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Exchange Rate Policies in Transforming Economies of Central Europe

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INTRODUCTION

Exchange rate policies have always been important for policy makers in Central and Eastern Europe. Even before the initiation of market-oriented economic reforms in the beginning of the 1990s, the command economy system was confronted with more deregulated world markets through the export and import of goods and services. Therefore, policy makers could not ignore equilibrium exchange rates with currencies of the leading world economies, although the official rates were arbitrarily set by the Communist authorities at significantly distorted levels.

Comprehensive programs of economic deregulation strengthened the importance of exchange rate policies for at least three reasons. First, these programs included an expansion of the currency convertibility on the current account. Second, policy makers had to consider application of fixed exchange rates as nominal anchors aimed at reducing the magnitude of corrective inflation stemming from price deregulation and trade liberalization. And third, the removal of trade barriers with the West broke the centrally determined trade relations inside the former Soviet bloc countries and caused a massive shift of external trade toward the highly developed market economies. Consequently, sensitivity of export and import to exchange rates has become much stronger.

This chapter overviews exchange rate policies in four Central European countries: Poland, Hungary, and the Czech and Slovak Republics. It emphasizes differences in their individual approaches to exchange rate systems, although the general evolution of these systems has assumed a consistent pattern of gradual expansion of exchange rate flexibility. The pattern begins from the fixed exchange rate followed by an adjustable peg and/or a crawling peg, and in the
cases of Poland and Hungary, it ends with a crawling band. Problems related to a necessary future alignment of Central European countries' exchange rates with the European Union (EU) currencies and with the Euro as the future EU common currency are identified. The future coordination of Central European currencies with the EU currency system means, in fact, a return to a currency peg.

The underlying recommendation is that the Central European countries should pursue a hard currency strategy to ensure compliance with the essential needs to control the budget deficit, to reduce chronic inflation, and to diminish the productivity lag with the West. More flexible exchange rate formulas are desirable for the countries in transition. Such rates are consistent with a greater degree of competition in all commodity, resource, and financial markets and with the removal of administrative controls, as the general premises of transition. A hard currency strategy under relatively flexible exchange rates should be accomplished with prudent fiscal and monetary policies as pillars of disinflation. Preparations for accession to the European Union provide an extraordinary opportunity to formulate a program of disinflation and stable currency. Central European countries should assume ambitious economic convergence criteria for integration with the EU. Low government budget deficits, reasonably targeted low inflation rates, and relatively strong and positive real interest rates are essential for exchange rate stability. Central European exports are increasingly sensitive to exchange rates. However, their growth should not be accomplished through currency depreciation. Instead, a hard currency strategy will be more favorable to promote productivity improvements and higher national saving, which are essential for building a solid base for exports and, to some extent, for import substitution.

The following section reviews general exchange rate policies in countries in transition. Specific policies in the four selected countries are discussed in the third section. Problems related to the real effective appreciation of Central European currencies in terms of the U.S. dollar are identified in the fourth section. The exchange rate elasticity of export and import in the case of Poland, as the largest economy of the four analyzed states, is examined in the fifth section. The concluding sixth section contains recommendations for future exchange rate adjustments in the context of preparations for accession of these states to the EU.

GENERAL POLICIES

The most critical steps in the economic transformation of Central European countries were applications of comprehensive stabilization policies in the beginning of the 1990s. Poland, Hungary, and the former Czechoslovakia adopted heterodox stabilization policies that contained pegged exchange rates and wage indexation as nominal anchors. Poland adopted a "shock therapy" program of economic deregulation in January 1990, and the former Czechoslovakia applied
similar measures in January 1991. The reforms in Hungary had a gradual path. They were essentially initiated two decades earlier by the Communist authority, which recognized the advantages of deregulated markets. However, the new, democratic Hungarian government also applied a sharp 15 percent currency devaluation in January 1991, followed by the managed adjustable peg. Therefore, in all these cases the currency peg was adopted as a nominal anchor that was supposed to diminish inflation expectations. The peg was initially intended to have a temporary character. Policy makers expressed intentions to replace it with a more flexible exchange rate when the initial wave of the residual inflation ended, that is, inflation stemming from price liberalization and the erasure of the monetary overhang.

In their choice of the initial exchange rate system in the first stage of the economic transformation, policy makers in Central Europe were exposed to arguments presented by the proponents of solutions ranging from the currency board and fixed exchange rates, on the one extreme, to the clean float, on the other (Balcerowicz, 1992, p. 42). They eventually chose fixed rates, although their determination is debatable from the five-year perspective of transformation experiences. Recently, there have been at least two episodes (Kazakhstan and Albania) of a successful stabilization among the former command economies without a currency peg.

The proponents of the currency peg as a nominal anchor advanced several arguments supporting their choice. Price stability was the first critical factor. Fixed exchange rates can be used to cushion turbulent effects of corrective inflation, that is, unbalanced price increases following price liberalization and reduction of import barriers. The initial inflation shock following price deregulation was deep but rather short lasting in the case of Poland (a 76 percent monthly inflation rate in January 1990) and somewhat milder, although equally short, in Czechoslovakia (a 26 percent monthly inflation in January 1991). Hungary did not experience similar shocks since the price liberalization started much earlier and had a more gradual character there. The single-time initial inflation shock was the deepest in Poland because the departure of administratively controlled prices (price ceilings) from the market equilibrium levels was the largest there among the Central European economies, despite a sizable price deregulation applied by the last Communist government in 1989. The initial inflation shock led to considerable changes in relative prices (Bruno, 1992). Under the command system, prices of consumer necessities were generally fixed far below market equilibrium levels, while prices of selected consumer durables and services were closer to the market equilibrium. The resulting unbalanced changes in relative prices made the overall inflation outlook highly unpredictable. Under such circumstances, the authorities needed to apply a currency peg as a tool of nominal synchronization, that is, an instrument transferring world market prices to the transforming economies and preventing further progress of unbalanced inflation. With the currency peg, inflation expectations were subdued and became more apparent. Consequently, a better predictability of inflation led to
more equally balanced, or synchronized, price increases. If the floating rate was applied, inflation expectations could be further exacerbated by the uncertainty of the degree of domestic currency depreciation. This would generate a further unbalanced inflation and, perhaps, a deeper economic recession.

The second general reason for the application of the currency peg was the initial underdevelopment of financial markets during the first stage of the economic transformation, along with the very limited use of indirect instruments of monetary policy by central banks. Floating rates are closely tied to market interest rates or, more specifically, to the differentials between domestic and foreign interest rates. Therefore, they require efficient foreign exchange markets; otherwise, considerable distortions between official and purchasing power parity (PPP) exchange rates may arise. Stability of floating rates is normally accomplished through changes in domestic credit responding to international credit conditions. Discretionary changes in domestic components of monetary base are most effectively implemented through open market operations by central banks. These operations could not be initially conducted in transforming economies because the bond market did not exist. Furthermore, floating rates must be accompanied by the availability of hedging instruments for exporters, importers, and investors, such as forward currency contracts. In highly developed economies, banks determine forward discounts or premiums for currencies based on market interest rates differentials. Limitations of financial markets and distortions of interest rates inhibited introduction of forward contracts in the early stage of the economic transformation. Their absence would expose exporters, importers, and investors to a significant risk of currency fluctuations if floating rates were applied.³

The choice of a pegged exchange rate at the early stage of the economic transformation was further enforced by a belief that the currency peg would reinforce the government commitment to the stabilization effort by establishing explicit targets for monetary policy. Moreover, stability of official exchange rates helps to reduce wage and price indexation; thus, it may be a useful tool of disinflation. Households and enterprises are also believed to benefit from a pegged exchange rate. This system allows them to rebuild their real money balances after their depletion during high inflation. Under pegged exchange rates, they may convert their repatriated offshore capital into domestic assets since central banks are committed to purchasing this capital in return for domestic currency. There is no such commitment under floating rates, which, therefore, are less favorable for reconstruction of real money balances by households and businesses (Sachs, 1996, p. 149).

A currency peg always requires high fiscal and monetary discipline. Therefore, it may have a positive learning impact on economic authorities in transforming economies, giving them a chance to gain fiscal and monetary credibility if their policies are consistent with the target of a stable exchange rate. Monetary policies should be sufficiently tight to minimize the gap between official and market equilibrium exchange rates. If monetary policies are too ex-
pansionary, the fixed exchange rate will lead to the domestic currency appreciation and result in deeper trade and current account deficits. Moreover, overvaluation of domestic currency in real terms may induce excessive net capital inflows that normally add to inflation. To avoid current account deficits and large net capital inflows, policy makers who initially choose a currency peg aimed at reinstating macroeconomic stability must later design a proper “exit strategy” from the peg and add more flexibility to the exchange rate formula.

A successful exit strategy has been generally accomplished in world economies by a gradual move toward exchange rate flexibility rather than by a one-step policy change to market-determined rates (Sachs, 1996; Clark et al., 1994). Most of the transforming economies of Central and Eastern Europe have chosen to initially replace the fixed rate either with an adjustable peg or with a crawling peg. In the latter case, the official par value exchange rates change monthly by preannounced percentages with a narrow band of permitted fluctuations. The main rationale for choosing the crawling peg system was to combine the currency stability device aimed at discouraging destabilizing speculation with the mechanism of daily devaluations at a predetermined monthly rate adjusting official rates to inflation and aimed at preventing excessive real appreciation of a domestic currency. The system is feasible as long as there is a risk of destabilizing speculative attacks against vulnerable currencies of emerging market economies. The currencies are subject to such attacks, particularly when domestic interest rates are inflexible due to underdeveloped financial markets and when central banks are unable to use open market operations. For instance, in the presence of a heavy speculative selling of domestic currency under a system of flexible rates, central banks would not be able to effectively sterilize speculative capital inflows if they could not immediately tighten up domestic credit through open market sale of bonds.

A crawling peg system with preannounced devaluations has serious disadvantages as well. The rate of monthly devaluations contributes to accelerated inflation expectations, and it serves as a powerful indexation mechanism in transforming economies. A sustained policy of monthly devaluations over a longer period of time may engender “chronic” or “inertial” inflation characterized by automatic indexation of wages and prices. Such inflation becomes increasingly built into strategic and operational policies of firms. It is, therefore, necessary to establish an exchange rate strategy where the rate of preannounced monthly devaluation would be declining and eventually completely eliminated. Such a program would enforce the authorities’ commitment to a strategic policy of disinflation. After a reasonable stability is achieved in Central European countries, the authorities ought to change the crawling peg system into a formula that allows a greater flexibility of exchange rates. Otherwise, the peg with monthly devaluations and with a narrow band of permitted fluctuations will continue adding to long-term inflation expectations.

Logical choices for the replacement systems that allow a greater degree of exchange rate flexibility are the crawling band system or the adjustable peg with
markets, and on the degree of currency convertibility on the current account and on the capital account.

Hungary introduced a partial currency convertibility in the 1980s. For foreign companies engaged in direct investment in the country, the Hungarian forint (HUF) has been convertible for all current account transactions and most capital transactions. The last obstacles to the HUF convertibility on the current account were removed by the Hungarian Parliament in November 1995. A full convertibility meets the International Monetary Fund (IMF) criteria and the Organization for Economic Cooperation and Development (OECD) conditions for the country's membership, which was granted at the end of March 1996.

The Hungarian exchange rate system has been fully consistent with a gradual approach to economic reform. The country had an adjustable peg system where the HUF was pegged to a basket of currencies, and the par value was changed several times through small-sized, randomly selected devaluations. In addition, the authorities enacted a sharp 15 percent devaluation in January 1991. The HUF was pegged to a basket of currencies whose composition was subject to several changes. Since August 1993, the HUF had been pegged to the basket composed of 50 percent of the deutsche mark (DM) and 50 percent of the U.S. dollar. The composition was changed to 70 percent of the European Currency Unit (ECU) and 30 percent of the U.S. dollar in May 1994. The most significant currency adjustment was enacted on March 13, 1995, as a part of the "Bokros Plan" (sponsored by Finance Minister Lajos Bokros) when the HUF was devalued by 9 percent and the crawling peg was introduced with a preannounced monthly devaluation. The band of permitted fluctuations was set at plus-minus 4.5 percent. The initial devaluation rate was 1.9 percent, later adjusted in June 1995 to 1.3 percent and in January 1996 to 1.2 percent. The HUF nominal depreciation against the official basket was 29.9 percent in 1995, which was marginally stronger than the 28.5 percent rate of the consumer price index (CPI)-based inflation, reflecting a mild depreciation of the Hungarian currency in real terms (National Bank of Hungary, 1996). Despite the real depreciation of the HUF, foreign reserves of Hungary rose in 1995 by approximately U.S.$1.5 billion, or 3.7 percent of the country's nominal gross domestic product (GDP).

Poland introduced the fixed rate system as a part of the "Balcerowicz Plan" (sponsored by Deputy Prime Minister Leszek Balcerowicz) in January 1990. The currency peg was introduced at PZL9,500 (Polish zloty) to the U.S. dollar and maintained at the fixed level until May 1991. The exchange rate anchor was aimed at suppressing corrective inflation stemming from the initial sharp devaluation of 30 percent and from liberalization of prices and trade. However, despite the initial devaluation, the PZL appreciated in real terms by 25 percent in 1991 as a result of high inflation. It can be argued that the initial devaluation was too sharp, and it contributed to inflation (Bruno, 1992, p. 14). The government adopted a crawling peg against a five-currency basket in October 1991, with a strong weight on the U.S. dollar (45 percent of the basket), followed by
the DM (35 percent), the British pound (10 percent), and the French franc and
the Swiss franc (5 percent each). A large daily devaluation at a preannounced
monthly rate of 1.8 percent was maintained until July 1993, when it was lowered
to 1.6 percent. It was further cut to 1.5 percent in November 1994, to 1.4 percent
in January 1995, and to 1.2 percent in February 1995. In January 1996, the rate
was further lowered to 1.0 percent. The band of permitted fluctuations was ini-
tially set at a plus-minus 2.5 percent. A major policy change was enacted in May
1995 with the introduction of a crawling band system and the extension of the
band to a plus-minus 7 percent. The PZL nominal depreciation in U.S. dollar
terms was a mere 1.2 percent in 1995. With the 1995 CPI-based inflation reach-
ing 21 percent, the Polish currency considerably appreciated in real terms. This
resulted in a large increase in foreign exchange reserves by U.S. $9 billion (from
$6 billion to $15 billion), or 7.7 percent of the country’s 1995 nominal GDP.5

The former Czechoslovakia introduced foreign exchange liberalization in Jan-
uary 1991. As in the cases of Poland and Hungary, restrictions on business
current account transactions were removed in order to infuse competition and
to align domestic prices with world market levels. At the same time, controls
on capital transactions were sustained due to a low level of foreign exchange
reserves and the risk of speculative outflows in the presence of residual infla-
tion.6 The former Czechoslovak government decided to apply a 35 percent de-
valuation of the koruna in October 1990, prior to the comprehensive economic
reform program of January 1991. As a part of the 1991 reform package, the
koruna was further devalued by 15 percent, and the exchange rate for tourist
and commercial transactions was unified. The authorities applied the exchange
rate peg against the basket of five currencies of the major Western trading part-
ners, with the weights assigned at 49.07 percent to the U.S. dollar, 36.15 percent
to the DM, 8.07 percent to the Austrian schilling, 3.79 percent to the Swiss
franc, and 2.92 percent to the French franc.

After the separation of both states of the former Czechoslovakia, the authori-
ties of the Czech Republic decided to change the basket to 65 percent of the DM
and 35 percent of the U.S. dollar in May 1993 and maintained a very narrow 0.5
percent band of permitted fluctuations of the new Czech koruna (CKR) against
the firm peg to the basket. There were no preannounced monthly devaluations;
thus, the country has maintained a fixed rate with a narrow band, contrary to the
Polish and Hungarian crawling peg systems. The fixed rate has eventually led to
a considerable real appreciation of the CKR, particularly in the presence of the
accelerated inflation in 1995 induced by a faster economic growth and large cap-
ital inflows. The rigid exchange rate policy coupled with high Czech real interest
rates contributed to a staggering accumulation of foreign reserves, which rose by
U.S. $8.2 billion (from $8.9 billion to $17.1 billion), or 18 percent of the coun-
try’s nominal GDP, in 1995. In order to cushion inflationary effects of this
buildup of foreign exchange reserves, the Czech National Bank sterilized them
by selling treasury notes worth nearly U.S. $4 billion in 1995. This domestic
credit tightening was not particularly helpful in lowering inflation, which
reached 9.0 percent in the same year. Against this background, the Czech National Bank decided to introduce a more flexible exchange rate policy aimed at reducing speculative capital inflows and the resulting inflationary pressures. The band of permitted fluctuations was widened at the end of February 1996 to a plus-minus 7.5 percent. The bank expected to erode the CKR real appreciation in this way and to align the official and equilibrium exchange rates.

After the breakup of former Czechoslovakia, the Slovak Republic introduced its own currency—the Slovak koruna (SKR). It essentially maintained the former Czechoslovak pegged exchange rate system with the same U.S. dollar—emphasizing basket, although it decided to devalue the SKR by 10 percent in July 1993. A year later, in July 1994, the monetary authority decided to rearrange the basket composition into 60 percent DM and 40 percent U.S. dollar weights. Contrary to the Czech Republic, which has gradually eased restrictions on capital account transactions, Slovakia has maintained a very limited currency convertibility on the capital account. Nevertheless, the pegged exchange rate system in the presence of a 7 percent inflation in 1995 also contributed to the real currency appreciation and to the net capital inflows of U.S.$1.3 billion, or 8.9 percent of the country’s 1995 nominal GDP.

The gradual move of Central European countries toward a greater degree of exchange rate flexibility is consistent with the evolution of their financial markets, with the declining inflation, and with their overall economic growth. Flexible rates are feasible and more advantageous for countries with a larger size of national income, with a structurally and geographically diversified trade, and with competitive, well-developed financial markets. Smaller economies with homogeneous trade and underdeveloped financial markets may only opt for fixed exchange rates. There is a limited link between interest rates and exchange rates in underdeveloped economies; thus, there is a distorted domestic monetary policy connection to exchange rates. Monetary authorities cannot effectively influence exchange rates through changes in the monetary base and domestic credit. Consequently, if flexible rates are applied by underdeveloped countries, they will be subject to extensive speculative attacks. Currency traders and banks facing a high uncertainty of exchange rates can only take short-term positions.

As the Central European economies continue experiencing a fast-track GDP growth and the development of modern market economy institutions, they ought to further expand flexibility of their exchange rates. They should at least consider widening the bands of permitted currency fluctuations. Hungary and Poland should abandon the "crawling" element in their exchange rate formulas—the monthly devaluation of currency rates. Preannounced devaluation is a powerful mechanism of indexation of wages and prices, and it impedes disinflation efforts of economic authorities. Proponents of the crawling system may be right that a removal of crawling devaluations may lead to real currency appreciation and trigger current account deficits. But the elimination of these devaluations will contribute to lower inflation expectations, and consequently, it may reduce the size of the real currency appreciation after all.
Flexible rates are likely to accelerate structural adjustments in Central European economies since they do not distort nominal synchronization of relative prices. They help to realign domestic relative prices with world market levels, identifying areas of comparative advantage and specialization. This process is essential for a further diversification of trade and for establishing compatible economic structures with the rest of Europe. Once the areas of specialization between Central Europe and the EU are settled, the Central European candidates for accession to the EU will face fewer obstacles to integration. Furthermore, flexible rates are consistent with the higher degree of openness of Central European economies understood in a broad sense advanced by Sachs and Warner (1995). They define as "closed" the economies that have high nontariff barriers, high average tariff rates, a high black market premium, a socialist economic system, or a state monopoly on exports. These obstacles to free trade have been largely eliminated in Central Europe, which means simultaneously the reduction of administrative distortions to equilibrium exchange rates. Consequently, an expansion of exchange rate flexibility has become more feasible.

THE DIMINISHING UNDERVALUATION OF CENTRAL EUROPEAN CURRENCIES

An endogenous growth of export and diminishing current account deficits are critical for a future alignment of Central European currencies with the EU currencies or with the Euro in the future. Their exports may be promoted in two general ways. They could either undervalue their national currencies, comparing to PPP equilibrium rates, or seek means of improving productivity and technology in production of exportables. The second way is consistent with a hard currency strategy, and it is more desirable in the long run. As long as these nations' productivity of labor and capital lags behind developed industrial economies, they will be likely to use currency undervaluation as a tool of promoting exports and balancing the current account. The EU may help to relieve them from using this tool and may promote a faster alignment of Central European and the Union members' currencies by eliminating restrictions on imports from the East.

In the beginning of the economic reform, most of the transforming economies eased import restrictions and introduced a partial convertibility of their currencies on the current account. To defend their current account balances, they sharply devalued their national currencies. This move caused a considerable initial undervaluation of their currencies in terms of the leading world currencies. The scope of the currency undervaluation can be measured by the ratio of the official to PPP exchange rates stated in terms of national currency values of the U.S. dollar and presented by Figure 6.1. Higher ratios indicate a stronger undervaluation of domestic currencies. A ratio higher than 1 implies the U.S. dollar's overvaluation and the analyzed currencies' undervaluation, since the
official (market) value of the U.S. dollar would be higher than the PPP value in the relative form, that is, obtained by the ratio of domestic to foreign inflation.

Poland started the transformation process with the sharpest undervaluation of the PZL, as indicated by the ratio of 4.7 in the beginning of 1990. This resulted from the sharp initial devaluation of the PZL in January 1990. However, the currency peg combined with the near-hyperinflation brought it sharply down to a half of that level during the first year of reform. The currency undervaluation has been slowly reduced to the ratio of 1.5 at the end of February 1995. This level is comparable to the undervaluation of the HUF. The continuously high Hungarian inflation contributes to the diminishing degree of the HUF undervaluation. The Slovak and the Czech korunas have been undervalued to a higher degree because these countries' inflation has been much lower. For instance, their 1995 inflation rates of 6.7 and 9.0 percent, respectively, were roughly three times lower than the rates in Hungary (28 percent) and in Poland (21.4 percent). Their starting point—the ratio of 4.0—was relatively high due to the significant initial devaluation of the former Czechoslovak koruna. The new national currencies of both states of former Czechoslovakia have experienced a gradually
diminishing undervaluation as well. A strong emphasis on the DM in their currency baskets helps to reduce their undervaluation in U.S. dollar terms, since the U.S. dollar itself has been undervalued in DM terms in 1995 by 20 to 35 percent. However, the highest ratio of the official to PPP exchange rate for the Slovak koruna among the four countries implies an excessive undervaluation, considering the fact that the country has already generated a current account surplus reaching 2.1 percent of the nominal GDP in 1995. The remaining three countries had current account deficits in the same year. Their ratios to GDP were 1.2 percent for Poland, 2.0 percent for the Czech Republic, and 4.8 percent for Hungary. These deficits give them less room for cutting the size of the currency undervaluation. At the same time, these deficits inhibit adjustments of their currencies' exchange rates with the PPP rates in terms of the EU currencies.

Nevertheless, the path of diminishing undervaluation of Central European currencies through the adjustment of official exchange rates closer to PPP rates has been relatively fast. This has encouraged monetary authorities of Poland and Hungary to apply periodic devaluations and the crawling system aimed at defending competitiveness of their exports in international commodity markets. These devaluations were, therefore, intended to prevent the ratio of official to PPP exchange rates from falling below the level targeted as a current account safety margin. Ironically, the crawling devaluations are a serious source of indexation and add to inflation expectations. Stronger inflationary pressures result in a lower official to PPP ratio, thus diminishing the scope of undervaluation and inducing current account deficit tendencies.

Central European countries should not emphasize the use of undervaluation as a tool of promoting exports. Rather, they ought to seek more flexible and relatively stronger currencies, consistent with positive real interest rates and disinflation programs that would motivate firms to develop exports through productivity improvements. At the same time, stronger currencies and positive real interest rates would improve national saving in the emerging market economies of Central Europe, which is always helpful to reduce current account deficits.

The directions of the real currency appreciation in Central European countries can be further examined by the path of real effective (comparative inflation-adjusted) exchange rates as presented in Figure 6.2.

To better understand the trends of the real appreciation of Central European currencies as reflected by a rising index of real effective exchange rates, it is necessary to identify the underlying reasons for it. The economic literature on the factors contributing to real exchange rate movements concentrates mostly on deviations of market exchange rates from PPP rates. Much of the theoretical debate deals with the form of PPP rates. They can be assessed either by the ratio of price levels (the absolute form of PPP) or by the impact of inflation differentials (the relative form of PPP) (Dornbusch, 1985). The relative price approach is more useful, particularly, when it refers to different price changes between tradable and nontradable goods sectors (Bruno, 1976). Much of the recent literature on the reasons for real exchange rate fluctuations in transition
Figure 6.2
Real Effective Exchange Rate Indexes in National Currency per U.S. Dollar Terms Based on Consumer Price Deflators: Average Monthly Series, January 1990–December 1995*

Source: PlanEcon Reports (various editions).
*January 1990 = 100.

economies emphasizes the impact of the real sector, primarily exports and imports, on exchange rates.8

A detailed review of the extensive theoretical debate on the determinants of real exchange rate movements goes beyond the scope of this chapter. However, considering the stabilization policies applied by transition economies, the monetarist approach seems to provide some useful interpretations. According to the monetarist interpretation, a real effective exchange rate appreciation results from the monetary expansion coupled with the fixed exchange rate. The monetary expansion is directly related either to the factor of unloading of the monetary overhang (the excess supply of money) following price liberalization or to the expansionary monetary policy. The resulting currency appreciation in real effective terms will be, therefore, perceived as “negative,” stemming from lax monetary policies, or as “positive” (Hochreiter, 1995). The latter results mainly from productivity improvements that eventually lead to wage increases.9

As evidenced by Figure 6.2, the strongest real appreciation of domestic cur-
currency was experienced by Poland in 1990. At the same time, the Czechoslovak and the Hungarian currencies did not appreciate in real terms to the same extent. The main reason for the PZL real effective appreciation was the combination of very high residual or corrective inflation with the fixed exchange rate. The discrepancy between the 1990 rates of the real currency appreciation between the Central European countries suggests to dismiss claims of the impact of the disintegration of the Council for Mutual Economic Assistance (CMEA) trade on real exchange rates. All these countries were comparably affected by the collapse of traditional trade links within the former Soviet bloc and experienced subsequent negative income shocks (Bakos, 1993).

The sustained, moderate real appreciation of all four countries’ currencies in the period 1992–95 results from the combination of two factors. It stems from the domestic credit expansion and, to some extent, from productivity improvements. Productivity gains in Central Europe can be promoted by positive real interest rates and higher savings rates coordinated with the gradually expanded currency convertibility on the capital account. These solutions ought to be integral components of a comprehensive program of disinflation policy. The expanded currency convertibility on the capital account will further promote foreign direct investment, which is essential for improving productivity in Central European transforming economies. However, policy makers ought to realize that a full currency convertibility on the capital account in the presence of lax monetary policy and weak political credibility and stability will not promote foreign direct investment in these economies. Instead, it will induce currency substitution, since companies and investors will seek allocation of their assets in foreign, more stable currencies. In essence, monetary stability, higher national saving, and productivity improvements are all necessary conditions for a “justified” real appreciation of Central European currencies and their closer alignment with the EU currencies.

Domestic currency real appreciation may be detrimental for exports, and it may worsen current account deficits if it is not accompanied by improved productivity and competitiveness in the tradable goods sector. It can be empirically shown that Central European exports and imports to highly developed industrial countries are sensitive to changes in nominal exchange rate, as argued, for instance, by Berg and Sachs (1992).

NOMINAL EXCHANGE RATES AND TRADE BALANCE: THE CASE OF POLAND

Poland, as the largest country among Central European transforming economies, can be chosen for the purpose of an empirical investigation of the relationship between external trade and nominal exchange rates. The economy of Poland has become increasingly opened, and its trade with the EU and other developed industrial nations has significantly expanded. The country has experienced a major shift of trade channels from the traditional ties with the former
Reforms of Currency and Payment Systems

Table 6.1

<table>
<thead>
<tr>
<th>Natural Log of Export</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>R²</th>
<th>DW</th>
<th>F-stat</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6.814</td>
<td>0.599</td>
<td>0.435</td>
<td>0.513</td>
<td>0.81</td>
<td>1.91</td>
<td>57.65</td>
<td>0.030</td>
</tr>
<tr>
<td>(91.29) (5.35)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to the West</td>
<td>6.473</td>
<td>0.673</td>
<td>0.436</td>
<td>0.508</td>
<td>0.82</td>
<td>2.07</td>
<td>61.40</td>
<td>0.034</td>
</tr>
<tr>
<td>(82.14) (3.52)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Eastern Europe</td>
<td>4.831</td>
<td>0.696</td>
<td>0.418</td>
<td>0.466</td>
<td>0.58</td>
<td>2.57</td>
<td>19.22</td>
<td>0.055</td>
</tr>
<tr>
<td>and former SU</td>
<td>(34.70)</td>
<td>(3.34)</td>
<td>(3.08)</td>
<td>(17.77)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Developing</td>
<td>4.937</td>
<td>-0.019</td>
<td>-0.048</td>
<td>0.008</td>
<td>0.002</td>
<td>1.961</td>
<td>0.027</td>
<td>0.036</td>
</tr>
<tr>
<td>Countries</td>
<td>(65.59)</td>
<td>(-0.17)</td>
<td>(-0.29)</td>
<td>(0.05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note:
t = statistics in parentheses.
DW = Durbin Watson statistics.
v = Coefficient of variation (ratio of standard deviation to the mean of the dependent variable).

CMEA countries to the West. The ratio of merchandise import to GDP exceeded 22 percent and the ratio of export to GDP reached almost 18 percent in 1994. In the same year, 75.2 percent of import came from highly developed Western economies, 14.2 percent from Eastern Europe and the former Soviet Union, and 10.6 percent from developing countries. The geography of merchandise exports was very similar, with 75.4 percent going to developed Western economies, 14.5 percent to former Soviet bloc countries, and 10.1 percent to developing nations.

Since the economy of Poland is fairly opened and its economic ties with the West are getting stronger, the exchange rate policy is expected to be an important determinant of national income and trade. PZL appreciation or depreciation is anticipated to have a strong impact on the value of export and import.

Sensitivity of export and import to exchange rate fluctuation can be determined by the double-log models of Poland's export—equation (1)—and import—equation (2)—as dependent variables and the PZL per U.S. dollar exchange rate as an independent variable. The ARMA process is applied in both cases. The autoregressive correction (AR) is used to account for a significant positive autocorrelation in all the investigated cases and for lags between exchange rates and trade transactions. The moving average (MA) component helps to smooth seasonal and other fluctuations in the monthly values of trade. The AR has an order, which is the most significant in all tested cases.10

Table 6.1 presents empirical results of elasticity of Polish export to changes in the PZL per U.S. dollar exchange rate in the period between January 1992 and September 1995 (45 monthly observations). The test is based on the double-
log formula of the monthly value of export $X$ as a function of the average monthly exchange rate $e$ with ARMA:

$$\ln X = a + b \ln e + c AR(-1) + d MA(1)$$  \hspace{1cm} (1)

This relationship is tested separately for Poland's total export, export to the West, export to Eastern Europe and the former Soviet Union states, and export to developing countries. The export data are based on monthly U.S. dollar values.

As evidenced by Table 6.1, total Polish export and the export to the West are highly sensitive to fluctuations of the PZL per U.S. dollar exchange rate. These functions are highly deterministic as reflected by high values of R-squared and F-statistics, as well as t-statistics for sensitivity coefficients. The positive 0.67 coefficient of exchange rate elasticity of the Polish export to the West means that for a 1 percent appreciation of the U.S. dollar in PZL terms (depreciation of the PZL), the U.S. dollar value of the export to the West increases by two-thirds of a percent. Polish export to the transforming economies of Eastern Europe and the former Soviet Union shows a medium sensitivity to exchange rates, while export to developing countries is not responsive to exchange rate changes. In the last case, the function is not deterministic, and none of the variables are statistically significant. Recalling that two-thirds of Poland's export goes to the West, one may argue that a nominal and also the real appreciation of the PZL may have a strong negative impact on export to this dominant geographic area. This result suggests that it is desirable to expand the exchange rate flexibility in order to allow foreign exchange markets to determine the equilibrium currency rate and to ensure a better connection between exchange rates and exports.

The empirical results in Table 6.1 show a relatively high significance of the MA component for export to Eastern Europe and the former Soviet Union, along with the highest (5.5 percent) coefficient of variation. This implies a high degree of monthly volatility for export to this region, which is dominated by large contracts of state-owned enterprises. Many of these contracts are still carried from the traditional trade ties set under the former command economy system. These remnants of the "old" system decide about a lesser degree of sensitivity of sales to the East to exchange rates. Polish export to developing countries is almost completely insulated from changes in exchange rates. It depends on sporadically organized contracts whose U.S. dollar value in the period 1992–95 was gradually declining despite the PZL nominal depreciation in the U.S. dollar. However, the accelerated foreign direct investment by multinational corporations in Poland in 1995, including investment by Far East Asian companies, may contribute to a future growth of the country's export to this region.\footnote{11}

A similar sensitivity test to exchange rates is conducted for Polish import for the same period of time. The tested formula is

$$\ln M = a + b \ln e + c AR(-1) + d MA(1)$$  \hspace{1cm} (2)
Table 6.2

<table>
<thead>
<tr>
<th>Natural Log of Import</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>R²</th>
<th>DW</th>
<th>F-stat.</th>
<th>v</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6.949</td>
<td>(49.29)</td>
<td>0.736</td>
<td>(3.43)</td>
<td>0.613</td>
<td>(4.16)</td>
<td>0.055</td>
<td>(0.34)</td>
</tr>
<tr>
<td>From the West</td>
<td>6.636</td>
<td>(46.93)</td>
<td>0.764</td>
<td>(3.55)</td>
<td>0.603</td>
<td>(3.99)</td>
<td>0.082</td>
<td>(0.51)</td>
</tr>
<tr>
<td>From Eastern Europe</td>
<td>5.025</td>
<td>(29.74)</td>
<td>0.728</td>
<td>(2.90)</td>
<td>0.341</td>
<td>(2.30)</td>
<td>0.343</td>
<td>(5.67)</td>
</tr>
<tr>
<td>and former SU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From Developing</td>
<td>4.785</td>
<td>(46.39)</td>
<td>0.603</td>
<td>(3.96)</td>
<td>0.300</td>
<td>(1.96)</td>
<td>-0.033</td>
<td>(-0.21)</td>
</tr>
<tr>
<td>Countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note:

- t = statistics in parentheses.
- DW = Durbin Watson statistics.
- v = coefficient of variation.

where \( M \) is the U.S. dollar value of Polish import.

The model is examined separately for Polish total import, import from the West, import from Eastern Europe and the former Soviet Union states, and import from developing countries. The results are presented in Table 6.2.

The tested function is highly deterministic for total import and for import from the West and less deterministic for import from developing countries and from Eastern Europe and the former Soviet Union, as implied by the R-squared and F-statistics. Noticeably, import from developing countries is relatively more sensitive to exchange rates than export to these countries. The MA component is only statistically significant for import from Eastern Europe and the former Soviet Union, which again exhibits the highest degree of volatility as measured by the coefficient of variation of 6 percent. In general terms, changes in the U.S. dollar value of the Polish import are responsive to exchange rate fluctuations; thus, a proper choice of the exchange rate formula and policy and the factor of the currency stability have some impact on the country’s purchases of foreign goods.

In sum, the proper choice of the exchange rate formula is essential for trade and current account transactions, at least in the case of Poland. Expanded flexibility of the exchange rate would contribute to a better alignment of export and import with the PZL value in foreign currency terms. Such flexibility can be gained through a wider band of permitted currency fluctuations that would prevent an excessive appreciation of the PZL, both in nominal and in real terms. Consequently, an expanded exchange rate flexibility would have a better bal-
ancing effect on merchandise trade and current account transactions, especially with highly developed economies of the European Union.

CONCLUSION: CURRENCY STABILITY IN PREPARATION FOR ACCESSION TO THE EUROPEAN UNION

In preparation for accession to the European Union, Central European countries should pursue a policy of stability of their currency exchange rates in terms of the leading EU currencies. They will have to design and implement a hard currency strategy in order to bring their currencies closer to the strong currencies of the EU incumbents. In order to reach this goal, Central European countries must adjust their exchange rate systems consistently with comprehensive strategies of disinflation. Control over budget deficits and anti-inflationary, reasonably tight monetary policy will be focal to accomplish the task of low inflation and currency stability (Orlowski, 1996).

The period of feasibility of fixed exchange rates in Central Europe seems to be over. These countries have developed by now relatively effective financial markets that allow them to expand flexibility of exchange rates. It will be very difficult for them to simultaneously accomplish all three elements of the "Impossible Trinity," as it is labeled in the recent economic literature: exchange rate stability, financial openness, and monetary independence. However, prudent, anti-inflationary fiscal and monetary policies will be critical to attain stable exchange rates in the presence of the expanded exchange rate flexibility and gradually phased-out capital controls. Hungary and Poland should eliminate preannounced monthly devaluations, which by themselves are a powerful source of indexation and inflation expectations. All four Central European states should expand the bands of permitted currency fluctuations to as much as plus-minus 15 percent, as it is still maintained for the currencies participating in the European Exchange Rate Mechanism (ERM) in mid-1996. Moreover, the analyzed countries should emphasize the ECU and, in the future, the Euro in the currency baskets. In particular, Poland ought to change the basket of foreign currency to which the PZL is adjusted, deemphasizing the presently strong role of the U.S. dollar.

A higher degree of exchange rate flexibility may have some negative repercussions as well. It may contribute to excessive volatility of exchange rates if it is not accompanied by disinflationary fiscal and monetary policies. Under such circumstances, the horizon of technical exchange rate forecasts will be shorter, and it may invite so-called noise traders, or speculators using the spot rate arbitrage, rather than long-term investors. The policy of currency stability and a simultaneous reorientation of monetary policy targeting on stability of exchange rates in ECU or Euro terms is likely to bring the rates closer to the economic fundamentals. Under such conditions, exchange rate forecasting will be consistent with rational expectations, and the role of "speculative bubbles" (under flexible exchange rates) or "speculative attacks" on domestic currencies
(under pegged rate formulas) will be diminished.\textsuperscript{12} If monetary authorities prove their commitment to currency stability, traders and banks will be likely to take long-term positions that are always healthy for the growth of trade and capital investment.

While preparing for accession to the EU, Central European countries ought to realize that the period of expanded flexibility of their exchange rates will only be temporary. In preparation for integration with the Union, their currencies will have to be increasingly aligned with the ECU or the Euro. Eventually, fixed rates with a narrow band of fluctuations will have to be reintroduced, once they join the EU. Logical steps of moving from more flexible rates to the Euro peg still need to be debated and designed, although it seems inevitable that they follow the path of

1. Removing the crawling devaluations.
2. Expanding the band to 15 percent.
4. Changing the monetary policy target to controlling exchange rates in Euro terms.

At the same time, the economic authorities need to seek ways of improving productivity and strengthening a competitive position of producers of exported goods. In essence, a hard currency strategy will favor the growth of national saving and productivity. It will generate undeniable long-term benefits to the Central European countries who will become fully qualified members of a united Europe.

NOTES

1. See Aghevli, Khan, and Montiel (1991) for a comprehensive presentation of arguments for choosing various exchange rate systems.
2. In the prereform period in the late 1980s, almost all prices in Poland and in Czechoslovakia were administratively controlled, while only 15 percent of prices were subject to a state control in Hungary (Bruno, 1992, p. 6).
3. The experience of Russia with the floating rate system without efficient market interest rates in 1991–94 proves that such a system is likely to generate a considerable undervaluation of the domestic currency official rate comparing to the PPP exchange rate, which, in turn, exacerbates inflation expectations.
4. Hungary implemented a series of monetary policy and financial institutions reforms before. They started from the introduction of a two-tier banking system (central bank and commercial/investment banks) in 1987.
5. Calculations are based on the data of the National Bank of Poland and on Business Central Europe (1996, p. 73).
6. See Aghevli, Borensztein, and van der Willigen (1992) for a comprehensive review of the exchange rate policy and trade liberalization in Czechoslovakia.
7. Since the March 1995 devaluation, the HUF market rate in terms of the official
currency basket has been oscillating around the upper bound of the permitted band of fluctuations (in U.S. dollar per HUF terms), indicating a relative strength of the HUF, based on the evidence provided by the National Bank of Hungary. Under such circumstances, the policy of monthly devaluations of the HUF becomes questionable.

8. For instance, Oblath (1994, p. 35) identifies four major factors influencing real exchange rate movements in transition economies: import liberalization, the collapse of the CMEA trade, elimination of administrative export restrictions to the West, and the "emancipation" of the service sector. There is, however, limited empirical evidence supporting the impact of trade policies on real exchange rates. This is because trade policies remain strongly connected to nominal, not to real, exchange rates (Berg and Sachs, 1992).

9. Real effective exchange rate movements, wage increases, and their price effects are never coincidental in time. A closer examination of time lags between these factors in transition economies would be beneficial for a better understanding of the link between them. The Dornbusch "sticky price" model of exchange rate "overshooting" can serve as a good basis for further research on this subject (Dornbusch, 1976). The model assumes a delayed reaction of prices to monetary policy changes that leads to exchange rate overshooting or overvaluation.

10. The integrated component I in the ARIMA process is not statistically significant in the tested series. Therefore, it is not included in these tests.

11. The AR component is relatively significant for all exports except to developing countries. A further investigation of optimal lags between exchange rate fluctuations and export values by the Granger Causality Test shows that in three cases export reacts relatively quickly to exchange rates with a one-month lag (F-stat. = 5.17 for total export, 5.35 for export to the West, and 3.36 for export to Eastern Europe and the former Soviet Union). Other lagged applications are by far less conclusive.

12. Recently advanced arguments by Obstfeld (1995) suggest that speculative attacks are not only attributable to exchange rate uncertainty under flexible rates, as emphasized by the traditional "speculative bubbles" literature. Unwarranted speculative attacks take place under fixed rates or target zones as well, as implied by his "second-generation" model of speculative attacks with multiple equilibria.

REFERENCES


