IV Exchange Rate Policy

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One of the choices facing countries in transition to a market economy concerns which exchange rate regime to adopt. In general, the selection made has reflected, among other things, the individual country's particular economic objectives, as well as its initial conditions and the source of shocks to the economy.

The purpose of this section is to discuss issues arising in connection with the choice of the exchange rate regime, and in particular of the crawling peg arrangement. The first two subsections provide a conceptual background for Poland's choice of the pure fixed exchange rate regime and its subsequent switch to the crawling peg arrangement, respectively. The main developments in the exchange rate since 1990 are then detailed. The role of the exchange rate policy in the stabilization program, including its role in reducing inflation and maintaining Poland's international competitiveness, follows. Finally, some concluding remarks are provided.

Choice of a Fixed Exchange Rate

In the context of economies in transition, a fixed exchange rate system has often been viewed as providing an anchor for domestic price performance and as solving the problem of setting relative prices that typically had been seriously distorted under the centrally planned regime.[1] In other words, fixed exchange rates, by importing foreign prices into the domestic economy, can work to stem high inflationary expectations and can help realign relative prices after opening domestic markets to foreign trade. To the extent that inflation constitutes a pressing problem, a fixed exchange rate policy can be assigned the role of assisting in the stabilization of the price level. One obvious difficulty with implementing a fixed exchange rate de novo, however, is the determination of the appropriate exchange rate and currency to peg to. Moreover, fixing the exchange rate may not be feasible if international reserves are considered inadequate.[2] More importantly, if the selected exchange rate is not backed by appropriate policies, it will quickly lead to a loss of competitiveness and capital outflows, and thus become unsustainable.

A flexible exchange rate regime, on the other hand, in principle provides the authorities with an independent monetary policy, and possibly facilitates securing international competitiveness—which is particularly important when the external position imposes a binding constraint. However, uncertainty concerning the path of the exchange rate can adversely affect production and trade. Moreover, absent the anchor afforded by an exchange rate peg, there is a need for another nominal anchor, such as the money supply, to achieve good price performance. With poorly developed financial markets and frequent shifts in the money demand and supply functions during the transition, however, the relationship between indirect monetary instruments and money supply targets is uncertain, and the link from intermediate targets to the ultimate goal is typically unstable. As a result, a credible anti-inflation policy may be more difficult to establish without a pegged exchange rate, with one possibility being successive depreciations of the exchange rate that can fuel inflationary expectations of a self-fulfilling nature. This vicious circle may in turn threaten the achievement of a sustainable external position. Regardless of the choice of the exchange rate regime, the attainment of internal and external stability depends crucially on the consistency of the accompanying economic and financial policies.

The choice between fixed and flexible exchange rates is also influenced by the nature of the shocks that are affecting the country. To the extent that policy aims at stabilizing output in the face of transitory shocks, a flexible exchange rate is desirable when shocks either are external or originate from the real side of the domestic economy, whereas a fixed

[1]See, for example, Bruno (1992) and Oles and Rubel (1992).

[2]For a more detailed review of the conditions under which a fixed or flexible exchange rate policy would be appropriate, see Aghevli, Khan, and Montiel (1991) and Calvo and others (1993).

rate is preferable if shocks have domestic and monetary origin (see Aghevli, Khan, and Montiel (1991)).

In the case of Poland, both high inflation and a large external imbalance were pressing problems at the commencement of the economic reform. Moreover, relative prices were severely distorted after decades of price controls, and there was the possibility of a significant monetary overhang due to output shortages, which suggested a potential inflationary outburst upon the liberalization of prices. Consequently, the initial choice of the program accompanying trade and price liberalization was to introduce a fixed exchange rate as a nominal anchor to brake the emerging hyperinflationary pressures, while fixing the parity at a level that would restore and maintain international competitiveness. The choice of a fixed rate was also influenced by the absence of an organized foreign exchange market that some maintained would argue against adopting a floating exchange rate regime. Despite a weak external position, the requirement of adequate foreign reserves to cushion against volatility in foreign exchange transactions was met by foreign reserves equivalent to about 3.5 months of convertible currency imports. The reserve position was further boosted by the availability of a stabilization fund amounting to about 1.2 months of imports.

The fixed exchange rate was expected to be only temporary. In the event, it survived longer than anticipated. However, as described in greater detail below, eventually a moderate and persistent deterioration in external competitiveness had a cumulative impact and the authorities switched to a preannounced crawling peg exchange rate regime in October 1991.

Switch to a Preannounced Crawling Peg Regime

A preannounced crawling peg is a system in which the monetary authority fixes a preannounced path of the exchange rate and implements changes in par values progressively and predictably. This regularity, in principle, can give exporters and importers a high degree of certainty about the future path of the exchange rate. The crawling peg regime can then be viewed as an adaptation of the fixed exchange rate system to an economy in which the rate of inflation considerably exceeds that of partner countries.

When selecting the rate of crawl, the authorities have the option of using exchange rate policy as one of the instruments for achieving their macroeconomic objectives, notably, to reduce the rate of inflation in a smooth and steady fashion. Specifically, the monetary authorities can preannounce a rate of crawl below the projected inflation differential with trading partners, that is, below the risk-adjusted differential between foreign and domestic rates of interest. The rate of crawl can be reduced progressively in coordination with domestic monetary policy (i.e., interest rate adjustments), until a fixed exchange rate can be established or until conditions are conducive for floating the exchange rate. The successive reductions provide an anchor for establishing the credibility of a country's anti-inflation policy.

At the other extreme, if the rate of crawl is selected with the sole objective of preventing the relatively high domestic inflation from compromising international competitiveness, the authorities may in effect end up targeting a real exchange rate, running the risk of generating an unstable outcome with ever accelerating inflation being sustained by ever more rapid rates of crawl.[3] These two alternative ways of selecting the rate of crawl correspond to the terminology of "active" versus "passive" crawling, respectively, that was first introduced by McKinnon (1981) (see Yuravlivker (1985)).

In the case of Poland, the continued need to reduce inflation and, at the same time, to secure international competitiveness forced the authorities to adopt an "active" crawling peg policy. The rate of crawl against a basket of convertible currencies was accordingly set below the projected inflation differential with trading partners. The rate of crawl has also been lowered once, which is consistent with the authorities' determination to reduce inflation.

A possible implication of pitching the rate of crawl to support the reduction of inflation is that some of the costs of disinflation will become evident through pressure on international competitiveness. However, these costs are more reflective of the decision to reduce inflation than of any given rate of crawl. Moreover, to the extent that disinflation costs are disproportionately experienced in the traded goods sector, they can be mitigated by discrete devaluations. Of course, resort to discrete devaluation should be sparing to avoid undermining the very rationale for the rate of crawl, and it would be preferable to minimize the cost of disinflation by supporting exchange rate policy with appropriate monetary, fiscal, and incomes policies.

[3]See Genberg (1981) and Montiel and Ostry (1992). Specifically, the adoption of real exchange rate rules may serve to index both the nominal exchange rate and, through the balance of payments, the money supply, to the price level. Under these conditions, a real exchange rate rule may imply that there is no exogenous nominal anchor that can tie prices down, as an increase in domestic inflation from any source is automatically accommodated by a faster exchange rate depreciation and by a faster rate of monetary growth (see Adams and Gros (1986) and Aghevli, Khan, and Montiel (1991)).

Maintaining the credibility of a crawling peg thus imposes certain constraints on the conduct of monetary policy—constraints that would nevertheless be necessary to reduce inflation regardless of the choice of the exchange rate regime. A tight monetary policy, in turn, involves controlling the growth of the money supply, and in effect net domestic credit, as the monetary authorities do not have a direct control over the foreign reserve component of the money supply under a fixed exchange rate system. Controlling domestic credit, and hence establishing the credibility of the exchange rate policy, often depends on the ability of the monetary authorities to restrain credit to the fiscal sector, and on the fiscal sector's exercise of financial discipline. The absence of prudent fiscal policies could result in monetization which, in the absence of well-developed financial markets that would permit a reversal through open market operations, might quickly generate inflationary pressures.

Similarly, the crawling peg in principle constrains interest rates. In particular, to discourage capital outflows, domestic interest rates should not be lower than foreign interest rates, adjusted for the rate of crawl and the country's risk premium. Finally, exchange rate policy in transition economies typically should be accompanied by a restrictive incomes policy, in the form of some control over the growth of wages, to prevent nominal depreciations of the currency from being translated into higher wages and prices.[4]

In Poland, the authorities have attempted to implement financial and incomes policies with a view to securing the sustainability of the crawling peg regime, which in turn serves as an instrument for achieving the broad objectives of the economic policy. Against this background, the remainder of this section details the main developments in the zloty exchange rate and evaluates the role of the exchange rate policy in Poland's stabilization.

Exchange Rate Developments

During the 1980s, the value of the Polish zloty was determined in terms of a basket of currencies and adjusted periodically with a view to securing the profitability of Polish exports. In addition to the official market, there was an unofficial market for foreign exchange, where the value of the zloty was determined by market forces. As inflation accelerated, the size and the frequency of adjustments in the official exchange rate increased. The devaluations became increasingly sharp following the legalization of the parallel foreign exchange market in March 1989, as the authorities used depreciations in the official rate to reduce the size of the parallel market premium—which on average was about 83 percent in the March–October 1989 period—and to gain competitiveness ahead of the planned unification of the markets in 1990. Indeed, the zloty was devalued ten times during the last quarter of 1989, causing the value of the currency to fall by about 90 percent between end-1988 and end-1989, and the premium over the official rate fell sharply, virtually disappearing by the end of 1989. The adjustments in some of the administered prices and the liberalization of many controlled prices during the latter part of the year also contributed to the fall in the premium by reducing the excess demand in the goods and foreign exchange markets.

As already noted, the use of the exchange rate as an anchor against inflation was a key element of the bold reform program adopted at the beginning of 1990. On January 1, 1990, internal convertibility of the zloty was introduced and the foreign exchange market for current transactions was unified at a rate of Zl 9,500 per U.S. dollar, which involved a 31.6 percent devaluation of the official rate (Table 4-1). Alongside the official fixed exchange rate, the parallel market rate continued to be determined freely by market forces in a market where a large number of small foreign exchange dealers (*kantors*) have participated.

The purpose behind fixing the exchange rate was to brake Poland's emerging hyperinflation—in the latter half of 1989, the monthly rate of inflation averaged some 30 percent. The initial rate was set, with a margin, on the basis of a weighted average of exchange rates prevailing toward the end of 1989, adjusted for the effect of export incentives, the projected impact of price liberalization, and projected feedback effects on prices of wage adjustments.[5] Initially, the peg was regarded as provisional and no announcement was made concerning how long the arrangement would be maintained. The peg, however, turned out to be more durable than expected. The strength of the balance of payments—there was a significant accumulation of reserves during the year—and the accompanying orthodox measures of fiscal and monetary tightening and a strict wage policy helped underpin the rate throughout the year, as did the availability of a $1 billion stabilization fund.[6]

[4]See, for instance, Gotz-Kozierkiewicz (1991).

[5]For further details about the choice of the initial level of the exchange rate, see Lane (1991).

[6]Lane (1991) argues that if a smaller initial devaluation had been chosen, the new fixed exchange rate would not have been maintained as long. This would have implied a smaller initial jump in the price level through the initial effect of the exchange rate on the prices of tradables, but would also have meant higher inflation later in the year, as further exchange rate adjustments would have been needed sooner.

Table 4-1. Exchange Rate Developments

Period	Exchange Rate Policy	Action	Comments
Before 1990	Multiple exchange rates, adjustable peg to a basket of currencies	Frequent and substantial devaluations	
January 1, 1990	Fixed exchange rate system	Unification of official and black market rates Devaluation (31.6 percent)	Exchange rate: Zl 9,500 per US$
May 17, 1991	Fixed exchange rate system	Devaluation (16.8 percent against the dollar, 14.4 against the basket) Shift from a dollar peg to a basket peg	Exchange rate: Zl 11,100 per US$ Basket includes: U.S. dollar (45 percent), deutsche mark (35 percent), pound sterling (10 percent), French franc (5 percent), Swiss franc (5 percent)
October 15, 1991	Preannounced crawling peg	Rate of crawl announced: 1.8 percent per month (Zl 9 per day)	Basket unchanged
February 25, 1992	Preannounced crawling peg	Devaluation (10.7 percent against the basket) Rate of crawl: 1.8 percent per month (Zl 11 per day)	Exchange rate: Zl 13,360 per US$ Basket unchanged
July 10, 1992	Preannounced crawling peg	Rate of crawl: 1.8 percent per month (Zl 12 per day)	Basket unchanged Technical adjustment made
August 27, 1993	Preannounced crawling peg	Devaluation (7.4 percent against the basket) Rate of crawl reduced: 1.6 percent per month (Zl 15 per day)	Basket unchanged

As the nominal exchange rate was maintained at a fixed level, the real effective exchange rate (REER), as measured by a range of indicators, appreciated during 1990 following the sharp initial rise in the price level, continued high (though decelerating) monthly inflation rates, and a collapse in relative labor productivity reflecting an initial reluctance to shed labor in the face of large demand declines (Chart 4-1). The premium between the parallel and the official market rate widened to about 3 percent in May 1990 from −1.7 percent in January, but stood at about 2 percent at the end of December, after a brief period of even narrower premia (Chart 4-2).

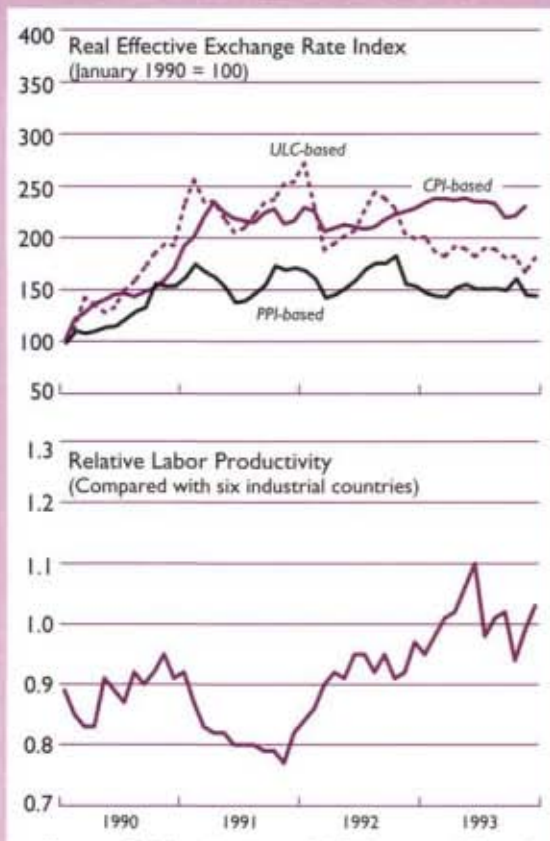
In order to reverse the outflow of foreign currency reserves and the loss of international competitiveness, the exchange rate arrangement was shifted from the dollar peg to a peg based on a basket in May 1991, given an increased concentration of trade with western Europe, and the zloty was devalued by 14.4 percent against this basket. The latter was composed of five main convertible currencies, roughly in proportion to the currency composition of the Polish trade turnover.[7]

[7]The composition of the basket was U.S. dollar, 45 percent; deutsche mark, 35 percent; pound sterling, 10 percent; French franc, 5 percent; and Swiss franc, 5 percent.

Though initially net international reserves started rising, the exchange rate continued to appreciate in real terms until the end of 1991, reflecting, in part, the increase in real wages in most of 1991. (Developments in the real exchange rate indices are discussed more thoroughly under "Exchange Rate Policy and External Sector Performance" below.) Furthermore, the parallel market premium widened to about 4.5 percent, indicating the overvaluation of the official rate as compared with the parallel market rate. In order to reduce the loss of competitiveness, while, at the same time, maintaining the role of the exchange rate as a nominal anchor, a preannounced crawling peg system was introduced on October 15, 1991. Consistent with the authorities' determination to reduce inflation, the rate of crawl was set to be lower than the differential between Polish inflation and average inflation in those countries whose currencies were included in the basket (see Charts 4-3 and 4-4). Under the new system, the official exchange rate against the same basket would depreciate daily, so as to achieve a depreciation of 1.8 percent per month (or about 24 percent on an annualized basis); the daily correction was intended to lower the trade risk associated with sharp and unpredictable exchange rate adjustments.

Following the announcement of the crawling peg,

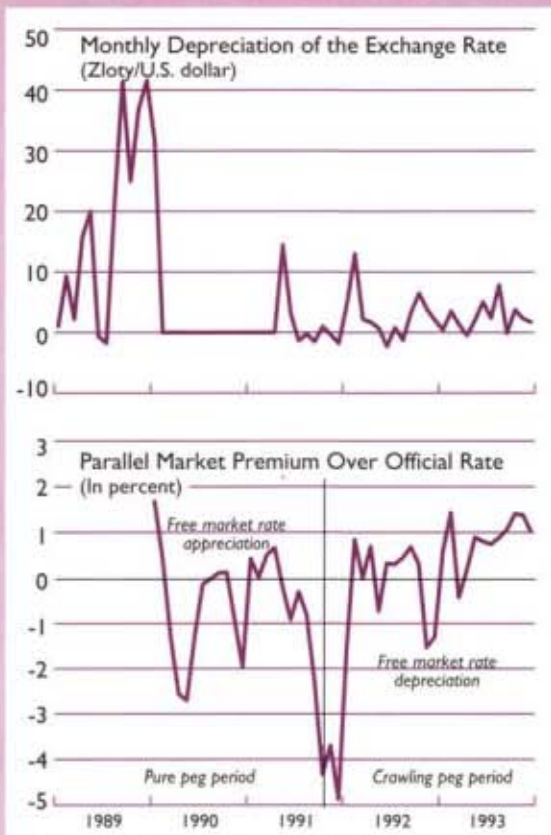
Chart 4-1. Real Exchange Rate Indicators



Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

Note: CPI indicates consumer price index, PPI indicates producer price index, and ULC indicates unit labor cost.

Chart 4-2. Exchange Rate Indicators

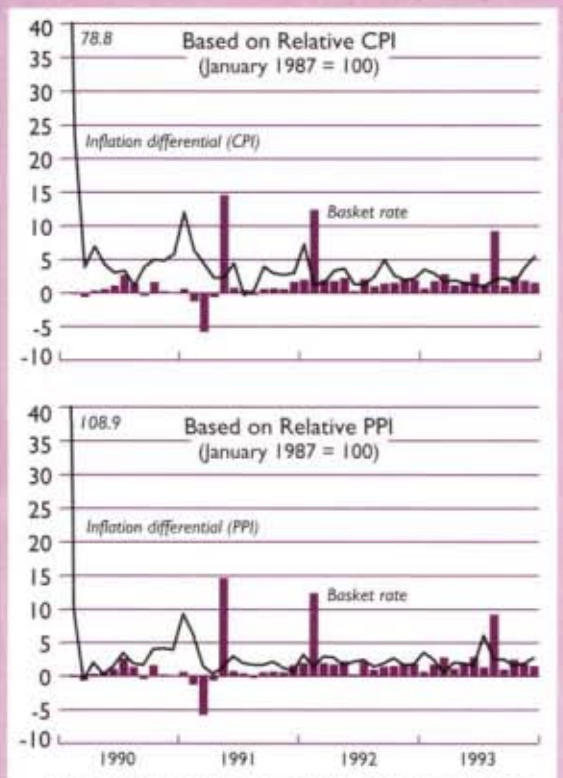


Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

the parallel market premium continued to widen and reached about 5 percent on December 1991. The persistence of relatively high inflation and a 3 percent increase in real wages in 1991 from their levels in 1990 resulted in a real exchange rate appreciation based on producer prices and normalized unit labor costs (ULC). Furthermore, net international reserves started falling, after a brief period of increase, between May and September 1991. The zloty was devalued by about 11 percent against the basket on February 25, 1992. The parallel market spread decreased sharply after this devaluation and remained within a 2 percent range thereafter. Following a brief period of depreciation after the February devaluation, the REER index started appreciating—particularly the measure based on ULC and producer prices—until about the last quarter of 1992. Since then, however, the ULC-based REER index has depreciated significantly.

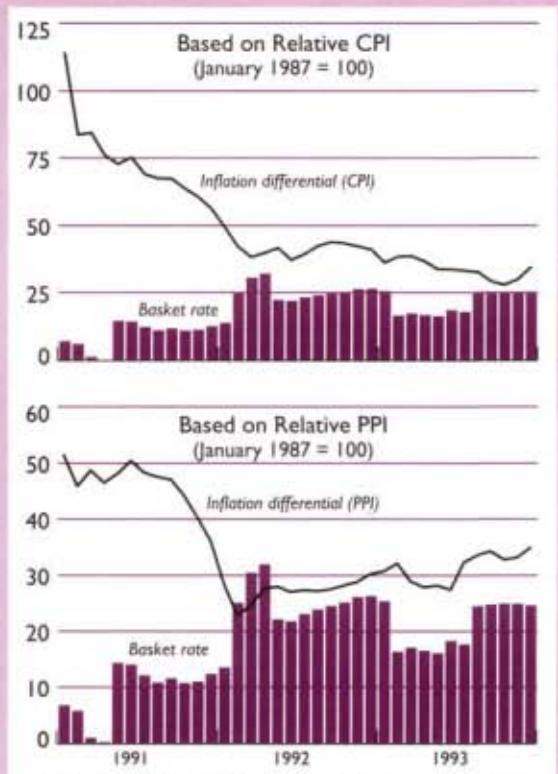
As a result of concerns over a rapid deterioration of the country's balance of payments and a fall in hard currency reserves between mid-1992 and mid-1993, the zloty was further devalued by 7.4 percent against the basket on August 27, 1993. Simultaneously, the authorities announced a reduction in the rate of crawl from 1.8 percent to 1.6 percent per month. It is important to note that no increase in the parallel market spread was observed before or after the August 1993 devaluation. This might suggest that the precise timing of the devaluation was a surprise. More generally, while the narrow spread has in the first instance reflected a persistent excess supply of foreign exchange to kantor markets, given that market participants always have the choice of where to place their funds, the behavior of the exchange rate in the kantor market provides an indicator of the credibility of the crawling peg and, in that connection, the evidence is consistent with broad acceptance of Poland's exchange rate regime.

Chart 4-3. Monthly Exchange Rate Depreciation and Inflation Differentials
(In percent; end of period)



Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

Chart 4-4. Annual Exchange Rate Depreciation and Inflation Differentials
(In percent; end of period)



Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

Role of Exchange Rate Policy in Polish Stabilization

As described above, Poland has adopted various forms of a fixed exchange rate mechanism during its reform program: the pure fixed exchange rate vis-à-vis the U.S. dollar; a subsequent switch to a fixed peg against a currency basket; and finally, the switch to a preannounced crawling peg. The changes in policy reflected concerns over the loss in competitiveness arising from the use of the exchange rate as a nominal anchor. Overall, the policy has been broadly successful in attaining substantial reductions in inflation while maintaining competitiveness. Indeed, Poland has increased its share in western markets, attained a sizable foreign exchange reserve position, and even witnessed a small premium in the parallel over the official market rate. The following two subsections will provide a more detailed evaluation of the effectiveness of the exchange rate policy in terms of the attainment of the two broad objectives of the stabilization program.

The Exchange Rate as a Nominal Anchor

The sharp decline in inflation since 1990 points to the broad success of monetary and exchange rate policy. Substantial progress has been made in reducing the rate of inflation from near hyperinflation levels in 1989 and early 1990 to only 2–3 percent a month more recently. The sharp acceleration of inflation at the beginning of the stabilization program mainly reflected the adopted sequence of stabilization measures, considerable corrective adjustments in many administered prices in January 1990, and the impact of sharp devaluations of the zloty vis-à-vis the U.S. dollar at the end of 1989 and in January 1990. Indeed, the monthly rate of consumer inflation fell to single-digit numbers by March 1990. Moreover, inflation continued to fall between 1990

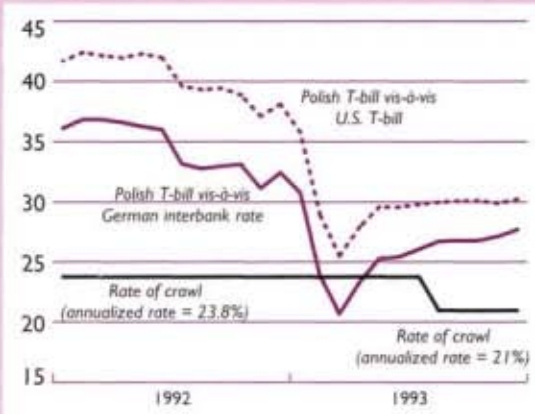
and 1993. Specifically, annual inflation was reduced substantially to about 35 percent in 1993, from 586 percent in 1990. The rate of producer price inflation has been even lower than consumer inflation.[8]

The crawling peg exchange rate regime in force after October 1991, and the fixed exchange rate before that, contributed significantly to this disinflation. While the switch to a crawling peg from a pure fixed rate policy might appear to be a retreat from fighting inflation in favor of the objective of maintaining external competitiveness, it must be remembered that the fixed exchange rate was always viewed as a temporary expedient to break hyperinflationary tendencies. Moreover, the authorities' choice of an "active," as opposed to "passive," policy in setting the rate of crawl emphasizes that lower inflation has remained the priority of economic policy. As shown in Charts 4-3 and 4-4, in general, monthly and annual inflation differentials vis-à-vis trading partners have remained above the rate of zloty depreciation since 1991.[9]

Of course, the success of the exchange rate policy should not be viewed in isolation, but rather in the context of the other elements of policy, notably monetary and fiscal policies, and a tax-based incomes policy. Since these policies are discussed in Sections II, III, and V of this Occasional Paper, they will not be addressed here. One aspect, however, that does merit discussion concerns interest rates.

The crawling peg exchange rate that, as already noted, is analytically equivalent to a fixed exchange rate regime places constraints on domestic interest rates. In particular, Polish interest rates would need to be higher than foreign rates corrected for the rate of crawl and a risk premium if the regime is to remain viable. Reflecting this constraint, interest rate differentials were by and large maintained at levels that prevented the flow of capital out of the zloty-denominated assets into foreign-currency-denominated ones. Chart 4-5 shows the three-month interest rate differentials for Polish T-bills vis-à-vis Germany and the United States. Both differentials have started approaching the annualized rate of crawl (which was then about 24 percent), and those between the Polish T-bill rates and the German interbank rates fell below the annualized rate of crawl in March 1993. (See Section III, "Monetary Policy and Financial Sector Reform," for real interest rate

Chart 4-5. Three-Month Interest Rate Differentials



Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

developments and similar trends in the zloty-dollar deposit rate differentials.) This period was, in fact, associated with some substitution from zloty-denominated to foreign-currency-denominated assets. Indeed, the reduction in banks' zloty deposit rates in February–March 1993 caused real interest rates to turn sharply negative, and zloty-denominated household deposits, which had been increasing rapidly in real terms, fell in the remainder of 1993. The spreads subsequently rose, however, and climbed above the annualized rate of crawl, following the upward trend in Polish T-bill rates.

Of course, there would also have been constraints on the level of interest rates even if a more flexible exchange rate regime had been selected. To ensure stability in foreign exchange markets, domestic interest rates need to accommodate differentials in inflationary expectations, differentials that would be reflected in an expected rate of currency depreciation. That is, regardless of the choice of the exchange rate system, an appropriate interest rate policy is necessary to implement a credible disinflation policy, and reductions in interest rates that are not supported by lower inflation would only undermine the exchange rate policy.

Exchange Rate Policy and External Sector Performance

This section discusses the role of the exchange rate policy in maintaining the competitiveness of the Polish external sector. First, indicators of external competitiveness will be considered. Then, trade and

[8]While it fell substantially from its levels in 1990, and in general remained below consumer price inflation, producer price inflation surged in the second half of 1993, reflecting mainly the impact of the VAT, excise taxes, and rises in government-regulated prices.

[9]When producer prices were used to compute inflation differentials, the rate of crawl tracks inflation differentials more closely (lower panels of Charts 4-3 and 4-4).

current account developments and trends in international reserves will be evaluated.

Indicators of Competitiveness

An important determinant of a country's external position is its international competitiveness. One approach to evaluating the role of the exchange rate in external sector performance is to examine its impact on indicators of competitiveness. An assessment of the appropriateness of the exchange rate based on measures of competitiveness involves a comparison of past movements in prices or costs at home relative to those in major trading partners, converted to a common currency using nominal exchange rates. It should be recognized at the outset that while focusing on relative price and cost effects, these indicators do not reflect the effects on the equilibrium real exchange rate associated with, as examples, differential income or technological growth rates among countries. Second, they are backward-looking, as they assess competitiveness relative to an equilibrium period in the past.

The developments in the Polish real effective exchange rate (REER) indices based on three alternative price and cost measures—namely, consumer prices, producer prices, and normalized unit labor costs—were shown in Chart 4-1.[10] The chart indicates a clear structural break in the REER indices after January 1990. All indices rose sharply and have stayed thereafter at a level significantly higher than in the prereform period. This break is hard to interpret, since the equilibrium real exchange rate is unknown. While the initial sharp appreciation might be attributed to the substantial price shock and the fixing of the nominal exchange rate at a constant level until May 1991, more fundamental factors, including the dramatic liberalization of trade and various structural changes, including shifts in trade patterns, might have brought the real exchange rates to a new equilibrium level.

During 1991 and most of 1992, the zloty appreciated sharply in real terms relative to its levels in 1990, despite the devaluations in May and June and the subsequent switch to a crawling peg regime. The real appreciation was most pronounced in the ULC-based REER index, which mainly reflected the continued sharp fall in relative labor productivity, while the rate of growth of wages exceeded that of inflation (Chart 4-1, lower panel). Since the last quarter of 1992, there has been a significant depreciation of the ULC-based REER index that reflected, mostly, the sharp rise in labor productivity in Poland relative to its major trading partners. The CPI-based index appreciated from mid-1992 until the beginning of 1993. The indicators as measured by both CPI and PPI have been fairly stable since then.

In the Polish case, the step devaluations of the zloty have been viewed as necessary to redress competitiveness problems, in the first instance following the hyperinflation in 1989, and subsequently in reaction to concerns that the rate of crawl had been insufficient. Against this background, the developments in the REER indices following the devaluations of the zloty are summarized in Table 4-2. The first two columns of the table indicate the percentage change in the REER indices from the point of a discrete devaluation until December 1993. The final column gives the changes that occurred after the adoption of the crawling peg regime.

Calculations based on consumer prices indicate a loss of external competitiveness after both the May 1991 and the February 1992 devaluation. When producer prices are used, there is some gain in competitiveness after both discrete devaluations. Similarly, based on indicators measured by ULC, competitiveness has improved significantly. Moreover, the competitiveness of Polish exports as measured by ULC and PPI has improved since the switch to crawling peg.

Trends in the REER indices can also be used to compute the "effectiveness index" of the three devaluations of the zloty. The index can be viewed as the cumulative ex post elasticity of the real exchange rate with respect to the nominal exchange rate, E, for k periods after a given devaluation and, in effect, shows how much of the nominal devaluation was eroded in the periods following the exchange rate change:

$$\textit{Effectiveness Index}_k = \frac{\Delta REER_k}{\Delta E_k}$$

where k refers to the period after the devaluation, ($k = 0, 1, 2, 3\ldots$). Both variables are measured in terms of a percentage change over the k periods following the devaluation. If the index takes a value of one, it means that the nominal exchange rate adjustment has been transferred into a one-to-one real devaluation over the k periods. A negative value indicates that more than 100 percent of the devaluation has vanished. (Note that in this discussion, an increase in the index indicates a real depreciation.) Edwards (1989) identifies a devaluation episode as "successful" if three years after the devaluation, the effectiveness index exceeds 0.3 (i.e., no more than 70 percent of the devaluation impact is eroded by price increases), and the current account or net foreign assets have improved.

The effectiveness indices for the three devaluations of the zloty in 1990–92 are set out in Table 4-3. Calculations based on all three indices show

[10]The choice of these indicators has been dictated by their comprehensiveness and by the availability of data.

Table 4-2. Competitiveness Indicators[1]
(Percent change as of December 1993)

	Since the Devaluation of:		Since the Crawling Peg,
	May 1991	February 1992	October 1991
Real exchange rate based on:			
Consumer price index (CPI)[2]	2.4	2.0	1.0
Producer price index (PPI)	−5.2	−10.0	−16.6
Unit labor costs (ULC)	−17.4	−21.4	−23.7

Sources: IMF staff calculations based on six major trading partners of Poland (France, Germany, Japan, Italy, the United Kingdom, and the United States).
[1]A positive figure indicates a real appreciation and, thus, a loss in competitiveness.
[2]As of November 1993.

that the January 1990 devaluation was quickly reversed, since the exchange rate was fixed at a constant level until mid-1991 and inflation was high following the trade and price liberalization. Three years after the devaluation, the effectiveness index had become negative. Nevertheless, the trade and current account showed a substantial improvement in 1992 relative to 1989, and the reserve position strengthened significantly.

Based on consumer prices, none of the devaluations seems to have translated into real depreciations. On the basis of PPI-based calculations, the most effective devaluation episode seems to be in February 1992, when a real depreciation was maintained for a longer period of time, due to a substantial reduction in inflation. Based on ULC, however, the discrete devaluations in 1991 and 1992 were broadly successful; the index exceeded 30 percent in all six quarters following the February devaluation.

The trends in the effectiveness index are broadly consistent with the results of Table 4-2; the nominal devaluations of the zloty were not very effective in maintaining real depreciations in the exchange rate based on relative consumer prices. One explanation is the relatively small size of the devaluations, particularly since the switch to a crawling peg regime, and the fact that inflation has remained relatively high, though substantial reductions have been achieved since 1990. More importantly, these computations emphasize that the interpretation of a country's competitive position can be quite different based on alternative indicators of competitiveness. Several factors underlie these differences.[11]

First, movements in the index based on producer prices, which contains mostly traded goods in the case of Poland, are only likely to indicate the degree of substitutability between Polish goods and those of its trading partners. Its small variation, especially during 1992–93, supports the view that Poland's traded goods are close substitutes for those of its trading partners. When traded goods are close substitutes, exporters can "price to market" in response to exchange rate changes by squeezing profits in the short term. Hence, such indices provide little information on the relative profitability of domestic versus foreign traded goods and on incentives to shift resources into these sectors. Reliance on such indices as a measure of competitiveness is made more difficult by the lack of cross-country comparisons with respect to the commodity composition of the index. In addition, some features of the transition process might have artificially depressed producers' prices during the early years of transition, which might mean that the observed prices are not a good guide to underlying competitiveness. For example, the sale of excessive stocks typically held by enterprises in command economies and the absence of hard budget constraints on many enterprises during the early years of transition might have distorted prices (see Turner and Van 't dack (1993), p. 70).

Second, an indicator based on ULC can offer a measure of the underlying profitability of nonlabor factors in producing manufactured (traded) goods, and thus is likely the most useful of the indicators used here for assessing competitiveness. Nevertheless, while they avoid certain limitations of the PPI- and CPI-based indicators, ULC-based indicators might also have certain drawbacks. First, apparent gains in labor productivity due to the substitution of capital for labor are frequently associated with an increase in unit capital costs, so that improvements in terms of measured ULC may overstate the underlying gains in competitiveness. Similarly, additional nonlabor costs in production, such as intermediate

[11]For a full discussion of the competitiveness indicators, see Lipschitz and McDonald (1991), Turner and Van 't dack (1993), and Marsh and Tokarick (1994).

Table 4-3. Index of Effectiveness of Nominal Devaluations

Quarter of Devaluation	Number of Quarters Following Devaluation:											
	1	2	3	4	5	6	7	8	9	10	11	12
	(Based on consumer price index)											
1990.1	0.02	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0
1991.2	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	...	...	...
1992.1	0.21	0.18	< 0	< 0	< 0	< 0	...	...	...	...	...	...
	(Based on producer price index)											
1990.1	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0
1991.2	0.89	< 0	0.34	0.34	< 0	0.08	0.38	0.22	0.23	...	...	...
1992.1	0.67	< 0	0.19	0.58	0.35	0.34	...	...	...	...	...	...
	(Based on unit labor costs)											
1990.1	0.29	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0	< 0
1991.2	0.54	< 0	0.31	0.63	0.06	0.39	0.64	0.64	0.61	...	...	...
1992.1	1.23	0.26	0.68	0.97	0.93	0.86	...	...	...	...	...	...

Source: IMF staff calculations.

goods costs, may distort the return to capital.[12] Finally, ULC indices may reflect measurement errors in their components. In the case of Poland, resources have likely shifted to more labor-intensive industries, indicating that the depreciation in the ULC-based index understates the real depreciation. The recent declines in ULC and improvements in labor productivity are, thus, encouraging and point to significant competitiveness gains. Nevertheless, trends in the ULC-based indicators should also be interpreted with caution, as they might reflect the recent labor shedding in manufacturing and a possible misreporting of wages owing to the then-prevailing punitive tax on excessive wage increases.

Third, competitiveness indicators based on consumer prices are one of the most comprehensive indices, including traded and nontraded goods, and are calculated on the basis of a basket of goods fairly comparable across countries. However, they may be poor proxies for the competitiveness of the trading sector, as they in addition include imported goods and nontraded goods and services, while at the same time excluding some important traded goods such as intermediate inputs. More importantly, consumer prices are subject to the influence of price controls, subsidies, and indirect taxes. In the case of Poland, the change in the structure of prices following the elimination or reduction of subsidies, the introduction of the VAT, and the import surcharge would tend to bias consumer inflation upwards, resulting in a distorted picture of international competitiveness. Furthermore, if the country has a faster growth of labor productivity in the traded goods (manufacturing) sector than in the service sector, CPI-based indicators show a tendency toward a real appreciation with no adverse implications for competitiveness, at least in the short run. This possibility is supported by the movements in indicators based on unit labor costs. The implication of these considerations for Poland is that the recent appreciation of the CPI-based real exchange rate is indeed normal and the deterioration in competitiveness based on consumer prices is more apparent than real.

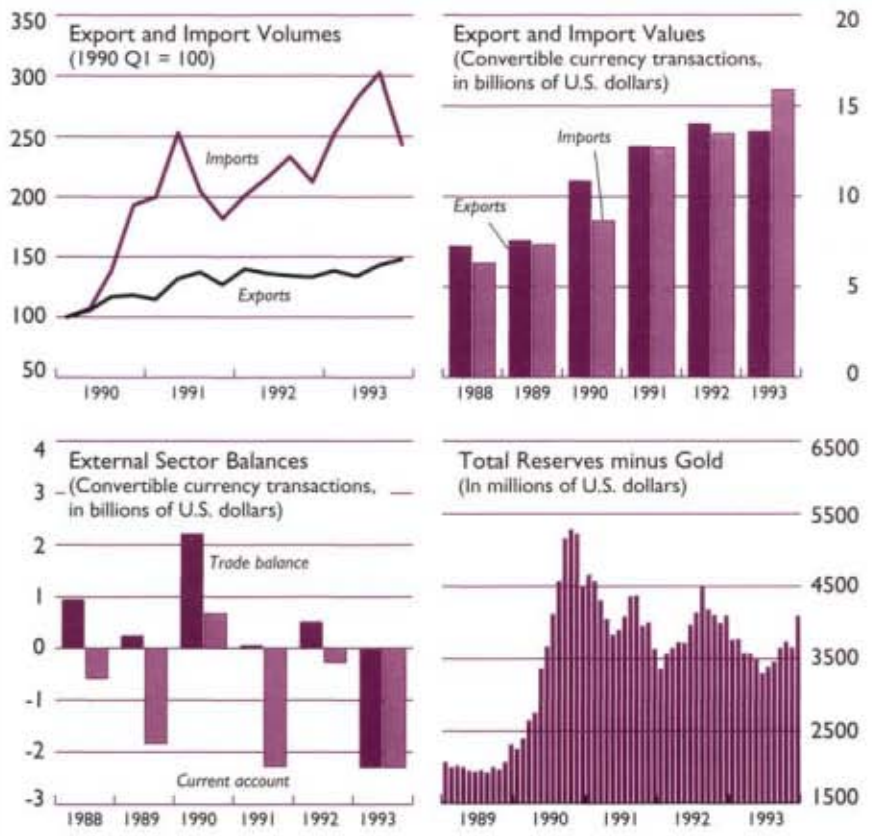
In short, while overall the trends in the real effective exchange rate indices suggest that Poland's competitiveness is not an issue of immediate concern, one should keep in mind the long-term implications of a change in the equilibrium real exchange rates and use caution in deriving conclusions about the competitiveness of a country based on such indicators. That is, the examination of trends in competitiveness alone—independent of, among other things, considerations of structural and cyclical developments in output and demand—generally provides only a partial account of the developments in external trade. In order to get a broader picture of the external sector's performance, one needs to combine these indicators with direct measures of competitiveness, such as the country's market shares.

External Sector Balances and International Reserves

The examination of a range of indicators in the external sector supports the findings of the previous

[12]While a correction of this shortcoming is possible by adjusting the ULC index by the value-added deflator in manufacturing (suggested by Lipschitz and McDonald(1991)), it is difficult to implement in practice owing to the lack of data.

Chart 4-6. External Sector Performance



Sources: Polish authorities; and IMF, *International Financial Statistics* and staff calculations.

subsection: overall, Poland's competitiveness position has been favorable. Indeed, during the period under review, Poland has increased its share in western markets, attained a favorable foreign reserve position, and witnessed a sharp decline in its premium in the parallel over the official foreign exchange market—the premium fell from about 40 percent at the end of 1989 to within a 2 percent margin in 1992–93. In this subsection, an overview of developments in the external sector will be provided by incorporating a number of other macroeconomic indicators, including the differential growth performance among trading partners.

The main performance indicators are provided in Chart 4-6 and Appendix Table A9. The performance of the external sector improved significantly in the first year of the program, as measured by the trade and current accounts, and the increase in foreign reserves. The improvement in the trade balance from a small surplus of 0.4 percent of GDP in 1989 to a surplus of 3.6 percent in 1990 reflected not only the impact of the devaluation, but also the shift of goods from domestic to external markets following the alleviation of shortages, and as households suffered income losses from a sharp fall in real wages. Consequently, the current account shifted to a surplus of 1.1 percent of GDP in 1990 from a deficit of 2.7 percent of GDP in 1989. Foreign reserves rose sharply, in part reflecting the strengthened current account position.

The balance of payments deteriorated sharply at the end of 1990, reflecting not only the real appreciation of the zloty, but also the rise in domestic demand as financial and incomes policies were relaxed. The significant fall in reserves and the worsening of the current account were followed by the May 1991 devaluation, which, together with the subsequent switch to a crawling peg, failed to prevent a real appreciation, as the increase in real wages was combined with a decline in labor productivity. Despite an

overall appreciation based on relative prices in 1992, sharp gains in productivity led to an improvement in competitiveness in terms of the ULC measure, and the external sector showed a small improvement. Reflecting the impact of the devaluations in 1991–92, the reserve position remained higher. Even though the REER indices based on ULC and producer prices point to no loss in competitiveness in 1993, the trade and current account balances deteriorated sharply. Reserves started to fall in the second part of 1992 until mid-1993, likely reflecting expectations of a devaluation and deteriorating current account position.

The weakness of the external position, and in particular of the trade balance, in 1993 may be attributed to several factors. First, the sharp rise in imports in the first half of the year was in part due to some transitory influences, including a systematic advancing of purchases as a hedge against a widely perceived devaluation risk and in expectation of sharp price rises from tax and tariff changes in mid-year. There is also some evidence that there are significant unrecorded exports (see Section VI, "Integration into the World Economy").

The most important factor behind the weak external sector performance in 1993, however, may have been a sharp recovery-driven rise in import demand in Poland, whose economy has been growing at a faster rate than the economies of its trading partners, and which needs to modernize its stock of capital.[13] In fact, import volumes grew by about 25 percent in 1993, a surge that was not offset by a gain in exports. Exports rose only marginally over the same period, reflecting the continued slowdown in economic activity as well as protectionist tendencies in Poland's western European trading partners.[14]

While trends in external sector performance were a source of concern in the first half of 1993, Poland registered a current account surplus in October and November, mainly reflecting the reduction in the trade deficit in these two months. Import volumes fell sharply in the last quarter of the year attributed, in part, to the August devaluation and in part to the introduction of the VAT, while export volumes rose slightly.

[13]The share of imports of machinery and transport equipment in total imports from nonsocialist developed countries increased from 29.3 percent in 1988 to 38.8 percent in 1991. Most recent data also indicate that in 1992 and 1993, raw materials and investment goods made up the biggest component of the trade (see Section VI).

[14]A simple regression of the monthly Polish trade balance on real effective exchange rate indices and on industrial production in industrial countries and in Poland showed that the output developments in industrial countries, and to some extent in Poland, could track the actual developments in Poland's trade balance, while alternative competitiveness indicators contributed only marginally to the explanatory power.

It is important to note that despite the adverse developments in the external accounts in 1993, reserves have remained at a sustainable level, the parallel market premium has been small and negative, and more importantly, Poland increased its share of western markets. The share in Germany's imports more than doubled between 1989 and the first half of 1993—a substantial increase, though the share is small in absolute terms (about 1.5 percent). Focusing only on imports from the Eastern European countries indicates that Poland's share in the German market rose about 9 percentage points, to 30 percent, between 1989 and the first three quarters of 1993.

Clearly, one cannot attribute the changes in the external sector's performance to the exchange rate policy alone. The policy contributed to the improvement of the external sector in the first year of the program, when it was accompanied by tight financial and incomes policies. The performance of the external sector should thus also be evaluated in the context of accompanying financial and incomes policies. Moreover, other factors, including the income effects that are associated with differential growth rates between Poland and its trading partners, have also played a role in the external sector's performance.

Conclusions

Poland instituted a major reform program in January 1990, a principal objective of which was to achieve dramatic reductions in inflation while attempting to attain a sustainable external position. The deliberate use of the exchange rate as an anchor against inflation was a key element of the program. A pure fixed exchange rate was chosen at the outset to break the inflationary spiral, and the size of the initial devaluation was selected so as to account for the loss of competitiveness that was already occurring and that would be worsened by the price liberalization. The switch to a crawling peg regime aimed to attain the goal of lowering inflation without an excessive cost in terms of competitiveness: the successive reductions in the rate of crawl, set to be lower than inflation differentials between Poland and its trading partners, can be viewed as a signal of the authorities' determination to reduce inflation, as well as an instrument to achieve that reduction.

The sharp decline in inflation after 1990 points to the broad success of monetary and exchange rate policy and shows that strong nominal anchors can contribute to economic stabilization. Indeed, significant progress has been made in reducing the rate of inflation from near hyperinflationary levels in 1989 and early 1990 to only 2–3 percent a month, or 35 percent on an annual basis, in 1993. Furthermore,

the policy has been broadly successful in maintaining external competitiveness. Any loss in competitiveness that might have been brought about by the implementation of an "active" crawl has been compensated for by the step devaluations rather than by an increase in the rate of crawl. Poland has increased its share of western markets, attained a sustainable reserve position, and registered a small premium in the parallel over the official market rate.

However, one cannot attribute the success in reducing inflation and attaining a sustainable external sector performance to exchange rate policy alone. Rather, this success should be viewed in the context of the other elements of policy, notably monetary and fiscal policies, and a tax-based incomes policy. Overall, the Polish experience has emphasized that such policies are critical in maintaining the sustainability and the credibility of economic policy.

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