National Bank of Poland

Monetary Policy Council

INFLATION REPORT 2000

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SUMMARY

With Polish macroeconomic policies insufficiently restrictive, the strong supply shocks begun in 1999 on the world fuel market and the domestic food market led to an acceleration of inflation that lasted until July 2000. Annualised consumer price growth at that point reached its highest level since 1998, running at 11.6%. The increase in inflation was also encouraged by the existing limitations in the efficient operation of the fuel and foodstuff markets.

The growth in fuel prices did not begin to slacken markedly until the second half of 2000. From August onwards, food price growth also began to ebb gradually, one reason for this being a significant reduction in the pace of consumer demand growth. The tightening of monetary policy begun in September 1999, coupled with the waning impact of supply shocks on price growth in Poland, led to a pronounced decline in inflation following July 2000. Although inflation had fallen 3.1 points by the end of the year, it did not prove possible to achieve the short-term monetary policy target for 2000, namely, lowering inflation to 5.4%-6.8% at year end. In December 2000, consumer price growth stood at 8.5%, compared to 9.8% in 1999, while annualised average inflation had risen to 10.1%, as against 7.3% a year earlier. Nevertheless, the reversal of the inflation trend and the major decline in inflation in the latter half of the year greatly increased the likelihood of attaining the medium-term monetary policy target.

The largest contribution to consumer inflation in 2000 was made by service prices. Since 1997, growth in service prices has remained at a relatively steady, high level, regardless of changes in the severity of macroeconomic policy and the strength of domestic demand. These movements in service prices are determined by factors independent of monetary policy. An obstacle to bringing down inflation in Poland is the lack of competitive market structures in certain areas, including such key areas of the service sector as electricity and gas supply or housing occupancy. It was these prices that exerted the dominant influence on overall service prices in 2000. Growth in service prices was also fuelled by the process of adjusting officially regulated prices, and by the "Balassy-Samuelson effect", typical for countries attempting to overcome a "development gap", which stems from lower labour productivity in the service sector in the context of mounting demand for those services (cf. Box 1).

For the first time in five years, domestic demand growth in 2000 was slower than GDP growth. This change was accompanied by a decrease in employment, an increase in the unemployment rate, and - in contrast to recent years - a deterioration in the financial situation of households. It is estimated that a slight decline took place relative to 1999 in both real employee earnings and real gross household disposable incomes. Further, the year 2000 also brought slower growth in personal consumption. The more restrained growth of investment demand, on the other hand, was chiefly due to a reduction in corporate capital expenditure. The fact that in these circumstances the same GDP growth was achieved as in 1999 (4.1%) is traceable to stronger performance in foreign trade. This was made possible by Polish exporters taking advantage of the more favourable conditions on foreign markets, and by the moderate increase in the volume of imports. The receding growth in domestic demand observed in 2000 led to the upward trend in inflation being reversed and the balance of payments improving. One of the factors behind the weakening of domestic demand growth as of the second quarter of 2000 were the interest rate rises performed by the NBP in the autumn of 1999 and at the beginning of 2000.

The impact of fiscal policy on the creation of domestic demand in 2000 was less significant than in 1999, although greater than projected in the Budget. Thus, the burden of restoring economic equilibrium was primarily borne by monetary policy. The adjusted public sector financial deficit (adjusted fiscal deficit) came to 2% of GDP in 2000, compared to the 1.7% targetted in the Budget¹. The mix of a fiscal policy that was less restrictive than planned, and the tightening of monetary policy essential in these circumstances, meant that the lowering of inflation and improvement of external equilibrium were accomplished at greater short-term cost in terms of the slowdown of investment and economic growth.

The narrowing of Poland's trade deficit, which was also a result of the firmer monetary policy pursued, permitted the deepening of external disequilibrium, a process under way since 1996, to be arrested in 2000. In this regard, the lower requirement for external savings, expressed in the reduction of the current account deficit, came about through a larger increase in gross savings within the Polish economy than that seen the year before, allied with only a slightly faster pace of capital formation (at current prices).

The task of curbing inflation was hampered in 2000 by the fact that the processes of economic deregulation and privatisation had still not been completed. Competition remained limited on markets of such importance to the overall CPI as fuels, telecommunications and postal services, land transport of passengers and freight, electricity supply, district heating and gas supply. Curtailing inflation was also impeded by the extensive system of subsidies to lossmaking companies, primarily in the public sector. Further, disinflation was weakened by the strong protection against foreign competition afforded to the market for agricultural produce.

On the other hand, the substantial deregulation of industrial imports helped enhance competition on the markets for most industrial products. In their battle for sales markets at home and abroad, businesses chiefly cut their labour costs, by containing wages and downsizing staff. That the corporate sector took this tack is related to obstacles constraining the flexibility of the labour market. Eliminating these obstacles, as is the case in other sectors as well, would allow the release of the supply potential inherent in them, but currently blocked, and also allow productivity to rise more rapidly; it would thereby enable output and employment to expand without fanning inflationary pressure.

In view of the dangers associated with the increase in inflation that had persisted since mid-1999, the Monetary Policy Council raised interest rates twice in 2000, doing so in February and in August. February's rate adjustment came in response to the swift price growth seen since August 1999 and to projections that this was set to continue in the coming months. This jeopardised performance of the inflation target set for 2000 and could have led to a rise in inflation expectations.

The decision to raise rates in August, on the other hand, was intended to counter the secondary inflationary effects of the rapid growth in food and fuel prices that had occurred due to supply disruptions on the markets concerned. Given that it was unable to address the original inflationary impulse directly, the Monetary Policy Council attempted in this way to prevent the resultant inflation expectations consolidating and also spilling over into wage growth. The correctness of this course of action stemmed in particular from the high level of wage indexation within

¹ This figure for the adjusted fiscal deficit was not announced by the Ministry of Finance until the end of May 2001. In the second half of 2000, various statements from the Ministry concerning the expected performance of the adjusted fiscal deficit referred to it rising to between 2% and 2.7% of GDP. It should be noted here that the achievement of a lower adjusted deficit than forecast was principally due to a major decrease in December 2000 in the outstanding debt of the Social Insurance Fund to the commercial banks.

the Polish economy. In this situation, an increase in interest rates was designed to hold down the rise in other prices (by dampening domestic demand), and thus also in overall inflation, and to lay a sound basis for performance of the inflation target in 2001. This decision was taken against a background of increasingly visible signs that the strictness of fiscal policy was less than previously indicated by the Government.

In December, with confirmation received of the tendency for inflation to come down and the factors earlier responsible for its rise now having a dying impact, the Monetary Policy Council changed its policy stance from restrictive to neutral. However, it took no decision to alter interest rates, as it saw a series of inflationary threats still continuing.

In 2000, the most important measures taken by the Council with a view to enhancing the effectiveness of monetary policy were the full floating of the zloty in April (a move undertaken in consultation with the Council of Ministers) and the commencement by the NBP in September, in accordance with a Council recommendation made in March, of sales of Treasury securities from its own portfolio in order to reduce the surplus operating liquidity within the banking system. Measures to restrict excess liquidity are intended to heighten the sensitivity of commercial bank pricing to movements in central bank interest rates. They thus serve to increase the effectiveness of interest rates as the basic instrument of monetary policy.

The shift to fully floating exchange rates for the zloty in 2000 represented part of the implementation of the Medium-Term Monetary Policy Strategy for the Years 1999-2003. It was also announced beforehand in the Monetary Policy Guidelines for the Year 2000. This move contributes to improving the effectiveness of monetary policy as regards influencing interest rates and is a precondition for consistently applying the strategy of direct inflation targetting. Introducing floating exchange rates also diminishes the risk of turbulence on the financial markets by unblocking the automatic mechanism for restoring equilibrium in the balance of payments and inducing market participants to perform a proper assessment of exchange rate risk.

The increase in inflation in the first half of 2000 occurred in an environment of decreasing money supply growth. This created favourable conditions for bringing down inflation in the future. Money supply growth was lower than in 1999 in both nominal and real terms. One reason for this was the tightening of monetary policy, which acted together with other factors to restrain domestic demand growth and reinforce the ensuing slowdown of economic growth.

The composition of the money supply in 2000 was marked by two characteristic developments, namely, an acceleration of growth in personal zloty deposits, and a systematic decline in the volume of notes and coin in circulation. The key factor stimulating the growth of personal savings at the banks were the rising interest rates available on commercial bank time deposits. These also played a part, in addition to the swift development of non-cash settlements, in the gradual decline in notes and coin in circulation.

In 2000, the principal counterpart to changes in money stocks remained lending to both persons and corporates. However, growth in loan outstandings slowed noticeably compared to 1999. As in the case of quickening deposit growth, this can be traced to rising interest rates at the banks. The declining propensity to borrow was also related to the slight decrease in real gross household disposable incomes and more muted economic growth.

The year 2000 also witnessed a substantial reduction in the outstanding net borrowings of general government at the banks. However, this was facilitated by a major increase in the financing

Basic macroeconomic indicators

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	QI	Q2	Q3	Q 4	1998	QI
			1998			
GDP	6.4	5.4	5.0	2.9	4.8	1.6
Domestic demand	7.4	5.9	6.3	6.6	6.4	3.4
Total consumption	5.5	3.7	3.9	3.9	4.2	4.0
Personal consumption	6.4	4.2	4.5	4.6	4.8	4.6
Gross capital formation	17.4	14.9	14.6	12.0	13.8	0.7
Gross fixed investment	17.8	15.2	14.8	12.6	14.2	5.7
Savings ratio (%) ¹	11.2	14.5	10.7	16.0	13.2	9.0
Financial savings ratio (%) ²	8.5	7.8	7.1	7.0	7.6	10.8
Unemployment (%)	10.4	9.6	9.6	10.4	10.4	12.0
Disposable incomes						
(corresponding period previous year $= 100$)	104.7	104.5	103.6	109.3	105.5	102.7
Treasury debt (million zloty, nominal) ³	212 661.4	220 129.9	226 962.3	237 400.9	237 400.9	259 037.3
Central government deficit (million zloty) ⁴	-3 540.0	-9 357.8	-10 409.7	-13 192.6	-13 192.6	-8 719.2
Foreign debt (USD million) ⁵					59 163.0	59 730.0

¹ Household savings to gross disposable incomes. Savings represent that portion of incomes not allocated to consumption. ² Household financial savings to gross disposable incomes. Financial savings represent the growth in household money stocks (sum total of growth ³ Period end.

⁴ As of Q4 1998, this amount includes the item "due on failure to increase government sector wages".
⁵ Until 1998, figures available solely on annual basis.

Q2	Q3	Q4	1999	QI	Q2	Q3	Q 4	2000
199	99				20	00		
	real growth							
3.0	5.0	6.2	4.1	6.0	5.2	3.3	2.4	4.1
4.6	5.5	5.7	4.9	5.1	3.3	1.3	1.7	2.8
4.4	4.8	5.0	4.5	3.9	2.3	0.9	1.3	2.1
5.2	5.7	5.9	5.4	4.6	2.6	0.8	1.3	2.4
5.5	7.8	7.1	5.9	11.5	6.8	2.6	2.7	4.9
6.3	6.6	7.0	6.5	5.5	2.9	2.4	2.6	3.1
10.7	8.8	14.8	10.9	4.9	9.5	8.3	14.2	9.3
2.9	2.8	5.1	5.4	5.5	7.5	1.4	4.3	4.7
11.6	12.1	13.0	13.0	14.0	13.6	14.0	15.0	15.0
102.9	101.4	103.7	102.7	100.2	100.2	100.3	98.6	99.8
255 583.4	261 317.4	264 370.3	264 370.3	270 144.9	279 507.80	287 584.30	267 653.40	267 653.40
-11 320.0	-11 270.0	-12 479.0	-12 479.0	-6 927.4	-10 650.20	-14 041.90	-15 365.60	-15 365.60
59 499.0	63 30.0	64 852.0	64 852.0	64 954.0	65 881.00	64 167.00	67 517.00	67 517.00

in bank deposits, notes & coin and investments in securities, less household borrowings).

Basic monetary indicators

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	QI	Q2	Q3	Q4	1998	QI
		I	998			
Consumer prices ¹	113.9	112.2	110.6	108.6	108.6	106.2
Industrial producer prices ¹	109.2	107.7	106.4	104.8	104.8	104.7
MO	117.6	120.6	112.7	126.8	126.8	121.5
MI	116.5	113.7	112.6	113.0	113.0	121.8
M2	127.4	126.7	125.4	125.2	125.2	127.6
Non-financial sector deposits	130.9	130.2	128.6	127.8	127.8	129.5
personal	134.0	131.0	129.6	126.3	126.3	127.5
corporate	122.8	127.8	126.1	131.5	131.5	135.0
Claims on non-financial sector	130.4	129.2	128.2	127.9	127.9	129.5
persons	145.3	135.3	133.8	130.0	130.0	135.8
corporates	127.9	128.1	127.1	127.5	127.5	128.3
MO	103.3	107.5	101.9	116.7	116.7	114.4
MI	102.3	101.4	101.8	104.0	104.0	114.6
M2	111.9	112.9	113.4	115.2	115.3	120.2
Non-financial sector deposits	114.9	116.0	116.3	117.6	117.6	121.9
personal	117.7	116.8	117.2	116.3	116.3	120.0
corporate	107.8	113.9	114.0	121.0	121.0	127.1
Claims on non-financial sector	114.5	115.1	115.9	117.8	117.8	121.9
persons	127.6	120.6	121.0	119.7	119.7	127.9
corporates	112.3	4.	114.9	117.4	117.4	120.8
Reference rate (minimum reverse repo ra	te) (%) ² 24.0	21.5	18.0	15.5	15.5	13.0
Rediscount rate (%) ²	24.5	23.5	21.5	18.3	18.3	15.5
Lombard rate (%) ²	27.0	26.0	24.0	20.0	20.0	17.0

¹ Final month of quarter.

² Period end.

Source: GUS, NBP estimates.

	Q2	Q3	Q 4	1999	QI	Q2	Q3	Q 4	2000
	1999	I				2000			
со	rresponding pe	riod previou	ıs year = 10	0					
	106.5	108.0	109.8	109.8	110.3	110.2	110.3	108.5	108.5
	105.2	106.2	108.1	108.1	107.3	108.9	108.3	105.6	105.6
	nominal g	rowth, perio	d end						
(co	rresponding pe	riod previou	ıs year = 10	0)					
	118.9	92.9	98.4	98.4	83.9	87.7	110.7	92.4	92.4
	119.3	9.	122.0	122.0	105.1	108.1	99.6	94.3	94.3
	122.9	120.9	119.3	119.3	113.8	120.6	4.	111.8	111.8
	124.6	122.3	118.3	118.3	115.5	123.3	6.	115.5	115.5
	123.4	120.8	115.2	115.2	114.2	118.5	117.3	120.9	120.9
	128.0	126.2	125.5	125.5	9.	136.0	113.0	103.8	103.8
	127.6	127.8	127.1	127.1	123.9	130.6	122.0	117.3	117.3
	141.1	147.6	153.1	153.1	152.1	179.4	140.9	131.7	131.7
	125.0	123.8	121.6	121.6	8.	119.7	117.4	113.5	113.5
	real gro	wth, period	end						
(co	rresponding pe	riod previou	ıs year = 10	0)					
	111.6	86.0	89.7	89.7	76.0	79.6	100.4	85.I	85.1
	112.0	110.3	111.1	111.1	95.3	98.1	90.3	87.0	87.0
	115.4	111.9	108.7	108.7	103.2	109.4	103.4	103.0	103.0
	117.0	113.2	107.7	107.7	104.7	111.9	105.3	106.5	106.5
	115.8	.9	104.9	104.9	103.5	107.5	106.4	111.5	111.5
	120.2	116.9	114.3	114.3	108.0	123.4	102.4	95.7	95.7
	119.8	118.3	115.7	115.7	112.3	118.5	110.6	108.1	108.1
	132.5	136.6	139.4	139.4	137.9	162.8	127.7	121.4	121.4
	117.3	114.6	110.8	110.8	107.1	108.6	106.5	104.6	104.6
	13.0	14.0	16.5	16.5	17.5	17.5	19.0	19.0	19.0
	15.5	15.5	19.0	19.0	20.0	20.0	21.5	21.5	21.5
	17.0	17.0	20.5	20.5	21.5	21.5	23.0	23.0	23.0

of government funding requirements by foreign currency revenues, including large privatisation receipts. Yet this method of government financing also had its negative consequences. The funds accessed in this way increased another source of money supply growth, namely, net foreign assets. Part of the foreign currency obtained by government was exchanged for zloty on the FX market, causing the zloty to appreciate. Further, the currency sold by central government directly to the NBP aggravated the surplus liquidity of the commercial banks, undermining the effectiveness of monetary policy. The opening in September 2000 of a government foreign currency account at the National Bank, earmarked for deposits of government foreign currency receipts, made it possible to avoid these negative effects of funding government expenditure from foreign sources.

In the course of 2000, the banking sector continued to show surplus operating liquidity, which weakened the impact of central bank interest rates on rates at the commercial banks. At the same time, other elements of the monetary policy environment played a significant role in improving the effectiveness of that policy. For example, the sharp rise in food prices up until July led to a decrease in other consumer spending and a reduction in loan demand. Moreover, the very poor earnings of corporates in 1999 constituted a barrier to undertaking investment in 2000 and acted as a constraint on wage growth, and therefore also on growth in personal consumption. In addition, with loan portfolio quality deteriorating, many commercial banks were now more cautious in originating new loans. One cause of the slackening of economic growth in Poland, as in other fuel-importing countries, was the increase in fuel prices.

In the Monetary Policy Guidelines for the Year 2001, the Monetary Policy Council set the inflation target for year end 2001 as year-on-year consumer price growth within a range of 6%-8%. The Council has reaffirmed that the target established in the Medium-Term Monetary Policy Strategy for the Years 1999-2003, i.e., lowering inflation to under 4% by year end 2003, remains fully valid. To lay the best possible basis for achieving that medium-term target, the Council will be seeking to bring inflation down to a level close to 6% at the end of 2001.

* * *

In the present *Report,* we also present the findings of certain model research conducted at the NBP, in particular as regards the relationship between the money supply and the level of prices within the Polish economy, and set out the methodology employed at the NBP in calculating indices of core inflation.

The present *Inflation Report* was developed on the basis of statistical data available up to mid-May 2001.



I.I. Consumer prices²

It was not until the second half of 2000 that it proved possible to halt the rise in the rate of inflation that had continued without interruption since August 1999. Although inflation came down 3.1 points between July and year end, annualised consumer price growth in December nonetheless stood at 8.5%, thereby overshooting the monetary policy target adopted for the year, i.e., consumer inflation of 5.4%-6.8%. This failure to achieve the inflation target is attributable to the excessive loosening of monetary policy at the turn of 1998 and 1999, the laxer fiscal policy in 1999 and 2000 than projected in the relevant Budgets, and stronger than expected supply shocks on the world fuel market

 $\frac{1}{2}$ In the present *Report*, the terms "consumer price growth" and "CPI" (Consumer Price Index) are used interchangeably.



Figures 1 Inflation in selected European countries (12-monthly CPI)

Source: GUS, EUROSTAT, CNB (Czech National Bank) data.

and the domestic food market, both of which began in 1999. It was only in the latter half of 2000 that the impact of high fuel prices on inflation started to wane, while food price growth also began to lose momentum as of August. Coupled with the tightening of monetary policy pursued since September 1999, these developments had the effect of curbing inflation considerably from July onwards, while the inflation target set for December was attained just two months later, in February 2001. However, the end result of inflationary processes taking the course outlined above during 2000 was that annualised average inflation rose to 10.1%, compared to 7.3% in 1999.

It should be noted that, in the years 1999-2000, the supply shocks referred to above pushed up inflation in most European countries, particularly those which are not themselves oil producers (cf. Fig. 1).

Despite the fact that in this situation the short-term inflation target was not achieved, from July 2000 onwards twelve-monthly inflation began to approach the downward trend line that had marked consumer price growth from mid-1995 until the beginning of 1999. This is borne out by Figure 2. As this chart shows, in February 1999

Figures 2 CPI and CPI trend, 1992-2000 (corresponding month previous year = 100)



Source: NBP calculations based on GUS figures.

	1998	1999			2000		
	XII	XII	III	VI	IX	XII	I-XII
		corresponding period previous year = 100					
CPI	108.6	109.8	110.3	110.2	110.3	108.5	110.1
Foodstuffs & non-alcoholic beverages	102.8	106.0	109.2	109.9	111.7	108.5	110.0
Alcoholic beverages & tobacco products	114.8	110.7	109.5	108.7	106.4	105.8	108.0
Non-food articles	108.9	110.6	111.0	110.9	108.7	106.5	109.6
of which: fuels	104.7	152.7	157.0	146.7	125.9	111.1	136.8
Services	114.6	112.4	110.7	110.2	.3	111.0	111.0

Table 1Price growth, basic categories of consumer goods & services

Source: NBP calculations based on GUS figures.

twelve-month CPI inflation hit a record low since the beginning of the economic transition in Poland. This primarily stemmed from a steep drop in food prices caused by a large surplus of supply over demand in the wake of the Russian crisis. The fact that inflation was at this point driven below the trend line was thus traceable to extraordi-



Figures 3 Consumer price growth (corresponding month previous year = 100)

Source: GUS.

nary circumstances. Following this period, a buildup of adverse factors, on both the supply and demand sides, produced an acceleration of price growth. As a result, in the final quarter of 1999 annualised inflation in Poland was running above the trend line, which it did not return to until the end of 2000.

Inflation in the years 1998-2000, as measured by consumer price growth, is presented in Table 1 and Figure 3, as are its principal components.

A breakdown of CPI growth over the same period is given in Table 2 and in Figures 4 and 5.

These figures confirm that the rate of inflation in 2000 was primarily conditioned by the following factors:

• steady and unremittingly strong growth in service prices,

- a weakening in the latter half of the year in the upward trend in food and fuel prices,
- declining growth in prices of non-food articles.

Service prices continued to exert the determining influence on overall price growth due to their large weight within the reference basket of consumer goods and services (31.9%). The increase in these prices in recent years has been relatively high and stable, despite

Table 2

Contribution of basic categories of consumer goods & services to annualised CPI

	1998	1999			2000		
	XII	XII	Ш	VI	IX	XII	I-XII
		Contribu	ition to CF	l growth	(percenta	age point	ts)
Total consumer goods & services	8.6	9.8	10.3	10.2	10.3	8.5	10.1
Foodstuffs & non-alcoholic beverages	1.0	1.9	2.8	3.0	3.6	2.6	3.1
Alcoholic beverages & tobacco products	1.0	0.7	0.6	0.6	0.4	0.4	0.5
Non-food articles	2.7	3.3	3.4	3.3	2.7	2.0	3.0
of which: fuels	0.1	1.3	1.6	1.3	0.7	0.3	1.0
Services	3.9	3.9	3.5	3.3	3.6	3.5	3.5
			Compositi	on of CPI	growth (S	%)	
Total consumer goods & services	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Foodstuffs & non-alcoholic beverages	11.7	19.4	27.2	29.4	35.0	30.6	30.6
Alcoholic beverages & tobacco products	11.6	7.1	5.8	5.9	3.9	4.7	5.0
Non-food articles	31.4	33.7	33.0	32.3	26.2	23.5	29.7
of which: fuels	1.2	13.3	15.5	12.7	6.8	3.5	9.9
Services	45.3	39.8	34.0	32.4	35.0	41.2	34.7
Services	45.3	39.8	34.0	32.4	35.0	41.2	34.7

Source: NBP calculations based on GUS figures.





Figures 4 Contribution of product categories to overall CPI growth (corresponding month previous year = 100)

Source: NBP calculations based on GUS figures.



Figures 5 Contribution of product categories to overall CPI growth (previous montb= 100)

Source: NBP calculations based on GUS figures.

changes in the severity of monetary policy and in the pace of domestic demand growth. Some service prices are set on markets that are not fully competitive, while rises in some of them are still a function of administrative decisions.

The high proportion of the consumer price basket represented by foodstuffs (30.5%) meant that the disruptions in food supply in the years 1999-2000 had a very powerful impact on the overall CPI. A major factor affecting food price growth was also the continued strong protection against imports provided to the domestic market for agricultural produce, as were the administrative methods of regulating supply on this market. Because of the timing and scale of the measures taken by the Government on this market, they frequently failed to curtail food price growth.

With the exception of fuels, the prices of non-food articles (accounting for 31.1% of the consumer basket) were to the greatest extent subject to market mechanisms. In addition, industrial goods are characterised by fairly high income elasticity of demand. With domestic demand growth ebbing, price increases in this category were relatively slow compared to the categories discussed previously.

Consumer service prices

Consumer service prices have been rising faster that those of consumer goods for a number of years now (excepting the period when temporary supply shocks pushed up the prices of goods, cf. Fig. 6). One factor acting to increase service prices is the "Balassy-Samuelson effect", modified by the process of adjusting officially regulated prices (cf. Box 1). The estimates available indicate that in 2000 this effect added 14% to the CPI (1 point).

A striking feature of service prices is the differentiation in growth rates, both among those service where price increases are capped by various forms of administrative decision, and among those that are to a greater extent governed by market mechanisms. As Figure 7 shows, in 2000 three categories of service prices determined by administrative decision strongly fed inflation, climbing by more than an annualised 12%-13%. These were the prices for transport services, electricity and gas supply, and housing occupancy.

Figure 8 presents the prices of those services that were more subject to market mechanisms. Among the



Figures 6 Consumer price growth (corresponding month previous year = 100)



Figures 7 Price growth, services (corresponding month previous year = 100)



Source: GUS.





A tendency observable in the highly-developed countries is that of a decline in value of the "internal terms of trade", i.e., of the price relationship between tradables and non-tradables. An empirical verification of Polish data supports the conclusion that the effect in question is also applicable to this country. The theoretical explanation of this tendency, known as the Balassy-Samuelson effect, is that the index of internal terms of trade reflects the relationship between the marginal productivity of labour in those sectors of the economy not subject to international competition and in those that are. This can be expressed as follows:

$$\frac{P_T}{P_N} = \frac{MPL_N}{MPL_T} ,$$

where P is the level of prices, MPL is the marginal productivity of labour, N refers to the non-tradables sector, and T refers to the tradables sector.

The first sector primarily involves services, since the overwhelming majority of these are local in character and are non-tradable, while the second sector consists of those industries producing tradable goods. In contrast to manufacturing, for example, where technological progress allows rapid productivity gains, achieving similar results is impossible in services. In consequence, the marginal productivity of labour in services declines relative to that in industry. Assuming a flat level of wages throughout the whole economy, and assuming that real wages in each sector correspond to the marginal productivity of labour for that sector, the Balassy-Samuelson effect allows us to infer that this situation causes service prices to grow faster than those of tradable goods. It is worth noting that the decline in value of the internal terms of trade is independent of the state of business activity, is unrelated to the ease with which costs can be passed through to prices in the service sector, and is not conditioned by any temporary impulse. Instead, it mirrors a certain fundamental economic process that will continue for as long as labour productivity keeps rising in industry.

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Source: GUS.

services in this category are health care, package holidays, and restaurants and hotels. These prices displayed much slower growth than the prices previously discussed, going up by an annualised 5%-8%, with a tendency to rise even less in the final quarter of 2000. Weakening demand for these services produced a flexible adjustment in prices.

Food prices

Movements in food price indices in 2000 were a function of diverse growth trends for particular foodstuffs (cf. Fig. 9). A small grain harvest in the 1999/2000 crop season, combined with restricted imports and a progressive decline in fatstock production, meant that prices for bread, other grain products and meat rose systematically from the beginning of the year. These price increases gained further speed in the spring. The root cause of instability on the market for agricultural produce in 2000 was the upsetting of equilibrium on the grain market. A fall in grain supplies of over 5% in the 1999/2000 season, together with a decrease of more than 27% in stocks car-



Figures 9 Price growth, foodstuffs (corresponding month previous year = 100)



Figures 10

Prices for foodstuffs & non-alcoholic beverages (processed & unprocessed) (corresponding month previous year = 100)



Source: NBP calculations based on GUS figures.

MBP

ried forward to the next season, resulted in demand exceeding supply. This led suppliers to raise grain procurement prices. Pessimistic forecasts regarding the size of the coming grain harvest, which were based, among other things, on adverse weather conditions for agriculture, additionally accelerated grain price increases in May and June 2000. At the same time, the administrative mechanisms in operation prevented restoring equilibrium with the help of extra imports. The decision to put in place a duty-free quota for grain imports, which was essential to supplement domestic supplies, was not taken until the end of June. In other words, this did not occur until after the sharp surge in grain prices seen in May and June, caused by increasing domestic supply shortages. Rising grain prices also hoisted meat prices. In the latter case, imports were again insufficient to prevent unduly steep price increases.

The excess demand on the market for agricultural produce triggered increases in retail prices for both processed and unprocessed foods, as Figure 10 illustrates. In practice, it was only vegetable prices, having risen rapidly in the first half of 2000 due to poor harvests the year before, that then started to come down in the second half of the year, following better harvests than in 1999. Up until mid-year, fruit prices also declined. However, relatively high price growth for the remaining categories of foodstuff persisted in the latter half of the year as well.

A more detailed discussion of supply and demand on the market for agricultural produce, together with a description of the official intervention undertaken and an assessment of the results this produced, is given in **Appendix 1**.

Prices of non-food articles

As in 1999, fuel prices constituted a major inflationary factor in 2000 (cf. Fig. 11). However, whereas in 1999 domestic fuel price growth gathered speed from one month to the next as of March (when world fuel prices began going up), in 2000 fuel prices in fact came down relative to the previous month on four occasions, slipping 1.1% in April, 4.7% in August and 0.4% in November, and then falling the most, 6.9%, in December. Annualised average fuel price growth came to 36.8% in 2000, as against 25.2% in 1999. A large NBP

Figures 11 Price growth, non-food articles (corresponding month previous year = 100)



Source: GUS.

Figures 12 CPI vs fuel prices (corresponding month previous year = 100)



Source: GUS.

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Factors determining retail fuel prices in 2000

The analysis presented below refers to Eurosuper 95 petrol, and is based on the following assumptions:

• the gross retail price of petrol given is the average domestic retail price as quoted by the Nafta Polska SA oil company (whose figures differ from those of GUS, the Central Statistical Office),

- the net retail price represents the gross retail price less VAT,
- the sales margin represents the net retail price less the average factory-gate price at the refineries,
- "import parity" represents the estimated price of imported fuel; factors affecting this include world fuel prices, dollar exchange rates, and excise duty,
- the import price represents the world price times the dollar/zloty exchange rate.
- The factors impacting retail fuel prices may be divided into three groups, as follows:
- external factors (world fuel prices, exchange rates),
- factors determined by the Government (excise duty, VAT, customs tariffs),
- market factors (stemming from the pricing policies of domestic refineries and fuel retailers).

The composition of retail fuel prices varies over time, being contingent on changes in the particular components involved, i.e., excise duty, daily movements in world prices, and dollar/zloty exchange rates. Thus, it is impossible to define a constant basket of the components of fuel prices. In 2000, monthly movements in retail prices were primarily related to fluctuations in import prices (resulting from movements in world fuel prices), and also to domestic market factors. As world prices rose, so the relative weight of sales margins declined, as did the difference between factory-gate prices and import parity (see the Table below, and also Figs. 13 and 14). On the other hand, due to their strong market position, domestic fuel producers reacted in weaker and/or slower fashion to decreases in world prices than to increases. The effect of this was to widen the difference between factory-gate prices and import parity. The powerful position on the market occupied by the PKN Orlen SA Polish Oil Corporation and the Gdańsk Refinery, which together own some 35% of all filling stations, could also have been the cause of sales margins increasing as a proportion of retail prices.

Month	Import price	Tariffs & taxes	Market factors
June 2000	38.3	55.6	6.1
December 2000	25.9	58.7	15.4

Components of gross retail petrol prices (%)

Source: NBP calculations based on figures from Nafta Polska SA.

In the first half of 2000, rising world fuel prices and increases in excise duty were the main factors behind retail price growth. In the second half of the year, world prices began to come down. However, this was the sole factor visibly acting to reduce retail prices. At this time, the impact of both domestic market factors and of taxes strengthened. In June 2000, the import price represented over 38% of the retail price of fuel, while by December, due to the decline in world prices, this proportion had fallen to around 26%. By contrast, the minor contribution of market factors to fuel prices, standing at 6% in June, had climbed to over 15% in December. The weight of customs tariffs and taxes was also greater at year end than it had been in June.

The Government decision to lift tariffs on imported fuels in September failed to produce any significant lowering of retail prices, although it did lessen the effect of September's rise in excise duty, reducing this from around 1.3 points to 0.6 points. In addition, the high proportion of VAT in retail prices (18%) reinforced the impact of the remaining factors (both when prices increased and when they decreased). part in this growth was played by price increases performed in 1999, which subsequently impacted fuel price levels in 2000. On the other hand, on a year-on-year basis (December 1999 to December 2000), fuel prices rose just 11.1% in 2000, compared to 52.7% the previous year (cf. Fig. 12).

In addition to fluctuations in world prices, movements in Polish retail fuel prices were determined by changes in the levels of excise duty and customs tariffs, and also by the pricing policies of domestic refineries and retailers. A more detailed description of these factors and their impact on retail prices is given in Box 2.

In line with a timetable adopted in December 1999, excise duty on fuels was raised three times in 2000, going up around 5% on January 1, around 4.8% on March 1, and around 4.6% on September 1. In contrast to 1999, during 2000 the Government did not carry out any additional increases in excise duty, over and above those announced earlier. In all, the rise in excise duty in the course of 2000 totalled some 15.1%, contributing around 4.6 points to fuel price growth.

Pursuant to a decision of the Government, from September 2000 – three months earlier than originally planned – a zero tariff was introduced on fuels imported from the European Union, the EFTA countries, the CEFTA countries, Lithuania, Estonia, the Faeroes and Turkey, and also from those countries with which Poland had not signed agreements on free trade zones. As a result, average customs tariffs on imported petrol went down from 5% in 1999 to 3% in 2000, and those on diesel fuel dropped from 11% to 4%.

The world price for Premium petrol exhibited large volatility in 2000. In June, this price stood at around USD 400 per tonne, up over 64% on December 1999 and almost 260% on December 1998. However, by December 2000 it had fallen below the level recorded in December 1999, to stand at around USD 220 per tonne.

In December 2000, a fall in world petrol prices was accompanied by the appreciation of the zloty against the dollar, thereby giving strong impetus to the decrease of domestic fuel prices. At this point, these prices dropped some 7% compared to the previous month. As a result, twelve-monthly fuel price growth came down from 23.5% in November to 11% in December, while annualised average growth slipped from 39.7% to 36.8%.







Source: NBP calculations based on figures from Nafta Polska SA.





Source: NBP calculations based on figures from Nafta Polska SA.

Due to this slump in the price of Premium petrol, the annual fuel price growth recorded at year end 2000 was exclusively attributable to domestic factors, i.e., the increase in excise duty and VAT, together with movements in exchange rates.

Prices of other non-food articles (excluding fuels) rose much more slowly in 2000 than the overall CPI (cf. Fig. 11). These groups of industrial products are the most affected by market pricing mechanisms, and are also to the largest extent subject to international competition. The prices of such articles within this category as clothing and footwear, household equipment (both audio-visual equipment and household appliances) and household furnishings all displayed growth within a range of 2%-8% at the beginning of 2000, subsequently tending to come down in the second half of the year to 2%-4%. In most cases, the reason for this was declining consumer demand growth.

In reviewing the course of inflationary processes in 2000, the following periods can be distinguished:

January-February – the rise in inflation begun in August 1999 continues; food price growth intensifies, while growth in the prices of services and of alcoholic beverages and tobacco products holds steady, and that of non-food articles diminishes slightly,

March-April – annualised price growth subsides somewhat due to the slower increase in the prices of services and non-food articles, although food prices rise more rapidly,

May-July – CPI inflation again climbs sharply due to faster price growth for foodstuffs and (to a lesser degree) consumer services; in July, annualised inflation hits its highest point during the year,

August-December – annualised inflation falls markedly as price growth slows for foodstuffs and non-food articles, including fuels; growth in service prices stays flat at July's level, dipping gently in December.

I.2. Core inflation

In the first half of 2000, all measures of core (underlying) inflation trended upwards, while in the second half this trend was reversed. The sole exception was "net" inflation (ex-food & fuels), which moved down in the first quarter of 2000, and then for the remainder of the year held relatively stable at around 9%.





Figures 15 CPI vs core inflation, excluding most volatile prices (corresponding month previous year = 100)

Source: NBP calculations based on GUS figures.





Source: NBP calculations based on GUS figures.

The analysis set out below of movements in particular rates of core inflation is supplemented in **Appendix 2** by a detailed presentation of the methodology used to calculate these rates and the findings of research into the quality of the results they produce (a verification of the long-run relationship between the CPI and indices of core inflation, and also of the forecasting properties of those indices).

The specific nature of inflationary processes in Poland, including in particular the changing scope of officially regulated prices, and the differentiated and shifting sources of inflation, means that various aspects of those processes can be analysed more fully by employing several measures of core inflation. It should be noted in this connection that in 2000 the core inflation rates presented below did not contradict each other. An attempt at establishing which index of core inflation constitutes the most satisfactory measure of inflation in contained in **Appendix 2**.

From April 2000 onwards, core inflation as adjusted to exclude from the CPI those prices that exhibit the highest volatility ran very close to the CPI, the only measure to do so (cf. Fig. 15). This was principally due to movements in fuel prices, which were not eliminated from this index. A comparison of this measure of inflation with a supplementary one that also excludes fuel prices (cf. Fig. 16) confirms the very strong influence of those prices on overall inflation, and also shows that growth in the most volatile prices was similar to that of the general CPI (of the prices included in this index, the highest increases were seen in those of sugar, bread, processed meats, raw meat, transport services, services related to housing, gas, medicines and hard coal). In the fourth quarter of the year, the gap between these two indices narrowed, which was the result of lower fuel price growth.

The next measure of core inflation, adjusted for the outlying 15% of prices subject to the greatest and smallest change relative to the preceding period, on both sides of the distribution (15% trimmed mean inflation, cf. Fig. 17), ran well below the CPI from the beginning of 2000 (the difference between the two did not diminish until Q4). Of the prices included in this index, the fastest growth was reported in those of hard coal, processed meats, medicines and energy. On the other hand, the prices excluded from the index, yet exerting the greatest







Source: NBP calculations based on GUS figures.





Source: NBP calculations based on GUS figures.

impact on CPI inflation in the fourth quarter, were those of telephone rental, certain foodstuffs, transport services and services related to housing.

The rate of core inflation obtained by excluding officially controlled prices from the CPI reached its highest point in July, at 11%, and then gradually began to come down (cf. Fig. 18). Growth in prices determined by market mechanisms picked up in the fourth quarter, principally due to increases in the price of certain foodstuffs, such as bread, flour, sugar, pork and processed meats. Substantial price growth was seen in services (including charges for housing occupancy and other services related to housing), while the non-food articles significantly affecting this measure of core inflation were medicines and hard coal. Of the prices excluded from this index of core inflation, those of fuels, transport services and telephone rental, and also cigarettes, electricity and gas, all made a major contribution to inflation, although their exclusion from this rate of core inflation did not reduce it noticeably.

"Net" inflation (cf. Fig. 19), i.e., core inflation as obtained by eliminating the prices of foodstuffs and nonalcoholic beverages, and also fuel prices, has displayed

Figures 19 CPI vs "net" inflation, excluding food and fuel prices (corresponding month previous year = 100)



Source: NBP calculations based on GUS figures.

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the steadiest growth since February 1999 (8.2%-10%). This is evidence that growth in the prices making up this index of core inflation has remained virtually constant, and also that those prices excluded from this measure have risen substantially, particularly those of fuels and numerous foodstuffs, including bread, flour and meat.

The level of core inflation indices in 2000 reaffirms the large impact of supply shocks on overall consumer price growth. As of July, core inflation came down less rapidly than CPI inflation. This demonstrates that the fall in inflation recorded in this period was primarily related to the gradual fading away of the consequences of disruptions on the world fuel market. The second half of the year also saw lower growth in food prices.

I.3. Producer prices in industry³ and construction

In December 2000, industrial producer prices were 5.6% higher than they had been in the corresponding period of the previous year (in December 1999, year-on-year growth had been $8.1\%)^4$. The fact that the PPI rose much less than a year earlier was chiefly the result of slower price growth in the section of manufacturing (cf. Fig. 20). The producer price index for this section of industry stood at 4.7% in 2000, down 2.8 points on 1999. Price growth in the section of manufacturing is estimated to have been responsible for some 78% of the total increase in the PPI⁵.

Producer price growth in the remaining two sections of industry ran at a similar level in 2000 to that recorded in 1999. In the section of electricity, gas and water supply, prices rose 10.0% (compared to 10.9% in 1999), while in mining and quarrying they went up 9.5% (8.9% in 1999).

Price growth in the section of mining and quarrying was primarily related to considerably faster producer price increases in the division of coal and lignite mining; prices here rose 9.4% in 2000, as against 4.4% in 1999. This

³ In the present *Report*, the terms "industrial producer price growth" and "PPI" (Producer Price Index) are used interchangeably.

⁴ In these price indices, the corresponding month of the previous year represents 100. ⁵ The estimate of the contribution made by particular sections (or divisions) of industry to the PPI was compiled on the basis of figures for the growth in prices and in output in the period from January to December 2000, compared to that in the corresponding period of the previous year. The weightings used reflect an index of the composition of industrial output by section and division of activity, in accordance with the Polish Classification of Economic Activity.

NBP

Figures 20 Industrial producer price growth, by section (corresponding month previous year = 100)



Figures 21

Contribution to PPI of producer price movements in particular divisions of industry (corresponding period previous year = 100)



(corresponding period previous year = 100)

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division experienced an exceptionally large increase in production costs due to implementation of the coal industry restructuring programme. Particularly sharp growth was registered in external service costs, labour costs, and depreciation charges. These higher costs could only be partially offset by financial assistance from public funds.

Strong producer price growth also continued in 2000 in other divisions of industry. The highest growth was reported in the following divisions:

- electricity, gas, steam and hot water supply, where prices rose 10.5%, compared to 11.1% a year earlier (both production and distribution in this division is largely monopolised),
- manufacture of coke and refined petroleum products, where prices went up 10.4%, compared to 56.9% a year earlier (production costs here are linked to the price of raw materials traded on world markets),
- manufacture of food products and beverages, where prices increased 8.0%, compared to 5.6% a year earlier (prices here are determined by agricultural produce prices, and also by official agricultural policy and the policy of protection to the food market).

Movements in industrial producer prices in 2000 were principally impacted by producer price growth in five divisions of industry: manufacture of coke and refined petroleum products; manufacture of food products and beverages; electricity, gas, steam and hot water supply; manufacture of chemicals and chemical products; and manufacture of metals. Together, producer prices in these five divisions accounted for around 74% of PPI growth (as against some 51.2% in 1999) (cf. Fig. 21). Compared to the previous year, the influence on industrial producer prices exerted by price growth in the division involving oil refining almost doubled (shooting up from 16.7% in 1999 to 29.7% in 2000; from January to March, 2000, the contribution made by this division was exceptionally high, at a huge 34.8%, due to the rise in world oil prices). An equally large increase was seen in the contribution to the PPI made by the division "manufacture of food products and beverages", which was responsible for 10.4% of PPI growth in 1999, yet 22.9% in 2000, as the raw materials for food processing went up in price (cf. Table 3). The products of both of these divisions are included in the reference basket of consumer goods and services, and their prices therefore feed into the CPI.

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Table 3

Contribution of producer price growth in selected divisions of industry to total PPI (cumulative basis, corresponding period previous year = 100)

		I – XII 1999			I – XII 2000	
	Producer	Share of	Contribution	Producer	Share of	Contribution
	price	division in	of division	price	division in	of division
11-	growth for	total indus-	to total PPI	growth for	total indus-	to total PPI
	division	trial output		division	trial output	
Manufacture of coke						
& refined petroleum products	124.5	3.9	16.7	138.2	5.9	29.7
Manufacture of food products						
& beverages	102.9	20.3	10.4	109.4	19.2	22.9
Electricity, gas, steam						
& hot water supply	109.6	8.9	14.9	108.7	9.5	10.5
Manufacture of chemical product	s 107.0	5.8	7.1	107.8	5.9	5.8
Manufacture of metals	102.5	4.8	2.1	107.9	5.1	5.1
Remaining 25 divisions	_	56.3	48.8	_	54.4	26.0
INDUSTRY	105.7	_	_	107.8	-	-

Source: Biuletyny Statystyczne [Statistical Bulletins], GUS; NBP calculations & estimates.

The direction taken by the PPI and CPI has exhibited a large degree of conformity (cf. Fig. 22), although the differences between them in the course of 2000 varied in size. In December 2000, consumer price growth was 2.9 points higher than industrial producer price growth (in December 1999, it had been 1.7 points higher). The faster decline in the PPI than in the CPI has laid a favourable basis for lowering inflation in the future.

In construction, producer prices were up 6.9% in December 2000 compared to the corresponding period of 1999 (a year earlier, the increase had come to $8.9\%)^6$. The easing of producer price growth in construction is on the one hand traceable to heightening competition on the market for construction services, and on the other – to the declining rate of investment within the Polish economy.

⁶ The maintenance of relatively rapid producer price growth in construction, despite the fall in construction output in 2000, is associated with the conclusion of longterm contracts for construction services that provide for guaranteed price levels.


Figures 22 Producer Price Index (PPI) and Consumer Price Index (CPI) (corresponding period previous year)

Source: GUS.

In the section of transport, storage and communications, prices in December 2000 had risen 8.2% compared to the corresponding period of 1999 (a year earlier, this increase had been 10.6%). The slower growth of prices here mainly involved the divisions of land transport (growth down 3.4 points to 8.9%) and of supporting and auxiliary transport activities (growth down 2.4 points to 6.9%). By contrast, in the highly monopolised division of post and telecommunications, price growth in 2000 was up 1.9 points on the previous year, at 9.1%.

2. DOMESTIC DEMAND AND SUPPLY IN 2000

In 2000, Polish GDP growth came to 4.1% (preliminary estimates), the same rate of growth as recorded in 1999. For the first time since 1995, GDP growth outpaced that of domestic demand. The tendency was thus arrested for an increase in negative net exports (the balance of trade as reflected in the national accounts). Growth in GDP and domestic demand and the relationship between the two in the years 1995-2000 are presented in the table below.

One of the reasons for the weakening of domestic demand growth in 2000 were the interest rate rises performed by the NBP in the autumn of 1999 and beginning of 2000. These were carried out in a situation of mounting inflationary pressure and a deepening deficit on the current account. Due to the time lags in monetary transmission mechanisms, the effects of these rises gradually began to make themselves apparent from the second quarter of 2000 onwards. By contrast, the increase in NBP interest rates performed in August 2000 had only a minor impact on demand in 2000; this impact began to be felt in the first quarter of 2001.

Table 4GDP, domestic demand and net exports, 1995-2000

	1995	1996	1997	1998	1999	2000	
GDP	107.0	106.0	106.8	104.8	104.1	104.1	
Domestic demand	107.0	109.7	109.2	106.4	104.9	102.8	
growth differential, pct points	0.0	-3.7	-2.4	-1.6	-0.8	+1.3	
Consumption	103.3	107.2	106.1	104.2	104.5	102.1	
Capital formation	124.5	119.5	120.8	113.8	105.9	104.9	
Exports	122.8	112.0	112.2	114.3	97.4	•	
Imports	124.3	128.0	121.4	118.5	101.0		
Total domestic demand to GDP, current prices	97.7	101.6	104.3	105.2	106.4	106.6	
Consumption	78.0	79.7	79.7	79.0	80.0	80. I	
Capital formation	19.7	21.9	24.6	26.2	26.4	26.5	
Net exports to GDP, current prices	2.3	-1.6	-4.3	-5.2	-6.4	-6.6	
Net exports, million zloty, current prices	7.2	-6.0	-20.4	-29.0	-39.1	-45.5	

Source: GUS.

NBP

Lower domestic demand growth was the result of slacker growth in both consumer and investment demand. The deceleration of consumer demand was stronger (down 2.4 points more). This was related to household disposable incomes rising more slowly than in 1999, and also to the diminished role of borrowings in financing consumption (one cause of this being high interest rates). The smaller decrease in capital formation (down 1.0 points) stemmed from a greater increase in 2000 in tangible current assets. A steeper reduction was seen in fixed investment (down 3.4 points), mainly as a result of slower growth in corporate capital expenditure. The swifter growth of GDP than of domestic demand did not produce any major changes in the relationship between the two. As in 1999, domestic demand was over 6% greater than GDP (at current prices), while consumption represented over 80% of GDP and capital formation was equivalent to over 26%.

The achievement of the same rate of GDP growth in 2000 as in 1999, despite lower domestic demand growth, was made possible by stronger performance in foreign trade. The increase in the volume of exports was considerably higher than that of imports, and the trade deficit narrowed. The greater importance of foreign demand in Polish economic growth was reflected in changes in the sources of GDP. The fastest growth in value added was reported in industry (up 6.8%, as against 3.0% in 1999 and 4.8% in 1998), with the highest rise in output seen in those divisions exporting a large proportion of their production. By contrast, output growth came down at companies mainly producing consumer goods. Growth in value added was also down in commercial services, and production decreased in construction for the first time since 1991. Due to the adverse weather conditions for crop production and the maintenance of the downward trend in livestock production, value added in agriculture declined for the second year in succession.

The improvement in Poland's foreign trade in 2000 halted the increase in the country's external disequilibrium that had been going on since 1996. On a balance of payments basis, the current account deficit dropped from 7.5% of GDP in 1999 to 6.3% in 2000. The decline in the amount of foreign savings required, as expressed in the reduction of the current deficit, can be attributed to gross savings within the Polish economy rising faster than nominal growth in capital formation. This represents a major qualitative change in comparison with 1999, when the deficit widened as growth in savings came down more sharply than growth in capital formation. Preliminary NBP estimates are that gross savings, which went up 23.1% in 1998 and some 5% in 1999, increased around 15% in 2000. In the same years, nominal growth in capital formation came to 25.0%, 11.9% and 12.9%, respectively.

Apart from the improvement in corporate sector earnings seen last year, another cause of the increase in savings in the Polish economy in 2000 may be presumed to have been the sound profits reported by financial intermediaries and insurers (which was in part related to the reform of the pension system). The rise in savings in these sectors meant that, despite gross household savings decreasing further, total private sector savings in 2000 were higher than in 1999 (going up from 19.4% to 20.0%, an increase of 0.6 points). However, due to the stronger growth of capital formation in the whole private sector (up 0.9 points), the situation in this sector acted to widen the current deficit. On the other hand, the general government sector saw a reduction in savings (of 0.2 points in relation to GDP), which was accompanied by a steeper fall in capital expenditure (of 0.8 points). As a result, in contrast to 1999, the balance of public sector investment and savings came down in 2000, and it was this that constituted the determining factor behind the improvement in external disequilibrium. Estimates of the savings in particular sectors and of the impact of these sectors on external disequilibrium, together with the methodology employed in performing the relevant calculations, are presented in Appendix 4.

The first three quarters of 2000 brought declining growth in both GDP and domestic demand. Growth in consumption and capital formation, although similar in the first quarter to that recorded in the fourth quarter of 1999, subsequently slowed in the second and third quarters. However, initial estimates show growth in consumption and capital formation going up slightly in the fourth quarter compared to the third. Growth in GDP and domestic demand in the particular quarters of 2000 is set out in Table 5.



Table 5Quarterly growth in GDP & domestic demand

Year	QI	Q2	Q3	Q4	Q1-4			
	Corresponding period previous year = 100							
1999	101.4	102.8	104.8	106.1	103.9			
2000	105.8	105.0	103.1	102.0	103.8			
1999	95.7	99.8	106.0	109.7	103.0			
2000	110.2	109.4	106.5	102.3	106.8			
1999	102.0	102.8	103.2	104.9	103.5			
2000	104.3	100.8	97.8	97.6	99.4			
1999	105.8	105.8	106.5	106.8	106.0			
2000	105.5	105.3	103.5	104.1	104.6			
1999	101.6	103.0	105.0	106.2	104.1			
2000	106.0	105.2	103.3	102.4	104.1			
1999	103.4	104.6	105.5	105.7	104.9			
2000	105.1	103.3	101.3	101.7	102.8			
1999	104.0	104.4	104.8	105.0	104.5			
2000	103.9	102.3	100.9	101.3	102.1			
1999	104.6	105.2	105.7	105.9	105.4			
2000	104.6	102.6	100.8	101.3	102.4			
1999	100.7	105.5	107.8	107.1	105.9			
2000	111.5	106.8	102.6	102.7	104.9			
1999	105.7	106.3	106.6	107.0	106.5			
2000	105.5	102.9	102.4	102.6	103.1			
	Year 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000 1999 2000	Year QI 1999 101.4 2000 105.8 1999 95.7 2000 110.2 1999 95.7 2000 104.3 1999 102.0 2000 104.3 1999 105.8 2000 105.5 1999 101.6 2000 106.0 1999 103.4 2000 105.1 1999 104.0 2000 103.9 1999 104.6 2000 104.6 2000 104.6 2000 105.7 2000 111.5 1999 105.7 2000 105.5	Year QI Q2 Corresponding 1999 101.4 102.8 2000 105.8 105.0 1999 95.7 99.8 2000 110.2 109.4 1999 102.0 102.8 2000 104.3 100.8 1999 105.8 105.3 1999 105.5 105.3 1999 101.6 103.0 2000 106.0 105.2 1999 101.6 103.3 1999 103.4 104.6 2000 105.1 103.3 1999 104.0 104.4 2000 103.9 102.3 1999 104.6 105.2 2000 104.6 102.6 1999 100.7 105.5 2000 104.6 102.6 1999 100.7 106.3 1999 105.7 106.3 2000 105.5 102.9	Year Q1 Q2 Q3 Corresponding period previo 1999 101.4 102.8 104.8 2000 105.8 105.0 103.1 1999 95.7 99.8 106.0 2000 110.2 109.4 106.5 1999 102.0 102.8 103.2 2000 104.3 100.8 97.8 1999 105.8 105.8 106.5 2000 105.5 105.3 103.5 1999 105.8 105.3 103.5 2000 105.5 105.3 103.5 1999 101.6 103.0 105.0 2000 106.0 105.2 103.3 1999 103.4 104.6 105.5 2000 105.1 103.3 101.3 1999 104.0 104.4 104.8 2000 103.9 102.3 100.9 1999 104.6 105.5 107.8	Year QI Q2 Q3 Q4 Corresponding period previous year = 100 1999 101.4 102.8 104.8 106.1 2000 105.8 105.0 103.1 102.0 1999 95.7 99.8 106.0 109.7 2000 110.2 109.4 106.5 102.3 1999 102.0 102.8 103.2 104.9 2000 104.3 100.8 97.8 97.6 1999 105.8 105.8 106.5 106.8 2000 105.5 105.3 103.5 104.1 1999 101.6 103.0 105.0 106.2 2000 106.0 105.2 103.3 102.4 1999 101.6 103.0 105.5 105.7 2000 106.1 103.3 101.3 101.7 1999 103.4 104.6 105.5 105.7 2000 105.1 103.3 101.3 <			

Source: GUS; NBP estimates.

2.1. Domestic demand

Personal consumption in the household sector

Personal consumption in the household sector is estimated to have risen by a nominal 11.8% in 2000, or 2.4% in real terms. Real growth in personal consumption therefore declined considerably, coming down from 4.8% in 1998 and 5.4% in 1999. In the particular quarters of the year, growth in personal consumption in the household sector came to 4.6%, 2.6%, 0.8% and 1.3%.

The slowdown in consumer demand growth in 2000 was primarily the result of the lower increase in real household disposable incomes recorded in the last two years. In 1999, growth in these incomes almost halved compared to the previous year. Households maintained their high level of consumption at this point thanks to a substantial increase in consumer lending and a reduced propensity to save. In 2000, the financial situation of households worsened. Growth in average real employee earnings diminished, while the incomes of those households dependent on social benefits actually fell. It is estimated that nominal disposable incomes rose some 10% on the year before.

In 2000, average real monthly employee earnings in the corporate sector went up 1.3%, as against 3% in 1999. The NBP estimates that the substantial slackening of growth in average corporate sector real wages, combined with the decline in the numbers in employment, led to a 6.9% decrease in aggregate corporate sector real wages.

Owing to the reduced purchasing power of average old-age and disability pensions and the decline in the average number of pensioners, a decrease was also seen in the growth of household incomes from social benefits. The average employee old-age or disability pension was down 2.3% in real terms compared to 1999, while the average farmer pension was down 2.9% and aggregate pensions fell 2.6%. On the other hand, aggregate social insurance payments and other transfer payments went up 0.8% in real terms, mainly due to an increase in preretirement benefits and allowances (up 92% in nominal terms) and unemployment benefits (up a nominal 28%). In addition, 3.4bn zloty was paid out in 2000 in compensation for the temporary failure to raise government sector salaries and the lack of adjustments or supplements to old-age and disability pensions in the years 1991-1992.

Estimates by the NBP show a further decrease in 2000 in both the gross savings ratio in the household sector, which fell to 9.3% (compared to 10.9% in 1999 and 13.2% in 1998), and in the net financial savings ratio, which dropped to 4.7% (as against 5.4% in 1999 and 7.6% in 1998). The decline in financial savings in 2000 came about despite growth in personal zloty savings at the banks almost doubling and a more restrained increase in consumer loans taken out by households. The causes of this decline were a contraction in the volume of notes and coin in circulation, and slower growth in foreign currency deposits and investments in securities.

The sharpest decrease in currency in circulation in 2000 took place in the first quarter (when cash stocks

shrank 5.1bn zloty compared to year end 1999). This can be ascribed to the disappearance of fears connected with "Y2K". Deposits that had been withdrawn and converted to cash in December 1999 were again placed at the banks in January 2000, resulting in a decrease in cash stocks. In terms of the whole year, however, the reduction in the volume of notes and coin (down 3.9bn zloty) was chiefly due to the expansion of various forms of non-cash settlement.

The more subdued growth of personal consumption at households in 2000 was reflected in a lower increase in retail sales. The volume of retail sales, comprising sales of foodstuffs and non-food articles purchased by households, rose some 2% year-on-year (in 1999, the corresponding increase had been 4.0%).

The low growth in total retail sales was related to a year-on-year fall of 18.5% in sales of motor vehicles and motorcycles, 10.4% in sales of solid, liquid and gas fuels, and 14.7% in sales of foodstuffs, alcoholic and non-alcoholic beverages, and tobacco products at specialised retail outlets. The remaining segments of the retail trade reported an increase in sales. Sales volumes were up 5.1% year-on-year at companies retailing furniture, audio-visual equipment and household appliances, and 10.8% at those selling pharmaceuticals, cosmetics and orthopaedic appliances. The strongest growth, of 12.9%, was recorded at distributive companies operating non-specialised outlets mainly retailing foodstuffs, beverages and tobacco products.

Capital formation

Preliminary estimates from GUS show capital formation rising 4.9% year-on-year in real terms in 2000, with this including 3.1% growth in gross fixed investment. Growth in capital formation and in fixed investment was slower than in the preceding years (standing at 5.9% and 6.5%, respectively, in 1999, and 13.8% and 14.2% in 1998).

The faster growth of capital formation than of gross fixed investment stemmed from a large increase in tangible current assets. At constant prices, this increase was over 55% greater than in 1999. However, this rapid stockbuilding does not solely reflect the amassing of surplus output at companies, but is also the statistical echo of the abnormal movements in current assets that occurred at the turn of 1998 and 1999. At that time, particularly in the first months of 1999, companies scaled back their stocks of raw materials and intermediates to correspond to the slump in output that had taken place7. As a result, in the first quarter of 1999, growth in current assets came to just 92.4m zloty at current prices (representing only 0.4% of capital formation), whereas in the same period of 1998 it had amounted to 1,141.1m zloty (accounting for 5.0% of capital formation). In subsequent months, as output recovered, companies were seen to be restocking, although in the second quarter of 1999 growth in current assets was still lower than a year before (1,215.6m zloty, as against 1,309.9m in Q2 1998). As a result, despite faster growth in current assets in the following quarters, over the year 1999 as a whole this growth was 9.9% less than in 1998.

In the first quarter of 2000, growth in current assets totalled 1,624.0m zloty at current prices, and at constant prices was almost 17 times more than the exceptionally low level reported a year previously. In the second quarter of 2000, the increase in current assets was more than twice as large as a year earlier; however, it would appear that at this point the strong increase was not only a function of the preceding year's low reference base, but was also due to excess output, given that domestic demand was rising more slowly. Growth in current assets rose to 7.0% of capital formation, while in the corresponding periods of 1997 and 1998 it had represented 4.2%-4.3%. The third quarter of 2000 again brought a higher share of current asset growth within capital formation than the seasonal norm (5.2%, compared to 3.4%-3.8%), with the end result that for the year as a whole this ratio stood at 5.1% (as against 4.0%in 1998 and 3.4% in 1999). It should be noted, however, that the increase in current asset growth as a proportion of capital formation – aside from the excess output, relative to demand, seen in the second and third quarters of 2000 - was also due to the substantial reduction of growth in fixed investment.

 $^{^7}$ Due to the collapse of exports to Eastern markets in the aftermath of the Russian crisis, for three consecutive quarters value added in industry was lower than it had been twelve months before (down 1.1% in Q4 1998, 4.3% in Q1 1999, and 0.2% in Q2 1999).

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The decline in the growth of fixed investment was chiefly rooted in the curtailing of corporate capital expenditure. Capital spending at companies with a staff of over 49 was 2.2% higher in real terms than a year previously. Expenditure on buildings and structures fell 6.0%, while purchases of capital goods rose 7.1%. These purchases represented some 59% of total investment (at current prices), compared to 57% a year earlier. Within these purchases of capital goods, the proportion of imported machinery and equipment dropped to 27.6%, as against 34.7% in 1999.

At current prices, the swiftest growth in total capital expenditure was seen in the section of real estate and business activities (an increase of around 67%), and in transport, storage and communications (around 30%). In distribution and repairs, investment was down 0.3%, while in manufacturing it slipped some 4.1%. The largest decline in investment took place in the divisions manufacturing pulp and paper, coke and refined petroleum products, and wearing apparel and fur products. After high growth rates in previous years, in excess of 33%, capital spending fell in 2000 in the manufacture of motor vehicles. By contrast, a large increase relative to 1999 was seen in investment in the manufacture of other transport equipment, of rubber and plastic products, of fabricated metal products, and of furniture. These shifts in the structure of capital expenditure by division indicate that investors had higher hopes of selling new output on foreign markets than on the domestic market. This is also confirmed by the areas chosen for new investment projects. In 2000, the industries where a rise was recorded compared to 1999 in the cost-estimate value of projects in course of construction included those manufacturing food products, radio and television equipment, furniture, and basic metals.

Major changes were also observable in the type of investment project being undertaken. Although the number of new projects increased 16.6% compared to 1999, their cost-estimate value was 4.3% lower. This decline in the average value of projects being started was the result of capital spending being redeployed from the construction of new facilities to the modernisation of existing fixed assets. The latter accounted for 51.1% of the cost-estimate value of all projects under way, as against some 31% in 1999.

The flagging growth in corporate capital expenditure in 2000 was related to the deterioration in corporate finances being witnessed since the end of 1998. In 1998, corporate sector net savings (gross savings equivalent to gross disposable income, less depreciation) were lower in nominal terms than they had been in 1997. It is believed that the nominal decrease in this sector's net savings became more acute in 1999. With fixed investment still relatively high, this led to a rapid growth in net debt. The improvement in corporate earnings seen in 2000 should arrest the decline in corporate savings and lay the basis for an increase in capital expenditure in 2001.

Public sector finances

The tightening of fiscal policy performed in 2000 proved weaker than expected. Government receipts were lower than projected and the expenditures of local government institutions and the health service were higher than planned, as were the deficits at government special-purpose funds, especially at the Employment Fund, resulting in an increased imbalance within the whole sector of public finances, both in terms of the targets written into the Budget for 2000 and in comparison with the previous year. On a cash basis, the public sector financial deficit finally came to 3.0% of GDP, as against a projected 2.7% and the 3.2% recorded in 1999.

In addition, the failure to transfer the planned sum of social insurance contributions to open-ended pension funds heightened the negative impact of the public sector on domestic savings, as measured by the adjusted fiscal deficit⁸. In 2000, these pension funds were to have received 10.1bn zloty, while the sum actually transferred amounted to around 7.5bn. As a result, the adjusted fiscal deficit overshot the original target of 1.7% of GDP, and in fact stood at 2% of GDP⁹.

⁸ The adjusted fiscal deficit represents the public sector financial deficit on a cash basis, adjusted by compensation payments for the failure to raise wages, together with old-age and disability pensions, at the turn of 1991/92, and by the transfer of social insurance contributions from ZUS (the Social Insurance Board) to open-ended pension funds. In 2000, the calculation of this deficit was modified, replacing the cash deficit of the Social Insurance Fund with a deficit defined as the movement in the Fund's outstanding net debt to the commercial banks and the Treasury.

⁹ This figure for the adjusted fiscal deficit was not announced by the Ministry of Finance until the end of May 2001. In the second half of 2000, various statements from the Ministry concerning the expected performance of the adjusted fiscal deficit referred to it rising to between 2% and 2.7% of GDP. It should be noted here that the achievement of a lower adjusted deficit than forecast was principally due to a major decrease in December 2000 in the outstanding debt of the Social Insurance Fund to the commercial banks.

The threat of fiscal policy being relaxed, which the NBP had already recognised when the Budget for 2000 was still being drafted, was one of the factors that led the central bank to raise interest rates in November 1999. Uncertainty as to the final character of fiscal policy, particularly in the context of the soaring buildup of the government deficit in the first half of the year, was a major consideration in maintaining a tight monetary policy stance. In addition, a series of statements from the Government reaffirmed fears that the adjusted fiscal deficit could surpass the targetted 1.7% of GDP (in July 2000, when work was under way on the Budget for 2001, it was projected that the deficit would climb to 2% of GDP, and in November 2000 this forecast was raised to 2.5% of GDP).

Since fiscal policy in 2000 was less rigorous than had previously been indicated, the task of restoring economic equilibrium had to be assumed by monetary policy. This resulted in a poor policy mix. A laxer fiscal policy left no option but to tighten monetary policy, leading to a slowdown in the pace of investment and in economic growth.

The macroeconomic environment for performance of the national budget in 2000 differed from that anticipated at the beginning of the year. More sluggish growth than forecast resulted in central government receipts being lower than projected in the Budget. Moreover, the fact that inflation was higher than envisaged placed a strain on government expenditures, the majority of which are index-linked, while at the same time giving rise to high government spending obligations in 2001. Over the year as a whole, government receipts were 5.2bn zloty less than planned (equivalent to 3.7% of the annual target), mainly due to lower revenues from indirect taxation and personal income tax, and this determined the level of government spending that could be carried out while keeping to the government deficit target, set in the Budget for 2000 at 15.4bn zloty (2.2% of GDP).

The difficult conditions for performance of the national budget also affected the other components of public finances, primarily local government institutions. With a reduction in revenues (partly correlated with central government receipts), and an increase in

Table 6

Public sector financial deficit, 1999 & 2000 (% of GDP)

	1999	2000	2000
		plan	performance
Central government	-2.0	-2.2	-2.2
Local government institutions	-0.2	-0.2	-0.5
Health trusts	-0.1	-0.1	-0.1
Special-purpose funds	-1.0	-0.2	-0.5
Other	0.1	0.1	0.1
Public sector financial deficit	-3.2	-2.7	-3.0
Adjusted fiscal deficit	-2.9	-1.7	-2.0

Source: Report on performance of the national budget, January-December 2000, Ministry of Finance, May 2001.

expenditures¹⁰, local government reported higher deficits than a year previously. By contrast, the balance of receipts and expenditures improved at government special-purpose funds, principally thanks to the better financial condition of the Social Insurance Fund, which stemmed from the increased collectibility of social insurance contributions. However, the Employment Fund suffered from a shortage of finance due to the surge in benefit payments caused by the rising number of unemployed.

The balance of receipts and expenditures of the particular components of public finances is given in Table 6.

The adjusted fiscal deficit, which portrays the impact of the sector of public finances on the balance of savings within the economy, came down in comparison to the previous year, yet was higher than targetted in the Budget. This had a negative effect on the cost of suppressing inflation.

In these circumstances, no major changes were forthcoming in the scale of GDP redistribution effected by central government; this remained high, despite the mild downward trend that has been continuing for several years. In 2000, public sector spending stood at some 42.7% of GDP, a figure around 1.8 points lower than in 1999.

¹⁰ One factor raising local government expenditures were salary increases in education as a result of amendments to the Teacher's Charter.

NBP

Nor did the year 2000 bring any significant changes in the pattern of domestic demand generated by the public sector. Compared to 1999, the proportion of expenditures assigned to purposes of consumption rose from 85.8% to 86.7%, with a decline in the relative weight of fixed spending on servicing the public debt (down 0.6 points) and of capital spending (down 0.3 points).

2.2. Supply

Gross value added increased 3.8% in real terms in 2000, i.e., growth was similar to that in 1999. However, due to shifts in the pattern of demand, the contribution to that growth made by particular divisions of activity changed. The weakening of domestic demand growth resulted in a slower increase in value added in commercial services than that recorded the year before, and also in a decrease in value added in construction. The faster rise of external demand accelerated output growth in industry. Owing to adverse weather conditions, agricultural output fell, as it had in 1999.

The growth in value added was achieved in the context of a further decline in the employed labour force. Preliminary estimates from GUS put the employed labour force at year end 2000 at 15.7 million, as against 15.9 million twelve months before. Thus, the social productivity of labour again increased. After two years of lower investment activity, fixed asset growth in 2000 does not seem to have been higher than in 1999. In previous years, when growth in fixed investment was more rapid, growth in the capital stock was less than GDP growth, with asset productivity rising. This tendency would appear to have been sustained in 2000. The increase in output was associated to a greater extent with an improvement in the efficiency of factors of production than with their expansion. In macroeconomic terms, the volume of factors of production did not constitute a barrier to growth.

A strong increase in efficiency was reported in industry. Labour productivity, as measured by output per employee, rose some 14% relative to 1999. With average employment down 6.3%, output at industrial companies with a staff of over nine was up 7.1%. Output growth was higher than in 1998 (3.5%) and 1999 (4.8%). Compared to previous years, growth slowed in industries mainly producing consumer goods (to around 2%) and in those chiefly manufacturing capital equipment (to around 9%). Growth quickened in those industries manufacturing production supplies (to some 11%). Robust growth was seen at companies selling their output abroad. This applies both to those producing capital equipment and to those manufacturing production supplies, and in part also to those producing consumer goods. The upturn on foreign markets led to an increase in sales in such industries as metals, coke, the manufacture of radio, television and communication equipment and apparatus, and chemicals. Despite a deepening decline in sales of passenger cars, output growth was sustained in manufacture of motor vehicles, trailers and semi-trailers, mainly due to exports of vehicle components.

The lower growth recorded in commercial services was primarily traceable to a significantly lower rise in sales and margins in retail distribution. In 2000, retail sales at large and medium distribution enterprises were up 1.5% on the previous year, although a decline was noted in the third and fourth quarters. Despite the substantial increase in foreign trade, growth in wholesale decreased, which may be attributed to the faster growth of exports, largely carried out directly by industrial companies, with slower growth in imports, handled mainly by distributive firms. Sales of transport services went up around 1%, while in communication growth came to over 14%. High growth was sustained in the services of financial intermediaries and insurers.

Construction output fell compared to 1999 (down 2.1%), which was related to diminished growth in capital construction and modernisation projects (growth of 2.0%), together with a slump in repair and maintenance works (down 12.4%). Output declined at companies involved in building installation and the building of complete constructions, while rising at those involved in site preparation and building completion.

Gross agricultural output fell 4.1% compared to the previous year (in 1999, the decrease came to 5.2%). Crop production was down 3%, while livestock production dropped 5.5%. The decline in crop production was primarily the result of exceptionally low harvests of grain and rape, and also a smaller fruit harvest. Meanwhile, the drop in livestock production was due to a contraction of the cattle and pig herds, which led to production of fatstock and milk being lower than in 1999.



* * *

The level of aggregate demand within the Polish economy in 2000 did not fuel inflation. The strength of demand pressure on prices is usually defined in terms of the "demand gap". This represents the difference between the current level of output and that which is neutral, i.e., does not generate inflationary pressure. A positive gap occurs when mounting demand causes current output to exceed potential output. Unemployment then declines to below the "natural rate", pressure arises for wage increases, and inflation begins to go up, as does the trade deficit. The demand gap becomes negative when production capacity is not fully utilised and unemployment rises above the natural (equilibrium) rate. Pressure for higher wages then abates, while weak demand makes it difficult for producers to raise their prices.

The non-inflationary level of output ("potential output") is not a variable that is directly observable, although it can be estimated by statistical or econometric methods. Owing to certain factors, including the profound structural changes taking place in the Polish economy since 1999, and also the very short time series of macroeconomic data available, which do not cover a full business cycle, identifying the long-term equilibrium level of output and estimating the demand gap are subject to major uncertainty¹¹.

NBP estimates indicate that the level of non-inflationary GDP growth is around 5% per year. Figure 23 depicts the demand gap, expressed as a percentage of the potential output approximated by the NBP. From the third quarter of 1996 to the third quarter of 1998, this gap was positive. However, the relatively swift decline in inflation for most of this period was accompanied by a furious increase in external disequilibrium. The collapse of demand for Polish exports in Russia and Ukraine in the wake of the Russian crisis led to the level of current output falling beneath that of potential output at the beginning of 1999, giving rise to a negative

¹¹ Estimation of the demand gap was performed using a statistical method. Seasonally-adjusted GDP figures, at constant prices, were smoothed using the Hodrick-Prescott filter. The values thus obtained were deducted from the seasonally-adjusted figures on current GDP. The difference thus derived represents the demand gap.







demand gap. The effect of this was to check price growth in Poland at that point in time.

The resurgence of demand, particularly in the third and fourth quarters of 1999, together with the supply shocks on the fuel and food markets, acted to swell inflationary pressure. The interest rate rises begun in 1999 were one of the factors that turned the positive demand gap into a negative one in 2000, and held output below its potential level throughout the year. Ebbing domestic demand growth slowed inflation and helped reduce external disequilibrium.



3. EXTERNAL DISEQUILIBRIUM

As a result of the tightening of monetary policy, the year 2000 saw an improvement in the relationship between private sector investment and savings, which yielded a significant reduction in domestic demand growth. In addition, sales opportunities on Poland's main export markets increased markedly. On the one hand, this was thanks to rising external demand, while on the other it flowed from the favourable cost competitiveness of Polish exports.

These factors eased the external disequilibrium of the Polish economy in 2000. Following a period in which the gap between domestic investment and savings steadily widened (1996-1999), the current account deficit narrowed from USD 11.6bn in 1999 to USD 10.0bn in 2000. The restoration of external equilibrium proceeded systematically from the second quarter of 2000 onwards. At year end, with economic growth having stabilised, the current account deficit stood at 6.3% of GDP, compared to 7.5% in 1999 (cf. Fig. 24).

The key factor behind this performance on the current account (responsible for some 74% of the improvement) was a USD 1.2bn fall in the trade deficit (cf. Fig. 25). At the same time, the declining trend in the surplus on unclas-



Figures 24 Current deficit as proportion of GDP, 1996-2000

Source: NBP.



Figures 25 Trade deficit, 2000



Source: NBP.

Figures 26

Export & import growth by volume, 1998-2000 (year-to-date, corresponding period previous year = 100)



Source: GUS.

sified current transactions was arrested, while the deficit on services steadied at the same level as in 1999. The remaining components of the current balance – income and current transfers – also held flat at the previous year's level.

Balance of payments statistics indicate that the growth in export receipts gathered momentum as of the second quarter of 2000, clearly outpacing the growth in import payments. Receipts for exports of goods went up 7.2% compared to 1999, to total USD 28.3bn, while payments for imports went up 1.7% to USD 41.4bn.

These tendencies in Poland's trade in goods were also confirmed by customs statistics. The figures for 2000 published by GUS show the dollar value of exports amounting to 31.7bn, up 15.5% on 1999, with imports up 6.6% at 48.9bn¹². It is worth emphasising that this improvement in the balance of trade took place despite an increase of USD 1.5bn in payments for oil imports (due to both higher prices and a larger volume of purchases).

The changes seen in the relative growth rates of exports and imports when compared to 1999 is also borne out by figures on the volume of trade (cf. Fig. 26). At constant prices, exports were up 25.3% in 2000 (as against an increase of just 2.0% in 1999), while imports were up 10.8% (as against growth of 4.4% in 1999).

Over the first ten months of the year, the strongest growth by volume was recorded in exports to the countries of the European Union (up 26.5%). In the same period, the largest volume increase in imports was reported in deliveries from the countries of Central and Eastern Europe (up 18.7%, with oil imports up 13.2%, i.e., 1.9 million tonnes), and the EU (up 12.2%).

This rapid growth in export volumes in 2000 is attributable to the following factors:

an 11% increase in the volume of euro area imports in 2000 (compared to 6.4% in 1999), including growth of 10.5% in German imports (as against 4.8% in 1999)¹³. The analytical model employed by the NBP indicates that movements in external demand accounted for almost 50% of the increase in Polish exports during this period;

 $^{^{12}}$ The appreciation of the US dollar against the euro in 2000 means that growth in the trade figures as expressed in dollars was lower than in those expressed in euros or measured by volume; in terms of the euro, exports rose 33.9% in 2000, while import growth came to 23.3%.

¹³ Estimates for 2000 taken from *World Financial Markets*, first quarter 2001, J.P. Morgan.

Figures 27 Real effective zloty exchange rates, 1993-2000 (January 1993 = 100)



Source: NBP calculations.

- the slowing of Polish domestic demand growth, which was down 2.1 points year-on-year in 2000 (with personal consumption down 3 points and gross fixed investment down 3.4 points). Although the contribution this made to the rising growth in export volumes was far smaller than that made by changes in external demand, the fact that output was "crowded out" of the domestic market contributed around 2 points to the rise in exports;
- the depreciation of real zloty exchange rates against the dollar (as deflated by labour costs in industry)¹⁴.

¹⁴ Research using econometric models indicates that export volumes react most strongly to changes in real exchange rates one month afterwards, and then again eight months afterwards. The response seen after one month involves 5%-7% of all goods, which enjoy constant demand and are not exported solely due to being overpriced. The response after eight months concerns all goods that are potentially exportable. An analysis of export streams by product groups and country groups points to the following interrelationship: the volume of raw materials and low-processed goods exported to non-OECD countries is highly sensitive to movements in nominal exchange rates. By contrast, the volume of more highly-processed goods exported to developed countries is significantly dependent on movements in real exchange rates. Since the latter category represents some 70% of total exports, it is real exchange rates that play the dominant role within exports overall. Source: J. Przystupa, *Ekonometryczny model funkcjonouznia gospodarki polskiej ze szczególnym uuzględnieniem bandlu zagranicznego* [An econometric model of the operation of the Polish economy, with particular consideration to foreign trade], Instytut Koniunktur i Cen Handlu Zagranicznego, Warsaw, 2000.

Around one third of changes in export volumes can be traced to movements in these exchange rates. The exchange rate elasticity of export volumes stands at 1.12 and has been steady over time. In 2000, unit labour costs in industry came to 0.96 (i.e., they were down 4 points on 1999). Given nominal zloty depreciation against the US dollar of 9.6%, the zloty weak-ened 12.1% over the year in real terms (cf. Fig. 27). Thus, with export volumes up 25.3% over the twelve months of 2000¹⁵, it can be concluded that the depreciation of real zloty exchange rates in both 1999 and 2000, by enhancing the competitiveness of Polish goods, accounted for 4.5 points of export growth by volume¹⁶;

from the third quarter of 2000 onwards, price competitiveness had a neutral impact on generating export growth. This growth was primarily determined by the launching of sales of diesel engines manufactured at a factory in Tychy built by the Isuzu corporation¹⁷. By value, exports of these engines constituted over 11% of total Polish exports in the third quarter of 2000.

The rise in import volumes in 2000 was the end result of a substantial decline in domestic demand growth¹⁸, coupled with an acceleration of export growth (due to the unit consumption of imports in export production). In addition, around one sixth of the change in import volumes was a function of move-

- virtually the entire output of this plant (target output is to be around 450,000 units per year) is shipped to manufacturing plants run by Opel (to take 300,000 units) and Honda (150,000 units);
- sales of engines in Q3 2000, amounting to USD 902m, were not accompanied by a proportional increase in imports of components.

¹⁵ Biuletyn Statystyczny GUS [GUS Statistical Bulletin] no. 3/2001.

¹⁶ An improvement in the cost competitiveness of Polish exports is also indicated by the index of real effective zloty exchange rates as deflated by unit labour costs, which slipped 1.0% in 2000 compared to 1999, despite the appreciation of the zloty against the euro (cf. Fig. 27). Polish companies, including exporters, made a large effort to hold on to their competitive position and improve their earnings in the face of flagging domestic demand, rising costs and the real appreciation of the zloty (the annualised average increase in the indices of real effective exchange rates, as adjusted by reference to movements in manufacturers' producer prices and in consumer prices, came to 5.7% and 10.1%, respectively). The measures thus undertaken yielded a major rise in labour productivity, which offset the adverse effect of movements in nominal exchange rates on the competitive position of manufacturers of tradable goods.

¹⁷ The plant in Tychy (operated by Isuzu Motors Polska) is a typical example - albeit infrequent in Poland - of an investment project geared towards exports, carried out by a foreign company:

¹⁸ Movements in domestic demand account for around three quarters of the changes in imports.

NBP

Figures 28 Financing of current deficit by FDI



Source: NBP.

ments in nominal effective zloty exchange rates, as deflated by the CPI. With the exchange rate elasticity of import volumes equivalent to 0.95 and the zloty strengthening in real terms (annualised average appreciation of 10.1%), this firming of the zloty was responsible for 1.6 points of the 11.3% increase in imports by volume¹⁹.

The positive balance on unclassified current transactions increased slightly in 2000 (up almost USD 0.4bn). The growing part played by Poland's eastern voivodships in net purchases of convertible currencies, along with the larger share of dollars in those purchases relative to 1999, suggest an upturn in unregistered trading with Poland's Eastern neighbours. Confirmation of this can be found in the statistics compiled by Poland's Border Guards, which show the numbers passing through Poland's eastern borders up 17.4% in 2000 compared to 1999, with the largest

¹⁹ The reason for the far stronger growth in import volumes than that seen in 1999, despite domestic demand coming down in 2000, was the major rise in export volumes. Over the medium term, the import elasticity of exports stands at 1.05.





Figures 29 Pattern of incoming FDI, 1998-2000

Source: NBP.

increases on the borders with Belarus (up 26.5%) and Ukraine (up 19.6%)²⁰.

The deficit on services stabilised in 2000 at the level of USD 1.7bn (as against USD 1.6bn in 1999). Higher net debits on insurance and financial services, and on patents, copyrights and licence fees²¹, were counterbalanced by larger net credits on transport services and a reduction in the deficits on construction and commercial services, and also on tourism. The deficit on "income" in the current balance remained at the level recorded in 1999, amounting to USD 0.8bn. The surplus on current transfers was up some USD 80m on 1999.

The year 2000 saw an improvement in the pattern of financing for Poland's current account deficit. The continuation of privatisations helped to boost the surplus on foreign direct investment (FDI) to USD 8.3bn (as against USD 6.5bn in 1999). This produced a major

²⁰ GUS.

 $^{^{21}}$ The deficit on this category of services is largely associated with the strong inflow of foreign capital to Poland, while the expansion of Polish companies abroad remains limited.

Table 7 Early warning signs

	1998	1999	2000
Current balance/GDP	- 4.3	- 7.5	- 6.3
Trade balance, goods/GDP	- 8.7	- 9.4	- 8.3
SFDI/Current balance*	74.8	55.9	83.I
Non-privatisation investment/Current balance	52.6	26.1	28.0
Current balance less FDI/GDP*	-1.2	-3.4	-1.1
Foreign portfolio investment/Official reserve assets	4.9	5.3	10.1
Official reserve assets (yrs)/Current balance	4.0	2.2	2.8
Short-term external debt/ Total external debt	14.2	16.5	13.0
Corporate foreign borrowings/ Total external debt	32.1	37.0	41.4
Official reserve assets as months of imports	7.5	7.5	8.0

* It should be noted that the improvement in those ratios involving FDI in 2000 stemmed from the inflow of foreign investment generated by privatisations, particularly that of TP SA.

> increase in the proportion of the current deficit funded by FDI (cf. Table 7 and Fig. 28)²². The composition of inward investment was also more favourable. In contrast to previous years, the proportion of direct investment debt fell in 2000, coming down to 12.2% from 33.1% in 1999, while the proportion of non-privatisation investment rose (cf. Fig. 29).

> Beginning from the second quarter of 2000²³, the net inflow of foreign portfolio investment was considerably lower than in 1998 and 1999, which was related to the net outflow of investment in Polish debt securities in the third and fourth quarters.

> Meanwhile, cause for concern was given by the growing proportion of corporate borrowings in Poland's total external indebtedness (cf. Table 7).

 $[\]frac{22}{1}$ It should be said, however, that a major portion of this investment represented the proceeds from the privatisation of one company, Telekomunikacja Polska SA (TP SA), which yielded some USD 4.3bn.

²³ A large surplus on this item of the capital account was seen in Q1 2000, amounting to USD 2.0bn, yet over 50% of this came from bond issues on international markets by the Polish Treasury and TP SA.



4. THE LABOUR MARKET

One factor conditioning the scope and strength of the impact of the demand gap on inflation is the degree of efficiency displayed by particular markets and the possibility of flexibly adjusting supply to correspond to demand. One of the most important elements of this process is the labour market.

Employment and unemployment

The year 2000 brought yet another reduction in employment, both within the corporate sector and within the economy as a whole. The fall in employment was the sharpest since 1993. Compared to 1999, average corporate sector employment declined 3.3%, while in industry it shrank a huge 6.3%. The contraction in the number of employees in employment was most pronounced in the public sector. In 2000, employment here slumped 7.2% (as against 6.2% the year before), while average employment in the private sector in the same period rose 0.1% (as against 4.4% in 1999).

The disparity was even greater as regards the loss of jobs in public and private sector industry (13.9% and 2.6%, respectively). In terms of those divisions of industry accounting for a substantial share of total employment, the largest decreases were reported in manufacture of basic metals (18.5%), coal and lignite mining (13.8%) and manufacture of textiles (11.5%). The steepest fall was in the first quarter of the year, when average employment in the whole corporate sector dropped 3.6%. In subsequent quarters, the rate of decrease slowed slightly. Although employment in services had risen rapidly for several years, the increase witnessed in 2000 was several times smaller, failing to offset the large decrease in industry and construction (cf. Fig. 30).

The predominant role of the public sector in the decline in employment, and the particular industries showing the largest decline, confirm that the level of employment in 2000 was significantly influenced by the restructuring programmes under way. A very important factor reducing employment was also that companies were attempting to maintain their competitiveness against a backdrop of the deterioration of earnings in 1999 and a further rise in costs (fuels and energy), a situation compounded by the gradual weakening of domestic demand growth. In seeking to trim

Figures 30 Movements in corporate sector employment, by section (previous year = 100)



Source: NBP calculations based on GUS figures.

production costs, companies first and foremost cut their labour costs. Employers are given an incentive to reduce costs by shedding staff because of the heavy financial burden placed on them by the provisions of the Labour Code and social insurance regulations, and also by the regulations on staff pay (including the high level of social insurance contributions, the provision of sick pay by employers for illnesses of up to 35 days, and the high minimum wage when compared with average pay). Until recently, the relatively high severance pay required, particularly in cases of collective redundancies, acted as a short-term disincentive to downsizing the workforce. In 2000, however, with employers under powerful pressure to cut their production costs, they were prepared to carry out redundancies, although in doing so they incurred large costs in terms of redundancy pay (six months' wages for every person involved). The incentives in force did not encourage growth in employment. As a result, investment in labourefficient technologies rose, allowing large productivity gains in conjunction with staffing cuts (see "Capital formation" in section 2.1, "Domestic demand"). Further, in the course of 2000 an increase was seen both in the num-

Year	Newly-registered	of which:							
	unemployed	due to collective		schoo	l-leavers	due to other reasons,			
	in period	redur	ndancies	& graduates		includin	g financial		
							of employer		
		no. of	as % of	no. of	as % of	no. of staff	as % of		
		redundan-	total newly-	school-	total newly-	dismissed	total newly-		
		cies (thou.)	registered	leavers &	registered	(thou.)	registered		
			unemployed	graduates	unemployed		unemployed		
				(thou.)					
1999	2 562.9	164.8	6.4	388.9	15.2	2 009.2	78.4		
2000	2 475.9	185.4	7.5	396.5	16.0	I 894.0	76.5		

Table 8

Sources of newly-registered unemployment

Source: NBP calculations based on GUS figures.

ber of companies announcing future redundancies, and in the scale of the redundancies so announced. In January 2000, 700 workplaces disclosed plans for a total of some 36,000 redundancies in the near future, yet in December the corresponding figures were 2,000 workplaces and over 77,000 redundancies (cf. Table 8).

At year end 2000, the jobless total stood at 2.7 million, having risen 352,800 since December 1999 (of this number, only 20% were eligible for benefit), which represented the highest figure since 1993. The largest number of people newly registered as unemployed was recorded in the fourth quarter, i.e., 678,900 (almost 12,000 more than in Q4 1999). The prime reasons for the growth of unemployment in 2000 were poor corporate finances and demographic factors. The part played by collective redundancies increased, including those stemming from corporate restructuring and privatisation. Of those employees losing their jobs (through no fault of their own) in 2000, 185,400 registered as unemployed, i.e., the same number as in 1994. Of this number, only 44% re-entered employment, whereas in 1994 an enormous 92% of those dismissed found new jobs. The labour market was also swollen by the addition of employees who lost their jobs due to the expiry in 2000 of most employer commitments under the "social contracts" concluded in previous years as part of privatisation deals.

NBP

Figures 31 Registered jobless through redundancies, 1994-2000



Source: NBP calculations based on GUS figures.

Figures 32

School-leavers & graduates newly registered as jobless and deregistered on entering employment, 1994-2000





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Figures 33 Unemployment, job vacancies and capital expenditure growth

Compared to 1999, the population of working age rose 149,000 in 2000 (i.e., the population between the ages of 18 and 59 or 64), with a particular increase in those over 44 years of age. Of the 720,000 people leaving school or college in 2000, almost 400,000 registered as unemployed, and just one quarter of those (108,000) subsequently deregistered due to entering employment. This means that the labour market in 2001 will include 300,000 of the previous year's school-leavers and graduates (cf. Fig. 32). If the structure of unemployment seen in 1999 is preserved, some 35% of these 300,000 jobless school-leavers and graduates will remain out of work for more than a year. In all, the larger-scale redundancies in 2000 than a year before and the entry onto the labour market of those born in the years of the demographic high of the 1980s, together with waning investment in new jobs and a resulting decrease in the number of vacancies on offer, combined to take the number out of work at year end to 15% of the labour force, as against 13.1% at the end of 1999 (cf. Fig. 33).

Source: NBP calculations based on GUS figures.

The jobless total was also increased by the failure to adjust the supply of labour to the requirements of the market. Around 70% of those registered as unemployed have only a primary education (complete or incomplete), or attended a junior vocational secondary school. There are still many junior or senior vocational secondary schools specialising in trades which are no longer in demand on the market.

Unemployment in Poland is highly differentiated geographically, ranging from 11.1% (9.6% in 1999) in the Mazovia voivodship to 24.5% (22.8% in 1999) in the voivodship of Warmia and Mazuria, where most of those out of work were formerly employed at state farms and are poorly qualified. In 1999, they were still able to find jobs in construction. In 2000, however, due to the downturn in construction (especially as regards the actual building of constructions), employment in this section of activity declined 4.2% year-on-year, which particularly acted to increase unemployment in regions with large numbers of former state farms.

A major barrier to bringing down unemployment is the low level of labour mobility in Poland, which is associated with difficulties in accommodation (mainly due to high house prices and rents), and also transport problems (poor connections between particular regions and high fares). In addition, the inappropriate relationship between the minimum wage and the level of unemployment benefit and other pre-retirement benefits and allowances undermines interest in finding employment. In 2000, the increased pre-retirement benefit was 20% higher than the minimum wage, while the minimum income was slightly higher than the lowest wage. As the above indicates, more effective measures to combat unemployment will largely depend on achieving greater flexibility both on the labour market and in setting wages.

Employee earnings

Average employee earnings in the national economy as a whole and in the corporate sector in particular rose much more slowly in 2000 than they had in previous years. This can be traced both to companies attempting to improve their own earnings, and to the easing of staff pressure for wage rises due to the continuing increase in the number of job seekers. For this reason, surplus corporate funds were not assigned to pay increases to the



extent seen in previous years, and wage levels were primarily a function of the financial health of the companies concerned.

In a few industries where strong trade unions are present (e.g., mining and metallurgy), certain concessions were extracted by the workforce, such as slowing down the rate of job loss as part of the restructuring of lossmaking companies. This resulted in additional costs in keeping these unprofitable firms operational, while the inevitable redundancies were simply postponed. Despite this, in 2000 both the nominal and real growth of average wages in these industries was lower than in the corporate sector as a whole.

Over the course of the year, average gross employee earnings in the corporate sector went up 1.2% in real terms, whereas in 1999 they had risen 3.1%. In the first half of 2000, real wage growth was comparable to the year before, at 3.5%. In the second half of the year, nominal wages increased at a similar pace to consumer price growth. It was only in July and December that wage growth was lower than inflation (a difference of around 2 points). In the fourth quarter, average gross wages slipped 0.9% in real terms (cf. Fig. 34). Table 9





Source: NBP calculations based on GUS figures.

Table 9

Source: GUS

Average wage growth, corporate sector (corresponding month previous year = 100)

	1	Ш	III	IV	V	VI	VII	VIII	IX	Х	XI	XII
						L.	999					
nominal	105.3	108.0	111.7	111.0	110.2	110.5	109.9	111.1	112.3	110.9	109.0	112.3
real	98.5	102.3	105.2	104.4	103.6	103.8	103.4	103.6	104.0	102.0	99.8	102.3
						2	000					
nominal	117.2	117.9	113.7	115.5	112.0	111.5	109.2	111.9	110.7	110.4	110.2	106.4
real	106.4	106.8	103.1	105.2	101.8	101.2	97.8	101.1	100.4	100.5	100.8	98. I

NB. Wage growth indices for January and February 2000 are not fully comparable with those for 1999, due to the fact that not all companies performed the required "grossing up" of wages in January 1999, resulting in understated figures for that year.

presents corporate sector wage growth in the particular months of 1999 and 2000.

The highest wage growth in 2000 was reported in the divisions of post and telecommunications (8% in real terms), manufacture of radio, television and communication equipment and apparatus (6.7%), and manufacture of other transport equipment (4.5%). In 10 divisions, however, including coal and lignite mining, wage growth was less than inflation. Excluding Polish State Railways and the Polish Post Office (a state public utility), average gross employee earnings in the corporate sector went up a nominal 11.2%, or just under 1% in real terms.

Despite a certain slackening in the fourth quarter, growth in labour productivity in 2000 ran much higher than wage growth. The share of wages in total corporate costs (at companies employing a staff of 50 and over, and filing the F-01 report to GUS) decreased from 18.9% in 1999 to 17.5% in 2000. Movements in labour productivity, unit labour costs and the remuneration of productivity gains are depicted in Figure 35.

In the general government sector, average wage growth again outstripped that in the corporate sector. One reason for this was the independent setting of pay by local government. Average gross wages rose 4.9% in the government sector in 2000 (in real terms), whereas in the corporate sector they went up 1.2%. Despite this,







average employee earnings in the government sector remained lower, standing at 94% of those in the corporate sector in 2000 (compared to 90% in 1999).

Average wages have been increasing faster in the private sector than in the public sector for several years now. Nevertheless, pay levels in the former still lag behind those in the latter. In 2000, average gross employee earnings in the private sector were 18% lower than those in the public sector (in 1999, the gap stood at 20.4%). However, in companies with majority foreign equity, wages were 32% higher than in the private sector overall.

Source: NBP calculations based on GUS figures.



5. OTHER SUPPLY FACTORS IMPACTING INFLATION

A major obstacle to reducing inflation in Poland are various factors related to the structure of the economy. In 2000, competition remained limited on many markets that play an important role in determining overall price growth. Movements in prices were also affected by changes in certain fiscal and customs instruments, and by trends in external prices.

Structural factors

A situation of near monopoly prevailed in 2000 on the markets for liquid fuels, telecommunications and postal services, land and air passenger and freight transport, electricity, district heating and gas.

Industrial companies²⁴ occupying a dominant position²⁵ on their respective markets were to be found in three economically important classes of activity²⁶: "manufacture of refined petroleum products" (included within the section of manufacturing), "production and distribution of electricity"²⁷ and "manufacture of gas and gaseous fuels" (both the latter are included in the section of electricity, gas and water supply). In addition to the above-mentioned areas of production, evidence of monopolisation was also visible in certain services within the section of transport, storage and communications. A dominant position was held by particular businesses in the classes of "transport via railways", "scheduled air transport", "national post activities" and "telecommunications" (cf. Table 10).

²⁴ Figures on these companies are taken from the quarterly financial statements which they submit to GUS on the F-01 form. The requirement of filing these statements to GUS applies to all companies employing 50 or more employees, regardless of the business they conduct, i.e., it applies to companies of large and medium size. At year end 2000, there were 17,430 of these companies.

²⁵ The Act on Combatting Monopoly Practices defines a business as occupying a dominant position "where it has a market share of over 40%". This has been interpreted as the share of that company's output in the output of the whole class of activity concerned. Sales revenue and equivalents have been taken to correspond to the volume of output.

²⁶ The Polish Classification of Economic Activity categorises business establishments by five levels of aggregation: sections (of which there are 17), divisions (60), groups (222), classes (503) and subclasses (647).

²⁷ In "production and distribution of electricity" there is no single company dominant within the whole country. However, there are companies which dominate local markets in particular voivodships.

	Manufacture	Production	Manufacture	Transport	Scheduled	National	Telecommu-
	of refined	and	of gas and	via railways	air	post	nications
	petroleum	distribution	gaseous		transport	activities	
	products	of electricity	fuels				
Classification no.							
- section	D	E	E	I	I	I	I
– division	23	40	40	60	62	64	64
– class	23.20	40.10	40.20	60.10	62.10	64.11	64.20
No. of companies	14	134	3	13	I	1	43
Share of dominant							
company in output		not applicable					
of class (%)	64.7	nationwide	99.7	95.7	100.0	100.0	59.7
Share of class							
in total output (%)	4.3	6.1	0.8	1.0	0.3	0.5	2.8
Price indices, section							
– cumulative	(105.0) 107.5	(109.6) 108.4	as previous	(107.6) 109.5	as previous	as previous	as previous
– Dec./Dec.	(107.5) 104.7	(110.9) 110.0		(110.6) 108.2			
Price indices, division							
– cumulative	(124.5) 138.2	(109.6) 108.7	as previous	(108.6) 111.3	•	(102.4) 107.7	as previous
– Dec./Dec.	(156.9) 110.4	(111.1) 110.5		(112.3) 108.9	•	(107.2) 109.1	

Table 10Monopolisation of classes of economic activity, 2000 (cumulative figures)

NB. Values in parentheses refer to 1999.

Source: F-01 reports; GUS.

The situation on the market for liquid fuels was heavily influenced by world prices for oil (as feedstock) and of petrol and diesel fuel (imported). Compared to the previous year, the contribution of the division involving oil refining to industrial producer prices almost doubled.

The manufacture of liquid fuels was subject to monopoly. The PKN ORLEN SA Polish Oil Corporation occupied a dominant position on the market for liquid fuels, both in terms of refining and of distribution (both wholesale and retail). Together with affiliated companies, this corporation accounted for around 75% of all oil refined in Poland in 2000. The corporation operates over two thousand filling stations, 30% of all stations in Poland, and through this network sells some 40% of all fuels. The fact that PKN ORLEN holds such a strong position in sales of liquid fuels does not encourage the growth of competition on the Polish market. The second major producer and distributor of fuel in 2000 was Rafineria Gdańska SA - the Gdańsk Refinery. However, domestic producers do not satisfy the total demand for petrol and diesel fuel. Some 25% of demand for petrol and around 10% of demand for diesel fuel is met every year by imports. Administrative restrictions on fuel imports had an adverse effect on market competition and fuel prices²⁸. The import permits required for particular fuel shipments prevent a flexible approach to the use of imported fuels to satisfy domestic demand, one where the volume of those imports is adjusted to correspond to the ongoing situation on the market.

Earnings and costs in the class "manufacture of refined petroleum products" demonstrate unequivocally that producer prices in the division involving oil refining were chiefly affected by increases in feedstock costs and in excise duty (cf. Table 11). To earn 1 zloty in pre-tax profits in 2000, companies in this class of activity had to spend an enormous 13.55 zloty on feedstock and energy (compared to 9.55 zloty in 1999), and pay another 7.53 zloty in excise duty (7.20 zloty in 1999). The tax payable on those profits also went up, from 23% in 1999 to 26.6% in 2000.

In 2000, most companies in the section of manufacturing operated in a competitive environment. December-on-December price growth in manufacturing came to 4.7%. This was not only less than in 1999, but also 0.9 points less than the PPI for the whole of industry in 2000^{29} .

The tendency witnessed in the division "manufacture of food products and beverages" differed from that seen in manufacturing as whole, with December-on-December producer price growth in this division going up from 5.6% in 1999 to 8% in 2000³⁰. The production

²⁸ These restrictions included licences to trade in liquid fuels (required for businesses with annual sales above EUR 500,000), import licences for companies bringing in fuel from abroad, and permits for particular import shipments, specifying the source and quantity of fuel involved.

 $^{^{29}}$ In December 2000, industrial producer prices were up 5.6% year-on-year (in December 1999, growth had come to 8.1%).

 $^{^{30}}$ On a cumulative basis, January-December, the price index rose from 2.9% in 1999 to 9.4% in 2000.
Table 11

Structure of production costs and efficiency ratios, selected classes of economic activity, 1999-2000 (cumulative figures)

	Manufacture of		Prod	uction	Manufacture of	
	refined petroleum		and dist	tribution	gas and gaseous	
	products		of electricity		fuels	
	1999	2000	1999	2000	1999	2000
Structure of costs (%)	100.0	100.0	100.0	100.0	100.0	100.0
– material inputs & energy	49.6	56.7	36.0	34.5	48.6	50.8
– external services	6.0	5.4	23.0	27.5	13.0	16.6
- taxes & duties, of which:	38.0	32.1	1.6	1.7	1.3	1.1
– excise duty	37.3	31.6	0.0	0.0	0.0	0.0
– total labour costs	3.0	2.3	17.7	16.5	21.6	17.6
- depreciation charges	2.8	2.8	18.8	17.5	14.2	12.9
Ratios of costs to pre-tax earnings:						
– total costs/pre-tax earnings	19.27	23.86	27.63	45.07	-24.34	-14.11
 material inputs & energy 						
/pre-tax earnings	9.55	13.55	9.94	15.52	-11.83	-7.16
– external services						
/pre-tax earnings	1.15	1.28	6.34	12.40	-3.15	-2.35
– excise duty/ pre-tax earnings	7.20	7.53	0.00	0.00	0.00	0.00
– total labour costs/pre-tax earnings	0.57	0.54	4.89	7.44	-5.27	-2.49
- depreciation charges						
/pre-tax earnings	0.53	0.67	5.19	7.87	-3.47	-1.82
Taxes/pre-tax earnings (%)	23.0	26.6	73.90	72.14	•	•

Source: F-01 reports; GUS.

of foodstuffs was carried out on a market characterised by full competition (in 2000, this division comprised 1,610 large and medium enterprises, which represented around 20% of all manufacturing companies). However, price growth in manufacture of food products and beverages was greatly influenced by higher raw material costs (which rose as a proportion of total costs from 58.2% in 1999 to 61.1% in 2000), a development caused by price increases in agriculture. As a result, the contribution of producer price growth in this division to the overall PPI came to some 23%, as against 10.4% in 1999 (see section 1.3, "Producer prices in industry and construction"). December-on-December price growth in the section of electricity, gas and water supply was similar in 2000 to that recorded in 1999, coming to 10% (in 1999 it had stood at 10.9%). In this section, 72.5% of annual output was produced by companies in the class "production and distribution of electricity". Manufacture of gas and gaseous fuels accounted for 10% of output.

In 2000, the privatisation of the power industry chiefly went ahead in relation to distribution companies, while a slowdown in this process was observed in power generation. The financial efficiency of power generation deteriorated. The costs attributable to one unit of pre-tax earnings in the class "production and distribution of electricity" climbed from 27.63 zloty in 1999 to 45.07 zloty in 2000 (primarily due to higher coal prices). In relative terms, the swiftest rise was in the cost of external services, which stems from the accelerated privatisation of the power distribution industry in relation to the generation industry. As a result of this, the distribution and transmission of electricity became external services for particular generating companies.

With respect to the potential opportunities for reducing electricity prices, an important step is to introduce competition, particularly in power generation. The Electricity Exchange (Giełda Energii SA), which began operation on July 1, 2000, had only managed to capture some 2% of the wholesale trade in electricity by year end. It is estimated that in 2001 5%-7% of all electricity will be traded on this exchange. In 2000, customer safeguards against unwarranted electricity price rises were kept in place³¹.

Thus, in 2000 the electricity market was still largely monopolised at local level, i.e., individual producers held dominant positions in their regions. This situation obtained in eight voivodships, while in seven the market was dominated by two companies together. It was only in the voivodship of Silesia that none of the 42 producers (or distributors) of electricity occupied a dominant position (cf. Table 12).

³¹ Pursuant to the Electricity Act, which took effect in 1997, charges for electricity and district heating were deregulated. At the same time, however, it was stipulated that these charges required approval from the President of the Electricity Regulation Agency.



Table 12

Electricity generation and distribution companies occupying a dominant position at voivodship level, January-December 2000

	No. of companies involved	Share of largest generation
	in electricity generation	/distribution companies
	& distribution	in total voivodship output
Total, Poland	134	
Lower Silesia	9	40.67
Kujawy Pomerania	5	47.9 i 45.6
Lublin	2	59.9 i 40.1
Lubusz	6	38.6 i 29.5
Łódź	9	51.0
Małopolska	8	51.1
Mazovia	17	71.7
Opole	4	66.7
Podkarpacie	7	65.9
Podlasie	2	81.4
Pomerania	7	52.0
Silesia	42	25.9. 12.5 i 11.5
Świętokrzyskie	4	51.7 i 47.0
Warmia & Mazuria	3	51.2 i 40.3
Wielkopolska	6	39.1 i 38.0
Western Pomerania	3	55.7 i 29.35

Source: F-01 reports; GUS.

The market for natural gas was dominated in 2000 by a state public utility, the Polish Gas and Oil Extraction Company (PGNiG). From May 2000 onwards, a reorganisation of this company was under way, with the aim of splitting it into an exploration and extraction company and four distribution firms. The ceilings in force on gas prices and supply charges meant that PGNiG, while possessing a monopoly position, nevertheless generated a loss. The schedule of gas charges applicable in 2000 was insufficient to offset the costs of obtaining gas. Figures on the class "manufacture of gas and gaseous fuels" indicate that the losses incurred by companies here declined. Compared to 1999, the year 2000 saw an improvement in the ratios of particular costs to pre-tax earnings (cf. Table 11).

Transport fares were 8.2% higher in December 2000 than they had been in December 1999, which repre-

sented a decline in price growth (a year before, growth had been 10.6%). The slowing of price growth mainly involved the division of land transport (where growth fell 3.4 points to 8.9%).

Within land transport, the key role is played by rail transport of passengers and freight. In 1990, the railways ran a deficit, experiencing a slight worsening of their financial condition relative to 1999 (cf. Table 13). Rail transport was the almost complete monopoly of one state enterprise. The fact that there is only one network of railway lines in Poland means that there can only be one owner and one managing authority for the whole national system. However, as of September, sections of line of local significance, slated for closure, may be given over free of charge to local authorities. The market for transport services is to be demonopolised. In 2000, in addition to Polish State Railways (PKP), there were another 21 firms holding freight licences. However, PKP still retained its monopoly on passenger services. Under the Act on the Commercialisation, Restructuring and Privatisation of Polish State Railways of September 8, 2000, the ownership structure and organisation of rail passenger and freight services are to be gradually altered, which offers hope of the efficiency of rail transport improving. One issue that needs to be settled explicitly is the role of the state as the regulator of the market for transport services.

The Aviation Act is to launch a major deregulation of the air transport market. In 2000, LOT Polish Airlines was the sole domestic carrier. Privatising this company should ensure that it maintains and consolidates its position on the competitive market for air transport services to be put in place under the agreement, now being prepared, on a "single European sky" (WEOL). Management of the air traffic infrastructure (eight airports with permanent licences to handle international traffic) is carried out by the "PORTY LOTNICZE" state enterprise, which is currently on the eve of restructuring and privatisation. In 2000, the structure of costs incurred within the class of "scheduled air transport" showed an increase in the relative weight of material inputs compared to 1999 (due to higher fuel costs), which was paralleled by savings in labour costs (cf. Table 13). Profitability soared in 2000³², as therefore did the efficien-

 $[\]frac{32}{10}$ In 2000, scheduled air transport reported a thirteenfold increase in pre-tax profits compared to 1999.

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Table 13

Structure of production costs and efficiency ratios, selected classes of economic activity, 1999-2000 (cumulative figures)

	Transport		Scheduled		National post		Telecom-	
	via railways		air transport		activities		munications	
	1999	2000	1999	2000	1999	2000	1999	2000
Structure of costs (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
– material inputs & energy	17.0	18.8	13.6	16.6	6.3	6.4	7.1	4.9
– of which: energy	8.6	8.8	0.2	0.1	1.2	1.1	1.4	0.9
– external services	8.7	9.1	68.1	67.0	13.1	14.5	38.5	39.5
– taxes & duties	2.5	2.6	0.3	0.3	3.9	3.6	5.4	3.0
– of which: excise duty	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
– total labour costs	52. I	49.8	14.2	12.6	72.6	71.2	23.8	24.3
- depreciation charges	18.3	18.1	2.0	2.2	2.2	2.1	20.3	23.5
Ratios of costs to								
pre-tax earnings:								
– total costs								
/pre-tax earnings	-4.44	-4.82	581.87	57.71	31.30	48.77	19.10	7.71
– material inputs & energy								
/pre-tax earnings	-0.75	-0.91	78.89	9.58	1.98	3.14	1.36	0.38
– external services								
/pre-tax earnings	-0.39	-0.44	396.53	38.69	4.11	7.09	7.34	3.04
– excise duty								
/pre-tax earnings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
– total labour costs								
/pre-tax earnings	-2.31	-2.40	82.49	7.28	22.71	34.75	4.54	1.88
 depreciation charges 								
/pre-tax earnings	-0.81	-0.87	11.72	1.24	0.68	1.00	3.87	1.81
Taxes/pre-tax earnings (%)	•	•	2.6	0	61.6	53.2	83.7	53.4

Source: F-01 reports; GUS.

cy of air transport. In addition, for some time scheduled air transport has been required to make a minimal contribution to the Treasury; indeed, in 2000 it paid zero tax.

In the division of post and telecommunications, December-on-December price growth was up 1.9 points on the year before, coming to 9.1%. The persistence of rapid price growth in this division was the result of the dominant position occupied by Telekomunikacja Polska SA (TP SA) and the Polish Post Office on their respective markets. The market for postal services is a state monopoly as regards mail deliveries. One advance in the deregulation of the Polish postal market has been the opening up of the market for courier services to competition. Licences from the Minister of Communications to provide services in this area are held by 22 private firms (of which 6 operate solely on a local basis, while 2 only handle intercity deliveries).

Within the operating activity of the Polish Post Office, the basic cost component are labour costs. In 2000, labour costs per unit of pre-tax earnings rocketed, up 50% on 1999, which was the prime reason for the deterioration in the operating efficiency of the Post Office.

The position of TP SA was protected against competition on the domestic market in 2000 by its exclusive right to provide long-distance wireline telephone services³³. The development of the domestic telecommunications infrastructure remains insufficient, reinforcing the position of TP SA due to the extensive network it operates. Meanwhile, demand for information services via telephone is constantly increasing (particularly as regards the Internet), giving companies that provide services of this type a privileged status. The lack of competition in this field poses a particular threat to the price of these services. In 2000, local operators on the Polish telecommunications market faced serious financial problems because of the high licence fees required from them and the lack of opportunities to earn revenues from longdistance or international services³⁴. This bolstered the monopoly position of TP SA, while the earnings this company generated improved the ratio of costs to pre-tax earnings in the class of telecommunications (cf. Table 13).

In the section of mining and quarrying, price growth trended upwards in 2000, coming to 9.5% (compared to 8.9% in 1999), mainly due to the surge in producer prices in the division of coal and lignite mining. This division experienced an exceptionally sharp increase in production costs related to the restructuring programme for the hard coal industry (with particularly large

³³ The very rapidly growing mobile phone market was marked by high service charges and low competition in terms of services offered.

³⁴ There are over 40 local operators, with a total so far of some 530,000 subscribers, while TP SA has around 9,643,000 subscribers to its network (i.e., over eighteen times as many).

growth in external service costs, labour costs and depreciation charges). This increase in costs was only partly absorbed by government financial assistance. Coal prices, calculated on a cost basis, were negotiated with customers and kept rising. Export prices for coal were lower than domestic prices, and in certain cases exports were supported by government subsidies.

In line with the coal industry restructuring programme, the objective of which is to cut costs and restore the profitability of hard coal mining, measures were taken in 2000 to reduce the number of coal mining combines in operation (from three to seven).

To summarise, the following factors connected with the structure of the Polish economy can be said to have impeded the process of lowering inflation in 2000:

- the monopolies present on certain markets, including those for liquid fuels, telecommunications and postal services, land passenger and freight transport, and electricity and gas,
- the restructuring processes under way, both in lossmaking industries (e.g., coal mining), and in profitable ones, where companies holding a dominant market position were able to pass on the costs involved to the consumer (telecommunication services, production of liquid fuels, air transport),
- delays in privatisation and deregulation (the production of electricity and gas or gaseous fuels, scheduled air transport, telecommunications),
- an increase in the proportion of external service costs in total costs, which was inadequately offset by the decline in other cost components (primarily labour costs), together with the maintenance of a high proportion of material input costs (indeed, in some cases the latter proportion rose).

Indirect taxes and customs duty

Excise duty represents an additional cost component in only six divisions of industry. In 2000, excise duty represented the highest proportion of costs in the divisions of manufacture of tobacco products (64.2%) and manufacture of coke and refined petroleum products (29.8%). A much lesser role was played by excise duty in the division of manufacture of food products and beverages (9.1% of total costs). This reflects a fiscal policy approach designed to levy excise duty on certain products in particular (cigarettes, alcohol and fuel). As of September 1, excise duty was raised by around 4.5% on fuels and some 4% on rectified spirit used in the production of alcoholic beverages. It is estimated that higher excise duty contributed 0.65 points to annualised average price growth.

VAT is a price component that affected company costs only to a minimal degree. In the corporate sector, VAT input tax not eligible for refund or deduction accounted for a mere 0.2% of total costs in 2000. On average, over 95% of the VAT output tax due on sales was not taken to costs by the companies concerned, but incorporated in the final price paid by consumers. The largest VAT burden was borne by oil refining and electricity generation, which then fed increases in the price of other products as well.

The year 2000 brought changes in the pattern of VAT collected. The most important consequences of these changes were the following:

- a reduction in the scope of VAT-exempt sales (down from 5.8% for the total corporate sector in 1999 to 4.1% in 2000),
- a substantial increase in the proportion of sales subject to 17% VAT (for the total corporate sector, this rose from 0.1% to 3.3%; in the case of the division of manufacture of chemicals and chemical products, the rise in this proportion was exceptionally sharp, from 0.1% to 7.3%, which was accomplished at the expense of reducing the share of sales taxable at the 22% rate),
- a slight increase in the proportion of sales subject to 7% VAT in most divisions of activity,
- a modest decrease in the proportion of sales subject to 22% VAT,
- the treatment of the divisions of manufacture of coke and refined petroleum products, and electricity, gas, steam and hot water supply, as the primary sources of VAT revenues; in the first nine months of 2000, these two divisions accounted for a hefty 18.9% of output VAT from the corporate sector as a whole, although they generated only 12.5% of corporate sector sales; the overwhelming majority of sales in both divisions were subject to the highest, 22% rate of VAT.

In 2000, the protection of the Polish market against imports was steadily scaled down, especially as regards imports from the European Union. Tariffs on steel products imported from the EU were lifted at the

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beginning of 2000. Tariffs on fuel imports from all countries were abolished or suspended in autumn 2000. As a result, some 77% of total industrial imports to Poland currently come into the country duty-free. It is estimated that in 2000 the average duty payable on imports of industrial goods and raw materials from the EU (which account for some 66% of Polish imports) was around 1%, while on imports from other countries it came to around 4%. This means that the protection of domestic industry from foreign competition was reduced to a minimum, and that domestic prices largely moved in response to world prices. The cost of material inputs was increased by customs duty to only a modest extent. Thus, customs tariffs are playing an increasingly minor role within the Polish economy as a factor swelling prices.

As regards those imports so far not exempt from customs tariffs, the Government resolved in 2000, as it had in previous years, to establish duty-free quotas for certain goods. On the one hand, this stemmed from Poland's international treaty obligations (e.g., the duty-free quota on cars imported from the EU, and a quota on certain products for the automotive industry), while on the other it was designed to cut costs, and thus improve the price competitiveness of Polish finished goods, by lifting duty on certain raw materials and components (for the manufacture of chemical products, electrical and electronic products, paper products, clothing and footwear, pharmaceuticals, and metals).

In contrast to industrial imports, agricultural and food imports were not fully liberalised in 2000 for any source of supply; indeed, in 1999 and at the beginning of 2000, tariffs were raised on many categories of agricultural produce and foodstuff. In 1999 and 2000, the high tariffs on agricultural produce, estimated to have averaged around 14.7% inhibited the flexible use of imports to supplement domestic supply, and thus played a part in the rapid growth of food prices. From July to December 2000, Polish imports of grain and related products came to almost 1.3m tonnes. Around 60% of these grain imports (80% in the case of wheat) were carried out under quotas covered by preferential customs tariffs.

Impact of external prices on inflation

The year 2000 saw an increase in the annualised average dollar prices of most commodity categories on world markets. Prices of non-energy commodities rose 4.1%, mainly as a result of 7.5% growth in the prices of industrial commodities. Within this category, the fastest price growth was for metals, which went up in price 15.7% in 2000 (cf. Figs. 36 and 37)³⁵. On the other hand, prices for foodstuffs and for agricultural commodities used in industry came down 1.2% and 3.1%, respectively. In the second half of the year, with industrial output growth slowing in the OECD countries, the rise in industrial commodity prices, including metal prices, was weaker than in the first half (down 3.9 and 1.4 points, respectively).

However, it was oil prices that determined world commodity price growth in 2000. The annualised average price for Brent and WTI stood at USD 29.4 per barrel (a 15-year high), up more than 59% compared to the previous year's annualised average of USD 18.5 per barrel. In all, oil price growth over the years 1999-2000 came to 115%. The scale of this growth justifies the conclusion that this constituted the fourth serious oil price shock in the last thirty years. However, in contrast to similar episodes in the 1970s, the tendency for the energy efficiency of the OECD economies to increase meant that supply disruptions on the oil market had a relatively mild impact in these countries on both economic activity and price growth. The doubling of oil prices caused no more than a minor reduction in GDP growth (of around 0.1 points) and added 0.2 points to CPI inflation in 2000³⁶.

The root cause of the rise in oil prices in the years 1999-2000 was the strong acceleration of industrial output growth in the OECD countries seen from the second half of 1999 onwards, allied with the lowering of OPEC oil production quotas in the years 1998-1999³⁷. The reduced quotas prevented the seasonal replenishment of oil stocks prior to the second half of 2000. Meanwhile, the distinct increase in oil price volatility observed over the last three quarters of 2000 can be traced to the low level of stocks heightening market sensitivity to any news from OPEC on output plans (which elicited waves of speculation). Price fluctuations were also aggravated by political and seasonal fac-

³⁵ Calculations based on figures from *The Economist*, issues from 1998 to February 2001; these indices refer to annualised average price movements.

³⁶ OECD Economic Outlook, December 2000.

³⁷ The reason for quotas being cut was the 50% decline in oil prices recorded in 1997-1998, caused by the surplus output that persisted in 1996-1998.



Figures 36 Basic commodity prices, world markets (corresponding month previous year = 100)



Source: "The Economist".

Figures 37 Basic non-energy commodity prices, world markets (December 1998 = 100)



Source: "The Economist".

tors³⁸. In December 2000, prices came down due to the marked reduction in oil demand flowing from the slackening of US GDP growth, along with the information from the US Department of Energy that a surplus had been attained in commercial oil stocks for the first time since 1999.

The tendency that has been taking shape since the second quarter of 2000 for oil supplies to exceed consumption, coupled with the news that oil stocks in the USA are now sufficient, support expectations that prices are set to fall steadily in the course of 2001, to a level acceptable to both the OECD countries and OPEC³⁹ (cf. Fig. 38).

In 2000, world petrol prices went up an average of 62% on the previous year and were subject to strong swings that reflected the situation on the oil market. The maximum price during this period was USD 393 per tonne, while the minimum was USD 218 per tonne (cf. Fig. 39).

The situation on world commodity markets, and particularly on the oil market, directly impacted transaction prices in Polish foreign trade. Expressed in zloty, import transaction prices rose 6.1% over the first eleven months of 2000⁴⁰, while export prices were up 1.4%. This represents a major deterioration in Poland's terms of trade, which stood at 95.6, as against 100.8 in 1999.

Figures 40 and 41 present a breakdown of the overall index of Polish import transaction prices for the first three quarters of 2000. During this period, transaction prices rose 7.1%.

This 7.1% growth in import transaction prices breaks down as follows:

- mineral fuels, lubricants and derivative products contributed 5.6 points of the overall increase (accounting for 78.8% of price growth);
- chemicals and related products, and raw materials excepting fuels, contributed 0.9 points (12.8%);
- machinery and equipment, transport equipment, industrial goods classified by raw material and miscellaneous other industrial goods were responsible for 0.3 points of the overall increase (4.2%);
- foodstuffs contributed another 0.3 points (4.2%).

 $[\]frac{38}{10}$ In particular by the political situation in Iraq and forecasts of a protracted, icy winter in the USA, which prompted the sharpest increase in demand for heating fuel for a decade.

³⁹ The acceptable price is thought to be USD 24-25 per barrel. This is within the intervention range of USD 22-28 established by the OPEC countries.

⁴⁰ Biuletyn Statystyczny GUS [GUS Statistical Bulletin] no. 1/2001.





*Figures 38 Oil prices, production and consumption, 1999-2000**

* Average price for Brent (North Sea) and WTI (USA).

Source: Reuters.



Figures 39 Petrol prices, 1999-2000*

* 95-octane unleaded Premium petrol, Amsterdam - Rotterdam - Antwerp (FOB).

Source: Reuters.

Figures 40 Cumulative indices of Polish import transaction prices (corresponding period previous year = 100)



Source: NBP.

Figures 41

Cumulative indices of Polish import transaction prices - cont. (corresponding period previous year = 100)





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The rise in import transaction prices had a significant impact on movements in domestic prices in 2000. It is believed that the 6.1% growth in these transaction prices from January to November added 1.4 points to the PPI and 1.2 points to the CPI. Around 80% of this can be ascribed to the increase in oil prices. The delay in the response of industrial producer prices to movements in oil prices was no greater than 1 month, while in the case of other raw materials and intermediates the strongest response came 3-4 months afterwards. Consumer prices reacted to changes in import prices with a time lag of 2-3 months. The reaction to movements in oil prices was not always clearcut, which may be due to the manner in which Polish refineries set petrol prices (these did not reflect the actual purchase price of oil, but rather movements in world oil prices).



6.1. Monetary policy in 2000

The rise in inflation that persisted in Poland until mid-2000 was primarily attributable to strong supply shocks on the markets for fuel and foodstuffs. However, it was also linked to the relatively loose macroeconomic policies pursued in 1999. A factor taken into consideration in the interest rate cuts performed in the latter half of 1998, and particularly at the beginning of 1999, had been the announcement that fiscal policy was to be tightened in 1999. In reality, however, the imbalance within public finances deepened significantly, especially outside the central government sector. Although domestic demand grew more slowly than GDP from the fourth quarter of 1999 onwards, the earlier relaxation of macroeconomic policies, including monetary policy, encouraged the maintenance of relatively high inflation in the first half of 2000.

The continuation of the upward drift in inflation begun in the second half of 1999 created a very difficult environment for performance of the inflation target in 2000. Despite a firm monetary policy response, it was not until after July 2000 that inflation began gradually coming down, to stand at 8.5% at year end. This meant that the inflation target set for 2000, within a band of 5.4%-6.8%, was not achieved. However, the reversal of the upward trend in inflation seen as of August made it possible to return to the path leading towards the medium-term inflation target. This has been borne out by the continuing process of disinflation in the first months of 2001. In February, inflation fell to 6.6%, signifying that the inflation target to have been achieved at the end of 2000 was in fact reached with a delay of two months.

The policy of the central bank in 2000 involved acting to prevent the emergence of secondary repercussions of the periodic price shocks suffered; had they persisted, these could have consolidated inflationary pressure. The downward trend in inflation in the second half of the year indicates that this policy yielded the desired results. Curbing domestic demand not only allowed a reduction in inflation after July 2000, but also helped cut the current account deficit (from 8.3% of GDP in Q1 2000 to some 6.3% at year end).

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Table 14More important monetary policy decisions, 2000.

Date*	Decision
February 24	lombard rate raised from 20.5% to 21.5%
	rediscount rate raised from 19% to 20%
	minimum 28-day reverse repo rate raised from annual 16.5% to 17.5%
April 12	zloty exchange rates fully floated
August 31	lombard rate raised from 21.5% to 23%
	rediscount rate raised from 20% to 21.5%
	minimum 28-day reverse repo rate raised from annual 17.5% to 19%
December 20	monetary policy stance changed from restrictive to neutral

* Date decision took effect.

Source: NBP.

The Monetary Policy Council raised central bank interest rates twice in 2000, thereby continuing the tightening of monetary policy begun in the autumn of 1999, when official rates were increased three and a half points.

The first decision to raise interest rates was taken by the Council at its meeting of February 23. As of February 24, all NBP interest rates were increased by one point. The Council also resolved to maintain a restrictive monetary stance. The justification for this decision was the maintenance of a strong tendency of price growth and forecasts that this would continue in the months ahead, which jeopardised performance of the inflation target established for 2000. The unremitting rise in inflation witnessed since August 1999 had led to a significant increase in inflation expectations, while the rise in various measures of core inflation demonstrated that supply impulses had been transmitted from the fuel and food markets to the prices of other product categories as well.

The further development of inflationary processes confirmed these pessimistic projections. With the exception of April, in all the subsequent months up to September 2000 annualised consumer inflation ran above 10%. This situation posed a threat to achievement of the monetary policy target the following year. Although rapid price growth was mainly the result of supply disruptions on the fuel and food markets – giving grounds to believe that this was a temporary state of affairs – the Monetary Policy Council concluded that it was necessary to counter the consolidation of inflation expectations and their spillover into wage growth. In raising interest rates by another one and a half points on August 31, 2000, the Council was therefore seeking to avert secondary inflationary effects by containing the scale and scope of such adaptive reactions. In these circumstances, a monetary tightening could not address price growth in the group of goods and services responsible for the original inflationary impulse. Instead, it was designed to restrain domestic demand growth and thereby curtail the rise in other prices, and thus also in inflation.

In addition, the rate hike in August was performed at a time when it was becoming increasingly apparent that fiscal policy was less strict than the Government had previously indicated. True, seven months into the year, the available figures suggested that fiscal policy performance was better than it had been a year previously, yet an increase in local government spending was to be expected due to the education subsidy having been underbudgetted, as was an increase in the deficit at government special-purpose funds. The impact of fiscal policy in generating demand in 2000 eventually proved greater than projected. Nor did the expected increase in fiscal policy transparency take place.

The end result of the decisions taken by the Monetary Policy Council from September 1999 to August 2000 was to raise official interest rates by a total of six points. Over the same period, annualised consumer price growth went up 2.7 points. Thus, real interest rates also rose. In the final quarter of 2000, real interest rates at the commercial banks were in the region of 10%. From August onwards, inflation began to trend downwards. In the last three months of the year, inflation again returned to single figures, increasing the likelihood that the inflation target set for 2001 would be attained.

Given that the tendency for inflation to come down had been confirmed and that the factors previously responsible for pushing up inflation were now seen to be losing their impact, on December 20, 2000, the Monetary Policy Council altered its policy stance from restrictive to neutral. This lessened the probability that nominal interest rates would be increased. However, in view of the inflationary dangers still present, the

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Council held back from a cut in rates. In doing so, the Council cited, in particular, the lower decrease in core inflation than in headline inflation, the possible acceleration of food price growth, the small likelihood of a further decline in world oil prices, and also the increase in gas prices expected in the first months of 2001. The Council also indicated that demand pressure could mount due to the buildup in the first months of 2001 of cost-of-living adjustments and compensation payable to government sector employees and to old-age and disability pensioners. Further, the Council noted the difficulties involved in assessing the real degree of fiscal policy severity, and the maintenance of relatively high inflation expectations.

6.2. The money supply

At year end 2000, the total money supply stood at 294.5bn zloty, representing an increase on year end 1999 of 31.0bn zloty, equivalent to nominal growth of 11.8% and real growth of 3.0%⁴¹. The determining circumstance here was the low money supply growth recorded in December compared to the figures reported for the previous months of 2000⁴², which is traceable to two basic factors. Firstly, the traditional seasonal increase in corporate zloty deposits failed to materialise. Secondly, December 2000 saw a sharp appreciation of the zloty against the dollar, which lowered the zloty value of foreign currency deposits held by non-financial customers⁴³.

The increase in the total money supply witnessed in 2000 was below the lower bound of the forecast range included in the *Monetary Policy Guidelines for the Year* 2000 (38.8-47.9bn zloty). The prime reasons for this discrepancy were the following:

• the more sluggish economy than expected, producing lower transactions demand for money (the projection for GDP growth in 2000 written into the *Monetary*

 ⁴¹ The total money supply (M2) is defined as the sum of domestic money stocks and foreign currency deposits taken from the non-financial sector. Domestic money stocks represent the sum of notes and coin in circulation (excluding vault cash) and zloty balances held at banks by the non-financial sector (corporates and persons).
 ⁴² Annualised average money supply growth in 2000 came to a nominal 14.9%

^{(4.4%} in real terms).

 $^{^{\}rm 43}$ This particularly refers to personal foreign currency deposits, mainly held in US dollars.

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Policy Guidelines was 5.0%, whereas it is currently estimated to have been 4.1%);

- a swift development of non-cash settlements and a concomitant decline in the demand for cash;
- an expansion of the services provided by financial market institutions (e.g., the "dividend investment funds" offered as investment vehicles to corporates, which proved so popular in 2000 due to the tax benefits afforded);
- the non-appearance at year end (in contrast to previous years) of a seasonal increase in corporate zloty deposits, which normally stems from the cyclical growth of transactions demand due to the large rise in sales of goods in this period. In addition, December 2000 also failed to see the substantial increase in these deposits observed in past years as a result of companies closing out financial transactions and funds being posted from settlement accounts to corporate deposit accounts.

Throughout 2000, annualised growth in money stocks was lower than the corresponding figures for previous years. Growth was also steady (cf. Fig. 42), with the figures for particular months diverging only slightly from the average for the whole year, which came to 15.0%. The surge in the money supply seen in June 2000 was of an extraordinary character. This was related to the public offering of shares in the PKN ORLEN SA Polish Oil Corporation, which produced a simultaneous leap in both non-financial sector loans and deposits⁴⁴.

The ratio of money stocks (annualised average M2) to GDP, which depicts the monetisation of the economy, stood at 39.9% in 2000, as against 38.9% in 1999. As measured by the ratio of domestic money stocks to GDP, monetisation came to 34.0%, compared to 33.4% in 1999. At year end, the ratio of the total money supply to GDP was 42.1%, as against 42.8% at the end of 1999.

The money multiplier, defined as the ratio of M2 to reserve money (M0), rose in 2000 compared to the pre-

⁴⁴ The steep yet short-lived surge in bank claims on the non-financial sector stemmed from the fact that brokerage houses were offering loans for the purchase of shares in PKN ORLEN while subscriptions were being taken under the IPO. The increase in bank liabilities to the non-financial sector, on the other hand, was caused by balances at the banks rocketing as investors deposited funds to purchase shares at independent brokerage houses holding accounts at the banks, or at bank brokerage houses.







Source: NBP.

vious year. As averaged from monthly data, the multiplier came to 5.71, compared to 4.45 a year before. However, these two figures are not directly comparable, due to the structural change effected with the lowering of reserve requirements in September 1999. This resulted in a major decline in the demand for reserve money, thus pushing up the multiplier.

Total zloty deposits taken from persons and corporates stood at 217.4bn zloty at the end of 2000, having risen 31.7bn zloty since the end of 1999, giving growth of 17.1% (by comparison, nominal growth in total zloty deposits in 1999 came to 18.3%). This reflects the very slow growth in corporate zloty deposits, which on an annualised basis rose just 2.8%, whereas in 1999 the corresponding growth had come to 30.1%, and in 1998 had been 26.3%. Corporate zloty balances increased only 1.7bn zloty in 2000, to stand at 63.3bn zloty at year end.

This was related to the fact, already noted, that December 2000 had not witnessed the large seasonal increase in these deposits that had traditionally taken place. The weaker pace of corporate deposit growth could also have been connected with slower growth in sales revenues. Further, "dividend funds" enjoyed great popularity as vehicles for corporate investment in 2000, since the legal basis for these funds allowed investors to benefit from the lower tax payable on dividends than on operating income⁴⁵.

The opposite tendency was observable with respect to personal zloty deposits. The downward trend in the annualised growth of these deposits observed during 1999 was reversed at the beginning of 2000. The upward trend in growth was then maintained throughout the rest of the year. At the end of 2000, growth in personal deposits stood at 24.1%, as against 13.2% in 1999. Personal balances climbed 30.0bn zloty, totalling 154.0bn at year end. As a result, personal zloty deposits also increased as a proportion of total zloty deposits, representing 71.0% at year end 2000, compared to 66.8% in 1999 and 70% in 1998.

The decisive factor sustaining this tendency was the tightening of monetary policy, which produced a systematic increase in the rates offered by the banks on zloty time deposits. Although the largest rise in deposit rates was the sharp leap registered towards the end of 1999, a general tendency for the returns on time deposits to go up was observed throughout 2000. The rise in weighted average nominal rates on time deposits with an original maturity of 1-24 months oscillated in the region of 1.3 to 1.9 points.

The trends regarding movements in domestic money stocks⁴⁶ largely corresponded to the direction of change seen in the overall money supply, as measured by M2. Annualised growth in domestic money stocks in the particular months of 2000 was subject to modest fluctuations around a stable central point of 15.0%. The only larger-scale disruptions to this, which affected M2 as well and have already been mentioned, were the increase in growth in June and the decrease in December.

At year end 2000, the domestic money supply stood at 251.5bn zloty, as against 223.7bn at the end of 1999. This represented nominal growth of 12.4%, or 3.6% in

⁴⁵ Figures from the Association of Investment Fund Companies put the value of the net assets of investment funds at year end 2000 at 6.56bn zloty. Net assets therefore doubled compared to the end of 1999 (growth of 108%). The largest part in this increase was played by money market funds (which include "dividend funds"), which saw their net assets rise more than tenfold in 2000, soaring from 0.28bn zloty to 3.0bn.

⁴⁶ Defined as the sum of notes and coin in circulation (excluding vault cash) and of personal and corporate zloty deposits.

real terms. As in 1999, the share of domestic money stocks in M2 oscillated within a narrow band of 83.0%-85.0% during 2000. It was only towards the end of the year (from October to December) that a mild tendency was noticeable for this share to increase. At year end, domestic money stocks accounted for 85.4% of the total money supply as measured by M2.

At the end of 2000, the foreign currency deposits held on account by non-financial customers amounted to the equivalent of USD 10.4bn. In the course of the year, these deposits went up USD 0.8bn, with personal balances up around USD 0.6bn and corporate balances up USD 0.2bn. In zloty terms, the foreign currency deposits taken from the non-financial sector totalled 43.0bn, giving an increase over the year of 3.3bn⁴⁷.

At year end, personal foreign currency balances were equivalent to 32.7bn zloty, having gone up 2.4bn zloty year-on-year⁴⁸. A mild yet systematic upward tendency in the dollar value of personal foreign currency deposits has been observable since mid-1998.

The softening of the zloty against the dollar that occurred at the turn of the third and fourth quarters of 2000 could have fostered greater uncertainty as to future exchange rate movements, or indeed generated expectations that the zloty was set to depreciate further against the dollar⁴⁹. The growth in personal foreign currency deposits witnessed in the final months of 2000 might in this context be interpreted as reflecting a desire – in the face of mounting uncertainty – to place funds in financial assets traditionally considered low risk.

The foreign currency held at banks by corporates was equivalent to 10.3bn zloty at the end of December

⁴⁷ The rise in the foreign currency deposits held by non-financial customers in 2000 is primarily attributable to absolute growth in these balances themselves (up 3.35bn zloty). The slight appreciation of the zloty relative to the dollar seen during the year (equivalent to some 0.5 grosze) caused the value of these deposits to decline by only 50m zloty. It should be noted that the calculations given here are approximations, since NBP figures indicate that around 25.0% of non-financial sector foreign currency deposits are held in currencies other than the US dollar (mainly in euros and Deutschemarks).

⁴⁸ In the course of 2000, the impact of movements in absolute balances and exchange rates on growth in personal foreign currency deposits, as expressed in zloty, was similar to that previously outlined with regard to deposits taken from the whole non-financial sector. This stems from the similarity in the currency composition of those deposits, with the majority of personal deposits, around 80.0%, denominated in US dollars, and the remainder being held in D-marks and euros.

 $^{^{49}}$ The mid-rate for the zloty against the dollar stood at USD/PLN = 4.4084 in August, USD/PLN = 4.4900 in September and USD/PLN = 4.6369 in October.

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2000. Over the year, growth in these corporate deposits came to 0.9bn zloty.

It should be underlined that a large part of corporate foreign currency balances are held in euros or in D-marks (which are pegged against the euro)⁵⁰. Growth in the zloty value of these deposits is thus influenced not only by movements in absolute balances and in zloty/dollar exchange rates, but also by fluctuations in zloty/euro rates. Calculations indicate that the depreciation of the euro against the zloty that took place in 2000 shaved 0.4bn off the zloty value of corporate foreign currency deposits^{51,52}.

Fluctuations in these deposits (in dollar terms) were also impacted by corporate borrowings via bond issues denominated in foreign currencies. The year 2000 saw two major Eurobond issues, one in March with a face value of EUR 475m, and one in June with a face value of EUR 200m. Both of these issues found reflection in the aggregate balance sheet of the banking system⁵³.

The most important shift seen in the composition of the money supply in 2000 was the 4.0bn zloty reduction in the volume of notes and coin in circulation (a nominal decline of 10.4%, or 17.4% in real terms), which at year end stood at 34.1bn zloty. The were three reasons for this. Firstly, the composition of the total money supply in 1999 had been seriously dislocated by the large, one-off increase in cash stocks in December. This was related to consumer fears concerning access to funds at the turn of the year (due to Y2K). This increase was then overturned in January 2000, when stocks of notes and coin went down just as sharply as they had gone up. Secondly, the year 2000 brought a further rapid rise in the scale of non-cash settlements, which substantially reduced the amount of

³⁰ NBP figures indicate that these make up over 50.0% of corporate deposits in the three principal currencies (the USD, EUR and DEM).

⁵¹ These calculations are based on the assumption that no change in the composition of these deposits occurred in 2000 (i.e., that 50.0% were held in USD and 50.0% in either EUR or DEM).

⁵² The impact of euro exchange rates on movements in corporate foreign currency deposits was also estimated by reference to an artificial, single base index of deposit growth (taking January 1999 to be 100), factoring in the relative shares of the three primary foreign currencies in which corporates hold deposits (the USD, DEM and EUR). The value of this synthetic index in December 2000 was 10 points higher than that of the corresponding index of deposit growth in dollar terms. This difference constitutes a certain (imperfect) approximation of the impact of euro depreciation on corporate foreign currency deposit growth.

⁵³ Econometric research into corporate foreign currency deposit growth demonstrates that movements in the dollar value of these deposits are significantly affected by fluctuations in zloty/dollar exchange rates, and also by the volume of foreign trade.



Figures 43 Growth of notes & coin in circulation, real terms (corresponding month previous year = 100)

Source: NBP.

cash in circulation⁵⁴. Thirdly, the period under examination witnessed a steady increase in the interest rates available on zloty deposits, which heightened interest in placing surplus funds at the banks. As a result, annualised growth in notes and coin in circulation declined systematically for most of the year (Fig. 43).

To summarise, the conclusion of the above is that there were two basic tendencies at work in 2000 that had a major impact on movements in the total money supply. First and foremost, the tendency for personal zloty deposits to rise was reinforced. There was also a steady increase in personal foreign currency deposits (as expressed in dollars), which gathered momentum towards the end of the year. These developments may be evidence of a growing propensity to save via bank deposits.

 $^{^{54}}$ NBP figures show that in Q1 2000 over 55 million transactions were performed using payment cards of various types, to a total value of more than 12bn zloty, while in Q4 there were over 81 million transactions, to a total value of more than 19bn zloty. A year earlier, there had been 28 million transactions in Q1, to a total value of around 5bn zloty, and 48 million in Q4, to a total value of over 11bn zloty.

The money supply was also influenced by factors of an institutional nature, in particular by the expanding range of services on offer from financial sector institutions. The most glaring example of this was the mushrooming of non-cash settlements, which led to an absolute decline in the volume of notes and coin in circulation in 2000, and thus also to an increase in the multiplier (M2/M0). The convenience of carrying out settlements using non-cash payment facilities triggered a surge in the popularity of these facilities, and boosted the weight of the opportunity cost of holding cash as a factor determining the demand for notes and coin.

However, the extension of the services provided by financial institutions could also have acted to curb the growth of corporate zloty deposits. "Dividend funds" became a popular investment vehicle for corporates, as already mentioned.

Short-term disruptions in the money supply were also associated with sharp temporary increases in corporate deposits at the banks. This was linked to the issue of corporate bonds denominated in foreign currencies. The proceeds from these issues were placed on account at banks as short-term deposits. This occurred in March, for example, when that month's 2.5bn zloty (USD 641m) increase in corporate foreign currency deposits was in the main caused by EUR 475m in receipts from a Eurobond issue performed by one particular company.

The relationship between inflationary processes and movements in monetary aggregates has for many years been the subject of research at the NBP. One strand of this research approaches inflation exclusively as a monetary phenomenon⁵⁵, while another reduces the significance of monetary factors solely to long-term interrelationships (see **Appendix 3**). However, the findings obtained are not definitive enough to form a solid foundation for the conduct of monetary policy⁵⁶.

⁵⁵ The model employed is described in detail in M. Brzoza-Brzezina, J. Kotłowski, "Analiza związku pomiędzy cenami i pieniądzem w gospodarce polskiej na podstawie modelu Π^* " [An analysis of the relationship between prices and money in the Polish economy using the Π^* model], Bank i Kredyt no. 3/2001.

⁵⁶ Empirical research into short-span, non-homogenous samples makes it impossible to draw strict inferences based on the rules of mathematical statistics.



Counterparts to changes in money stocks

The principal counterpart to changes in money stocks in 2000 was the growth in claims on persons and corporates⁵⁷ (i.e., primarily in outstanding bank loans); in addition, growth in net foreign assets also fuelled monetary expansion in the second and fourth quarters. In the fourth quarter, a major contributor to money supply growth was also the balance on "other items (net)", due to the increase in other assets (net) at the NBP, involving the revaluation reserve arising on differences in asset and liability valuations (cf. Fig. 15).

Table 15Counterparts to changes in money stocks

	Growth, 1999	Contribution	Growth, 2000	Contribution
	million zloty	to 1999	million zloty	to 2000
		growth, %		growth, %
Total money supply	42 668.9	100.0	31 029.7	100.0
Net foreign assets	14 432.8	33.8	21 327.6	68.7
Claims on persons & corporates	37 456.0	87.8	30 411.5	98.0
General government sector debt	3 336.1	7.8	-13 806.8	-44.5
Other items, net	-12 556.0	-29.4	-6 902.6	-22.2

Source: NBP (Banking System Statistics).

At year end 2000, outstanding personal and corporate borrowings under bank loans were equivalent to 70.1% of total money stocks within the banking system⁵⁸, with claims on corporates accounting for 53.7%, and those on persons accounting for 16.4%. As a proportion of the total money supply, outstanding bank lending to corporates held steady in 2000, not declining until towards year end.

⁵⁷ Claims on persons and corporates 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.

⁵⁸ The calculation of these stocks includes "other items (net)", which chiefly comprise income, capital, interbank and interoffice settlements, suspense accounts, sums due on securities issued and outstanding, sums due to and from other banks, and specific provisions.

Figures 44 Growth of claims on persons and corporates (corresponding month previous year = 100)



Source: NBP.

By contrast, personal loan outstandings trended upwards in relation to the money supply throughout 2000.

By the end of 2000, claims on persons and corporates had risen 17.3% compared to December 1999. Growth in these claims gradually waned from the beginning of the year onwards, slipping most in the fourth quarter (cf. Fig. 44)⁵⁹. At year end, claims on corporates were up 13.5% on the end of 1999, while those on persons were up 31.7%. This means that growth in outstanding bank lending, particularly to persons, was significantly curtailed in 2000 compared to 1999. Growth in claims on persons and corporates also declined gradually in real terms⁶⁰, to stand at 8.1% in December 2000.

Corporate loan outstandings rose 18.8bn zloty in 2000, against 24.8bn in 1999. Quarterly growth in these loans also came down in real terms⁶¹. The slower

³⁹ An exception was June, which saw a one-off increase in bank loans to retail investors to purchase shares in PKN ORLEN. These loans were then paid off in July.

⁶⁰ As adjusted by reference to annual consumer price growth (8.5%).

⁶¹ As adjusted by reference to industrial producer price growth.

	Anı	nual growth	Structure of claims, year end		
	1999	2000	XII 1999	XII 2000	
	m	illion zloty	%		
Total bank claims on persons,					
of which:	12 680.0	11 595.2	100.0	100.0	
– Overdrafts & bank card lending	3 045.7	3 099.5	15.7	18.3	
– Housing loans	2 852.1	3 704.2	16.0	19.8	
– Other*	6 782.3	4 791.4	68.4	61.9	

Table 16Claims on persons, growth & structure

* In line with the classification employed in Banking System Statistics, this item represents the sum total of claims on persons under bills discounted, other loans and advances, purchased debt, funds disbursed under guarantees and endorsements, and outstanding unpaid interest.

Source: NBP (Banking System Statistics).

increase in lending to persons seen in 2000 involved loans and advances of all types. The increase in personal borrowings seen in 2000 was also lower than in 1999 in absolute terms. The highest growth was recorded in housing loans (up 61.9%), and in formal overdrafts and bank card lending (up 54.2%), while the lowest was reported in consumer loans (up 19.1%). However, it was growth in formal overdrafts and bank card lending that came down most sharply over the course of the year (cf. Fig. 45). Given that bank loans to persons are mainly used to finance consumer demand, the more muted growth of these loans testifies to the effectiveness of the interest rate policy being pursued. Figures on personal borrowings are presented in Table 16.

In 2000, demand for loans denominated in foreign currencies rose faster than overall loan demand. As a result, foreign currency claims went up from 19.3% of total claims at year end 1999 to 21.0% at year end 2000.

The **net foreign assets** of the banking system came to 132.0bn zloty at the end of 2000, which represented yearon-year growth of $19.3\%^{62}$. Foreign assets rose 9.5%, to total 167.6bn zloty, while foreign liabilities fell 15.9%, to

⁶² The net foreign assets of the banking system comprise the foreign assets administered by the NBP (the official reserve assets and other assets denominated in foreign currencies), together with the foreign assets held by the commercial banks, less the liabilities of the NBP and the commercial banks to non-residents, whether denominated in foreign currencies or in zloty.



Figures 45 Growth of claims on persons (corresponding month previous year = 100)





stand at 35.6bn zloty. Expressed in dollars, net foreign assets amounted to 31.9bn at year end, giving growth of 19.4% compared to the end of 1999. Over the year as a whole, movements in zloty/dollar exchange rates were neutral in their impact on the volume of these assets.

The lack of NBP intervention on the currency market in 2000 had a stabilising effect on the level of the Bank's foreign assets and liabilities. The proportion of both the foreign assets and liabilities of the banking system attributable to the NBP declined. At year end, the foreign assets held by the NBP amounted to 120.7bn zloty, representing 72.0% of the foreign assets within the whole banking system (compared to 78.7% at the end of 1999). The official reserve assets, the main component of the Bank's foreign assets, held relatively constant during the year. In zloty terms, the level of these reserves kept within a range of 108.7-122.2bn. The largest fluctuations took place in the fourth quarter, and were associated with incoming receipts from the privatisation of national assets, deposited in the Government foreign currency account at the NBP. As of September 2000, a portion of the proceeds from privatisation were





Figures 46 General government debt (net) in total money supply (period end)

Source: NBP.

placed on this Government account. The funds involved were then applied to servicing the foreign debt, and also to the early redemption of Polish Brady bonds.

The Bank's share of foreign liabilities also went down, dropping from 34.3% at the end of 1999 to 23.9% at the end of 2000, when they stood at 8.5bn zloty. This decline in liabilities stemmed from a decrease in foreign currency deposits on the Bank's settlement of repurchase commitments.

Net general government indebtedness within the banking system came to 50.8bn zloty at year end 2000, having shrunk 13.8bn over the preceding twelve months, i.e., 21.4%. The decline in this debt on an annual basis was the first since 1991.

In the course of 2000, the pace and direction of movements in net general government debt to the banks was on the one hand related to the ongoing finances of the particular components of the public sector, and on the other was connected with the volume and sources of funds accessed to meet public sector borrowing requirements. Thus, changes in this monetary category constituted a good indication of the current fiscal situation. Figure 46 portrays the net debt of general government in relation to the total money supply in 2000 (compared to 1999).

This counterpart to changes in money stocks was most influenced by the financial condition of central government. Despite high borrowing requirements, net central government debt to the banking system came down 13.9bn zloty in the course of 2000, whereas in 1999 it had gone up 2.5bn zloty. This substantial reduction in net central government indebtedness stemmed from a large inflow of funds to finance its borrowing requirements from outside the banking system.

Central government obtained 8.2bn zloty in 2000 from sales of Treasury securities to non-bank investors, an increase of 87.7% on the year before. Particularly heavy investment in Government paper was seen in the first three quarters of the year. With no major privatisation receipts forthcoming in this period, the Ministry of Finance increased the volume of Treasuries put up for sale and kept prices low⁶³.

Over the year as a whole, however, the prime vehicle for fulfilling central government funding requirements were privatisation receipts. These totalled 26.7bn zloty, a sum 32.4% greater than planned and over double that received in 1999. Of this amount, 70% was not obtained by central government until the fourth quarter of the year. This allowed a reduction in the supply of Treasuries being offered on the market, particularly since central government borrowing requirements at that time proved smaller, one reason being the performance of government spending cuts in response to the statutory deficit target having already been reached in October.

The broad stream of funding from non-bank sources, leading to the maintenance of high government balances at the banks, meant that the level of central government debt to the banking system diminished throughout 2000.

The net indebtedness of the other components of general government, i.e., special-purpose funds and

⁶³ Weighted average T-bill yields climbed from 16.03% at the beginning of the year to 18.18% at the end of September, dipping to 17.49% at the end of December. Average yields on 2-year T-bonds rose from 15.26% in January to 17.66% in September, slipping to 17.22% in December, while the corresponding yields on 5-year bonds were 12.32%, 13.91% and 13.99%.

local government, edged up 0.1bn zloty in 2000, compared to 0.8bn in 1999. This represented the end result of a considerable increase in the net debt of local government institutions in the fourth quarter (up 1.8bn zloty) and a substantial decrease in the net debt of special-purpose funds (down 1.7bn zloty, chiefly due to the repayment in December 1999 of loans taken out previously by ZUS).

The decline in net general government indebtedness reported in 2000 might suggest that this sector played a smaller part in money supply growth. However, to gauge the real impact of general government on monetary expansion, the role it played in the growth of net foreign assets also has to be considered. In view of the monetary effect of financing government funding requirements reflected in foreign assets (equivalent to 22.5bn zloty), the conclusion that can be drawn is that general government continued to account for a large part of the changes in money stocks (28%), only slightly less than in 1999 (32%).

The growth in the total money supply resulting from the increase in foreign assets generates inflationary pressure when the foreign exchange obtained by government to finance domestic spending is sold to the central bank. This leads to an increase in reserve money and thus, via the money multiplier, in total money stocks. To counteract this effect, a Government foreign currency account was opened at the NBP, and part of the privatisation revenues received from foreign investors was placed on this account as of August 2000. This marked a major change, since from that point onwards the rise in the total money supply ensuing from an increase in its foreign component did not cause an expansion of domestic money stocks.

6.3. Monetary policy transmission mechanisms

6.3.1. Interest rates

In determining the supply of reserve money through its open market operations, the central bank influences the level of interbank interest rates. Given a certain level of inflation expectations, the objective of the central bank is to achieve a level of real interest rates that will enable performance of its inflation target. The bank exerts the strongest influence on the rates payable on instruments with maturities comparable to those of its own open market operations. Yields on other instruments, especially long-dated instruments, largely move in line with the expectations of market players themselves.

Interest rates impact the decisions of economic agents regarding both consumption (particularly in terms of consumer durables) and investment. These decisions are then mirrored in the demand for money. While the financial markets are relatively swift to react to changes in central bank rates, the impact on the real economy and inflation of changes in commercial bank lending and deposit rates is subject to a considerable time lag. Research conducted at the NBP indicates that interest rate movements display the most pronounced effect on inflation only after one and a half to two years⁶⁴. This implies that the inflationary processes at work in 2000, insofar as these were contingent on interest rate policies, reflected decisions taken in 1999. The interest rate adjustments performed in 2000, particularly the last, carried out in August, had less impact on these processes, although this impact was obviously not totally absent. In the present Report, it is the rate adjustments performed in 2000 that are examined in detail, since those carried out in 1999 were discussed in last year's Report.

In 2000, short-term interest rates oscillated around the level of the National Bank's 28-day minimum reverse repo rate (the reference rate), attesting to the fact that the Bank was keeping short-term rates under control. The divergence of interbank borrowing rates for the shortest maturities from the NBP reference rate reflected transitory shifts in money market liquidity. By contrast, the discrepancy between the reference rate and interbank rates for longer maturities (3 and 6 months) was primarily the result of changing expectations regarding NBP interest rate policies.

⁶⁴ Due to the short time series used, it has not been possible to establish any asymmetry in the reactions of corporates and households to the rise and fall of interest rates. At most, the existence of this in the years 1995-2000 may be surmised on the basis of the response times at banks. The research performed referred to WIBOR rates (Warsaw Interbank Offered Rates), which are strongly affected by NBP base rates.





Figures 47 Spread, 3M vs 1M WIBOR (Warsaw Interbank Offered Rates)

Source: NBP calculations based on Reuters figures.

The largest growth in 3- and 6-month rates (in relation to the reference rate, as increased by the risk premium typically applicable to the given maturity) took place prior to the rises in NBP rates in February and August. In December, on the other hand, 3- and 6-month rates fell below the NBP reference rate, as at this point strong expectations emerged that the central bank was about to cut its rates. The fact that expectations of future interest rates act to change the differential between 1-month rates (held steady by the NBP) and rates on 3- and 6-month interbank deposits can be attributed to the shallowness of the interbank market for deposits maturing in over 1 month. The small volume of trading on this segment of the market means that 3and 6-month rates are much less affected by shifts in the relationship between supply and demand than by expectations concerning the future level of 1month rates (cf. Fig. 47).

NBP rate adjustments had a powerful impact on the most developed and most highly liquid segment of the interbank money market, namely, the market for FX swaps, which represent synthetic interbank borNBP

Figures 48 Spreads: 3M vs 1M WIBOR; 3M FX swaps vs 1M WIBOR



Source: NBP calculations based on Reuters figures.

Figures 49 Spreads: 3M vs 1M WIBOR; 3M T-bills vs 1M WIBOR



Source: NBP calculations based on Reuters figures.


rowings originated via reversible transactions on the FX market⁶⁵.

The interest rates payable on synthetic zloty borrowings on the FX swap market (deriving from the forward spread on zloty exchange rates) were marked by greater volatility than the rates on straight borrowings on the interbank deposit market (cf. Fig. 48). This stemmed from much heavier trading on the market for synthetic zloty borrowings via FX swaps than on the market for straight interbank deposits, with the result that supply and demand factors had a relatively greater influence on the level of interest rates.

The general tendency for interbank deposit rates to be higher was primarily rooted in the absence of foreign players on this market, due to fact that interbank deposits taken by Polish banks from foreign institutions are subject to reserve requirements.

NBP base rates also exerted a strong influence on the overall level of Treasury bill yields, as is evidenced by the relatively stable spread between WIBOR rates and T-bill yields (cf. Fig. 49). This attests to arbitrage between these two segments of the interbank money market.

The direct influence of the central bank on long-term rates, as exercised through short-term rates, was by nature fairly weak. The low interrelationship of shortand long-term interest rates is an inherent consequence of the fact that long-term rates on the shallow domestic bond market are principally affected by capital flows, and these tend to react more to changes in the overall Polish economy and in the general situation on international financial markets than solely to movements in Polish short-term rates.

Reaction of commercial banks to central bank policies

In 2000, the NBP raised its base rates twice, putting them up 100 bps in February and 150 bps in August. Following the first rise, weighted average

⁶⁵ A swap transaction where zloty are sold spot and repurchased forward essentially represents a synthetic zloty placement, since on settlement of the forward leg the zloty that have been "placed" are recovered together with interest equal to the spread between the spot and forward exchange rates. A swap transaction where zloty are purchased spot and resold forward essentially constitutes a synthetic zloty borrowing, since on settlement of the forward leg the zloty that have been "borrowed" are returned together with interest equal to the spread between the spot and forward exchange rates.

personal deposit rates went up around 70 bps, while after the second they went up some 60 bps. The response of the banks to the February rate increase was not only greater in relative terms, but also much swifter than after the NBP rate adjustment in August. In the wake of the August move, adjustments to household deposit rates at the banks lasted until November, i.e., around three months. The reason for this slow response, with various banks waiting to see what the others would do, was the fairly rapid growth being seen in personal deposits, coupled with projections that inflation would come down in the final months of the year, leading the banks to believe there was a growing likelihood of the NBP cutting its base rates in the first quarter of 200166. Another factor of some relevance to movements in deposit rates is the excess liquidity within the banking sector, which undermines the responsiveness of deposit pricing to changes in central bank rates.

The adjustments seen in corporate deposit rates took a different course; these rose much more sharply after the August rate increase than after the one in February. Following the increase in official rates in February, the banks raised corporate deposit rates some 50 bps, whereas they responded to the August rise by putting these up around 90 bps. This strong response by the commercial banks to the second NBP rate rise may have been related to the slowing growth in corporate balances.

In the aftermath of both the first and second NBP rate rises, personal lending rates rose some 100 bps. This indicates that, as in the case of deposits, the response of the banks to the second increase was relatively weaker than to the first. The banks would seem to be guided by the same considerations in their basic pricing of personal loans as in their pricing of personal deposits.

Corporate lending rates are generally set by reference to money market rates, i.e., WIBOR. Research

⁶⁶ This conclusion is based on movements in rates on forward rate agreements (FRAs) in October 2000. At the beginning of the month, rates on FRAs fell, indicating that the market was expecting a cut in official rates. Subsequently, towards the end of the month, FRA rates went up in response to turbulence on international financial markets.





Figures 50 Time deposit & lending rates, weighted averages

Source: NBP.

at the NBP indicates that short-term loans (maturing within 1 year) are priced off 1-month WIBOR, while rates on medium- and long-term loans are to a greater degree related to 3- and 6-month WIBOR. Following February's 100 bps increase in the NBP reference rate (minimum reverse repo rate), 1- and 3month WIBOR rose some 60-70 bps, while corporate lending rates went up no more than some 30-50 bps. However, these rates had already climbed fairly steeply a little earlier, due to the combined effect of the increase in the reference rate in November 1999 and the rise in interbank rates in December 1999 caused by Y2K. Lending rates had then gone up more than the NBP reference rate, hence the adjustments following February's rate increase were smaller than usual. When the National Bank subsequently raised its reference rate by 150 bps in August, the banks responded by putting up their lending rates some 100-130 bps (cf. Fig. 50). It should be stressed that this major increase in corporate lending rates occurred at a time when corporate loan demand was plainly ebbing.

Interest rates and loan demand

In 2000, growth in bank claims on persons and corporates⁶⁷ slowed in real terms⁶⁸ (cf. Fig. 51). In the latter half of the year, the economy slackened, with growth declining in both investment and consumption. These factors undoubtedly weakened loan demand. As a result, real growth in claims on persons stood at 21.4% in December 2000, almost 18 points down on the previous December, while the corresponding figure for corporates was 7.5%, having come down 5 points compared to 1999.

Interest rates are only one of the factors conditioning loan demand. Corporate demand for external financing is also affected by the volume of current investment, while this is a function of future revenues and real interest rates at project completion expected at the time the investment decision is taken. Household loan demand, on the other hand, is contingent not only on interest rates, but also on growth in real incomes.

In December 2000, corporate borrowings under outstanding commercial paper stood at 10.9bn zloty, representing an increase on year end 1999 of 58.1%. Meanwhile, the volume of long-term securities issued and outstanding soared in the last quarter of the year, reaching 7.1bn zloty in December, having risen 4.9bn over the year, or 223%. This increase in issues of debt securities is not solely the result of the difference in borrowing costs between bank facilities and the capital market, but is also related to the legal lending limit laid down in Article 71 of the Polish Banking Act⁶⁹. Thanks to the negotiability of debt securities, banks were able to offer these to their customers, dis-

⁶⁷ Claims on persons consist of loans and advances, purchased debt, funds disbursed under guarantees, and outstanding unpaid interest. In 2000, around 98% of these claims were made up of loans and advances. Claims on corporates comprise the items mentioned above together with debt securities, repurchase transactions and "other items". In 2000, loans and advances represented some 92% of claims on corporates.
⁶⁸ Claims on persons adjusted by reference to the CPI, claims on corporates by reference to the PPI.

⁶⁹ Under the Banking Act, the total amount of loans and cash advances extended, bonds and other debt securities acquired, exposures under guarantees, endorsements and letters of credit, and other exposures of a bank to a single party, or to a group of parties related by capital and management and incurring common economic risk, shall not exceed 25% of the bank's capital.



Figures 51 Growth of claims on persons and corporates (real growth on corresponding month previous year)



Source: NBP calculations based on GUS figures.

posing of paper from their own portfolios. In addition, the amended Act on Bonds, by vesting bondholders with greater powers safeguarding their claims on issuers, contributed to an expansion of issuances and the growth of the market.

The rise in borrowings under debt securities partly offset the slower growth in corporate borrowings at the banks. At year end, corporate debt under shortand long-term securities outstanding was equivalent to 11.4% of corporate borrowings at the banks, whereas in December 1999 the corresponding ratio had been 6.5%. It should be emphasised, however, that part of this corporate paper is held by the commercial banks (the NBP estimates this to be some 20%-30%), i.e., it constitutes a component of the banks' claims on non-financial customers.

The foreign debt of the non-government, non-banking sector rose in the first half of 2000, yet in the third quarter of the year this debt started to diminish, despite relatively high domestic lending rates. In the fourth quarter, the debt again went up substantially, with the end result that in December it was 14.9% higher than it NBP



Figures 52 External indebtedness, non-government & non-banking sector (USD million)

Source: NBP.

had been in December 1999 (cf. Fig. 52)⁷⁰. In the course of the year, a large increase was seen in borrowings under long-term debt securities (up 29.1%), and also in borrowings classified as "other loans and advances" (up 20.4%). The latter rose particularly sharply in the last quarter of 2000. This can be traced to one single transaction, which accounted for some 70% of fourth-quarter growth in this category of debt. It should be stressed that part of the external debt of the non-government, non-banking sector is not directly related to the differential between domestic and foreign interest rates (or if it is, the relationship is weak). Some companies have such large funding requirements that they would not be able to satisfy them on the domestic market (one reason being the aforementioned legal lending limit), and therefore issue long-term bonds on foreign markets

⁷⁰ Preliminary figures.

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instead. Additional reasons for borrowing abroad cited by companies that access funding in this way include the greater flexibility available in terms of the face value, currency and maturity of the bonds. Nonetheless, it is often difficult to determine exactly whether companies are borrowing abroad because of the positive rate differential they secure relative to borrowing at home, or because of large exposure limits and the shallowness of the Polish market. It cannot be excluded that in some cases several motives are at work simultaneously.

The credit channel

The theory of the "credit channel" implies that a tightening of monetary policy signifies a reduction in the supply of reserve money by the central bank. In this situation, if the banks are unable to neutralise this effect, e.g., by trimming their securities portfolios, then they will 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 capital market, 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 operation of a credit channel is the dominant role of banks on the financial market.

This precondition is met within the Polish economy. In 2000, as was the case the year before, the capital market was still confined to a relatively narrow group of companies and was not of major importance as a source of corporate funding. The market capitalisation of the Warsaw Stock Exchange rose a nominal 5.4%, yet as a proportion of GDP slipped to 18.8%, down from 20% in 1999. While the issue of commercial paper and bonds in 2000 greatly outpaced annual growth in bank claims on corporates, producing a steady rise in the ratio of corporate debt securities outstanding to corporate borrowings at the banks (see the preceding section on "Interest rates and loan demand"), the role of the banks on the financial market nevertheless remained predominant.

In Polish circumstances, a factor of key importance for the operation of the credit channel and the capacity of the central bank to influence the supply of commercial bank credit is the surplus liquidity within the banking industry⁷¹. This surplus liquidity represents a situation where the central bank is the net debtor of the commercial banks. This allows the banks greater leeway in neutralising the effects of central bank tight credit policies, since in seeking to maintain lending volumes banks can reduce their holdings of NBP money market bills (these bills serve to absorb excess liquid reserves from the banks, with the balance on open market operations reflecting the scale of that excess liquidity).

In 2000, as in 1999, the banking industry remained in a position of surplus liquidity. The NBP drained excess liquid reserves through issues of 28day money market bills. During the year, the average monthly balance on open market operations rose 4.55bn zloty (cf. Fig. 53). This increase largely stemmed from a temporary decline in the balance on these operations towards the end of 1999. This development was linked to the issue of Y2K. Due to the large increase in the demand for cash, the banks eased their demand for money market bills, purchasing cash from the National Bank with funds received from the Bank on maturing bills. In the first quarter of 2000, as demand for cash waned, this effect ceased to be operational, and the banks resold this cash to the central bank, which had to expand its issuance of bills to absorb the surplus funds held at the commercial banks.

The influence of open market operations on the functioning of the credit channel was a complex one. Although the only operations conducted were those absorbing liquidity, the principle adopted in 1998 that maturities on these operations would be limited to a maximum of 28 days made it easier for the banks to respond flexibly to any increase in loan demand. If this demand rose, the banks could cut back their holdings of NBP money market bills relatively rapidly, holding back from purchases of new issues as those already held matured and assigning the funds thus obtained to finance loans. In June 2000, personal loan demand leapt up briefly in connection with the

 $^{^{71}}$ A detailed discussion of the causes and effects of surplus liquidity within the Polish banking system was given in the *Inflation Report* for 1998.







Source: NBP.

privatisation of PKN ORLEN and subscriptions for that company's shares. As a result, over the last ten days of the month claims on persons climbed some 9.3bn zloty, or $22.4\%^{72}$.

In order to reduce surplus operating liquidity within the banking system, in the third quarter of 2000 the NBP commenced sales of Treasury bonds acquired in 1999 under the conversion of non-negotiable government liabilities to the central bank. On September 30, 1999, this government debt to the NBP was converted into 3-, 4-, 5- and 10-year fixed-rate Treasury bonds to a face value of some 12.3bn zloty. At the end of 1999, under the second stage of this operation, the NBP received 2-year zero-coupon Treasury bonds to a face value of 4.1bn zloty. The central bank thus found itself

 $^{^{72}}$ It should be emphasised in this regard that, although the decision to carry out open market operations only for maturities of up to 28 days limited the effectiveness of the credit channel of monetary policy transmission, it greatly enhanced the effectiveness of the interest rate channel, which was the main objective.

in possession of negotiable Treasury securities with a face value originally totalling 16.4bn zloty. By the end of 2000, the Bank had sold at tender "conversion bonds" to a face value of 2.2bn zloty. The tender value of bids accepted amounted to 1.8bn zloty.

The sale of these conversion bonds constitutes an operation of a structural character, staggered out over time. It is not directly connected with the ongoing conduct of monetary policy. As already mentioned, the purpose is to reduce surplus operating liquidity within the banking system and improve the effectiveness of monetary policy. Scaling down this surplus liquidity, and then moving to a shortage of liquidity, should on the one hand strengthen the influence of the NBP on deposit rates, while on the other reinforcing the Bank's impact on the supply of credit at the commercial banks.

The year 2000 saw a gradual deterioration in loan portfolio quality at the commercial banks; in December 1999, irregular assets together with outstanding unpaid interest represented 14.7% of total loan books, while by December 2000 this had risen to 16.4%. Studies regarding the period 1994-1998 indicate that there is a statistically significant inverse relationship between the proportion of classified assets in total bank claims and the rate of growth of these claims at private banks⁷³. This means that, in a situation of declining loan portfolio quality, the tendency at this group of banks was to apply stricter lending standards, to restrict the access to loans of customers with relatively low or uncertain incomes, and to limit certain types of loan, such as non-specific advances, used car loans, etc.

In line with Article 39, para. 3, of the Act on the National Bank of Poland of August 29, 1997, banks implementing rehabilitation programmes are eligible for exemptions from reserve requirements. In 2000, however, in contrast to previous years, the commercial banks who acquired institutions that were availing themselves of such exemptions did not subsequently offer deposit rates on behalf of those institutions that were significantly higher than those on offer at other banks. In the past, behaviour of this kind made it more difficult for

⁷³ Timothy P. Opiela, *Monetary Policy and Bank Lending in Poland: The Role of Government Deposit Guarantees*, DePaul University Working Paper, no 1, 2001.



the NBP to influence the supply of credit, since the deposit funds thus collected could then be applied to finance lending operations.

Compared to the previous year, the operation of the credit channel was not subject to any major change in 2000, with the banks continuing to constitute the prime category of financial intermediary, although the role of non-bank financing was seen to be gradually increasing, particularly via issues of both commercial paper and long-term securities. In addition, the excess liquidity within the banking industry persisted, curtailing the influence of the National Bank on the supply of credit flowing from the decisions of the commercial banks.

6.3.2. Exchange rates

The year 2000 brought a change in Poland's exchange rate regime, which represented a very significant decision in terms of increasing the effectiveness of the exchange rate channel of monetary policy transmission. As of April 12, the exchange rates of the zloty against other currencies were fully floated. This involved the abolition of the central parity rate for the zloty, and also of the crawling band mechanism relative to a reference currency basket, with its trading band for permissible deviations in market exchange rates from central parity.

The introduction of floating exchange rates represented the fulfilment of one of the goals set in the *Medium-Term Monetary Policy Strategy for the Years 1999-*2003, and had also been announced beforehand in the *Monetary Policy Guidelines for the Year* 2000⁷⁴. The objective of moving to a system of floating exchange rates was to improve the effectiveness of the central bank's interest rate policies. A floating exchange rate is a precondition for consistently applying the strategy of direct inflation targetting. Another important motive for this deci-

 $^{^{74}}$ The move to a floating exchange rate regime took place at a point when the trend for the zloty to appreciate, visible in the first months of 2000, had been checked, and the divergence of market exchange rates from central parity was stable. The inflow of foreign currency privatisation receipts in subsequent months could have disrupted that stability, while any further delay in taking the decision to float the zloty would have undermined the credibility of the economic authorities.

sion was the desire to eliminate a potential source of turbulence on the financial markets by fully unblocking the automatic mechanism for restoring equilibrium in the balance of payments. Further, the introduction of floating exchange rates encourages market participants to perform a proper assessment of exchange rate risk.

The introduction of fully floating exchange rates constituted the final stage in a policy of gradually increasing exchange rate flexibility pursued over the preceding ten years, which had previously involved a transition from rigidly fixed exchange rates to a crawling band, with the band then being gradually widened. From 1998 onwards, exchange rate policy had been subordinated to the performance of a direct inflation target, which markedly accelerated the process of making exchange rates more flexible. In addition, the NBP had limited its presence on the FX market. This approach to exchange rate policy had a positive effect on the development of the domestic FX market. The result was that the zloty became more sensitive to both changes in the condition of the Polish economy and movements on world financial markets⁷⁵. Exchange rate volatility was substantially increased, compelling market players to factor FX risk into their investment decisions.

Movements in the value of the zloty in 2000 indicate that it was subject to fluctuations similar in scale to those seen in the final two years preceding the administrative decision to change the exchange rate regime (cf. Fig. 54). However, zloty exchange rates in 2000 were affected to a greater extent than in previous years by euro/dollar cross rates. This was on the one hand related to considerably sharper euro depreciation on world markets, and on the other to the abolition of the reference currency basket, which had cushioned the impact of fluctuations in these cross rates on the value of the zloty against foreign cur-

⁷⁵ To gauge the sensitivity of market exchange rates for the zloty to selected factors, a VAR model was developed (applied to the period 1997-2000) to trace the relationship between the nominal zloty/dollar exchange rate and the following factors: the euro/dollar cross rate, central bank currency interventions, the ratio of net inward FDI to the current account deficit, and the inflow of portfolio investment. The findings of this research indicate that some 30% of movements in the zloty/dollar exchange rate were accounted for by changes in the euro/dollar cross rate, some 12% by incoming portfolio investment, some 7% by currency interventions, and some 4% by the ratio of net inward FDI to the current deficit. Altogether, these factors accounted for around 49% of zloty/dollar exchange rate movements.





Figures 54 Zloty exchange rates against currency basket, May 1995-2001*

* – as of Jan. 1, 1999, basket composed of 55% EUR, 45% USD
– as of April 12, 2000, zloty fully floated

Source: NBP calculations.



Figures 55 Zloty exchange rates against USD & EUR; EUR/USD rates, 2000

Source: NBP.

rencies⁷⁶. Annualised average nominal euro depreciation relative to the dollar came to 13.3% in 2000 (compared to 4.8% in 1999). As a result, the zloty strengthened solely against the euro, registering an annualised average nominal gain of 5.1%, or 7.2% in real terms⁷⁷. In relation to the dollar, the zloty lost 9.6% nominally and 5.6% in real terms (cf. Figs. 55 and 56). With the exception of the second quarter of the year, the trend for the zloty to firm against the single currency proved relatively constant; by the fourth quarter, the nominal value of the zloty against the euro was almost 10% higher than in the fourth quarter of 1999. Over the year as a whole, zloty/euro exchange rates displayed greater volatility (3.6%) than zloty/dollar rates (3.1%) (cf. Fig. 57).

Effective zloty exchange rates rose in 2000 (in both nominal and real terms)⁷⁸. On an annualised average basis, nominal effective zloty exchange rates were up 2.2% on the previous year, whereas in 1999 they had gone down 8.8% (cf. Fig. 57). The average monthly volatility of zloty exchange rates⁷⁹ stood at 2.8% in 2000, as against 2.7% in 1999 (cf. Fig. 58).

The first quarter of 2000 saw a clear tendency for the zloty to appreciate (in both nominal and real terms). The prime factor bolstering the Polish currency was the inflow of foreign portfolio investment, lured by a pronounced improvement in the returns available on Polish Treasuries. In March, this tendency gathered further momentum on heavy foreign investor demand for the Eurobonds issued at this point by the Polish Treasury and TP SA⁸⁰. This testified to the positive view of

⁷⁶ The existence of the central parity rate for the zloty based on the reference currency basket constituted a component of the exchange rate system in place in Poland from 1991 to the floating of the zloty in April 2000. Under the crawling band mechanism instituted in 1995, the deviation of market rates from the parity rate was seen by market players as a measure of the strength of the zloty. The NBP set parity rates against the basket currencies, taking into account the current exchange rates between them on international markets and their respective weights within the basket as a whole. This smoothed the impact of movements in cross rates on the level of reference rates and thus on market exchange rates for the zloty against these currencies. It should be noted here that this mitigating effect was visible solely in the event of large swings in cross rates.

⁷⁷ As adjusted by reference to movements in manufacturers' producer prices.

 $^{^{78}}$ The nominal effective zloty exchange rate represents the weighted average of bilateral zloty rates against 8 other currencies, with euro area currencies weighted at 64%, and the dollar at 15%.

⁷⁹ This volatility refers to a 50% dollar/50% euro currency basket.

⁸⁰ The net inflow of foreign investment in debt securities totalled some USD 2bn, with over half constituting the proceeds from these Eurobond issues.











Source: NBP calculations.

Source: NBP calculations.

NBP

Figures 58 Volatility of zloty exchange rates against USD & EUR and USD & EUR basket



Source: NBP calculations.

Poland being taken by international financial markets, which was additionally encouraged by favourable assessments of the development of other emerging markets.

The zloty then softened in the second quarter of 2000. The level and volatility of zloty exchange rates in the period prior to the floating of the currency was strongly affected by events on world markets, namely, the substantially sharper swings seen in leading world stock market indices⁸¹, and the marked acceleration of euro deprecation against the dollar⁸². These developments played a major part in weakening the zloty, and also in the temporary increase in zloty volatility over some three weeks following the float. Zloty depreciation in this period was also linked to the large increase in the current account deficit in March.

⁸² See the Inflation Report for Q2 2000, September 2000.

 $[\]overline{{}^{81}}$ The most important factor here was the slump in the NASDAQ, which on the second day after the zloty had been floated sank to its lowest point yet after a series of falls (dropping 25.3% in all). This sparked a temporary pullout of portfolio investors from emerging markets, Poland included.

MBP

In the week immediately before the zloty was floated, the average divergence of the fixing rate from central parity was 5.1% on the upside. The decision to float the zloty triggered a one-day strengthening of the currency. On April 12, the zloty rose against both the dollar and the euro, gaining 1.2% and 1.5%, respectively. On the one hand, this was rooted in an increase in the disparity seen by the market in short-term interest rates, due to the scrapping of the crawling band. On the other, the firming of the zloty reflected a positive response to the new exchange rate regime. From April 13 to May 5, the zloty gradually traded downwards, more so against the dollar (losing 12.9%), than against the euro (5.6%)⁸³. This was accompanied by a significant increase in market interest rates. For the remainder of the second quarter, the zloty weakened more slowly. Over the quarter as a whole, nominal effective zloty exchange rates fell 5.7%. Zloty/euro volatility stood at 5% in the second quarter of 2000 (compared to an average over the year of 3.6%), while zloty/dollar volatility came to 4.5% (the annual average was 3.1%)84.

The final two quarters of 2000 saw a sustained trend for the zloty to appreciate; in the second half of the year, nominal effective zloty exchange rates gained 6.2%, as against a loss of 0.4% in the first half of the year. This strengthening of the zloty was assisted by a narrowing of the current deficit, and also by market expectations of an influx of foreign currency from the privatisation of TP SA⁸⁵. Following the interest rate rise performed by the Monetary Policy Council on August 30, zloty exchange rates held fairly steady. The enhanced appeal of Polish securities failed to find reflection in a swelling inflow of portfo-

⁸³ This was largely connected with the sharp appreciation of the US dollar against the euro on international markets; from April 10 to May 5, the dollar gained around 7%.

 $^{^{84}}$ April and May saw a marked increase in the volatility of dollar/euro exchange rates on world markets.

⁸⁵ The appreciation of the zloty due to large-scale privatisations (such as TP SA) was lessened in the latter half of 2000 by the existence of the central government foreign currency account established in September 2000, used to deposit part of the proceeds from privatisations. These funds were then applied to servicing the foreign debt and redeeming Polish Brady bonds.

NBP

Figures 59 Interest rate differentials and capital flows*



* Rate differential = spread between interest rates (yields) on 2-yr Polish and US T-bonds (at month end) Capital flows = movements in outstanding foreign investment in Polish securities (month end)

Source: Reuters, NBP.

lio investment, nor in the value of the zloty against other currencies. In the third and fourth quarters of 2000, the balance of foreign investment in Polish debt was negative. The volatility of zloty exchange rates, following a temporary increase in the second quarter of 2000, decreased markedly in the latter half of the year; average zloty/dollar and zloty/euro volatilities in this period came to 3.1% and 2.7%, respectively (as against 4.1% and 3.5% in the first half of the year).

Assessing the consequences of the full float of the zloty is a relatively difficult task, since the exchange rate mechanism in place since 1999 had already been very similar to a floating rate regime. The heightened FX risk associated with floating exchange rates was intended to weaken the influence of interest rate parities on portfolio capital flows (cf. Fig. 59). However, studies at the NBP show a low correlation

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Figures 60 Reaction of CPI to 1-sigma shift in nominal effective zloty exchange rates

Source: GUS and NBP data; NBP calculations based on GUS figures.

between interest rate disparities and flows of portfolio investment⁸⁶. This could imply that interest rates disparities are just one of many factors impacting the volume of capital flows. The decisions taken by portfolio investors in 2000 were primarily influenced by their assessment of the Polish economy in the context of the situation on international financial markets. Each deterioration in this assessment exacerbated investor fears of the zloty weakening and led to a temporary withdrawal of portfolio investment, despite the large differentials between interest rates

⁸⁶ These studies covered the period from October 1998 to February 2001. They took into consideration differences in both nominal and real interest rates on instruments denominated in zloty, US dollars and Deutschemarks, including adjustments for actual movements in zloty exchange rates against the latter two currencies. Three categories of capital flow were examined: the balance on portfolio investment, the balance on purchases by non-residents of debt securities issued on the Polish market, and the balance on foreign credits received and issues of debt securities on foreign markets by Polish residents, excluding the government sector.

in Poland and abroad. An example of this was the departure of portfolio investment from countries classified as "emerging markets", including Poland, in October 2000, when Argentina stood on the brink of a currency crisis.

The zloty exchange rates recorded in 2000 helped curb the inflationary tendencies within the Polish economy⁸⁷.

Exchange rate movements, in affecting the price of imported goods as expressed in domestic currency, influence the CPI both directly (via prices of imported consumer goods) and indirectly (via changes in producer prices caused by movements in the price of imported production inputs).

A measure of the sensitivity of prices to exchange rate movements is the "pass-through ratio"⁸⁸. As estimated by the NBP for nominal effective zloty exchange rates, this came to -0.53 for the whole of 2000 (as against +0.49 in 1999). This signifies that the nominal effective appreciation of the zloty in 2000 reduced the CPI by 1.18 points⁸⁹. In this regard, it is worth noting the following:

- the reaction of the CPI to exchange rate movements becomes visible one month after, and reaches its peak three months after (cf. Fig. 60),
- the direct impact of exchange rate movements on the PPI is one third greater than on the CPI. However, the reaction thus engendered in the PPI peaks in the month following the movements in question. In 2000, the appreciation of the zloty pared 1.12 points off the PPI.

The influence of exchange rates on Poland's foreign trade is discussed in the present Report in the section 3 on "External disequilibrium".

 $\mathbf{PT}_{t,t+j} = \mathbf{CPI}_{t,t+j} / \mathbf{EXR}_{t,t+j}$

⁸⁷ This assessment draws on the results of pass-through analysis conducted using statistical and econometric methods.

⁸⁸ It is assumed that the cumulative statistical pass-through effect of exchange rate movements on the CPI may be measured by the following ratio:

where:

 $PT_{t,t+j}$ is the cumulative pass-through effect of exchange rate movements on the CPI after j months,

CPI is the cumulative CPI for the particular months of the year being analysed, EXR is the cumulative exchange rate index.

⁸⁹ The direct impact of exchange rate movements on the CPI in 2000 came to 0.85 points, while the indirect impact (via the PPI) came to 0.33 points.



6.3.3. Inflation expectations

The monetary policy strategy pursued by the National Bank of Poland treats inflation expectations as a significant leading indicator of inflation, recognising that the impact of these expectations on price growth is both demonstrated theoretically and confirmed by empirical research⁹⁰. The decisions taken by the Monetary Policy Council in 2000 were to a large degree underpinned by the need to contain inflation expectations.



Figures 61 Inflation expectations of consumers & bank analysts, 2000

Source: Demoskop and Reuters figures; NBP calculations.

A factor that differentiates the inflation expectations of particular groups participating in the market is the relative weight which they ascribe in developing those

⁹⁰ See T. Łyziak, Monetary transmission mechanism in Poland. Theoretical concepts vs. evidence, "Materiały i Studia" no 19, NBP, 2001.

expectations to information on the current level of inflation and on price movements in the future; this difference can clearly be seen in the case of consumers and banks. Analyses suggest that consumer projections of inflation (as quantified using a questionnaire from the Demoskop company⁹¹) are strictly related to the current rate of inflation, i.e., the rate known to respondents at the time they are polled. On the other hand, the inflation expectations of bank analysts, as taken from Reuters surveys, reflect a more complex array of information that gives some indication of the price movements likely in the future. The different ways in which these two groups formulate their expectations produce divergences in both the level of inflation expected and the responses given by those polled to various types of information. In 2000, consumer inflation expectations one year forward were on average 4.4 points higher than the corresponding expectations at the banks (cf. Fig. 61).

Consumer inflation expectations

Over the first three quarters of 2000, consumer inflation expectations oscillated around a rising trend line, kindled by the increase being reported in current inflation. At the beginning of the year, the price growth expected over the coming 12 months was 9.8%, which was 0.6 points above the current inflation rate at the time⁹². By the end of the third quarter, i.e., in September 2000, consumer inflation expectations had climbed to 13.5%, the highest level since April 1998, which was principally the result of a surge in the current rate of inflation from 10.2% during the August poll to 11.6% during the September one.

It is worth noting the decline in consumer inflation expectations that occurred in April 2000, despite the growth in current inflation at that point. The year-on-

⁹¹ An adjusted version of the Carlson and Parkin method. This method is described by T. Łyziak in "*Badanie oczekiwań inflacyjnych podmiotów indywidualnych na podstawie ankiet jakościowych*" [Investigating consumer inflation expectations using qualitative surveys], Bank i Kredyt no. 6, NBP, 2000.

⁹² This being year-on-year inflation in November 1999. The Demoskop poll used to quantify consumer inflation expectations is carried out in the first ten days of each month, i.e., prior to the release of GUS figures on inflation in the preceding month. For this reason, the quantification procedure (an adjusted version of the Carlson and Parkin method) assumes the current inflation rate to be year-on-year inflation two months previously, which is known to the respondents when the poll is taken.

NBP

year price growth anticipated for the corresponding month of the following year fell 0.6 points compared to projections in March, standing at 10.6%, a mere 0.2 points above the current inflation rate. April's decrease in consumer inflation expectations could have been connected with the rise in NBP base interest rates performed by the Monetary Policy Council towards the end of February. Although studies of the time series of consumer inflation expectations fail to disclose any linkage between these expectations and the ongoing decisions of the central bank, it was nevertheless characteristic in 2000 that consumers revised their expectations downwards in the second month after a monetary policy tightening. This happened both in January and in April. However, on the basis of these two observations it is difficult to make a definitive judgement on any cause-and-effect relationship between the decisions of the Monetary Policy Council and consumer inflation expectations⁹³.

In the final quarter of 2000, as current inflation came down, so too did consumer inflation expectations. Following a steep drop in October (projections for year-onyear inflation in twelve months' time then fell to 11.3% from September's 13.5%), expectations were again lowered in November. The 0.8 point decline in consumer inflation expectations seen in November took them close to the current rate of inflation. In December, consumer expectations of year-on-year price growth one year forward remained at the same level as in November, despite a rather substantial decrease in current inflation. The fall in current inflation did not find reflection in December's consumer inflation expectations due to the positive, fairly strong seasonality of these expectations in that month, as shown by the findings of econometric research.

Corporate inflation expectations

Corporate inflation expectations are monitored at the NBP using the results of a quarterly survey of around 300 companies. The information collected (charted in Fig. 62) indicates that a considerable increase in inflation

 $^{^{93}}$ Let us also note the decline in consumer inflation expectations in October, which was much sharper than the decrease in current inflation (2.2 points, as opposed to 0.9 points). This rapid reduction in inflation expectations could have been connected with the Council decision to raise official interest rates in August.

expectations in the first quarter of 2000 was then followed by a downward trend in corporate expectations of both CPI growth (the left-hand chart in Fig. 62) and PPI growth (the right-hand chart). The projections for annualised industrial producer price growth compiled in the fourth quarter of 2000 averaged 8.8%, while those for consumer price growth averaged 10.2%⁹⁴. It is noticeable that changes in these expectations in the second half of the year were minor.

As regards the prices expected by companies for their own products, a steady decrease in these was apparent, with the exception of the first quarter of 2000 (cf. Fig. 63, left-hand chart). In the fourth quarter, companies projected that price growth for their own products and services would come to an average of around 6%. This figure is considerably below that for expected producer price inflation. As concerns forecast growth in material input costs, this went up distinctly in the third quarter (cf. Fig. 63, right-hand chart). Apart from that quarter, corporate expectations in this regard were fairly in line with their expectations of consumer price growth.

Knowing the projections of particular companies concerning both CPI and PPI growth within a horizon of one quarter, the rationality of these projections was investigated (in terms of the fit between the distributions forecast by the companies surveyed and the real, albeit unknown, distributions of the CPI and PPI)⁹⁵. The conclusions presented below should be treated with caution, since only eight observations were available.

On the basis of the analysis conducted, sufficient evidence was not found to indicate that the corporate view of the process of movements in the CPI and PPI

 $^{^{94}}$ The quarterly growth rates projected by the companies were annualised as follows. If the companies expected (on average) CPI growth in Q1 2000 of 2%, then this was extrapolated to give an annual figure of 100 x {(1.02)⁴ - 1} % = 8.2%. Generally speaking, this represents the annual growth rate corresponding to the last quarterly figure, assuming that expectations for the next three quarters will remain unchanged.

⁹⁵ The methodology employed is described in detail in the following articles:

F.X. Diebold, T.A. Gunther, A.S. Tay, "Evaluating Density Forecasts, with Applications to Financial Risk Management", International Economic Review, no. 39, 1998;

F.X. Diebold, J. Hahn, A.S. Tay, "Multivariate Density Forecast Evaluation and Calibration in Financial Risk Management: High-Frequency Returns on Foreign Exchange", The Review of Economics and Statistics, no. 81, 1999.





Figures 62 Expected growth in consumer prices (left) and industrial producer prices (right), Q1 1999 – Q4 2000

Source: NBP surveys.

Figures 63

Expected growth in corporate output prices of goods & services (left) and input prices of raw materials & intermediates (right), Q1 1999 - Q4 2000



differed substantially from the real process. Certain factors allow it to be surmised that companies display greater rationality in their forecasts of the CPI than the PPI. In addition, it should be underlined that companies had a better feeling for the central trend and uncertainty (the average dispersion around the central tendency) than for the asymmetry and steepness of bell of the real distribution generating observations of the CPI and PPI.

Inflation expectations of bank analysts

In January 2000, the price growth forecast by bank analysts for the coming twelve months stood at 6.8%. In the first quarter of the year, the inflation expectations of the banks gradually came down, to stabilise around 6.5% from April to August.

The second and third quarters of 2000 saw a fairly significant increase in the uncertainty of the banks concerning future price movements. This is evidenced by the widening range of projections declared by the banks (cf. Fig. 61), and also by the rise in the coefficient of variance. In view of the strong disruptions to the first of these measures (the width of the range of responses given by the banks surveyed), which stemmed from individual responses that were atypical of the sample as a whole, the coefficient of variance seems to be a more suitable measure in this respect. This takes into account all the banks included in the survey, not only those exhibiting the greatest optimism or pessimism in their views of future price growth. The coefficient of variance specifies the average deviation of the inflation expectations of the banks from the mean of the distribution. From January to September, the coefficient of variance of the inflation expectations of the banks rose from 7% to 14.6% (cf. Fig. 64).

In September 2000, the distribution of bank inflation expectations shifted towards higher inflation rates. This increase in inflation expectations may have been related to the jump in current inflation (i.e., year-on-year inflation in July), and also to the announcement by the Monetary Policy Council of its short-term inflation target for 2001, set within a range of 6%-8%. The mean value of September's distribution of bank inflation expectations was 7%, corresponding to the mid-range of the NBP inflation target for 2001.

In the final quarter of the year, the inflation expectations of the banks steadied at around 7%⁹⁶. In October,

⁹⁶ It should be noted that in November 2000 Reuters altered the questionnaire used in its survey of commercial bank inflation expectations. The changes performed significantly reduced the amount of information provided; among other things, these changes interrupted the basic time series utilised in work at the NBP connected with bank inflation expectations, i.e., the series detailing the year-on-year inflation expected in the corresponding month of the following year. For this reason, in analysing bank inflation expectations as of November 2000, we have been compelled to apply a slightly different measure to that previously used, namely, the year-on-year inflation expected by the banks in the month preceding the corresponding month of the following year. In Fig. 61, this time series is given as "Expected yr/yr CPI (+11 months), banks".





Figures 64 Coefficient of variance of bank analysts' inflation expectations

the inflation projected by the banks for October 2001 ranged from 6.2% to 8.2%, with a mean value of 7.1%, while in November these expectations brightened, ranging from 6.1% to 8.2%, with a mean of 6.9%97. The Reuters survey in December 2000 showed that the yearon-year inflation rate predicted by the banks for the month preceding the corresponding month of the following year had remained at the same level as in November. It is worth emphasising that in December the banks' expectations were more closely clustered around the mean. The range of expectations narrowed; whereas in November the extreme values were 6.1% and 8.2%, in December the minimum projection was 6.2%, while the maximum was 7.9%. The coefficient of variance of these expectations came down from 8.6% in November to 6.6% in December.

Source: Reuters and NBP figures; NBP calculations.

⁹⁷ Due to the change in the survey questionnaire at this point (in November 2000), in both October and November the banks reported their inflation forecasts for October 2001, while in December they reported them for November 2001.

Expectations on financial markets

Given the current level of development of Poland's financial market, information on the expectations of financial institutions can be gleaned – albeit with certain constraints – from forward interest rates on the market for FRAs, and also from forward rates derived from the zero-coupon yield curve.

The rates on FRAs (forward rate agreements) reflect expectations concerning the level of interest rates in several months' time. This is because the rates on FRAs are used by the banks to calculate the interest differences payable on settlement of the contracts concerned due to the intervening increase or decrease in interest rates. The stronger the market sentiment that interest rates will go up (or come down), the higher (or lower) the forward interest rates on FRAs. Thus, rates on FRAs can be treated as an expression of the interest rates expected by the market. Forward rates for one-year periods can be calculated from the yield curve, since the yields on bonds maturing in several years tend to be the geometric mean of the current annual interest rate on the spot market and annual forward rates, with settlement dates deferred to the respective years preceding the maturity of the given bonds. Due to the risk premium embedded in bond yields, the forward rates derived from the yield curve do not give an exact picture of the annual interest rates expected by the market for the particular years ahead.

A characteristic feature of the rates payable on FRAs in 2000 was the increase in these rates over the whole maturity spectrum prior to NBP rate rises expected by the market, while following such rises rates on FRAs decreased slightly for relatively short maturities (settling in 1 or 3 months) and came down substantially for contracts with more distant maturities (settling in 9 months). This tendency reflected the general market view that the rise in inflation in Poland and rate hikes conducted by the NBP were in fact temporary. A fall in inflation and in interest rates was therefore expected in the longer time frame. This view made itself felt in December 2000, when rates on FRAs dropped abruptly for all maturities as the market began expecting a rapid cut in official rates (cf. Fig. 65).

However, not all movements in rates on FRAs reflected changes in expectations of future interest rates. This stems from the fact that those writing FRAs hedge their





Figures 65 3M FRA rates vs effective NBP 3M reverse repo rate*

* The reference rate for FRAs is WIBOR. FRAs are quoted as 1x4, 3x6, 6x9, etc. The first number represents the settlement date for interest differences, while the interval between the two numbers represents the tenor of the contract, e.g., a 6x9 FRA refers to a contract for 3M WIBOR in 6 months' time.

Source: NBP calculations based on Reuters figures.

positions on the spot market. The costs they incur, and thus also the rates payable on the contracts they offer, can therefore also be impacted by movements in spot interest rates, which are not related to expectations of central bank rate adjustments, but are triggered by upsets on financial markets, which result in changes in the risk premium embedded in those rates. An example of this was the rise in rates on FRAs at the end of October 2000, which was precisely a consequence of turbulence on international financial markets. This elicited a general rise in domestic interest rates due to a temporary outflow of capital from emerging markets, including Poland.

Even more caution is demanded in approaching the information obtained from the yield curve on market expectations of 12-month interest rates in 1, 2 or 5 years' time (cf. Fig. 66). Although the durability of the differentials between these rates testifies to the market having rather fixed expectations concerning the NBP

Figures 66 12M forward rates in 1, 2 & 5 years, derived from zero-coupon yield curve





sequencing of future reductions in the general level of Polish interest rates, the year 2000 brought large volatility in bond prices, producing considerable changes in the position of the yield curve. This volatility was rooted in the changeable nature of forecasts for the Polish economy, particularly as regards the balance of payments, and also in shifts in the situation on international financial markets. An example of the impact exerted by the latter was the situation that unfolded on the bond market following the NBP rate rise in August. This rise was viewed by the markets as "the last", and as a result, due to expectations of future rate cuts, bond prices began to go up. However, this process was temporarily interrupted by the instability on international markets already mentioned.

Generally speaking, however, throughout the year 2000 the markets considered the difficulties of the Polish economy to be transient. This was demonstrated by the inflow of portfolio investment, which continued apace despite the deterioration in the current deficit and the rise in inflation witnessed until July. The rates on FRAs, despite temporary increases directly prior to NBP

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Figures 67 Zero-coupon yield curve expected for March 31, 2001

Source: NBP calculations based on Reuters figures.



Figures 68 Benchmark 5-yr T-bond yields and USD/PLN exchange rates

Source: NBP calculations based on Reuters figures.

rate rises, also implied that a decline in interest rates was expected in the longer time horizon (cf. Fig. 67).

A factor accentuating bond price volatility was the substantial interrelationship between these prices and zloty/dollar exchange rates (cf. Fig. 68). This is traceable to Poland being viewed as increasingly linked to the euro area. A strengthening of the euro against the dollar boosted demand for assets denominated in the euro and in currencies associated with it, the zloty being seen as one of these currencies. This higher demand was also directed towards Polish bonds. On the other hand, a weakening of the euro against the dollar set in motion the reverse process. The impact of the interrelationship of bond prices and zloty/dollar exchange rates constitutes an additional factor – apart from the volatility of risk premiums – that cautions against treating the forward interest rates derived from the yield curve as a precise reflection of market expectations of future interest rates.

6.3.4. The wealth effect

The year 2000 brought fluctuations in the composition of the investment portfolios held directly or indirectly by households. The largest changes were recorded in the second and fourth quarters of the year, when a stock market boom – partly related to external factors (the situation on US markets) – steeply lifted share prices on the Warsaw Stock Exchange. The third quarter, on the other hand, saw a significant reduction in direct personal investment on the stock market. This was plainly linked to the downturn on that market at the time. In other sectors of direct investment (Treasury securities), no major changes were forthcoming. By contrast, a substantial increase was reported in the assets held by investment funds, bolstered by investment from corporates. Pension fund assets also rose.

Movements in particular categories of investment in 2000 are presented in Table 17.

The strong growth seen in the sector of indirect investment in securities was also sustained in the fourth quarter. Pension fund assets rose to 9.9bn zloty (with over 30% of this invested in listed shares), while those of investment funds went up to 7.2bn. It is estimated that "dividend funds" took around 4bn zloty from corporates in 2000, bringing about a major change in the customer base of investment funds, which up until mid-2000 had primarily comprised personal investors.

Table 17Direct & indirect forms of personal capital market investment, Q1-Q4 2000

Type of capital investment	QI (period	Q2 (period	Q3 (period	Q4 (period
	end	end	end	end
	balance)	balance)	balance)	balance)
	billion zloty			
I. Direct portfolio investment				
 securities held on personal 				
accounts (total)	17.7	20.6	17.7	21.5
– Shares	12.6	15.6	12.3	16.5
– Bonds	2.8	2.7	2.9	3.1
– T-bills*	2.3	2.3	2.5	1.9
2. Indirect portfolio investment (total)	8.0	9.5	14.0	17.1
 Investment funds (net assets)** 	3.9	3.7	6.5**	7.2
- Pension funds (net assets)	4.1	5.8	7.5	9.9
Total	25.7	30.1	31.7	38.6
Above investments (total) as proportion				
of bank liabilities to persons, in zloty				
& foreign currency (%)	16.5	17.2	17.7	20.6

* As reported by dealer banks.

** The high growth in investment fund assets in Q3 is largely attributable to an inflow of funds from institutional investors.

Source: GUS, NBP.

To summarise, personal investment in securities displayed slow growth in 2000, and the growth that did take place was fuelled by indirect investment vehicles, principally pension funds. The increase in the assets of investment funds was of a temporary character, primarily resulting from an inflow of funds held by institutional investors.

Following the rise in the second quarter in the equity investments held by personal investors, the third quarter saw investor preferences shift towards bank deposits and interest-bearing securities. The rise in the value of shareholdings that occurred again in the fourth quarter mainly stemmed from exchange rate movements.

All in all, the level of personal savings invested on the capital market in 2000, whether held directly or indirectly, still does not support the conclusion that this factor exerts a significant influence on the wealth of households, and thus on their consumption decisions and the level of inflation.





On April 11, 2000, the Council of Ministers, acting in consultation with the Monetary Policy Council, resolved to float exchange rates for the zloty against foreign currencies. In this connection, at its meeting of April the Council adopted resolutions abolishing the trading band for the zloty, and abolishing the parity rate and the previous crawling band mechanism. These resolutions took effect as of April 12, 2000. In line with the *Medium-Term Monetary Policy Strategy for the Years 1999-*2003, the objective of moving to a floating rate regime, one entirely consistent with direct inflation targetting, was to improve the effectiveness of the central bank's interest rate policies. In addition, this regime will help reduce to a minimum the dangers associated with the full deregulation of capital transactions.

Pursuant to a recommendation of the Monetary Policy Council issued on March 29, the NBP commenced sales in September of Treasury securities from its own portfolio, to a total face value of 16.4bn zloty. By the end of the year, a total of 15 tenders had been held, at which bonds with a face value of 2,222m zloty were sold, for a selling price of 1,795m zloty. The bonds sold had been obtained by the NBP in 1999 under the conversion of non-negotiable government liabilities to the central bank. The sale of these conversion bonds constitutes an operation of a structural character, staggered out over time. It is not directly connected with the ongoing conduct of monetary policy, and therefore does not cloud the transparency of that policy. The purpose of this exercise is to reduce the structural surplus liquidity within the banking system (i.e., the surplus of total liquidity), including surplus operating liquidity (absorbed by instruments with maturities shorter than the period for holding required regulatory reserves, i.e., around one month). Structural surplus liquidity represents a situation where the central bank is the net debtor of the commercial banks. Structural surplus liquidity may be accompanied by either a surplus or shortfall in operating liquidity. Surplus operating liquidity signifies that at least a portion of the surplus funds of the banks are absorbed via short-term open market operations (maturing in consecutive regulatory reserve periods). By contrast, a shortfall in operating liquidity

NBP

means that at least all of the banks' surplus funds are absorbed via long-term operations, and in consecutive reserve periods the central bank carries out liquidityproviding operations with the banks. Whether structural (total) liquidity is absorbed solely via long-term operations (thereby being "frozen") or by short-term ones is of major significance for the effectiveness of monetary policy transmission.

Given a situation of surplus operating liquidity, these operations are rolled over from one reserve period to the next, since otherwise the excess funds at the banks would lead to a fall in interest rates, bringing down interbank rates first of all, and then commercial bank lending and deposit rates. Thanks to the conduct of open market operations, the central bank can hold interbank rates at the desired level, while at the same time the impact of those rates on lending and deposit rates at the commercial banks is weakened. In a situation of surplus operating liquidity, the central bank, by changing the interest rates applied in open market operations, directly influences the rates earned on part of a commercial bank's asset portfolio. Should the central bank decide to raise interest rates, the commercial bank's interest income on NBP money market bills rises, since an increase in NBP base rates denotes an increase in yields on those bills. Other things being equal, the commercial bank's income stream will in these circumstances expand and its earnings rise, with no change in lending and deposit rates. A rate adjustment by the central bank does not therefore compel the commercial banks to follow suit. This signifies that central bank interest rates have a weaker impact on the pricing behaviour of the commercial banks.

The outright sale of conversion bonds from the National Bank's own portfolio begun in the third quarter of 2000 is a measure to reduce structural surplus liquidity (and thus also excess operating liquidity) on a lasting basis. As such, it serves to increase the effectiveness of official interest rates as a basic monetary policy instrument. This operation is being carried out gradually and involves the sale of relatively small amounts, accepting yields by reference to current market rates. This limits to a minimum the impact of this operation on the yields obtainable on Treasury securities of similar characteristics to the conversion bonds being sold by the NBP.



From August 2000 to the end of the first quarter of 2001, a downward trend was maintained in both consumer price inflation and core inflation. Despite this positive tendency, however, the signs concerning a further decline in inflation still remain indistinct.

The information available on the condition of the Polish economy at the beginning of 2001 indicates a clear reduction in domestic demand growth. One development that reaffirms this is the marked narrowing of the current account deficit, which fell from 8.3% of GDP in the first quarter of 2000 to some 5.3% in the first quarter of 2001.

Given the imbalance that persists on the labour market, the tendency for moderate growth in nominal wages can be projected to continue. Nonetheless, a rise in consumer demand is possible in the second half of 2001. This would be fed by the increase in real incomes resulting from the slowing of price growth, and also by the buildup in the first half of the year of wage rises and performance bonuses in the government sector, together with additional payments in cost-of-living adjustments to old-age and disability pensions and compensation for the lack of full indexation of these pensions in previous years.

Continuing the process of bringing down inflation is being encouraged by moderate money supply growth. The tendency for lending growth to come down gradually, including lending to persons, is being sustained, in conjunction with accelerating growth in household zloty deposits. However, with the rate of inflation coming down, a constant pace of nominal money supply growth translates into faster monetary expansion in real terms. Over the longer term, the maintenance of this trend could therefore aggravate inflationary pressures, particularly in the event of any increase in inflation expectations, thereby causing a decline in the demand for money.

The milder decrease in core inflation than in headline inflation seen since August 2000 primarily attests to the fading of the inflationary impulses issuing from the world fuel market and the domestic food market in the years 1999-2000. The fuel market should not be a
source of inflationary impulses in 2001. It is also possible that the impact of food prices on overall price growth can be restrained by swift Government measures to liberalise grain imports. This will further be contingent on no additional barriers being created to imports of agricultural produce, and on favourable weather conditions for food production.

In 2000, one factor constraining inflation was the appreciation of the zloty. The research cited in this Report indicates that the reaction of prices to exchange rate movements is already visible within a month. Thus, any reversal of these tendencies on the currency market, i.e., the beginnings of a weakening of the zloty, could contribute to accelerating inflation in 2001.

A major factor heightening the probability of a lasting reduction in inflation is this year's clear decline in household inflation expectations. Rising inflation expectations were a significant consideration behind the last increase in official interest rates.

The Monetary Policy Council lowered NBP base rates by one point in both February and March 2001. Previous experience suggests that a more pronounced easing of monetary policy triggers a relatively strong and swift increase in domestic demand. The scale of the rate cuts carried out by the Council in February and March ensure the maintenance of powerful incentives to growth in deposits, particularly personal deposits. These factors support the maintenance of the upward trend in savings at the banks, one that is positive for the economy as a whole.

The predominance of static perceptions in the development of inflation expectations among economic agents in Poland presents difficulties in surmounting those expectations. For this reason, a precipitate lowering of nominal interest rates, in view of the areas of uncertainty outlined above, could easily spark a resurgence of inflation. In these circumstances, were the NBP to slash interest rates, this would prompt an expansion of domestic demand and lead to inflation again intensifying and the current deficit widening, thereby increasing the likelihood of a currency and financial crisis.

The relatively cautious decisions taken by the Monetary Policy Council take into account the areas of uncertainty that a central bank must factor into its activity. In addition to those already mentioned, these include, in particular, the conduct by the Government of a fiscal policy that has proved less restrictive than previously assumed. The condition of public finances represents a serious threat to the process of curbing inflation. By the end of March 2001, the central government deficit had exceeded 73% of the amount targetted for the entire year. The utilisation of such a large proportion of the deficit target within the first quarter, the highest proportion since 1990, poses the danger that this target could be overshot, which could generate additional inflationary pressure.

In order to contain inflation effectively, while sustaining the most rapid and stable economic growth possible, it is also essential for the Government to take steps to improve the operation of markets of key importance to price growth. The markets for labour, foodstuffs and fuels, and also household electricity, gas and water supply, continue to operate in a manner that encourages the persistence of inflationary pressure. These constitute additional factors of a structural nature that require the central bank to retain a relatively tight monetary policy.

In the Monetary Policy Guidelines for the Year 2001, the Monetary Policy Council has set the inflation target for year end 2001 within a range of 6%-8% consumer price growth relative to year end 2000. The Council reaffirms that the target written into the Medium-Term Monetary Policy Strategy for the Years 1999-2003, namely, bringing inflation down to below 4% by the end of 2003, remains fully valid. In order to lay the best possible foundations for performance of the medium-term target, the Council will be seeking to lower inflation to a level close to 6% at year end 2001.



APPENDIX I

The food market in 2000

Supply on the food market in 2000

The year 2000 was the second in succession to witness a substantial decline in agricultural output. The Central Statistical Office estimates that aggregate agricultural output fell 4.1% on the previous year, following a drop of 5.2% in 1999. Crop production was down 3%, while livestock production was down 5.5%. The determining factors behind the volume of agricultural output in 2000 were adverse weather conditions, with the soil affected by drought from mid-April to the end of June, leading to a slump in grain yields, and the maintenance of a downward trend in livestock farming, one reason for this being low profitability. The harvests of the principal crops are presented in Table 18.

Excess demand over supply persisted on the market for agricultural produce in 2000, pushing up both procurement prices and prices at open-air markets. Prices for most produce, particularly grains and milk, were well above the previous year's level. Average procurement prices for basic agricultural produce and retail prices for certain foodstuffs are given in Table 19.

Table 18 Harvests of principal crops, 1998 - 2000

	Harvest					
	199	8	199	9	200	0
	million tonnes	1997 = 100	million tonnes	1998 = 100	million tonnes	1999 = 100
Basic grains & mixed cereals	26.6	106.7	25.1	94.3	21.3	85.1
Food grains	5.8	100.0	5.7	99.6	5.7	100.0
Potatoes	25.9	124.9	19.9	76.8	24.2	121.6
Field vegetables	5.9	9.9	5.2	88.7	5.5	105.2
Tree fruit	2.1	84.6	2.0	93.6	1.8	93.8
Soft fruit	0.4	102.2	0.4	100.8	0.4	95.4

Source: figures from GUS and IERiGZ (Institute of Agricultural Economics and the Food Industry); NBP calculations.

Table 19

Price indices, agricultural procurement & retail foodstuffs

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	1998	1999	2000
		previous year = 100	
Procurement prices			
– wheat	92.3	91.8	118.2
– rye	87.4	91.1	121.0
– potatoes	137.6	125.6	123.6
– milk	103.8	99.8	128.5
– fat pigs	94.5	85.8	120.4
– fat cattle	97.7	105.6	109.8
– table poultry	97.7	85.3	109.2
Procurement prices			
– bread & grain products	105.8	102.9	114.3
of which: bread	105.5	102.5	118.2
– potatoes	110.2	107.4	117.8
– milk	107.8	102.4	109.6
– pork	107.3	95.3	110.9
– beef	102.0	102.4	110.4
– poultry meat	98.6	92.1	106.9

Source: GUS.

Figures 69 Food price indices vs Consumer Price Index (December previous year = 100)



Source: NBP calculations based on GUS figures.



As a result of these changes, the year 2000 saw the annual growth rates for food prices and the CPI come closer together, as they had done in 1992-1993 and in 1996. Experts in agricultural economics attribute this to the government protection afforded to agriculture, which caused a steep rise in farm-gate prices. The maintenance of strong protection to the domestic market was one of the reasons for the growth in food prices paid by end users, thereby influencing the relationship depicted in Figure 69.

Structural factors

The policy of official intervention in agriculture, aimed at stabilising the market for farm produce and foodstuffs and safeguarding farm incomes, is implemented by the Agricultural Market Agency, which is responsible to the Prime Minister. The activity of the Agency includes:

- intervention purchases and sales of agricultural produce and processed goods on the domestic market and on foreign markets; and
- the stockpiling and management of official reserves of agricultural products and of food products and intermediates, in performance of specified responsibilities, using earmarked funds.

The agricultural and food products and intermediates that are included in the operations of the Agency comprise:

- under official intervention food wheat, food rye, butter, skimmed powdered milk, sides of pork, bee honey, potato starch and rape;
- under the management of official reserves food wheat, food rye, butter and sides of pork.

The Agency sets emergency support prices and minimum prices for these products and intermediates, which are set out in its annual programme of official intervention. In setting emergency support prices, the Agency specifies the periods in which these prices will apply, together with quality requirements and the volumes to be purchased, in consideration of the funding at its disposal under the annual intervention programme. Where sales are to be carried out, the prices for the agricultural produce and processed goods involved are determined by the Agency with a view to stabilising the market. In establishing minimum prices, the Agency takes into account the projected level of domestic prices and import prices, along with its own financial resources. Proposals regarding minimum prices are submitted to the Council of Ministers by the President of the Agency in the annual programme of official intervention.

Overview of selected markets

Grain

The situation on the grain market in 2000, as indicated by the national grain balance, is presented in Table 20.

Domestic grain supplies were down 5.7% in the first half of 2000 compared to 1999 (with stocks down 9.2% and the harvest down 5.2%), while in the second half of the year the decline came to 14.5% (stocks shrinking 27.7% and a 12.9% lower harvest). At the same time, grain consumption fell (7.7%). With demand exceeding supply for the second season in a row, market equilibrium was restored through grain imports and price rises.

Following a period of moderate growth in procurement prices from January to March, grain prices began to soar in May at the farm gate, at open-air markets, and particular-

Table 20

Domestic grain supplies, imports and consumption

	1997/1998	1998/1999	1999/2000	2000/200 I
		thousand	d tonnes	
Stocks	4 56	3 544	3 217	2 327
Output	25 351	27 101	25 690	22 385
Imports	I 463	I 309	I 346	I 400*
Consumption	27 119	28 179	27 869	25 716
of which:				
– food	5 810	5 790	5 791	5 792
– feed	16 965	18 034	17 670	15 650
		previous crop	year = 100	
Stocks	223.8	85.3	90.8	72.3
Output	100.4	106.9	94.8	87.1
Imports	42.7	89.5	102.8	387.7**
Consumption	103.7	103.9	98.9	92.3
of which:				
– food	99.9	99.7	100.0	100.0
– feed	105.6	106.3	98.0	88.6

* Imports performed July-December 2000.

** Import growth in 2nd half 2000 to 2nd half of 1999.

Source: NBP calculations based on figures from IERiGZ (Institute of Agricultural Economics and the Food Industry).

ly on commodity exchanges. Prices on the domestic market were increasingly affected by pessimistic forecasts concerning the size of the harvest in 2000 due to the protracted drought. These were based on the unfavourable weather conditions for agriculture that had prevailed since mid-April, and had resulted in a reduction of the crop area under basic grains. The forecasts also factored in the relatively low application of commercial crop inputs. On this basis, the conclusion that presented itself was that the negative tendency in supply and demand was very likely to persist until the end of the 1999/2000 crop season. From July onwards, grain prices began to come down.

The situation on the grain market was regulated by the activity of the Government and the Agricultural Market Agency, as follows:

- as of November 1999, the Agency conducted tender sales of rye, and as of February 2000 also of wheat;
- in June 2000, to halt the rise in grain prices, the Government established a duty-free quota on grain imports of 200,000 tonnes, intended to remain in force until the end of July;
- from August to October, 2000, intervention purchases of grain were conducted, representing a continuation of the programme of grain purchases introduced in 1999, involving producer subsidies from the Agricultural Market Agency. The programme for 2000 projected subsidised purchases of 20% more wheat and 40% more rye than in 1999. Companies purchasing grain under direct Agency producer subsidies were required to pay grain procurement prices no lower than the minimum set for the year 2000, i.e., 6.7% more for wheat than in 1999 and 3.1% more for rye. To avoid a concentration of grain deliveries, a financial incentive for producers was maintained by offering higher subsidies for grain delivered in September and October;
- in August 2000, the Government resolved to introduce a duty-free quota on grain imports involving 400,000 tonnes of wheat and 100,000 tonnes of rye to meet the needs of the Agricultural Market Agency, and a further 400,000 tonnes of wheat and mixed cereals and 200,000 tonnes of rye, barley and oats to meet the ongoing needs of the domestic market⁹⁸.

⁹⁸ Report on the current situation on the grain market, Ministry of the Economy, October 26, 2000.

Figures 70 Average wheat procurement prices (corresponding month previous year = 100)

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Source: GUS.

Figures 71

Average rye procurement prices (corresponding month previous year = 100)



Source: GUS.

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The upward trend in grain prices was predominant in the first half of the year. In these circumstances, the measures instituted by the Government and the Agricultural Market Agency should be considered correct, albeit belated. The June decision on duty-free grain imports should have been taken earlier, if only because of the time needed to arrange and perform those imports (which began arriving at the beginning of July). This conclusion is borne out by movements in procurement prices for basic grains over the period April-June (cf. Figs. 70 and 71). Reservations also arise concerning certain forms of intervention applied on the grain market in 2000. This does not refer to the direct producer subsidies employed in Poland since 1999. However, considerable doubts are raised by the method of setting a minimum price that takes into consideration solely the inflationary effects involved, and not the situation on the market.

Movements in average grain prices in the years 1997-2000 are shown in Figures 70 and 71.

Meat

Compared to 1999, procurement of fat pigs fell 6.6% in 2000, with farm-gate prices climbing 20.4%. A survey of the national pig herd carried out by GUS at the end of 1999 indicated that in 2000, especially in the first months of the year, the meat market would be conditioned by excess supply (although this would not be as large as a year earlier). In this situation, the Agricultural Market Agency began buying up pork as early as January 3. Since procurement of fat pigs was reduced, prices although dipping in January and February – began to rise steadily as of March. In June, the farm-gate price per kilo of fat pigs was 29.2% higher than a year before. It was only from August onwards that prices started to come down. One of the main causes of this was the high price of grain and potatoes. This produced a systematic increase in retail meat prices. With feedstuff prices continuing to rise, particularly grain prices, the profitability of pig breeding deteriorated; in conjunction with the rising prices of other fodder, this led to a contraction in pig herds and an increase in farm-gate prices. Growth in average procurement prices and in the procurement of fat pigs, and also in retail pork prices, is depicted in Fig. 72.

Figures 72 Growth in average procurement prices & volumes, fat pigs, and retail pork prices (corresponding period = 100)



Source: GUS.

The very low prices being paid for fat cattle for several years now, and also – until recently – for milk, has meant that cattle farming has increasingly become less profitable, and that the cattle herd has been dwindling faster and faster from year to year. In 2000, the national cattle herd shrank 6.1% compared to 1999. Following the reduction in the number of cattle being reared by farmers, prices for fat cattle trended upwards from the beginning of 2000. The annualised average procurement price for fat cattle was 9.8% higher in 2000 than the average price in 1999.

Table 21 details the movements in meat production, consumption and prices over the last three years.

Protection of the domestic agricultural market

The year 2000 brought certain changes designed to increase the protection afforded to the domestic market for agricultural produce.

In terms of pork imports, a small reduction was performed in the conventional tariff, from 83.3% to 76%,

	1998	1999	2000
		thousand tonnes	
Meat production	2 965	3 026	2 879
– pork	2 028	2 087	I 958
– beef	418	370	351
– poultry	519	573	570
Imports	130	68	70
Consumption	2 319.9	2 420.2	2 354.6
– pork	451.4	I 528.6	459.
– beef	312.7	301.1	281.8
– poultry	505.7	536.5	548.1
		previous year = 100	
Meat production	107.1	previous year = 100 102.1	95.1
Meat production - pork	1 07.1 107.0	previous year = 100 102.1 102.9	95.1 93.8
Meat production – pork – beef	107.1 107.0 104.2	previous year = 100 102.1 102.9 88.5	95.1 93.8 94.9
Meat production – pork – beef – poultry	107.1 107.0 104.2 109.7	previous year = 100 102.1 102.9 88.5 110.4	95.1 93.8 94.9 99.5
Meat production – pork – beef – poultry Imports	107.1 107.0 104.2 109.7 115.0	previous year = 100 102.1 102.9 88.5 110.4 52.3	95.1 93.8 94.9 99.5 102.9
Meat production - pork - beef - poultry Imports Consumption	107.1 107.0 104.2 109.7 115.0 104.7	previous year = 100 102.1 102.9 88.5 110.4 52.3 104.3	95.1 93.8 94.9 99.5 102.9 97.3
Meat production - pork - beef - poultry Imports Consumption - pork	107.1 107.0 104.2 109.7 115.0 104.7 106.2	previous year = 100 102.1 102.9 88.5 110.4 52.3 104.3 105.3	95.1 93.8 94.9 99.5 102.9 97.3 95.4
Meat production - pork - beef - poultry Imports Consumption - pork - beef	107.1 107.0 104.2 109.7 115.0 104.7 106.2 97.6	previous year = 100 102.1 102.9 88.5 110.4 52.3 104.3 105.3 96.3	95.1 93.8 94.9 99.5 102.9 97.3 95.4 93.6
Meat production - pork - beef - poultry Imports Consumption - pork - beef - poultry	107.1 107.0 104.2 109.7 115.0 104.7 106.2 97.6 105.7	previous year = 100 102.1 102.9 88.5 110.4 52.3 104.3 105.3 96.3 106.1	95.1 93.8 94.9 99.5 102.9 97.3 95.4 93.6 102.2

Table 21Meat production, consumption & prices, 1998-2000

Source: Figures from GUS and IERIGZ (Institute of Agricultural Economics and the Food Industry); NBP calculations.

with a parallel lowering of the autonomous tariff, also from 83.3% to 76%, resulting in a slight effective decrease of customs duty. A 25% preferential tariff was also reintroduced on imports from Hungary.

A 28% preferential tariff was also applied to poultry imports from Hungary.

As regard wheat imports, a modest decrease was performed in the autonomous tariff, lowering it from 70% to 64%. At the same time, preferential tariffs (15%) were introduced for imports from Hungary and Slovakia.

In addition, the import in 2000 of many products competing with Polish ones (including pork, grain, butter, sugar and rape) was subject to the high conventional tariffs obtaining the previous year (outside preferential quotas). The following measures were undertaken in 2000 to allow better controls and monitoring of imports:

- the list of products subject to quantity ceilings under a single import permit was extended. This list comprised: pork, poultry meat, butter, dairy fats, wheat grain, rapeseed, sugar and processed tomato products;
- a requirement was introduced for the automatic registration of trade shipments, necessitating the obtaining of import permits, together with mandatory reporting on the utilisation of such permits, for the import of a large number of products, including pork, edible offal, poultry meat, dairy beverages, oils, sugars, cereal bran and tobacco;
- a quarterly allocation of preferential quotas was established for sugar and rapeseed, in addition to pork, poultry meat, beef and wheat grain (already included in this allocation in 1999). Quotas remaining unutilised in one quarter could not be "carried over" to the following quarters.

All of these measures, in addition to stepping up the control of imports under preferential quotas and tightening the monitoring of incoming shipments, undoubtedly constituted additional obstacles to imports, leading to a reduction in purchases abroad of products subject to these restrictions.



APPENDIX 2

Core inflation calculation methodology

Core inflation depicts the long-term trend in the movement of consumer prices, adjusted to exclude seasonal price fluctuations and fluctuations produced by temporary supply shocks. Compared to the CPI, indices of core inflation take a smoother course. For this reason, these indices can serve as a useful analytical tool in investigating inflationary phenomena. Core inflation rates also enables an assessment to be made of the actual impact of monetary policy on consumer price growth. These indices are used at the National Bank of Poland for purposes of research and analysis, although - as at other central banks throughout the world - they do not constitute an alternative to the headline Consumer Price Index published by the relevant statistical agencies. Pursuant to the approach to Direct Inflation Targetting adopted in the Medium-Term Monetary Policy Strategy for the Years 1999-2003, the Monetary Policy Council takes into consideration all available information on factors liable to jeopardise performance of the inflation target set for a given year.

A brief description is presented below of the composition of the measures of core inflation that have been calculated up to now by the National Bank of Poland on a monthly basis (with the previous month equivalent to 100) and on a twelve-monthly basis (with the corresponding month of the previous year equivalent to 100). These measures comprise:

- core inflation as obtained by excluding officially controlled prices,
- core inflation as obtained by excluding the most volatile prices,
- core inflation as obtained by excluding the most volatile prices and fuel prices (a supplementary measure allowing a determination of the impact of fuel prices on overall price growth),
- "net" inflation, i.e., core inflation excluding food and fuel prices (calculated as of Q2 2000),
- a 15% trimmed mean (obtained by symmetrically trimming the outlying 15% of prices subject to the

greatest and smallest change relative to the preceding period, on both sides of the distribution).

Two general approaches to calculating core inflation can be distinguished. The first consists of mechanical methods, which involve stripping the CPI of certain prices of individual consumer goods and services, while the second involves statistical methods. All the countries that track core inflation rates employ similar calculation methods.

Mechanical methods

The most popular method of calculating core inflation involves stripping out certain elementary price indices from the all-items CPI. To compute an alternative inflation index, the real weights of the elements excluded are replaced by zero. This removes their impact on the overall price index. The general principle underlying this method is the exclusion of those prices that are marked by strong swings (due to seasonality or price shocks) or are unrepresentative for other reasons (e.g., they are not determined by the market). This is the approach utilised in developing the methods presented below.

Core inflation excluding officially controlled prices

This index (cf. Fig. 73) is obtained by stripping out those prices that are not determined by market mechanisms, but are subject to various forms of administrative regulation, as a result of which the price distribution may not reflect real inflationary trends. The drawback of this approach is its arbitrary character. Officially controlled prices include ones that are largely composed of excise duty (fuels and alcoholic beverages), ones which are capped by price ceilings or otherwise regulated (electricity), and ones that are set by local authorities (municipal transport).

At present, the prices excluded from the CPI are those of alcoholic beverages and tobacco products, energy, fuel, transport services, postal and telecommunications services, and various forms of insurance; together, these account for 25% of the total CPI.







Source: NBP calculations based on GUS figures.

Core inflation excluding most volatile prices

In calculating core inflation excluding the most highly volatile prices (cf. Fig. 74), the National Bank of Poland utilises standard deviations of the prices of particular goods and services to set a cutoff, above which a given price is considered volatile. These prices are removed from the all-items price index (their weights being replaced by zero). The index thus obtained is no longer impacted by the most turbulent prices, i.e., those marked by very sharp seasonality and those susceptible to shocks or cyclical changes. These prices comprise those of many types of fruit and vegetables, housing occupancy charges, electricity charges, and also charges for certain postal and telecommunications services. The prices considered the most highly volatile currently represent 15.5% of the total CPI; when fuel prices are also added (cf. Fig. 75), this proportion rises to around 18%.

Figures 74 Core inflation excluding most volatile prices, rate and trend



Source: NBP calculations based on GUS figures.

Figures 75 Core inflation excluding most volatile prices & fuel prices, rate and trend



Source: NBP calculations based on GUS figures.





"Net" inflation

The index of "net" inflation presented in Figure 76 (first compiled in Q2 2000) is obtained by stripping out the whole group of food prices and fuel prices from the headline index (these account for around 33% of the CPI).

Figures 76 Net" inflation (ex- food & fuels), rate and trend?



Source: NBP calculations based on GUS figures.

Statistical methods

15% trimmed mean

The sole measure of core inflation calculated at the National Bank of Poland by statistical methods is the 15% trimmed mean (cf. Fig. 77), which is a weighted average of the set of prices with cumulative weights (corresponding to prices previously ranked in ascending order) greater than 15% and less than 85% (the trim is performed symmetrically on both sides). This removes those prices exhibiting the greatest change relative to the preceding period.

Figures 77 15% trimmed mean, rate and trend



Source: NBP calculations based on GUS figures.

Figures 73-77 present the respective measures of core inflation discussed above, together with their trends, mapped using the Hodrick-Prescott filter.

Core inflation indices: an attempt at validation

The considerable number of core inflation indices in use at the NBP prompts a verification of the quality of these measures, with a view to narrowing this number down in order to increase transparency and allow a proper interpretation of real inflationary trends. Studies to select the best index of those previously outlined, using statistical and econometric methods, primarily cointegration analysis, have so far failed to yield definitive results, and these are being continued. In the case of the 15% trimmed mean, the suggestion has been raised of an asymmetrical trim (e.g., the 10% of prices that have risen the most and 20% that have risen the least).

To ensure the integrity and comparability of the core inflation indices analysed, it is essential to verify them regularly, particularly since account has to be taken of changes in the method of calculating the Consumer Price Index employed by GUS. These involve annual adjustments to the weights and composition of the reference basket used to calculate the CPI (corresponding to changes in the consumption pattern of a representative household).

Investigations of the long-run relationship between the CPI and twelve-month indices of core inflation were performed mainly on the basis of cointegration analysis (using the Engle-Granger method, and also the Johansen test). In addition, to check the requirement of exogenism, i.e., to determine whether a given index leads the CPI, a Granger causality test was carried out. The analysis referred to time series covering the period from January 1992 to December 2000.

The following symbols were used in this study:

- IBK: core inflation excluding officially controlled prices
- IBNZ: core inflation excluding most volatile prices
- IBNZP: core inflation excluding most volatile prices and fuel prices
- NETTO: "net" inflation (ex-food & fuels)

T15: -15% trimmed mean.

The investigations principally focussed on cointegration analysis to verify the long-run relationship between the CPI and particular measures of core inflation. The most popular method of such analysis is the Engle-Granger method, which consists of two stages:

1.Testing the stationarity of series (the Dickey-Fuller test), and where the series are stationary – testing their order of integration (a non-stationary series that can be reduced to a stationary one calculating increments d times is referred to as a *series integrated to the* order of d)⁹⁹.

The time series x_t , y_t may be cointegrated only when they are integrated, and integrated to the same order, since the differences between the variables x_t , y_t then show no distinct tendency to increase or decrease. If there is a long-run connection between non-stationary variables, the general idea of cointegration is that the deviations from this long-term path are stationary. The variables examined are then cointegrated. An equivalent statement is the stationarity of a linear combination of

⁹⁸ Ch. Charemza, D. Deadman, *Nowa ekonometria* [The New Econometrics], PWE, Warsaw, 1997.

variables of the same order of integration, which is illustrated by the following definition:

We say that the time series x_t , y_t are integrated to the order of d, b, where $d \ge b \ge 0$, which is written as x_t , $y_t \sim CI(d,b)$, if

- both series are integrated to the order of d
- there exists a linear combination of these variables, e.g., $a_1x_t + a_2y_t$, which is integrated to the order of d b.

The vector $\{\alpha_1, \alpha_2\}$ is called the cointegration vector.

2. The second stage involves determining the stationarity, using Dickey-Fuller statistics (the ADF test) of the linear combination of variables π_t and ω_t , or more precisely, the stationarity of the residual from the equation:

$$\pi_t = \alpha + \beta x \omega_t + \zeta_t,$$

where

 π_t – the overall CPI,

 ω_t – one of the indices of core inflation.

The results obtained demonstrate that both the CPI and core inflation indices constitute non-stationary series. However, their first differences are stationary. This means that the series are integrated to the first order (a precondition being that the variables subject to cointegration analysis be integrated to the same order). The second stage of analysis was also successful for all the measures concerned, i.e., cointegration exists between each of the core inflation indices analysed and the CPI, although in the case of "net" inflation (ex-food & fuels) the relationship is by far the weakest.

Another, alternative tool in cointegration analysis is the Johansen test of the existence of a cointegration vector. On the basis of this procedure, having first chosen a suitable number of lags using the Schwarz or Akaike information criterion (the lower the value of the criterion, the better the model), we can infer whether the null hypothesis regarding the lack of a cointegration vector has been rejected, and the hypothesis that it exists accepted. The results of the Johansen cointegration test indicate that in almost all cases the hypothesis of the lack of a cointegration vector was rejected, and the hypothesis accepted that at most one existed. The sole exception is "net" inflation, where the hypothesis concerning the lack of a cointegration vector was not rejected. It is important to note that the power of the Johansen test is greater than that of the Engle-Granger



procedure. However, these two procedures are related to different econometric methodologies, and therefore cannot be directly compared.

To check the possible forecasting properties of core inflation indices and the requirement of exogenism, i.e., whether a given index leads the CPI, Granger causality was tested, and the values of forecasting errors (RMSE and MAE) calculated. In summarising the findings of the causality test, it can be stated that all the indices display forecasting properties only to a small degree. The evaluation of the accuracy of the forecasts developed using RMSE and MAE errors gave different results (it is important here that the values of these errors be the smallest possible). The results obtained indicate that the best forecasting index is IBNZ (or perhaps IBNZP), while "net" inflation definitely performed worst, producing the highest values for both errors.

Although the findings cited above point to the usefulness of employing the measures analysed, it is extremely difficult to specify explicitly which of the indices under examination is the best. For this reason, work will be continued with a view to verifying the indices calculated up to now, and selecting the best measure. However, there is much to indicate that in general terms all of them are fairly good (the exception being "net" inflation, which fails to satisfy many criteria), particularly since they are transparent and possess a high information value. Moreover, the NBP has never declared its intent of utilising one single measure of inflation. It cannot therefore be excluded that, should the need arise, the number of indices calculated will be increased.



The structure of inflationary processes in Poland

Analyses of inflationary processes in Poland, conducted on a routine basis, focus on identifying those goods and services which rise in price most rapidly in a given period. These studies make it possible to indicate the sectors of the economy (product markets) subject to the most intensive adjustment processes: changes in relative price levels, adaptive or anticipatory valorisation, incidental disruptions to supply or demand, structural change, etc. The structure of inflationary processes thus obtained (or more exactly, the weighted structure of the consumer price index) is undoubtedly of considerable cognitive value. However, it imposes a rather one-sided manner of understanding and interpreting the phenomena involved, with the most banal versions boiling down to the assertion that the reason for inflation is ... price growth. In seeking another cross section of inflationary processes, an attempt has been made to estimate an equation which, without imposing a product structure on measures of inflation, could explain the impact of monetary factors on annual inflation growth, particularly in the long term. At "normal" levels of inflation (in the region of 2%-10% annually), short-term effects cannot be captured statistically.

The appropriate equation was estimated by a generalised method of moments, using quarterly data for the period from Q3 1994 to Q4 2000¹⁰⁰. The estimates were performed on a conditional basis, with a given form of the long-term demand for money (estimated separately). The relationship representing the demand for money in the long term was estimated using the Johansen method¹⁰¹, with unit elasticities of money with respect to prices and GDP being imposed in estimating the cointegration vector, which implies the long-run neutrality of money. It is worth noting that formal sta-

¹⁰⁰ When the calculations were conducted, complete data for Q3 and Q4 2000 were not yet available; the missing values have been replaced with estimates.

 $^{^{101}}$ Evaluations of the cointegration vector were performed using a version of the Johansen procedure implemented under the EViews package, version 3.1 (7/04/1999).

tistical inference does not confirm the neutrality of money in Poland - hypotheses concerning the long-run unit elasticity of money with respect to prices and GDP or nominal GDP (etc.) are rejected. However, this would seem to derive not so much from the dissimilarity of the Polish economy as from the overly short time sample used to investigate long-run relationships, or the excessively brief history of Poland's market economy. In the period that has elapsed since the beginning of systemic transition, a full cycle of long-term adjustment has not yet been completed (one that would develop unit elasticities of prices and GDP in the money demand equation), or else the number of such cycles has been too small to allow the identification by formal means of a tendency for money to react neutrally¹⁰². For this reason, an estimation was carried out solely - in addition to the constant - of the interest elasticity of the reciprocal of the velocity of circulation (see the *ecm* equation).

Compared to evaluations of the components of the cointegration vector obtained for analogous equations in countries with a stable market economy, the long-run interest elasticity of the reciprocal of the velocity of circulation is small in Poland (-1.45). There is reason to believe that this elasticity will increase in the future¹⁰³. However, taking into consideration the monetary aggregate employed (the broad Divisia index, i.e., a measure taking account of interest rate effects¹⁰⁴), it is hard to expect it to be equivalent to the value obtained in the UK, for example.

The estimation results obtained were the following $^{105\,106}$:

¹⁰² Another explanation may be the loss of degrees of freedom in estimating as many as five components of the cointegration vector.

¹⁰³ Evaluations of the cointegration vector are sensitive to the addition and deduction of observations (elasticity increases when observations from the years 1993-1995 are eliminated, yet the loss of degrees of freedom then makes it impossible to draw statistical inferences at rational significance levels). On the one hand, this gives grounds for formulating the above supposition, while on the other it demands caution in interpreting the results presented further on. In terms of the impact of monetary factors on inflationary processes, this will signify an overestimation of the effect of disequilibrium on the market for money in the initial observations, and an underestimation in the final ones.

¹⁰⁴ Formal tests on M2 call into question the weak exogenism of interest rates in respect of the estimated parameters of the long-run relationship in the sample, which is why the exercise has been conducted on the Divisia index.

¹⁰⁵ Included in parentheses are Student's t-statistics calculated on the basis of an estimator covariance matrix resistant to autocorrelation (to the fifth order, maximum) and also resistant to heteroschedasticity.

¹⁰⁶ In the equation given above, as in a number of analogous ones estimated using different samples and other techniques, the hypothesis of the homogeneity of the equation in relation to the first two variables could not be rejected at a standard level of significance.



$0,653 \Delta_4 \ln(PC_{t-1})$	<i>(a)</i>
(15,33)	
+ $(1-0.653) \Delta_4 \ln((my_t PM_t + (1-my_t)P_t)(1+txo_t))$	<i>(b)</i>
+ $0,177 - 0,019[ecm_{t-1} - ecm_{t-2}] + 0,018ecm_{t-4}$	<i>(c)</i>
(2,08) (-2,65) (1,98)	

 $ecm_t = [(\ln(DVR) - \ln(PC) - \ln(Y))_t + 1.451RS_t + 4.479]$

where:

- PC single base consumer price index (by quarter)
- my ratio of imports to GDP (at constant prices)
- P single base producer price index (calculated as the weighted average of producer price indices for industry, construction and transport & communications)
- PM single base index of import prices
- *txo* effective rate of indirect taxation
- *DVR* Divisia monetary index (broad)
- Y gross domestic product
- *RS* short-term interest rates (WIBOR 3M).

The fact that the basic part of this equation is more technical (i.e., approximating a definitional relation of the consumer price index) than behavioural makes it slightly more resistant to (justified) critiques of models estimated using short and non-uniform samples, which represent an attempt to describe a permanently changing object with the aid of a rigid formula. A number of studies conducted at the NBP in recent years with a view to quantifying the impact of monetary aggregates on inflationary processes ended in "momentary" success, with a re-estimation of the model on an updated sample changing not only the evaluations of the parameters and the properties of the whole equation, but also the general conclusions reached. In the equation given above, the key factors determining inflationary processes apart from inertia - are stimuli on the supply side (wages, material input costs, additional charges, etc., represented by the producer price index), ones coming from abroad (import prices), and also ones on the demand side, with consideration given to fiscal effects. The role of the monetary factors included in the equation comes down to conditioning long-term equilibrium on the market for money, which is the result (given the specification of long-run relationships adopted) of both monetary policy and autonomous adjustment processes involving prices and volumes. All of the above gives reason to surmise that the estimated equation will prove very durable¹⁰⁷.

Using the estimations obtained, inflation (the fourth increments of the logarithm of the single base consumer price index, by quarter) can be broken down into four components:

a) Inertia

The role of this factor has to be considerable given the method of measuring inflation applied (annual inflation by quarter). It is worth noting that the scale of inertia (being a mathematical effect¹⁰⁸) is modified by expectations, with adaptive ones increasing the value of the estimated elasticity, and rational ones decreasing it.

b) Current inflationary supply/demand shocks

This category encompasses only one fragment of domestic production costs, import prices and movements in effective rates of indirect taxation. However, it can be interpreted more broadly as representing the shocks transmitted to the economy from abroad (including the role of exchange rates), the effects of the wageprice spiral, the effects of income tax rates in impacting the size of additional charges on costs borne by producers and the intensity of the bargaining process on the labour market, the effects of adjusting the pattern of final demand to current relative price levels or growth rates (domestic and import prices), etc.

c) Long-term monetary effects (as measured by disequilibrium on the market for money given its neutrality)

This component, in addition to measures of disequilibrium on the market for money, also comprises a free term (this factor is constant and significant, and thus conditions the level of inflation over the long term).

¹⁰⁷ Estimates of the parameter separating the impact on price growth of lagged inflation from that of current shocks are not subject to greater change when the size of the sample is reduced or increased. The values of this parameter range from 0.57 to 0.67; given the permanent transformations affecting the economy, and also the nonuniformity of data, stemming from frequent changes in measurement methods, etc., this has to be viewed as a symptom of stability. However, this attribute does not apply to the parameters characterising the sensitivity of inflation to the disequilibrium observable on the market for money.

¹⁰⁸ In measuring annual inflation by quarter, two successive values differ from each other by the inflation in one quarter, while the three other quarters are common to both.

Generally speaking, the inflationary burden observable need not be equated solely with monetary effects, yet formally the free terms of the cointegration vector and the dynamic equation are not identifiable, hence the need to combine them. The structure of the component describing the long-run relationship suggests that an escalation of disproportions on the market for money (rather than the level of those disproportions) results in an acceleration of inflation. In the long run, however, price growth must lead to a price level that corresponds to equilibrium on the market for money.

d) Other factors (residuals)

Factor (a) characterises those determinants of current inflation which cannot be influenced at a given point in time, as they are a consequence of past events. Factors (b) and (c) are of interest in terms of monetary policy, although only part of current inflationary impulses (factor b) are susceptible to monetary policy instruments, and neither is the emergence of disequilibrium on the market for (broad) money determined exclusively by central bank policies. The estimated equation and pro-

Figures 78 Structure of inflationary processes (fourth increments of logarithm of single base consumer price index, by quarter)





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posed method of interpreting it therefore make it possible, among other things, to identify the short-term constraints on monetary policy.

The particular explanatory variables were multiplied by the estimated parameters, thereby obtaining the values plotted on the accompanying chart (cf. Fig. 78), where the sum of the areas represents real annual inflation in the respective quarters. Theoretically, each of these factors could assume a negative value. In practice (in the sample), deflationary effects were only produced by factors omitted from the equation.

The chart indicates that the role of long-term monetary factors in conditioning the current rate of inflation was moderate up until mid-1999109. From that point onwards, the importance of monetary disequilibrium has heightened in both relative and absolute terms, fuelling inflation. Mid-1999 also marks the end of the period during which the impact of current inflationary stimuli (factor b) steadily waned, thanks to which the role of inertia (of inflation expectations) rapidly diminished, and thus overall price growth came down. A series of ongoing inflationary impulses that appeared in subsequent quarters (including impulses not explicitly represented in the model) halted the process of disinflation. The year 2000 was not homogenous in this regard, with the stimuli from the market for money fanning inflation (particularly in the first quarter), while the role of the variables omitted from the model (factor d) was minimal, in contrast to the years 1997-1999. The decline in inflation in the fourth quarter (as the inflationary stimuli were suppressed) points to a rapid fall in inflation in the first quarter of this year (due to the inertia effect being reduced).

¹⁰⁹ Taking into account the time lag in the impact exerted by disequilibrium on the market for money, the change here can in fact be attributed to Q3 or Q4 1998, although the cumulative repercussions of this made themselves felt in 1999.



The external environment and its relationship to savings & investment

The impact of the government and private sectors on external disequilibrium can be expressed by referring to the equation of investment and savings within the economy, as follows:

$$(-CA) = (I_p - S_p) + (I_g - S_g),$$

where:

- CA the balance on the current account (with a current deficit, -CA, being equal to the import of foreign savings),
- I_p private sector investment in fixed asset and tangible current assets (capital formation by households, non-financial companies, financial intermediaries, insurers and non-profit organisations),
- S_p private sector savings (disposable incomes less consumption),
- I_g government sector investment (investment by central and local government institutions),
- S_g government sector savings (the net income of central and local government institutions, i.e., receipts from direct and indirect taxation minus corporate subsidies together with net physical transfers and transfer payments to households, less social consumption).

A decomposition of savings and investment, carried out ex post on the basis of the above formula, allows an examination of the impact of the private and government sectors on the scale of external disequilibrium within the economy, with consideration given to changes in the factors conditioning the balance of investment and savings in the particular sectors. Such a decomposition was performed for the years 1991-1998, drawing on the National Accounts compiled by GUS, and for the years 1999-2000, on the basis of the authors' own calculations. The level of the government







Source: GUS.

sector deficit (I_g-S_g) and the current account figures (CA) presented in this Appendix may differ from those published in other NBP materials. Fully mapping all the transactions between the government and private sectors, and also between Poland and other countries, as is done in the system of integrated national accounts, is a lengthy process, and for this reason the real picture of the economy may prove somewhat different from one developed on the basis of easily available statistics. In particular, a factor influencing this may be any future adjustments to nominal GDP in 2000.

In 2000, private sector savings rose from 19.4% to 20.0% of GDP, an increase of 0.6 points (cf. Fig. 79 and Table 22). This increase was lower than the growth in investment (up from 22.7% to 23.6% of GDP, i.e., 0.9 points), resulting in a 0.3 point deterioration in this sector's balance of investment and savings. This was reflected in an increase in the transfer of foreign savings in 2000. The growing share of private sector savings in GDP in 2000 is traceable to a pronounced rise in corporate savings, up from 11.6% of GDP to 13.5% (cf. Fig. 80), which was accompanied by a fall in the proportion of household savings, from 7.8% of GDP to 6.5%.

Figures 80

Private sector savings as percentage of GDP, 1991-2000

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Source: GUS.







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Figures 82 Current balance as sum of deficit/surplus, savings vs investment, in private & government sectors, 1991-2000 (% of GDP)

Source: GUS.

 Table 22

 Gross investment as percentage of GDP (gross investment in fixed assets & growth in current assets)

Year	I	lg	I _h	I _f	Ip
	Total gross	Government	Household	Investment of companies	Private
	investment	sector	investment	and financial	sector
	$(I=I_g+I_p)$	investment		institutions	investment
					$(I_p = I_h + I_f)$
1991	19.9	2.9	3.1	13.8	17.0
1992	15.2	3.4	2.9	8.9	11.8
1993	15.6	3.7	3.0	8.8	11.8
1994	15.9	3.7	2.7	9.5	12.2
1994 ¹	17.6	3.4	3.8	10.4	14.2
1995 ¹	19.7	3.5	4.1	12.1	16.2
1996 ¹	21.9	3.9	3.8	14.2	18.0
1997 ¹	24.6	4.2	3.3	17.0	20.4
1998 ¹	26.2	4.2	4.0	18.0	22.0
1999 1, 2	26.4	3.7	4.0	18.7	22.7
20001, 2	26.5	2.9	3.3	20.3	23.6

¹ In line with new methodology applied in the System of National Accounts.

² Years 1999-2000: own estimates based on following materials: Statistical Yearbook of the Republic of Poland, 2000, public sector financial balance tables for 1999 and 2000, GUS report on GDP in 2000, www.stat.gov.pl.

Source: National accounts by institutional sector and sub-sector, 1991-1997, GUS, May 1999; National accounts by institutional sector and sub-sector, 1995-1998, GUS, June 2000.

Table 23

Gross savings as percentage of GDP

Year	S	Sg	Sh	S _f	Sp
	Total gross	Government	Household	Savings of	Private
	savings	sector savings	savings	companies	sector
	$(S=S_g+S_p)$			and financial	savings
				institutions	$(S_p = S_h + S_f)$
1991	15.8	-2.9	11.5	7.2	18.7
1992	15.4	-2.3	10.9	6.8	17.7
1993	15.8	-0.1	9.0	6.9	15.9
1994	17.3	0.5	8.6	8.2	16.8
1994 ¹	20.0	1.2	9.8	9.0	18.8
1995	21.2	1.2	11.5	8.5	20.0
19961	20.8	1.9	9.1	9.9	19.0
1997 ¹	21.0	2.2	9.5	9.3	18.8
19981	22.0	2.6	9.5	9.9	19.4
1999 ^{1, 2}	20.8	1.4	7.8	11.6	19.4
20001, 2	21.2	1.2	6.5	13.5	20.0

¹ In line with new methodology applied in the System of National Accounts.

² Years 1999-2000: own estimates based on following materials: Statistical Yearbook of the Republic of Poland, 2000, public sector financial balance tables for 1999 and 2000, Balance of Payments of the Republic of Poland, cash basis, 1999, Balance of Payments of the Republic of Poland, payments basis, 2000, www.nbp.pl, GUS report on GDP in 2000, www.stat.gov.pl.

Source: National accounts by institutional sector and sub-sector, 1991-1997, GUS, May 1999; National accounts by institutional sector and sub-sector, 1995-1998, GUS, June 2000.

Table 24External disequilibrium as sum of private and government sector deficits (% of GDP)

Year	Private	Government	Foreign
	sector	sector	savings
	(<i>I_p-S_p</i>)	(<i>I_g-S_g</i>)	(-CA)
1991	-1.8	5.9	4.1
1992	-6.0	5.7	-0.3
1993	-4.1	3.9	-0.2
1994	-4.6	3.2	-1.4
1994	-4.6	2.2	-2.4
19951	-3.8	2.3	-1.5
1996 ¹	-0.9	2.0	1.0
1997 ¹	1.6	2.0	3.6
1998 ¹	2.7	1.5	4.2
1999 ^{1, 2}	3.3	2.3	5.6
20001, 2	3.6	1.7	5.3

^{1.2} See Tables 22 & 23. Source: See Tables 22 & 23.



In the government sector, a sharp readjustment took place, involving a reduction in investment from 3.7% of GDP to 2.9%, i.e., a drop of 0.8 points (cf. Fig. 81). As in 1999, the year 2000 again saw the net income of central and local government decline as a proportion of GDP. The savings of this sector decreased by 0.2 points of GDP. The balance of investment and savings thus went down 0.6 points of GDP in 2000, which constituted the determining factor in the improvement in external disequilibrium (cf. Tables 22-24).



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APPENDIX 5

Voting of Monetary Policy Council members on Council resolutions¹

Date	Subject	Decision taken	Voting of
of			Council members
resolution			
23.02.2000	the rediscount rate	to raise base interest rates	For: H.Gronkiewicz-Waltz
	and refinance rate	by one percentage point	M. Dąbrowski
			B. Grabowski
			C. Józefiak
			J. Krzyżewski
			J. Pruski
			D. Rosati
			G. Wójtowicz
			W. Ziółkowska
			W. Łączkowski was absent
23.02.2000	procedures for the conduct	to raise the reference rate	For: H.Gronkiewicz-Waltz
	of open market operations	(minimum reverse repo rate)	M. Dąbrowski
		by one percentage point	B. Grabowski
			C. Józefiak
			J. Krzyżewski
			J. Pruski
			D. Rosati
			G. Wójtowicz
			W. Ziółkowska
			W. Łączkowski was absent
11.04.2000	rescinding the resolution on the pace	to float zloty exchange rates	For: B. Grabowski
	of crawling devaluation		C. Józefiak
			W. Łączkowski
			J. Pruski
			D. Rosati

¹ Excluding the following resolutions:

amending the resolution on the by-laws of the Monetary Policy Council (March 29, 2000)

 – establishing a ceiling on the liabilities due on NBP borrowings at international banking and financial institutions in 2001 (September 20, 2000).



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			G. Wójtowicz
			W. Ziółkowska
			Against: H. Gronkiewicz-Waltz
			M. Dąbrowski and J. Krzyżewski
			were absent
11.04.2000	rescinding the resolution on the	to float zloty exchange rates	For: B. Grabowski
	trading band for the zloty		C. Józefiak
	against foreign currencies and		W. Łączkowski
	foreign exchange		J. Pruski
			D. Rosati
			G. Wójtowicz
			W. Ziółkowska
			Against: H. Gronkiewicz-Waltz
			M. Dabrowski and I. Krzyżewski
			were absent
26.04.2000	approving the accounts of the NBP		For: H. Gronkiewicz-Waltz
	at December 31, 1999		M. Dabrowski
			B. Grahowski
			C lózefiak
			L Krzyżowski
			J. NIZYZEWSKI
			D. Kosati
			G. Wojtowicz
			VV. ZIOIKOWSKA
17.05.0000			
17.05.2000	approving the report on INBP		For: H. Gronklewicz-waltz
	operations in 1999		B. Grabowski
			C. Józefiak
			J. Krzyżewski
			W. Łączkowski
			J. Pruski
			D. Rosati
			G. Wójtowicz
			W. Ziółkowska
			M. Dąbrowski was absent


24.05.2000	approving the report on the performance		For: H. Gronkiewicz-Waltz
	of monetary policy guidelines in 1999		M. Dąbrowski
	and assessing the activity of the NBP		B. Grabowski
	Management Board in implementing		C. Józefiak
	those guidelines		J. Krzyżewski
			W. Łączkowski
			J. Pruski
			D. Rosati
			G. Wójtowicz
			W. Ziółkowska
21.06.2000	raising all interest rates	motion admitted for voting,	For: M. Dąbrowski
	by one percentage point	yet failed to receive a majority	C. Józefiak
			J. Pruski
			D. Rosati
			Against: H. Gronkiewicz-Waltz
			B. Grabowski
			J. Krzyżewski
			W. Łączkowski
			G. Wójtowicz
			W. Ziółkowska
30.08.2000	the rediscount rate	to raise base interest rates	For: H.Gronkiewicz-Waltz
	and refinance rate	by one and a half percentage points	M. Dąbrowski
			B. Grabowski
			C. Józefiak
			J. Krzyżewski
			W. Łączkowski
			J. Pruski
			D. Rosati
			W. Ziółkowska
			Against: G. Wójtowicz
30.08.2000	procedures for the conduct	to raise the reference rate	For: H. Gronkiewicz-Waltz
	of open market operations	(minimum reverse repo rate) by one	M. Dąbrowski
		and a half percentage points	B. Grabowski
			C. Józefiak
			J. Krzyżewski
			W. Łączkowski
			J. Pruski
			D. Rosati
			W. Ziółkowska
			Against: G. Wójtowicz

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20.09.2000	establishing monetary policy	For: H. Gronkiewicz-Waltz
	guidelines for 2001	B. Grabowski
		C. Józefiak
		J. Krzyżewski
		W. Łączkowski
		J. Pruski
		G. Wójtowicz
		Against: M. Dabrowski
		D. Rosati
		W. Ziółkowska
20.12.2000	approving the NBP	For: H. Gronkiewicz-Waltz
	financial plan for 2001	B. Grabowski
		C. ózefiak
		J. Krzyżewski
		W. Łaczkowski
		I. Pruski
		D. Rosati
		G Wóitowicz
		W Ziółkowska
		M. Dabrowski was absent
		during the vote