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Quarterly 1/2001 (8)

POLISH ECONOMIC OUTLOOK
TRENDS • ANALYSES • FORECASTS

Publisher

CASE – Center for Social and Economic Research Foundation
Sienkiewicza 12, 00-944 Warsaw, Poland
tel. (4822) 622 66 27, 828 61 33, fax (4822) 828 60 69
e-mail: case@case.com.pl, www: case.com.pl
ISSN 1507-3149

Distributor PEO
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From the editor

Dear readers,

The quarterly 4/2000 (7) was the last produced under the supervision of Mirosław Gronicki. On behalf of the PEO team I would like to thank him for his contribution in the creation of our quarterly. From the current issue onwards I will be directing the work of the team, trying to perform the duties entrusted to me for your satisfaction.

Starting from the new year we introduce certain changes to the quarterly, which – we hope – will make it more user-friendly, readable and interesting for you. We are enlarging that part of the issue dedicated to problems that go beyond the most current economic events – and placing them in the first part of the quarterly. In the second part of the quarterly, in which we used to have an analysis of the current situation, we have now separated this part from forecasts, at the same time changing the order of the topics. We have moved the data tables – both historical and those including forecasts – to a separate statistical appendix, which it is possible to follow while reading the text. Responsibility for the content of specific texts and authors' rights to them are now assigned to particular members of our team – which, obviously, does not in the least reduce my own responsibility for the publication as a whole.

In this issue we try to convince you that the Polish economy has entering a new – unfortunately more difficult – phase of its development. With a certain delay – resulting from the transmission mechanism, a problem touched in one of our articles – monetary policy tightening has become a central feature of the economic situation. One of the basic features of this, which last year arose especially clearly, are the relations between the zloty and the most important world currencies – the dollar and the euro – and the cross exchange rates between these two currencies. A slightly different approach from that of the PEO team's to analysis of this problem is presented in the second of our problem articles.

A change in monetary policy, starting with the creation of the Monetary Policy Council, has had positive as well as negative effects. Partially they result from past neglect, partially from new challenges facing current economic policy discussed in the second part of the quarterly. In our forecast we try to say how, in our opinion, economic policy will manage to cope with them over the next two years. We must, however, acknowledge that these things may turn out to be worse than we predict. Thus, we have also sketched the pessimistic scenario. If these materialise they could delay accession to the EU. In our view, integration on any terms remains the only real strategic option for Poland, however. The problems faced by the EU are therefore also our problems and we will address them in our quarterlies. This is why in the first part of the current issue – as a supplement to the presented analysis of Polish problems of co-ordinating fiscal and monetary policies – we present an article whose author is trying to answer the question: does EMU demand tight co-ordination of fiscal policy within the euro zone?

All estimates and forecasts are based on official statistical data available up to February 3 2001. One should note that various data for previous years are updated in line with revisions in official statistics.

I wish you a useful and interesting read.

Andrzej Bratkowski

Jacek Rostowski*

Center for Social
and Economic Research

Does the existence of the euro require further political integration of EMU members?

Is EMU merely the one more step on the road to a European Federation, and more specifically, does it require fiscal federalism to function properly? Or may the euro turn out to be a new generally apolitical monetary standard, similar to the classical gold standard? Could the creation of the euro turn out to be the precursor of a return to the "functionalist" model of European integration of the 1950s and 1960s? The answer to these questions depends on the answers to three more detailed questions:

1. Is discretionary monetary policy possible at monetary union level in an EMU of 26 independent countries?
2. To what extent is a country exposed to asymmetric shocks (i.e. ones that affect the economy in question differently from the rest of the union) if it gives up monetary sovereignty?
3. Can a monetary union (MU) be successful if fiscal policy is not coordinated with monetary policy?

1. Is discretionary monetary policy possible in an EMU of 26 independent countries? If it is possible, then any union-wide fine-tuning using monetary policy that might be necessary can be left to the ECB. Mayer [2000] claims that a General Council of the ECB consisting of 26 national central bank governors and 6 Executive Board members would be unable to take make monetary policy decisions efficiently. However, this is because Mayer assumes that decisions must continue to be taken as at present by consensus. In fact there is no reason why interest rate decisions could not be taken by simple majority voting.[1)]

2. To what extent is a country exposed to asymmetric shocks if it gives up monetary sovereignty? Apart from the well known criterion of similarity of economic structure, a relatively open economy can more easily give up monetary sovereignty, especially if most of its trade is with the eurozone (so that it will not suffer

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1) The ECB's General Council could first be asked to vote on whether to increase interest rates or not. If the answer were no, then they would be asked whether to decrease them or not. If the answer were yes, then they would be asked whether the decrease should be 25 basis points or more. If the answer was 25 basis points, that would be the amount by which the rate was decreased. If the answer was more, the Council would be asked whether the decrease should be 50 basis points or more, and so on. The same procedure would be used to determine how much rates should be increased if that was the original decision. Mayer also raises the question of the under representation of large and rich countries in the Council as the EMU expands. But this is a different issue, which could be dealt with by weighting NCB governors' votes by their share in ECB capital or some other suitable measure.

2) Part of Ireland's problem is that so much of its trade is with the UK, and the euro has depreciated so sharply against the pound. Even worse placed is Argentina, whose exports to the US – to which its currency is "hard pegged" – account for only 1% of GDP.

from the appreciation or depreciation of the euro).[2] This is because economic conditions in the rest of the MU – which in the case of an asymmetric shock go in the opposite direction to those in the country concerned – will act more effectively as a "shock absorber" the more open the country is. Size may matter as well as openness, depending on the kind of exogenous shock likely to be experienced.[3] How open does a country need to be? Poland is probably open enough, while the UK, although sufficiently open, trades proportionately less with the eurozone.[4]

3. Can a monetary union (MU) be successful if fiscal policy is not coordinated with monetary policy? One can answer the question by considering four supplementary questions:

1. What would MU-wide fiscal policy be useful for?
2. Within a MU, can national fiscal policy perform any useful national level functions?
3. Does a MU need federal fiscal automatic stabilizers?
4. Can fiscal policy at national level disrupt macroeconomic policy at MU level?

1. What would MU-wide fiscal policy be useful for? MU level macroeconomic **fine-tuning** using the fiscal instrument would seem pointless. It is unclear what this could achieve that monetary policy could not achieve more flexibly (however, this depends on our answer to the previous question, that discretionary monetary policy is possible in an EMU of 26 member states). **Overheating** at MU level is unlikely given the conservatism of the ECB, so extra tight fiscal policy is unlikely to be needed. **Excessively loose fiscal policy** is fortunately impossible at MU level as long as the "stability and growth" provisions of the Amsterdam Treaty are adhered to. Whether they are likely to be adhered to we discuss below in our answer to question 4. In the face of a **major recession**, an expansionary fiscal policy could support a loose monetary policy (although recent Japanese experience shows that this approach may have limits). The Amsterdam Treaty's requirement for fiscal balance over the business cycle implies a steady reduction in public debt to GDP ratios, even with nominal GDP growth at 5% per annum [Bratkowski and Rostowski, 2000]. This means that fiscal policy may be more effective in future against 1930s style depressions.[5]

2. Within a MU, can national fiscal policy perform any useful national level functions? If it can, then the argument for "fiscal federalism" in Europe is weakened. The Irish example – where a budget surplus of 4% of GDP has failed to rein in 10% real growth and almost 7% inflation – suggests that these will be quite modest in a small open country, although they may be larger in a large country. This is because in a more open country aggregate demand depends on the MU's demand to a larger extent, while a small country's own demand will have less effect on demand in the MU as a whole. The effects are summarised below, where we assume ceteris paribus (i.e. both the large and the small countries are equally closed in row 1, and equally open in row 2).

Thus, national fiscal policy could have some effect on macroeconomic conditions in a large member state of a MU.

Figure 1. Likely Impact of National Fiscal Policy on Aggregate Demand in the Monetary Union

	Large country	Small country
Closed country	small	negligible
Open country	large	small

[3] A large (relative to the MU) country that is affected by certain kinds of negative asymmetric shock (say a fall in non-MU demand for its exports) may find it harder to compensate this fall with an increase in intra-MU exports (if the downward sloping demand curve it faces is inelastic). On the other hand, a given increase in costs in the country's export sector will cause exports to fall both in a small and a large country, but the fall will be larger in the case of the small country, where prices cannot increase than in the large country. Furthermore, the lower the elasticity of demand for the large country's exports (i.e. the "larger" it is) the smaller the fall in export revenue, even as volumes decline.

[4] The UK also has a much larger economy (almost 10 times as large).

[5] Although Japan started the 1990s with quite low levels of public debt to GDP.

Figure 2. Likely Impact of National Fiscal Policy on Aggregate Demand in the Initiating Country

(including "Second Round" effects via effects on the rest of the Monetary Union)

	Large country	Small country
Closed country	large	large
Open country	medium	small

Under what circumstances could such a policy be sensibly used? The usual answer is: when there is an asymmetric shock. It is thus fortunate that a smaller country, which can benefit less from national fiscal policy is by the very fact of its smallness less likely to need it. This is because of the well known regularity that small countries are generally more open than large ones – so that increased demand from the rest of the union is more able to absorb a negative shock in case of a small country.

However, national fiscal policy is more suited to certain kinds of asymmetric shock than others. Fiscal policy operates on aggregate demand, so it is more useful for offsetting demand shocks than supply shocks. For example, increasing demand to offset a fall in supply (a negative supply shock) is a dubious undertaking, which increases prices and both public and private foreign indebtedness [Bruno and Sachs, 1985].[6] National fiscal policy would make more sense when used to offset asymmetric demand shocks, but these are not very likely in the EMU, none of whose members are primarily raw materials producers. In any event, the apparent residual usefulness of national fiscal policy is an argument against the need for the EMU to have a common fiscal policy, as the more fiscal decisions are made at the centre the less scope is there for national fiscal policy.[7]

3. Does a MU need federal fiscal automatic stabilizers, which would reduce taxes and increase transfers to those countries that suffered from a negative asymmetric shock?[8] Fergusson [2000] suggests that EMU does need such a system, because of the far higher degree of labour market rigidity and lower level of labour mobility in Western Europe today than in previous MUs such as the Second Reich. Greater labour market rigidity means a higher NAIRU and therefore higher unemployment at any given rate of inflation, but this does not of itself suggest the desirability of federal fiscal automatic stabilizers. However, greater labour market rigidity may also mean that the labour market effects of an asymmetric shock persist longer than they otherwise would. In that case, federal fiscal automatic stabilizers would offset the effects of an asymmetric shock.[9] They may be helpful, but are they necessary? The answer depends on the effectiveness of national fiscal policy. The more effective the latter is, the less the need for federal fiscal automatic stabilizers.

4. Can fiscal policy at national level disrupt macroeconomic policy at MU level? Clearly not as long as the stability and growth provisions of the Amsterdam Treaty are observed. However, Fergusson argues that because of vast implicit pension debt most European governments are "fiscally fragile". Any one of them may find itself on the verge of bankruptcy at some time over the next quarter century. If this happens, the remaining EMU members will be faced with the choice of (1) accepting that the "delinquent" leave the EMU, so as to be able to liquidate its debt through high inflation, or (2) establishing a far higher degree of fiscal centralization at EMU level so as to generate the funds which would allow the other members to bail the delinquent out. The choice would presumably depend on the costs to the remaining members

6) The same holds for reducing demand when there is a positive supply shock - prices are pushed down more than necessary and net exports are increased more than would have happened anyway.

7) The scope for national fiscal policy is limited by the Stability and Growth Pact, which requires EMU member states to balance their budgets over the business cycle and forbids deficits in excess of 3% of GDP (except in emergencies). These figures allow for a "swing" in the fiscal stance of a maximum of about 6% of GDP, which should be quite adequate for fiscal policy needs under normal conditions.

8) This is how the US Federal tax system operates as between states.

9) This is particularly true of a demand shock, but even a country suffering from an asymmetric supply shock would benefit from the increase in net transfers, which would result from the operation of federal fiscal automatic stabilizers.

of the bail-out relative to the costs of the disruption which would result from an important country leaving EMU.

There is no doubt that such scenarios are possible, but how likely are they? First, one has to remember that although current implicit public debts are very large, and would need either very large reductions in transfers or very large increases in taxes to eliminate them, they are sensitive to quite reasonable increases in retirement age. For most Western Countries increases in retirement age of as little as three years will eliminate the debts [IMF 1997]. Second, the balanced budget provisions of the Amsterdam Treaty mean that explicit public debts should decline from 60% of GDP to slightly over 20% over the next 20 years (assuming 5% nominal GDP growth per annum). Third, a national government that decides to play the "delinquent" card exposes itself to severe risks:

1. If the country is small enough (e.g. Belgium) then its partners may simply allow the government to be forced into default on its public debt.[10)]
2. Partners may prefer to see the country leave the EMU, rather than bail it out, which could involve a high cost to the delinquent.
3. Success (i.e. increased fiscal centralisation) need not be costless to the delinquent. A high degree of central control is likely to be imposed in exchange for the bail out, since otherwise the new system would encourage delinquency and embody a high degree of moral hazard. Fergusson assumes that the same degree of central control will be imposed on all members to obtain the funds for the bail-out, but this need not be the case. All would have to contribute to the bail out, but only the delinquent is likely to be highly controlled by the centre as regards the expenditure side.[11)]

Conclusions

EMU-wide fiscal policy is only necessary in the case of a major depression of the 1930s kind. Fiscal fine-tuning at MU level is unnecessary, and national fiscal policy is likely to be most effective in just those (relatively closed) countries that are most exposed to asymmetric shocks. This means that, contrary to conventional wisdom, EMU automatic fiscal stabilizers need not be necessary, in spite of a high degree of labour market rigidity. National fiscal policy and high national public debt (including implicit pension debt) need not inevitably lead to either break-up or tighter integration of the EMU, as suggested by Fergusson. Among other things, this is because the direct risks to governments that pursue irresponsible policies are very high.

It follows that EMU need not necessarily lead to further political integration in the EU, and that the ECB can operate as an apolitical monetary authority, providing an objective monetary standard that would be a modern equivalent of the gold standard for the countries of Europe. The EMU could even become a model for the non-political and non-federalist integration of the continent, through the spinning-off of various activities to independent Europe-wide bodies. The recent British suggestion of the creation of a European anti-monopoly office independent of the Commission would tend in the same direction. Such a "functionalist" approach would revive the spirit of the early integration initiatives of the 1950s and 1960s, which expressed themselves in the creation of the European Coal and Steel Community and Euratom. Germany, although the most Federalist of the large member states, also has some sympathy for this approach due to its tradition of ordnungsliberalismus.

On the other hand, a single currency does remove impediments to further integration. Moreover, even if a "politically neutral" outcome is possible for EMU in economic logic, this does not mean that it will necessarily occur in practice. There are other forces pushing the EU towards further political integration, such as the federalism of Germany and many of the small countries and France's policy of "selective integration" in those fields that suit its interests. These factors may

10) The greatest risk for the other members of EMU might be the effects of a government default on the solvency of the domestic banking system. However, as time goes on, banks will diversify their liquid assets, moving out of domestic government bonds and into the bonds of other EMU governments. Furthermore, cross-border mergers and acquisitions will mean that smaller countries such as Belgium may no longer have a "domestic" banking system at all within 10 years.

11) Also, the delinquent government may not be particularly federalist, so increased centralisation may itself be a cost.

well lead to considerable further movement towards federation in many areas, including the fiscal. But it is not the case, that the efficient functioning of EMU of itself requires it.

REFERENCES

Bratkowski, A. and J.Rostowski, 2000, "The EU attitude to Unilateral Euroization: misunderstandings, real concerns and ill-designed admission criteria" paper presented at the Conference on *Economics, Politics and the Euro*, at the Royal Institute of International Affairs, Chatham House, London, December 1, 2000.

Bruno, M. and J.Sachs, 1985, *The Economics of Worldwide Stagflation,* Blackwell, Oxford.

Fergusson, N., 2000, "Built on Shaky Foundations, the Euro's Medium to Long-term Viability" paper presented at the Conference on *Economics, Politics and the Euro*, at the Royal Institute of International Affairs, Chatham House, London, December 1, 2000.

International Monetary Fund, 1997, *World Economic Outlook, Focus on Fiscal Policy,* Washington D.C.

Mayer, T., 2000, "EU Enlargement and Economic Reform from Within", paper presented at the Conference on *Economics, Politics and the Euro*, at the Royal Institute of International Affairs, Chatham House, London, December 1, 2000.

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The role of monetary policy in Poland: A VAR approach

The VAR approach to monetary policy in Poland: Motivation and results

Estimating the effects of monetary policy on output and the CPI is a challenging task. Monetary policy instruments are set in response to developments in macroeconomic variables, which the Central Bank attempts to target. Since the instruments themselves and macroeconomic variables are sometimes determined simultaneously, it is often difficult to distinguish the effects of policy on the economy from the way policy itself reacts to economic developments. The structural vector autoregression (SVAR) model has become a standard tool in econometric analysis of this problem. The main advantage of this method over traditional, structural econometric modelling is the smaller number of constraints imposed on the model: econometricians applying SVAR methodology attempt to identify policy effects with a minimal set of, preferably uncontroversial, restrictions. The advantage may be particularly important in the case of transition economies as we still know little about the transmission mechanism and it is difficult to build a complete macroeconomic model specifying this mechanism. There are, however, also some downsides to the SVAR approach. The SVAR model has usually many parameters relative to sample size and is particularly vulnerable to the Lucas critique (changes in policy regimes may cause changes in the model's parameters). Both problems are of paramount importance in the transition environment. Nevertheless, our application of SVAR to Polish data indicates that the method can produce sound results and provides a key insight into the operations of the monetary transmission mechanism. Below we present the main results of the study. The last section of the article outlines the methodology. Further details can be found in Maliszewski (2000).

Dynamic responses to policy shocks

The structural VAR modeller assumes that monetary authorities react to macroeconomic variables in a predictable way. This predictable part of the policy is often called the policy reaction function. Some of the variation in policy instruments, however, cannot be explained by the reaction function. These changes are interpretable as policy shocks, i.e. exogenous revisions of monetary policy. A dynamic response of the non-policy variables to such policy shocks (called impulse response function) allows for a tracking of the effects of policy changes on the economy. In our study we assume that the NBP employs two policy instruments: short term interest rates (WIBOR T/N) and exchange rates. Obviously, the weights attached to these instruments change over time. The policy was based on the fixed exchange rate early in the sample but the role of the exchange rate is now far smaller. In our analysis we estimate the model on the full sample (September 1993-November 2000), assuming a relatively low weight

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attached to the exchange rate (ω = 0.3) and on the sub-sample from September 1993 to June 1998, where the role of the exchange rate appears to be more important (ω = 0.7). Ideally, we should be able to divide the sample into two sub-samples with different exchange rate regimes. Unfortunately, a small number of observations in the flexible exchange rate period makes the econometric inference very imprecise.

The responses of industrial production, consumer price index, WIBOR and exchange rate to a positive monetary policy shock (unexpected monetary tightening) are plotted on figure 1. The left panel shows the results for the sub-sample from September 1993 to June 1998 and with = 0.7. The right panel shows the full sample results when ω = 0.3. The monetary shock is reflected by a simultaneous increase in the money market rate and exchange rate[1]. For the short sample the increase in the interest rate is less pronounced than the reaction of the exchange rate. This reflects the weight attached to the exchange rate in this sub-period. After the initial policy shock, the interest rate's response dies out quickly while the exchange rate response is more persistent. Over the full sample the initial effect of the shock on the interest rate is much stronger, which reflects the greater weight now attached to this instrument. Moreover, the dynamic response of this variable is more persistent. The initial reaction and dynamic response of the exchange rate are of the same magnitude as before (i.e. the exchange rate appreciates after the increase in the interest rate).

The dynamic responses of macroeconomic variables are consistent with theoretical presumptions and other SVAR studies: output decreases relatively quickly after the shock, prices react later but more persistently. **Industrial production drops to its lowest level 5 to 10 month after the shock and recovers thereafter. Impulse responses of the CPI indicate that prices fall to their lowest level about 15 months after a monetary policy tightening and the effects of the shock are very persistent.** Estimates from both samples generate similar, easily interpretable impulse response functions. The results are also quite robust. Despite changes in the exchange rate regime, the parameters in production and CPI equations are very similar in the models estimated on the sub-sample and the full sample.

It is important to note that the positive monetary policy shock leads to a small increase in the interest rate and a small real exchange rate appreciation. Thus, although an analysis of the effects of exogenous shocks is important to identify the transmission mechanism, the variation in macroeconomic variables caused by these shocks is relatively small. In other words, monetary policy is usually predictable and markets are rarely surprised by the central bank.

Methodology

The aim of the SVAR methodology is to identify monetary shocks[2], and their effect on the economy, by imposing some minimal identifying assumptions on the unrestricted VAR system. The analysis usually starts from an unrestricted VAR system with two kinds of variables: macroeconomic variables (including some potential policy objectives) and variables reflecting the stance of monetary policy. In the simplest case the policy vector is a single variable – e.g. central bank rate or reserves. In this case the identification often starts from imposing a restriction that this policy variable does not have any contemporaneous effect on non-policy variables, i.e. the economy reacts to a policy action only with a lag. This identifying assumption is truly minimal: the non-policy equations still constitute a simultaneous, unidentified system and identification of shocks in this part of the model is impossible without further assumptions.

The analysis becomes more complicated if the policy vector is not a single variable. The first step of identification is similar to the case of a single policy indicator: a researcher assumes either that the policy indicators affect macroeconomic variables only with a lag or the other way around. The equations describing the policy

[1] Note that exchange rate index is defined as 1/(0.5*PLN/USD + 0.5*PLN/DM). Increase in this index means appreciation.

[2] Some better known examples of the SVAR methodology include Bernanke and Blinder (1992), Sims (1992), Strongin (1995), and Bernanke and Mihov (1998).

behaviour, however, form a simultaneous system themselves and some further identifying restrictions are necessary to retrieve a part of the variation attributable to unexpected policy actions. The identification of shocks in this system is achieved by various assumptions about the operation of the money market. Researchers investigating the US economy typically focus on the interaction between markets for borrowed and non-borrowed reserves (Bernanke and Mihov (1998), Strongin (1995)).

Estimation and identification adopted in this study

The main problem in modelling monetary policy is the appropriate choice of policy indicators and identification of policy shocks affecting these indicators. The operating procedures of the National Bank of Poland were changing over time. Initially, monetary authorities controlled the exchange rate in the crawling peg and crawling band systems. The zloty was not fully convertible and, as indicated by the results in (IMF, 1997) and Gomułka (1997), the sterilisation of capital inflow, although very expensive, was to some extent effective. Thus, there was some room for independent monetary policy even in the period of the fixed or quasi-fixed exchange rate. The operational target of the central bank was changing between the money market rate (1993–1995) and reserve money (1996–1997). In practice the money market rate has always been regarded as an important instrument of monetary policy. The role of the money market rate as a policy instrument further increased after widening and ultimately abandoning the exchange rate band. In 1998 the newly established Monetary Policy Council officially adopted it as an intermediate target.

It is clear from this discussion that a description of the central bank's operating procedures of must take into account the behaviour of the money market interest rate and the exchange rate. Consequently, the policy variables in the estimated VAR system are WIBOR T/N and exchange rate index defined as a reciprocal of an average of USD/PLN and DM/PLN rates. Non-policy variables are the consumer price index and industrial production index. The industrial production index and consumer price index are seasonally adjusted and in logs, the exchange rate index is in log and money market rate is not transformed. The effective estimation period starts in 1993, when the modern payment system and the central bank open market operations became fully operational. The model is estimated on monthly observations from September 1993 to November 2000. The lag length in VAR is set to three. The reduced VAR form is relatively stable, although stability tests suggest that a break in the exchange rate equation occurred in mid 1998. The more flexible exchange rate policy and turbulence on foreign markets (the Russian crisis in August 1998) were the main factors behind the changes in the observable statistical relationship. In order to check the sensitivity of results to potential instability of the system, we conduct the analysis for the full sample and for the sub-sample ending in June 1998.

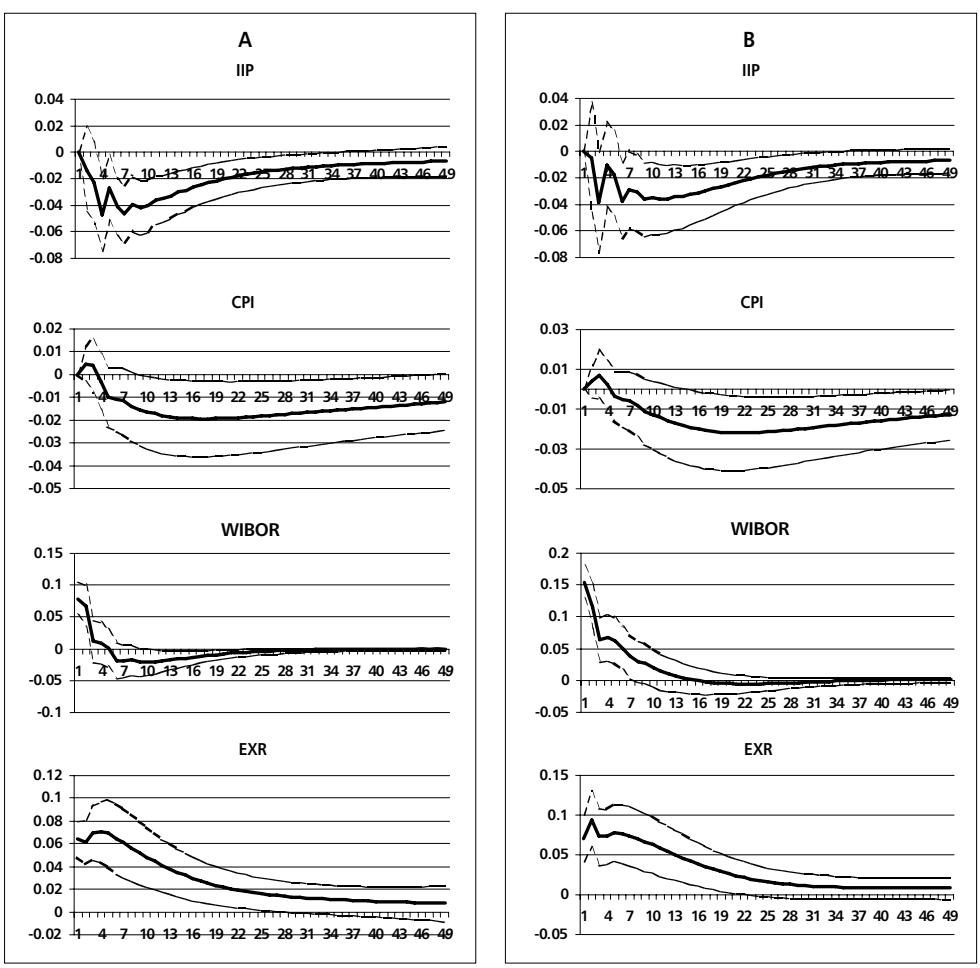
In the first step of identification I assume that the exchange rate and money market interest rate affect macroeconomic variables only with lags. However, as discussed above, the introduction of two policy variables requires some further identifying restrictions. My approach follows Smets (1997), who analyses monetary policy in Germany, Italy and France assuming that monetary authorities target a weighted average of the exchange rate and interest rate. The weights attached to these two variables reflect the relative impact of the real exchange rate and real interest rate on output. The theoretical model derived from the work of Gerlach and Smets (1996) shows that it is optimal for the central bank in a small open economy to target a monetary condition index (MCI) defined in this way and that the MCI should react only to domestic supply, demand and monetary policy shocks. In particular, disturbances from the exchange rate market should not affect the MCI. Even if the MCI is not officially adopted as an intermediate policy target, central bank behaviour may be well approximated by this kind of policy. This result is very intuitive: in the case of an unexpected capital outflow monetary authorities may allow the exchange rate to depreciate, increase the interest rate or use a mixture of the two. The central bank will try to minimise the effects of this external shock on the economy by using an appropriate combination of depreciation and interest rate changes. The weights in the MCI, if known, provide a sufficient identification restriction for the system of equations describing the policy indicators. These weights are estimated by GMM, using as instruments innovations to JP Morgan EMBI+, innovations to US federal funds rate and innovations to 1 month FIBOR (Frankfurt Interbank Offered Rate). The first variable is a proxy for changes in the risk premium, the last two vari-

ables provide information about changes in international interest rates. The estimates of ω from the sample up to June 1998 are broadly consistent with our knowledge about the evolution of monetary policy in Poland: the estimated weight $\omega \cong 0.7$. Attempts to estimate ω in the full sample produce unreliable estimates, close to zero and with very large standard errors. This result may indicate that the weight attached to exchange rate has been negligible later in the sample. Guided by the estimates of the weights, we report impulse responses from the SVAR model estimated on the sub-sample from Sep 1993 to June 1998 with ω = 0.7 and on the full sample model with ω = 0.3.

Conclusions

The response functions generated by the model identified with this weight have reasonable shapes and direct economic interpretations. A monetary policy shock seems to affect inflation and output with the strongest effects within 5–10 months for industrial production and within 15–20 months for the CPI. As discussed at the beginning, there are some advantages and disadvantages of the VAR framework in the transition environment. Nevertheless, given the large changes in the operation of monetary policy, the results are surprisingly robust to changes in the sample size and the specification of the

Figure 1. Impulse responses of the consumer price index (CPI), industrial production (IIP), WIBOR T/N and exchange rate to monetary policy shocks.
Panel A: estimation period 93:09–98.06 and ω = 0.7,
Panel B: estimation period 93.09–00.11 and ω = 0.3.
The dashed lines are 90% confidence bands bootstrapped with 5000 replications.



model. The encouraging results reported here indicate that the behavioural relations in the Polish economy are already developed and stable enough for serious econometric modelling. The SVAR may be the first step in building reliable models for policy analysis.

REFERENCES

Bernanke, B.S. and A.S. Blinder (1992), The Federal Funds Rate and the Channels of Monetary Transmission, *American Economic Review* 82(4), 901–921.

Bernanke, B.S. and I. Mihov (1998), Measuring monetary policy, Quarterly Journal of Economics, pp. 869–902.

Gerlach, S. and Smets, F. (1996), MCIs and monetary policy in small open economies under floating rates, mimeo.

Gomulka, S. (1997), *Managing Capital Flows in Poland*, Working Paper 7, CASE and CEU, Warsaw.

IMF (1997), Poland: Country Report, IMF, Washington: International Monetary Fund.

Sims Ch. (1992), Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy, *European Economic Review* 36, 975–1011.

Smets, F (1997), Measuring Monetary Policy Shocks in France, Germany and Italy: The Role of Exchange Rate, BIS Working Paper 42

Strongin, S. (1995), The identification of monetary policy disturbances: Explaining the liquidity puzzle, Journal of Monetary Economics 35, 463–497.

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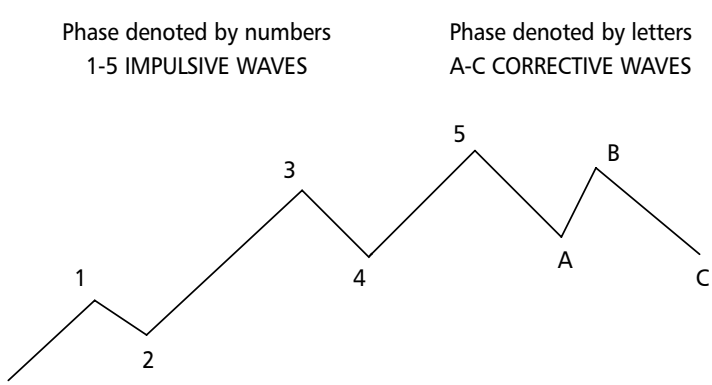
The application of the Elliott Wave theory to exchange rate forecasting

Introduction

Among the most effective methods applied in forecasting equity and foreign exchange markets is the Elliott Wave theory developed in the 1930s. Elliott predicted a spectacular bull market period lasting several decades. At that time most of investors considered it inconceivable that the Dow Jones index could possibly exceed its peak of 1929. The great bull market of 1942–1966 proved Elliott's predictions put forward in the late 1930s right.

Another example of the potential of the Elliott Wave theory is the forecast presented by A. Frost and R. Prechter in 1978. They predicted that a period of a great bull market would arrive in the next few years, and set the target top for the Dow Jones Industrial Average (DJIA) at 2860 points, i.e. at the time when the Dow Jones index was at 740 points. From 1964 to 1978, the DJIA made an attempt at exceeding the 1000 top as many as four times. Each unsuccessful attempt was followed by a sharp drop ranging between 25% and 45%, and it was feared that 1978 would see another series of drops in the DJIA. Few analysts expected any movement upwards, but if the DJIA were to rise at all it would be by no more than by 200–300 points reaching a top of 1000 points. At that time, the prospects of the market index rising to more than 2800 points seemed preposterous. However, subsequent years witnessed a spectacular validation of the Elliott theory. In 1987 the DJIA reached a important high at 2747points, followed by a 22% fall in a single day.

Figure1. Schematic of market movements



* Bank Handlowy w Warszawie SA.

Introduction to the Elliott Wave theory

The idea underlying the Elliott Wave theory is relatively straightforward. Market movements assume a pattern of five upward waves and three downward waves which form one full cycle. The upside waves are referred to as numbers 1 to 5, whereas those numbered 1,3 and 5 determine the main trend of the whole movement and are separated by two waves, denoted by numbers 2 and 4 that have an opposite direction to the main trend. The three downward waves are referred to as A, B and C waves (see Fig.1).

A full eight-wave cycle consists of two phases: an impulse phase (denoted by numbers) and a corrective phase (denoted by letters). Waves 1, 3 and 5 in the impulse phase are referred to as impulse waves since they add momentum to the market. They are always separated by corrective waves 2 and 4 since they may only contribute partly to the extinction of the preceding impulse wave.

Once an eight-wave cycle shown in Fig.1 has been completed, another similar cycle made up of an upward five-wave and downward three-wave structures. In the next stage the third movement consisting of five upward waves completes a five-wave structure by one degree higher (see Fig.2).

In practice, application of the Elliott Wave theory does not involve only mechanical numbering of waves (up to

Figure 2. Hierarchical structure of the Elliott waves (larger-degree waves are denoted by a dotted line)

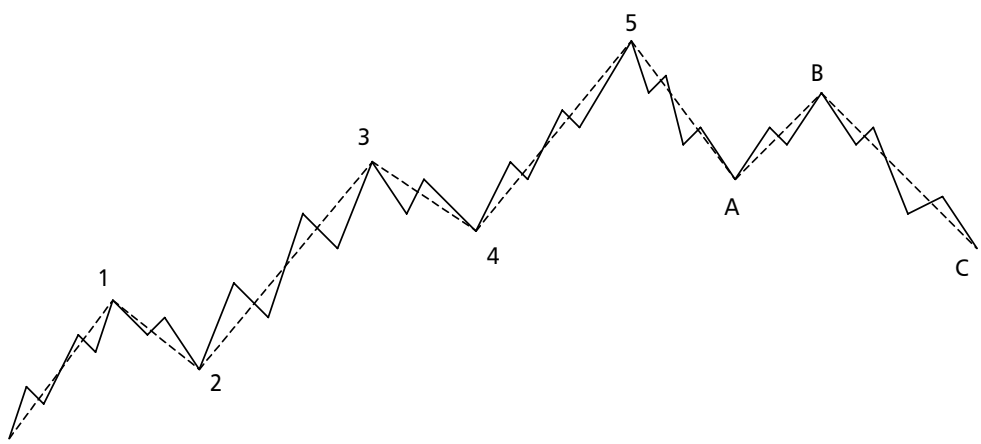
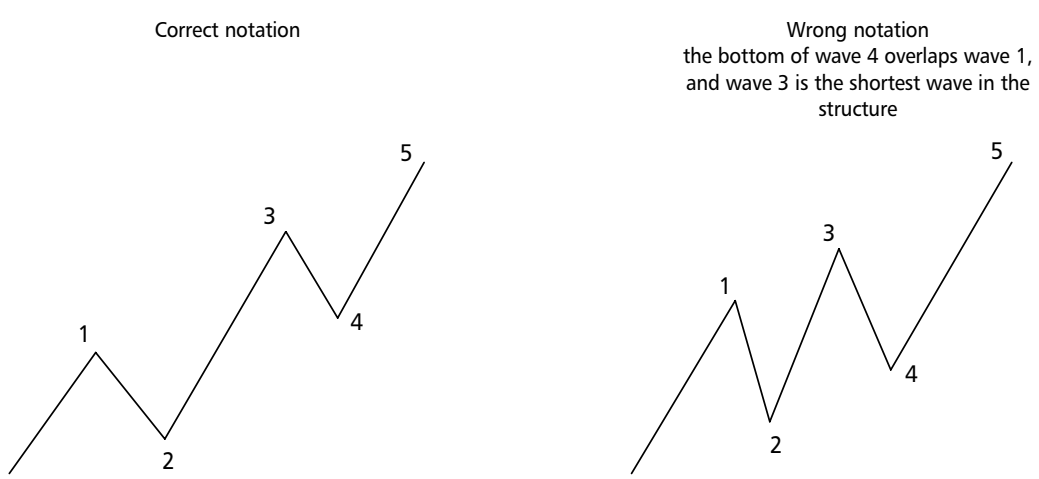


Figure 3. Basic principles



five or three): the theory includes strict rules that apply to the formation of waves.

- Corrective waves do not fully extinguish the preceding impulsive waves. In other words, wave 2 never fully extinguishes the preceding wave 1. Similarly, wave 4 does not cause wave 3 to be completely eliminated.
- Wave 3 always overlaps the end of wave 1 since it moves the whole structure forwards,
- Wave 3 is never the shortest impulsive wave, it is often the longest wave in the structure,
- Wave 4 never overlaps the peak of wave 1.

There exists a complete catalogue of all possible impulsive and corrective wave patterns. Some patterns may exist only as waves 1, 4 or 5. However, limitations of space make it impossible for the author to show all such patterns. The author's aim was to present only the main principles of the Elliott Wave theory, and thus to help the reader to understand the current technical situation as well as the breakthrough that appeared in the EURO graph at last year's end.

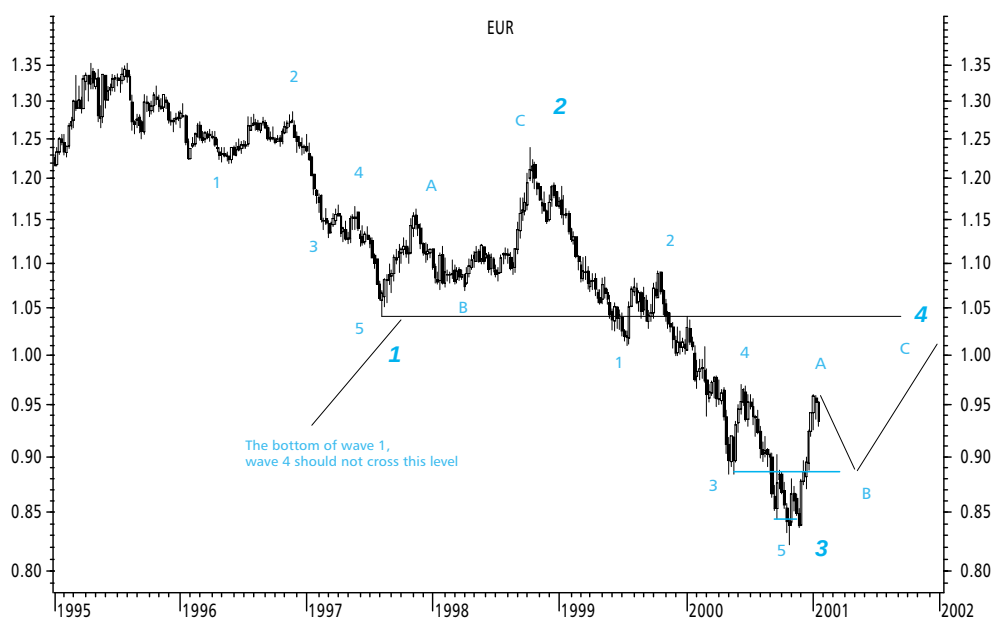
Forecast for the EURO

Graph 1 represents trends in the EURO/US$ exchange rates since 1995. Two conspicuous five-wave patterns can be distinguished. That they are directed downwards is of no great importance: to obtain an upward trend the graph should simply be reversed and the US$/EURO exchange rate replotted.

From the point of view of the Elliott Wave theory what is important is the situation which pertained prior to 1995. Had another five-wave sequence occurred at that time, the autumn of 2000 should have terminated with a large five-wave pattern, which would have resulted in a significant upward correction. Otherwise, the autumn of 2000 would have seen only a large downward three-wave structure without another downward five-wave structure of the lower degree. In other words, following the present upward correction, that is in the current EURO situation, another five-wave downward structure may be appear.

The author has made use of the German mark with the aim of enlarging the range of available data. The German mark registered a reversal in 1995. It follows that within the trend of the higher degree the following structures can be found in the EURO: wave 1 (bottom at US$1.041 on August 6, 1997), wave 2 (peak at US$1.24 on October 8, 1998) and wave 3 (bottom at US$0.822 on October 26, 2000). The present situation is most probably witnessing the upward wave 4 (the author has used the words probably since the depre-

Graph 1. EURO (weekly data)



Source: Reuters (Polish edition)

ciation of the EURO against the dollar may have ended in a three-wave movement). Another alternative scenario, however less probable, assumes that the EURO has already registered its lowest value. Wave A (bottom at US$1.041), wave B (peak at US$1.24) and wave C (bottom at US$0.822) have brought future weakening of the EURO to an end.

In what follows trends for the EURO will be considered and discussed, and later short-, medium- and long-term forecasts will be presented.

The downward trend: April 1995 – October 2000

The first five-wave structure that took form in 1995–1997 marked, in the framework of the Elliott Wave theory, the beginning of a new several years' long downward trend. Over the period of 28 months the EURO against the dollar depreciated from 1.352 to 1.041, that is it experienced a drop of 23.0% (for large movements a logarithmic scale rather than arithmetic scale should be employed). The subsequent correction structure that took the upward three-wave pattern sent a clear signal that in the coming months the EURO would continue its downward trend as wave "3", with the range comparable with that of wave "1" and duration of the same order, ie 20 months rather than 6 months.

The starting point for wave 3 was US$1.24, and the first subwave terminated at US$1.01. Since the latter was so strong, as early as mid-July 1999 wave 3 could have been expected to be longer than wave 1. Following an upward correction and subsequent drop, the EURO exchange rate against the dollar came down dangerously close to 1.0. This psychologically important level of 1.0 took two months to defend, but once it had been crossed strong depreciation of the EURO was inevitable as a purely psychological response on the part of investors. One EURO was found to be worth less than one dollar. The bottom of subwave "3" reached the value of US$0.884. To have the five-wave structure fully completed one upward correction (ie. subwave "4") and one downward wave (subwave "5") were needed. Five months later, the EURO graph exhibited a very clear five-wave pattern. On October 26, the EURO dropped to a historically record low value of US$0.822.

Strong upward correction (wave "4") from October 2000 to ...? (end-2001 or beginning-2002)

By end-October 2000, the EURO rose above the bottom of one of the subwaves of wave 5, i.e. US$0.844 (in the graph represented by a short bold line in the right bottom corner), which provided the first highly important signal which, in the Elliott Wave theory, signified that wave 5 should be corrected. Another important signal occurred in early December when the bottom of wave 3, i.e. US$0.884, was crossed (in the graph represented by a line in the right bottom corner), which meant that the whole five-wave 24-month structure had been corrected. A similar situation was last noted in the period from August 1997 to October 1998 (see Table 1 and Graph 1).

The Table below gives the duration and ranges of the waves formed so far. It should be noted that wave 3 is significantly stronger than wave 1. In addition, the subdivision of wave 3 into waves of the lower degree, i.e. subwaves, indicates that subwave 3 was the strongest. This gives strong support to the sequence of events in which the present upward trends represent in fact a corrective wave 4. What can be expected in the months to come is termination of downward trends as represented by wave 5.

The current appreciation of the EURO has been observed for only two and half months, its range, as calculated from the minimum to the last maximum, extending to 16.8%.

In the graph plotted in the daily system of reference it may easily be seen that since the end-October 2000 all the

Table 1. The application of Elliot Wave theory to the euro-dollar exchange rate

	DURATION	PERIOD	RANGE OF THE WAVE
Wave 1	28 months	April 19,1995 –August 6,1997	-23.0%
Wave 2	14 months	August 6,1997- October 10,1998	19.1%
Wave 3	24 months	October 10,1998 – October 26,2000	-33.7%
		FORECAST	
Wave 4	about 1 yr	October 26,2000 - end 2001 or beginning 2002	max. up to US$1.04
Wave 5	about 2 yrs	-end 2003 or beginning 2004	new bottom of US$0.80

consecutive peaks have been ever higher, whereas the consecutive bottoms have not overlapped the preceding peaks. The EURO can be found within the impulsive wave of a lower order (it is most likely wave A). A fairly strong resistance is encountered in the region of US$0.95-0.97. A stronger short-term (several months' long) correction can also appear, represented in the graph by a downward wave B, followed by another several months' long period of rises (wave C). The A-B-C structure should be terminated with an upward wave 4. In the author's opinion, the predicted range of wave C should lie in the range between US$1.0 and US$1.04.

The bottom of the large wave 1 at US$1.041 (of the same order) in August 1997 would not be broken in future, which will provide the best proof that the present forecast for EURO is valid. If the EURO is unable to overcome the above resistance, a new five-wave downward trend should begin with its likely duration time of two years, its range comparable with that of wave 1, and the bottom probably close to US$0.80, i.e. lower than that of October 26, 2000. The minimum should be reached somewhere between end-2003 and beginning-2004. At that point the structure consisting of five downward waves of a higher degree with the duration time of about 9 years will be completed! The next several years should see an upward correction of the whole five-wave structure.

Otherwise, if the bottom of wave 1 of August 1997 is broken, further rise and correction of the whole downward movement will take place starting from April 1995 (at US$1.352).

Forecast for the zloty

As for the zloty an analysis and/or forecast, based on the Elliott Wave theory, has been found to be more difficult due to factors that distort the normal functioning of the system of demand and supply. What seems to be most important in this case is high inflation, large but irregular privatisation proceeds, as well as strong dependence on the EURO. However, technical analysis may also be of use in this case. The recently noted strong position of the EURO against the dollar has had an effect on crossing the low at 4.25 zlotys as determined by the bottom of the wave in July 2000. In terms of the Elliott Wave theory what it meant was that the nearly two-year long trend of the weaker zloty against the dollar has entered into a correction phase. Technically speaking, the dollar receives a very strong support when its exchange rate varies from 4.00 to 4.01 zlotys. Therefore, if, within the next few weeks, the EURO does not become dramatically strengthened against the dollar, which, according to the above outlined forecast for the EURO is very unlikely, this support will not be eliminated. As a result, the next few months will see a weakened zloty, although the future situation will be strongly dependent on the changes in the exchange rate of the EURO against the dollar. Polish currency is expected to roughly reflect the EURO trends. In a longer view, ie. by the year-end when the EURO enters the upward C wave, one may expect further appreciation of the zloty and a renewed attempt at gaining support in the range of 4.00-4.01 zlotys.

Graph 2. The zloty against the dollar (weekly data)

Source: Reuters (Polish edition).

Center for Social
and Economic Research

The economy in 4Q00

Andrzej Bratkowski

Nothing is as it was before

- **Economic growth falls**
- **Record-high unemployment**
- **Improvement in the balance of payments**
- **The strongest zloty for over a year**
- **Inflation fell, central bank inflation target for second year in a row turns out to be over-optimistic**
- **Budget for 2001 passed, but doubts over state of public finances remain**

In the year after the Russian crisis Poland returned to a path of 5% growth. This was treated as evidence that such growth was somehow "natural" for the country. Everyone worried about a currency crisis, some worried about inflation and the budget deficit, still others demanded a more equal division of the fruits of growth. But fast growth in itself – as long as we avoided a currency crisis – was treated as a given for many years. Doubts, if they appeared, were to do with whether such or such a rate was not too low – demanding at least 7% or 8%! But from the second half of last year something started to break down. In 4Q00 there were no doubts – growth was fast faltering.

So how did it happen? The external situation was good, as never before: The US was breaking growth records, the EU – with a little lag – was also clearly speeding up, improvements in Russia and the Far East returned belief to investors in the rapidly emerging markets – which in Poland led to record-high inflows of foreign investment. But against this, the rate of output fell. In industry the record 11.7% growth rate in 4Q99 had fallen to just 6.7% three quarters later and in 4Q00 to barely 2.5%. The news grew steadily worse month by month: in December output declined. In the construction sector, an area in which post-crisis revival was not so spectacular, things got worse still. The drop in output began in 2Q00 and by 4Q00 had reached below -3.6% (in December -6.9%). **Was this a symptom of a catastrophic economic policy or a sign that a certain phase of economic growth had come to an end and that from then on nothing would ever be as it had been before? For those with hope in a new economic policy after the autumn elections we do not have the best news: a return to the path of high growth in the next few years will be incomparably more difficult than in the past.**

There are two main reasons for this. The first is a logical consequence ... of economic successes to this point. Thanks to this the inflow of capital is so large that its sudden outflow has become significantly more likely. The second is also an effect of the progress we have made in bringing inflation down as well as the fact that this progress was decidedly insufficient in the face of changes in the Polish balance of payments.

The inflow of foreign capital has over the past years been one of the key factors behind economic growth.

However, as the wave of capital moved above the psychological level of 5% of GDP and the foreign debts of Polish companies quickly began to rise, the currency exchange risk also sharply increased. In effect, although direct investment was very high, other items of the capital account were far more volatile, making the zloty exchange rate also volatile. In addition, the government, rightly fearing turmoil on our currency market, transferred a part of its privatisation proceeds to a special account earmarked for the repayment of foreign debt. Polish commercial banks also – most clearly frightened of a weakening of the zloty – increased their foreign currency holdings in the second half of the year. All this meant that only a part of capital inflows turned up in the currency market and were used to finance imports. Under these circumstances we saw periods of strong zloty depreciation – the first in late 1999 and the next in 2000. The depreciation resulted in weaker domestic demand and proved that the exchange rate was no longer an effective inflationary anchor, as it had been in previous years. At the present current account deficit level, factors contributing to GDP growth must experience on-going changes: exports will contribute more than previously and consumption play a lesser role. This is a more difficult path of development. It demands, amongst other things, speeding up of technical modernisation of our industry and therefore another boost of investment.

All this would not be so important if it were not for the fact that the fight against inflation has entered a new era in our country. In previous years monetary policy was not very restrictive. When inflation was measured in the tenfold digits, fast growing capital inflows and fast growth in labour productivity made possible a high enough rate of real appreciation of the zloty. Such a policy was sufficient to gradually bring down inflation. The problem was that this fall was too gradual. As a result we now have a dangerously high current account deficit on the balance of payments as well as still dangerously high inflation. Low enough, however, that such factors such as the period of zloty depreciation (unavoidable in the face of high current account deficit), the rise in the price of oil or poorer agricultural harvests caused not only – as in previous years – a slower rate of disinflation, but a temporary reversal of the trend. This is a threatening phenomenon, as it undermines the credibility of our central bank, which in turn causes a rise in inflationary expectations. In effect we have inflation at about 10% with the large enough probability that a coincidence of unfavourable circumstances could at any moment lead to another acceleration of inflation.

Such a situation cannot be tolerated for too long in the context of our ambition to join first the EU, and then the EMU. The logical consequence of these plans is acceptance of the medium-term target of monetary policy of bringing inflation below 4% by the end of 2003. The development of the monetary situation in recent years has made this target increasingly less realistic. However, the turning point proved to be the establishment of the Monetary Policy Council (MPC). The spreading of individual responsibility greatly increased the anti-inflationary determination of the NBP. The MPC's composition also had a certain effect on this: the economic views of its members designated by the centre-right grouping and the support of the political representatives of the left produced an unlikely anti-inflationary/anti-government coalition. Its existence made possible the acceptance of a wide-ranging single-minded decision on raising interest rates. As a result Poland's monetary policy is marked now by one of the highest real interest rates in the world – but inflation finally began to decrease. Due to the significant volatility of the zloty and the structurally determined susceptibility of the Polish economy to changes in the global price of commodities and seasonal fluctuations in agriculture, the policy of high interest rates (although not necessarily as high as at present) will be permanent element of our economic reality.

In the event of a fall in the following ratios: inflows of capital to GDP and also the very high interest rates must end up restricting domestic demand growth. In addition, for the first time in many years real household incomes fell. This was mainly caused by a strong fall in the growth of domestic demand. The labour market suffered most. Demand for labour waned rapidly due to the implementation of the government's programme of restructuring the mining and steel industries. The combined effect of both factors is an unemployment rate of over 15%. Apart from slower growth, the changed pattern of growth also played an important role: from being driven by consumption to be driven by exports. Higher exports inevitably entail improvement in the standard of quality and this in turn forces imports of efficient technologies. Introducing more elastic labour market regulations could definitely improve the situation, but the problem of high structural unemployment remains.

Slower economic growth, especially when coupled with a significant slowdown in consumption, points to an on-going budgetary problem. It already reduces the effectiveness of monetary policy and undermines confidence of foreign investors. The budget law for 2001 was passed, but doubts with regard to its implementation remain. More fundamental consolidation of public finances goes beyond Finance Ministry gestures the, demanding on-going, wide-ranging and large-scale reform of the budgetary sphere. That is also a problem that to date has been put aside and which – in light of EU integration, in which the basic principle is a balanced budget throughout the full business cycle – further procrastination will not do.

Readers can find more detailed descriptions of the problems touched upon here in the following texts devoted to an assessment of the current situation. The ensuing outlook for 2001 and 2002 is presented in the next chapter.

Anna Myślińska, Katarzyna Piętka

Economic growth

- **Significant slowdown in GDP**
- **Low consumer demand as the main obstacle to growth**
- **Exports alleviate results of domestic demand downturn**

GDP and demand factors

We estimate the GDP growth rate at 2% in 4Q00, i.e. a slightly lower level than the provisional figure of Central Statistical Office (CSO). The result means **a further slowdown of the economy in comparison with previous quarters of 2000**. In 2000 GDP increased by 4.0%, i.e. by 0.8 percentage points lower than we predicted three months ago. The downward revision resulted from an underestimation of the downturn in domestic demand. First, lower budget transfers for households in the first half of the year and unexpectedly high inflation in 3Q00 drastically cooled household demand. Moreover, a "price surprise" in 3Q00, along with restructuring of manufacturing companies lowered the wage income in the enterprise sector, which added to the reduction in demand. High real and nominal interest rates also played a role. All these effects led to a drastic cooling of domestic demand.

According to our estimates, 4Q00 recorded **a fall in the dynamics of household consumption by 1%**– which had not happened since the end of 1990. This was due to two main factors: a drop in real disposable income and the high savings rate. Social benefits experienced especially low dynamics on the back of the adoption of a low inflation rate in the budget act (5.7% annually as opposed to actual 10.1%). In a situation of lowering labour demand, nominal wages and salaries in the enterprise sector increased slowly. The real decline in average wages and salaries in the enterprise sector in December (by 1.8%), despite the lower-than-expected inflation, is the best proof of considerable rigidities in nominal pay. Despite the drop in real household income, the savings rate increased (the highest rise since 4Q99). Remaining high interest rates increased household net savings by more than 5.5 billion zlotys.

Public consumption increased at a rate similar to the previous quarters (more than 1%).

The investment dynamic remained positive, although amounted only to 1.8%. The CSO data for three quarters (covering large and medium-sized companies) show an increase only in investment in transport. Taking into account the weak results of construction output in 4Q00, we think that this trend was maintained until the end of the year. The fact is that in comparison with the situation at the end of September, credits for the corporate sector increased only by 1%, while their net savings were higher by more than 6 billion zlotys (almost by 4% in comparison to end-3Q00), which means that due to high interest rates, companies avoided long-term investments in construction.

In the face of very low domestic demand (household and public consumption and investment in fixed assets), exports constituted the main driving force of economic growth. In all quarters of 2000 the domestic demand growth rate was lower than the GDP growth rate. At the same time, weaker demand contributed to a reduction in import growth to 10%. Contribution of net exports to GDP growth in 2000 was 1.5% and was the highest in

the last 5 years.

We would like to stress that our estimates of GDP in 4Q00 and consequently for the whole of 2000 differ considerably from the initial CSO estimates. First and foremost, in our opinion the increase in household consumption in 4Q00 by 1.5%, found in the implicit annual CSO data, has been overestimated. Such growth is hardly likely in the light of a decrease in household real income (wages and salaries, and social benefits) and the increase in savings. It seems however, that the initial CSO estimates underestimated the growth of exports.

Real sector

In 4Q00 weak domestic demand corresponded with a low increase in industrial production and a slight fall in construction output as well as retail trade sales. The growth rate of industrial production in companies employing more than 9 people lowered for the fourth time in a row in 2000, reaching a very low level of 2.5%. **External demand was the main factor boosting industrial production.** However, in December it was insufficient to make up for the reduction in demand caused by a real decrease in wages and salaries in the enterprise sector. As a result, industrial output decreased by more than 2% and the PPI went down. We estimate that the value-added in industry increased by only 2.4%in 4Q00. Over the whole of 2000 industrial production output increased by 6.9%, which is still a better result than in the previous two years.

Declining demand for investment in buildings was reflected in **the fall in construction output by 3.6%** (according to CSO). The quite unexpected hike in the CSO general confidence index in the construction sector was followed by its further decline in November. Our estimates show that as a result, the value-added in the construction sector dropped by 2.4%. The whole of 2000 saw only a 0.6% rise, which is the worst result for the last few years. Taking into account favourable weather conditions, such weak construction sector activity can only be explained by low investment demand.

Despite the fall in retail sales we estimate the value-added in the market services sector grew by 3.2%. This was possible due to positive trends in services not related directly to household demand. However, it should be noted that growth in 4Q00 was slower than in the previous quarters. Overall in 2000, the increase in value-added in market services amounted to 4.3%.

The year 2000 proved to be quite unfavourable for agriculture. Due to bad weather conditions the fruit and cereal crops were lower than in 1999 (by 13.2% and 5.9% respectively), although the long and warm autumn meant higher crops of potatoes and sugar beet. Livestock also decreased by several per cent. We estimate that as a result of these trends, **value-added in agriculture in decreased by 6% in 4Q00** and over the whole of 2000 by nearly 7%. It should be stressed that the fall in agricultural output last year will lead to pressure for an increase in food prices this year.

External sector

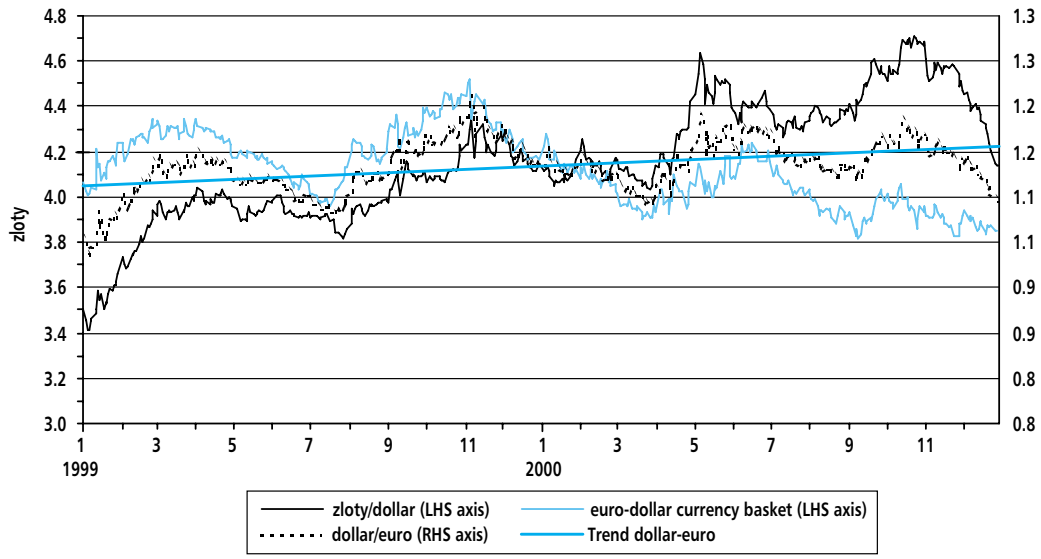
- **Strengthening of the euro against the dollar**
- **Constant appreciative pressure on the zloty**
- **Strong appreciation of the zloty did not stop export growth**
- **Weak domestic demand slows down import dynamics**
- **Improvement of the current account on the balance of payments**

Rafał Antczak

Exchange rate

After a period of nominal appreciation of the zloty against the dollar and the euro in July-August 2000, the zloty exchange rate experienced a period of depreciation in September – November, ending with a strong nominal appreciation from December 2000. The weakening of the zloty at the end of 3Q00 and beginning of 4Q00, was due to a series of negative political developments (the minority government introducing the budget to parliament) and a change of NBP President) and economic developments (annual inflation at 10%, a slowdown in economic growth) as well

Chart 2.1. Average exchange rates of the zloty against the dollar, euro and the euro-dollar currency basket, 1999–2000



Source: NBP.

as the weakening of the euro against the dollar. However, at the end of 4Q00 the negative trends reversed. The political atmosphere (high odds of passing the budget, election of Leszek Balcerowicz as the president of the NBP) and macroeconomic indicators improved: inflation dropped below 9% in December and the deficit on the current account below 7%.

December saw the euro strengthen against the dollar. The dramatic forecast on the imminent currency crisis at the end of 2000, heralded after the release of the macroeconomic assumptions for the 2001 budget, did not come to pass. Positive developments encouraged foreign capital to return to the treasury securities market, causing the nominal appreciation of the zloty. In 4Q00, the zloty appreciated 8.7% against the dollar (4.14 PLN/US$ as compared with 4.54 PLN/US$), and 3.5% in terms of the euro (3.85 PLN/euro as compared with 3.996 PLN/euro). Over the same period the euro appreciated by 6.2% against the dollar (from 0.88 to 0.94 euro/USD).

As a result of nominal appreciation, the real effective exchange rate of the zloty, according to JP Morgan, appreciated up to a level of 166.9 in December 2000.

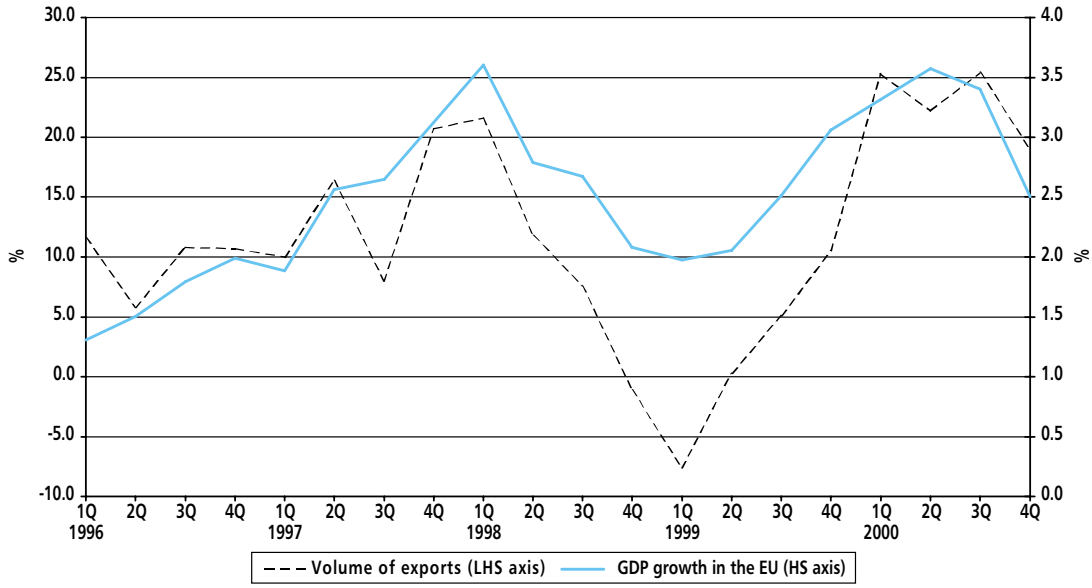
Łukasz Rawdanowicz

Foreign trade

According to preliminary estimates, exports (the balance of payments data) amounted to US$7.95 billion in 4Q00. This is the best result for the last 4 years. The favourable economic situation in the EU and Russia contributed to it largely. High exports can be also explained by the "crowding out effect", i.e. in face of weak domestic demand, producers look for markets abroad. It is worth noting that the high export dynamic was achieved under conditions of extremely high real appreciation of the zloty. According to JP Morgan, the real effective exchange rate of the zloty appreciated by 12.0% yoy in 4Q00.

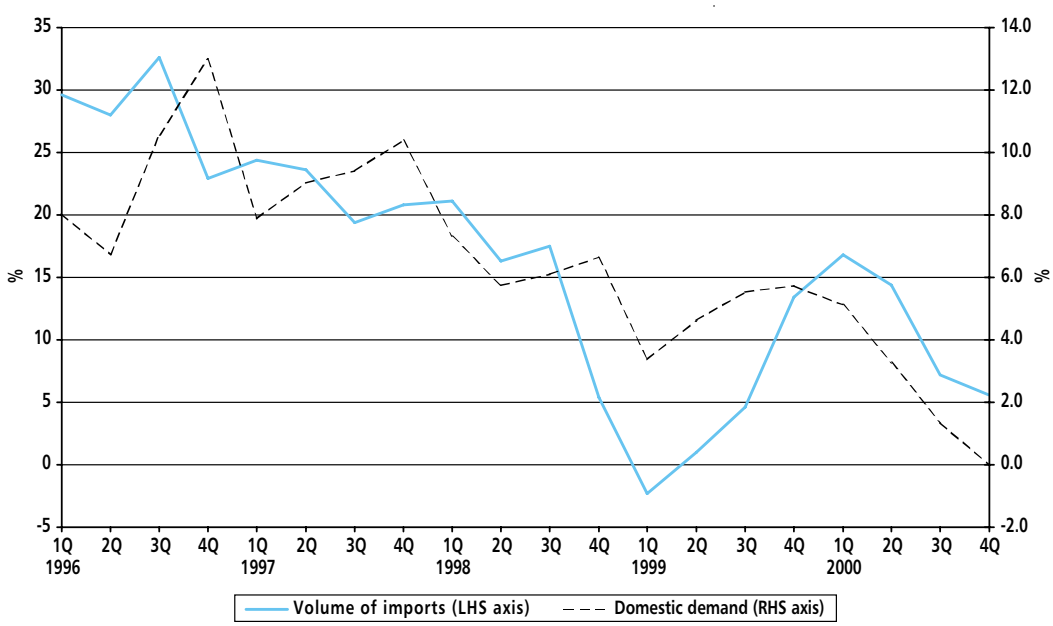
The zloty appreciation limited the room for Polish producers to raise prices denominated in zlotys. On the one hand, exporters intending to stick to world prices are forced to lower zloty prices for their exported goods, and on the other hand, the increase in domestic prices was restrained due to greater competition from imported goods, especially given weak domestic demand.

Chart 2.2. Volume of exports and GDP in the EU, 1996–2000 (% change, yoy)



Source: CSO and Eurostat.
Notes: Volume of merchandise exports only.

Chart 2.3. Volume of imports and domestic demand, 1996–2000 (% change, yoy)



Source: CSO and CASE.
Note: Volume of merchandise imports only.

Table 2.1. Import and export data revisions by CSO

Reporting Period	Data of release	Exports		Imports	
		A	B	A	B
1Q00	May	119.0	99.8	112.9	88.1
	June	124.7	104.6	116.5	90.9
	July	124.9	104.8	116.6	91.0
	August	125.0	104.8	116.7	91.0
	September	125.3	105.1	116.7	91.0
	October	125.3	105.1	116.8	91.1
	November	125.3	105.1	116.8	91.1
	December	125.3	105.1	116.8	91.1
2Q00	August	116.1	98.8	109.4	103.6
	September	121.6	103.2	113.5	107.5
	October	122.1	103.6	114.4	108.3
	November	122.1	103.6	114.4	108.3
	December	122.2	103.7	114.4	108.3
3Q00	November	124.1	103.4	106.1	97.6
	December	125.1	104.4	107.2	98.6

Source: Statistical Bulletin CSO.
Notes: A – yoy index, B – qoq index.

The good export results are confirmed in the CSO data. According to our estimates, export volume increased by 19.0% yoy in 4Q00.

No considerable changes in the geographical structure of exports were recorded. In 2000 the share of exports to CEE and CIS countries remained at the average 1999 level, i.e. amounting to approximately 17% of total exports. The Polish export commodity structure shows a growing share of machinery and transport equipment. This may indicate that the commodity structure is changing (though slowly) towards high value-added goods.

The import dynamic dropped visibly in 4Q00. Slower growth of domestic demand, particularly on the side of the manufacturing sector and households led to a slowdown in raw materials and consumer imports respectively. According to the NBP, imports in the balance of payments amounted to US$11.3 billion.

The terms of trade continued to worsen – They remained below a level of 100 during the first three quarters of 2000. This mainly resulted from the high fuel prices and a relative weakening of the euro against the dollar (in 1999 the average exchange rate stood at 1.06 US$/Euro, and in 2000 at 0.92 US$/Euro) and caused a rapid growth in import prices. Despite the reversal of these trends in November and December, we do not expect any considerable improvement of the terms of trade in 4Q00.

One should treat CSO foreign trade data with care. The CSO is notorious for revising export and import volumes for previous quarters. Table 2.1. shows how considerable these changes are – the revision stands even as high as 6

percentage points. The erratic nature of trade data negatively affects the credibility of preliminary GDP estimates.

Łukasz Rawdanowicz

Balance of payments

The NBP estimates that 4Q00 closed with a trade deficit on the balance of payments of US$2.9 billion, which taken for the whole of 2000 gives a deficit of US$13.1 billion. Taking into consideration the surplus in unclassified current transactions (US$1.1 billion) the current account deficit was as high as US$2.0 billion in 4Q00, and over the whole year – US$9.9 billion (i.e. 6.2% of GDP), which is lower by 0.7% than we forecast three months ago. This improvement arises mainly from the reduction of the merchandise trade deficit (high exports supported by favourable external economic conditions and low imports halted by domestic demand).

A considerable net inflow of FDI, estimated at US$5.7 billion, was recorded in 4Q00. This was mainly accounted for by the privatisation of TP SA. A relatively small net inflow of portfolio capital took place in November and to a lesser degree in December, totalling US$262 million in the whole of 4Q00.

On the capital account side, it is worth mentioning the increase by US$2.7 billion of the item cash and deposits of the Polish residents made with foreign banks in 4Q00. These funds were deposited mainly by commercial banks, which in October sold zlotys to the French telecom company within the framework of the TP SA privatisation. Clearly, these banks expected further depreciation of the zloty. The strengthening of the zloty against the dollar in November and December proved that they were wrong. However, due to these operations the zloty appreciation was delayed and the current account balance benefited as a consequence. Moreover, taking into account the appreciation of the zloty against the dollar in December 2000 and January 2001 and interest rate cuts in the USA, Polish banks are expected to lose from funds being deposited abroad.

The official reserve at the end of 2000 amounted to US$27.5 billion and increased by US$2.0 billion as compared to the end of 3Q00 and only by US$150 million on yoy basis. Such reserves are enough to cover for 7.9 months of the average monthly imports.

Małgorzata Markiewicz, Artur Radziwiłł

Public finances

- **Public finances the weakest element of the economy**
- **Budget revenues in 2000 lower than those assumed in the Budget Act**
- **Privatisation proceeds lowered the costs of public debt servicing, but pushed the zloty up**

Public finances will remain the weakest element of the macroeconomic situation. This weakness will have to be compensated by a restrictive monetary policy, which would mean a retention of high real interest rates and a lower rate of economic growth. The reform of public finances will remain an area of promises and will most likely remain sidelined. The government's work on the

Table 2.2. Economic deficit according to various government acts (as % of GDP)

	Budget 1999	Budget draft 2000	Budget 2000	Economic assumption of the budget draft for 2001	Budget draft 2001	Corrected budget draft 2001
1999	-2.0	-2.4	-2.7	-2.7	-2.7	-2.7
2000		-1.2	-2.0	-2.0	-2.5	-2.7
2001		-1.0	*-1.0*	-1.6	-1.6	-1.8
2002		0.0	*0.0*	-0.2	-0.5	-0.7
2003				0.5	0.3	0.1

Source: Ministry of Finance.

budget is tightening the fundamental indicators, though in the course of its implementation it most likely turns out that the government's assumptions are over optimistic.

Revenues for the 2000 budget were over-estimated. Within the lower-than-planned growth in domestic demand the least pleasing areas turned out to be revenues from indirect taxes (7.9 billion zlotys less than planned in the budget) and personal income tax revenues (2.2 billion zlotys less than planned in the budget). These were only partially compensated by the high revenues from corporate tax (2.7 billion zlotys more than planned for in the budget) which was connected with higher enterprise productivity. In total, tax revenues were 7.4 billion zlotys lower than planned. Due to the higher-than-expected non-tax revenues, the revenue shortfall was 5.3 billion zlotys. However, the budget deficit did not increase (15.4 billion zlotys), which indicates that expenditures fell by the same amount. It is not clear exactly where this was seen. We can only note that the costs of servicing foreign debt were 1 billion zlotys lower and payments to the pension funds 0.4 billion zlotys lower. In the worst case scenario the remaining 3.9 billion zlotys of savings were achieved by shifting a part of expenditures to the beginning of 2001 – causing an additional burden on this year's budget. Delaying expenditures until the following year had already been done in 2000: teachers' pay was credited by local governments to the following year and the compensation for pensioners due to higher-than-assumed in the budget inflation will become budgetary expenditures in 2001. In addition, the Labour Fund was obliged to take credit from commercial banks. The higher-than-expected deficit was recorded on a par with the Regional Health Funds and the Social Insurance Fund. In total, the economic deficit turned out to be 0.7% higher than the budgetary assumptions for 2000.Thanks to the higher-than-expected revenues from privatisation (26.7 billion zlotys rather than 20.1 billion zlotys) it was possible to increase the projected reductions in Treasury bills debts (by 4.3 billion zlotys) and on Brady's bonds (by 3 billion zlotys).

Budgetary shortfalls may also be seen in the following quarters of 2001. Also one cannot rule out delays in some planned privatisations – as was in the case of TP SA. This is why the government decided to be additional cautious and decided to speed up privatisations in the first half of 2001.

Privatisation proceeds in 2000 of 26.7 billion zlotys covered 15.4 billion zlotys of the budget deficit. Domestic financing of the deficit totalled 20.7 billion zlotys, and foreign financing – due to the necessity to repay debt – was negative, amounting to more than 5.3 billion zlotys. In 2001 the budget deficit of 20.5 billion zlotys will for the last time be financed from significant privatisation proceeds (18 billion zlotys) and the UMTS licence sale (one instalment of more than 3 billion zlotys). The balance of foreign financing will be again negative. In 2002 the fall in income from privatisation will require a reduction in the deficit (in the Ministry of Finance's plans for 2002 this amounts to 1.6 percentage points) or an increase in state debt – probably through foreign debt (the cost of domestic debt will continue to be high). This will inevitably lead to appreciation pressures on the zloty.

Mateusz Walewski

Labour market

- **Continued increase in unemployment**
- **Restructuring of enterprises the main cause of the fall in numbers of available jobs**
- **Unemployment and high interest rates prevent increase in wages**

The situation on the job market in the last year unfortunately has not improved. The number of unemployed increased by 352,800 over the last 12 months and at the end of November the unemployment rate reached 15%. In 4Q00 the number of unemployed rose by 173,800, i.e. almost exactly the same as in the equivalent period in 1999. It is therefore possible to talk of **a stabilisation in the trend**.

In comparison to 1999, **the structure of unemployment has not altered**. Those unemployed who had not previously been working constituted 23.8% of all unemployed – only 0.1 percentage point more than the previous year. The number of graduates among the total unemployed fell by 0.2 percentage point to 6.2%, those laid off for example through group redundancies fell by 0.5percentge point to 6.9%. At the peak, around the end of March last year, the number of such type of unemployed amounted to 9.4%. Therefore we conclude that the main wave of redundancies due to the process of restructuring the economy is already behind us. With the increased impact on the job market of younger groups resulting from the population boom, the absence in the

official figures of the increase of an element of previously unemployed individuals (including graduates) in the general numbers may cause surprise. This may be caused by two factors. First, the reticence of younger people to register at Job Centres – in areas with a high level of unemployment they don't have a particularly good chance of finding work anyway, and they can't count on unemployment benefits. Second, a section of younger people seeing the difficult situation on the job market may have decided to continue studying in aid of increasing their future chances on the market. This hypothesis would be confirmed by the increase of 5.1% (between 3Q98 and 3Q00) of the number of individuals not working due to study, or completing qualifications.

From 3Q98, according to LFS (Labour Force Survey), the number of graduates in the general unemployed increased almost imperceptibly, from 21.9% to 22.6%, at a time when the number of individuals who had lost work increased from 48.7% to 51.6% (the LFS was not conducted in 2Q99 and 3Q99). This is confirmed by the fact that the basic sources of the increase in unemployment over the last period, are restructuring of enterprises and only to a small extent the impact of newcomers on the job market. The rate of unemployment (according to LFS) among young people aged 15–24 increased however over a period of two years (3Q98–3Q00) from 23.0% to 33.3%. Evaluating the very high rate of unemployment among young people, it should be borne in mind that this only concerns young people who have actually completed their education.

Developments in the job market have led to a change in the make-up of the unemployment rates in relation to education. However, in 3Q98 (according to LFS) it was largely individuals with a general school education who had the most problems in finding work, **in 3Q00 the highest rate was among individuals with only primary education or less**. These are probably young people who discontinue study and unqualified workers laid off in restructured industrial enterprises.

Employment

Employment in the enterprise sector fell by 1.3% yoy in 4Q00. Over the whole of 2000, the fall in employment amounted to 2.9%, whereas during the course of 1999 this indicator reached only 1.6%.

The sectors showing the highest fall in employment in the last year were: coke production 20.6%, metal production 13.9%, and mining 11.1% – that is to say, the sectors which have undergone the most deep-rooted restructuring. This confirms the thesis that general restructuring increases unemployment. **The largest providers of work places in the last year were first and foremost in the service sector.** The biggest increase, 11.2%, was noted in the real estate and company services sectors, whereas the trade and repairs sector showed only 1.4% growth. This is connected to weak consumer demand, which determines the increase of employment of this sector. It's worth remembering that over the whole of 2000 the dynamic of the retail sales indicator was very low in relation to the previous years.

The LFS data also bears witness to the fall in demand for work in the economy. According to the survey, in 3Q00 the number of employed in the national economy was 5.6% lower than in the equivalent period in 1998. In the space of those two years, **it is the demand for work has fallen relatively most in the industry** (by 10.6%), and least in the service sector (by 2.5%). **Unfortunately, without improvement in the economic situation, and most importantly in domestic demand growth, it is not possible to expect that the service sector will be able to take in all those laid off in the industry sector.**

The difference in demand for work between sectors defined by ownership is of relevance. At a time when demand fell in the state sector by 15.9%, the private sector noted an increase in the number of employed of 0.6%. Although the privatisation process "transfers" jobs from the public sector to the private, it is still clear that the fall in employment is concentrated in the state sector. As well as the fall in demand for work, the employment rate also registered a decline, taking the percentage of individuals employed in the whole population aged over 15 years of age. In the space of the last two years (3Q98 – 3Q00), this indicator fell from 52.1% to 48.0%. This shows that, **at the moment, for every person employed, there is more than one person not working** (economically inactive or unemployed), which must lead to an increase in the pressure on the social security system.

Wages

In December 2000, nominal wages and salaries in the enterprise sector amounted to 2345.50 zlotys and were

higher by 6.4% yoy. This shows that real wages and salaries fell by 2.1% yoy. On average however, in the course of 2000 an increase in real wages of 1.3% was noted. This is the natural response to falling demand for work and rising labour supply, without which the increase in unemployment would be even faster. If the trend of falling growth of real wages and salaries continues through this year, the pace of the increase in unemployment will fall.

Mariusz Jarmużek

Prices

- **Resumption of disinflation after 3Q00**
- **Favourable supply factors**
- **Restrictive monetary policy has fed through**

4Q00 saw inflation falling – the CPI grew by 9.2% yoy, while in 3Q00 it stood at 10.8%. The PPI also recorded a decline – from 8.5% yoy in 3Q00 to 7% in 4Q00.

Lower growth of price rises was the outcome of continued dampening of demand due to restrictive monetary policy and the consequent low growth in money supply, consumer credits, and wages and salaries. A significant additional factor lowering inflation – especially in the case of the PPI – was the fall in the price of fuel. This factor, plus a modest rise in the price of cereal and cereal products and meat and meat products, indicate that, on this occasion, supply factors did not play a fundamental role in fuelling inflation.

Foodstuff prices saw a considerable slowdown, rising by 9.4% yoy. This resulted from the intervention by the Agricultural Market Agency (ARR) and import quotas which limited the rise in prices of cereal products, bread and meat. Another factor was modest demand in the retail market and low exports to CIS countries. Moreover, it is important to note, that the seasonal growth in the price of fruit and vegetables turned out to be lower than in preceding years. In the case of vegetables this was caused by the 5.2% increase in the size of the harvest in the previous year.

In 4Q00 non-foodstuff price growth fell significantly, reaching 7.6% yoy. In December prices fell by 0.6% mom. This was caused by weak household demand, which dropped by 1.0% yoy in 4Q00. In November and December a fall in the price of fuel on the domestic market – following a decline in global fuel price – was also noted. In addition, the growth in the money supply and nominal wages and salaries continued to fall and the real wages and salaries declined.

The price of services grew by 11.3% yoy. The continued high rate of growth was the result of the lifting of gas prices following the phasing out of concessions on the price of gas delivered by suppliers from Russia. This caused a 30% rise in the end-price. Aside from this, the price of heating and prices of education services also rose.

Przemysław Woźniak

Core inflation

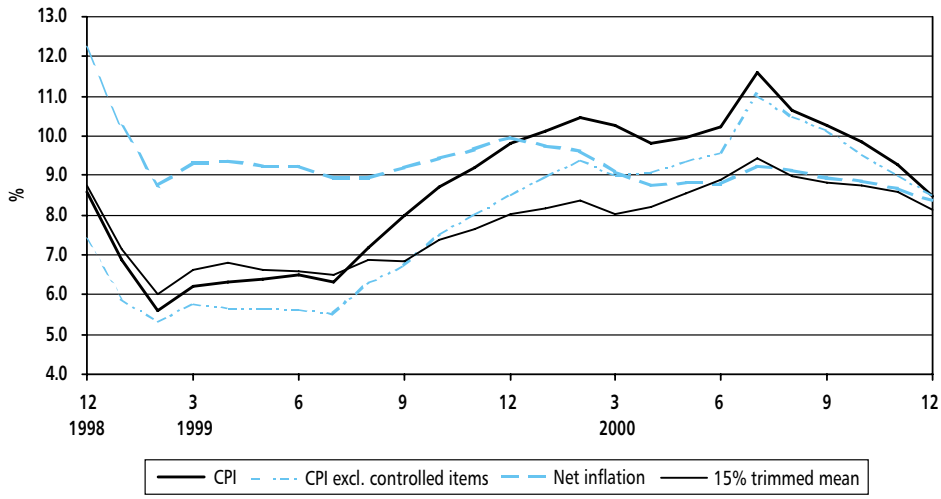
This section presents the dynamics of core inflation calculated according to the methodology of the NBP. Alternative core inflation index and its forecast will be presented in the next chapter on forecasts.

We think that regardless of our evaluation of official methods of constructing core inflation indices, it is necessary to calculate them and use them in monitoring underlying inflation pressures. This ensures that we have the same inflation-related information as the members of the Monetary Policy Council when they decide on the course and restrictiveness of monetary policy during their monthly meetings. Currently the NBP calculates 4 core inflation series:

1. core inflation excluding prices of most volatile items
2. core inflation excluding prices of administratively controlled items
3. "net inflation" excluding prices of food and fuel
4. 15% trimmed mean

Series 1–3 are obtained by excluding respective CPI categories permanently – as weighted means of the remaining items. Series no. 4 is calculated without the 15% lowest and 15% highest price changes in a given month. Since the NBP does not publish the exact algorithm of excluding most volatile prices, it is not possible to reconstruct the series. Below we estimate the remaining 3 series: core inflation excluding prices of

Chart 2.4. Core inflation, 1998–2000 (% change, yoy)



Source: CSO, NBP and CASE.

administratively controlled items, net inflation and 15% trimmed mean.

All three series have exhibited similar falling dynamics since August 2000. It is also noteworthy that the distance between them has narrowed markedly during 4Q00 and is currently at the lowest level in several years.

The core inflation index excluding prices of controlled items reached in December 2000 a value almost identical with that of the CPI. The gap between the two indices has been narrowing in the course of the entire year 2000 which points to diminishing inflationary role of administrative price increases. Towards the end of the year prices of controlled items (i.e. those heavily influenced by indirect taxes, set by local authorities or controlled in other ways) were going up at the same pace as the remaining consumer prices. The total share of these prices in the consumption basket amounts to about 20%.

Net inflation, introduced to the NBP's inflation reports only recently, eliminates food and fuel prices which constitute over 30% of the entire consumption basket. Unlike other core series, net inflation exhibited considerable stability during past 24 months, remaining within the range of 8.5–10.0%. Consequently, net inflation deviated from headline[1)] inflation markedly with the deviation exceeding 3% on several occasions. Until the end of 1999, net inflation was above headline inflation which points to lower dynamics of food prices and (only up till April 1999) also fuel prices. 2000 was marked by the reversal of this trend and it is mainly due to abrupt price hikes of fuel and a couple of staple foods (flour, butter and sugar) that the dynamics of the CPI exceeded net inflation consistently throughout the year.

Trimmed means eliminate prices of those goods and services whose annual rate of change in a given month was extremely high or low regardless of the CPI category they belong to based on the notion that they are unrepresentative of general growth of prices. NBP calculates 15% trimmed mean which eliminates 15% of the biggest and 15% of the lowest price changes (percentage pertains to the share in the consumption basket). From mid-1999 on, this index has exhibited consistently lower dynamics than the CPI, which indicates that headline

1) The term "headline inflation" is used synonymously with the growth rate of the CPI

inflation was being pushed up by price changes considerably different from the trend and untypical of the general growth of prices. Like other core indices, trimmed mean has registered gradual fall since August 2000.

Rafał Antczak

Monetary policy

- **Continuation of restrictive monetary policy in 4Q00**
- **Growing problems with the policy-mix**
- **Direct inflation targeting maintained**

The effectiveness and credibility of monetary policy can be evaluated by its impact on the financial markets. The increase in NBP interest rates in August 2000 by 150 basis points caused an increase in interest on loans for households and the corporate sector of on average 60 points in September and by November of 90 points. The increase in interest rates on zloty deposits for households and the corporate sector was at first weaker, amounting to respectively 20 and 40 basis points, but in November reached 70 and 90 points. The most recent increase in the NBP rate had a stronger impact on the market interest rate on loans than that in February 2000. At that point it took three months for the market rate to rise half of the NBP rate change, currently up to 60%. The increase in effectiveness of NBP instruments comes in substantial part from drawing on over-liquidity from the banking system with the help of free market operations (sale of Treasury bonds from the NBP portfolio as well as NBP cash bonds). At the beginning the sale was planned of 1.2−1.5 billion zloty securities monthly (eliminating operational over-liquidity within one to two years). However the rapid achievement of this target turned out to be too costly, since investors began to demand a higher yield from the offered securities. By the end of 2000, the NBP had decreased the liquidity of the banking system by around 2.2 billion zlotys, i.e. by more than 10%. This rate does not guarantee a swift achievement of the under-liquidity of the banking system.

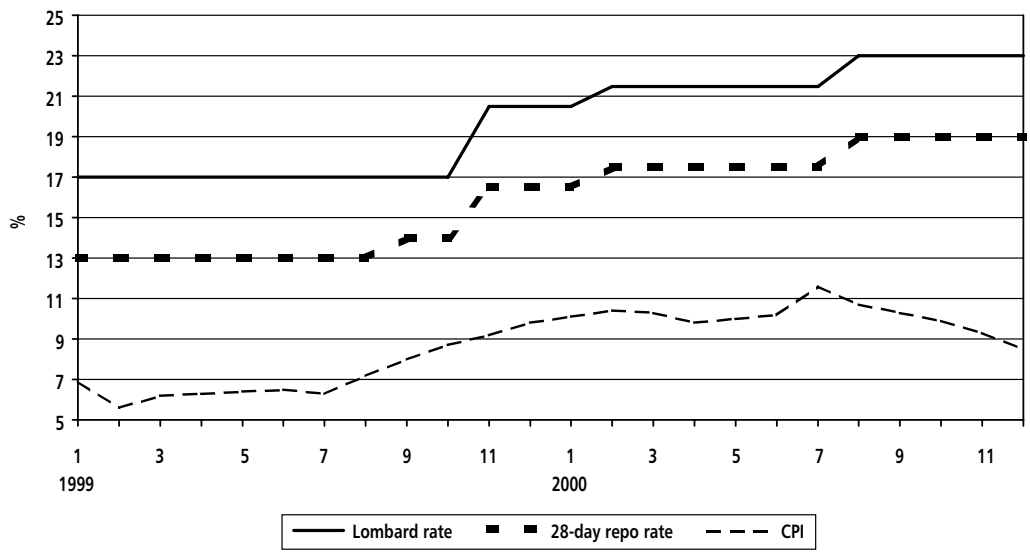
Together with the increase in interest rates, from 3Q00 problems began to develop with the policy-mix, i.e. with co-ordination of monetary and fiscal policy. The sequence of events was as follows. The late arrival of income from the TP SA privatisation in the middle of October 2000 forced the Ministry of Finance (and the NBP as its representative), at the end of September into short term (government issued 1-day and 2-week securities) and at higher-than-planned interest borrowing (18.5% versus 18.2%). The competition of Ministry of Finance and the NBP on the money markets became evident, when, at the end of September-beginning of October 2000, the NBP began to eliminate over-liquidity from the banking system, offering average yield on securities at 18.6% – higher than the market yield by about 0.5%. As a result, in 4Q00, the market interests rate stabilised at 18−20%. The continuing high cost of money on the domestic market then impacted on the decision of the Minister of Finance to sell collaterals, i.e., USA government zero-coupon bonds maturing in the years 2022−2023 and constituting a pledge for Brady bonds, used for the restructuring of Polish debt. The buying up of part of the Brady bonds (of US$943 billion) from foreign creditors also freed the pledge. On 8 January, the Ministry of Finance sold its US government bonds for US$439 billion, exchanging dollars for zlotys, which raised the liquidity of the banking system by about 1.8 billion zlotys. The exchange took place without the involvement of the monetary authorities (jointly the NBP and Ministry of Finance). Under the present law, they can only sterilise privatisation proceeds. In this way the efforts of the NBP in 2000 to limit over-liquidity in the banking system were almost entirely thwarted. At the end of January 2001, the Ministry of Finance also sold eurobonds to a value of US$750 million, of which US$500 million is devoted for current budget expenditures (increasing the liquidity of the banking system by more than 2 billion zlotys), and US$250 million to be deposited with the monetary authorities. Moreover, the Ministry now has the option of making use of the remaining collaterals in the amount of US$500 million.

The high interest rate maintained by NBP raises the cost of servicing the domestic debt. The budget situation is further worsened by the lower revenues caused by slower GDP growth as well as the building-up of fixed budget expenditure in 1Q01. This leads to the temptation to avoid the high costs of maintaining the financial solvency of the budget at the cost of zloty appreciation. With reference to the fall in privatisation proceeds in

2002 (see public finances), the likelihood of the budget turning to foreign sources of finance is still greater, moreover since the appreciation of the zloty also decreases the costs of repaying foreign debt.

Obtaining cheaper (the disparity between domestic and foreign interest rate is approximately 10%) funds for financing the budget deficit on foreign markets brings with it an appreciation pressure on the zloty as well as an

Chart 2.5. Monetary policy instruments, 1999–2000 (%)



Source: NBP and CSO.

Table 2.3. Components of the reserve money supply, 1998–2000 (cumulative % change)

		Reserve money (RM)	Net foreign assets (NFA)	Net domestic assets (NDA)	Net claims on government (NCG)	Claims on deposit money banks (CDMB)	Other items net (OIN)
1998	1Q	4.82	25.37	-7.00	-5.31	-1.69	-13.55
	2Q	17.54	36.32	-10.22	-8.74	-1.48	-8.56
	3Q	17.50	48.85	-4.39	-6.35	1.96	-26.94
	4Q	26.78	63.44	-0.90	2.95	-3.85	-35.75
1999	1Q	0.44	-0.78	-0.57	-0.50	-0.07	1.79
	2Q	10.20	14.07	1.54	2.10	-0.57	-5.42
	3Q	-13.94	6.15	-3.65	-2.79	-0.87	-16.45
	4Q	-1.57	18.50	-4.75	-3.71	-1.04	-15.34
2000	1Q	-14.44	1.03	-1.91	-1.57	-0.34	-13.56
	2Q	-1.83	-2.94	9.15	9.82	-0.67	-8.05
	3Q	-3.20	10.87	0.98	1.53	-0.55	-15.05
	4Q	-7.64	24.09	-9.93	-9.08	-0.85	-21.80

Source: The NBP Bulletin and authors' calculations.

Notes: The shares of components of reserve money are calculated using the following formula: $\Delta RM/RM_{-1} = \Delta NFA/ RM_{-1} + \Delta NCG/ RM_{-1} + \Delta CDMB/ RM_{-1} + \Delta OIN/ RM_{-1}$ cumulative in the current year. Net foreign assets were re-estimated (valuation adjustment) using the average exchange rate of the currency basket for a given period to account for fluctuations in the exchange rate of the zloty.

increase in NBP costs of sterilising incoming capital (higher interest rates). The appreciation of the zloty does however make it easier to reduce inflation, which is one of the NBP's priority targets. In "Monetary Policy Guidelines for the year 2001", the NBP defined its target for headline inflation at a range of 6–8% for the end of 2001, with the bias to the lower band of the range. The NBP also confirmed its determination in the achievement of a medium-term target for headline inflation of less than 4% at the end of 2003. After missing its inflation target for the second time in two years (at the end of December 2000, it amounted to 8.5% instead of 5.4–6.6%, and in 1999, 9.8% instead of 8.0–8.5%), the NBP now faces the need to give credence to its policy.

In spite of the increase of public sector debt in December, the reserve money supply fell in 4Q00 by 4.6%, and over the whole year by 7.6%. Such restrictive monetary policy was possible thanks to the decrease in domestic credit, both to the budget and financial sectors (see Table 2.3). In reality the impact of the net foreign assets on reserve money supply was stronger in 2000 than in the previous year – which results from both the increase of NBP foreign reserves and their valuation adjustment in respect of appreciation. Even though from the end of 1999, NBP reserves increased to US$27.5 billion, i.e. by barely US$150 million, from April (the lowest level for the last 24 months) the increase amounted to US$1.9 billion.

The banking system and broad money

The NBP has been aiming to lower reserve money since September 1999 and this began to bring effects in the form of restricting broad money supply on average by 15% annually in 2000 and to 11.7% in December. This level is in line with the GDP growth rate and the level of inflation. However, in 2001 given forecasts of GDP growth below 4% and headline inflation of about 7%, the NBP will have to further restrict broad money supply. As such, we predict that the central bank's assumptions of a rise in money supply of 40–46 billion zlotys will be too high.

The recent rise in interest rates impacted on the increase in savings in the banking system. From October 2000 household savings began to grow strongly, along-

Table 2.4. Components of broad money, 1998–2000 (cumulative %)

		Broad money (M2)	Net foreign assets (NFA)	Net domestic assets (NDA)	Net claims on government (NCG)	Claims on private sector (CPS)	Other items net (OIN)
1998	1Q	2.25	3.76	0.85	-2.85	3.70	-2.36
	2Q	8.97	4.79	5.25	-2.60	7.86	-1.08
	3Q	15.35	4.33	13.76	0.86	12.90	-2.74
	4Q	25.12	9.72	20.60	3.42	17.18	-5.20
1999	1Q	4.30	-0.53	5.74	1.18	4.55	-0.91
	2Q	7.01	2.35	9.59	1.77	7.82	-4.93
	3Q	11.42	2.45	13.19	0.14	13.06	-4.23
	4Q	19.36	6.43	18.45	1.51	16.94	-5.53
2000	1Q	-0.58	1.94	-0.54	-3.62	3.08	-1.98
	2Q	8.11	1.11	8.14	-2.30	10.44	-1.13
	3Q	6.48	3.66	8.12	-2.57	10.69	-5.29
	4Q	11.71	10.85	6.31	-5.23	11.54	-5.44

Source: The NBP Bulletin and authors' calculations.

Notes: The share of broad money components are calculated using the following formula: $\Delta M2/M2_{-1} = \Delta NFA/ M2_{-1} + \Delta NCG/ M2_{-1} + \Delta CPS/ M2_{-1} + \Delta OIN/ M2$, cumulative in the current year. Net foreign assets were re-estimated (valuation adjustment) using the average exchange rate of the currency basket for a give period to account for fluctuations of the exchange rate of the zloty.

side a shift in their structure from short-term to long-term, reaching over 154 billion zlotys (22% of GDP). At the same time the rate of household and corporate credits began to fall, reaching, respectively, 48.2 billion zlotys and 158 billion zlotys (totalling 206 billion zlotys). The high interest rate disparity did not lead to a significant growth in companies' foreign debt – in fact the opposite was the case - until November 2000 domestic firms' debt obligations fell US$1.5 billion, against the US$2.5 billion rise in debt for the same period of the previous year. Zloty exchange risk (see exchange rate) therefore determined the restrictions on foreign credit.

The interest rate disparity led, however, to net inflows of short-term capital, which in 2000 reached US$2.9 billion and were US$1.5 billion higher than in the same period of the preceding year. Capital inflows weakened in 3Q00, despite the light fall in inflation and improvements in macroeconomic indicators. Events surrounding the parliamentary reading of the Budget Act, the level of the budget deficit and the election of a new NBP president had the most decisive impact on investors. The capital and financial account in 2000 recorded surplus of US$7.9 billion, against US$8.3 billion in 1999. We estimate about US$800 million remained in the monetary authorities' accounts and this was used to cover foreign debt repayments from the end of 1Q00. For the whole of 2001 payments on foreign debts will reach about US$3.8 billion, that is, about 80% of privatisation proceeds may pass through the monetary authorities' accounts (in 200 this was about 35%).

In effect, the main component of broad money supply was the rise in net foreign assets, and not – as it had been in 2Q00 and 3Q00 (see Table 2.4) – domestic credit. Public sector debt was consistently reduced in 2000, reaching 50.9 billion zlotys. However, the December rise was high, at 4.5 billion zlotys. Until November 2000 there were no basic changes in appropriote allocations and local government budgets. December's rise in budgetary sector debt indicates a rise in liquidity problems, resulting from worsening macroeconomic indicators (see above).

Table 2.5. Calendar of the most important events in the monetary policy of the NBP in 2000

Source	Date of the resolution	Events
J. NBP No. 20	November 17, 1999	NBP rediscount rate 19% Lombard rate 20.5% Refinancing rate 20.5/21.5% 28-day repo rate at least 16.5%
J. NBP No. 21	November 19, 1999	Interest rate on NBP current deposits 6.15%
J. NBP No. 26	December 22, 1999	Amendment to the law on reserves due to bank insurance, in force on March 30, 2000
J NBP No. 1	February 23, 2000	NBP rediscount rate 20% Lombard rate 21.5% Refinancing rate 21.5/22.5% 28-day repo rate at least 17.5%
J NBP No. 2	February 25, 2000	Interest rate on NBP current deposits 6.45%
J NBP No. 6 and Monitor Polski No. 11/231 and 232	April 11, 2000	Abolition of crawling peg of the zloty and the permissible exchange rate fluctuation band
J NBP No. 13	August 30, 2000	NBP rediscount rate 21.5% Lombard rate 23.0% Refinancing rate 23.0/24.0% 28-day repo rate at least 19.0%
J NBP No. 14	September 4, 2000	Interest rate on NBP current deposits 6.9%
Monitor Polski No. 31	September 20, 2000	Release of the monetary policy guidelines for 2001, inflation target for end-2001 set at the rage of 6-8%

Source: Official Journal of the NBP, various issues. Authors' compilation.

Piotr Bujak, Mariusz Jarmużek

Financial markets

Interbank deposit market

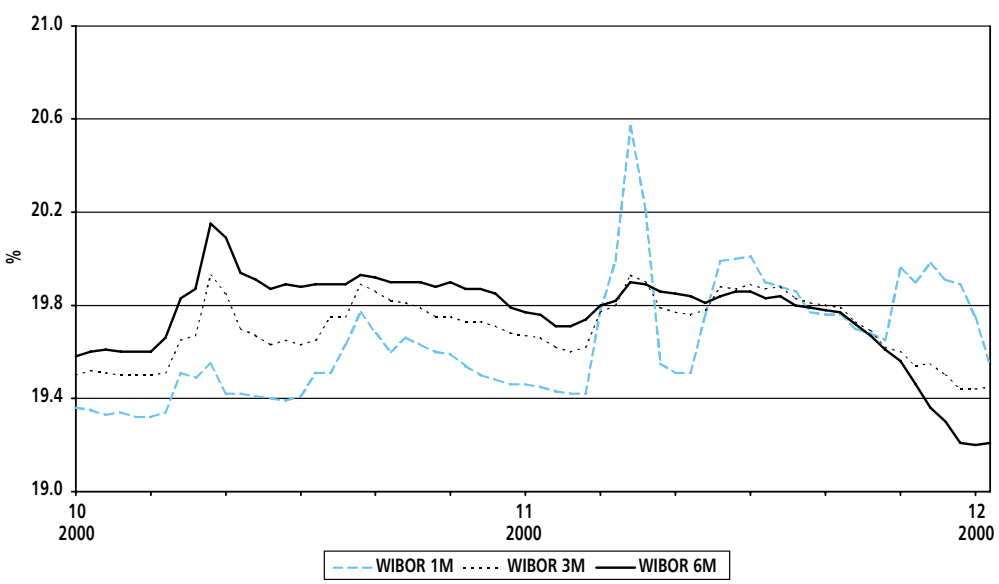
After the period of stable rates in the first ten days of October, the beginning of the next ten days recorded a strong increase in short-term interest rates related to disturbances on international markets and the outflow of capital from emerging economies. This forced the domestic banks to borrow funds on the interbank market in order to purchase foreign currency resold to foreign investors withdrawing from Poland, which was accompanied by an increased interest in Forward Rate Agreement (FRA) transactions, to which high inflation and changes in foreign exchange rate risk assessment after the publishing of the results of weaker autumn foreign trade also continued to contribute. However, publication of better inflation data in September than those expected by the banks caused a general change in investors' sentiment.

A return to the rates from the first ten days of October followed. The reversal of inflation expectations was mainly reflected in interest on the FRA transactions and deposits with long maturity (3 and 6 months). WIBOR rates remained stable until the middle of December, while the FRA transaction rates fell gradually over that period. The latter abruptly dropped after the meeting of the MPC on 20 December. Recognising falling inflation in October and November, the MPC announced a change in its bias from restrictive to neutral. At that time the interest rates of deposits in the interbank market were also falling.

Treasury bills and bonds market

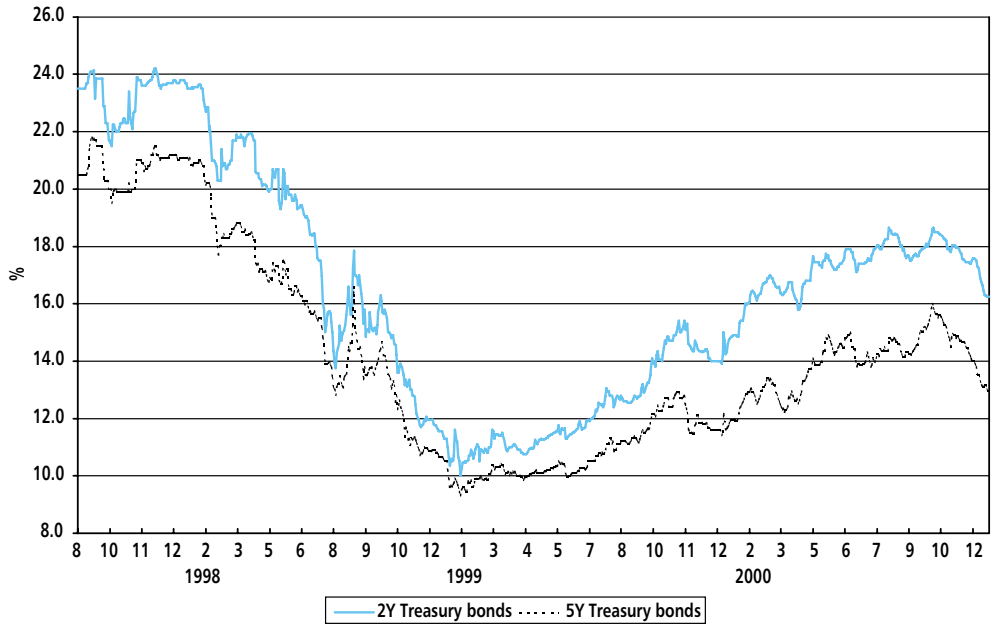
After the publication on 2 October of unfavourable data on the current account deficit and outflow of capital from emerging markets in the event of turmoil on international financial markets, bond prices dropped. Despite the fact that yields achieved a decent level only in the first ten days of October, the prices of bonds did not stop falling until hitting a their low on 12 and 13 October. This situation resulted from investors' conviction that the NBP would conduct a restrictive monetary policy longer that was earlier assumed, i.e. that the cuts in interest rates and execution of related profits would be prolonged. Therefore, foreign investors began to worry about further weakening of the zloty, which would deep-

Chart 2.6. WIBOR in 4Q00 (daily quotations)



Source: NBP.

Chart 2.7. 2Y and 5Y treasury bonds, 1997–2000 (daily quotations)



Source: NBP.

en their capital losses and they closed positions. Foreign investors' sentiments improved after the publication of data confirming a further fall in inflation in September and other favourable data concerning the current account deficit, which reduced risk to such an extent that they were no longer afraid of a significant fall in the zloty. Moreover, during the turmoil in Turkey at the turn of November and December, foreign investors started to close positions and transfer funds to more stable countries from the emerging economies group. As a result, the demand for Polish bonds went up along with their prices. Further reduction in the yield on bonds took place after the publication of favourable inflation figure for November and foreign trade data for October. This was combined with further expectations regarding equally good data published in January and the strengthening of investors' belief that they could encourage MPC into a quicker reduction in official interest rates.

Center for Social
and Economic Research

Outlook for the economy for 2001 and 2002

Andrzej Bratkowski

Higher – but much slower

The direct cause of the economy's rapid downward course last year is still active – very high interest rates. Admittedly they will shortly start to fall, but this fall will not be great and its effects will only be clearly felt in the second half of the year. The strong appreciation of the zloty means that exports – the single strongest factor driving the economy in recent months – will now rise less fast. The structural underpinnings of our public finance weakness have not gone away. Inflows of foreign capital will therefore continue above all else to finance budgetary expenditures – and artificially appreciate the zloty – while not increasing the productive capacity of Polish companies. Together with the worsening of the US economy and some slowdown in the EU, the favourable external situation will begin to weaken gradually. So, are we on the verge of a recession?

We believe not. The current slowdown in economic growth is the price to pay for shifting to a different path of growth. That path along which the economy travelled in the 1990's has become a little too dangerous: the current account deficit in the balance of payments rose too fast and inflationary expectations were too high. Restrictive monetary policy, greater flexibility of the exchange rate and restructuring of the least efficient branches of the economy cooled domestic demand down and caused a rise in unemployment – though at the same time strengthened the economy's fundamentals. That was a difficult point, through there are reasons to believe that the economy is straightening up. Inflation and the foreign trade deficit are lower, profitability in the manufacturing sector improved and savings grew.

Thanks to this there will be another chance to reawaken consumer demand: growth of nominal pay in the enterprise sector is stabilising and lower inflation will allow for real growth. An additional factor strengthening consumer demand will be compensation in social benefits due to higher inflation last year. The growth in consumer demand would initially be modest enough for continued operation of the "crowding out " effect boosting exports. This is why despite the strengthening of the zloty in the first half of 2001exports will still rise faster than imports – net exports will still be the driving force of growth, though its strength will start to disappear gradually. From March we expect modest cuts in interest rates by the NBP which will be clearly felt only in the second half of the year: investment will gain momentum and wages and salaries growth will accelerate. The economy will get back on to the path of relatively high growth and in 2002 this will fasten.

However, the rate of growth will not be as strong as in the second half of the 1990's. Slower growth in 2001 than assumed in the budget act will increase the imbalances in public finance. This, as well as domestic demand will slow disinflation and lead to a further rise in imports and – not much later – also to lower export growth. Such a situation will oblige the NBP to retain its restrictive monetary policy (although less than at present). The

Table 3.1 Main macroeconomic indicators, 1996–2002

							forecast		*forecast*			
									2001			
		1996	1997	1998	1999	2000	*2001*	*2002*	*1Q01*	*2Q01*	*3Q01*	*4Q01*
Baseline scenario												
GDP	% growth	6.0	6.8	4.8	4.1	4.0	*3.0*	*4.3*	*2.5*	*2.7*	*3.0*	*3.6*
Domestic demand	% growth	9.7	9.2	6.4	4.9	2.4	*2.8*	*5.0*	*1.1*	*2.2*	*3.2*	*4.2*
Budget deficit	% of GDP	-2.4	-1.3	-2.4	-2.0	-2.2	*-3.2*	*-2.6*	*-6.1*	*-3.7*	*-2.8*	*-1.0*
Unemployment rate	%	13.2	10.3	10.4	13.0	15.0	*15.4*	*15.1*	*16.4*	*15.9*	*15.2*	*15.4*
Balance on current account	% of GDP	-0.9	-3.0	-4.3	-7.5	-6.2	*-5.4*	*-6.6*	*-5.2*	*-4.0*	*-5.6*	*-6.7*
Balance on merchandise trade	US$ billion	-8.2	-11.3	-13.7	-14.4	-13.1	*-13.9*	*-16.4*	*-2.9*	*-2.7*	*-3.7*	*-4.6*
M2	PLN billion	134.8	176.4	220.8	263.5	294.4	*335.5*	*372.6*	*302.1*	*313.3*	*319.4*	*335.5*
CPI	%	19.9	14.9	11.8	7.3	10.1	*6.7*	*5.8*	*7.6*	*7.2*	*6.1*	*5.8*
Exchange rate against US$	zloty/US$	2.7	3.3	3.5	4.0	4.3	*4.3*	*4.4*	*4.16*	*4.28*	*4.38*	*4.38*
Exchange rate against euro	zloty/euro				4.2	4.0	*4.3*	*4.5*	*3.95*	*4.30*	*4.44*	*4.41*
Lombard rate	%	25.0	27.0	20.0	17.9	23.0	*19.0*	*17.0*	*21.0*	*21.0*	*21.0*	*19.0*
Alternative scenario												
GDP	% growth						*-0.2*	*2.4*	*0.3*	*-1.2*	*-0.7*	*0.5*
Domestic demand	% growth						*-3.2*	*-2.3*	*-2.5*	*-3.9*	*-5.5*	*-4.8*
Budget deficit	% of GDP						*-4.0*	*-3.8*	*-6.8*	*-4.5*	*-3.0*	*-1.5*
Unemployment rate	%						*17.0*	*16.5*	*16.9*	*17.5*	*17.2*	*17.0*
Balance on current account	% of GDP						*-4.4*	*-4.0*	*-4.5*	*-3.9*	*-4.5*	*-4.8*
Balance on merchandise trade	US$ billion						*-11.0*	*-9.7*	*-2.5*	*-2.5*	*-2.9*	*-3.2*
M2	PLN billion						*323.7*	*359.1*	*291.4*	*302.2*	*308.1*	*323.7*
CPI	%						*6.2*	*7.1*	*7.1*	*5.7*	*5.9*	*5.9*
Exchange rate against US$	zloty/US$						*4.5*	*5.0*	*4.2*	*4.5*	*4.7*	*4.7*
Exchange rate against euro	zloty/euro						*4.7*	*5.2*	*4.0*	*4.7*	*5.1*	*5.0*
Lombard rate	%						*16.0*	*17.5*	*21.0*	*19.0*	*16.0*	*16.0*

Source: CSO, NBP, and CASE.

reduction of the probability of recession, interest rates higher than in other countries and budget borrowing requirements will continue to attract the inflow of foreign capital. It is necessary to remember, however, that even despite the improvement in the foreign trade balance the deficit on the current account of the balance of payments will remain high. This fact, as well as the slowing of the privatisation process will mean that in the next 2–3 years growth of foreign investment will not be as high as it has been in recent years. Due to this the zloty will appreciate so strongly that – combined with lower external demand – net exports next year will cease to be the main driving force of growth. However the role of foreign capital as an accelerator of consumption will be significantly lower that in the past.

One cannot also completely rule out that the turn the economy is currently taking may get sharper and the recovery will be delayed. We describe such a situation in the alternative scenario, which, however, we think will be significantly less probable. In our view, even in this pessimistic variant the floor of this fall is not very deep: one could then talk of temporary stagnation and not recession. We want one more time to emphasise that the current difficulties are not only a little stumble, after which the economy moves back on its upward path at the old speed. The present weakness of public finances, inflexible labour market and floating exchange rate, every strong speeding of economic growth carries with it the risk of losing macroeconomic equilibrium. We assume that economic policy will take this fact into consideration – which is why in the next few years we expect slower economic growth. This conviction underlies the following forecasts.

Łukasz Rawdanowicz

External conditions[1)]

- **US recession looms over the global economic outlook**
- **Slower global growth in 2001**
- **The euro-zone will continue to grow though at a slower pace**

The development of the situation in the US is the main concern for the global economic outlook. The question now is whether the slowdown already seen in US data, will have a soft- or a hard-landing and what the consequences for the global economy will be. It should be stressed that a slowdown in the US is inevitable and the economy needs to reduce its ever increasingly imbalances. It would thus appear that the new economy paradigm heralded by many economists is not working as expected.

The American Federal Open Market Committee unexpectedly cut the federal funds interest rates by 50 basis points on 3 January 2001 and then by a further 50 basis points down to 5.5% on 31 January 2001. The cuts were determined by concerns about a possible recession in the US. On the back of mounting evidence of a slowdown and contained consumer prices the FOMC is set to continue easing over the year. However, an aggressive lowering of interest rates could be very difficult to administer if the dollar falls significantly fuelling inflation via higher import prices. Most investment banks forecast the federal funds rate to go down to 5–4.75% by mid-year.

In our base-line scenario we do not forecast a recession in the US, though there will be a slowdown in 2001 and this will have a cooling effect on the global economy. This process already started in the second half of 2000 due to high oil prices and the monetary tightening pursued in 2000. Along with slower growth, world trade flow volumes should moderate. Given the forward-looking attitude to monetary policies in developed economies and the apparent cyclical nature of the slowdown, interest rates will be cut in the course of the year. We forecast oil prices to settle at a more moderate level than in the previous year. This factor, coupled with stronger competition and slower growth will make inflation in most economies benign. If monetary easing feeds in, some re-acceleration in economic growth at the end of the year and in 2002 will be seen.

There is no doubt that the downturn in the US is going to affect the rest of the world given the key trade and financial links it has with other economies and the fact that the US makes up over 30% of the global economy. Among those adversely affected will be, first of all,

1) More information on the current situation and forecasts on the global economy can be found in our English-language publication **Global Economy** – http://www.case.com.pl/pgtop/pgtopge.html

Table 3.2. GDP in selected countries, 1997–2002 (% change, yoy)

	1997	1998	1999	2000e	*2001f*	*2002f*
Global	4.1	2.6	3.4	4.1	*2.7*	*3.5*
OECD	3.4	2.7	3.0	3.7	*2.3*	*3.0*
USA	4.4	4.4	4.2	5.1	*2.6*	*3.0*
Canada	4.4	3.3	4.5	5.0	*2.8*	*2.6*
Japan	1.6	-2.5	0.2	1.3	*1.2*	*2.0*
European Union	2.6	2.7	2.4	3.3	*2.8*	*3.4*
Germany	1.4	2.1	1.6	3.1	*2.7*	*3.2*
France	2.0	3.2	2.9	3.1	*3.0*	*3.3*
Italy	1.8	1.5	1.4	2.6	*2.6*	*3.3*
United Kingdom	3.5	2.6	2.1	3.1	*2.6*	*2.9*
Russia	0.9	-4.9	3.2	7.5	*4.5*	*3.3*
China	8.8	7.8	7.1	8.0	*7.5*	*7.0*

Source: IMF and forecast derived from the McFair model devised at Yale University.
Notes: e – estimates, f – forecasts.

the main exporters to American markets, i.e. Canada, Mexico, and Latin America. However, the latter will benefit from expected Fed easing as the interest on their foreign debt will be lower.

Asian emerging markets are also likely to be hit by the lower demand in the US for high-tech goods which will result from lower investment. 2001 may be a real test of the substance of the recovery of the emerging Asian economies after the financial crises. Weaker external demand (also on a par with Japan) may reveal unsolved structural weaknesses as has already happened in the case of Korea.

The EU seems to be affected by the US slowdown to a lesser extent as the importance of exports for growth is historically not that high. However, undoubtedly slower global growth will affect GDP growth potential in the EU. It should be underlined that countries with greater exposure to American markets, like Germany and the UK, will experience a greater drag.

The preliminary 3Q00 figure for GDP growth in the euro-zone stood at 3.4% yoy and in the EU at 3.3%. Consumer spending was particularly low, which could probably be attributed to high oil prices, whereas investment was robust. 4Q00 is expected to record a slightly lower growth rate. As domestic demand should gain steam this year (tax reform and higher employment), its contribution will be higher than in 2000. Exports are expected to grow at a slightly slower pace due to the stronger euro and weaker external demand.

The latest provisional GDP figure in Germany indicates 3.1% growth in 2000. It is a significant improvement on 1999 (1.9%) and a record high since 1991. Exports and investment were the main driving forces. But the real sector is sending mixed signals. On the one hand, manufacturing orders in November surprised on the upside and increased by 6% on an annual rate, but on the other hand, the Ifo business climate survey dropped in December (for the sixth consecutive month) down to 96.5. Both components (current situation and business expectations) were down, which may point to lower activity in the euro-zone in 1Q01.

The largest economies of the CEFTA will continue to gain on the strong performance in the EU. Also, the expected appreciation of the euro will add to the stronger export stimulus there. After 3 years of recession the Czech Republic recorded GDP growth estimated at 2.5–2.8% in 2000 driven mainly by private consumption and investment. This year and in 2002 growth is expected to accelerate even further. The huge budget deficit that could also be very high this year remains the biggest threat to macroeconomic stability.

Taking into account OPEC's decision on the latest production cut and the cold weather in the US, we anticipate the Brent oil price to settle in the range US$23–US$27 in 1Q01. Prices may drop in 2Q01 due to lower demand and a possible increase in non-OPEC oil production. In 2002 oil prices are expected to ease further since the projection of increases in production capacity exceeds the projected growth of demand.

Given the forecast of lower oil prices, Russia and Latin American oil-exporting countries will experience significantly poorer terms of trade as compared to last year. This will impose key strains on these economies, testing their states of health and their susceptibility to adverse external factors. In the case of Russia lower revenues from oil have brought the debt issue back onto the agenda. Lower oil price and continued real appreciation of the rouble are likely to result in a significant reduction of the massive trade and current account surpluses in Russia in 2001, though they will remain at a very high level. We expect a further broadening of the growth profile with investment expansion and a gradual recovery of household demand becoming the key growth engines. The currently very high contribution of net exports is expected to go down, but will remain significant.

Lower energy prices all over the world, expected this year, and possibly slower growth will help to contain prices. In this situation inflation in developed economies will be lower than in 2000 and the disinflation process in European transition economies will be resumed.

Table 3.3. CPI in selected countries, 1997–2002 (% change, yoy)

	1997	1998	1999	2000e	*2001f*	*2002f*
OECD	2.0	1.1	1.4	2.2	*1.6*	*1.3*
USA	2.3	1.6	2.2	3.4	*2.2*	*2.1*
Canada	1.4	1.0	1.7	2.7	*2.1*	*2.0*
Japan	1.7	0.6	-0.3	-0.6	*-0.4*	*-0.3*
European Union	1.8	1.4	1.3	2.3	*1.7*	*1.0*
Germany	1.5	0.6	0.7	1.7	*1.2*	*0.9*
France	1.3	0.7	0.6	1.7	*1.3*	*0.8*
Italy	1.7	1.7	1.7	2.5	*2.0*	*1.3*
United Kingdom	2.8	2.7	2.3	2.1	*2.2*	*2.0*
Russia	14.7	27.7	85.9	20.2	*16.0*	*13.0*
China	2.8	-0.8	-1.4	0.5	*0.7*	*1.0*

Source: IMF and forecast derived from the McFair model devised at Yale University.
Notes: e – estimates, f – forecasts.

Table 3.4. Long-term interest rates in selected countries, 1997–2002 (%)

	1997	1998	1999	2000	*2001f*	*2002f*
USA	6.3	5.3	5.7	6.1	*4.8*	*5.0*
Canada	6.1	5.3	5.5	5.9	*5.0*	*5.0*
Japan	2.3	1.5	1.8	1.7	*1.4*	*1.3*
Euro area	5.7	4.7	4.6	5.4	*5.0*	*5.0*
United Kingdom	7.0	5.5	5.0	5.3	*4.8*	*5.0*
LIBOR (US$/year)	5.9	4.8	5.4	6.5	*5.3*	*5.3*

Source: IMF and forecast derived from the McFair model devised at Yale University.
Notes: f – forecasts.

Table 3.5. Dollar exchange rate vs. the euro and the yen, 1997–2002

	1997	1998	1999	2000	*2001f*	*2002f*
Euro		1.11	1.07	0.92	*1.00*	*1.03*
Yen	121.0	130.9	113.9	108	*114*	*120*

Source: IMF and forecast derived from the McFair model devised at Yale University.
Notes: 1. f – forecasts.
2. Annual averages.

The slowdown in the US, narrowing interest rate disparities between the US and the euro-zone (in favour of the latter due to faster monetary easing in the former), and a possible correction in American stock markets will affect the direction of capital flows. Smaller inflows to the US are expected and as a consequence the dollar will lose grounds against the euro. However, the strengthening of the euro will not be that great and the average exchange rate will be around parity in 2001. If the Fed's aggressive easing take its toll at the end of the year (given the 2–3 quarter lag) and growth in the US accelerates then the appreciation of the euro could be halted.

By and large 2001 will see slower global growth accompanied by a change in economic leadership of the global economy from the US to the EU. The pace and depth of these changes hinge primarily on developments in the US economy.

The external situation in 2001 will be favourable for the Polish economy, though external demand from the EU will be weaker. A light slowdown in economic activity in the EU will be to a certain extent compensated by price factors (expected strengthening of the euro against the dollar) and maintained good economic conditions in Russia and our southern neighbours. Moreover, the lower price of oil will facilitate disinflation.

Finally, it should be noted that the odds on a recession cannot be ruled out entirely. The main threat to the hard-landing scenario are developments on the stock exchanges. If there is a sharp correction, then domestic demand (household consumption and investment demand) will collapse. Consequently, the spillovers onto the rest of the world via trade links would be much more severe than in the baseline scenario. In addition, a stock market correction would lead to a world-wide capital squeeze that would limit FDI and portfolio capital inflows to emerging markets, thus aggravating their investment possibilities. Therefore, global growth would fall significantly and a recovery would start only in 2002.

Anna Myślińska, Łukasz Rawdanowicz

Economic growth

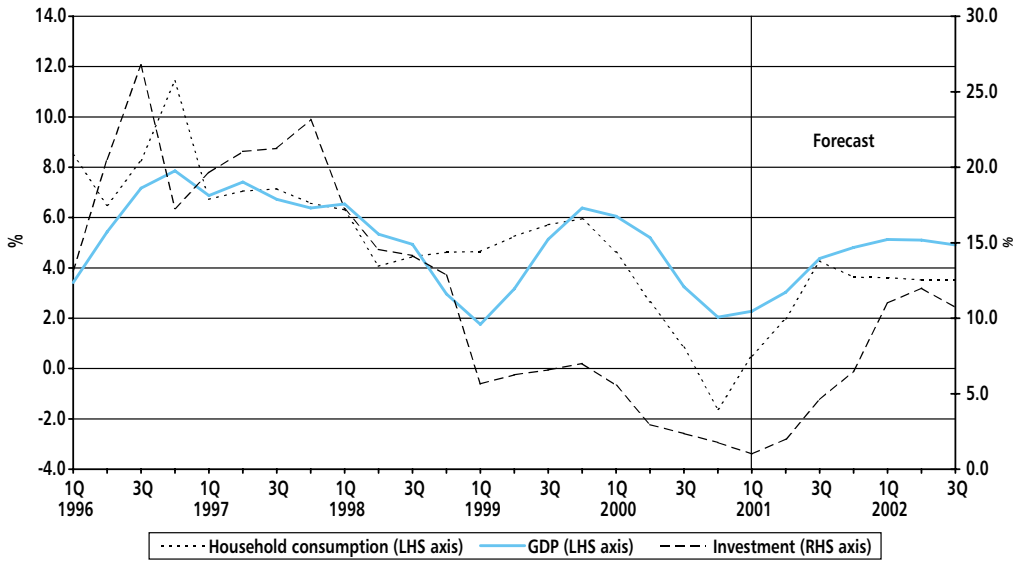
- **Slower growth in 2001**
- **Continued weak domestic demand**
- **Investment speeds up GDP growth in 2002**

In comparison to the previous issue of PEO we have significantly revised downward our growth forecasts for 2001–2002 – from 5.5% and 5.8% to 3.0 and 4.3% respectively. This revision on one hand results from lower growth estimates for 2000, and on the other hand, the lack of visible factors that would indicate as strong revival in domestic demand this year and in 2002 as we predicted earlier. Despite expectations of cuts in interest rates, they will remain high in real terms hampering any boost in economic activity.

Growth of consumption will accelerate benignly in line with the predicted rise in real incomes. Incomes will not however see as high growth as before the Russian crisis. Above all, high unemployment and poor performance of the industry sector will effectively limit the rise in wages and salaries in the enterprise sector. Social benefits may experience faster growth on the back of lower inflation than assumed in the budget act, and compensation: due to lower social benefits last year and forced labour in world war II (paid by Germans).

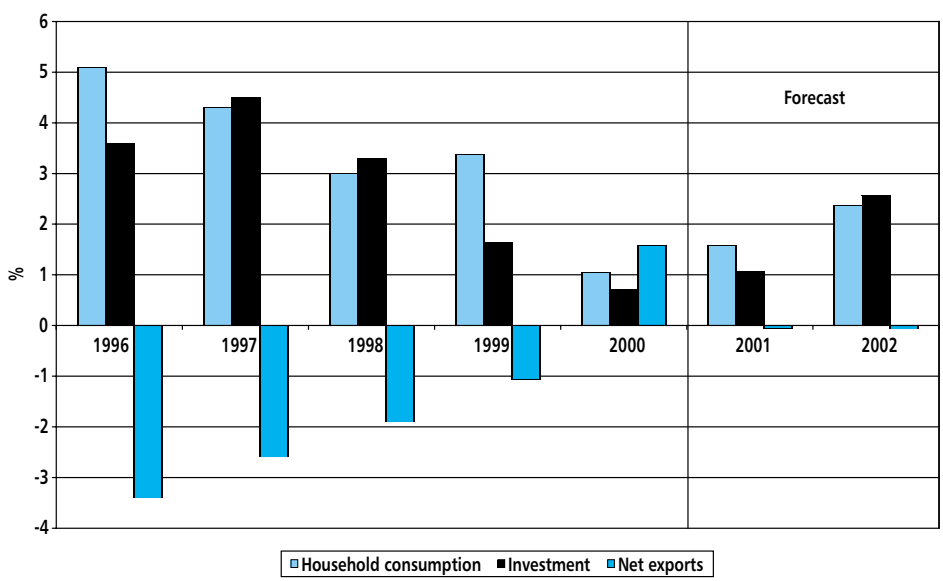
Along with the improvement in domestic economic activity and lower interest rates one should expect high-

Chart 3.1. GDP, domestic demand and investment, 1996–2002 (% change, yoy)



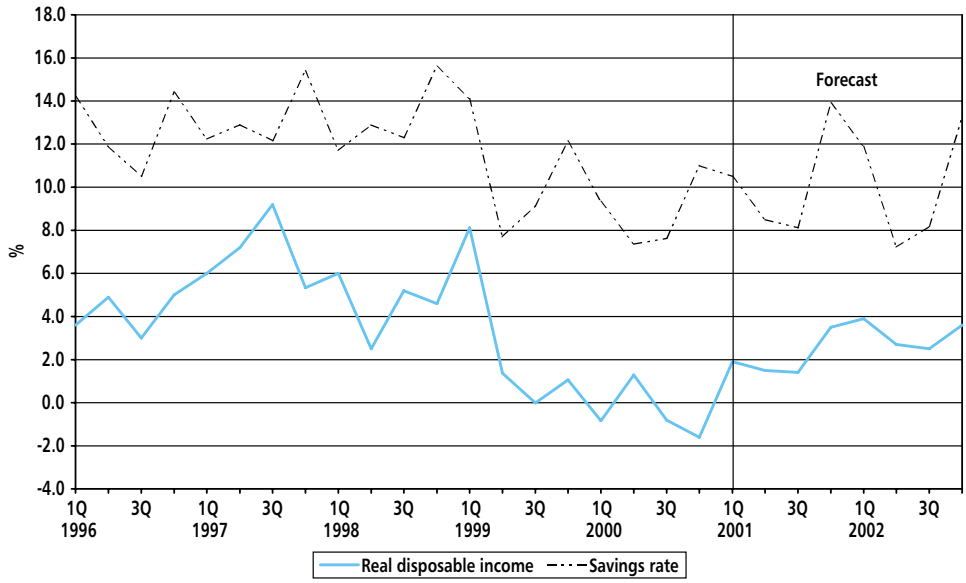
Source: CSO and CASE.
Notes: CASE forecasts starting from 1Q01.

Chart 3.2. Contribution to GDP growth, 1996–2002 (%)



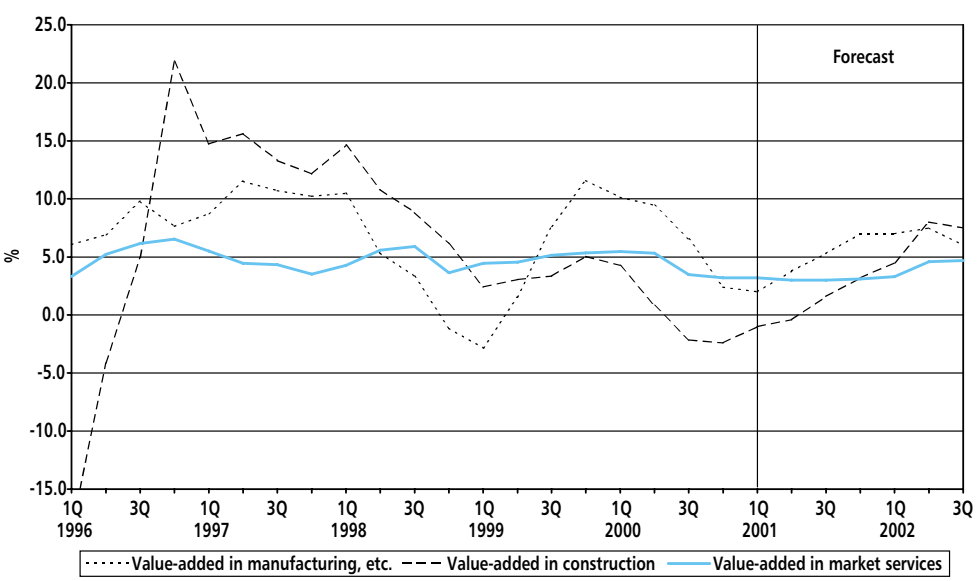
Source: CSO and CASE.
Notes: CASE forecasts starting from 1Q01.

Chart 3.3. Change in household real disposable income and savings rate, 1996–2000 (%)



Source: CSO and CASE.
Notes: CASE forecasts starting from 1Q01.

Chart 3.4. Value-added in major sectors of the economy, 1996–2002 (% change, yoy)



Source: CSO and CASE.
Notes: CASE forecasts starting from 1Q01.

er investment growth in the second half of 2001 and in 2002. Taking into account weaker exports – due to weaker foreign demand – household consumption and investment will be main driving forces of GDP growth. The contribution of investment to growth will be especially high in 2002.

Value-added

Weaker domestic economic activity will dampen value-added growth in industry as well as in services. Due to lower domestic demand (about 70% of output is sold on the domestic market) industrial production will grow at a slower pace in 2001, despite high growth of exports. A similar pattern will be observed in the case of market services, with growth slowing, though to a lesser extent.

In the light of lower investment demand and high real interest rates, growth of value-added in construction will be possible only in the second half of 2001, and only 2002 will see a marked improvement – value-added will grow then by 7.5%.

If there are no abnormal weather conditions, it is reasonable to forecast an improvement in the agriculture sector, especially after two years of decline in the value added in this sector. We predict especially high growth for this year. however, it should be noted that to a large extent this is due to a low base effect.

External sector

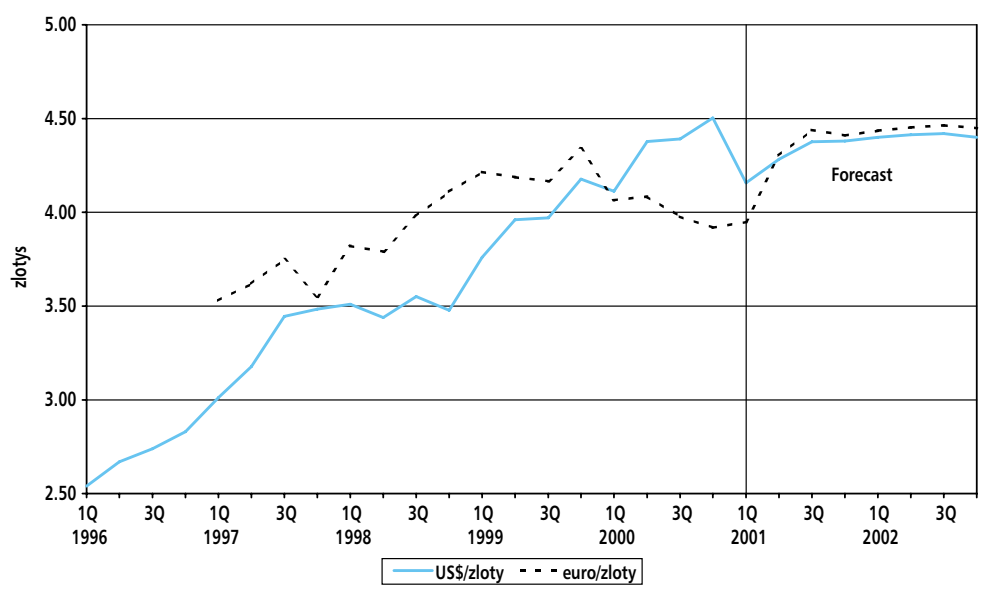
- **Further improvements in the trade and current account deficits in 2001**
- **Lower foreign capital inflows**

Rafał Antczak

Exchange rate

Problems with co-ordinating monetary and fiscal policies (see monetary policy) will cause both NBP and market interest rates to remain at a high level. This in turn will lead to inflows of foreign capital. In addition, the zloty will appreciate due to the Ministry of Finance's strategy of financing the budget deficit with foreign currencies sources. On top of this, the weakening of momentum in the US in comparison to the EU will stabilise, at least in the first half of the year, the euro exchange rate against the dollar at 0.90–0.95. This will benefit Polish exports and increase confidence in the zloty. The very strong

Chart 3.5. Basic exchange rates, 1996–2002 (in zlotys)



Source: NBP and CASE.
Notes: CASE forecasts starting from 1Q01.

appreciation of the zloty at the turn of 2000 and 2001should be treated as a short-term effect of improved macroeconomic indicators. Therefore, we believe that in 2Q01 the zloty will weaken slightly. In the following quarters macroeconomic variables will have an asymmetrical influence on investors' perceptions of the Polish economy. The first half of 2001 will see gradual disinflation and the lower current account deficit coupled with slower economic growth, whereas the second half of the year and 2002 will witness faster growth, but slower disinflation and a worsening of the current account deficit (on the back of revival of domestic demand). By and large, we forecast a stable nominal exchange rate of the zloty which means modest real appreciation.

Łukasz Rawdanowicz

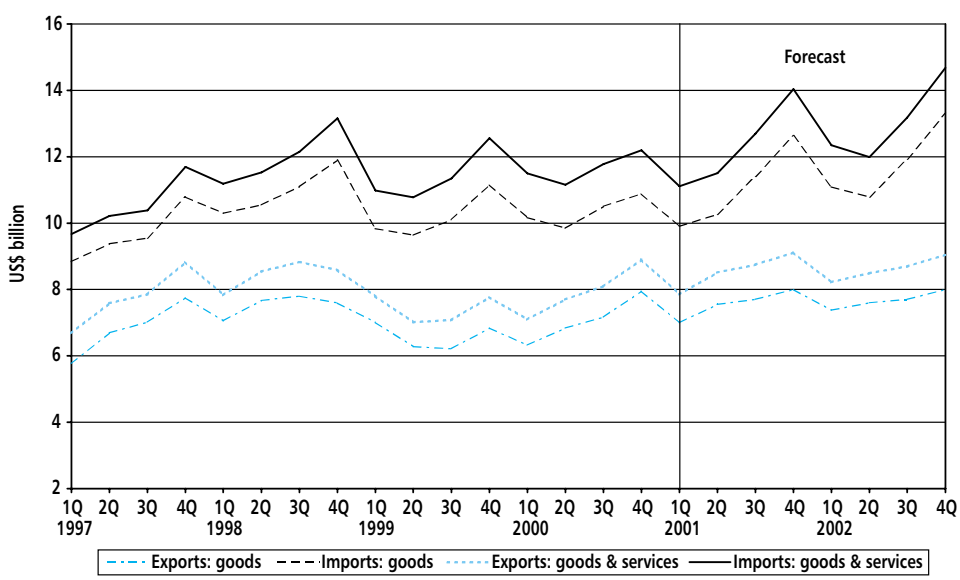
Foreign trade and the balance of payments

We predict that nominal exports (according to NBP data) will grow in the forthcoming quarters despite a slower rate of growth in the EU. Growth in the EU, though weaker than in 2000 will still be strong. Moreover, the expected strengthening of the euro against the zloty and the dollar in the course of this year may boost import demand in the EU. However, it is important not to overestimate this effect, as the elasticity of import demand against the exchange rate is usually low and works with a certain lag. We also expect increased exports to the eastern markets. For the whole of 2001 exports will amount to US$32 million.

The slower economic activity and the modest rise in household incomes will make imports (in the balance of payments account) grow benignly in the next few quarters, remaining just over US$10 billion. With total imports reaching US$45.2 billion in 2001 the trade deficit will amount to US$13.2 billion.

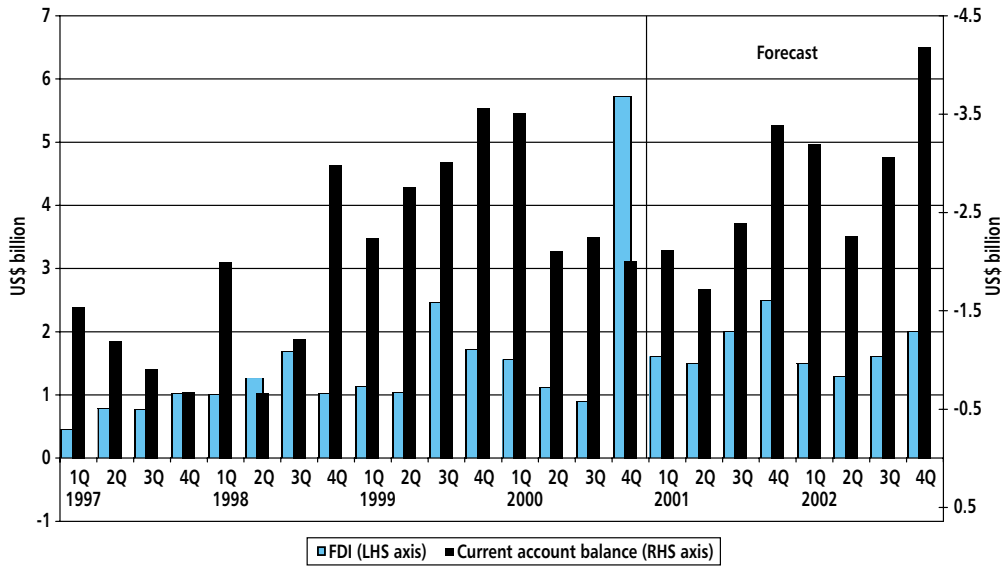
Thanks to the lower trade deficit the current account will improve. A slightly higher surplus on unclassified current transactions will also contribute to this. In 2001 the current account deficit will fall to -5.4% of GDP. Consequently, net inflows of foreign capital will also be lower. On the one hand, foreign debt payments will rise, and on the other, along with the end of privatisation of "large enterprises" lower inflows of FDI should be expected. Further shrinking of FDI will be seen in 2002. But in the years thereafter we expect significant "greenfield" investment inflows. Negotiations with the EU and the timetable for Poland's accession to the EU will be the key determinant of these inflows.

Chart 3.6. Exports and imports, 1997–2002 (US$ billion)



Source: NBP and CASE.
Notes: CASE forecasts starting from 1Q01.

Chart 3.7. Net FDI and current account balance, 1997–2002 (US$ billion)



Source: NBP and CASE.
Notes: CASE forecasts starting from 1Q01.

On the side of the capital account, we predict changes in its structure. The share of portfolio capital will increase at the cost of the share of FDI.

Finally it should be noted that there is some downside risk to our forecast of an improvement in the current account deficit. If we assume that the NBP will not intervene on the money market and that along with fundamental macroeconomic improvements FDI and portfolio capital inflows will hold at a high level and that privatisation proceeds will not be placed with the sterilisation accounts – the zloty will appreciate strongly. This would inevitably lead to a worsening of the current account deficit. However – in the light of the forecasted lower foreign direct investment – the likelihood of such a scenario is not great.

Małgorzata Markiewicz, Artur Radziwiłł

Public finance

- **Overestimated tax revenues for 2001**
- **Dangerous increase in economic deficit**

The budget for 2001 included wide-ranging activity aimed at increasing revenues and tightening the system (for example, raising VAT on construction materials and services and changes in farmers' social insurance contributions). Some of the proposed changes were rejected by Parliament, which meant changes to the budget. Moreover revenues from the sale of UMTS licenses earmarked for education led to an increase in the planned economic deficit in 2001 from 1.6% of GDP to 1.8% of GDP. Overestimated budgetary revenues may also have a negative impact on fiscal policy in 2001, as they did in 2000. The government's corrections to the budget made the macroeconomic assumptions more realistic, although we still think the 4.5% growth for 2001 on which they are based is unrealistic. This indicates that the central budget deficit may be higher than planned by even as much as 3 billion zlotys. Higher tax revenues in the budget are also doubtful. In the context of weak growth in domestic demand in 2001, the corrected predictions of higher revenues from direct taxation of close to 19% are completely unrealistic. If budgetary revenues turn out to be lower than expected the budget deficit will be seriously threatened – all the more so as the 2001 budget may be reduced by unrealised expenditures hanging over from 4Q00. More (in practise irreclaimable) credits for

Regional Health Funds can also not be ruled out. Parliament's decision to raise health insurance contributions from 7.5% to 7.75% and its decision to enter into direct negotiations with nurses have set a precedent which could lead to destruction of financial discipline in the Regional Health Funds.

Mateusz Walewski

Labour market

- **The scope of government plans of changing the labour law is too modest**
- **Unemployment to stay at a high level for next two years**

In response to the rapid growth in unemployment the government prepared a series of proposals to change the labour law. They can be divided into two groups: those reducing labour market rigidities (and thanks to this making a rise in employment and a decline in the unemployment rate more likely) and those designed to alleviate the negative effects of unemployment.

In the first group we would include above all the proposition to make it easier for employers to manage human resources and in turn reduce labour costs: an increase in the number of allowed overtime hours, a return to unlimited contracts for specified periods, raising thresholds on levels of employment that required labour codes, and also a gradual cutting of employers' obligations to pay employees during periods when they cannot work. These propositions appear to be directed mainly at small and medium-size enterprises that will in the nearest future create employment.

The second group includes, amongst other things, increased expenditures on so-called active anti-unemployment programmes and also plans to set up of a network of both state and private labour offices. This activity will above all reduce the average period of unemployment by preserving contacts between the unemployed and the labour market.

The projected changes will certainly not have an effect on the labour market this year. In our view neither of them will they induce radical improvements in 2002. The government's proposals are modest and will not lead – though will undoubtedly in the longer-term – to fundamental reductions in labour market inflexibility (for example, differentiation of minimum pay dependent on status and region). Moreover, it is not certain that the Sejm, dominated by trade union representatives, will accept even these modest governmental proposals.

In the coming year it will not be possible to count on fundamental improvements in the labour market. Three main factors determine this. First, lower GDP growth leading to continued falls in labour demand. Second, the restructuring processes – stemming from the government's measures aimed at healing selected branches of industry as well from the necessary redirection from the domestic market to the more demanding world markets – especially in the face of the zloty's appreciation. The third element increasing labour market tensions is the on-going influx of baby-boomers onto the market until 2005. It cannot be expected that these factors will ease as compared to 2000. Thus, we expect unemployment to rise further in 2001 and stabilise only in 2002.

Mariusz Jarmużek

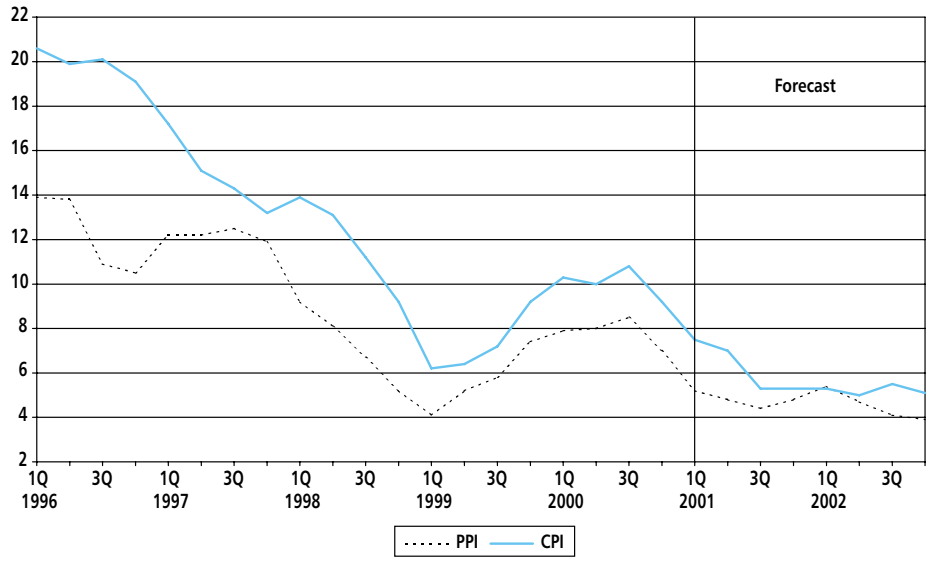
Prices

- **Higher harvest will dampen growth of foodstuff prices**
- **Weak domestic demand, a strong zloty and lower oil prices will foster disinflation**

In 2001 we expect to see a continued reduction in the CPI – up to 5.9% by year-end – with annual average rises of 6.6%. The PPI will follow suit, growing 5.8% and 4.9%, respectively.

In 2001 we predict a lower growth in the foodstuff price on the back of a smaller rise in the price of cereal products and meat. The former should not rise significantly as the government decided in January 2001 to import additional quotas of grains – and if it turns out to be insufficient, the strong zloty will make imports

Chart 3.8. CPI and PPI, 1996–2002 (% change, yoy)



Source: NBP and CASE.
Notes: CASE forecasts starting from 1Q01.

cheaper. It is important, however, to remember that the harvest in 2000 was 13.2% less than in 1999, and that in the face of the weakening of the zloty could cause a certain acceleration of cereal prices on the domestic market and in turn of cereal products. On the other hand, the price of meat should not accelerate significantly because domestic demand will remain weak for the next two quarters and exports to CIS countries in the first half of the year will not rise fundamentally. However, we predict some rises in the second half of the year – due to stronger domestic demand and a fall in livestock. Vegetable prices should not rise as high as in the last few years, although their harvest was 5.2% larger than in the preceding year. A two-year-fall in the grain harvest makes it reasonable to forecast a good harvest for this year. In the forthcoming years we will see changeabity in harvest cycles.

In 2001 we foresee a continued fall in the prices of non-food products. This will be due to the strong zloty, continued low rises in monetary aggregates and the low growth in wages and salaries. On top of this we expect to see the price of oil on the world markets move within a band of $26–$28 per barrel in the first half of 2001, which, coupled with the strong zloty could to a certain extent cancel out higher excise duties.

In the first half of this year the price of gas, transport services and postal services will rise. However, the possibility of lifting gas prices every three months will come into force and could lead to preliminary attempts to shift costs on to end-users. A rise in the price of energy is predicted for July. Because decisions to raise prices last year were spread over 6 months a one-off rise in July may cause a clear statistical increase in the price of services.

In the first half of 2001 we expect to see a continued fall in the PPI caused by weaker domestic demand, a strong zloty and oil prices lower than in 4Q00. In the next quarters we predict a certain acceleration of prices due to revival of domestic demand and a stabilisation on raw materials markets.

Przemysław Woźniak

Core inflation

Because core inflation is a concept with no single clear definition, central banks use different methods to estimate it. Four indices chosen by the NBP (3 of which were presented in the chapter on the current situation) represent only a small fragment of the abundant group

of feasible core inflation series. Since 1998 the CASE Foundation has carried out related research on core inflation calculation techniques which point to very good properties of asymmetrically trimmed means. The 15% trimmed mean, used by the NBP, eliminates the same percentage (15%) of extremely small and high price changes. However, as many evaluating criteria show, a superior measure of core inflation trims a relatively higher percentage of lower price changes. Therefore, for the purpose of analysing and forecasting core inflation we use the asymmetrically trimmed mean. This trimmed mean is the 50%[2)] asymmetric trimmed mean eliminating 28.5% of the lowest and 21.5% of the highest price changes (percentage pertains to the share in the consumption basket).

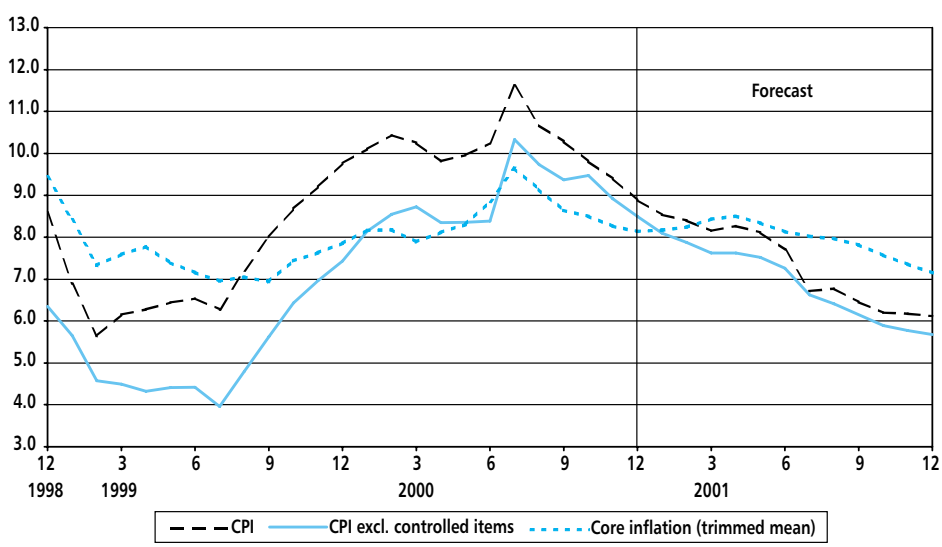
Figure 3.8 presents the dynamics of the above-defined trimmed mean along with growth of CPI. The forecast of core inflation for 2001 points to its gradual decrease from almost 8.5% at end-2000 down to 6.0% at end-2001. We expect gradual curbing of the inflationary effects of supply shocks which impacted on the Polish economy in the course of the past several months. Consequently, we expect slowing down of the 12-month dynamics of prices of numerous consumption goods and services. The prevalence of these tendencies will lead to a significant decrease in headline inflation. On the other hand, it might also be the reason why core inflation as measured by the trimmed mean will be slightly above headline inflation during 2001 (the trimmed mean will eliminate most of these large drops in dynamics). We forecast that the two measures of inflation will exhibit similar dynamics towards the end of 2001 – about 6.0%.

Rafał Antczak

Money

- **Policy-mix problems rule out radical cuts in interest rates**
- **Possible cuts by end of 2001 of 450 basis points**

Chart 3.9. Core inflation, 1998–2001 (% change, yoy)



Source: CSO and CASE.
Notes: CASE forecasts starting from 1Q01.

[2)] The name of the trimmed mean contains the total percentage trimmed from the index. According to this notation the mean calculated by the NBP is the 30% trimmed mean (2*15%).

The rise in the economic deficit from 1.6% of GDP to 1.8% of GDP will mean that – despite the increased effectiveness of the NBP's use of interest rates- achieving operational over-liquidity in the banking system will be difficult. Furthermore, the NBP's expectation of a reduction in the public finances deficit may not be achievable due to problems with collecting budgetary revenues in 2001. Therefore, various tensions in co-ordinating fiscal and monetary policy will oblige the NBP to be careful in cutting interest rates in 2001. The first cut (of about 100 basis points) may be expected after the budget is passed and disinflation has been maintained. In our baseline scenario for 2001 we believe there will be several modest rate cuts, totalling about 450 basis points. That would allow a small and gradual loosening of restrictive monetary policy (real rates of about 9% rather than as at present 10–11%) assuming the inflation target of about 6% is reached. The supply of broad money in 2001 will stay about 10–12% higher as compared to 2000.

Andrzej Bratkowski

Center for Social
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Alternative Scenario

If the downturn is sharper than it appears

The main threat to the Polish economy this year is a possible recession in the US. If it comes to this in the nearest months, in the first half of 2001 the world economy will suffer as a consequence. GDP growth in Western Europe will by that time also be lower, which would mean weaker Polish exports. Fears about the consequences of the worsening economic situation in the developed countries on developing countries may in turn reduce interest in the Polish market. That would impact negatively both investments as well as consumer demand – the latter via the weaker zloty and ensuing higher import prices.

The second threat with similar consequences is the possibility of lower growth in nominal wages and salaries in enterprises – especially over the next few months. That would additionally dampen already weak domestic demand, followed by weaker growth of industrial output and in turn GDP in the first half of 2001 would also be lower. In such a situation incentives for enterprises to invest would also undergo a further fall. Inflation would also be lower – one could then assume that interest rate cuts would come faster, which would, in turn, reduce the cost of servicing the public debt.

If both of the above-mentioned threats are realised this would mean a decline in GDP in 2Q01 and 3Q01. Detailed results of this scenario are presented in Table 3.1. Its inflationary effects would be cancelled out and on the basis of clear recessionary trends the NBP would decide on a course of faster cuts in interest rates in the first half of 2001. However, budgetary revenues would be dramatically lower than planned. The negative rate of growth, strong rise in the budget deficit and lower yield of debt instruments could, combined, lead to a massive outflow of capital and a very strong depreciation of the zloty. In such a situation the disinflation process would temporarily reverse its trend and the credibility of the NBP would again be seriously undermined. A return to a tighter monetary policy stance would also then be unavoidable, which would mean a delay in the revival of domestic demand.

Further developments would then depend on the political situation. If the left-wing parties win the election – and everything points in that direction – it would be very hard for them to preserve budgetary discipline without losing the trust of those who voted for them. One can expect that the new government will try to lessen the effects of the stagnating economy on the economically weakest groups in society. That means higher social spending and also a bigger budget deficit. Such a policy would additionally weaken the confidence of foreign investors and induce the NBP to a severe tightening of monetary policy. The effect would be economic stagnation due to relatively higher public finance deficits and inflation. This could delay the date of EU accession – we believe that after experiencing a strong weakening of the euro, Brussels may decide to raise the terms on which it will evaluate the new candidates progress towards macroeconomic stability.

Early warning crisis indicator

4Q00 brought an overall improvement in our indicator, reducing the risk of a currency crisis. The value of the indicator fell from 76 points in 3Q00 to 48 points in 4Q00. With this in mind we draw attention to changes in the value of the indicator in the preceding quarters which resulted from changes in official data and a wrongly used series of WIBOR – for which we sincerely apologise.

Six components of our indicator improved. Above all the external balance continued to improve. The current account deficit fell at the end of 2000 from the earlier predicted level of 7.0% of GDP to 6.2%. Moreover, in connection with the rise in official reserves (of US$2 billion in 4Q00) and a fall in Poland's foreign debt (of just under US$2 billion) Poland's short-term debt as a percentage of M2 indicator improved, as did total Polish foreign debt as a percentage of GDP.

Credit expansion as a percentage of M2 was reduced – mainly due to the government sector's lower net debt and inflation turning out to be lower than predicted in 4Q00.

However, trends in the real sphere worsened. The estimate of GDP growth lowered a further 0.8 percentage points in relation to the forecast from the previous quarter and we also noted another rise in unemployment of 1 percentage point to 15% at the end of the year.

We are still observing a real appreciation of the zloty (by 8% in relation to its three-year average) and a real growth of the WIBOR (by 1.4% qoq), which have led to a worsening of their respective indicators.

Table. Early warning crisis indicator, 3Q99-4Q00

	3Q99	4Q99	1Q00	2Q00	3Q00	4Q00
1. GDP forecast for 2000	6	5	5	5	6	6
2. Unemployment rate (end-quarter)	10	10	10	10	10	10
3. CPI forecast (end-2000)	10	10	6	10	10	4
4. Forecast of the government budget deficit as % of GDP for 2000.	0	0	10	0	10	4
5. Forecast of C.A. deficit as % of GDP for 2000	10	10	10	4	4	0
6. Real effective exchange rate	10	0	10	10	10	10
7. Credit expansion as % of M2 (end-quarter)	4	0	4	6	10	0
8. Polish short-term foreign debt as % of liquid reserves (end-quarter)	10	10	6	10	6	0
9. Total Polish foreign debt as % of GDP (end-quarter)	6	10	6	10	4	4
10. Real 3-month WIBOR	6	10	0	6	6	10
Indicator	**72**	**65**	**67**	**71**	**76**	**48**

Source: CASE.
Notes: A detailed methodology of the indicator can be found on our web site (www.case.com.pl/pgtop/pgtopen.html).