# **National Bank of Poland**

# Monetary Policy Council

# INFLATION REPORT

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# SUMMARY

The present report is devoted to an analysis of the inflationary processes at work within the Polish economy over the whole of 1999. As in the *Inflation Report*, 1998, compiled a year ago, the analysis of these processes set out in the present report is more developed than those contained in the quarterly reports.

In 1999, the short-term inflation target, set within a range of 6.6%-7.8%, was not achieved. Inflation in December, as measured by annualised consumer price growth, stood at 9.8%. Thus, for the first time since the transition of the Polish economy was begun, annual inflation measured in this fashion was higher than the previous year. At the same time, annualised average consumer price growth declined considerably, coming down from 11.8% in 1998 to 7.3% in 1999.

Both an analysis of the trend in underlying inflation and the timing sequence of inflationary processes, unusual for recent years, attest to the powerful impact of supply dislocation on Polish inflation in 1999. As in previous years, price growth was also significantly affected by increases in the general category of administratively regulated prices. Movements in indices of underlying inflation confirm that the rapid decrease in the official rate of inflation at the turn of 1998 and 1999 was primarily the result of slower growth in the most volatile prices. This situation was reversed as of the third quarter of 1999, when underlying inflation indices began to lag behind inflation. Whereas the unexpectedly sharp slowdown of consumer price growth in the fourth quarter of 1998 and beginning of 1999 can largely be traced to a sudden increase in domestic supply (especially of foodstuffs) due to the loss of Eastern markets, the strong acceleration of price growth from August 1999 onwards was principally linked to higher fuel and food prices. The repercussions of steep oil price growth on world markets were compounded by increases in excise duty on fuels that were higher than originally anticipated. Given the quasi-monopoly conditions prevailing on the Polish fuel market, cost impulses easily fed through into a surge in retail prices. A similar pro-inflationary effect was exerted by the stepping up of official intervention and protectionist measures on the market for agricultural produce at a time of contraction in the supply of many foodstuffs.

From the third quarter onwards, the processes outlined above were accompanied by a systematic rise in underlying inflation. This implies that more lasting inflationary tendencies also gathered momentum. At the same time, producer price growth rose faster than consumer price growth. As a result, the difference between the Producer Price Index (PPI) and Consumer Price Index (CPI) narrowed substantially. This is evidence of the persistence of strong cost push pressure, which in the appropriate demand conditions could drive up consumer prices. An increase in these prices could entrench inflationary tendencies within the Polish economy. This is all the more important in that surveys conducted by the NBP indicate that household inflation expectations are marked by force of inertia. There is thus a risk that higher inflation expectations could be transmitted to wage-price mechanisms.

The rise in inflation seen in 1999 coincided with lower money supply growth than in the previous year, in both nominal and real terms. However, caution has to be exercised in interpreting this fact. This is due to the lack of a stable statistical relationship in Poland between the M2 monetary aggregate and inflation, and in particular to the high volatility of the time lags displayed by monetary policy instruments in impacting the economy.

A characteristic aspect of the pattern of money supply growth in 1999 was the distinct slowdown in the growth of banking liabilities to the nonfinancial sector; this particularly applies to the low growth in personal deposits at the banks. Research into disposable incomes, consumption and personal savings indicates that this decline in deposit growth was primarily the result of lower growth in personal disposable incomes and the maintenance of a rapid increase in personal consumption. Another factor by no means unimportant was the expanding range of competing financial instruments, against a background of falling nominal deposit rates at the banks.

In terms of counterparts to changes in money stocks, the weakening of deposit growth in 1999 was coupled with a significant rise in loan outstandings, particularly in lending to persons. As in the case of slacker deposit growth, this is in large measure attributable to the desire to maintain a substantial increase in consumption despite lower growth in incomes. Loan demand could also have been whetted by expectations of a further decrease in interest rates. At the same time, heightened competition between financial institutions led to much greater ease of access to loans. Although housing loans rose rapidly, the most common loans continued to be instalment loans and overdraft facilities, indicating that finance was chiefly being provided for purchases of durable goods.

The general government sector played a lesser part in monetary expansion in 1999 thanks to the receipt of privatisation revenues double those projected. Nevertheless, the large deficit generated by this sector last year was very consequential in influencing the development of the overall economy. The fact that the cost of simultaneously implementing four structural reforms proved higher than forecast, in the context of weakening economic growth, contributed to an aggravation of the imbalance in public finances, particularly outside central government. As a result, the role of general government as a source of internal disequilibrium increased significantly in 1999. An over-expansionary fiscal policy was therefore one of the factors stimulating domestic demand, working to fuel inflation and deepen the deficit on the current account. In terms of this deficit, it was particularly unfortunate that the shortfall in general government finances was largely financed by inflows of foreign capital.

The year 1999 once again brought an increase in the gap between investment and domestic savings. Despite a noticeable slowdown in the pace of capital spending, domestic savings growth declined even more. Lower savings growth was reported in virtually all institutional sectors (apart from financial institutions). The result was to accentuate the imbalance on the current account, which was at the same time suffering from the impact of external developments such as the effects of the Russian crisis, weak domestic demand in Western Europe, high prices for imported oil, the strengthening of the dollar against the euro, or finally the sharp competition on third markets generated by goods from South-East Asia. A further increase in external disequilibrium threatens to make Poland substantially more sensitive to sudden shifts in capital flows, with all the negative consequences this would entail.

With the exception of the fourth quarter, the year 1999 brought faster growth in domestic demand than in domestic supply. However, as the year progressed, output growth gradually picked up speed, boosted from the third quarter onwards by a rising volume of exports. Although growth in disposable incomes was more modest, consumer demand growth was slightly up on the already high level recorded in 1998. The inelasticity of the propensity to consume in Poland in the face of changed conditions of prices and incomes may partly be ascribable to the development in recent years of a conviction that income growth will be constant. At the same time, the high investment growth seen in the mid-90s declined further in 1999, chiefly due to a deterioration in corporate finances and a more pessimistic view of future sales opportunities.

The most important measures taken by the Monetary Policy Council in 1999 were to lower interest rates in January, and then to tighten the monetary stance in September and above all in November. In addition, the operational (trading) character of the foreign exchange fixing was abolished in June. The elimination of the fixing represented another move to support the process of containing excess liquidity within the banking system, thereby allowing monetary policy instruments to operate more effectively. Thanks to the gradual reduction in surplus liquidity, it became possible to lower reserve requirements and make these uniform for all eligible liabilities. The banks used the funds thus released to purchase long-term bonds issued by the NBP.

In January 1999, the Monetary Policy Council carried out a significant cut in interest rates. In taking this decision, the Council was projecting that macroeconomic developments in 1999 would follow a different course than they ultimately did. First and foremost, it was assumed that the declared tightening of fiscal policy would in fact take place. It was also thought that exporters would readjust more rapidly to their new circumstances and that the investment climate on world financial markets would be more favourable in attracting foreign capital. Future developments on the world oil market were difficult to predict. In the environment anticipated by the Council, the lowering of interest rates would not have jeopardised attainment of the inflation target, and would have allowed the conduct of coordinated macroeconomic policies more conducive to overall stability.

As of September 1999, the Monetary Policy Council began to pursue a more restrictive monetary policy with a view to laying the basis for performance of the inflation target for 2000. The response of the financial markets to this decision was to cut yields on medium- and longdated Treasuries in the fourth quarter of 1999, bringing these down to the level at the beginning of the year, and to reinstitute a negative slope along the whole length of the yield curve. This can be interpreted as a restoration of market expectations that the process of disinflation would continue in the medium and long term.

The present *Report on inflation* was developed on the basis of statistical data available up to mid-April 2000, with the exception of figures on the balance of payments and on public finances, which were published in May 2000.



## INFLATIONARY PROCESSES IN 1999

## **Consumer prices**

Inflation in 1999, as measured by annualised average consumer price growth, came to 7.3%. In comparison to 1998, this constitutes a decrease of 4.5 points, i.e., a much sharper drop than in the previous year, when average inflation over the year came down 3.1 points. The overall increase in the price of consumer goods and services in 1998 represented the combined effect of annualised average price growth of 1.5% for foodstuffs and non-alcoholic beverages, 8.7% for non-food articles, 11.1% for services and 10.2% for alcoholic beverages and tobacco products.

At year end 1999, annual inflation as measured by annualised consumer price growth stood at 9.8%, up 1.2 points on the year before. The short-term inflation target for the year, set by the Monetary Policy Council at 6.6%-7.8%, was therefore overshot.

Inflationary processes in 1999 took a different course than they had in 1998. Following a decline in annualised price growth during the first two months of the year,





Source: GUS.

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Figure 2 Consumer price indices (previous month = 100)

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Figure 3 Consumer price growth (December previous year = 100)



Source: GUS.





## Figure 4 Contribution of product categories to overall CPI growth (previous month = 100)

Source: NBP calculations based on GUS figures.

and a slight rise in prices in the subsequent months up to mid-year, inflationary tendencies increased strongly in the latter half of the year. This was quite the opposite of the timing of price growth in previous years, when prices generally rose faster in the first half of the year, with growth then flagging in the second. Consumer price growth in 1999 on a twelve-monthly, monthly and year-to-date basis is charted by Figs. 1, 2 and 3. It is estimated that the contribution of particular categories to the annualised inflation reported at year end 1999 was as follows: foodstuffs and non-alcoholic beverages -1.9 points (as against 1.0 points at year end 1998), nonfood articles - around 3.3 points (as against 2.7 points), services -3.9 points (also 3.9 points the year before) and finally alcoholic beverages and tobacco products -0.7points (as against approximately 1.0 points). The contribution of the primary categories of consumer goods and services to overall inflation in 1999, on a monthly and twelve-monthly basis, is illustrated by Figs. 4 and 5.

In 1999, price increases for particular categories of goods and services impacted overall inflation to varying degrees. The contribution to inflation of those consumer goods and services that exerted the determining influ-



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## Figure 5 Contribution of product categories to overall CPI growth (corresponding period previous year = 100)



Figure 6

Contribution of most important goods & services to movements in CPI, 1999, and weight in reference basket



Source: NBP calculations based on figures from Central Statistical Office (GUS).



ence on the overall acceleration of price growth is presented in Figure 6 (in order of importance).

Over the whole of 1999, three distinct periods can be distinguished with respect to inflationary processes, as portrayed by movements in the annualised CPI; in each of these periods, the factors conditioning inflation displayed varying influence.

#### January-February 1999: inflation slows

The tendency at the beginning of 1999 was for CPI growth to come down. In February 1999, annualised inflation stood at an annual low of 5.6%, whereas the previous February it had come to 14.2%, which was the highest level recorded in 1998.

Over the first two months of 1999, consumer prices rose 2.1% on December 1998, while a year earlier the corresponding increase had been twice as fast, coming to 4.9%.

In January and February 1999, the greatest influence on consumer price growth was that of officially controlled prices, which went up 3.2%, accounting for 0.8 points of inflation in this period (a year before, these prices had climbed 9.6%, contributing 2.4 points to CPI growth). The slower growth of these prices compared to the preceding year was to a certain degree the result of the different timing of prices rises for goods and services subject to official control. In previous years, January and February constituted the months when most administrative price rises were introduced, these being effective as of the beginning of the year. In 1999, however, since a substantial proportion of prices in this category were already being regulated indirectly, via taxes, the effects of these prices rises were staggered out in time, being felt also in subsequent months, with the result that the growth of officially controlled prices was lower. In consequence, the price growth registered in this category in the first two months of the year was relatively weaker than a year before. Of all the goods and services subject to official price control, the highest price increases in this period were for mains gas, housing occupancy, transport services (mainly rail and bus fares, and also other municipal transport), telecommunications services, and radio and TV license fees. Officially controlled prices continued to be of greatest importance within consumer service prices (cf. Fig. 7).

Figure 7 Consumer service prices (previous month = 100)



Source: NBP calculations based on GUS figures.

From December 1998 to February 1999, the price of fuel (included within goods and services subject to official price control due to price regulation via indirect taxation) held steady (during the same period a year earlier, fuel prices rose 7.3%, contributing 0.2 points to inflation). Fuel prices remained unchanged despite the introduction in January 1999 of a 5.7% increase in excise duty on fuel, the first of four, which had been preceded by an additional, unplanned increase in December 1998. World oil prices fell considerably at that time compared to the corresponding period of the previous year. Thus, in the initial period of 1999, fuel prices did not act to speed up inflation.

Of those goods subject to the largest price volatility, the prime part was played by foodstuffs. From December 1998 to February 1999, prices of foodstuffs and non-alcoholic beverages rose 0.2% and were responsible for 0.1 points of overall CPI growth (a year previously, they had gone up 2.3%, contributing 0.9 points to the CPI). Slight growth in the prices of foodstuffs and non-alcoholic beverages persisted in this period despite the supply of agricultural produce markedly exceeding demand. Surplus supply was the result of large stocks of grain, remaining from the pre-

vious year's harvest and imported, and also large stocks of pork, held due to the collapse of exports to both Russia and the EU countries. At the same time, food prices stayed low over this period on world markets for agricultural produce, thereby contributing to a reduction in imported food prices, which had a restraining influence on domestic food price growth.

At the same time, strong growth was seen in other consumer service prices (excluding officially controlled prices); this amounted to 4.7% and accounted for 0.8 points of inflation in this period (twelve months previously, prices in this category rose 6.4%, representing 0.8 points of inflation). In 1999, relative prices continued to change, a consequence of the ongoing process of readjusting the structure of service prices to the demands of the market. This resulted in large price increases for certain services.

Prices of non-food articles, excluding officially controlled prices (which include fuel and tobacco products) went up 1.4% over this period, which contributed 0.4 points to overall consumer price growth (in 1998, the corresponding increase had been 2.7%, accounting for 0.8 points of inflation). During this period, the level of commodity prices on world markets did not engender pressure for price growth within the Polish economy. In the first two months of 1999, world price indices for basic commodities were lower than in December 1998, and also below the level recorded a year previously<sup>1</sup>. Only price increases for industrial goods, despite trending downwards, outpaced the general world index of basic commodity prices right from the beginning of 1999.

#### March-July 1999: inflation rises slightly

A tendency for consumer price growth to increase slightly began in March, when annualised inflation came to 6.2%, rising 0.6 points on February, and lasted until July. Inflation went up 0.1 points in the successive months up to and including June, to stand at 6.5% at mid-year.

Although July had in previous years usually witnessed a clear seasonal decline in prices, resulting in a seasonal decrease in annualised inflation, in 1999 this month saw twelve-month price growth slip just 0.2 points compared to June. In the course of the five months from March to July 1999, consumer price growth came to 2.4%, up 0.7 points on the corresponding period of 1998.

Consumer price inflation was in this period fuelled by increases in officially controlled prices, which climbed 5.1%, pushing the CPI up 1.3 points (a year before, these prices had gone up 0.8%, contributing 0.2 points to the CPI). This period brought rises in various categories of officially controlled prices (including various charges related to housing occupancy, electricity charges, and excise duty on alcoholic beverages and tobacco products, raised in March and June), with the influence of these prices being most noticeable in March, May and June. The increase in retail electricity charges was also related to movements in producer prices (cf. Fig. 8). Research into the correlation between retail electricity and gas prices and producer prices in the section of electricity, gas and water supply point to a strong statistical dependence, with a correlation coefficient of 0.96.

Rapid price growth was also driven by a very steep 24.7% increase in fuel prices (some 10% of this is attrib-

Electricity & gas prices vs electricity, gas & water supply (corresponding month previous year = 100)



Source: GUS.

Figure 8

utable to higher excise duty). The direct contribution of fuel price growth to overall price inflation stood at 0.6 points (a year previously, the same period had seen a 3.1% decrease in fuel prices, lowering overall inflation by 0.1 points), and also created powerful pressure for increases in other prices. The basic stimulus to retail fuel price rises at this time was the surge in world oil prices which began in March and continued unabated until year end. In Poland, virtually all domestic demand for petroleum is met by imports. Some 30% of refined petroleum products are also imported. Given the country's almost total reliance on imported fuel supplies, the situation on world markets had a crucial impact on domestic fuel prices<sup>2</sup>. In the course of 1999, world oil prices rose 128%. The large scale of this increase was primarily the result of a very consistent policy of limiting production applied by the OPEC countries. The fact that importers altered the composition of oil and fuel supplies, reducing purchases in the West in favour of higher supplies from Eastern and Central Europe, failed to make any major impact in containing price growth on the domestic market. An additional factor behind soaring fuel prices could have been a very significant institutional change that radically exacerbated the monopolistic nature of the fuel market, with negative consequences for price growth. In May 1999, a merger was carried out involving the incorporation of the CPN fuel retailing network into Polski Koncern Naftowy (PKN, the Polish Oil Corporation). In addition to the Petrochemia Plock refinery and the CPN network, the Corporation also includes the Trzebinia and Jedlicze refineries. PKN currently operates almost 2,000 filling stations. It has become the dominant player on the Polish market in terms of both fuel retailing and the production of liquid fuels.

The rise in other consumer service prices (excluding officially controlled prices); also continued to be swift, coming to 5.5%, which accounted for 0.9 points of overall inflation (a year previously, this rise had stood at 5.2%, representing 0.6 points of CPI growth). Numerous services went up in price dur-

 $<sup>^{2}</sup>$  Factory-gate prices are set by the refineries on the basis of an "import parity". This represents the price of imported fuel, translated at dollar exchange rates plus a spread of 1% (which represents some 40% of "parity"), with the addition of excise duty (some 56%), customs duty (around 2%), and banking/ financing costs (around 1.2%). Imported fuel prices are expressed in dollars per tonne and set for various fuels, e.g., EU95, ON 0.2%S, EN 590.



Figure 9 Prices for non-food articles vs manufacturing prices (corresponding month previous year = 100)



Source: GUS.

ing this period, including basic personal services, which was largely the indirect effect of faster growth in officially controlled prices.

Growth in prices of other non-food articles (excluding officially controlled prices) in this period came to 1.7% and constituted 0.5 points of total CPI growth (twelve months before growth had been 2.5%, equivalent to 0.7 points of inflation) (cf. Fig. 9). Despite the strong statistical dependence observed earlier between industrial producer prices and consumer prices for non-food articles (a correlation coefficient of 0.92), the former had only a minor impact on the latter in the period under discussion.

In the same period prices of foodstuffs and nonalcoholic beverages fell 1.4%, bringing down inflation for this period by 0.4 points (a year earlier, the decline had been 0.2%, lowering inflation by 0.1 points). The situation on both the domestic and world markets for agricultural produce at this point continued to be conducive to a decrease in food prices. The domestic market for agricultural produce was still marked by an excess of supply over demand, and the government intervention on this market conducted since the beginning of the year had yet to yield an increase in produce prices. Prices

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for unprocessed foodstuffs, including meat, poultry, milk and vegetables, were in this period not generating inflationary pressure, running substantially below the CPI. The largest food price rises between March and July were for fruit.

#### August-December 1999: inflation climbs sharply

In previous years, July generally ushered in the decline in annualised consumer inflation that characterised the second half of the year. This was not the case in 1999, however. Inflation began to soar from August onwards, a trend that was sustained right until year end, when it stood at 9.8%. From August to December, prices of consumer goods and services rose 5.1%, whereas the corresponding increase the previous year had been just 1.8%. This period saw a general shift in the growth pattern of consumer prices.

Prices of foodstuffs and non-alcoholic beverages began to move up rapidly in the latter half of the year, ceasing to act as a brake on overall price growth, as they had done in previous years. The increase in prices of foodstuffs and non-alcoholic beverages in this period amounted to 7.3%, adding 2.3 points to overall price growth (in the corresponding period of 1998, the relevant increase had come to 0.7%, representing 0.3 points of CPI growth). A contributing factor in this was that the production of basic agricultural produce in 1999 was scaled back compared to 1998, while protection for the food market was expanded relative to the previous year and official intervention stepped up. At the same time, world food prices began to go up in August and September, and by year end growth in these prices had reached the level of 1998. The intervention performed by the Agricultural Market Agency in 1999 (examined in more detail in Appendix 1) on the markets for grain and pork (the latter carrying over to the meat market as a whole) had a strong impact on food price growth, particularly in the case of unprocessed foodstuffs (cf. Fig. 10). The various measures taken to protect the domestic market had a cumulative effect, aggravating the consequences of a lower supply of agricultural produce and leading to a sharp acceleration in food price growth. The impact of price rises for particular groups of foodstuffs on the overall pace of consumer price growth is presented in Table 1.



#### Figure 10

CPI vs prices for foodstuffs & non-alcoholic beverages: overall, processed foods & unprocessed foods (corresponding month previous year = 100)





 Table 1

 Contribution of particular groups of foodstuff to overall consumer price growth in particular

 periods of 1999

	Contribu	Contribution to overall consumer price growth				
	Jan-Feb	March-July	Aug-Dec	1999		
	XII = 100	II = 100	VII = 100	XII/XII		
Overall consumer price growth	2.1	2.4	5.1	9.8		
Foodstuffs & non-alcoholic beverages	0.1	-0.4	2.3	1.9		
of which:						
- Bakery & grain products	0.0	0.0	0.1	0.2		
- Meat	-0.1	0.0	0.4	0.2		
- Fish	0.0	0.0	0.2	0.0		
- Milk, cheese, eggs	0.0	-0.1	0.4	0.3		
- Oil & other fats	0.0	0.0	0.2	0.2		
- Fruit	0.1	0.1	0.0	0.3		
- Vegetables	0.1	-0.3	0.9	0.5		
- Sugar, jam, honey, chocolate	0.0	-0.2	0.4	0.1		
- Other foodstuffs	0.0	0.0	0.0	0.1		

Source: NBP calculations based on GUS figures.

During this period, growth in prices of consumer goods and services continued to be greatly boosted by increases in officially controlled prices, which went up 4.3%, contributing 1.1 points to CPI growth (a year previously, these prices had gone down 0.1%, with zero impact on the CPI). This steep price growth was again determined by those prices affected by the successive increases in excise duty. In addition, fuel price rises continued to be very sizeable, coming to 22.5%. This was related both to the further sharp increase in world oil prices, which went up 27% from August to December 1999, and to the last of the year's rises in excise duty, one of 10% in August, which took place a month earlier than scheduled and was twice as large. The direct impact of fuel price increases on overall price growth over this period came to 0.5 points (a year earlier, these prices had gone up only 0.7%, with no effect on the CPI), while at the same time generating strong pressure for increases in other prices.

On the basis of an econometric analysis of the sensitivity of the consumer price index to movements in fuel prices, it can be estimated that, depending on the model employed<sup>2</sup>, a one per cent rise in fuel prices yields a rise in inflation within the same month of 0.05-0.06 per cent, i.e., the reaction produced is over twice as strong as suggested solely by the weight of fuels in the consumer price basket. Over the year as a whole, the impact of this fuel price rise would be compounded to 0.13 per cent. The conclusion to be drawn is that to an overwhelming degree fuel prices affect inflation indirectly, via costs, thereby exerting an influence five times greater than that implied by the direct consumption of fuels. Further, research indicates a two-stage process of price adjustment, with some prices reacting immediately or with little delay, while the remaining prices adjust within three months at most. The impact on overall price levels is in both cases almost identical (0.039 and 0.041 per cent, respectively). It can therefore be inferred that fuel price increases feed through into inflation fairly rapidly.

The transmission mechanism for inflationary impulses generated by fuel prices is one that is difficult to investigate in Poland. A small and heterogeneous statistical sample and the high volatility of the macroeco-

<sup>&</sup>lt;sup>3</sup> The models developed varied as to the number of lags.

nomic environment in the period under examination mean that the resultant parameter values may raise doubts. In addition, the large share of officially controlled prices in the consumer price basket dissipates the impact of a supply shock on the overall CPI, since the adjustment of officially controlled prices is subject to time lags and reflects the cumulative effect of fuel price movements over a longer time horizon. As a result of all these factors, any quantitative assessment of the total impact of fuel price rises on the level of other prices may be subject to considerable error, and the estimates outlined above should therefore be treated as approximate. What would appear to be more reliable, on the other hand, are the inferences concerning the pattern of time lags and the relative strength of the response of consumer prices to fuel price movements. An evaluation limited solely to the direct effect of fuel price increases on the CPI indicates that these increases contributed 1.3 points to the annualised consumer price growth of 9.8% reported at year end 1999. Similarly, the annualised average fuel price growth of 25.2% yielded 0.6 points of the year's 7.3% annualised average CPI.

Prices of other non-food articles (excluding officially controlled prices) went up 3.8% in this period, outpacing the growth shown in the preceding periods. This represented around 1.1 points of total consumer





price growth (a year before, these prices had risen 3.7%, equivalent to 1.0 points of inflation). The period under review saw price growth speed up for industrial goods, which on the one hand stemmed from the transmission to non-food articles of the strong cost push pressure felt by industrial companies, and on the other reflected the indirect effect of sharp fuel price rises.

Service prices (excluding officially controlled prices) rose 3.2% in all over the period from August to December, which was slightly less than the 3.5% recorded in the corresponding period of 1998.

In the course of 1999, the tendencies in consumer prices outlined above generated year-to-date price growth that was stronger than anticipated. The development of inflationary tendencies in the years 1997-99 is depicted in Fig. 11.

## **Underlying inflation**

In Poland, the inflation target is determined with reference to the overall consumer price index (CPI). However, the central bank also analyses indices of underlying inflation, which allow an approximate determination of whether price growth is the result of temporary supply shocks or is rooted in more lasting inflationary tendencies that are primarily influenced by monetary factors.

In Poland, underlying inflation is calculated in various ways. Limiting the number of underlying inflation indices observed in order to increase the transparency of monetary policy would be justified were an appropriate measure to be derived from empirical studies. However, this is problematical in Poland, one reason being the lack of sufficiently long time series. Demonstrating cointegration is difficult. Therefore, this *Inflation Report* presents the following measures of underlying inflation, as currently tracked by the NBP: underlying inflation adjusted to exclude officially controlled prices; underlying inflation adjusted to exclude those prices that exhibit the highest volatility; and a 15% trimmed mean obtained from a disaggregated CPI.

Annualised values for these measures, compared to movements in the CPI, are shown in Figs. 12, 13 and 14.

In illustrating the course of underlying inflation calculated by excluding officially controlled prices, i.e., those prices where a major component are taxes (e.g.,

Figure 12 CPI vs underlying inflation, excluding officially controlled prices, January 1998 - December 1999 (corresponding month previous year = 100)



Figure 13 CPI vs underlying inflation, excluding most volatile prices, January 1998 - December 1999 (corresponding month previous year = 100)





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Figure 14 CPI vs 15% trimmed mean, January 1998 - December 1999, (corresponding month previous year = 100)



excise duty), those prices set by local authorities (e.g., municipal transport) and those subject to price ceilings (e.g., electricity), Figure 12 reaffirms that these prices had a significant impact on the increase in inflation.

The index of underlying inflation excluding officially controlled prices provides evidence that up until July rises in the latter prices fuelled the acceleration of overall price growth. Over the year as a whole, this measure of underlying inflation ran below headline inflation, and at year end stood at 8.2%. Thus, overall CPI growth was chiefly driven by officially controlled prices that were higher than in the corresponding month of 1998, particularly fuel prices (due to repeated price increases by manufacturers), and thus the price of transport services as well. Also higher were the prices of telephone rental, tobacco products and electricity. Only telephone charges for domestic calls were lower than in the same period of 1998.

Figure 13 illustrates movements in underlying inflation adjusted to exclude the most highly volatile prices, i.e., those with the greatest amplitude of price swings. Prices exhibiting the greatest volatility principally include those of fruit and vegetables, and also those of certain services. In the first half of the year, most of these prices were running lower than in the corresponding period of 1998, yet in the second half of the year this situation was reversed. As a result, underlying inflation excluding the most volatile prices was higher than the CPI from January to April, very similar to the CPI from May to August, and lower than it from September to December, standing at 9.2% at year end.

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The underlying inflation charted in Figure 14, calculated using a 15% trimmed mean, exceeded overall price growth from the beginning of 1999 until the end of July and then lagged behind in the second half of the year, to edge up in the fourth quarter and end the year at 7.5%.

It is worth noting that the trends in underlying inflation presented here, although calculated in various ways, display a similarity in their relationship to overall consumer price growth; this particularly applies to underlying inflation excluding the most volatile prices and the 15% trimmed mean. Both of these measures of underlying inflation were distinctly higher than the CPI towards the end of 1998 and at the beginning of 1999. Subsequently, from August onwards, they were both lower than the overall price index. This common tendency reaffirms the major role of supply shocks in generating a pattern of price growth in 1999 that differed from previous years. At the same time, however, all the measures of underlying inflation uniformly point to an upward trend in consumer prices that extended into the first months of 2000. These movements in underlying inflation relative to consumer price inflation would appear to confirm that an important part in speeding up price growth in 1999 was played by the secondary repercussions of supply disruptions, primarily the consequences of fuel price rises.

## **Producer prices in industry** and construction

In December 1999, industrial producer prices had risen 8.1% since December 1998, as against a rise the previous year of 4.8%, signifying a large increase of 3.3 points in the rate of producer price inflation (cf. Fig. 15). The difference between the rate of consumer and producer price growth at year end thereby narrowed to 1.7 points, as against 3.8 points at year end 1998. The smaller difference between the growth rates for these prices poses a danger that, were demand conditions to





Figure 15 Industrial producer prices, overall indices (December previous year = 100)

Figure 16 Producer price indices, mining & quarrying (December previous year = 100)



Source: GUS.



Figure 17 Producer price indices, manufacturing (December previous year = 100)



be conducive, producer price growth could stoke consumer price inflation in the first half of 2000.

The 8.1% increase reported in industrial producer prices represented the combined effect of prices rising 10.9% in electricity, gas and water supply, 8.9% in mining and quarrying, and 7.5% in manufacturing. The above price movements are presented in Figs. 16, 17 and 18.

Compared to the previous year, producer price growth gained most speed in mining, going up 5.6 points. In manufacturing, the PPI rose 3.5 points, while the corresponding increase in electricity, gas and water supply came to 0.8 points. Given that manufacturing output represented 84.3% of the value of total industrial output in 1999, it was price growth in this section that primarily determined the overall level of producer prices in industry. From March onwards, the Producer Price Index for manufacturing was higher than it had been twelve months earlier (cf. Fig. 17).

For analytical purposes, the particular divisions of industry were grouped together by those which showed higher producer price growth relative to the previous December than they had a year before, and those where this growth was lower.

In the first group (eleven divisions) the swiftest price growth at year end 1999 was recorded in manufacture of coke and refined petroleum products. Producer prices





Figure 18 Producer price indices, electricity, gas & water supply (December previous year = 100)

here shot up 56.9% compared to December 1998 (cf. Fig. 19). The surge in producer prices in this division was visible from March 1999 onwards.

Strong price growth was also evident in the following divisions: electricity, gas, steam and hot water supply (up 11.1%); manufacture of pulp, paper and paper products (up 9.3%); manufacture of chemicals and chemical products (up 8.8%); manufacture of leather and leather products (up 7.2%); manufacture of radio and television equipment and apparatus (up 6.2%); manufacture of food products and beverages (up 5.6%); manufacture of wood and wood products (up 5.2%); manufacture of rubber and plastic products (up 5.1%); and manufacture of electrical machinery and apparatus (up 3.0%).

In the second group of divisions, where producer prices rose more slowly than a year before, the highest price growth was recorded in the following divisions, among others: manufacture of tobacco products (up 13.8%); manufacture of other non-metallic mineral products (up 6.1%); publishing, printing and reproduction of recorded media (up 5.3%); manufacture of furniture (up 5.0%); manufacture of other transport equipment (up 4.7%); mining of coal and lignite (up 4.4%); manufacture of medical instruments (up 3.7%); manu-



Figure 19 Producer price indices, manufacture of coke & refined petroleum products (December previous year = 100)



facture of machinery and equipment (up 3.4%); manufacture of motor vehicles (up 3.0%); manufacture of fabricated metal products (up 2.5%); and manufacture of textiles (up 2.5%).

In construction, producer prices rose 8.9% in 1999 relative to the previous December. However, the price growth registered over the year was slower than in 1998, when at year end it had stood at 10.6%. Producer price growth was faster than average in building installation (up 11.1%, as against 12.4% in 1998). By contrast, it was below average in the section of "building of complete constructions or parts thereof; civil engineering" (up 8.5%, as against 10.2% in 1998).

## FACTORS CONDITIONING INFLATION IN 1999

## The money supply and prices on financial markets

#### The money supply

At the end of December 1999, the total money supply stood at 263.5bn zloty<sup>4</sup>. This represented an increase of 42.7bn zloty relative to year end 1998, giving growth of 19.3% in nominal terms and 8.7% in real terms. By comparison, nominal money supply growth in 1998 came to 25.2%, while the corresponding real growth amounted to 15.3%. This indicates that the demand for money rose more slowly in 1999 than in 1998. With the exception of the first three months of 1999, quarterly indices of monetary expansion were lower than those recorded the previous year (cf. Fig. 20).

<sup>4</sup> The total money supply is defined as the sum of domestic money stocks and foreign currency deposits. Domestic money stocks represent the sum of notes and coin in circulation (excluding vault cash) and zloty balances held at banks by the nonfinancial sector (corporates and persons).





Source: GUS and NBP.



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Figure 21 Non-financial sector zloty deposit growth, real terms (previous quarter = 100)



Figure 22 Nominal growth of personal zloty deposits and notes  $\mathcal{E}$  coin in circulation (corresponding month previous year = 100)



The lower overall money supply growth reported in 1999 can largely be traced to a slower increase in the liabilities of the banking system to the non-financial sector. Zloty deposits held by non-financial counterparties totalled 185.7bn zloty at year end, having gone up 28.8bn zloty since year end 1998, i.e., 18.4% in nominal terms and 7.8% in real terms. A year previously, growth in non-financial sector deposits had been much higher, coming to 32.6% (22.1% in real terms). Although deposits grew from one quarter to the next in 1999, the pace of growth, with the exception of the first quarter, was markedly lower than in 1998 (cf. Fig. 21). Compared to 1998, annualised deposit growth was also considerably slower. Further, annualised growth trended steadily downwards from the beginning of 1999.

The prime reason for the slower growth in deposits taken from the non-financial sector was the small increase in personal deposits at the banks. At year end 1999, personal balances stood at 124.1bn zloty, having risen 14.5bn zloty since the end of 1998. This represents nominal growth of 13.2% (3.1% in real terms). In 1998, the banks' zloty liabilities to persons rose much faster, going up 35.5% in nominal terms (and 24.7% in real terms).

The slackening of zloty deposit growth was the result of weaker growth in household disposable incomes, coupled with the maintenance of fast growth in consumption. In addition, the expanding range of services offered by financial service institutions has boosted interest in other types of asset as alternative savings vehicles to bank deposits, particularly given the decline in nominal deposit rates seen at the turn of 1998 and 1999.

Towards the end of 1999, the slow increase in deposits was further aggravated by rising consumer demand for cash (cf. Fig. 22).

Corporate zloty deposits at the banks totalled 61.6bn zloty at year end 1999. These balances rose 14.3bn zloty on year end 1998, or 30.2% in nominal terms (18.6% in real terms). Growth in these deposits in 1999 proved to be slightly higher than in 1998, when nominal growth had come to 26.3% and real growth to 16.3%.

The year 1999 saw a systematic increase in the pace of quarterly growth in corporate deposits, which was linked to the upturn in business activity and the improvement in corporate finances. This trend was particularly visible in the second and third quarters. The pronounced growth in corporate deposits subsequently witnessed towards the end of the year was seasonal in character and stemmed from certain technical aspects of corporate financial transactions settled via the banks.

At the end of 1999, the foreign currency liabilities of the banking system to the non-financial sector amounted to the equivalent of USD 9.6bn. Compared to the end of 1998, this constitutes a slight decrease, of some USD 30.0m. Personal savings in foreign currency totalled USD 7.3bn at year end, up USD 0.3bn on the end of 1998. By contrast, corporate foreign currency balances declined USD 0.4bn over the year, to stand at USD 2.3bn at the end of December.

At the end of 1999, the foreign currency deposits taken from the non-financial sector represented the equivalent of 39.7bn zloty. Relative to the end of December 1998, these deposits had risen 6.1bn zloty, or 18.0% in nominal terms and 7.5% in real terms. The key factor determining the level and growth of these deposits in 1999 were movements in the nominal exchange rate for the zloty against the dollar. The extent of annual zloty depreciation against the dollar basically corresponded to the nominal growth of foreign currency deposits held by non-financial counterparties, as expressed in zloty.



Figure 23



The zloty value of personal foreign currency deposits at the end of 1999 stood at 30.4bn. Compared to the end of 1998, these deposits had gone up 5.9bn zloty. Nominal growth came to 24.0% (13.0% in real terms). The large scale of fluctuations in the growth of personal foreign currency deposits during the year, as expressed in zloty, was chiefly the result of the volatility of zloty/dollar exchange rates (cf. Fig. 23). In dollar terms, however, the growth of personal foreign currency deposits consistently gathered momentum over the first three quarters of 1999. This growth then halted from September to December, when the dollar value of these deposits decreased slightly in absolute terms.

An analysis of the foreign currency deposits held by the non-financial sector indicates that both the level of these deposits over the long term and movements in these deposits are significantly influenced by nominal exchange rates and consumer price growth. From March 1999 onwards, annualised consumer inflation gained speed. In parallel with this, the zloty depreciated considerably against the dollar in the first months of the year, and also in the period from August to November. In the context of the analysis referred to above, both of these factors could have bolstered the propensity of consumers to place their savings in foreign currency deposits, thus resulting in the faster growth of these deposits, in dollar terms, during the first three quarters of the year.

Figures for year end 1999 show that corporates were holding foreign currency balances to the zloty equivalent of 9.4bn. This constitutes an increase of 0.2bn zloty relative to year end 1998 (giving nominal growth of 1.9%, yet a decline in real terms of 7.2%). By comparison, the nominal growth of these deposits in 1998 came to 64.9% (51.8% in real terms). However, it should be borne in mind that December 1998 had seen a major, non-recurring inflow of funds to corporate foreign currency accounts. In view of this, the use of year-end 1998 figures as a point of reference strongly distorts an analysis of the growth of these deposits.

The monthly growth in corporate foreign currency deposits, as expressed in zloty, remained relatively stable during the first three quarters of 1999 (cf. Fig. 24). Sharper movements in these deposits in the final quarter of the year were on the one hand related to substantial swings in zloty/dollar exchange rates, and on the other hand to fluctuations in the dollar value of these deposits, most probably as a result of transactions involving deposits placed for short maturities. The latter factor would appear to have been connected with companies becoming more active in accessing funding through bond issues denominated in foreign currencies. Research into corporate foreign currency deposits indicates that one of the factors conditioning both the long-term levels and short-term movements of these deposits is the volume of merchandise trade, as registered by the banks for the balance of payments.

At the end of December 1999, the volume of notes and coin in circulation (excluding vault cash) stood at 38.1bn zloty. The increase recorded since the end of the previous year thus amounted to 7.9bn zloty. This represents nominal growth of 26.0% (14.8% in real terms). In 1998, nominal growth had been 10.9% (giving real growth of 2.1%). The large rise in the supply of notes and coin in 1999 was principally related to the strong increase in the demand for cash reported in December. This was rooted in concern among non-financial sector agents concerning the accessibility of funds on account at banks in the first days of the New Year, a concern connected with Y2K.

The fact that total money supply growth in 1999 was lower than that seen in 1998 was chiefly associated with

Figure 24 Corporate foreign currency deposit growth, real terms (previous month = 100)



Source: GUS and NBP.

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the modest rise in personal zloty deposits<sup>5</sup>. At the beginning of the fourth quarter, the main factor conditioning the level of total money stocks then became the rise in the foreign currency liabilities of the banks to the non-financial sector, a result of the major weakening of the zloty against the dollar, as already mentioned, and also of fluctuations in these liabilities in dollar terms. At the very end of the year, the primary impact on the total money supply was exerted by the seasonal rise in corporate zloty deposits. December 1999 also brought significant shifts in the composition of total money stocks. In particular, currency in circulation began to grow much faster, while growth in personal zloty deposits to cash was most probably associated with fears over Y2K<sup>6</sup>.

#### Counterparts to changes in money stocks

In 1999, claims on persons and corporates were the foremost factor in the creation of money within the banking system. Compared to 1998, the pattern of money supply growth in 1998 was marked by a significant increase in the relative weight of these claims, with a larger part also being played by net foreign assets. By contrast, there was a decrease in the role of general government debt and of other items (net). This is illustrated by Table 2.

The share of claims on persons and corporates' within the total money supply of the banking system<sup>8</sup> at year end 1999 stood at 66.8%, with corporates contributing 52.9% and persons 13.9%.

These claims totalled 175.9bn zloty at the end of December 1999, having risen 37.4bn zloty (27.0%) since year end 1998. By comparison, growth in 1998 came to 27.9%. A major increase was seen in 1999 in personal borrowings (up 53.0%, as against 30% in

<sup>&</sup>lt;sup>5</sup> Annualised growth in these deposits came down systematically throughout 1999, falling from 35.2% in January (26.4% in real terms) to 13.2% in December (3.1% in real terms).

<sup>&</sup>lt;sup>6</sup> The fact that these two developments involved a substitution effect and could have been fuelled by Y2K concerns is attested to by the figures for the end of January 2000. These show a sharp drop in notes and coin in circulation (down 12.0% in nominal terms on the end of December 1999), with a simultaneous rise over the month in personal zloty balances of 4.1% in nominal terms (the fastest growth recorded since December 1998). <sup>7</sup> These claims consist of all categories of loan irrespective of risk classification, and also of purchased debt, funds disbursed under guarantees and endorsements, interest receivable, and claims arising on interest subsidies to preferential agricultural loans.

<sup>8</sup> Including "other items (net)".

1998). On the other hand, growth in claims on corporates fell to 21.6%, as against 27.5% in 1998.

The first quarter of the year brought a substantial rise in corporate borrowings (up 7.6%), the result of a liquidity squeeze caused by declining sales. In the second quarter, however, outstanding bank loans to corporates went up rather less (3.4%) as their financial condition improved. In the third quarter, corporate borrowings again rose faster (going up 5.9%), which can be traced to the need for finance to meet mounting orders; this was subsequently reflected in an increase in output. The fourth quarter then brought another weakening of growth, which slipped to 3.4%.

The increase in outstanding corporate borrowings during the course of 1999, to 24.8bn zloty, was above all related to higher lending to finance current business operations and development; these loans accounted for 56.9% of total corporate outstandings. Other loans and advances in this category primarily comprised finance to sole traders and to farmers taking out agricultural loans at preferential rates of interest. Overdrafts constituted 12.4% of claims, and purchased debt represented 4.9%. The relative weight of trade finance, bills discounted and outstanding interest was not particularly significant, at 4.9%. The year 1999 also saw a decline in the relative importance of loans to finance central government investment projects, housing loans, funds disbursed under crystallised guarantees and endorsements, and subsidies to preferential loans.

Table 2Counterparts to changes in money stocks, 1999

	Growth,	Contribution to	Growth,	Contribution to	
	1998	1998 growth	1999	1999 growth	
	million zloty	%	million zloty	%	
Total money supply	44,388.1	100.0	42,718.9	100.0	
Net foreign assets	13,472.4	30.3	14,422.4	33.8	
Claims on persons & corporates	30,191.2	68.0	37,448.1	87.7	
General government sector debt	5,970.3	13.5	3,424.6	8.0	
Other items, net	-5,245.8	-11.8	-12,576.2	-29.5	

Source: NBP.
NBP

Outstanding claims on persons went up 12.7bn zloty in 1999, with growth in this category becoming more rapid. In the first quarter, growth came to 5.9%, rising in subsequent quarters to 11.9%, 14.3% and 13%, respectively. This tendency was related to a series of diverse factors affecting both the supply of credit and the demand for credit. The cost of borrowing fell (during the first three quarters), while the accessibility of bank loans increased. Loan demand was also influenced by developments such as the proposed amendment to personal income tax regulations abolishing tax relief for home improvements, and the announcement that excise duty was to be raised on imported passenger cars. Households sought to maintain living standards and fulfil earlier consumption plans despite the declining growth of real incomes. The contribution of lending growth to household disposable incomes climbed from 1.4% in 1998 to around 3% in 1999. Loans to persons thus became an important factor in the growth of personal consumption and of domestic demand overall.

At year end 1999, claims on persons accounted for 20.8% of total claims on the non-financial sector, while at year end 1998 the corresponding figure had been 17.3%.

Zloty financing accounted for 85.3% of the total growth in claims on persons and corporates reported in 1999, in contrast to 58.4% a year previously. The annual growth rate recorded for zloty claims (on both persons and corporates) was also swifter than that of claims in foreign currency, with the former rising 29.0% and the latter going up 19.3%, indicating greater borrower interest in zloty loans (chiefly long-term finance), with one reason for this being the exchange rate risk associated with borrowing in foreign currency.

Net foreign assets went down some USD 0.8bn in 1999, to total USD 26.7bn at year end<sup>9</sup>. The trend seen here was the opposite of that in 1998, when the foreign component of money stocks rose USD 3.9bn, to stand at USD 27.5bn at year end.

The main reason for the downward trend in net foreign assets in 1999 was the strong appreciation of the dollar against other currencies, resulting in a decrease in

<sup>&</sup>lt;sup>9</sup> Net foreign assets comprise the gross official reserves administered by the NBP and other foreign assets denominated in convertible currencies, less short-term bank liabilities and IMF loans, and other claims on non-residents, such as outstanding loans, securities issued and outstanding, subordinated loans, borrowings with original maturities of over one year, claims in non-convertible currencies, and other illiquid assets.

these assets when translated into dollars<sup>10</sup>. In 1999, Poland's overall balance of payments – the sum of the balances on the current account and on the capital and financial account, together with net errors and omissions – came to a negative USD 0.2bn. This was the result of a major increase in the current account deficit relative to 1998, in conjunction with a lower surplus on the capital and financial account.

The current deficit in 1999 totalled USD 11.6bn, up USD 4.7bn on 1998.

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Receipts from merchandise exports, as registered by the banks for balance of payments purposes, amounted to USD 26.3bn, representing a fall of 12.6% compared to the previous year. With import payments coming to USD 40.7bn, a decrease of 7.1%, the trade deficit stood at USD 14.4bn, as against USD 13.7bn in 1998.

Credits on services amounted to USD 3.3bn, a decline of 10.3% compared to 1998. Debits rose 17.6%, to stand at USD 4.9bn. As a result, the deficit on services came to USD 1.6bn. This imbalance chiefly stemmed from shortfalls on other commercial services (USD 0.5bn), on patents, copyrights and licence fees (USD 0.3bn), and on construction services (USD 0.3bn). At the same time, a serious decline was noted in the surplus on transportation services (which stood at USD 0.2bn).

The deficit on income yielded by the foreign assets and liabilities of domestic counterparties amounted to USD 0.8bn. Revenues amounted to USD 1.9bn, whereas remittances totalled USD 2.7bn. This deficit is related to the negative balance generated by interest on borrowings (USD 0.9bn) and income from direct investment (USD 0.3bn). The deficit on income as a whole was narrowed by a surplus obtained on income from debt securities, this principally representing income from NBP investment of the foreign exchange reserves (USD 0.7bn).

The surplus earned on current transfers, at USD 1.6bn, was the result of positive balances on both official transfers (USD 0.2bn) and transfers in other sectors (USD 1.4bn). Official transfers were predominantly composed of donations and non-refundable assistance

<sup>&</sup>lt;sup>10</sup> The official foreign exchange reserves, which make up the overwhelming portion of net foreign assets, declined USD 1,888m in 1999, coming down to USD 25,494m, the essential reason being movements in currency cross rates. Had the US dollar not strengthened in 1999 on world currency markets, the official reserves would have totalled USD 27,082.4.

NBP

from foreign governments (USD 0.2bn). The surplus on transfers in other sectors was primarily due to a positive balance on deposits to and withdrawals from foreign currency "A" accounts at banks (USD 0.8bn).

The net surplus of revenues over payments on unclassified current transactions amounted to USD 3.6bn in 1999, a decrease of USD 2.4bn on the surplus recorded a year earlier. The sharp decline in the surplus on these transactions can mainly be traced to a slump in revenues from local cross-border trading due to a reduction in the volume of purchases performed in Poland by visitors from the East. The resultant drop in the banks' purchases of foreign currency was chiefly observable in Warsaw (in the Mazovia voivodship) and in Poland's eastern voivodships (Lublin, Podkarpacie and Podlasie). The root causes of this change were primarily the worsening price competitiveness of Polish goods, the falling purchasing power of Poland's Eastern neighbours, and also administrative restrictions introduced with a view to tightening up Poland's Eastern and South-Eastern borders. The surplus of revenues over payments in unclassified current transactions financed 25% of the deficit on officially registered merchandise trade, which represents a major deterioration compared to 1998, when the corresponding ratio stood at 43.7%.

The surplus on the capital and financial account totalled USD 7.9bn in 1999, as against USD 10.8bn in 1998. The decrease in this surplus constituted the combined effect of a higher inflow of foreign capital in the form of foreign direct investment (FDI) and a large outflow of capital produced by an increase in Polish placements at foreign banks. The latter shift in the behaviour of Polish banks was the determining influence in lowering the surplus on the whole financial account relative to 1998.

The net inflow of direct investment in 1999 totalled USD 6.4bn, up 26% on 1998. This increase was principally due to a rise in the net amount of incoming FDI, which went up to USD 6.5bn, giving growth of 27% compared to 1998. The net outflow of Polish direct investment abroad came to 0.1bn. The pattern of inward FDI changed little in 1999. Credits received accounted for 34% of FDI in 1999, as against 31% in 1998. It should be noted here that in the first half of the year this ratio stood at 55%, yet in the latter part of the year a shift occurred in inward capital flows, which were reoriented towards purchases of equity interests in Polish companies. Most of these purchases were performed in the framework of equity privatisations, i.e., they involved the sale of equity holdings by the Treasury, rather than share purchases on the secondary market. The largest privatisations in 1999 included the sale of majority interests in two banks, Bank Pekao SA and Bank Zachodni SA. The increased value of privatisation deals relative to 1998 was the prime factor behind the higher net inflow of direct investment in 1999.

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Net portfolio investment came to USD 1.4bn in 1999, a rise of 8.9% on 1998. This increase is attributable, almost in its entirety, to the halting of the net outflow of Polish portfolio investment abroad. The final surplus on portfolio investment in 1999 was determined by capital flows in the fourth quarter of the year. At the end of the third quarter, there was a year-to-date deficit of USD 0.3bn, yet the next quarter, as in 1998, brought the largest influx of foreign portfolio investment. In the case of debt instruments, the inflow of portfolio investment was associated with Eurobond issues by the telecom companies Telekomunikacja Polska SA and Polska Telefonia Cyfrowa, and the issue of GDRs by Polski Koncern Naftowy. In terms of equity investment, this was bolstered by such factors as the stepping up of privatisation, the improvement in corporate earnings and more buoyant demand on the Warsaw Stock Exchange, although the latter was primarily generated by domestic investors, particularly by open-ended pension funds.

It should be noted that recent years have seen a sharp increase in transactions involving Polish portfolio investment abroad, which were particularly large in 1999, almost three times greater than transactions related to foreign portfolio investment in Poland. This stemmed from a powerful expansion in the activity of domestic investors involved in proprietary trading in derivative instruments.

In the second half of 1999, Polish placements at foreign banks continued to grow, leading to a USD 2.7bn negative balance on Polish assets abroad. In 1998, the balance had been positive, with a surplus of USD 2.2bn. This behaviour on the part of Polish banks could have been linked to expectations of zloty depreciation and the effects of the abolition of the operational (trading) character of the foreign exchange fixing on June 7, 1999.

Polish foreign liabilities showed a surplus, as they had a year before, signifying a net inflow of foreign capital to



Poland. This inflow was 22.7% higher than in 1998, standing at USD 2.2bn.

Drawings of short-term credits (up to one year) amounted to USD 0.9bn in 1999, as against USD 0.3bn in 1998. The total volume of these credits was just slightly more than one fifth that of long-term credits. Drawing of credits with maturities of over one year rose from USD 3.2bn in 1998 to USD 4.4bn in 1999, with a significant increase also recorded in principal repayments, which climbed from USD 1.5bn to USD 2.3bn.

The expense of foreign debt service in 1999 came to USD 3.3bn, comprising USD 1.0bn in interest payments on loans and debt securities, and USD 2.3bn in repayments of principal.

Net general government debt at the banks rose 3.4bn zloty in 1999 relative to December 1998, an increase of 5.6%, to stand at 64.7bn zloty at year end.

The rate and direction of movements in the net indebtedness of the general government sector at the banks varied in the course of 1999. These movements were conditioned, on the one hand, by the current state of finances in particular segments of government, and on the other by the inflow of funds to finance the sector's borrowing requirements, with these funds including both revenues from Treasury securities and the proceeds of privatisation.

The first half of the year witnessed a surge in net general government debt, which leapt up 4.0bn zloty, or 6.5%. This stemmed from the sector's high borrowing requirements, and particularly from the need to finance the soaring fiscal deficit. This shortfall in central government finances, which at mid-1999 reached 11.3bn zloty, i.e., 88.4% of the target ceiling written into the 1999 Budget, was caused by high spending levels, mainly in financing the structural reforms being instituted in the pension system, health insurance and local government. Although this period brought a substantial inflow of funding, chiefly from the non-banking sector (some 6.9bn zloty), and although privatisation receipts totalled 2.4bn zloty, this was not sufficient to cover the large requirements of central government.

In subsequent months, up to November, the general government sector saw its net liabilities to the banks fall 5.4bn zloty. The decline in net general government debt in this period was made possible by large receipts from the sale of privatised national assets, allied with lower central government borrowing requirements than in the first half of the year. Despite the fact that at this time there was a significant reduction in investment by nonbank institutions – both domestic and foreign – in Polish Treasuries (the drop in debt to the non-banking sector came to 2.5bn zloty), the high revenues generated by privatisations (10.8bn zloty) not only made it possible to fund ongoing central government borrowing requirements, but also to put aside considerable sums on government accounts at the NBP.

Net government debt rose dramatically in December, going up 8%, the highest growth reported in the whole of 1999. December's increase, as in previous years, was due to the need to secure funds to finance government borrowing requirements not only at this point in time, but also during the initial days of the coming year. Owing to expenditures by government institutions under the annual spending limits allocated to them, and also to transfers of funds to finance wages "payable in advance" together with old-age and disability pensions, the end of the year usually brings a substantial decline in government balances at the banks.

Although the fiscal deficit in December 1999 was not large, standing at some 0.4bn zloty according to the Ministry of Finance, the end of the year saw the emergence of certain additional factors that had a negative effect on general government indebtedness. Due to the financial difficulties being faced by the Social Insurance Board (ZUS), now operating in changed circumstances brought about by the new Social Insurance Act, central government made available another tranche of a loan facility extended to ZUS<sup>11</sup> and also passed on a portion of the funds due to that institution under a subsidy statutorily payable in 2000. December 1999 also brought the advance payment of the first instalment of a local government education subsidy included in central government expenditures budgetted for 2000.

It should be stressed, however, that movements in net general government debt in 1999 were in large measure impacted by the situation of the remaining components of general government, i.e., local government and special-purpose funds. Whereas in previous years these components had lowered the overall debt of the general

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<sup>&</sup>lt;sup>11</sup> The newly-amended Social Insurance Act required central government to extend loan finance to the Social Insurance Board in 1999 up to a ceiling of 4bn zloty. The funding for this was to be obtained from privatisation receipts. The Board drew down the full amount provided for in the Act.

government sector, in 1999 they were responsible for an additional 0.8bn zloty of this debt. The increased indebtedness of these other components of general government was primarily the result of the swelling liabilities of the Social Insurance Fund. The deepening shortfall suffered by this special-purpose fund forced ZUS to borrow at the commercial banks. By year end, its outstanding borrowings stood at 2.4bn zloty.

Thanks to the receipt of 13.2bn zloty in privatisation revenues, double the amount projected, and the high level of non-bank financing (albeit lower than planned), which stood at around 4.0bn zloty, the pressure of the general government sector for expansion of the money supply can be said to have weakened in 1999. The contribution of net general government debt to total money supply growth in 1999 came to 8.0%, while in 1998 it had been 13.5%. Despite this, the large government deficit recorded in 1999 played a prominent part in conditioning the overall state of the Polish economy (see the section on "Public finances").

### Transmission mechanisms in 1999

The present *Inflation report* examines the two basic monetary policy transmission channels in most detail, i.e., the "traditional" interest rate channel and the exchange rate channel<sup>12</sup>. The National Bank of Poland believes these to be of the greatest importance in Poland as regards both processes occurring within the real economy and the level of inflation. A slightly briefer presentation is given of the operation of the "credit channel" and "securities channel". In addition, this overview of transmission mechanisms includes an outline of inflation expectations. Although treated here as an independent transmission channel, these expectations constitute a major component of all the channels referred to above.

Inflation expectations, based not only on information concerning the past, but also taking into account information on the ongoing decisions of the central bank and their possible impact on inflationary processes in the

<sup>&</sup>lt;sup>12</sup> Monetary policy transmission channels are understood as the media by which monetary policy impulses affect the pricing and output decisions of economic agents. These monetary policy impulses constitute changes in prices (changes in interest rates, in other yields, in exchange rates). Monetary policy impulses thus represent monetary impulses generated by the actions of the central bank - primarily by changes in monetary policy instruments.



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future, represent an important factor in reducing the "sacrifice ratio". One of the goals which the Monetary Policy Council set itself in adopting the strategy of direct inflation targetting was to increase the capacity of the NBP to influence the inflation expectations of economic agents thanks to a more transparent and credible monetary policy.

## The interest rate channel

The chain of events that occurs within the economy in response to interest rate adjustments is as follows: a tightening of central bank monetary policy, given imperfect price elasticity, engenders a temporary increase in short-term interest rates, both nominal and real, which results in a decline in output and a reduction in inflationary pressure.

With respect to interest rates, two periods can be distinguished on the financial markets in 1999. In the first half of the year, following January's rate cut by the NBP, rates on Treasury securities and interbank deposits held steady. In the second half of the year, particularly towards the end of the third quarter and at the beginning of the fourth, the market was gripped by mounting uncertainty, which was expressed in a steep increase in yields demanded on Treasuries and rates demanded on interbank placements. The basic reason for this was the deterioration of a series of important macroeconomic indicators, prime among them being inflation figures and the current account balance, coupled with worsening prospects for the maintenance of political stability. The rate rise carried out by the National Bank in November steadied the markets once again.

Another factor generating pressure for a rise in longterm domestic interest rates was the clear upward tendency in yields on long-dated Treasuries on major world financial markets, i.e., in the euro area and in the USA.

Following the turbulence experienced at the beginning of the year (with the currency crisis in Brazil and conflict in Yugoslavia), the latter half of the year brought a distinct improvement in the situation on emerging markets as foreign capital once again flowed into these countries. In the case of Poland, however, the macroeconomic problems already mentioned meant that this inflow of foreign investment was not as noticeable as on other emerging markets.

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# Interbank rates

The central bank impacts the level of interest rates on financial markets by influencing rates on short-term interbank deposits. This influence is strongest in relation to the rates payable on instruments with maturities comparable to those of the operations carried out by the central bank. Yields on other instruments, especially those with long maturities, largely move in line with the expectations of market players themselves. Observing shifts in yield trends for these instruments provides the central bank with information on market expectations regarding the future direction of monetary policy, on the feasibility of achieving the inflation target, and on the market's appraisal of interest rate risk and liquidity risk.

In the wake of the fall in interest rates in January 1999, rates remained stable until mid-September, when the release of figures on August inflation caused the market to revise its expectations of central bank interest rate policy. This applied in particular to deposits maturing in 1 month and less. A gradual increase in rates on longer-dated funds (3- and 6-month deposits) had already been visible since April. This can be ascribed to the heightened risk implied by Poland's adverse macroeconomic indicators for the first quarter of the year. As of the end of June, a new factor made itself felt, that of Y2K. Striving to safeguard themselves against a possible lack of liquidity towards the end of 1999, the banks gradually raised rates on interbank borrowings. As a result, 6- and 3-month WIBOR rates (Warsaw Interbank Offered Rates) were the first to go up (cf. Fig. 25). In the case of shorter-dated money, i.e., 1-month and 1-week deposits, rates did not rise to above the level of the lombard rate until December. However, that rise was short-lived, as in that month the NBP adjusted the composition of its open market operations in line with the mounting demand for short-term funds and limited the liquidity risk being run by the banks. The consequence of the resultant decline in Y2K risk premiums was that the last week of 1999 brought a clear fall in 1-month WIBOR and a narrowing of spreads.

From mid-September until year end, the effects associated with the impending turn of the year were compounded by an increase in interest rate risk. This resulted in a rise in interbank rates in the days preceding meetings of the Monetary Policy Council. This was espe-



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Source: Interbank rates - Reuters; remaining rates - NBP.

# Figure 26

1M WIBOR (right axis) and 1M interbank spreads (left axis), Q4 1999





cially conspicuous in movements in 1-month WIBOR. From September onwards, another expression of growing market uncertainty prior to Council meetings was a widening of spreads (i.e., of the difference between the rates quoted for placing and taking interbank deposits) for funds of varying maturities (cf. Fig. 26).

The end result of the factors outlined above was that over the second half of the year WIBOR rates on 1-, 3and 6-month deposits rose 623 bps, 589 bps and 547 bps, respectively.

### The T-bill market and interest rate expectations

On the Treasury bill market, signs that expectations regarding future interest rate levels were changing became apparent as of mid-1999.

As of the end of the third quarter, deepening market uncertainty as to how interest rates would move was evidenced in relatively higher bid-ask spreads on the secondary T-bill market. At the same time, T-bill yields on the secondary market rose swiftly from the end of September to the end of November, with yields on 52-week bills exceeding

Figure 27

Shift coefficient of auction demand function (lines, right axis), and demand at 13-wk & 52-wk T-bill tenders (bars, left axis), 1999



Source: NBP figures and calculations.

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#### Figure 28





\* In calculating the slope coefficient of the auction demand function, cumulative nominal bid values are expressed in billion zloty.

Source: NBP figures and calculations.

# The T-bill market and interest rate expectations

In identifying uncertainty on a given financial market and the expectations of players on that market, a factor of major importance is to establish the probability distribution of market expectations concerning short-term interest rates. Option prices are the basic financial indicator used to identify statistical measures describing the probability distribution of market expectations of short-term interest rates. However, the options market in Poland is still at an initial stage of development. Where the market for interest rate options is shallow, one method of approximating the expectations of market participants is to analyse the auction bid distribution at T-bill tenders<sup>\*</sup>.

An analysis of the primary T-bill market makes it possible to identify the degree of uncertainty prevailing on that segment of the financial markets and indicate the interest rate expectations of participants.

For any given tender, a **point-based auction demand function** can be derived. This function assigns cumulative nominal values of bids submitted for bills to increasing weighted average T-bill yields. Using the classic linear regression model, a **linear auction demand function** is derived for each asset. This depicts the theoretical linear dependence of weighted average T-bill yields in terms of the cumulative nominal values of the bids for those bills. An example of the linear auction demand function is presented in the chart below.



Auction demand function for 52-wk T-bill tender, November 15, 1999



The analysis of T-bill tenders utilises the following parameters of the linear auction demand function: the directional coefficient (further referred to as the **slope coefficient of the auction demand function**) and its free term (further referred to as the **shift coefficient of the auction demand function**).

A rise (fall) in the shift coefficient of the auction demand function signifies a move in this function upwards (downwards), interpreted as a decrease (increase) in the individual T-bill prices submitted by investors at tender. An analysis of this coefficient and of the demand from investors at a given tender for bills of varying maturities makes it possible to identify the interest rate expectations of the market.

The shift coefficient of the auction demand function may be interpreted as an indicator of the interest rate expectations of **all** investors on the primary market.

The value of the slope coefficient of the auction demand function is determined by two factors, namely, the scatter of both weighted average T-bill yields and of cumulative nominal bid values.

The slope coefficient of the auction demand function may be interpreted as an indicator of primary market uncertainty concerning further interest rate movements. Increasing values for this coefficient, the result of lower demand for a given asset and/or an increase in the dispersion of cumulative nominal bid values, or the prices bid by investors, may signify an increase in primary market uncertainty, with lower values indicating relatively low uncertainty.

\* This method has been applied by the National Bank of Hungary; see: Attila Csajbók, Information in T-bill auction bid distributions, NBH Working Paper 1999/7.

those on 13-week bills. This fact may be considered confirmation that market players were expecting rates to go up.

Escalating expectations that interest rates would rise were also observable on the primary T-bill market. The period between October and November brought a particularly sharp increase in the shift coefficient of the auction demand function for 13- and 52-week T-bills (cf. Box above). This was accompanied by low demand for 52-week bills (cf. Fig. 27). This attests to investors pricing in a future rate rise. The fact that the market was experiencing acute uncertainty<sup>13</sup> is corroborated by the substantial rise in the slope coefficient of the auction demand function for both 13- and 52-week T-bills (cf. Fig. 28).

The decision to raise all NBP interest rates taken by the Monetary Policy Council on November 17 eased market uncertainty. This is indicated by the decrease in the slope coefficient of the auction demand function. Demand for 52-week bills increased substantially. This implies that investors were not expecting a further rise in interest rates.

### The yield curve

January's cut in base interest rates by the Monetary Policy Council resulted in a parallel downward shift of the yield curve without any change in shape<sup>14</sup>. This movement was principally due to the decline in the cost of carrying securities portfolios incurred by market participants (cf. Fig. 29), with a stabilisation of their expectations concerning a further decline in inflation. In the first two quarters of 1999, the yield curve had a negative slope along its entire length.

In the third quarter, as concern built up over the deterioration in macroeconomic indicators, the position and shape of the Treasury yield curve changed. This change took place in September, with the yield curve assuming a positive slope out to two years and retaining a negative slope thereafter. In addition, the entire yield curve shifted upwards by 100-230 bps. The curve maintained this shape until the Monetary Policy Council meeting of November 17 (cf. Fig. 30, Box below).

 $<sup>\</sup>overline{^{13}}$  Uncertainty on the primary T-bill market is reflected in the variegation of the bids submitted for bills at a given tender, and also in the volume of demand for bills forthcoming from investors at the tender.

<sup>&</sup>lt;sup>14</sup> The analysis presented herein concerning the shape of the **yield curve** and shifts in that curve refers to a zero-coupon yield curve estimated with the aid of the econometric model described in Box below. The same approach has been applied in subsequent sections of the present *Report*, and will also be applied in future editions.





Figure 29 Zero-coupon yield curve before & after base rates cut by Monetary Policy Council on January 20, 1999

Source: NBP calculations based on figures from bank information systems.





Source: NBP calculations based on figures from bank information systems.

# The zero-coupon yield curve

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In central bank practice, the yield curve is used to investigate market expectations concerning the direction of future movements in short-term interest rates. A precondition for analysing forward interest rates is developing a model of a continuous zero-coupon yield curve, most frequently using the market prices for zero-coupon T-bonds and T-bills as input data. The zero-coupon yield curve, in contrast to one based on yields to maturity, portrays the actual interest rates for given maturities, frequently referred to as spot rates. It is only on the basis of these spot rates that it is possible to derive "implied" forward rates which, where the assumptions of the theory of expectations are fulfilled, can then be treated as the forward rates expected by market participants. Assuming that the expected real return on investment is a constant, the risk premium is stable over time and the expectations are rational, or where the analysis is performed for short time intervals, yield curve analysis can also be employed to investigate inflation expectations. In Polish conditions, fulfilling these assumptions is difficult.

The method applied in estimating the zero-coupon yield curve is derived from the model developed by Svensson, referred to in the literature of the subject as a "*parsimonious*" *model*<sup>\*</sup>. The idea of a parsimonious model involves identifying a functional form that approximates the basic shape of the yield curve. A new technique for estimating the yield curve, first proposed by Nelson and Siegel in 1987, is based on the functional form of an "instantaneous" forward yield curve, defined as the yield on a forward contract of very short maturity  $(t->0)^{**}$ . Nelson and Siegel concluded that it was most straightforward to start from the functional form of an instantaneous forward yield curve as a second degree differential equation, and then, using the simple dependence between forward and spot rates, to derive the functional form of the zero-coupon yield curve.

The Svensson model, in reality an extended version of the original Nelson-Siegel model that expands the functional form of the yield curve, enhances the flexibility of the model by allowing an additional "hump" and improves the goodness of fit of the estimated curve to the empirical data observed. Due to the advantages of this model, it is used by a number of central banks, including the European Central Bank.

In Svensson's model, the parameters of the functional form of the zero-coupon yield curve are estimated by non-linear least-squares regression using a Gauss-Newton iterative algorithm.

Although the model is estimated assuming continuous interest capitalisation, the zero-coupon and forward curves obtained are presented, in accordance with market convention, on the assumption of annual capitalisation.

<sup>\*</sup> L. Svensson, *Estimating and Interpreting Forward Interest Rates: Sweden 1992-94*, National Bureau of Economic Research, Cambridge, 1994. <sup>\*\*</sup> A.F. Siegel, Ch.R. Nelson, "Parsimonious Modelling of Yield Curves", *Journal of Business* no. 60, Oct. 1987.

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The change in the shape of the yield curve at its short end was largely due to a shift in inflation expectations on the financial markets, with participants worried that the downward trend in inflation had reversed more sharply than they had projected. The ending of expectations that inflation would again come down generated pressure for higher yields on securities maturing out to two years. When the market is expecting inflation to hold steady for the time being, the factor determining the slope of the yield curve is the liquidity premium associated with particular maturities. The longer the maturity, the higher the premium, which imparts a positive slope to the yield curve.

The major rise in interest rates carried out by the NBP on November 17, 1999, caused an increase in yields on Treasuries in the maturity band of from 1 month to 1 year. The short end of the yield curve shifted upwards considerably, accompanied by a relative decline in yields on medium- and long-dated Treasuries (cf. Fig. 31). Towards the end of the fourth quarter, the yields on these securities thus reverted to the levels seen at the beginning of the year. This fact, coupled with the (re-)inversion of the yield curve across the whole spectrum of maturities, may be taken to indicate that the expectations of the financial markets concerning medium-





Source: NBP calculations based on figures from bank information systems.

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and long-term inflation had returned to those of the beginning of the year.

# Poland's financial markets and the situation on developed & emerging markets

In contrast to the previous year, the year 1999 was generally a period of rising interest rates on developed financial markets. In the United States, the monetary stance was gradually tightened, with the overnight Fed funds rate going up 75 bps over the year. In the euro area, after an initial relaxation of monetary policy in March, the second half of the year saw the European Central Bank (ECB) raise its repo rate by 50 bps. The rise in short-term central bank rates fed through into an increase in long-term rates as well. This was mainly connected with a reversal of the "flight to quality" witnessed in the latter half of 1998.

The interest rate rises abroad also made themselves felt on Poland's financial markets. These rises impacted both price volatility and the risk premium associated with fixed-rate Treasury bonds. In the first two quarters of 1999, the yield spread between German 5-year T-bonds and their Polish equivalent was subject to strong fluctuations, of up to 100 bps (cf. Fig. 32).

The halt to the downward trend in inflation seen in 1999 contributed to an increase in the yields on 5-year T-bonds. This thereby arrested the trend for long-term interest rates to converge with corresponding rates in the euro area<sup>15</sup>.

In 1999, developments on emerging markets did not impact the behaviour of the Polish market as strongly as they had in previous years. The Emerging Market Bond Index Plus (EMBI+) for Poland oscillated around a steady level in 1999, failing to show, as it had in past years, a high rate of return on Polish debt denominated in foreign currencies (cf. Fig. 33). There were two factors

<sup>&</sup>lt;sup>15</sup> One of the qualifying criteria for EMU (the Maastricht convergence criteria) is that yields on 10-year T-bonds in a candidate country should be no more than 200 bps above the average yields on the corresponding instruments issued by the three euro area countries with the lowest rates of inflation. At the end of December, the yield on 10-year Polish T-bonds stood at 9.56% - 221 bps in excess of the qualifying criterion. By comparison, at the end of the third quarter of 1999 the qualifying criterion was overshot by 322 bps.

Owing to the fact that Polish 10-year Treasury bonds have only been quoted for a short time (since May 19, 1999) and are not yet a fully liquid instrument, the analysis of the convergence process is based on 5-year T-bonds and their German equivalent. Polish 10-year bonds will be used as the basis for analysis once they fulfil the liquidity requirement.





Figure 32 Yield differential, 5-yr Polish & German T-bonds, 1999

Source: NBP calculations based on Bloomberg figures.





Source: JP Morgan.

at play in this. Firstly – the relatively higher return available on the debt of other countries classified as emerging markets. These countries, now restructuring their economies after various crises (Asia, Russia, Brazil), elicited greater interest from long-term investors as their debt was trading at low prices. The second factor behind the horizontal course of the EMBI Polish subindex was that foreign investors were treating Polish debt as a "defensive" instrument. A "defensive" instrument is one considered to reduce the risk of a whole portfolio in the event of financial crisis, yet it does not keep up to speed with the overall market index during an upturn. The stability of the Polish index is the result of Poland being viewed by foreign investors as participating in the process of convergence with the developed economies of Europe.

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The replacement of short-term speculative investors (e.g., hedge funds) by institutional investors guided by longer investment horizons, and thus willing to accept lower returns on assets in the short run, produced smaller fluctuations in the whole EMBI+ index when negative information appeared concerning emerging markets. This was one of the reasons why the Brazilian currency crisis at the beginning of the year and Ecuador's announcement in September of a moratorium on servicing its Brady bonds had no great impact on the other emerging markets and on the market price quoted for Polish debt.

# Reaction of commercial bank interest rates to central bank policies

The primary factor determining the level of deposit and lending rates at the commercial banks in 1999 were the rate adjustments carried out by the NBP. In addition, on September 30 the central bank lowered the reserve ratio, used to calculate reserve requirements on bank deposits, yet this had a relatively minor impact on deposit rates.

Three basic periods can be distinguished in terms of movements in interest rates at the banks in the course of 1999: a rapid decrease in rates in January and February, a subsequent period of stabilisation, and one of gradual increase towards year end. In January and February, rates came down in the wake of the cuts in NBP base rates performed in January 1999 and earlier, in December 1998. At this point, rates on corporate deposits fell slightly less than those on personal deposits. As regards the latter, the steepest drop in rates was for transaction accounts (interest-bearing current accounts) and for 6-, 12- and 24-month deposits, with the smallest decrease being reported in rates on time deposits with the shortest maturities. Lending rates fell more sharply than deposit rates, which could reflect fierce competition for loan business.

From March to August, deposit and lending rates either remained unchanged or edged up somewhat. Deposit rates were raised at this time by individual banks seeking to find a level of rates that would ensure a sufficient inflow of funds for them to accommodate the constantly growing loan demand from households. The banks also attempted to attract deposits by offering a broader range of products, above all to holders of transaction accounts. Few banks changed their lending rates, closely related as these are to interbank deposit rates (to 1-month WIBOR), which were held steady via 28-day open market operations.

From September until year end, interest rates gradually moved up, the result of the cut in reserve requirements, and the raising of the National Bank's reverse repo and base rates. The reduction of the reserve ratio was not intended to loosen monetary policy, but to improve the competitive position of Polish banks with respect to foreign ones. This also made possible an increase in deposit rates. Due to the brief interval between the lowering of reserve requirements and the increase in the minimum reverse repo rate, it is difficult to distinguish the banks' responses to each of these moves separately. Prior to the increase in the minimum reverse repo rate, deposit rates were raised at 6 of the 50 banks tracked by the NBP. These banks account for a significant proportion of the deposit market. The rises they performed can no doubt be ascribed both to the change in the reserve ratio and to a desire to draw in new deposits in response to the continued strength of personal loan demand.

The largest rise in bank interest rates took place in December, following the rise in NBP base rates and another increase in the reverse repo rate. The upward adjustment of NBP rates was greater than the commercial banks had anticipated. Owing to the scale of the rate hike, together with the fact that a rate rise had been NBP

Figure 34 Deposit & lending rates, weighted averages



universally expected due to mounting inflation, which was jeopardising performance of the NBP inflation target for 2000, and also as a consequence of the reduction of excess liquidity within the banking sector, the banks reacted fairly swiftly (within some four weeks), and their response was slightly stronger than it had been following the increase in base rates in 1997. While the central bank raised its base rates 3.5 points in November, rates on personal time deposits at the commercial banks went up by around 2 points. Corporate lending rates also rose some 2 points. Personal lending rates, however, were put up less than corporate ones. This was mainly because the banks were afraid of undermining customer interest in Christmas loans. Moreover, many banks postponed increases in their rates on housing loans until January 2000.

The spread between rates on loans and on time deposits narrowed visibly during the year, yet following the rate rises at year end it reverted to virtually the level of December 1998 (cf. Fig. 34).

# Interest rates and loan demand

Corporate loan demand declined in 1999 (in real terms, growth in claims on corporates fell from 21.8%







Figure 35 Real lending rates

Source: NBP calculations based on GUS figures.

at year end 1998 to 12.6% at year end 1999). The key factors determining corporate loan demand in 1999 were the weakness of business activity, the resultant relatively low level of investment demand (gross fixed investment rose 6.9%, i.e., 7.6 points less than in 1998), and the poor state of corporate finances. Relatively rapid growth was seen in corporate financing via commercial paper - in December 1999, this was up 18.1% on December 1998 in real terms - yet the scale of CP issues remained modest in relation to the volume of corporate borrowings at the banks. Surveys by the NBP<sup>16</sup> and GUS<sup>17</sup> data indicate that among companies polled there was a lesser tendency in 1999 than in 1998 to view real lending rates as too high (cf. Fig. 35) or to see unfavourable credit terms as a barrier to production. However, interest rates were raised near the end of the year, and the impact of this on loan demand will become apparent at the beginning of 2000.

By contrast, demand for personal loans ran strong throughout the whole of 1999. In real terms, out-

 <sup>&</sup>lt;sup>16</sup> Koniunktura w sektorze przedsiebiorstw – wybrane zagadnienia (Business activity in the corporate sector – selected issues), NBP Department of Statistics, December 1999.
<sup>17</sup> Badania koniunktury. Koniunktura w przemyśle, budownictwie i handlu (Surveys of business activity. Business activity in industry, construction and distribution), Warsaw, 1999.

standing bank claims on persons were 39.4% higher in December 1999 than they had been twelve months before. Household loan demand was in part stimulated by declining interest rates. It cannot be excluded that the frequent rate cuts seen the previous year and the maintenance of low inflation in the initial months of 1999 led consumers to expect that interest rates would continue to come down. On the other hand, loan demand was also fostered by a desire to prop up consumption levels and avoid any temporary fall in consumption – this was particularly relevant in the first half of the year, when income growth was decreasing.

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Household loan demand in 1999 could also have been influenced by the announcement from the Ministry of Finance that personal income tax regulations would be altered in 2000, inducing households to bring forward purchases of goods earmarked for improvements to homes and residential buildings, including purchases financed by credit.

The fast growth in lending was also not unrelated to easier access of consumers to loan facilities, the relaxation of collateral requirements, and the rising number of loan intermediaries. The result of these factors was that the proportion of instalment loans and overdrafts in personal zloty borrowings rose from 49.4% in December 1998 to 53% in December 1999. There was also a rapid increase in housing loans, most probably due to a combination of factors already mentioned, such as the fall in interest rates, the announcement that certain forms of tax relief would be abolished, and the expanding range of housing and mortgage loans being made available.

Over the first three quarters of 1999, the ratio of movements in outstanding claims on persons to the volume of personal consumption stood at around 0.03, whereas in the corresponding period of the previous year this had come to 0.014. This signifies a major increase in the proportion of personal consumption financed by borrowings. However, it is difficult to estimate the impact of personal lending growth on inflation; the relationship between these two variables is weak. Prices for those goods generally purchased using loan finance – transport equipment, consumer electronics, photographic and computer equipment, home furnishings, household appliances – rose more slowly than the overall CPI. Given that a large proportion of these goods are imported or require imported production supplies, the increase in lending contributed to the widening of the current account deficit. GUS figures on the pattern of imports indicate that, in the first eleven months of 1999, the share of consumer goods and production supplies in total imports rose to 20.3% and 64.8%, respectively, as against 19.7% and 64.4% in the corresponding period of 1998. Meanwhile, imports of capital goods declined accordingly, dropping to 14.8% from 15.7% a year earlier<sup>18</sup>.

### The credit channel

The concept of the "credit channel" assumes the following sequence of events within the economy: a tightening of the monetary stance signifies a reduction in the supply of reserve money by the central bank. This leads to a decline in banking sector deposits. Banks are able to take less deposits from economic agents, as their funds on account at the central bank are reduced. As a result, the banks scale down the supply of credit. If banks are the sole source of external finance for the overwhelming majority of economic agents, i.e., these agents are not able to access funding from the money or capital markets, then the fall in the supply of credit will cause a fall in expenditure on consumption and investment. It flows from the above that the precondition for the existence of a credit channel is the dominant role of banks on the financial market, and that the primary source of external funding for the banks should be open market operations.

In 1999, Poland's capital market was still limited to a relatively narrow group of companies and was not of major importance as a source of corporate funding, although the market capitalisation of the Warsaw Stock Exchange did increase substantially. The growth in total commercial paper outstanding outpaced the annual growth of bank claims on corporates, yet the funding thus obtained was also small in relative terms.

A question of crucial significance for the operation of the credit channel and the capacity of the central bank to influence the supply of credit from the commercial banks is the degree of surplus liquidity within the bank-

<sup>18</sup> Figures rounded out; do not sum to 100%.

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Figure 36 Average daily balance on open market operations



ing sector. In 1999, as in the previous year, the banking industry continued to be marked by excess liquidity, although the extent of this was gradually being reduced. The average volume of NBP money market bills outstanding in December 1998 stood at 27.9bn zloty (at sale prices), while by December 1999 this had fallen to 14.1bn zloty. This decline in the outstanding balance of open market operations was the result of the extension of the trading band for zloty exchange rates, the introduction of a fee on transactions at the exchange rate fixing, and then – as of June 7, 1999 – the abolition of the existing fixing mechanism itself. As excess liquidity diminished (cf. Fig. 36), the influence of the central bank on the behaviour of the commercial banks increased.

The impact of open market operations on the functioning of the credit channel was complex in nature. Although the only operations conducted were those that siphoned off surplus liquidity, the principle adopted in 1998 whereby operations are performed solely for maturities up to 28 days made it easier for the banks to adjust themselves flexibly to rising loan demand. In November 1999, personal loan demand temporarily rocketted in connection with the privatisation of Polski Koncern

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Naftowy and the associated share subscriptions. During the second ten days of the month, bank claims on persons leapt up 10.4bn zloty, or 31%, whereas up to that point ten-day growth in claims on persons had averaged around 1%.

Given the continuing decline in surplus liquidity at the banks, it became possible to lower reserve requirements and make these uniform for all eligible liabilities. To prevent a huge increase in liquid funds at the banks, resulting in additional credit creation, the banks were required to apply the funds previously held on account at the central bank as regulatory reserves to the purchase of long-term bonds issued by the NBP. The sole exception was for those banks that had held less than 5m zloty in required reserves. Thus, the cut in reserve requirements did not have a major effect on the supply of credit. Although the banks will now be meeting lower requirements on newly-taken deposits, this should not give rise to excess lending growth, since in a situation of continuing surplus liquidity the banks can respond to any increase in loan demand by running down their involvement in open market operations.

Under Art. 39, para. 3, of the Act on the National Bank of Poland of August 29, 1997, those banks implementing rehabilitation programmes in 1999 were entitled to exemptions from the requirement of holding regulatory reserves. As in 1998, some commercial banks, having taken over institutions enjoying this exemption, then offered relatively high deposit rates on behalf of those institutions.

The operation of the credit channel was also weakened by the opportunities open to corporates to borrow abroad. The sizeable disparity between domestic and foreign interest rates, together with a tendency to underestimate the associated exchange-rate risk, heightened corporate interest in accessing foreign loans. During the year, the outstanding external indebtedness of the non-government and non-banking sector rose USD 4.3bn, of which USD 1.4bn comprised direct investment debt and debt securities held by foreign portfolio investors (mainly long-dated paper). The remaining USD 2.9bn consisted in "other foreign investment" (trade credits and other loans and advances), which served as a substitute for domestic borrowings.

## The exchange rate channel

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Nominal exchange rates determine the foreign price of imported goods as expressed in domestic currency. Movements in exchange rates, in influencing import prices and thus cost factors, can have a major influence on price growth. However, the extent of the direct impact of exchange rate movements on the overall level of domestic prices is dependent on the relationship between the volume of foreign trade and a given country's domestic product; the more a country is reliant on imported production supplies, the more powerful this impact will be.

In 1999, the measures taken by the NBP with a view to fully floating the zloty now brought palpable results. While the zloty was still subject to the same general exchange rate regime<sup>19</sup>, major progress was made in making this more flexible. This made it possible to improve the conditions for the conduct of monetary policy in pursuit of the direct inflation target.

Thus, as of March 25, 1999, the monthly rate of crawling devaluation was lowered from 0.5% to 0.3%, thereby adjusting it to correspond to the new inflation target for 1999 and to reflect the narrowing differential in price growth between Poland and other countries. In parallel with this, the trading band for permissible fluctuations of NBP mid-rates relative to central parity was extended from  $\pm 12.5\%$  to  $\pm 15\%$ . This was accompanied by the NBP winding down its presence on the FX market. The decisive move in this respect was the abolition of the operational (trading) character of the exchange rate fixing as of June 7, 1999. At the same time, the central bank did not intervene directly on the forex throughout the year. The fact that the requirement for the central bank to conclude FX transactions with the commercial banks during the fixing had now been removed gave strong impetus to the development of the domestic interbank FX market, thereby also consolidating the market character of zloty exchange rates. The new procedures for setting NBP mid-rates, which as of June 7, 1999, are merely a "snapshot" of market rates at a specified time of day, brings the Polish system

<sup>&</sup>lt;sup>19</sup> This consisted in a crawling band mechanism, i.e., crawling devaluation against a reference currency basket in conjunction with a trading band for permissible deviations of market exchange rates relative to central parity.





Figure 37 Deviation of market zloty exchange rates<sup>1)</sup> from central parity, 1998-1999

closer to the solutions applied on developed currency markets $^{20}$ .

The above changes, within the framework of the existing exchange rate mechanism, had a positive effect on the conditions for monetary policy performance in 1999.

The curbing of growth in the gross official reserves made it possible to curtail the most important source of monetary expansion over the last two years. This allowed the NBP to scale down its open market operations significantly, thereby lowering the cost of implementing monetary policy. Permitting market exchange rates for the zloty to fluctuate within a 30% trading band enhanced the freedom of action of the monetary authorities, since in the context of a domestic FX market that was still shallow the deepening external equilibrium increased the risk of greater exchange rate volatility.

The fact that the zloty was to a substantial degree already floating allowed it to be much more responsive to the balance of payments situation. Thus, with the

<sup>&</sup>lt;sup>1)</sup> mid-rate at fixing against euro and US dollar. Source: NBP.

 $<sup>^{20}</sup>$  Zloty mid-rates against the euro and the US dollar are calculated on the basis of the selling and buying rates quoted between 10:55am and 11:00am at those ten banks included in the "List of Banks Authorised as Money Market Dealers" which show the highest trading volume on the domestic money market. The remaining zloty mid-rates, against other convertible currencies, are compiled on the basis of the mid-rate for the zloty against the euro and the market exchange rates for the euro relative to those currencies, as quoted at 11:00am.

shortfall on current transactions becoming more acute in 1999, and an accompanying reduction in the surplus on capital transactions, the depreciation of Poland's currency gathered pace. The average divergence of the fixing rate from central parity over the year as a whole stood at 1.9% on the upside, while in 1998 it had been 5.6% (cf. Fig. 37). As in 1998, zloty exchange rates were subject to relatively large swings, primarily driven by domestic macroeconomic factors. The volatility of zloty exchange rates in 1999 came to 10.4%, as against 10.2% in 1998<sup>21</sup>. The extent of exchange rate fluctuation amounted to some 13.8%, with the greatest deviation of market exchange rates from central parity, almost 9% on the upside, being recorded in January, and the largest divergence on the downside being 4.8% in November.

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Various tendencies were visible in zloty exchange rate movements in the course of 1999. In the first half of the year, the zloty was affected by both domestic factors and externalities. The first quarter of 1999 saw the zloty take heavy losses against other currencies. The most important external events weakening the zloty at this time included the crisis of the Brazilian real and the outbreak of military conflict in Kosovo. Both the Brazilian crisis and the Balkan conflict led to gloomier moods on world currency markets and caused foreign investors to limit their exposure to emerging markets, Poland included. Indications of the economy flagging in the Czech Republic and Hungary, coupled with a deterioration in their current account balances, led to the depreciation of their respective currencies. The worsening image of the countries of this region, in a situation where their respective local markets exerted a discernible influence on each other, restricted the inflow of foreign investment to Poland as well. The Balkan crisis, on the other hand, primarily contributed to a downturn in the investment climate surrounding European emerging markets. The tendency for the zloty to depreciate was also reinforced by the lowering of base interest rates by the Monetary Policy Council in January, which - given adverse signals concerning the Polish economy and this entire region of emerging markets resulted in a clear reduction in the interest shown in Poland by foreign investors. Pressure for the zloty to

 $^{21}$  Volatility measured on the basis of daily rates as the annual standard deviation of log rates of return on the fixing rate.



soften was also generated by the trading activity of Polish banks.

In the second quarter of 1999, after a period in which the zloty held steady around parity, a tendency took shape for the zloty to appreciate. The strengthening of the Polish currency stemmed from an overall improvement in the global investment climate and mounting investor confidence in the health of the Polish economy thanks to a gradual upturn in performance and the intensification of privatisation. Privatisations, together with positive appraisals of the Polish economy, expressed in the raising of Poland's investment rating by international agencies, prompted a distinct increase in expectations of zloty appreciation on the domestic FX market<sup>22</sup>. The publication of a higher rating lowered the risk premium acceptable to foreign investors for purchasing Polish debt instruments. Demand for zloty was also boosted at this time by the next stage of the privatisation of Bank Pekao SA, an operation which was projected to yield revenues of around USD 1.1bn. In addition, the proceeds of the sale of an 80% interest in Bank Zachodni SA were forecast at around USD 0.6bn. The zloty gained on the very expectation that the abovementioned funds would be channelled through the domestic FX market, and the upside deviation of the fixing rate from central parity rose systematically, from 1.78% at the end of April to 2.46% at the end of May and 4.38% at the end of June. Nominal effective exchange rates for the zloty slipped 3.3% during the first half of the year (comparing June 1999 to December 1998), contrasting with the corresponding period of 1998, when the zloty rose a nominal 2.3%. In the course of the first three months of 1999, nominal zloty depreciation came to 6.6% relative to December 1998, with nominal effective exchange rates hitting a low for the entire 1990s. In the second quarter, nominal effective exchange rates rallied 3.5% compared to March.

In the second half of 1999, with the global investment climate generally brighter, zloty exchange rates were conditioned by domestic factors connected with the state of the Polish economy. The decline in the value of the zloty then recorded came in response to a deteri-

<sup>&</sup>lt;sup>22</sup> Standard & Poor's raised its principal rating for Polish long-term paper denominated in foreign currencies from BBB- to BBB. In addition, the rating for long-term zloty-denominated debt was raised from A- to A.

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oration in macroeconomic indicators, particularly the increasing current account deficit and the persistence of financial difficulties besetting the general government sector. A rise in inflation expectations and the maintenance of relatively rapid lending growth reinforced the likelihood that interest rates would be put up, which temporarily served to heighten the pressure for the zloty to depreciate. The weakening of the zloty was also largely traceable to an ebb in the tide of privatisation, which in the preceding quarters had played an important role in fostering demand for the Polish currency. Although the market was receiving successive infusions of receipts from privatisation transactions already concluded, expectations of appreciation associated with further privatisations clearly waned. This tendency was reinforced by the unveiling of plans to set aside a portion of privatisation revenues on a special account at the NBP, earmarked for repayment of the foreign debt, a move intended to curtail excessive fluctuations in the supply of foreign currency to the domestic forex. In the macroeconomic environment outlined above, the large interest rate rise carried out by the Monetary Policy Council in November failed to produce any strengthening of the zloty. This was all the more understandable in that the unfavourable developments within the Polish economy were now being compounded by Y2K risk, which restrained foreign investors from placing their funds in zloty instruments. In December, as fears connected with the date change began to die down, the zloty reassumed its upward path. An additional source of appreciation sentiment was investor optimism at the prospect of the zloty being floated fully.

It was clearer in the second half of the year than in the first that zloty exchange rates were adapting to the deepening of external disequilibrium. The average deviation of market rates from parity in this period was 1.3% on the upside, as against 2.5% in the first half of the year. This was made possible by the fact that the zloty was already floating virtually freely, and also by the marked predominance of domestic factors in conditioning exchange rate trends.

As a result of the tendencies presented above, nominal effective zloty exchange rates came down 6.9% in 1999 (December-on-December), compared to a decline of 3.0% in 1998; annualised average nominal depreciation stood at 9.0% in 1999, as against 5.4% in 1998 (cf. Fig. 38).





Figure 38 Nominal effective zloty exchange rates, 1997-1999 (monthly figures, December 1997 = 100)

Source: NBP.

One aspect of the transmission channel by which exchange rates impact inflation are expectations of movements in those exchange rates. In 1999, the inflation and exchange rate expectations of the commercial banks<sup>23</sup> developed in rather different fashion than in previous years (cf. Figs. 39 & 40)<sup>24</sup>.

As can be seen, in previous years the inflation expectations of the banks displayed an almost monotonic correspondence with the actual rate of inflation as time passed. In 1999, inflation expectations remained steady at around 7.4% for the greater part of the year. It was not until the fourth quarter that a fairly sharp increase in these expectations became visible. Altogether, expectations were revised by some 2.5 points over the period from September to December.

Exchange rate expectations in 1999 were rather disparate. Following rising expectations of zloty depreciation in the first quarter, expectations of appreciation prevailed for almost the two next quarters, as mirrored in the gradual downward revision of the dollar exchange

 $<sup>\</sup>overline{23}$  Analysis performed on the basis of Reuters polls, where respondents were asked each month about their forecasts for the rate of inflation, December-on-December, and the exchange rate of the zloty against the dollar at year end.

<sup>24</sup> The charts show the minimum and maximum values, calculated as the respective means of the three lowest or highest values quoted; the median, as a measure of the central tendency of the distribution; and the actual inflation or exchange rate reported at year end.

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Figure 39 Inflation expectations at commercial banks

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Source: own calculations based on Reuters polls.





Source: own calculations based on Reuters polls.

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rate expected at year end. From September onwards, however, a relatively strong expectation of depreciation emerged, with the adjustment to projected dollar exchange rates over the whole period August-December coming to almost 0.3 zloty. In focussing on the overall trend for expectations to be revised in the fourth quarter, there seems reason to venture the hypothesis that the relationship between exchange rate expectations and inflation expectations took on more tangible form in the final three months of the year. On the other hand, the direction of the revisions made in particular months of the fourth quarter would appear to reaffirm the proposition that there was no definite relationship in 1999 between expectations of exchange rates and of inflation<sup>25</sup>, with the responses given in the relevant polls stemming more from observations of the past behaviour of the economy than from any attempt to construct a cohesive forecast of future economic trends.

Studies carried out by the NBP using data collected monthly indicate that there is in fact a longterm interrelationship between nominal effective exchange rates and the level of consumer prices. Over the longterm, movements in exchange rates are fully transmitted to the Consumer Price Index. On the basis of a dynamic dependence with error correction, it can be inferred that in the short term a 1% movement in nominal effective exchange rates generates a change of around 0.3% in the pace of price growth. This signifies that the direct impact of exchange rate movements on inflation in 1999 can be estimated at around 2 percentage points.

### Inflation expectations

Inflation expectations condition economic behaviour in the areas of consumption, savings and investment. They constitute an important factor considered by the central bank in its conduct of monetary policy.

Surveys carried out by the NBP in 1999 through the offices of its regional branches, using a sample of some 300 large and medium companies, provided the basis for an analysis of corporate inflation expectations.

This analysis indicates that inflation expectations were at their highest, in terms of all the price categories examined, with respect to the first quarter of 1999.

<sup>&</sup>lt;sup>25</sup> See: Inflation Report, Third Quarter 1999.

These expectations were far higher than the actual level of inflation recorded. In the course of the first quarter, inflation expectations were substantially revised downwards, as reflected in the level of price growth projected for the second quarter. The third quarter of the year brought a slight rise in inflation expectations concerning consumer prices (as reflected in the CPI growth expected in Q4), which was followed by a very clear increase in expectations during the fourth quarter, as expressed in the inflation forecast for the first quarter of 2000.

Expectations regarding increases in the price of the companies' own products were on average lower than expectations concerning the price of raw materials and intermediates purchased by those companies. This situation generally led to a deterioration of profit margins. Throughout 1999, the average expected price of the companies' own products declined. Furthermore, a fairly large group of companies intended to cut their prices. On the one hand, this suggests sharp competition on the markets concerned, while on the other it could be indicative of a downswing in the economy, with companies encountering a clear and mounting barrier of demand.

In 1999, forecast price increases were marked by large standard deviations. At the same time, these standard deviations were distinctly higher with regard to companies' own output prices and to input material and intermediate prices than they were with respect to the PPI and CPI. This demonstrates a great differentiation among particular business organisations as regards their

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Quarterly forecasts,	price indices	(end previous	quarter = 100)

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		Mean			Standard deviation				
	Own	Materials	CPI	PPI	Own	Materials	CPI	PPI	
	output	input			output	input			
	prices	prices			prices	prices			
QI, 1999	2.3	3.2	3.4	2.9	3.6	3.6	2.3	2.3	
Q2, 1999	1.7	2.6	2.8	2.7	3.1	2.8	2.0	3.0	
Q3, 1999	1.6	2.6	2.0	2.2	3.3	3.6	2.3	3.2	
Q4, 1999	1.4	2.6	2.2	2.0	3.5	3.3	1.5	1.5	
Q1, 2000	2.7	3.5	3.0	2.5	3.9	3.6	1.9	2.4	

Source: GUS figures and surveys conducted by NBP regional branches, based on sample of around 300 large and medium companies.




Figure 41 Inflation expectations of consumers, 1999

For any given month: "Expected yr/yr CPI, consumers" represents the year-on-year inflation in that month which consumers had expected in the corresponding month of the previous year (i.e., in 1999); "Expected yr/yr CPI, banks" represents the year-on-year inflation in that month which banks had expected in the corresponding month of the previous year (i.e., in 1999); and "Current CPI (-12 months)" represents the actual rate of inflation in the given month of the previous year (in 1999), i.e., at the time the forecast was made.

Source: Current CPI (-12 months) - GUS; Expected yr/yr CPI, consumers - Demoskop; Expected yr/yr CPI, banks - Reuters.

ability to set prices. Visible constituents of the sample analysed in 1999 were a group of companies compelled to lower their prices and another group that were raising their prices considerably faster than average inflation.

The rapid growth expected in prices of materials and intermediates, together with the substantial differentiation concerning price growth projections, suggest a significant cost component of inflation in 1999 (in the case of demand pull inflation, similar price growth is seen across most categories of goods). A large impact on inflationary processes could also have been exerted by the monopoly position occupied by many companies. It is worth emphasising that monopoly behaviour had a dual character. On the one hand, as is traditional, it served to accelerate inflation. On the other hand, it also curbed price growth, with some companies claiming to be severely restricted in their capacity to raise prices by the actions of large distributive firms that controlled their respective markets.

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In addition to analysing corporate inflation expectations, the NBP is also engaged in investigating those of consumers. Figure 41 compares the rate of inflation in particular months of 2000 expected by consumers in 1999 with the results of Reuters surveys of inflation expectations at the banks.

Research into consumer inflation expectations carried out on a sample period since 1992 indicates that the price growth projected by consumers for the coming twelve months is generally equivalent to the ongoing rate of inflation.

In 1999, the inflationary expectations of consumers showed similar overall tendencies to those of the banks. Up until April 1999, consumer inflation expectations trended downwards in line with the fall in inflation. In May, when respondents were aware of the rise in annualised inflation in March, their expectations increased drastically. The months from June to September would seem to have been a time of uncertainty concerning future inflation among those being polled, most probably due to the minor fluctuations at this time in ongoing inflation. In the last quarter of 1999, the inflation expectations of consumers shot up, surpassing the level of inflation at that time. In evaluating the longer time horizon, one conclusion that can be drawn is that in periods when the process of disinflation is disrupted, consumer inflation expectations increase faster than is warranted solely by the rise in ongoing inflation.

The increase in the inflation expectations of consumers in the last months of 1999 was substantially greater than the corresponding increase at the banks, indicating that consumers are more sensitive to negative information. On the other hand, it is worth noting that the decision of the Monetary Policy Council to raise official interest rates, taken on November 17, 1999, was not taken into account by consumers in December when they declared their projections of inflation, although it was reflected in lower inflation expectations at the banks.

Taking into account the course of disinflation in Poland, the mechanisms at work in determining the inflation expectations of consumers for a long time led to an overestimation, ex post, of the rate of inflation. An exception in this regard were the last months of 1999, when annualised inflation did indeed approach the level of consumer expectations a year previously (the rate of

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inflation in December 1999 was almost identical to the rate projected for that month a year before). This does not assist in overcoming the way in which consumers develop their expectations of inflation.

The process of formulating inflation expectations by consumers, as presented above, could have adverse macroeconomic consequences. It could encourage wage growth by force of inertia, which would raise the cost of disinflation (defined by the "sacrifice ratio")<sup>26</sup>.

In addition, this process hinders the efforts of the central bank to influence consumer inflation expectations directly, as monetary policy decisions impact those expectations only indirectly, via the effect they have on inflation itself, and therefore suffer from a time lag stemming from the length of the transmission mechanism.

The economic agents analysed – consumers, corporates and banks – developed their inflation expectations in different ways. This stems from the different ways in which these agents took account of information concerning the past and the future. Consumers and corporates primarily tended to base themselves on information regarding past inflation, while commercial banks factored in much more information, including their knowledge of transmission mechanisms. The expectations of banks were clearly impacted by NBP interest rate adjustments.

# Inference method for the inflation expectations of consumers

The investigation of consumer inflation expectations conducted by the National Bank of Poland draws on information from monthly surveys by the Demoskop company. The sample surveyed, of 1,000 persons, is derived on a random/quota basis. Respondents are selected by a quota method according to sex, age and education in 100 districts selected at random with probabilities proportional to the size of the population. The responses, which are qualitative in character, are gathered by individual questionnaire. On this basis, the rate of inflation expected by consumers is quantified utilising the probabilistic method developed by Carlson and Parkin, suitably adjusted to the variant replies contained in the Demoskop questionnaires.

 $<sup>\</sup>frac{26}{26}$  The sacrifice ratio can be regarded as the cost associated with reducing inflation by 1 percentage point during a period of declining aggregate demand. The cost involved is the decrease in output and in employment.

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### The securities channel (the "asset price effect")

Securities constitute a component of the assets held by households. If consumption is contingent not on current incomes, but on the incomes collected over a whole lifetime, then movements in securities prices, by affecting the value of those assets, may also affect consumption decisions. Interest rates are one of the factors that influence securities prices. Since an increase in interest rates causes a decrease in securities prices, it thereby also lowers the value of household assets. As a result, consumer demand declines and pressure on prices is eased. It should be underlined here that the securities channel and the asset price effect are capable of generating macroeconomic consequences solely where the value of the capital market instruments held by households is relatively large. In Poland, the ratio of market capitalisation to GDP has reached 20%, considered the dividing line between stock markets of minor economic significance and mature markets. In actuality, however, just a small portion of the shares listed, estimated at 1/3 of total market capitalisation, stand any chance of being traded. The remainder is largely held by strategic investors, some of whom intend to withdraw certain companies from the stock exchange.

The total market value of companies and National Investment Funds quoted on the Warsaw Stock Exchange climbed from 72.4bn zloty at the end of 1998 to 123.4bn zloty at year end 1999, spelling an increase in market capitalisation of 70.4%. This surge in capitalisation can be traced to November's public offering of shares in Polski Koncern Naftowy, which of all listed companies is second in size only to Telekomunikacja Polska SA. The total share in market capitalisation of domestic investors, both individual and institutional, was estimated at around 60% in 1999, with the remaining 40% held by foreign investors.

By the end of 1999, open-ended pension funds were holding a relatively modest sum of assets, estimated at 2bn zloty, an insubstantial amount when compared to the total capitalisation of the Warsaw Exchange. Of that amount, 0.6bn zloty was invested on the Exchange at year end.

A comparison of the return on equity investments with alternative instruments such as bank deposits in zloty and foreign currency, debt securities (which yield-

ed somewhere around a dozen percent, depending on the paper involved) or National Investment Funds (which brought a loss of 7.6%) indicates the higher return in 1999 from investing on the stock market (as expressed by the increase in the Warsaw Stock Exchange Index, the WIG). However, the low capitalisation of this market restricted its real influence on macroeconomic indicators. Despite the existence of a relatively large number of brokerage accounts - some 1.2m - as a result of earlier privatisation offerings, no more than 100,000-200,000 Poles actively trade on the market. This means that in terms of private investors the Warsaw Exchange is still an elitist vehicle. In addition, Poland is on the eve of a strong expansion of open-ended pension funds. So far, their impact on the market has been moderate, although certainly noticeable, as in December 1999. It is estimated that these institutions will place some 4.5bn zloty on the capital market in 2000. This will signify the involvement on the capital market, indirectly, of a much greater number of Polish citizens. However, macroeconomic effects issuing from movements in securities prices can only be expected in several years time, when investment funds will be one of the principal sources of demand on the Polish securities market.



Figure 42 WIG & turnover on Warsaw Stock Exchange (first-tier market), 1999

Source: Cedula GPW (Stock Exchange price bulletin).



In the course of 1999, the WIG gained 41.3%. The principal index of the first-tier market ended the year at 18,083.6 points (cf. Fig. 42). This means that the scale of price growth recorded on the Polish stock market was comparable with that of developed markets. For example, the Dow Jones and NASDAQ rose 25% and 85%, respectively, with the French CAC up 48%, the German DAX up 37% and London's FTSE up 15%. The boom on American markets was mirrored in similar investor behaviour on other markets. An important factor were also the sound fundamentals in both the developed countries and those previously hit by financial crisis. In Poland, the level of share price indices and the behaviour of investors reflected the state of the Polish economy. News of an increase in the current account deficit or inflation had an adverse effect on the activity of participants in Poland's capital market. This situation changed in the second half of the year, however, thanks to improved industrial output performance and economic growth.

### Impact of external prices on inflation in 1999

In 1999, with the world economy picking up, there was a distinct tendency for commodity prices to rise on international markets. This primarily applied to prices for oil and certain non-ferrous metals, with price growth concentrated in the last three quarters of the year. A factor constraining growth in dollar prices on world markets in 1999 was the stronger appreciation of the US dollar against the other major world currencies. The rising value of the dollar was the main reason for the mild decrease in the price of internationally traded manufactured goods.

Oil prices, having fallen sharply in 1997 and 1998, leapt 137% in 1999 (this refers to Brent, December 1998 – December 1999). In the first quarter of the year, oil price growth averaged a negative 2%, but by the second quarter this trend had been reversed (cf. Fig. 43). Oil prices continued to rise for the rest of the year, although subject to strong swings. In February 1999, oil was still being sold 24.5% cheaper than a year before (oil prices hit an annual low on February 9 of USD 10.7 per barrel), yet by December oil was costing USD 24.93 per barrel<sup>27</sup>. The sharpest monthly increases in oil prices occurred in March and November, coming to 42% and

<sup>&</sup>lt;sup>27</sup> Reuters; average prices for Brent in December 1998 and 1999.





Figure 43 Oil prices vs growth in overall world prices (corresponding month previous year = 100)

Source: Reuters and The Economist, 1997-1999.





Source: The Economist, 1997, 1998, 1999.



Figure 45 Basic commodity prices, world markets (corresponding month previous year = 100)



Source: The Economist, 1997-1999.

17.5%, respectively. Over the last three quarters of the year, prices for non-ferrous metals also rose, although not as rapidly as oil prices.

By contrast, annualised average growth in world nonenergy commodity prices was still negative in 1999, with prices slipping  $7.8\%^{28}$ . This is connected to the fact that the year 1999 saw a continuation of the downward trend in world prices for foodstuffs and agricultural commodities (cf. Figs. 44 & 45). For example, relative to 1998 average annualised prices were down 9% for grain, 18% for oilbearing crops, 30% for sugar, 25% for coffee, 20% for cotton, and 12% for natural rubber. Negative price growth was also recorded for such commodities and industrial intermediates as hard coal (down 9%), iron ore (down 8%), steel (down 12%) and scrap iron (down 36%)<sup>29</sup>.

Although oil prices rose greatly in 1999, this still had not elicited increases in most other world commodity prices by year end. Nonetheless, in the second half of 1999 rising oil prices did contribute to a certain acceleration of inflation in economies reliant on imported oil. In

<sup>29</sup> Koniunktura gospodarcza świata i Polski w latach 1999-2000 (The world economy and Polish economy in the years 1999-2000), IKC-HZ, February 2000.

<sup>&</sup>lt;sup>28</sup> HHWA, Institut für Wirtschaftsforschung, Hamburg.





Figure 46 Cumulative indices of Polish import transaction prices (corresponding period previous year = 100)

the euro area, the harmonised Consumer Price Index stood at an annualised 1.5% in the fourth quarter, as against 0.8% in the first. This was chiefly due to increased oil prices, with the energy price index in the euro area coming to 7.9% in the last quarter of the year, compared to a negative 3.8% in the first<sup>30</sup>.

The trends prevalent on world markets led to slower growth in dollar prices for both Polish imports and Polish exports. In 1999, the dollar prices obtained for Polish exports declined 4.4% compared to 1998. At the same time, the dollar prices payable for imports were down 6.8%. However, due to the considerable nominal depreciation of the zloty against the US dollar in 1999 (20.1% December-on-December), growth in zloty transaction prices in Poland's foreign trade was faster than in 1998. Average zloty import transaction prices went up 6.4% (as against 3.3% in 1998) while export transaction prices rose 7.8% (7% in  $1998)^{21}$ . Movements in import transaction prices during 1999 were very uneven. Following a temporary period of more rapid growth in February and March, these prices trended downwards from one month to the next until mid-

<sup>&</sup>lt;sup>30</sup> ECB Monthly Bulletin, February 2000.

<sup>&</sup>lt;sup>31</sup> Polish foreign trade prices based on GUS data for this first eleven months of 1999.



# Figure 47 Cumulative indices of Polish import transaction prices (corresponding period previous year = 100)



Source: GUS.

year. Import prices then began to climb distinctly from October onwards. In contrast to 1998, the largest price increases in 1999 were for mineral fuels and derivative products; in this product category, import prices rose steadily from April until year end (cf. Figs. 46 & 47).

The result of the tendencies described above was that Poland's terms of trade were favourable in 1999, with the relevant index standing at 100.8%, although this was lower than the 104.3% recorded in 1998.

It has to be said that in 1999 practically the sole external price impulse stimulating domestic inflation was the price of oil and intermediate petroleum products. The fact that zloty depreciation was higher than in 1998 also played a part in speeding up the growth of Polish import transaction prices. As regards foodstuffs, on the other hand, the impact of falling external prices in dampening inflation was limited due to the relatively small share of imported food in total domestic supply, and also due to the stronger price protection being afforded to the domestic market.

As Figure 48 illustrates, in the years 1998 and 1999 the rise in import transaction prices was clearly slower than that of consumer prices, demonstrating that "imported inflation" was not a factor driving domestic inflation in Poland (excluding the effect of oil prices in 1999).





Figure 48 Cumulative indices of inflation & import prices (December 1996 = 100)

To determine the impact of import prices on inflation and the time lags involved, a study was performed of the short-term relationship between the price indices of selected product categories in the consumer price basket and import prices expressed in zloty<sup>32</sup>. The results indi-

 $<sup>\</sup>overline{^{32}$  The price indices studied were adjusted to exclude seasonality and the trend towards disinflation. Removing seasonality eliminates the influence of periodic factors that are operative on a regular basis within an annual cycle. Removing the trend eliminates the influence of factors that affect the rate of price movements over the long term. Having excluded these components, a stationary component was obtained of the deviations from the series containing the trend and seasonal fluctuations, which can be interpreted as the shocks impacting the economy in the very short term. It should be noted that these shocks are generated by very heterogeneous factors, often incidental in character (supply shocks linked to the structure of the market, exchange rate movements, world prices). The trend was also removed from import prices, although this trend was in fact only weakly visible. It was assumed that the impulse set in motion by import prices is not homogenous. It includes the cumulative effect of current prices and lagged ones. This can be shown as a weighted average of price movements in particular periods. As a result of this approach, an aggregate variable was obtained that expresses the influence of import prices on the non-regular component of a given price index. This assumption corresponds to a situation where a change in import prices (produced by a movement in exchange rates or by a sudden change in the price of the goods being imported) impacts the particular components of the CPI with varying time lags. In addition, the weights of particular time lags may be interpreted as the relative force (or share) of the impact of changes in import prices from a given time lag within the overall impulse exerted by those prices. The variables were expressed as logarithms, which basically means assuming that the relationship is non-linear. However, this allows the use of a weighted arithmetical mean in constructing the aggregate variable representing the shock impulse. The weights assigned to particular lags were obtained by maximising the linear correlation coefficient between the non-regular component of a given price index and the above-mentioned aggregate variable. The study was based on GUS monthly data for the period from January 1994 to December 1999.

cate that in the short term the influence of import price impulses on prices in a given category is weak, with a correlation coefficient in the region of 0.4. This underlines the importance of other domestic supply factors in conditioning the shock impulses that affect price levels. In the case of foodstuffs, import prices have the most rapid impact. Over 70% of the impulse generated by import prices is derived from price movements in the current month or the preceding one. The effect of changes in import prices on the price of non-food articles and manufactured goods is strongest with a time lag of around two months (some 70% of the relevant impulse is attributable to price movements two months earlier, with a further 30% derived from price levels three months previously). As regards service prices, the impact of import prices displays the greatest time lag, since almost 85% constitutes the effect of price movements two and three months before.

# Aggregate supply and demand

The year 1999 brought a further increase in the gap between aggregate demand and domestic supply, and



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the deficit on foreign trade widened. Initial estimates are that final domestic demand rose 4.9%, while GDP grew 4.1%. Consumption increased at a pace similar to that in 1998, while capital formation was down by half. Growth rates for basic macroeconomic categories are presented in Figure 49.

During the year, as businesses readjusted to the slump in sales opportunities in Eastern Europe resulting from the Russian crisis, output growth could be seen to pick up gradually. In the first months of the year, domestic demand was the key factor in overcoming the downward trend in output. The third quarter then also brought a rise in the volume of exports, and in the fourth quarter, for the first time since 1996, domestic demand grew more slowly than GDP. However, this did not halt the increase in the economy's net external indebtedness (cf. Table 4).

The broadening of the gap between demand and supply, despite the slackening of capital expenditure growth, was associated with the reduction in savings growth in almost all institutional sectors (excepting the sector of financial institutions)<sup>33</sup>. Household consumption continued to expand rapidly despite slower growth in incomes. The role of credit in financing consumption increased, which thereby served to lower the growth of net claims

<sup>&</sup>lt;sup>33</sup> Savings are equivalent to that portion of disposable incomes not applied to consumption and are earmarked for the formation and replacement of assets and/or the reduction of debt. Savings comprise investment in fixed assets and tangible current assets (non-financial savings) together with movements in money stocks (financial savings, equal to the combined growth in bank deposits, cash stocks and other financial investments – equities, bonds, mutual funds, etc. – less the growth in debt).

In those institutional sectors where there is no consumption, i.e., in the corporate sector and the sector of financial and insurance institutions, savings are equal to disposable incomes. In the general government sector, savings constitute that portion of disposable incomes that is not expended on public consumption. In the household sector and sector of non-commercial institutions, savings represent the difference between disposable incomes and personal consumption (cf. Box on p. 88).

Financial savings adjusted by the balance on capital transfers remitted and received constitute debt or claims, representing a surplus or deficit of funds conditioning net growth in future non-financial assets. In Poland, as in other countries, there is a permanent funding deficit in the corporate sector. Owing to the fiscal deficit in the 1990s, the general government sector was also a net debtor (with the exception of 1994, when part of Poland's foreign debt was cancelled). Net claims were held by the household sector, the sector of financial and insurance institutions, and the sector of non-commercial institutions.

The sum total of debt/claims of domestic institutional sectors represents the funding surplus/deficit of the national economy, equal to the balance of the current account (on a transactions basis) and of foreign capital transfers. The existence of net claims within the national economy indicates the volume of outward financing provided from domestic funds. The level of net debt within the national economy shows the volume of the national requirement for external funds. In Poland, the years 1992-1995 saw net claims within the national economy; since 1996, the level of net debt has been rising year by year.

# Table 4

GDP & domestic demand growth

	year	QI	Q2	Q3	<b>Q</b> 4	QI-4
		Corresponding period previous year = 100				
Gross value added	1998	106.4	105.2	104.8	102.8	104.7
	1999	101.4	102.8	104.7	105.9	103.8
Industry	1998	110.5	105.4	103.4	98.9	104.3
	1999	97.3	101.6	107.5	111.6	104.7
Construction	1998	114.7	110.9	108.8	106.1	109.1
	1999	102.1	103.2	103.6	105.4	103.8
Commercial services	1998	104.2	105.6	105.9	103.6	104.8
	1999	104.2	104.3	104.8	104.9	104.6
Gross Domestic Product	1998	106.5	105.3	104.9	102.9	104.8
	1999	101.6	103.0	105.0	106.2	104.1
Domestic demand	1998	107.2	105.7	106.1	106.6	106.4
	1999	103.3	104.6	105.6	105.7	104.9
Total consumption	1998	105.4	103.5	103.8	103.9	104.1
	1999	103.7	104.1	104.5	104.5	104.2
Personal consumption	1998	106.2	103.9	104.3	104.5	104.7
	1999	104.3	104.9	105.3	105.2	105.0
Capital formation	1998	116.9	114.3	113.9	112.3	113.8
	1999	101.1	106.5	109.0	107.9	106.8
Gross fixed investment	1998	117.3	114.6	114.2	112.9	114.2
	1999	106.1	106.8	107.0	107.3	106.9

Source: GUS.

within this sector. The minor improvement in the fiscal deficit, given the deterioration in the performance of the other components of general government, failed to contain the rise in the net debt of the general government sector. In the corporate sector, costs rose faster than revenues, with a dramatic fall in net earnings and gross disposable incomes. It can be estimated that, despite investment slowing in 1999, corporates – in parallel with the general government sector – created greater demand than they had in 1998 for the savings generated in the remaining sectors of the national economy and abroad.

#### **Domestic demand**

#### Personal consumption

Preliminary NBP estimates indicate that growth in real household disposable incomes slowed in 1999 (coming down to 2.7%, as against 4.5% in 1998). Nevertheless, personal consumption grew slightly faster than the previous year (up 5.0%, as against 4.7%). This can be considered the result of consumer demand being slow to adjust to the changed conditions of prices and incomes, with a high marginal propensity to consume.

The central reasons for the development of a high propensity to consume have been the systematic growth in incomes registered since 1994 and the fall in inflation year by year. The prevailing situation in recent years promoted the conviction that income growth was permanent. Further, the emergence of high consumer demand growth in the 1990s was not unrelated to the initial economic condition of households, with a low level and standard of material possessions, coupled with a plunge in the level of consumption and in the purchasing power of incomes due to the hyperinflation experienced in the years 1989-90. In subsequent years, as incomes rose, consumption levels were gradually restored. However, consumer expenditure did not regain the level of 1989 until the end of 1996. At the same time, owing to the differentiated price growth seen for particular categories of goods and services, the pattern of expenditure altered significantly. The change in the pattern of personal consumption and acceleration of growth in this consumption was stimulated by the systemic socio-economic changes taking place. The scope of product subsidies was gradually narrowed, with an increasing proportion of goods and services being priced on a market basis. From 1994 onwards, consumer expenditure rose faster than public consumption.

The maintenance of relatively strong consumption growth in 1999, in the context of slower income growth, resulted in a decline in the household savings ratio, and particularly in the financial savings ratio. The latter plummeted to a record low. This stemmed from both slower deposit growth and a very sharp increase in borrowings. At the same time, an expansion was seen in savings outside the banks.

Movements in the rate of consumption growth observed in the course of 1999 were modest. Following a first-quarter increase of 4.3% (similar to that seen in the second half of 1998), growth gathered speed in the third and fourth quarters, coming to 4.9% and 5.3%, respectively. In the fourth quarter, consumer growth was slower, at 4.1%, which could imply that the volume of personal consumption was beginning to readjust to the

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changed conditions represented by slower income growth and swifter price growth. Larger fluctuations were recorded in the growth of incomes, deposits and borrowings.

#### Household incomes and savings

Preliminary NBP estimates put the rise in gross household disposable incomes in 1999 at some 2.7% in real terms, compared to 4.5% in 1998 and 7.1% in 1997. This slowdown in income growth involved a lower increase in original incomes and a higher increase in social benefits and other transfers.

It is estimated that growth came down in all the components of original incomes. Incomes from farmers' operating surplus diminished, as did ownership incomes. In relative terms, the swiftest growth was of employee earnings and other incomes related to employment, although this growth was also slower than in previous years. The purchasing power of incomes from employment went up 3.1% year-on-year in 1999, as against

# Household incomes and savings – basic definitions

**Original incomes** in the household sector, (gross), represent the sum total of gross operating surplus, employee earnings and other income related to employment, and ownership income.

**Gross disposable incomes** in the household sector represent gross original incomes plus social benefits and other welfare transfers, and the balance of other current transfers (foreign transfers, administrative charges, voluntary insurance premiums and compensation, etc.) less income and property taxes.

**Gross household savings** constitute the difference between gross disposable incomes and personal consumption, and thus represent that portion of incomes that has not been applied to the purchase of consumer goods and services. Gross savings include capital formation, the predominant component of which is investment in dwellings, together with fixed investment by households engaged in productive activity in or outside agriculture, and net claims.

**Net claims (financial savings)** represent the growth in money stocks equal to the sum total of growth in household bank deposits, notes & coin in circulation excluding vault cash and company cash, and other investments in securities – equities, bonds, units in mutual funds, etc. – less the growth in household borrowings.

The gross savings ratio constitutes the ratio of gross savings to gross disposable incomes.

The financial savings ratio constitutes the ratio of net claims to gross disposable incomes.







Source: GUS figures, NBP estimates.

4.7% in 1998 and 8.4% in 1997. As in the previous year, the contribution of these incomes to total gross disposable household incomes stood at around 44.0%.

On the basis of the growth rates reported for old-age and disability pensions, it can be estimated that incomes from social benefits and other welfare transfers increased some 4% in real terms (compared to 0.1% in 1998, 4.6% in 1997 and 2.8% in 1996). The share of social insurance benefits and other welfare transfers in total gross disposable incomes in 1999 went up 1.5 points relative to 1998, to stand at around 24.5%.

The year 1999 witnessed a decline in both the gross savings ratio (dropping to 11.4% from 13.3% in 1998) and the financial savings ratio (down to 4.9% from 7.7%). Over the years 1995-99, both of these measures of household savings stood at various levels, although movements in them exhibited a similar tendency. The exception was 1998, when the overall savings ratio edged up slightly, while the financial savings ratio dropped fairly substantially. A sharp decline in both ratios, albeit not as pronounced as in 1999, was previously seen in 1996. At that point, the fall in savings ratios was connected with a large rise in household borrowings. Households took out loans in that period in NBP





Source: GUS and NBP.

expectation of a further decrease in lending rates as inflation subsided. In 1999, the steep drop in the financial savings ratio was also the result of a major increase in consumer loans taken out by households (cf. Figs. 50 & 51 and Table 5).

With the exception of 1997, the years 1995-99 saw a deterioration in both growth in net claims and in movements in these claims as a proportion of gross household savings. In 1995, net claims accounted for 64.5% of gross household savings, whereas by 1999 this ratio was down to just 43%. The year 1999 brought a profound drop in net claims of 34% in real terms, while the corresponding decrease in 1998 had been 7.5%. By comparison, 1997 had seen a real increase in net claims of around 23% (cf. Table 6).

The small share of net claims in gross household savings in 1999 was determined by the low growth of zloty deposits and the sharp rise in borrowings (cf. Table 7).

In the 1990s, banks deposits, which constitute the dominant form of household savings, rose relatively rapidly in nominal terms. The sum total of household savings in the form of bank deposits and cash stocks rose



# Table 5 Gross savings & net claims as proportion of gross disposable incomes

	1995	1996	1997	1998	1999
Disposable incomes (billion zloty)	220.1	275.2	338.6	395.4	436
Gross savings (billion zloty)	35.3	35.4	44.7	52.6	50
Gross savings ratio (%)	16.1	12.9	13.2	13.3	11.4
Net claims (billion zloty)	22.8	20.7	29.3	30.2	21
Financial savings ratio (%)	10.4	7.5	8.6	7.7	4.9

Source: GUS and NBP.

# Table 6Composition of gross household savings

	1995	1996	1997	1998	1999
			%		
Gross savings	100.0	100.0	100.0	100.0	100.0
Fixed & current investment	35.5	41.5	34.5	42.5	57
Net claims	64.5	58.5	65.5	57.5	43
Growth in notes & coin	19.6	11.4	7.4	5.6	16
Total deposit growth	45.2	52.0	63.2	53.2	41
zloty deposits	48.6	49.9	52.5	54.7	29
foreign currency deposits	-3.4	2.1	10.7	-1.5	12
Other investment	4.4	8.5	9.6	9.1	10
Growth in borrowings	6.4	17.1	14.8	10.5	25

Source: GUS and NBP.

	Table 7
Gross household savings,	real growth

	1996	1997	1998	1999
			%	
Gross savings	83.7	109.8	105.2	89
Net claims	76.0	122.7	92.5	66
Notes & coin	48.6	71.2	79.6	248
Total deposits	96.2	133.5	88.5	68
zloty deposits	85.8	115.7	109.6	47
foreign currency deposits	-53.5	548.5	14.6	700
Other investment	162.4	124.2	100.2	109
Borrowings	176.8	138.0	119.7	215

Source: GUS and NBP.



Figure 52 Movements in bank deposits, notes & coin and borrowings



Source: NBP.

from 18.6bn zloty in 1991 to 192.5bn zloty in 1999. As measured in this way, savings thus increased nominally over tenfold during that period (more than doubling in real terms), with real annual growth coming to some 9.5%. Movements in bank deposits, notes & coin and borrowings are presented in Figure 52.

The decline in savings at the banks in recent years can probably be traced to relatively low interest income and the emergence of alternative savings vehicles competing with bank deposits. Households began to make use of other savings opportunities in addition to bank deposits, e.g., purchasing fixed-income government bonds, or equities paying out variable-income dividends. In the years 1996-99, the securities held on personal brokerage accounts at brokerage houses (shares, bonds and Treasury bills) were equivalent on average to some 8.5% of household zloty deposits.

At the end of September 1999, the value of assets in the form of shares, bonds and Treasury bills held on personal brokerage accounts at brokerage houses stood at 11.4bn zloty, representing a year-on-year increase of 56%. In addition, the assets held by mutual funds and investment funds at year end 1999 came to 3.2bn zloty, having risen over 75% on the previous year.

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Moreover, given the proposed introduction of new tax regulations, households may have invested part of their funds not in bank deposits, but in business activity affording an opportunity of tax deductions against capital expenditure, thereby increasing capital formation in this fashion.

### Movements in level and pattern of household consumption

The changes occurring in household consumption in recent years have been less marked than those at the initial stage of economic transition, when a fundamental recomposition began of both incomes and expenditures in particular socio-economic categories of household, and also of prices; at the same time, there was a clear deepening of the differentiation in living standards between particular types of household.

Research into household budgets conducted by GUS indicates that in the first three quarters of 1999 average monthly disposable incomes per family member in the total sample of households surveyed rose 0.2% in real terms compared to the previous year (as against 5.8% in 1998). In employee households, the average real growth per person in monthly disposable incomes during these three quarters came to 2.0% (compared to 6.8% a year earlier), while in old-age and disability pensioner households it stood at 0.8% (3.4% a year earlier).

During the first three quarters of 1999, average monthly household expenditure on consumer goods and services declined 1.6% year-on-year in real terms (as against an increase of 7.4% a year previously), with this decrease coming to 1.7% in employee households (compared to an 8.8% increase a year before) and 0.8% in old-age and disability pensioner households (as against a 7.2% increase in the first three quarters of 1998).

The picture that emerges from this research into household budgets, while not complete (since it refers only to Q1-Q3, not to the whole of 1999, and since it does not fully accord with the macroeconomic figures reported in the national accounts), does point to certain changes in the financial condition of households. It is apparent that, compared to 1998, the year 1999 brought a clear slowdown in real growth in current incomes per family member.

The studies into household budgets carried out by GUS also reveal changes in expenditure patterns.

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In terms of the main components of expenditure, the greatest reduction occurred in expenditure on foodstuffs, which dropped from 35.5% of household spending in 1998 to 34.0% in 1999. By contrast, there was a large increase in the relative share of occupancy and energy charges, which rose from 18.3% to 19.4%. The proportion of expenditure assigned to transport and communications remained similar to that seen the previous year, at around 11.4%-11.5% in both 1998 and 1999. Together, expenditure on food and recurring items (occupancy, transport, communications) had in recent years accounted for over 2/3 of expenditure on consumer goods and services; during the first three quarters of 1999, these items represented 64.9% of consumer expenditure, coming down just slightly from 65.2% in 1998.

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The remaining expenditure, some 35% of monthly spending per family member, was to a greater or lesser extent assigned freely by decision of the households concerned. With many goods becoming relatively cheaper and a considerably greater choice available on the market, households stepped up their purchases. The increase in demand for durables in 1998 and 1999 involved household appliances, audio and television equipment, and passenger cars. The result was an increase in the number of households equipped with particular durables, and also in the number of these per household. A detailed description of the changes in the level and composition of household consumption is given in Appendix 3.

It should be noted that, despite the increase in the number of households equipped with various durable goods, Poland has still to attain the levels seen in the countries of Western Europe. For example, 70% of UK households own a car, compared to 45% in Poland, while 77% have a microwave oven, as against 11.2% in Poland. However, the number of UK and Polish households with TV sets and refrigerators is similar (cf. Table 8).

Purchases of durables are to a large extent financed by credit. The study of household budgets in the first three quarters of 1999 performed by GUS indicates that, in comparison with the previous year, a lesser amount of loan finance was allocated to purchases of basic goods such as foodstuffs, heating fuel or clothing. Instead, loans were used more frequently than in 1998 to finance purchases of household appliances and com-



	Poland	UK
Refrigerator & freezer	98.7	90
Personal computer	10.2	29
Microwave oven	11.2	77
VCR	55.8	84
Compact disc player	7.9	63
Washing machine & spin dryer	97.9	91
Passenger car	44.5	70
Colour TV	93.9	96.6
Dishwasher	1.1	22

# Table 8 Percentage of households equipped with selected durable goods, 1998

Source: NBP and Government Statistical Service.

puters. Above all, however, loans are taken out to finance car purchases.

#### Investment

The very rapid capital expenditure growth noted in the mid-1990s declined once again in 1999. Initial figures indicate that gross fixed investment went up some 7%, as against 14.2% in 1998, and 20%-24% in the years 1994-97. This diminishing rate of investment growth represents the combined result of the following:

- a decline in capital expenditure in the general government sector, which in 1998 accounted for some 15% of all investment nationally;
- slower capital spending growth in the corporate sector (some 68% of investment in 1998);
- the maintenance of high investment growth in the household sector (around 9% of investment in 1998);
- continued rapid investment growth in the financial sector (around 7% of investment in 1998).

The capital spending target for the entire general government sector in 1999 was 16.9bn zloty, a nominal decrease of 10% compared to 1998. Central government investment expenditure in the whole of 1999, including local government subsidies, totalled 7.4bn zloty, which was 10.3% less than planned. During the first three quarters of the year, local government incurred investment expenditure of just some 6bn zloty. These figures suggest that the spending finally performed could have been less than planned. Even if the NBP

Figure 53 Financing of corporate investment



target here was met, however, the growth of capital expenditure prices by over 6% means that in real terms the capital spending of the general government sector could have shrunk around 15%.

It is estimated that investment in the household sector rose, as it had in 1998. A substantial decrease in this investment was seen only in the first quarter of 1999. In the months thereafter, investment expenditure increased rapidly. In addition to the improvement in the economy over the year, resulting in a change in the investment outlook of owners of small production and service establishments, this growth could well have been linked to the proposed amendments to tax regulations. The projected abolition of tax relief on construction spending may have led to a rise in household investment in dwellings. This conjecture is also confirmed by the faster growth registered in housing starts and in the number of dwellings under construction. The further drop in sales and manufacture of agricultural machinery and equipment, together with the poor financial condition of households with an involvement in farming, points to a fall in investment in private farming, which as recent-



ly as at the beginning of the 1990s was responsible for over 80% of household investment.

Over the period January-September 1999, the capital expenditure undertaken by corporates included in GUS quarterly statistics was up 6.5% year-on-year at constant prices (in 1998, the capital expenditure of these companies rose around 20%). A decline in investment was reported in manufacturing (down 2.2%) and mining (down 2.8%). Capital spending growth slowed in construction (down from around 40% to 12%) and in transport (down from 16% to 5%), while accelerating in distribution (up from 35% to 45%). The share of distribution companies in total corporate investment rose from just under 10% to over 15%.

Flagging investment activity in the corporate sector may be attributed to constraints on the demand for goods and services. Given the increased share of construction works in total investment and the decreased share of expenditure on machinery and equipment, it would appear that the year 1999 did not yet see, to any greater extent, the attempts discernible in the first quarter of 2000 to overcome barriers of demand by improving product competitiveness via larger investment inputs. With surplus capacity on the increase, it seems likely that capital spending decisions in 1999 were to a larger degree determined by a negative assessment of future sales opportunities and the return obtainable on investment (cf. Fig. 53).

The level of investment was adversely affected by the deterioration in corporate finances seen since 1998, which restricted the possibility of conducting investment activity on a self-financing basis. The improvement in corporate earnings recorded after 1993 led to an expansion of investment projects of this type and was of key importance in investment picking up in the mid-1990s. The share of internal corporate financing in capital expenditure rose systematically, standing at 62%-64% in the years 1996-98 (cf. Fig. 54).

In evaluating the capacity of businesses to finance investment internally, a somewhat simplified measure that can be applied is the sum of net earnings plus depreciation charges. In the years 1993-97, this sum grew over 30% annually (with the exception of 1996, when growth came to 18%). In 1998, earnings plus depreciation were just 5.5% higher than in 1997, with earnings having slumped almost 58%. From January to



Figure 54 Financing structure of corporate investment





Growth in net earnings & depreciation and ratio of earnings plus depreciation to internally-financed corporate investment



Source: GUS.

NBP

September 1999, this sum went down nearly 8% on the corresponding period of 1998, with net earnings plummeting over 80% (cf. Fig. 55).

In examining the relationship between internallyfinanced investment and the sum of net earnings and depreciation charges, it can be concluded that in the years 1997-98 companies drew on their trading surplus from prior periods, yet in 1999 they were compelled to scale down the extent of internally-financed investment.

### **Public finances**

In 1999, the condition of public finances took a clear turn for the worse. The simultaneous launch of four reforms – social insurance, health care, education and local government – imposed a strain on public finances throughout the entire year. With economic growth faltering, the fact that the cost of implementing these reforms proved higher than projected (particularly the reform of the social insurance system) led to an aggravation of fiscal imbalance.

The basic component of the general government sector, central government, showed negative financial performance over the year, to a total of 12.5bn zloty. Although the fiscal deficit snowballed in the first half of 1999, reaching 88% of the planned annual target by the end of June, it was finally held down to a level slightly under that written into the 1999 Budget. The fact that the statutory target was not overshot, despite central government receipts being lower than planned (4.2%)lower indirect tax receipts, 7.7% lower corporate income tax receipts, 6.5% lower customs revenues), was made possible by a policy of cutting back or forgoing certain government expenditures. The cost of servicing the public debt, both domestic and external, was lower than projected (6.3% less), as was the current spending of government institutions (2.1% less), and most particularly capital spending (10.3% less) and personal benefit payments (16.2% less).

The financial situation of central government in the particular quarters of 1999, together with performance against annual plan, is presented in Table 9.

In terms of macroeconomic equilibrium, it is the state of public finances in their entirety that is significant. The reduction in the fiscal deficit in 1999, which dropped to 2.0% of GDP, as against 2.4% in 1998, was

### Table 9

Central government finances, basic categories

		QI	Q2	Q3	<b>Q</b> 4	1999	Performance of
							annual plan (%)
Central govt.	Million zloty	27 747.8	28 785.1	32 432.1	36 946.2	125 911.5	97.4
Receipts	% GDP	20.8	19.7	21.0	20.4	20.5	
Central govt.	Million zloty	36 467.0	31 385.9	32 382.4	38 189.9	138 425.2	97.4
Expenditures	% GDP	27.3	21.5	21.0	21.1	22.5	
Central govt. net	Million zloty	-8 719.2	-2 600.8	49.9	-1 243.7	-12 513.7	97.7
surplus/ deficit	% GDP	-6.5	-1.8	+ 0.03	- 0.7	-2.0	

Source: Ministry of Finance.

accompanied by a parallel growth in the deficits of other components of general government. The unexpectedly high deficits reported by the Social Insurance Fund and the health service represented an additional source of fiscal expansion, one that may be estimated as equivalent to 1.2% of GDP.

The inauguration in 1999 of the reform of the pension system, almost immediately after the relevant Bill was enacted, in the absence of the proper organisational and institutional preparations, caused a drastic decline in the collectibility of contributions to the Social Insurance Fund, with the result that this Fund ran up a deficit estimated at 6.5bn zloty. To secure funding for ongoing payouts of old-age and disability pensions, the Social Insurance Board (ZUS), responsible for administering the Fund, borrowed a total of around 3bn zloty at the commercial banks, drew on a loan from central government (4bn zloty), and financed itself by increasing its liabilities to open-ended pension funds (by year end, ZUS had still not passed on the insurance contributions due to these funds).

Meanwhile, the new system of financing health care and the new institutions operating under that system, the Health Trusts, had also generated a deficit, estimated at some 0.8bn zloty. In addition, in the course of 1999 there was an increase in the outstanding unpaid liabilities of the division "health care". These payables amounted to around 8.2bn zloty at year end, having gone up almost 1.7bn zloty, and constituted 86% of the unpaid liabilities due from central government institu-

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tions. It should be made clear, however, that the growth of this debt was primarily due to the accrual of interest on liabilities originated in previous years.

At the end of 1999, local government showed a negative balance on revenues and expenditure of around 1bn zloty. Although local government institutions had reported a year-to-date surplus of some 3.7bn zloty at the end of the third quarter of 1999<sup>34</sup>, that surplus was used up in the fourth quarter, which is generally a period of heavy spending, especially in settling payment for the performance of capital investment contracts.

The total public sector financial deficit for 1999 amounted to some 20.8bn zloty, i.e., around 3.4% of GDP<sup>35</sup>. This signifies that the role of general government as a source of domestic disequilibrium heightened considerably. Thus, general government finances had an adverse effect on the level of domestic savings. The increase in the public sector financial deficit in 1999 lowered these savings to a larger extent that in 1998 – by an additional 0.4% of GDP (cf. Table 10).

The financial difficulties experienced by the consolidated public sector in 1999, particularly by ZUS and the Health Trusts, had the effect of making fiscal policy less restrictive. The end result was that fiscal policy proved to be overly expansionary and served as a greater stimulus to domestic demand than had been projected at the beginning of the year. The more negative impact of the general government sector in generating domestic

	, <i></i>	,,,,	(,,,,,,,
	1998	1999	
Net surplus/ deficit, central govt.	-2.4	-2.0	
Net surplus/ deficit, special-purpose funds	0.1	-1.1	
Net surplus/ deficit, Health Trusts	-	-0.1	
Net surplus/ deficit, local govt.	-0.3	-0.2	
Net surplus/ deficit, general govt. sector	-2.6	-3.4	
Contribution to 2nd pillar of pension system	-	+0.4	
Effect on domestic savings	-2.6	-3.0	

 Table 10

 Net surplus/ deficit, general government, by component (as % of GDP)

Source: NBP calculations based on figures from Ministry of Finance and Agency for Pension Fund Supervision (UNFE).

<sup>&</sup>lt;sup>34</sup> Figures from the Ministry of Finance on the year-to-date finances of local gov-

ernment institutions at the end of the third quarter of 1999. <sup>35</sup> Ministry of Finance figures.



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demand, mainly consumer demand, was one of the factors behind the marked acceleration of inflation in 1999.

In addition, the high level of privatisation receipts, drawn substantially from foreign savings, contributed to furthering external disequilibrium in 1999, one factor in this being the appreciation of the zloty in periods when the inflow of foreign capital was stepped up.

# External disequilibrium and inflationary threats

A deficit on the current account attests to the utilisation of foreign savings within the economy, which is contingent on the one hand on a need for foreign funding to finance the surplus of domestic investment over domestic savings, and on the other by a willingness of foreign agents to provide this funding. The Polish economy has fulfilled both of these conditions in recent years, with the result that this deficit has been widening.

In 1999, a large increase was seen in the utilisation of foreign savings within the Polish economy in comparison with the two previous years. The deficit on the current account was some USD 4.8bn higher than in 1998 (this shortfall had risen USD 2.9bn and USD 2.5bn in the years 1997 and 1998, respectively). With the economy growing more slowly, the ratio of the current deficit to GDP deteriorated seriously, coming to 7.6%, as against 4.3% in 1998.

A major question is whether the ratio of the current deficit to GDP can still be considered safe for the economy. The experience of countries that have suffered financial crises indicates that there is no rigidly defined safe limit for utilising foreign savings within a given economy. The determining circumstances here include such factors as the stage of economic development and the associated structural features of the economy, the current state of business activity, the condition of the domestic banking system, and the credibility of government macroeconomic policies. An important indicator is the relationship of official reserves to short-term debt. The above considerations also determine the terms on which external disequilibrium is financed. In the case of countries in the process of systemic transition, a major source of finance are revenues from the privatisation of domestic enterprises.

The root cause of Poland's current deficit is the gap between the investment requirements of an economy in transition and the capacity to finance these requirements from domestic savings. The deepening shortfall on current transactions is encouraged by the growing surplus on the capital transactions of the balance of payments, a consequence of Poland being given access to international capital markets and also of the rising contribution made by foreign capital in recent years to financing the deficit of general government. On the one hand, this has made it possible to fund the broadening gap between domestic investment and savings. On the other hand, the rising influx of capital since 1995, in fuelling zloty appreciation and generating pressure for import growth, has accentuated the external disequilibrium of the Polish economy.

The analyses conducted by some economic research institutions indicate that the deficit on Poland's merchandise trade - the most important item in the current account of the balance of payments - is to a certain degree structural in nature<sup>36</sup>. Research has shown that Polish exports are increasingly based on supplying products with sales markets easily accessible to competitors and susceptible to changes in the business cycle. At the same time, the unit consumption of imports within the Polish economy is rising swiftly, with a rapidly swelling share of Polish imports being goods with sales markets that offer restricted access to new producers and are highly resistant to changes in the business cycle. The figures available for ratios depicting the share of exports in industrial output and the import penetration of Polish markets for industrial goods show that over the years 1995-98 the first of these ratios increased only slightly, from 22.3% to 23.4%, while the second rose from 26.2% to 34.6%<sup>37</sup>. Import growth in recent years has also been supported by the distinctly slower growth of import prices in relation to prices on the domestic market.

Statistical analysis indicates that imports respond much faster to movements in exchange rates. The

<sup>37</sup> The ratio of import penetration expresses the following relationship:

imports output - (exports+imports)

<sup>&</sup>lt;sup>36</sup> See: Zagraniczna polityka gospodarcza Polski 1998-1999 (Polish foreign economic policy, 1998-1999), Instytut Koniunktur i Cen Handlu Zagranicznego, Warsaw, 1999; Polski handel zagraniczny w latach 1998-1999 (Polish foreign trade, 1998-199) Instytut Koniunktur i Cen Handlu Zagranicznego, Warsaw, 1999; Mieczysław Nasiłowski, Przyspieszony wzrost gospodarczy i jego zagrożenia w Polsce (Accelerated economic growth and the dangers it poses in Poland), Studia i Prace, Kolegium Zarządzania i Finansów, SGH, Warsaw, 1999.

strongest and most significant relationship between real effective exchange rates and export volumes are observable with a time lag of three quarters, while the corresponding reaction of import volumes is visible within the same quarter (cf. Figs. 56 & 57). In the 1990s, this fact represented a major impulse to import growth, given the relatively strong real appreciation of the zloty and the ongoing deregulation of imports.

Thus, it will not be possible to eliminate external disequilibrium in the years immediately ahead in the context of continuing structural change, a growing inflow of foreign capital, and the rising consumption requirements of the general public. However, difficulties may emerge in financing the resulting deficit, now running high, particularly once the incoming stream of foreign currency funding associated with privatisations is exhausted.

The increase in the current deficit has been going on since 1996, despite macroeconomic policy gradually becoming more restrictive. A reversal of this trend was visible in the first eight months of 1998, yet this was interrupted by the external supply shock produced by the financial crisis in Russia and the slackening of domestic demand growth in Western Europe. This was then exacerbated by the relaxation of macroeconomic policy in 1999.

For a large part of 1999, due to the continuing repercussions of the Russian crisis, the factors conditioning external demand did not favour a rise in Polish exports. The index of external business activity fell to 1.60% in 1999, as against 1.87% in 1998<sup>38</sup>. Import growth was markedly weaker in the countries of the euro area; for example, these countries increased their imports 3.7% in the first quarter of 1999, compared to 13.3% in the first quarter of 1998<sup>39</sup>. In Germany, the region's largest economy, GDP growth in 1999 came to 1.4%, as against 2.2% in  $1998^{40}$ . Over the first three quarters of the year, import demand growth here ran lower than it had in 1998; for example, import growth indices for the first and second quarters of 1999 stood at 3.2% and 3.4%, respectively (on an annualised basis), while in the corresponding periods of 1998 they had come to 9.2%

 $<sup>^{38}</sup>$  Calculated on the basis of real GDP growth in the 17 countries taking the largest proportion of Polish exports, weighted by their share of those exports.

<sup>&</sup>lt;sup>39</sup> DIW, Wochenbericht 13/2000.

<sup>&</sup>lt;sup>40</sup> DIW, Wochenbericht 8/2000.





Figure 56 Indices of import volumes & real exchange rates (corresponding quarter previous year = 100)

Source: NBP calculations based on GUS figures.





Source: NBP calculations based on GUS figures.

# The impact of monetary policy

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Changes in monetary policy can influence the current account balance via the income effect and the substitution effect. In a rising interest rate environment, the income effect triggers a decline in domestic expenditure and income, and thus also a fall in imports and an improvement in the balance of payments. At the same time, rising interest rates reinforce rate disparities, which may lead to a stronger inflow of portfolio investment and an appreciation of the domestic currency, along with a shift in domestic demand towards imported goods and services, which is the crux of the substitution effect.

on the current balance

Since these two effects work in opposite directions, the final – short-term – impact of a rise in interest rates on the current account depends on which of the two is stronger, a question which is in turn contingent on market conditions and the specific character of a given economy. The heightened risk associated with portfolio investment in the country concerned may neutralise the workings of the substitution effect. However, it would appear that in most small and open economies marked by a low level of monetisation, where the risk premium remains stable, the substitution effect is more powerful. In this situation, raising interest rates may in the short run cause an increase in the current deficit. Over the long term, with the money supply remaining neutral, monetary policy does not influence any real economic categories, and therefore neither does it impact the current balance.

The large current account deficit in Poland is to a large degree the effect of structural factors independent of monetary policy. Efforts to reduce that deficit should therefore primarily seek to intensify structural reforms that will improve the competitive position of business organisations. In terms of macroeconomic policy, tightening the fiscal stance is the sole tool liable to be effective in reining in the current deficit. The fundamental task of monetary policy is to contain inflation. Imposing other responsibilities in this area necessarily gives rise to a conflict of policy objectives, inevitably undercutting the effectiveness of monetary policy and undermining the credibility of the central bank.

> and 10.6%. The worsening conditions for Polish exports to the euro area in 1999 were also linked to the substantial weakening of the single currency against the US dollar. At the same time, the depreciation of the euro cut the cost of goods imported from EMU, which helped speed up growth in those imports. The result of the euro softening on world markets was that the zloty gained against this currency; the appreciation of the Polish currency relative to the euro in 1999 came to 2.9% in real terms (December-on-December, adjusted by reference to producer price growth in manufacturing).

> In Russia, despite a clear acceleration of growth in industrial output, domestic demand remained weak, with real domestic demand growth coming to a negative 6.8% in 1999, following a negative 9.6% in 1998<sup>41</sup>.

<sup>41</sup> Emerging Markets Economics Quarterly, Goldman Sachs, March 2000.

# The impact of the Russian crisis on Polish foreign trade

The Russian financial crisis of August 1998 had very wide-ranging implications, not just for Russia itself, but also for the country's broader economic surroundings. As a result of the profound depreciation of the rouble against the dollar (falling to some 25% of its value), allied with a sharp fall in personal incomes, import demand on the Russian market dwindled drastically. In Q4 1998, Russian imports were down some 57% year-on-year, while real personal incomes had fallen 30% and GDP 7.8%<sup>\*</sup>. Due to the maintenance of close economic links between Russia and the other economies of the former USSR<sup>\*\*</sup>, symptoms of crisis spread to other Eastern markets, including those directly bordering Poland, which play an important role in Polish exports. OECD figures for 1997 and 1998 indicate that, of the three largest CEFTA economies, Poland had the relatively strongest connections with Russia as a sales market \*\*\*\*.

The consequences of the supply shock from the East hit Polish exports exceptionally hard. The ensuing plunge in exports affected both registered trade and cross-border trading together with trading at open-air markets.

Customs statistics for 1999 indicate that, in dollar terms, Poland's exports to the countries of the former Soviet Union fell over 34% in 1999 compared to 1998, with those to Russia down almost 56%. The gravity of this decline is reaffirmed by the fact that over the period January-October 1998 the volume of exports to all the countries of Central and Eastern Europe dropped 16.4% year-on-year. Whereas the CIS countries still accounted for around 16% of Polish exports in 1997, with Russia taking 8.4%, by 1999 the corresponding figures were 9.3% and 2.6%.

The impact of the Russian economic crisis on Polish exports proved stronger than is suggested by the downward trend in Russian imports overall. Thus, while Russian imports from countries outside the CIS went down 45% in the first half of 1999, those from Poland sank almost 73%. Factors behind the relatively high sensitivity of the Polish economy to the effects of crisis in the largest economies of the ex-USSR include the high diversification of exports in terms of the number of exporters involved and also the competitiveness of the Polish goods on offer \*\*\*\*\*. Polish deliveries to Eastern markets are predominantly the domain of small and medium enterprises (in 1997, there were 6,763 companies exporting to Russia, compared to 1,859 importing from Russia). While total exports to CIS markets rose 30% in 1997 (compared to 1996), those from the private sector went up nearly 47%. The subsequent collapse of trade stemmed from the following:

- for most of the small businesses concerned, the Eastern market was their sole sales market, and the relatively low competitiveness of their goods prevented them from replacing their customers with ones from the EU or even the CEFTA countries;
- the trading partners which these businesses had in the East were mostly firms of similar size, and it was these firms which were worst affected by the crisis and the resultant paralysis of trade settlements;
- the structure of exporting organisations described above, coupled with the highly disparate character of the goods being exported eastwards, constituted a major obstacle to increasing barter trade with Russia due to the low diversity of the goods available from Russia in return.

An important factor that reinforced the downward trend in exports to Eastern markets was the imposition of stricter restrictions on commerce, both by Poland's partners (pursuing anti-import policies) and by Poland itself (tightening controls on Eastern borders). The slump in Polish merchandise exports to Russia was also related to competition from cheap Asian goods and subsidised EU foodstuffs, and also to humanitarian aid from the EU and USA in the form of food supplies. Estimates from the European Commission put EU food exports to Russia at EUR 5.5bn in 1999, compared to EUR 3.7bn in 1998. This rise in exports involved all categories of foodstuff.

The pattern of Polish exports to CIS countries (in 1997, the year trade grew fastest) was dominated by the fol-

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lowing categories: chemical products (22.3%), agricultural and food products (19.4%), mineral products (19.9%), engineering products (10.2%), furniture and lighting equipment (9.7%), and textiles, clothing and footwear (7.4%). As regards exports to Russia, by far the greatest component of these were foodstuffs (42.7%), particularly processed meat, chocolate, and fruit and vegetable products, followed by chemical products (17%), engineering products (11.6%), and furniture and lighting equipment (10.9%).

The effect of the Russian crisis was a decline in Polish exports in virtually all the categories mentioned above, although the scale of this decline varied by particular product category and market. In 1998, the sharpest fall in exports occurred in processed foodstuffs, down 40.5% compared to 1997 by US dollar value, in chemical products, down 36.6%, and in miscellaneous finished goods (including furniture), down 35.5%. The year 1999, especially the first half, brought a consolidation of the downward trend in exports in most of these product categories. For example, over the first nine months of 1999, the volume of exports to Central and Eastern Europe decreased most markedly in the following classes of merchandise \*\*\*\*\*: confectionery products (down 81% on the corresponding period of 1998), processed fruit products (down 60%), bakery products (down 56%), processed meats (down 57%), frozen fruit (down 33%), and cosmetics (down 26%). The end result was that the years 1998 and 1999 witnessed a fall of quite dramatic proportions in Polish food exports to the CIS countries (down almost 70% in 1999 compared to 1997), a slump in eastward sales of furniture (with a drop in miscellaneous finished goods of 57%), and a 44.6% decrease in exports of chemical products (an important component of these being pharmaceuticals). The decline in exports of crop products to the countries of the former Soviet Union, which was the smallest in relative terms (down just 1.7% in 1999 compared to 1997), is mainly attributable to the rigidity of demand for this category of foodstuff. The steep fall in Polish exports to Eastern markets of prepared foodstuffs and chemical products, which was not cushioned by offsetting exports to the EU, caused a contraction in overall exports in the industries concerned, with exports of prepared foodstuffs going down 40.4% in the years 1998-99, and those of chemicals and related products dropping 20.5%.

It is estimated that the slump in exports to Russia alone increased the trade deficit in 1998, as reported by GUS, by some USD 560-760m. In 1999, this effect was substantially greater, equivalent to USD 1,450-1,960m.

\* "Mify i uroki avgustskovo krizisa", Voprosy Ekonomiki no.10, 1999.

\*\* For example, Russia constitutes the largest sales market and source of supply for the other largest CIS economies, Ukraine and Byelorus, with Russia's share of these countries' foreign trade in 1997 coming to some 67% and 87%, respectively.

Against a background of stricter protection of the Russian domestic market, this considerably limited its import potential. The deteriorating conditions for trade with Poland's Eastern neighbour, which most conspicuously produced a reduction in the volume of purchases in unregistered trading, were also aggravated by the strong depreciation of the rouble against other currencies. In nominal terms, the rouble lost an annualised average of 63.6% against the zloty during 1999 (com-

<sup>\*\*\*</sup> Monthly Statistics of Foreign Trade, OECD, November 1999. In the years 1997 and 1998, Russia accounted for 8.4% and 5.7% of Polish exports, respectively, as against 3.4% and 2.5% of Czech exports and 5.1% and 2.9% of Hungarian exports.

<sup>\*\*\*\*</sup> Stan i perspektywy polsko-rosyjskiego handlu na tle sytuacji gospodarczej Rosji (Polish-Russian trade: state and prospects in the context of Russia's economic condition), Instytut Koniunktur i Cen Handlu Zagranicznego, Warsaw, 1999; J. Rutkowski, Stan i perspektywy polsko-rosyjskich stosunkow gospodarczych na tle kryzysu gospodarczego Rosji (Polish-Russian economic relations: state and prospects in the context of Russia's economic crisis), mimeo typescript, March 1999.

<sup>\*\*\*\*\*</sup> Data on trade volumes by class of merchandise are only available for Central and Eastern Europe as a whole.


pared to depreciation of 22.8% in 1998). In real terms, adjusted by producer price growth, the rouble fell 52.3% against the zloty over the year (compared to 20.5% in 1998).

Movements in real effective exchange rates for the zloty against the most important currencies in Polish foreign trade point to the competitiveness of the Polish economy improving in 1999 compared to 1998. In 1999, the index of real effective zloty exchange rates, as adjusted by reference to movements in manufacturers' producer prices, fell 2.0%, while as adjusted for consumer price growth it remained at the previous year's level; in 1998, these indices had risen some 2.3% and 4.1%, respectively. On an average annualised basis, real zloty exchange rates dropped 4.2% when adjusted by manufacturers' producer prices, and 3.2% when compared to consumer prices (cf. Fig. 58). When the Russian rouble is also included in calculations, the index of real effective zloty exchange rates shows a slightly sharper fall in 1999 (cf. Box 7).

> Figure 58 Real effective zloty exchange rates, 1993-1999, by quarter Deflators: export prices; manufacturers' producer prices; consumer prices; unit labour costs (January 1993 = 100)



Source: NBP.

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The collapse of trade with the East was an important factor in widening the current deficit. This is borne out by an analysis of movements in the most significant items of the current balance. The largest contribution to increasing the shortfall on the current account, representing almost 50% of that increase, came from the drastic slump in the surplus on unclassified current transactions (down USD 2,360m). Next in importance were services, where net debits rose USD 1,115m, largely due to the loss of revenues from the export of transportation services. Registered merchandise trade, as expressed in US dollars, declined substantially in terms of both exports and imports. Export receipts amounted to some 88% of those obtained in 1998, while import payments stood at around 93% of the previous year's level. The negative

### The influence of rouble/zloty exchange rates on indices of competitiveness

The indices of real effective zloty exchange rates previously compiled at the NBP considered only the currencies of the USA and Poland's most important trading partners in Western Europe. However, given the increasing significance of Russia in Poland's foreign trade until that country's crisis of 1998, and the negative effects of that crisis for Polish exports, the indices of both nominal and real effective zloty exchange rates have been modified. In addition to the currencies already included, these indices now additionally incorporate the Russian rouble.

The rouble has twice been sharply devalued since 1994. Although assigned a relatively minor weight in the indices, the inclusion of the rouble in examining effective zloty exchange rates yielded considerable differences in measurements of the competitive position of the Polish economy. Over the entire period investigated (1994-99), the index of nominal effective zloty exchange rates showed relatively smaller zloty depreciation when the rouble was included. By contrast, the index of real exchange rates, adjusted by reference to producer prices, displayed similar movements when the rouble was included to the index based solely on Western currencies, yet the scale of zloty appreciation was clearly reduced (cf. figure below). The disparities stem from the real appreciation of the rouble against other currencies, and the accentuation of these disparities in particular periods is linked to the relatively strong rise in the rouble on the currency markets and periods of accelerated inflation in Russia. The largest divergence between the indices occurs in 1997-98, prior to the crisis in Russia, when the rouble was strengthening against the zloty and other foreign currencies, while price growth in Russia was running high. As a result of turmoil on the Russian currency market, August 1998 saw a steep depreciation of the rouble and a parallel drop in market exchange rates for the zloty. However, in the indices of effective zloty exchange rates that incorporate the rouble, these sharp movements are cushioned by the weakness of the Russian currency, since the depreciation of the rouble signifies the appreciation of the zloty relative to that currency. In this situation, the slump in the value of the rouble by over 50% in September 1998 relative to the preceding month had the effect in the relevant indices of reducing the effective nominal depreciation of the zloty to 2.6% and real depreciation to 2%. By contrast, in the indices based exclusively on Western currencies, the respective values were 4.4% and 3.8%.



Source: NBP calculations.

Due to the stabilisation of the Russian currency market in 1999, rouble exchange rates no longer had the same impact as in 1998 on the indices of effective zloty exchange rates. However, thanks to the real appreciation of the rouble, an analysis of changes in Poland's competitive position (December-on-December) indicates that the inclusion of the rouble improved that position by almost 1 point more than in the traditional index.

balance on merchandise trade came to USD 14.4bn, a figure USD 726m higher than in 1998.

Figure 59 shows that the downward trend in foreign trade began in mid-1998<sup>42</sup>. With respect to exports, the decline in receipts persisted, and even accentuated, in the first half of 1999, with the quarterly decrease coming to 6% - 7%. The third quarter saw this negative trend level off, while the fourth brought a 7.5% increase in receipts. As regards imports, on the other hand, an upward trend had asserted itself by the third quarter of 1999. In the fourth, imports went up some 3%. It should be stressed, however, that the trade deficit derived from the underlying trends is considerably

 $<sup>\</sup>frac{42}{42}$  Trend component obtained by eliminating seasonal and incidental fluctuations from original data.



Figure 59 Foreign trade, balance of payments basis

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Figure 60 Trade deficit, balance of payments basis



Source: NBP calculations.

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Figure 61 Movements in foreign trade, by volume (corresponding month previous year = 100)

smaller than the deficit actually recorded in NBP statistics (cf. Fig. 60).

Another major cause of slower trade growth in 1999 in US dollar terms was the strong appreciation of the dollar in relation to the euro. In both exports and imports, the resultant change in cross rates yielded a decline in growth of over 3 percentage points.

GUS data on the volume of foreign trade clearly point to a steady reduction in negative growth in the first half of 1999, with respect to both exports and imports. A distinct rise in trade volumes was then visible from August onwards, although in the fourth quarter this had a more powerful effect on imports (cf. Fig. 61). This positive tendency in Polish export performance was accompanied by an upturn in import demand in the euro area. In the fourth quarter of 1999, this region's imports grew almost 8% (on an annualised basis), compared to an increase of 5.5% in the corresponding period of 1998. The respective figures for the German economy were 7.1% (Q4 1999) and 4.9% (Q4 1998)<sup>45</sup>. Customs statistics compiled by value demonstrate that Polish exports to both the EU as a whole and Germany in particular gathered speed in the fourth quarter of

<sup>&</sup>lt;sup>43</sup> DIW, Wochenbericht 8/2000 & 13/2000.



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1999, although still remaining at a lower level than in the fourth quarter of 1998.

Eurostat figures for Polish exports to the EU show an 8% increase in 1999 (by euro value). However, this growth was well below that recorded in exports from Hungary (up 18%) and the Czech Republic (up 15%). The relatively more feeble response of Polish exports to the upswing in the euro area in the second half of 1999 largely stemmed from the structural weakness of those exports.

GUS data for the first three quarters of 1999 indicate that oil imports had a relatively modest influence on the deterioration of visible trade performance<sup>44</sup>. From January to September, the volume of crude oil imports rose 0.8% year-on-year, while import volumes of petroleum oils, petrol and kerosene declined 2.2%, and those of the remaining refined petroleum products fell 12.4%. All of the above imports were subject to dollar price increases. Average crude oil prices went up 11%, prices for petroleum oils, petrol and kerosene rose 6.4%, and those for the remaining refined petroleum products climbed 17.1%. The combined effect of these changes was that imports of oil and petroleum products over the first nine months of 1999 increased the trade deficit (as reported by GUS) by USD 130m relative to the corresponding period of 1998.

In judging whether the level of the current deficit may be considered safe in terms of the stability of the domestic financial system, an important factor is how that deficit is financed. In Poland, recent years have seen foreign direct investment play a consistently large role in financing the deficit on current transactions. This is mainly linked to the growing contribution of foreign revenues from privatisation in funding the general government deficit. This circumstance seriously distorts the perception of foreign investors as to the danger of a currency crisis and causes portfolio investment to flow inward despite the high and rising level of the current account deficit. During the period of privatisation, the interim substitution of a decrease in the stock of (internationally) marketable Treasury assets for an increase in Poland's external indebtedness understates the ratio of debt to official reserves. In parallel with this, the influx of foreign investment connected with the intensification

 $\overline{^{44}\,\text{GUS}}$  data for 1999 as a whole will be available at the end of May 2000.





Figure 62 Financing of 12-month current deficit by FDI, 1998-1999

of privatisation temporarily raises the proportion of the current deficit funded by incoming FDI.

In 1999, with the current deficit growing substantially, there was a sharp decline in the share of this deficit covered by direct investment, taking this ratio down to 58% from around 75% in 1998 (cf. Fig. 62).

In addition, there was also a deterioration in the coverage ratio representing the funding of the current deficit by the most stable component of foreign investment, namely, equity investment; this dropped from 51% in 1998 to 37% in 1999. Given that a large part of the inflow of foreign capital in the form of direct investment consists in privatisation receipts, and that this source of financing for domestic expenditure will gradually dry up, an estimation has been made of the scale and growth rate of non-privatisation investment, based on balance of payments statistics<sup>45</sup>.

In the years 1996-98, the value of non-privatisation investment remained at a similar annual level (cf. Fig. 63). Both in 1998 and 1999, over 60% of net revenues from this source were obtained in the second half of the

 $<sup>\</sup>frac{45}{10}$  To this end, privatisation receipts and drawings of direct investment debt were deducted from inward foreign direct investment. The level of privatisation receipts was estimated on the basis of data obtained from the Ministry of the Treasury concerning sales of companies where the proceeds amounted to at least USD 20m.

NBP

Figure 63 Composition of net FDI



Source: own calculations based on figures from NBP and Ministry of the Treasury.

year. In 1999, the net capital inflow generated by foreign non-privatisation investment amounted to some USD 1,500m, while privatisation receipts totalled around USD 2,800m. In comparison to 1998, the net inflow of non-privatisation investment seriously diminished in 1999, going down a large 30%, while privatisation receipts went up more than 100%.

In view of the above, the proportion of the current account deficit financed by incoming non-privatisation investment (excluding borrowings from foreign investors) shrank considerably in 1999, standing at some 13% compared with around 31% in 1998.

Table 1	1

Financing of current deficit by incoming foreign capital: FDI & non-privatisation investment

	1997	1998	1999
Foreign direct investment	71.6%	74.8%	58.0%
Non-privatisation investment	26.1%	31.1%	12.8%

Source: NBP and Ministry of the Treasury.

To summarise, it has to be concluded that the rise in the current deficit to 7.6% of GDP in 1999 did not undermine the stability of the domestic financial system. Nonetheless, a further exacerbation of external disequilibrium, particularly in the light of the calculations presented above, would substantially heighten Poland's vulnerability in the event of a sudden outflow of capital and destabilisation of the currency market, which could prevent performance of the medium-term inflation target. Owing to the low effectiveness of monetary policy in terms of improving equilibrium on the current account, this task is one that should be primarily assigned to fiscal, incomes and structural policies.

#### Aggregate supply

The decline in foreign demand resulted in a slowdown in Poland's economic growth, especially in the first half of 1999. Economic growth was lower than in 1998, although in contrast to that year, when growth was seen to flag gradually, growth in 1999 began to pick up as of the second quarter. This was the result of industrial performance, particularly in the second half of the year. The growth in value added in industry was higher than in the previous year (4.7%, as against 4.3%). Value added fell sharply in construction (down to 3.8% from 9.1%), while slipping slightly in commercial services (to 4.6%, as against 4.8%). The growth in value added in agriculture, strong in 1998, now slowed.

Industrial output, having fallen in the fourth quarter of 1998 and the first months of 1999, began rising from March onwards. As a result, following a first-quarter year-on-year decline of 3.1%, output at companies employing more than five persons went up 1.2% in the second quarter, 7.4% in the third and 11.7% in the fourth, thereby showing 4.4% growth over the year as a whole. With average employment down 4.4%, labour productivity, as measured by industrial sales per employee, rose some 9%.

Output growth was slower than in 1998 in manufacturing, while faster in electricity, gas and water supply. The decline in production recorded in mining and quarrying was less severe. In manufacturing, the most rapid output growth, as in 1998, was reported by companies mainly producing capital equipment (up around 7%, as against some 8% the previous year). Growth was faster in those sectors manufacturing production supplies (around 6%, as against some 4%), yet slower in those manufacturing consumer goods (around 4%, as against some 8%).

The level of output in those divisions and groups of manufacturing considered to be in the forefront of technological progress was 12.2% higher than in 1998. Strong output growth was seen in "electrical equipment not elsewhere classified", motor vehicles, office machinery and computers, and lighting equipment. Output fell in pharmaceuticals. As regards other divisions, the swiftest growth in 1999, as was the case in 1998, was in publishing and printing, plastic products, and in wood and wood products. Those divisions of manufacturing with the most rapid output growth were also those reporting the greatest gains in labour productivity.

At construction companies employing a staff of more than five, output in 1999 was up 3.2% compared to the previous year (in 1998, the increase had been 11.6%). This slower output growth stemmed from a considerably lower increase in capital construction and modernisation works than in 1998 (up 3.1%, as against 14.2%), with a lesser decline in the increase in repair and maintenance works (up 3.5%, as against 6.0%). In the first quarter of 1999, construction output was lower than in the corresponding period of 1999, but in the next quarters of the year it surpassed the previous year's figures.

The increase in value added in commercial services was the result of:

- higher sales margins at retail and wholesale firms, which recorded turnover well above that of the previous year;
- a slight rise in sales revenues in transport, despite lower traffic;
- higher sales of communications services (up 25%), with especially strong growth in telecommunications services;
- a further expansion of the activity of banks and insurance companies, and of companies providing business services and engaged in real estate activities.

Preliminary estimates indicate that gross agricultural output declined 5.6%, slipping back to the level recorded in the years 1995-97. Crop output was down 8.4% on 1998, while livestock production was down 2.1%. With a further increase in the consumption of internal production inputs, final output fell more sharply than gross output. A continuation was seen in the tendency prevailing since 1995 for the share of marketed output in final output to increase.

The fall in gross agricultural output was traceable to lower grain production (down 5.7% on 1998), and exceptionally poor crops of potatoes (down 23.2% on 1998 and 24.6% on average crops in the years 1993-97) and sugar beet (down 15.7% and 14%, respectively). Also smaller were the harvests of field vegetables (down 11.3%) and fruit (6.4%), both of which play a large role in supplies to the domestic market and in overall foodstuff prices.

## Trends in corporate costs and their impact on prices

In 1999, the corporate sector continued to suffer from high cost/output ratios. This continually induced companies to raise factory-gate prices to support profit margins. Each suitable development on the market elicited a response in the form of higher producer prices, which then fuelled consumer price growth. The third quarter of 1999, which saw an acceleration of economic growth and an upturn in industry, one reason being that domestic demand was running higher than in the preceding quarters, offered conditions particularly conducive to companies passing on higher production costs to the consumer. It can therefore be concluded that costdriven growth in producer prices – principally the result of supply shocks, particularly evident on the market for fuels - contributed to the faster consumer price growth recorded in the second half of 1999.

In the first quarter of 1999, the financial condition of the corporate sector was marked by a maintenance of the negative tendencies obtaining in 1998<sup>46</sup>. Corporates reported adverse financial performance in the first quarter (negative net earnings) in both sectors of ownership and virtually all sections of activity. In the second quarter, the

<sup>&</sup>lt;sup>46</sup> The figures cited in this section refer to companies that maintain books of account and submit quarterly financial statements to GUS using the F-01 form. The companies in question employ in excess of 50 people in the sections of mining and quarrying or manufacturing, or in excess of 20 people in other sections. The figures do not refer to the performance of companies in agriculture, hunting, forestry, or inland or marine fisheries, nor of banks, insurance companies or universities and colleges. At year end 1999, the number of companies thus defined totalled 27,194. Compared to year end 1998, this represents an increase of 1.5%.

earnings of industrial companies were markedly better, resulting in an improvement in their performance ratios. In the third quarter, however, the financial condition of the corporate sector as a whole once again deteriorated. Although net earnings in this quarter were still positive, they represented a mere 9.6% of those generated in the second quarter. The fourth quarter then brought a repetition of the situation in the first quarter of the year, with overall corporate sector net earnings again negative. Indeed, companies now showed losses 18.4% higher than in the first quarter. Over the entire year, however, the corporate sector reported a net profit, chiefly thanks to the earnings achieved in the second quarter. Nonetheless, it has to be borne in mind that corporate performance over the period January-December 1999, as measured by net profit, was more than ten times worse than in the corresponding period a year earlier.

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In 1999, it was the level of costs incurred that was the determining factor in corporate sector profitability. Over the twelve months as a whole, ratios of total cost/total revenues averaged 98.8% (as against 98.1% in 1998)<sup>4/</sup>. These went up considerably in most sections and divisions of activity, exceeding 100% in some; these ratios were particularly high in the section of mining and quarrying (110.9%) and in the divisions of "land transport; transport via pipelines" (110.2%) and manufacture of metals (108.4%). The problem of cost levels in corporate business operations became especially acute in the second half of the year, finding expression both in the growth of costs and in cost/sales ratios. The improvement in cost factors seen in the second quarter of 1999 was thus short-lived and - as it turned out exclusively attributable to increases in producer prices.

In industry, which accounts for some 66% of revenues from sales of goods, the growth in cost of goods sold has for some time now being outpacing that of revenues from the sales of those goods. This was temporarily reversed only in the first half of 1999, which was clearly linked to industrial producer prices trending upwards (cf. Fig. 64). This was also reflected in the incidental slips in cost/sales ratios observed within industry between January and June (taking them down as far as 95.7%), compared to those seen in the twelve months of

 $<sup>\</sup>frac{47}{10}$  The remarks further presented in the present section refer to year-to-date values. Growth is analysed with reference to the corresponding period of the previous year.





Figure 64 Growth in corporate revenues & costs and in producer prices, industry, 1996-1999 (corresponding period previous year = 100)

Source: *Biuletyn Statystyczny* (Statistical Bulletin), GUS, Warsaw, 1996-2000, and individual GUS figures; aggregation & calculations by NBP.

1998  $(97.7\%)^{48}$ . However, over the whole of 1999, cost/sales ratios averaged a high 97.8%. In most divisions of industry, cost/sales ratios ran below the critical value of 100%.

The tendency for producer prices to go up more rapidly, which emerged in the second quarter of 1999, was also maintained in the third and fourth quarters (cf. Fig. 65). This applied both to industry as a whole and to each of its three sections. This represented a new situation, the opposite of the previous trend (began at the beginning of 1996), whereby producer price growth declined steadily. Furthermore, over the first three quarters of the year, both in industry as a whole and in the sections of manufacturing and of mining and quarrying, producer price growth rose faster than the growth in sales revenues, indicating difficulties in finding customers for the goods being produced.

<sup>48</sup> The cost ratios analysed here do not refer to total business operations at companies, but to the most important area of those operations, particularly for industrial companies, i.e., sales of goods. The two types of ratio stand at differing levels in the same period, although in industry the ratio of total costs/total revenues is generally much worse than that of cost of goods sold/sales (the cost/sales ratio).



#### Figure 65

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Producer price growth, by section of industry, 1996-1999 (corresponding period previous year = 100)



Source: Miesięczna informacja o zmianach cen w gospodarce narodowej (Monthly Information on Price Movements in the National Economy), nos. 1, 4, 7 & 10 from the years 1996-1999; Informacje i Opracowania Statystyczne (Statistical Information and Studies), GUS, Warsaw; and Biuletyn Statystyczny (Statistical Bulletin) no. 1, GUS, Warsaw, 2000.

#### Table 12

Growth in sales  $\mathcal{E}$  cost of goods sold, manufacturing, 1995-1999 (corresponding period previous year = 100))

	1-111	I-VI	I-IX	I-XII	1-111	I-VI	I-IX	I-XII	
		19	96			19	97		
Sales revenues	122.9	123.6	123.5	123.3	120.2	122.1	122.7	122.6	
Cost of goods sold	127.0	126.9	126.8	126.0	120.8	122.4	122.6	123.1	
Growth differential (sales to costs),									
pct. points	-4.06	-3.30	-3.30	-2.67	-0.56	-0.23	0.11	-0.50	
		19	98			19	99		
Sales revenues	123.0	9.	115.9	112.2	98.9	103.2	103.3	108.1	
Cost of goods sold	123.2	120.3	117.5	114.0	101.7	102.8	104.9	109.1	
Growth differential (sales to costs),									
pct. points	-0.19	-1.23	-1.53	-1.79	-2.88	0.36	-1.61	-1.07	

Source: individual GUS figures, aggregation & calculations by NBP.



# Table 13Producer price indices & cost of goods sold, selected divisions of industry, 1998-1999

					%	and pct. points
	Pro	ducer	Share of		I-XII 1999	
	Р	rice	industriai			
	growth		output	Cost/sales	Growth	Deviation
	I-XII	I-XII	(I-XII	ratio	differential,	factor**
	1998	1999	1999)		S - C*	
	Corres	ponding			I-XII 19	98=100.0
	period previous					
	year :	= 100.0				
Total industry	107.3	105.7	100.00	(97.7) ↑ 97.8	-0.16	0.7
Manufacture of food products & beverages	106.3	102.9	20.3	(97.5) ↑ 99.3	-1.90	1.3
Manufacture of tobacco products	118.3	111.4	1.0	(90.9) ↑ 91.9	-1.26	7.4
Manufacture of wearing apparel;						
dressing & dyeing of fur	109.4	106.1	2.1	(98.7) ↑ 99.7	-1.03	1.0
Manufacture of leather						
& leather products	108.3	106.3	0.7	(101.0) ↑101.2	-0.18	-2.1
Publishing & printing	106.8	104.6	3.1	(91.9) ↓ 91.1	1.10	3.6
Manufacture of coke,						
refined petroleum products & derivatives	105.3	124.5	3.9	(94.3) ↑ 96.4	-2.70	16.3
Manufacture of fabricated metal products,						
except machinery & equipment	105.8	103.7	4.1	(96.0) ↓ 95.5	0.61	-1.5
Manufacture of radio, television						
and communication equipment & apparatus	105.6	106.4	1.9	(93.1) ↓ 92.7	0.45	0.2
Manufacture of furniture; manufacturing						
not elsewhere classified	107.3	104.8	3.4	(96.2) ↓ 95.6	0.69	-0.8
Electricity, gas, steam & hot water supply	109.9	109.6	8.9	(96.4) ↓ 95.4	1.30	-1.9
Collection, purification & distribution of water	110.7	110.9	1.0	(98.2) ↓ 97.5	0.81	-1.2

\* Differential between growth in sales revenues and in cost of goods sold.

\*\* The deviation factor represents the difference between the cost deflator for a given division and the producer price index for that division. A positive value indicates cost push pressure on prices. The deflator is a price growth coefficient for particular cost categories calculated using the growth in industrial output volume (corresponding period previous year = 100).

NB: Figures in parentheses refer to I-XII 1998; these serve to illustrate the direction of movement in the cost/ sales ratio.

Source: Biuletyn Statystyczny (Statistical Bulletin), GUS, Warsaw, 1998-2000, and individual GUS figures; aggregation & calculations by NBP.

A particularly large gap became apparent in 1999 in the growth of sales revenues and costs within manufacturing. Both sales revenues and cost of goods sold in this section represent some 82% of those items within industry as a whole (cf. Table 12). It is therefore in the divisions of this section that the sources of excessive costs should be sought. NBP

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Of those divisions of industry producing largely for the consumer market, three witnessed especially sharp producer price increases in 1999 compared to the previous year (above the overall level of producer price growth in industry); at the same time, these divisions made a major contribution to total industrial output (cf. Table 13). The divisions in question were "manufacture of wearing apparel; dressing and dyeing of fur"; manufacture of coke, refined petroleum products and related products; and electricity, gas, steam and hot water supply. Producer price growth in manufacture of food products was one of the lowest in 1999 (up 2.9% on 1998), especially among those divisions particularly impacting the CPI. Yet this division accounted for the single largest share of industrial output (20.3%). In all, the output of the four divisions mentioned above represented 35.2% of industrial sales at year end 1999.

The influence of costs in price growth in 1999 was identified in most of the divisions mentioned. This influence was particularly strong in manufacture of coke, refined petroleum products and related products. During the year, this division registered a very high rise in cost of goods sold (up 24.7%), which – given a 5.4% drop in output volume<sup>49</sup> – meant that the cost deflator was well above the producer price index for this division. This attests to cost push pressure on prices. Apart from energy costs (which came down) all the cost components in this division rose very rapidly (the lowest increase was in total labour costs, up around 11% on the previous year). Factors impacting prices in this division with particular force were the cost of materials and energy, external service costs, and taxes and charges (especially excise duty). Depreciation charges also influenced prices, although to a much lesser extent than the cost components previously listed. Material costs associated with feedstock inputs did not become a more important factor until the fourth quarter of 1999. Thus, there was no justification for claiming that the price rises for liquid fuels carried out in the first half of the year were principally the result of movements in world oil prices.

In the division of manufacture of food products and beverages, developments related to costs in 1999 will affect producer price growth in 2000. This division saw

<sup>&</sup>lt;sup>49</sup> Figures on output volumes refer to companies filing F-01 reports and therefore differ from the values for all companies in industry and the particular divisions thereof published by GUS in its *Biuletyn Statystyczny* (Statistical Bulletin).

a particularly swift rise in production costs associated with VAT, energy, external services and depreciation.

In 1999, the situation obtaining in the divisions of electricity, gas, steam and hot water supply and of collection, purification and distribution of water was exceptionally favourable thanks to the producer price increases that took place. In both of these divisions, the growth in sales revenues was higher than that of cost of goods sold, with neither experiencing a problem of excessive costs. The financial condition of these divisions is a function of the lack of competition and their capacity to dictate prices that will ensure profitability (despite the introduction of ceilings on permissible price growth).

In 1999, rising producer prices in these two divisions, the two components of the section of electricity, gas and water supply, caused a leap in the contribution of this section to overall PPI growth. It is estimated that in 1999 some 17% of the increase in the industrial producer price index was traceable to producer price growth in the section of electricity, gas and water supply, as against some 13.5% in 1998 (cf. Fig. 66)<sup>50</sup>. The contribution made by the remaining two sections of industry thus declined. This decline was relatively larger in the case of mining and quarrying (which accounted for around 7.8% of PPI growth in 1998, and around 5.4% in 1999) than in manufacturing (a decrease from 78.7% to 77.6%). It is worth noting that prices in electricity, gas and water supply had the greatest impact on the PPI up to mid-year. In the first half of 1999, as much as 19.4% of industrial producer price growth is estimated to have been derived from higher prices in this section, compared to some 12% in the same period of 1998.

It is estimated that in 1999 over 44% of industrial producer price growth stemmed from price increases in four divisions: manufacture of food products and beverages; manufacture of wearing apparel and dressing and dyeing of fur; manufacture of coke, refined petroleum products and related products; and electricity, gas, steam and hot water supply. Of these, the largest share in price growth is attributable to the divisions involved in supplying fuels and energy, i.e., to manufacture of coke and refined petroleum products, and to electricity,

<sup>&</sup>lt;sup>50</sup> Estimates of the relative weight of particular sections and divisions of industry in producer price growth refer to the periods January-December, 1998 and 1999. The calculations were performed using weights corresponding to the share of output of a given section or division in total industrial output in the period concerned.

#### Figure 66

Contribution to PPI of producer price movements in particular sections of industry (year-to-date, corresponding period previous year = 100)



Source: *Biuletyn Statystyczny* (Statistical Bulletin) nos. 1/1999 & 1/2000, GUS, Warsaw; calculations & estimations by NBP.

gas, steam and hot water supply (the first accounted for some 16.7% of PPI growth, while the second accounted for around 15.0%). Over the year, manufacture of food products contributed some 10.3% of PPI growth, although this is mainly due to the scale of output in this division (cf. Table 13).

The impact on the PPI of movements in producer prices in these four divisions in the course of 1999 represents a very significant change compared to the situation in 1998. In 1998, the PPI was mainly affected by producer prices in the division of manufacture of food products, which accounted for around 18.3% of PPI growth, with price rises in the division of manufacture of coke and refined petroleum products responsible for around 2.5%. As in 1999, producer price movements in the division of electricity, gas, steam and hot water supply also had a large effect on the PPI in 1998 (contributing some 11.7%), which was related to the maintenance of high and evenly distributed price growth in this division throughout the year (cf. Fig. 67).

Thus, the year 1999 brought worrying symptoms of a deterioration in the financial condition of industrial





Figure 67 Contribution to PPI of producer price movements in selected divisions of industry, 1998-1999 (year-to-date, corresponding period previous year = 100)

Source: *Biuletyn Statystyczny* (Statistical Bulletin), GUS, Warsaw, 1998-2000, and individual GUS figures; aggregation & calculations by NBP.

companies. The persistence for some time of an upward trend in cost/sales ratios, accompanied by high growth in the cost of goods sold, indicates that companies are finding it difficult to compete by controlling and cutting costs. In seeking to improve earnings and raise efficiency, most companies in the first instance put up their factory-gate prices, provided the appropriate opportunity occurs due to movements in domestic or external demand. The opportunities for raising producer prices which the market afforded in 1999 were undoubtedly utilised by some companies to offset costs.

# Labour market, unemployment and incomes

#### Employment

Following a sharp fall in employment within the Polish economy during the initial stage of transition, the year 1995 ushered in a period of growth, which in the years 1995 and 1997 stood as high as 2.8% and 2.9%.

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Figure 68 National employment & unemployment, 1992-1999



Figure 69

Average employment: national, corporate sector & general government sector, 1994-1999



Source: GUS.

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Figure 70 Average national employment by ownership sector, 1996-1999

In 1998, employment continued to rise, albeit at a slightly slower pace than in the previous two years (1.2%). By contrast, the year 1999 brought a fall in average employment of 1.5% compared to 1998 (cf. Figs. 68 & 69).

In the corporate sector, the sizeable increase in employment seen in 1997 subsequently picked up even greater speed, particularly in the first half of 1998, with growth over that year as a whole coming to 1.9%. The projection for 1999 was of another increase, of 1%. However, it was only January and February that saw any slim year-on year growth in employment (0.6% and 0.1%, respectively). In the following months of 1999, a systematic decline in employment took place, resulting in an annual decrease in average corporate sector employment of 1%. The fall in employment stood at 4.4% in industry, 4.4% in transport and storage, and 0.9% in construction (where the years 1997 and 1998 had seen an increase of over 3%). The most drastic reduction in employment occurred in coal and lignite mining, where it slumped 15.2%, mainly due to restructuring, in manufacture of textiles (down 14.5%), in manufacture of leather and leather products (down 16.7%), and in manufacture of metals (down 9.5%).

All the sections of service activity (except transport and storage) registered an increase in employment in

Figure 71 Average national employment by broad sector of activity (1990 = 100)



Source: GUS; division by sector in years 1990-1994 estimated by NBP.

1999, with a rise of 7.7% in wholesale and retail trade and repairs, 9.7% in hotels and restaurants, and 11.2%in real estate and business activities. In 1999, services accounted for 24.3% of total corporate sector employment.

This decline in employment contributed to a decrease in personnel costs as a proportion of total corporate costs, with these coming down from a nominal 31.1% in the first three quarters of 1998 to 27.7% in the corresponding period of 1999 (this refers to companies filing F01 reports). In this situation, output growth was principally the result of productivity gains.

Over the last few years, the structure of employment has altered in Poland, not only in terms of sectors of ownership, with a migration of labour from the public to the private sector, but also due to a shift from production industries to services. These tendencies are depicted in Figures 70 and 71.

Whereas a continuous contraction was recorded in manufacturing employment, a major increase took place in the general government sector, particularly in the civil service (year-on-year growth of 4.5% in 1995, 3.4% in 1996, 5.9% in 1997 and 1.9% in 1998). From 1998 onwards, however, a gradual decrease in general

			thousands
	Total employment	Financially autonomous	General govt.
		institutions	sector institutions
1995	953.1	32.3	920.8
1996	954.6	45.6	909.0
1997	952.9	90.5	862.4
1998	960.0	293.6	666.4
QI-Q3, 1999	936.3	615.7	320.6

Table 14			
Employment in health	& social services	by financing	of institution

Source: GUS.

government employment has been observed, primarily as a result of alterations in funding arrangements for directly financed government institutions, particularly those in health care and social services, which have now become financially autonomous.

Due to the continuation of the reform of health care and social services, by the end of the third quarter of 1999 (annual figures are unavailable), 3/4 of those employed in this section were employees of financially autonomous institutions (cf. Table 14).

#### Unemployment

The impact of unemployment on inflation can work in various directions, depending on the overall economic situation and the specific circumstances of a given country.

Rising unemployment may lead to a reduction in employee wage claims, thereby easing wage pressure on prices. In Polish circumstances, however, this effect is of limited importance due to the structural character of unemployment. The latter is attested to by the differences in the rate of unemployment in particular voivodships, ranging from 9.6% in Mazovia to 22.8% in Warmia and Mazury. Since 1997, a virtually consistent feature has been that over 800,000 jobless, i.e., some 40% of all those unemployed, have been out of work for at least a year, or two years or more. In addition, housing problems are a cause of low labour mobility.

Lower incomes from unemployment benefits than from employment restrict consumption levels in the short term and contribute to restraining price growth. NBP

### Figure 72 Unemployed graduates & school-leavers: numbers & percentage in total jobless, 1990-1999



Source: GUS.

In the longer time frame, with exports running low, the reduction in consumption causes a reduction in output growth, which may result in a further decrease in employment.

Increasing expenditure on unemployment benefits, together with government payment of social insurance contributions on behalf of the unemployed (as of 1999), act to increase the public sector financial deficit.

After a large rise in unemployment in the first years of economic transition (taking it to 2,838,000 at year end 1994), a systematic fall in the jobless total was seen from 1995 until August 1998, when the rate of unemployment hit a low of 9.5%. In subsequent months of 1998 and 1999, unemployment once again went up, reaching 13% at the end of 1999. This represents the combined effect of a number of factors, including an overall slowdown in economic growth and investment, the acceleration of privatisation in many sectors of the economy, and an increase in redundancies as employers' commitments under social contracts concluded during privatisations in previous years now expire.

At the end of December 1999, the number of employees made redundant was 39.1% higher than at the end of December 1998, having gone up 62% during





Figure 73 Unemployed graduates & school leavers by education

Source: GUS.

the year. At the same time, the number of job vacancies is steadily dwindling. Given that at year end 1,800 employers declared their intention to carry out a total of 86,000 redundancies in the near future, with 48,000 in the private sector, a further decline in employment and increase in the jobless total is to be expected.

The number of job seekers is constantly being swelled by new entrants to the labour market from the years of the demographic high. Poland has one of the highest European growth rates in the population of working age (which constitutes 60.5% of the total population) and this tendency will be sustained until the year 2002. From June 1998 onwards, an increase has taken place in the proportion of jobless up to 24 years of age. Figures for the end of September 1999 show that this category at that point represented 32% of all unemployed. In parallel with this, at year end 1999 there were 35.3% more school leavers and new university or college graduates seeking employment than at year end 1998. At the end of September 1999, 10,700 fresh university or college graduates were unemployed, while a year previously there had been 6,300 (cf. Figs. 72 & 73).

With business activity slackening and a simultaneous process of corporate restructuring under way (one objec-

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tive being to lower labour/output ratios, with redundancies almost always involved), the absorption of increasing numbers of school leavers and graduates will not be possible without substantially faster economic growth. This may signify that the number of jobless, including school leavers and graduates, is set to continue rising in the years immediately ahead.

#### Employee earnings and social benefits

An analysis of movements in employee earnings since the beginning of the period of economic transition indicates that, as of 1998, this area has also become subject to market mechanisms. In previous years, the prime factor determining wage growth were public expectations. The collective bargaining system in place since 1995 basically allowed for wage growth irrespective of the financial condition of the enterprises concerned. Wage rises were brought about by powerful workforce pressure, frequently bearing no relationship to company financial performance, with the result that wage growth indices established during collective bargaining were constantly overshot.

In 1999, average employee earnings rose more slowly than in 1998. Preliminary estimates indicate that, for the first time, nominal growth in average monthly employee earnings corresponded to the target projections included in the Budget. Adjusted for annualised average consumer price growth, real wage growth in 1999 stood at around 3% (compared to a projected 2%).

In the general government sector, real wages rose almost 9% during the first three quarters of 1999 (annual figures are unavailable), whereas target growth was 2 points above inflation. It should be noted here that – partly in 1998, although mainly in 1999 – health care institutions, which are characterised by low wage levels, were removed from the system of direct government financing (due to a change in funding provisions). Some of these institutions were taken over by local authorities, which set wages independently, resulting in faster wage growth.

Owing to the swifter rise in government employee earnings, the gap between wages in government and in the corporate sector has narrowed. In 1994, wages at directly financed government institutions represented some 83% of those in the corporate sector, while in 1999 this ratio stood at around 90%.





Figure 74 Growth in average employee earnings and employee old-age & disability pensions, 1994-1999

Source: GUS.

Average employee earnings in the corporate sector (gross) rose 3.1% in real terms in 1999, giving growth 0.7 points lower than in the previous year. Wage growth in particular sections and divisions of activity varied, from a drop in real wages below the previous year's level in coal and lignite mining, and in manufacture of wearing apparel and dressing and dyeing of fur (down 0.8%and 1.1%, respectively), to a real increase of 7.8% in manufacture of radio and television equipment and apparatus. Since labour productivity grew faster than wages in 1999, the increase in average employee earnings did not fuel inflation. The proportion of personnel costs (excluding social insurance contributions and other employee benefits) in total corporate costs fell from 16.1% in the first nine months of 1998 to 15.7% in the corresponding period of 1999 (due to the grossing up of employee earnings in 1999, these ratios have been calculated on a comparable basis). It should be noted, however, that almost all wage growth in 1999 was expensed against earnings. Profit-sharing bonuses represented a mere 0.6% of total average employee earnings (as against 1.5% in 1997 and 1.2% in 1998).

Average corporate sector wage levels continue to vary by form of ownership. Despite slightly faster wage

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growth in the private sector in 1999 (1.3 points above that in the public sector), private sector wages were still 20.4% lower than those in the public sector (compared to 21.2% a year previously), while average wages at companies with majority foreign equity were 34.5% higher than those in the private sector overall.

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In 1999, old age and disability pensions rose more rapidly than wages, and also more rapidly than they had in 1998. Average employee old-age and disability pensions went up 3.5% in real terms, while farmers' pensions increased 3.4% (as against 1.9% and 2.2%, respectively, in 1998); this growth was considerably above that written into the 1999 Budget. This translated into higher expenditure at households obtaining pension income.

Growth in average employee earnings and old-age and disability pensions is presented in Figure 74.

Compared to 1998, the year 1999 brought a 25.9% increase in payments of unemployment benefit (excluding social insurance contributions, paid by central government for the first time in 1999), and a 68.8% increase in payments of other benefits and allowances, excluding pensions.

### MONETARY POLICY IN 1999 AND PERFORMANCE OF THE INFLATION TARGET

# Performance of the monetary policy target

For the first time since the beginning of systemic transition in Poland, the year 1999 saw an increase in annualised inflation. While annualised consumer price growth stood at 8.6% in December 1998, at year end 1999 it had risen to 9.8%. As a result, the short-term inflation target set for 1999 was not achieved.

The Monetary Policy Guidelines for 1999 set the inflation target of monetary policy within the range of 8%-8.5%. The bandwidth thus established was narrow, despite the considerable uncertainty accompanying efforts to contain inflation within a transitional economy, in order to underscore the determination of the Monetary Policy Council to achieve that target. Since price growth at the end of 1998 and in the first quarter of 1999 slowed much more markedly than had been expected, and since it was assumed that fiscal policy would be tightened, as the Government had indicated, the Monetary Policy Council, meeting on March 24, 1999, decided to amend the short-term inflation target.

The Council resolved that this target, as measured by annual consumer price growth at the end of December 1999, would now be 6.6%-7.8%. The decision to change the monetary policy target for 1999 was justified by the inflation forecasts then being made and by the predicted scenario for the development of Poland's macroeconomic situation. In deciding to amend the inflation target for 1999, the Council took into consideration the fact that the sequence of monthly price movements in 1999 would differ from previous years. This was indicated by an analysis of the external and internal factors conditioning inflation, which showed that it could rise temporarily in the months immediately ahead. Given that these factors were difficult to foresee precisely, the Council set the new inflation target within a broader bandwidth than provided for in the Monetary Policy Guidelines for 1999, as adopted in September 1998. Nonetheless, the considerable decline in the CPI at the turn of 1998 and 1999, coupled with subsiding inflation expectations, offered an opportunity to speed up the process of attaining the medium-term monetary policy target, at lower cost.

The sharp reduction in inflation in autumn 1998 and the first months of 1999 proved to be, as predicted, primarily the short-lived product of disruptions to the markets for food and fuels. In consequence, the monthly distribution of price movements throughout the year differed from previous years. Following a relatively positive first half of the year, inflation gathered momentum as of August (a month when the CPI generally comes down or stays flat due to movements in the price of agricultural produce). Although inflation had been expected to develop in this way in 1999, the scale of the price growth actually witnessed in the second half of the year came as a surprise.

As the analysis presented in the previous sections indicated, the prime reasons for the acceleration of inflation in 1999 have to be sought in several areas.

Firstly, this should be linked to the increase in world oil prices. This external supply shock, manifested in over 20 fuel price rises on the domestic market, was additionally compounded by internal factors in the shape of higher excise duty, the depreciation of the zloty, the maintenance of an oligopoly within the oil industry, and the determining influence of imported petrol prices on domestic fuel prices.

Secondly, impetus to inflation was given by the effects of greater official intervention on the market for agricultural produce in 1999 and the tightening of tariff protection in this field, in the context of a decline in domestic supply. The result of the factors outlined above was an increase in food prices that played a major part in the high inflation experienced in the final five months of the year.

Thirdly, the rise in inflation in 1999 was encouraged by the relaxation of macroeconomic policies. In the second half of January, the Monetary Policy Council decided to lower interest rates once again, following a series of gradual rate cuts in the autumn of 1998 (cf. Table 15).

The substantial reduction in rates carried out in January 1999 was based on the view that the inflation target was not in jeopardy, with the intention having been announced to move to a more restrictive fiscal pol-



Table 15Calendar of most important monetary policy decisions, 1999

Date *	Decision
January 21	lombard rate lowered from 20% to 17%
	rediscount rate lowered from 18.25% to 15.5%
	minimum 28-day reverse repo rate lowered from annual 15.5% to 13%
March 25	zloty trading band extended from $\pm 12.5\%$ to $\pm 15\%$ relative to central parity
	monthly rate of crawling devaluation against reference currency basket lowered from 0.5% to 0.3%
June 7	operational exchange rate fixing abolished
September 23	minimum 28-day reverse repo rate raised from annual 13% to 14%
September 30	reserve ratio lowered to 5% for all eligible deposits, conversion of Treasury liabilities to NBP
November 18	lombard rate raised from 17% to 20.5%
	rediscount rate raised from 15.5% to 19%
	minimum 28-day reverse repo rate raised from annual 14% to 16.5%

\* Date decision took effect.

Source: NBP.

icy. Were the latter to be made firmer, a relaxation of monetary policy would not loosen macroeconomic policies as a whole, instead yielding a shift in the policy mix that would benefit economic growth and favour performance of the medium-term monetary policy target.

However, the actual course taken by fiscal policy in 1999 differed greatly from those projections. This policy in fact became softer, primarily due to the financial distress of the Social Insurance Board (ZUS) and the Health Trusts, with the result that the consolidated public sector financial deficit reached much higher proportions than anticipated. This loosening of macroeconomic policy produced an increase in domestic demand. This demand created an environment conducive to the growth of inflation in response to the impact of inflationary supply shocks. In addition, a different set of externalities than expected and the slow pace of export readjustment also paved the way for the nominal depreciation of the zloty, a further factor adversely affecting inflation.

With inflationary pressure intensifying in the latter half of the year, the Monetary Policy Council took the decision to raise interest rates. Rates were increased at the Council's meetings in September and November. In consequence, the nominal base rates of the central bank rose to a level higher than at the beginning of the year.



Thus, autumn 1999 saw a sharp tightening of the monetary stance; however, due to the substantial time lags in the transmission mechanism, this change of stance could not lower annualised inflation to the target level before year end.

### **Monetary policy instruments**

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In accordance with the *Medium-Term Monetary Policy Strategy for the Years 1999-2003*, in 1999 the NBP for the first time officially embarked on the strategy of direct inflation targetting. In line with this strategy, the central bank establishes an inflation target, and then adjusts its monetary policy instruments as appropriate. Essentially, monetary policy should then be conducted within a floating exchange rate regime. Despite the operation of the crawling band exchange rate mechanism in Poland, the broad trading band permitted zloty exchange rates to be largely determined freely by the market.

The Monetary Policy Guidelines for 1999 specified that the basic policy instrument employed by the central bank in 1999 would be interest rates. The pursuit of monetary policy by the National Bank involved eliciting movements in the level of interest rates within the economy by exercising the relevant influence on nominal money market rates. The latter impact lending and deposit rates at the commercial banks, thereby affecting household decisions related to savings and consumption and corporate decisions concerning investment.

The NBP directly influenced 1-month WIBOR rates, primarily by means of the rates applied in open market operations. The minimum reverse repo rate (or reference rate), laid down by resolution of the Monetary Policy Council as the minimum yield on NBP 28-day money market bills issued under open market operations, set the floor level for interbank deposit rates of comparable maturities. For the greater part of the year, 1-month WIBOR stayed at the (operational) reverse repo rate, which was slightly higher than the minimum rate <sup>51</sup>. In 1999, the Council adjusted the minimum rate on three occasions. In view of the fact that inflation had

<sup>&</sup>lt;sup>51</sup> In contrast to the minimum reverse repo rate (the reference rate), which sets the minimum yield obtainable on 28-day money market bills, the operational rate corresponds to the rate actually obtained on bills issued. Both rates are calculated on a 360-day year base, while interbank rates refer to a 365-day year base.

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fallen faster than anticipated in the fourth quarter of 1998 and was expected to continue declining in the first months of 1999, the Council resolved to cut interest rates at its meeting of January 20, 1999, lowering the minimum reverse repo rate from 15.5% to 13%. At the same time, the lombard rate was cut three points from 20% to 17%, while the rediscount rate was brought down from 18.25% to 15.5%. This downward rate adjustment was carried out in a situation where the inflation target for 1999 was not believed to be in danger. The fact that the rate cut then performed was larger than projected by the markets scotched expectations of any further reduction in rates. These expectations had previously built up in the wake of the gradual lowering of rates in 1998, which had encouraged speculative short-term investment in zloty instruments.

The minimum reverse repo rate was held at 13% until September. The decision then taken by the Monetary Policy Council, meeting on September 22, to raise this rate 1 point to 14%, represented a response to information on macroeconomic developments. In particular, poor figures had been released on the mounting public sector financial deficit and the widening disproportion between lending and deposit growth, the result being an increase in the current account deficit. In addition, the lack of fiscal policy transparency was nourishing uncertainty within the economy. These developments, together with the effects of supply disruptions (rising prices for fuels and foodstuffs), were generating pressure for sharper than expected growth in consumer prices, and also in underlying inflation. This could have attested to the emergence of secondary price repercussions of the supply shocks. The rise in the minimum reverse repo rate caught the markets by surprise, constituting a clear warning sign.

The next increase in the minimum reverse repo rate took place at the Monetary Policy Council meeting of November 17. The rate was on this occasion raised 2.5 points, to 16.5%. In parallel with this, the lombard rate was hoisted from 17% to 20.5%, thereby providing interbank rates with the necessary freedom of movement. A 3.5 point increase was also performed in the rediscount rate, which went up from 15.5% to 19%. While the money market had been expecting a rise in rates, the size of this increase was greater than forecast.



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In 1999, the Monetary Policy Council also took a series of major decisions concerning the exchange rate regime, primarily with a view to the gradual move to the full float of the zloty, in line with the provisions of the Medium-Term Monetary Policy Strategy for the Years 1999-2003. On March 24, the Council extended the trading band for the zloty relative to central parity from 12.5% to 15%. At the same time, the monthly rate of crawling devaluation was trimmed from 0.5% to 0.3%, to correspond to the revised inflation target for 1999 and the diminishing gap between price growth at home and abroad. On April 21, 1999, the Council instructed the NBP Management Board to abolish the operational (trading) character of the exchange rate fixing. On this basis, the Board adopted a resolution on May 7, 1999, effective as of June 7, 1999, revoking the existing resolution on "Rules for the purchase and sale of foreign currency by the banks at the NBP". Thanks to this move, the basis was laid for reducing surplus liquidity at the banks; the average volume of NBP money market bills outstanding (at sale prices) stood at 27.3bn zloty at year end 1998, yet by year end 1999 this had fallen to 14.1bn zloty. The operational character of the fixing had reinforced the extent to which the scale of open market operations was conditioned by central bank reverse repo rates, as actually applied. The level of these rates influenced sources of liquid funds, since the higher the rate, the greater the attraction had been of investing in zlotydenominated financial instruments. The resultant influx of short-term capital had produced a supply of foreign currency that was bought up by the National Bank at the fixing, thereby injecting additional liquidity into the banking system. Due to the abolition of the operational character of the fixing, the liquidity effect of interest rate changes was neutralised and replaced exclusively by an exchange rate effect.

On July 21, 1999, the Monetary Policy Council adopted a resolution lowering regulatory reserve requirements. This was made possible thanks to the issue of NBP bonds – pursuant to the relevant resolution of the Bank's Management Board, dated June 25, 1999 – and the conversion of central government liabilities to the NBP, an operation under preparation for some time before. The reduction in the reserve ratio was a systemic measure unrelated to the current state of the economy and inflation. The system of averaged required reserves constitutes a monetary policy instrument that is structural in nature. Its role is primarily to reinforce the impact of interest rate policies by kindling demand for central bank money and smoothing fluctuations in market interest rates. The lowering of reserve requirements was a strategic and long-range move. This decision, together with the associated conversion of government liabilities into negotiable securities, the issue of NBP bonds indexed to inflation and the gradual move towards a fully floating zloty, represent constituent components of a package of measures designed to contain and then eradicate the excess liquidity within the Polish banking system. Thus, on September 30, the following steps were taken:

- a portion of the non-negotiable liabilities of central government, held within the asset portfolio of the NBP, were converted into negotiable Treasury securities;
- the reserve ratio was cut to 5% for all categories of eligible deposit;
- long-term NBP bonds were issued at an interest rate indexed to inflation and purchased by the banks using the funds released as a result of the reduction in reserve requirements.

The lowering of reserve requirements was desirable in terms of the need to improve the competitive position of domestic banks with respect to foreign financial institutions. Reducing the burden on banks represented by required reserves is a long-term process, one under way in many countries, including those of Central and Eastern Europe. The further maintenance of high reserve requirements in the context of the progressive deregulation and globalisation of financial markets could have led to Polish banks being squeezed out of customer markets. A shift in the interest of Polish residents towards the deposit and loan products offered by foreign banks would also weaken the impact of NBP instruments on this segment of the market, thereby limiting the effectiveness of monetary policy.

The lowering of reserve requirements did not signify a reduction in the firmness of monetary policy, since the banks were unable to invest most of the deposits concerned in lending operations. The majority of funds released through this move were immediately soaked up for long terms by NBP bonds to a face value of 13.03bn zloty, with maturities of 6-10 years. While the banks will now be placing a lesser percentage of newly-taken deposits on account at the NBP as regulatory reserves, this should not feed excess lending growth. In a situation of surplus liquidity, lending is not subject to supply constraints, and expanding loan books can be funded by scaling down bank involvement in open market operations.

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In the framework of this integrated package of measures, on September 30, 1999, central government debt to the NBP was converted into 3-, 4-, 5- and 10-year fixed-rate Treasury bonds to a nominal value of some 12.3bn zloty. Under the next stage of the operation, at the end of December 1999, the NBP received 2-year zero-coupon Treasury bonds to a face value of 4.1bn zloty. The central bank thus obtained negotiable Treasury securities to a total nominal value of 16.4bn zloty, which will now be available for sale to the banks for the purpose of draining liquidity. The debt conversion operation, coupled with the lowering of reserve requirements, has boosted the competitive strength of the Polish banking system. Thanks to the large reduction in surplus liquidity at the banks and the conversion of claims on central government into negotiable Treasuries, on the eve of the year 2000 the NBP found itself well-positioned to work towards a state of operational deficit liquidity within the banking system. This will bolster the impact of NBP interest rates on the economy.


# **PROSPECTS FOR INFLATION**

The Monetary Policy Council has adopted a shortterm monetary policy target for the year 2000 of reducing December-on-December inflation, as measured by the Consumer Price Index, to the level of 5.4%-6.8%. This target range is in conformity with the strategic monetary policy target mapped out by the Council in the *Medium-Term Monetary Policy Strategy for the Years* 1999-2003, approved in September 1998, of bringing inflation down to under 4% by the year 2003.

The final months of 1999 and start of 2000 point to a persisting trend of strong price growth began in the summer of 1999. In the particular months of the first quarter of 2000, annualised consumer inflation was in excess of 10%. The maintenance of this situation fosters higher inflation expectations, which are liable to be additionally stimulated by possible increases in the price of foodstuffs and fuels, and in indirect taxation. Furthermore, annualised average inflation for the whole of 2000 is set to rise, despite the gradual decline projected in twelve-month consumer price growth.

In order to curb the growth of inflationary pressure, the Council has already carried out three upward rate adjustments, in 1999 and in 2000. In the prevailing circumstances, the target adopted for 2000 is undoubtedly an ambitious one. Forecasts indicate that December's annualised inflation may be close to the upper limit of the target range. The Monetary Policy Council will take all decisions necessary to achieve the target it has adopted.



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# Appendix I

# Measures taken in 1999 to protect the domestic market for agricultural products

Within a market economy, it is typical for food prices to rise more slowly than prices overall. This stems from the low income elasticity of demand for foodstuffs, which further decreases as incomes increase. As a result, expenditure on foodstuffs also decreases as a proportion of total expenditure. Thus, demand factors limit food price growth, restrain price increases for agricultural produce and prevent rises in agricultural input prices from being fully incorporated in the prices obtained by farmers. This constitutes the basis for the continuous, long-term widening of the "price scissors". In Poland, food price growth in recent years has been slower than overall consumer price growth. A comparison of food price indices with total consumer price indices is presented in Figure 75.



Figure 75 Food price indices vs consumer price index (December previous year = 100)

Source: NBP calculations based on GUS figures.

In 1998, the large harvest, the relative contraction of domestic demand for food and agricultural products, and the drastic fall in exports of agricultural produce to Eastern markets and of dairy products to the EU countries all combined to produce a surplus of supply over demand in relation to agricultural products. This surplus was heightened by large imports of highly subsidised foodstuffs from the European Union. This not only led to a sharp fall in procurement prices for basic farm produce, particularly grain, fat pigs and milk, but also to problems in selling that produce. At this point, the scale of official intervention on the domestic market was insufficient in terms of the surplus stocks accumulated on the market for agricultural produce.

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In these circumstances, the second half of 1998 and first quarter of 1999 brought a further deterioration in price relationships, already negative from the standpoint of agriculture. The disparity between movements in the price of agricultural produce sold by farmers and in the price of the goods bought by farmers continued to deepen, resulting in a further decline (for the fourth year in succession) of farm incomes. This was then reflected in a wave of farmers' protests.

In the second half of 1999, supply and demand on the market for agricultural produce altered rather substantially. This was linked to the supply of produce ebbing somewhat, and also to the measures now being taken, on a much broader scale than a year previously, to protect this market. The end result was that the second half of 1999 saw a considerable acceleration in food price growth. The measures taken to protect the domestic market for agricultural produce proved mistimed, fuelling price increases on the one hand, while on the other stifling the operations of market mechanisms. An earlier introduction of wide-ranging protection, back in 1998, and the gradual scaling down of preferential tariff quotas, together with a rise in tariffs on products not included in those quotas, could have yielded greater stability on the market for agricultural produce by the beginning of 1999. This would have curbed the steep growth in food prices began in the third quarter of 1999, which, given the large share of foodstuffs in household expenditure, immediately pushed up overall consumer price growth for the whole of 1999.

Official intervention was undertaken in 1999 in several areas of the domestic food market. The most far-



reaching measures involved the markets for food grains and meat, and also for milk and sugar.

## Food grains

The situation on the grain market at the beginning of 1999 was determined by excess supply. One factor behind this surplus was the high grain production in 1998, up 6.9% on the previous year and 14.2% on average harvests in the years 1991-95. The surplus supply of grain led to the maintenance of low farm-gate prices for wheat and rye at the beginning of 1999. As of March, demand for grain edged up slightly, while ongoing grain procurement in the first quarter of the year had been lower than a year before. March also saw restrictions on grain imports, which were over 35% lower in the first half of 1999 than in the corresponding period of 1998. This was rooted in the introduction in the second half of March of a higher, 70% tariff on imported grain, with the exception of imports from Slovenia, Romania, Bulgaria and Lithuania, which were still subject to the previous 15% tariff. This restricted the amount of feed grain on the market, initiating a period of slow price growth. At the same time, however, the Agricultural Market Agency stepped up its sales of grain stocks on the domestic market and abroad. In March, sales of the Agency's wheat stocks from the 1997 and 1998 harvests began, via American-style call options, and grain from earlier years was also taken to the market via commodity exchanges.

During the first half of 1999, a total of over 880,000 tonnes of food grains from stocks held by the Agricultural Market Agency were placed on the domestic market, i.e., more than twice as much as in all of 1998 (390,000 tonnes). This major intervention significantly increased the market supply of grain in the runup to the new harvest, preventing the natural process whereby procurement prices adjust to dwindling supplies. The intervention carried out at this time disrupted the process of procurement prices adapting to current demand, yet did not produce a fall in prices, although such a large stream of supply should normally counter price growth and have an anti-inflationary effect. However, retail prices for grain-based products moved in the opposite direction. In July 1999, retail prices in the category "bakery and grain products" were up 1.2%

on December 1998, and 2.3% higher than a year earlier.

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In the second half of the year, following the harvest, the grain market shifted fundamentally. The 1999 grain harvest proved to be 5.2% smaller than a year before. At the same time, grain imports continued to be seriously restricted; over the first eleven months of the year, these were some 33% lower than a year earlier. In consequence, the supply of grain at the beginning of the latter half of 1999 declined markedly. In this situation, faster growth in market prices for grain could obviously have been expected. Yet the intervention of the Agricultural Market Agency while the harvest was still under way, buying up grain from August 1 of the previous year onwards at prices favourable to farmers, disrupted the process of the market adjusting itself to supply constraints.

The official grain purchases carried out by the Agricultural Market Agency from August 1 to October 31, which took on modified forms in 1999 (either via a system of rising subsidies, peaking in October, or via direct procurement) forestalled a seasonal decline in prices, and also clearly delayed procurement in comparison to the previous year. This was undoubtedly linked to the methods of official intervention applied by the Agency. In previous years, annual minimum prices and emergency support prices were established, with these guaranteeing the profitability of grain production at pre-set levels and leading to high prices, which determined the condition of the market, already being applied during the harvest, i.e., during the period of strongest supply. These high prices then acted as a stimulus to grain imports, which to a large extent replaced domestic supplies. As a result, instead of grain prices gradually rising during storage after the harvest, prices in previous years came down under the impact of a certain quantity of imports. In 1999, however, due to the introduction of higher tariffs on wheat imports, these imports gradually diminished, contrary to previous years, which was most probably one of the factors driving up prices. Altogether, official intervention following the 1999 harvest involved twice the amount of grain that it had in 1997 and 1998, as shown in Table 16 below.

Taking into account the forecasts of lower grain production, the series of factors affecting food grain prices

Type of grain	1997	1998	1999				
	Direct purchases +	Direct purchases +	Direct purchases of rye +				
	procurement via	procurement under	procurement of wheat & rye				
	authorised	business subsidies	by businesses under direct				
	warehouses	from Agricultural	producer subsidies from				
		Market Agency	Agricultural Market Agency				
		tonnes					
Wheat	1,135,621	I,295,484	2,715,089				
Rye	295,501	250,472	516,951				
Total	1,431,122	1,545,957	3,232,040				

# Table 16Volume of official price-support grain purchases, 1997-1999

Source: Agricultural Market Agency.

outlined above indicate that one of the prime reasons for the soaring prices recorded as of August 1999 was the surge in demand caused by government intervention. Average grain procurement prices are presented in Figure 76.

Grain purchases under official intervention had a purely inflationary effect. Government intervention was conducted on too great a scale, since the circum-





Source: NBP calculations based on GUS figures.

stances were not correct for the operation of supply and demand factors, with the result that farm-gate prices shot up in August and September, and then rose gradually right until year end. The effect of these changes was to consolidate the growth in wheat procurement prices, which by December 1999 were up 5.6% on June, while rye prices were up 22.9%. In these circumstances, retail prices for bakery and grain products rose 2.3% from July to December.

#### Meat

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On the meat market, the first half of 1999 was marked by a large supply of fat pigs and poultry. The Agricultural Market Agency estimates that in this period supply was over 15% higher than demand. However, the increasingly meagre profitability of pork production had already started to cause a slight reduction in pig herds as of the end of 1998. In all, pigmeat production was 7% higher in 1998 than in 1997.

The situation on the domestic meat market was greatly influenced by adverse developments in foreign trade. Poland's largest trading partners with respect to meat and meat products are the EU countries and Russia. Due to the economic crisis in Russia and the continuing overproduction of meat in the European Union, the Council of Ministers acted to limit meat imports to Poland by raising the autonomous rate from 60% to 83.3% in January 1999, thereby effectively increasing tariffs, introducing quarterly import limits in February, and in March abolishing the preferential tariffs on pork and poultry imports from Hungary. A large rise in fatstock supplies, coupled with moderate growth in consumption, had been holding prices low since 1997.

To protect the incomes of pig breeders, official purchases of pork were launched at the beginning of 1999, to a target ceiling of 50,000 tonnes of sides of pork. From March to May 1999, this ceiling on sides of pork was raised three times (to 75,000 tonnes, then to 100,000 tonnes, and then to 120,000 tonnes), thereby more than doubling the limit originally set on official purchases. By June 30, 1999, official pork purchases had absorbed an estimated 14.5% of supply in the first half of the year. By comparison, purchases of excess meat supplies in the first six months of 1998 had been equivalent to just 6% of supply during that period. Official purchases of sides of pork carried out in the first half of 1999 were a contributing factor in the increase in fatstock prices seen from January onwards. From March to June, 1999, procurement prices averaged around 2.8 zloty per kilo. The Agricultural Market Agency estimates that, had it not been for official purchases of excess market supplies, fatstock prices would have fallen to around 2 zloty per kilo.

The higher farm-gate prices caused by official intervention on the fatstock market had the initial effect of halting the downward trend in retail meat prices, and subsequently, in the third quarter of 1999, fanned stronger price growth. From June to September 1999, retail meat prices went up 8% overall, with pork prices rising 9.3%. With fatstock prices picking up, ongoing fatstock supplies increased, as did purchases, which in relation to all types of fatstock were higher in the fourth quarter of 1999 than they had been a year previously. This then caused purchase price growth to tail off again at the end of 1999, while also leading to a year-on-year decline in stocking figures at that point of 7.8% in young piglets, 5.5% in older piglets and 9.8% in fattening pigs.

#### Milk

Milk procurement in 1999 is estimated to have declined 8.1% year-on-year. This is attributable both to smaller dairy cow herds, down 5.1% on 1998, and also to the new milk quality standards introduced on January 1, 1998. With supplies of raw milk to dairies reduced, output of most dairy products also fell. In 1999 output of dairy products totalled some 133,000 tonnes, a drop of 8.2% on 1998.

The sharp decrease in butter production in the second half of 1999 caused butter prices to rise. In December 1999, a month of traditionally stronger demand, prices were 13.2% higher than a month earlier, and a huge 45.2% higher than a year before.

Under a programme of official intervention, the Agricultural Market Agency planned to purchase 15,000 tonnes of butter in bulk from June to October 1999, at an emergency support price of 8 zloty per kilo (including VAT), yet managed to buy just 4,100 tonnes, as prices quickly rose to 10 zloty per kilo. In addition, export subsidies were introduced for the first time for powdered skimmed milk. Exports eligible for these subsidies were those involving powdered skimmed milk produced during the period of intervention. As a result of the above measures, butter and powdered milk prices rose, thereby improving the profitability of production, yet also resulting in higher procurement prices and in consequence higher retail prices.

To prevent excessive imports given the sharp increase in domestic butter prices, the Government raised tariffs on yoghurt and butter imports from the European Union. The Council of Ministers also set this year's quotas on imports of these products for the EU, amounting to 16,000 tonnes of yoghurt and 15,500 tonnes of butter. The tariff on flavoured EU yoghurt is to be 29%, while that on butter is to be 111.7%, yet no more than 2.53 euros per kilo.

### Sugar

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The surplus supply of sugar in relation to demand has now lasted three years. Excess market stocks of sugar and obligatory sales by sugar mills meant that it was being quoted on commodity exchanges in 1999 at prices well below the set minimum (of 1,710 zloty per tonne, excluding VAT).

Sugar exports also decreased. This was caused by the crisis in Russia. In the first half of 1998, Russia was the largest customer for Polish sugar (taking some 30% of exports), while total sales to the countries of the former Soviet Union represented 92% of exports. As of October 1998, a new minimum price for the 1998/99 season was introduced, of 1.71 zloty per kilo (excluding VAT), representing an increase of 14%. This caused factory-gate prices at sugar mills to surge 8.9% in October that year. In subsequent months, prices were fairly stable, oscillating around the minimum.

The high minimum price, in conjunction with low world prices, resulted in sugar imports becoming more profitable. Sugar prices fell systematically from the beginning of 1999 from one month to the next, to go up 41.1% in September and another 11% in October, after which price growth slowed, with December prices up just 0.2% on those in November 1999.

In an effort to protect the domestic market from cheap imports, an ordinance of the Council of Ministers raised import tariffs on sugar imports to the conven-



tional rate, i.e., 100% (a minimum of 0.45 euros per kilo). Up to that point, imports had been subject to the autonomous rate, i.e., 40% (a minimum of 0.17 euros per kilo). By year end 1999, retail sugar prices had risen 9.4% on the end of 1998.

As indicated by the above analysis of prices for those agricultural products that have the largest share in household consumption, and thus also in the consumer price index, the food market is visibly very sensitive to the application of various macroeconomic and agricultural policy instruments, including customs protection and domestic price support (conducted via the intervention of the Agricultural Market Agency). To summarise, the measures taken to protect the domestic market for agricultural products, as described above, and the scale of those measures, in a situation where the supply of certain products was declining and imports considerably restricted, had the undoubted effect of stimulating food price growth as of August 1999. The forecasts of agricultural experts for the months immediately ahead, given the supply levels they project, point to a further continuation of the upward trend in food prices.



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# Appendix 2

# Relationship between the money supply and inflationary processes

## Money and inflation

In a modern economy, nominal broad money (i.e., the composition and growth rate thereof) represents a symptom of diverse processes related to both demand and supply. The relationship between money and inflationary processes is thus not a simple dependence, whereby money, which is directly controllable (and therefore, in terms of the whole economy, exogenous) directly determines the level and growth of prices.

A direct money-price relationship can be identified and measured by statistical methods solely in conditions of hyperinflation. Under hyperinflation, the supply of (narrow) money, due to autonomous and institutional indexation mechanisms based (among other things) on a spiral of self-fulfilling, anticipatory inflation expectations, translates in the short term into a proportionate increase in the overall price level of products and factors of production, with any real effects, if there are any, being difficult to measure. In measures characterising the growth of nominal categories, the dominant component are movements in price levels.

As inflation comes down, with the economy stabilising and inflation expectations no longer rocketting, the change in the level, growth rate and structure of nominal money reflects movements in aggregate nominal demand, aggregate supply and the connections between the two, and thus the money-price relationship becomes one of co-dependence, where it is impossible to specify unequivocally the direction of cause and effect, at least in the short term. In the short term, the typical economy is subject to a series of rigidities, such as time lags in the adjustment of product prices and factor prices to the current market situation, or lags derived, for example, from the cost of renegotiating agreements (including wage agreements) and commercial contracts. These rigidities mean that nominal movements in macroeconomic aggregates (domestic demand, aggre-

gate consumption, broad money, etc.) include a relatively large portion of real effects (volume changes), now more easily identifiable and statistically measurable. More difficult to identify, on the other hand, is the relationship between money growth itself and inflation. Adopting the convention of exogenous money, i.e., accepting the assumption on the direction of causality within the money—>price relationship, this situation is termed a lack of monetary neutrality. The fact that nominal rigidities are not absolute in character and fade away in the longer time frame, allowing price levels and relationships to adjust to long-term supply and demand trends (in factors of production, products and money) rationalises the proposition of monetary neutrality over the long run and lays a basis for research into the longterm relationship of prices and money, or the long-term demand for money function.

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In economies where a programme of disinflation is under way, i.e., in transition from a hyperinflationary model to one of economic stability, the relationship between money and prices is subject to a process of evolution, which means that empirical studies (on a heterogeneous sample) frequently end in failure. From the theoretical standpoint, the process of transition (of disinflation) should be characterised by an uneven decline in the growth rates of prices and money. At the hyperinflationary stage, money and price growth are similar, next a faster decrease is observed in price growth than in money growth, and finally low and stable price growth is achieved, lower than nominal money growth (which also includes volume changes). In a stable, growing economy, nominal money growth in the long run conforms (approximately) to the Fisher exchange equation.

## Long-term growth of Polish monetary aggregates and prices

Descriptive analyses for the years 1992-1998/99 concerning the growth in consumer prices (the CPI) and monetary aggregates (narrow money M1, broad money M2, and the Divisia indices D1 and D2, corresponding to narrow and broad monetary aggregates) indicate that the long-term trends in single base indices of prices and money (and the index logarithms) move apart, with money growth, as expected, systematically outpacing price growth. The gap between these growth rates is not just due to volume growth (resulting from the economic growth attained in recent years), but is also related to the gradual increase in the degree of monetisation of the economy. The factors behind this process include the regulation of ownership rights, denationalisation (including real estate), the market valorisation of household wealth (e.g., dwellings) etc., and also monetary innovation (the development of the banking system and the spread of non-cash payment methods, including bank cards and credit cards). It can therefore be assumed that long-term trends will (roughly) correspond to the model process of disinflation outlined previously.

However, the results of empirical investigations into the form of the money-price relationship prove inconclusive. On the basis of highly frequent (monthly) data sources, a relationship was sought between price levels (CPI), monetary aggregates (M1, M2, D1 and D2) and industrial output (PP), as a measure of the level of economic activity. Assessing the long-term relationship involved is in formal terms an estimation of the cointegration vector between the variables in the equation:

### $\log(CPI) = \alpha_0 + \alpha_1 trend + \alpha_2 \log(monetary aggregate) + \alpha_3 \log(PP)$

To establish the observation it was assumed that one of the variables, log(*CPI*) was "explained", while the *trend* represented the factors responsible for the increasing monetisation of the economy.

The cointegration vector exists when the orders of integration of the series constituting the relationship under investigation are appropriate<sup>52</sup>, and this is confirmed by additional testing (a Granger-Engle test, Johansen test etc., depending on how the cointegration vector is estimated). Table 17 presents the assessment results for the cointegration vector using the Johansen method and the LR test statistics for cointegration (the number of cointegration vectors).

<sup>&</sup>lt;sup>32</sup> For example, for the relationship x1 =  $\alpha$  x2 (two variables), x1 and x2 must be integrated to the same order. In the relationship x1 =  $\alpha_1$  x2 +  $\alpha_2$  x3 (three variables), the order of integration of x2 and x3 may exceed the order of integration of x1, provided the cointegration between x2 and x3 is such that the residuals from the equation x3 =  $\alpha$  x2 are integrated to an order equal to x1, etc. Investigations of the order of integration (logarithms) of the aggregates M1, M2, D1 and D2, and the logarithm of industrial output (PP) and prices (CPI) are inconclusive. Relatively certain results are log(M2) ~ I(1), log(PP) ~ I(2), log(M1) ~ I(2), log(D1) ~ I(2), and log(D2) ~ I(2). Prices themselves (log(CPI)) may be treated as an integrated series of the first or second order. Generally speaking, these results do not exclude the existence of a cointegration vector defining the long-term relationship between prices (CPI), money (alternately M1, M2, D1 and D2) and the measure of economic activity (PP).

Table 17					
Estimates of long-term	relationship	between	money	and	prices

Sample		1992:1 -	1998:12		1992:1 – 1999:12							
	Version Ia	Version 2a	Version 3a	Version 4a	Version 1b	Version 2b	Version 3b	Version 4b				
Constant	2.28	-2.24	4.09	0.947	-2.23	-1.99	-0.32	-2.25				
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)				
Trend	0.001	-0.039	-0.011	-0.009	0.001	-0.036	0.003	-0.015				
	(0.004)	(0.004)	(0.004)	(0.002)	(0.004)	(0.003)	(0.003)	(0.002)				
Log (MI)	0.704	-	-	-	0.710	-	-	-				
	(0.173)				(0.240)							
Log (M2)	-	2.66	-	-	-	2.49	-	-				
		(0.129)				(0.094)						
Log (DI)	-	-	0.970	-	-	-	1.000	-				
			(0.127)				(0.157)					
Log (D2)	-	-	-	1.74	-	-	-	1.64				
				(0.058)				(0.074)				
Log(PP)	0.05	-1.50	-0.927	-1.00	1.07	-0.42	0.20	-0.169				
	(0.425)	(0.560)	(0.349)	(0.193)	(0.661)	(0.270)	(0.399)	(0.205)				
LM(0)	50.78	50.94	53.46	52.98	40.04	47.58	43.97	40.23				
(CV-5%)	(42.44)	(42.44)	(42.44)	(42.44)	(42.44)	(42.44)	(42.44)	(42.44)				
LM(I)	19.62	21.12	20.20	18.58	-	20.11	20.35	-				
(CV-5%)	(25.32)	(25.32)	(25.32)	(25.32)		(25.32)	(25.32)					

Notes:

1. Calculations performed using standard procedures implemented under Eviews 3.1 (version 7/04/1999).

2. VAR models estimated using 12 lags and constant; Johansen cointegration test assumed trend, constant and 12 lags.

3. Asymptotic standard errors for parameters given in parentheses under parameter results.

4. LM(n) represents test statistic of reliability function quotient for number of cointegration vectors (n- no. of cointegration vectors); CV-5% represents critical value for 5% significance level.

5. Estimates for version 1b performed on sample of 1992:1 - 1999:10.

The data contained in Table 17 indicate that a longterm money-price relationship can be distinguished in the period 1992:1 – 1998:12. The cointegration vectors estimated using the Divisia indices D1 and D2 proved statistically significant and interpretable, and the standard errors in the assessments of the vector components may be considered satisfactory. The equation in version 3a deserves particular attention; the elasticities close to unity for output relative to prices and money relative to prices allow the equation to be reduced to the textbook version of the Fisher exchange equation, the sole exceptions being the trend and constant. This gives reason to suppose that the long-term relationship of money and prices in Poland is becoming similar to that expected in stable economies where inflation is fully under control. Long-term equations constructed on the basis of traditional monetary measures, particularly M1, are unsound - although a statistically significant cointegration vector was obtained, its components are insignificant and/or non-interpretable.

A re-estimation of the equations using a sample including the year 1999 yields a completely different picture of the relationship under examination. None of the equations obtained now confirm the existence of a stable, interpretable money-price relationship derived from the Fisher exchange equation. The versions of the equations based on M1 and D2 do not show a statistically significant cointegration vector, while the version using D1 is marked by a non-interpretable (and insignificant) elasticity of prices relative to industrial output (IO). In the equation constructed on the basis of M2, the cointegration vector is statistically significant, yet the component relating (nominal) money to industrial output proves to be insignificant (or the elasticity of prices relative to output was impossible to estimate with sufficient accuracy). Taking into account the fact that in relation to the previous year's study the size of the sample only increased by about 13%, the results are disquieting. In particular, it seems justified to suppose that the trend conditioning the long-term money-price relationship (a trend for transition from a model where nominal categories are dominated by prices to one where these are dominated by volumes) was halted in 1999. A characteristic development in this context is the fall in the elasticity of prices relative to output in the interpretable variants of the equations, mainly 2b.

The results obtained allow two hypotheses to be formulated. Accepting the convention of exogenous money (in the long term), it can be presumed that the year 1999 saw an increase in the relative importance of monetary sources of inflation. This hypothesis is supported both by the lower overall rate of economic growth, and by the fall in the estimated elasticity of prices relative to supply (as measured by industrial output). In the short term, however, there are grounds for money being considered an endogenous variable. In that case, monetary aggregates in the estimated equation are more a representation of nominal aggregate demand than of the exogenous money supply, and the results obtained solely suggest a rising supply gap (excess aggregate demand over supply). The question of quantifying the degree to which money supply creation contributed to the rise in aggregate demand remains one for further investigation.



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# Appendix 3

# Level and pattern of household consumption

One of the principal developments that occurred after 1990 in the area of consumption was a shift in the share of consumption in Gross Domestic Product. In 1985, total consumption represented some 70% of GDP. By 1989, it had fallen below 60%. Following 1990, the share of consumption in GDP rose to around 83% in 1994, subsequently coming down slightly in the years 1995-98. Similar movements were seen in the share of consumer expenditure. This stood at around 52% in 1985, then fell to some 44% and next rose to around 62%.

The year 1990 brought a slight increase in the share of consumption in GDP, although this did not stem from real consumption growth, but from a decline in capital formation and also an increase in the price of staple goods. Real consumption began to go up in 1991.

One of the reasons for movements in the level and pattern of consumption were the transformations occurring on the market. The rising volume of imported goods and shorter development lead times, i.e., the time





Source: NBP calculations based on GUS figures.

needed to modernise an old product or develop a new one, resulted in increased access to new goods and services. The previous producer's market now became a consumer's market. Product life cycles shortened, as goods were replaced increasingly rapidly by other models or types available. Consumer behaviour and preferences also changed. The larger selection of goods made it possible to buy alternative products that satisfied the same need, e.g., a music centre instead of a tape recorder (the substitution effect). Further, the purchase of certain goods triggered purchases of others, e.g., first a car, then a set of winter tyres (the complementary effect). It was noticeable that wealthier households substituted more expensive goods for cheaper ones, with an ostentation effect coming into play, while poorer households abandoned purchases of expensive products.

Competition combined with technological advances brought about a fall in the relative price of many goods, especially ones considered luxury goods prior to the period of transition, such as household electronics, automatic washing machines, refrigerators and freezers. In addition, completely new products became available, such as microwave ovens, computers or music centres, the relative price of which fell even faster. On the other hand, the relative prices of many daily goods and services rose, including telephone calls, electricity or clothing.

A consequences of the above changes, and also of the restructuring of household incomes, was a realignment in the pattern of expenditure. The macroeconomic result were shifts in the principal categories of consumption. As of 1991, consumption of foodstuffs and services rose,

	1991	1992	1993	1994	1995	1996	1997	1998
				1990	= 100			
Total consumer	106.3	108.7	114.4	119.3	123.6	133.9	143.1	149.8
expenditure								
Foodstuffs	7.	112.5	121.5	124.8	127.2	133.0	137.6	4 .4
Alcoholic beverages	93.7	86.0	93.9	99.6	97.7	99.0	100.0	99.0
Non-food articles	99.2	107.6	120.0	129.6	137.3	154.6	168.2	179.4
Services	105.7	113.9	109.7	111.9	116.3	126.3	137.3	146.7

Table 18Personal consumption growth, 1991-1998 (constant prices) (1990 = 100)

Source: GUS.

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while consumption of non-food articles began to grow from 1992 onwards, showing the sharpest increase of all categories over the entire period 1992-1998. By 1998, consumer expenditure had risen around 49% compared to 1990, with expenditure on foodstuffs up some 41% and on non-food articles up 79%.

In 1991, food consumption showed the fastest growth, going up 17.1% on 1990. In 1992 it dropped considerably compared to 1991 (down 3.9%), with total consumption up 2.3% and consumption of non-food articles up 8.5%. Consumption of both non-food articles and foodstuffs accelerated strongly in 1993, going up 11.5% and 8%, respectively, relative to 1992 (while total consumption rose 5.2%). After 1993, growth in food consumption, while continuing upwards, was lower than total consumption growth, with growth in the consumption of non-food articles staying higher than that of total consumption.

In observing the changes in consumption at the microeconomic level, on the basis of research into house-hold budgets conducted by GUS in the years 1989-1999, one development that should be underlined is the changing level of housing expenditure. As a proportion of total expenditure, housing expenditure rose from a level of 12.7% in employee households and 14.9% in pensioner households in 1990 to 24.2% in employee households during the first three quarters of 1999 and 28.1% in pensioner households in 1998. This increase was particularly large in the years 1990-1992. During that period, housing expenditure climbed over 11 points in employee households and over 7 points in pensioner households.

Housing expenditure has two components: recurring expenditure, incurred on a regular basis (rent, heating fuel, energy), and spending on furnishings and home improvements. The steep increase in recurring expenditure in this period stemmed from rents and energy charges rising faster than the price of goods and services which consumers could make do without. At the same time, the relative weight of spending on furnishings and improvements also increased.

Goods that consumers can postpone purchasing for a certain time include clothing and footwear. In the period under examination, the share of expenditure on these items within total consumer spending fell sharply in employee households, from 11.4% in 1990 to 7.5% in

## Table 19

Expenditure pattern, employee households, 1990-1999

Year	Food	Clothing	Education	Health	Personal Housing				Culture,	Transport &	
		& footwear			hygiene					sport,	communi-
										tourism	cations
						Total	Rents	Energy	Furnishings		
1990	49.9	11.4	-	-	3.4	12.7	-	3.3	-	10.0	6.2
1991	42.0	10.4	-	-	4.2	16.0	3.2	5.9	-	10.7	7.3
1992	39.0	8.2	-	-	4.9	19.1	4.0	8.3	-	10.0	8.7
1993	39.1	7.5	2.2	2.7	3.6	19.1	3.8	9.2	3.8	6.5	10.1
1994	37.6	7.5	2.4	2.9	3.4	20.6	3.7	10.2	4.1	6.3	9.5
1995	37.4	7.5	2.5	2.8	3.4	20.6	4.2	10.4	3.9	6.6	9.5
1996	35.3	7.4	2.4	2.9	3.4	21.0	4.4	9.8	4.1	6.5	11.1
1997	33.0	7.5	1.2	3.0	2.7	21.7	4.5	9.6	5.5	7.6	10.9
1998	30.7	7.2	1.3	3.3	2.7	23.9	4.7	9.5	5.4	7.4	12.0
I-IX 1999	29.8	6.4	1.3	3.3	2.8	24.2	5.3	9.8	5.5	8.0	12.1

Source: GUS.

1993. The same tendency was evident in expenditure on clothing and footwear in pensioner households. In 1990, this represented 7.9% of expenditure, yet by 1993 only 5.3%. Culture, education and recreation are in large measure also items that can be relinquished. In the years 1990-1996. In the years 1990-96, this expenditure displayed a tendency similar to that of expenditure on clothing and footwear, i.e., following a decrease in the first four years, the share of this expenditure in overall consumer spending remained stable until 1996.

From 1996 onwards, the relative share of expenditure on these items gradually rose. Factors that could have influenced this include the development of the market for periodicals, the higher price of school textbooks, changes to school curricula that made it impossible to use second-hand textbooks, and greater purchases of audio-visual equipment.

Shifts in the pattern of expenditure were encouraged by movements in the relative price of consumer goods and services. Average monthly employee earnings (net) were equivalent to the price of 0.13 colour TV sets in 1985, 0.23 in 1990, 0.44 in 1994 and 0.88 in 1998. A similar process occurred with regard to automatic washing machines. The average net wage bought 0.51 washing machines in 1985, 0.54 in 1994 and 0.87 in 1998. In 1995, that wage was equivalent to 0.87 microwave ovens, yet in 1998 it was equivalent to 1.53. At the same time, however, energy prices went up in relative terms. In 1990, the average wage bought 6,864 kWh of electricity and 5,952 m<sup>3</sup> of gas, while in 1998 it was equivalent to 4,287 kWh of electricity and 1,369 m<sup>3</sup> of gas.

As a result of the expanded range of durables available and the decline in their relative price, and also of new-found access to consumer credit on favourable terms, household purchases of durables trended upwards in the years 1991-1998. This increase involved household appliances and consumer electronics, and also cars. Higher purchases of these items took place in all groups of household, including those with the lowest incomes and those with the highest. In part, these represented the first purchases of the items in question, while in the higher income brackets these were repeat or replacement purchases.

First-time purchases of these durables increased the number of households equipped with these items, and also the number of items per 100 households. The effect of these first-time purchases is particularly apparent in comparisons of the percentage of households equipped with given durables, broken down by those households with the lowest and highest incomes. The increase in the percentage of households owning given items is observable throughout the period 1993-1998, with respect to both employee households and those of old-age and disability pensioners. This increase occurred both in the highest-income group (the Vth quintile<sup>53</sup>) and in the lowest-income group (the Ist quintile), with the difference involving the relative speed of increase. In employee households, this increase is faster than in pensioner households, and it is also faster in the highest-income groups than in the lowest-income groups.

In 1993, an automatic washing machine was owned by roughly 50 out of 100 employee households in the lowest-income group, while by 1998 this number had risen to roughly 60. Among employee households with the highest incomes, approximately 80 out of 100

<sup>&</sup>lt;sup>53</sup> The households studied were grouped by level of income. The 20% of households with the highest incomes constitute the Vth quintile, while the 20% with the lowest incomes represent the Ist quintile.

Table 20 Stock of selected durables, units per 100 employee households, 1984-1999

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	l st half
																1999
Colour TV	18.8	23.1	28.9	34.3	41.7	50.7	67.I	82.9	91.4	95.I	99.4	102.7	104.7	108.4	110.6	3.
Satellite TV																
equipment	-	-	-	-	-	-	-	-	-	31.4	37.8	42	43.I	51.2	57.1	61.3
Radio-cassette																
recorder	-	-	-	-	-	-	-	-	-	77.2	59.4	83.I	83.4	70	68.5	67.8
Compact disc																
player	-	-	-	-	-	-	-	-	-	-	-	-	-	12.5	12.3	-
Music centre	-	-	-	-	-	-	-	-	-	-	-	-	-	35.5	43.2	-
VCR	-	-	-	-	1.9	4.7	20.1	41	53.4	63.2	66.7	70.1	71.1	71.6	73.9	75.2
Camcorder	-	-	-	-	-	-	-	-	-	2.1	-	2.1	2.4	3.1	3.7	-
Personal																
computer	-	-	-	-	-	-	-	-	-	11	11.6	12.3	11.9	13.6	16	17.4
Automatic																
washing machine	34.8	38.7	46.2	51.2	55.5	59.1	63.5	67.2	69.7	70.9	73.8	75.5	77.2	79	81.4	82.8
Refrigerator	-	-	-	-	100	101	99.8	99.9	99.9	98.4	-	99.3	99.1	98.6	99.2	-
Freezer	-	-	-	-	16.4	20.3	23.8	27.4	30.3	32.3	-	33.7	34.I	33.3	35.3	-
Vacuum cleaner	93	94.8	94.7	95.1	96.2	97.7	97.6	97.6	97.5	96.2	-	98	98.3	97.I	97.1	-
Microwave oven	-	-	-	-	-	-	-	-	-	3.5	-	6.3	8.9	11.5	15.1	-
Bicycle (adult)	76.9	80.9	82.7	86.I	93.2	94.3	93	93.3	95.I	69.7	-	74.5	76.3	75.I	81.5	-
Motorcycle,																
moped, scooter	11.2	10.5	10.3	10.5	11.2	10.8	10.6	9.5	7.7	7.1	-	5.3	4.6	3.6	3.4	-
Passenger car	27.3	27.2	29.3	29.8	30.2	30.7	33.2	38.3	41.4	44.7	46.3	46.7	49	49.2	51.9	53.5

Source: GUS.

owned automatic washing machines in 1993, and roughly 90 in 1998. Among the lowest-income households of old-age and disability pensioners, some 28% were equipped with an automatic washing machine in 1993, and around 39% in 1998. The same washing machines were owned by over 60% of the highestincome pensioner households in 1993, and by over 70% in 1998.

The same trend is in evidence for other durables, including cars. While the number of households owning a car did not rise as fast as the number with a VCR, for example, an increase over the period in question was seen in both employee households and pensioner ones.

On the other hand, the rising stock of durables per 100 households (cf. Table 20) testifies to the improved finances of the most affluent households. Their financial situation has allowed them to purchase more than one item in the product category. This is most apparent in relation to colour TV sets. There were approximately 67 of these per 100 employee households in 1990, but by 1998 there were approximately 110. Among pensioner households, there were roughly 30 colour TVs per 100 households in 1990, and almost 94 in 1998.

At the beginning of the 1990s, possession of all categories of household appliance and consumer electronics was generally at a low level in Poland. Given the current gradual increase in these levels, it is difficult to gauge the volume of replacement demand. This demand certainly applies to washing machines, TV sets and other audio and video equipment, with the proviso that radio sets and radio-cassette players are being replaced by music centres, i.e., a switch is taking place in the product groups purchased.

Research into household budgets in the first three quarters of 1999 indicate that, while 25% of expenditure on purchases of washing machines and dishwashers in the first nine months of 1998 represented loan finance, in 1999 the corresponding proportion was some 30%. By contrast, in 1998 loans provided 23.8% of the funding for purchases of computers, whereas in 1999 this was only 14.4%. A declining share of credit was also seen in financing purchases of refrigerators, tape recorders and TV sets. This share remained similar to the first three quarters of 1998 in terms of expenditure on heating fuel and other types of energy, clothing and furniture.

As in 1998, half of all household borrowings were used to purchase cars. The share of credit in car purchases stood at 21.2% in 1998 and 27.8% in 1999. At the same time, however, there was a decrease in the nominal amounts spent on buying cars. In the first three quarters of 1998, average monthly expenditure per person stood at 439.97 zloty, of which 3.1 zloty represented the expense of car purchases. In the corresponding period of 1999, average monthly expenditure per person came to 515.30 zloty, with 2.3 zloty being spent on purchasing cars.



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