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Macroeconomic Fragility and Exchange Rate Vulnerability: A Cautionary Record of Transition Economies[1]

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The interaction between the exchange rate regime and macroeconomic stabilization in several transition economies during 1990–1996 was influenced by the persistence of high inflation rates and the initial disequilibrium between the highly undervalued nominal exchange rates in relation to their purchasing power parity estimates. Policymakers generally adopted the flexible (nominal) exchange rate regimes for manipulating real exchange rates with a view to correcting the exchange rate disequilibrium and conveying inflation control signals. The rates of real appreciation were higher in the earlier years of high inflation rates. By 1996, lower inflation rates required less currency appreciations thereby reducing the negative impact of the latter on trade competitiveness. However, the persistence of unwarranted interest rate differentials, a consequence of the domination of monetary control over prudent fiscal management, and the associated inflows of foreign funds put an upward pressure on exchange rates exacerbating trade competitiveness. The transition record suggests that innovative exchange rate arrangements can provide only a brief interval during which sound fiscal discipline needs to be put in place for controlling inflation. *J. Comp. Econom.*, December 1998, **26**(4), pp. 621–641. Columbia University, New York, New York 10027.

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1. INTRODUCTION

The former planned economies of East-Central Europe and the post-Soviet states began their transition toward a market system in the early 1990s. Their

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objective has been to expand their trade, preferably with Western markets and under liberalized trading arrangements, by freeing domestic prices, controlling inflation, and adopting suitable foreign exchange systems for the purpose. This paper focuses on the interaction between the exchange rate arrangements used and macroeconomic stabilizations in several transition economies during 1990–1996. A noteworthy feature of the record is that, with the exception of effective inflation control in a handful of economies, annual inflation rates continued to be in high, double-digit levels requiring a vigilant management of the exchange rate regimes aimed at promoting inflation control and foreign trade competitiveness.[2] Indeed, for the leading transition economies, to be identified below, the persistence of high inertial inflation has engaged the attention of policymakers and scholars alike.

As is well known, inflation control in transition economies was caught up in the emergence of correct relative prices from their administered norms. The process also involved the slashing of budget deficits from their initial high levels. The choice of a suitable exchange rate regime, including a pegged exchange rate, that could induce a correct set of relative prices and effective inflation control in an open economy was a major concern of policymakers.[3] With a few exceptions noted in Table 1, they opted for flexible exchange rate regimes that afforded them greater freedom in managing inflation control via discretionary fiscal and monetary policies. In Section 1, I describe the impact of the haphazard progression of price decontrol measures on the aggregate price level. Section 2 provides details of budget deficits and their persistence generally at high levels, except in a few economies, resulting in higher growth rates of broad money than would otherwise be the case. In Section 3, I analyze the implications of the initial disequilibrium between the highly undervalued nominal exchange rate and its purchasing power parity (PPP) measure for the management of the exchange rate regime. The real exchange rate had to necessarily appreciate creating an inevitable conflict for policymakers between the goals of promoting export competitiveness

[2] At the start of the transition reforms, the inflation rates were extreme and the nominal exchange rates were highly undervalued in relation to equilibrium exchange rates for most of the economies considered here. If the central bank were to undertake substantial real appreciation of the exchange rate with a view to correcting the disequilibrium, the measure would contribute to inflation control but damage trade competitiveness. The exchange rate regimes including the pegged exchange rate, the crawling peg, the managed float, and the crawling band for a set of transition economies is discussed in Desai (1997) and presented in Table 1 here. For a discussion of the issues involved in these arrangements, see Williamson (1995) and Tomczynska (1998).

[3] Nominal exchange rate changes do not affect *relative domestic* prices of traded goods of a small open economy with tariffs as the only trade barriers. The management of the real exchange rate that influences the relative prices of traded and nontraded goods is relevant here. Under a flexible exchange rate regime, the monetary authorities can manipulate the real exchange rate by appropriate changes in the nominal exchange rate in the context of a targeted growth of money supply. For a theoretical analysis of the need for strong adjustment efforts involving relative price changes between traded and nontraded goods under a regime of fixed exchange rate, see Schweickert (1994).

TABLE 1

1998 Exchange Rate Regimes in Transition Economies

Country	Currency	Exchange rate regime	Description
		Group I: Leading economies	
Czech Republic	Czech koruna	Managed float	The Czech National Bank (CNB) manages the rate with a view to maintaining a stable relationship against the Deutsche mark. The CNB may intervene in foreign exchange market and may signal desired exchange rate band.
Slovak Republic	Slovak koruna	Peg	The Slovak koruna is pegged to a basket comprising the Deutsche mark (60%) and the U.S. dollar (40%) within margins of ±7%.
Slovenia	Tolar	Managed float	The exchange rate is determined in the interbank exchange market where the Bank of Slovenia may participate.
Croatia	Kuna	Managed float	The exchange rate is determined in the interbank foreign exchange market.
Estonia	Kroon	Peg	The exchange rate is pegged to the Deutsche mark at the rate of 8 kroons (EEK) per 1 Deutsche mark.
Latvia	Lats	Managed float	The lats is informally pegged to the SDR and since February 1994 has maintained a constant exchange rate against the SDR of 0.7997 lats (LVL) per 1 SDR.
Poland	Zloty	Crawling peg	The exchange rate is adjusted under a crawling band policy at a preannounced rate within margins of ±7% around the central rate. The zloty is pegged to a basket of the U.S. dollar (45%), the Deutsche mark (35%), the Pound sterling (10%), the French franc (5%), and the Swiss franc (5%).

TABLE 1—*Continued*

Country	Currency	Exchange rate regime	Description
		Group I: Leading economies	
Hungary	Hungarian forint	Crawling peg	The National Bank of Hungary adjusts the official exchange rate in accordance with a preannounced rate of crawl against a currency basket consisting of the Deutsche mark (70%) and the U.S. dollar (30%) within margins of ±2.25%. The monthly rate of the forint crawl is 1%.
Lithuania	Litas	Peg to U.S. dollar	The litas has been pegged to the U.S. dollar at 1 litas (LTL) per U.S. dollar since April 1994 when the currency board arrangement was established.
		Group II: Lagging economies	
Macedonia	Dinar	Peg	The exchange rate is pegged to the Deutsche mark with current account convertibility.
Azerbaijan	Manat	Managed float	The central bank intervention is aimed at sterilizing capital inflows and maintaining competitiveness. The currency is fully convertible on current account.
Armenia	Dram	Managed float	The regime consists of a relatively clean float with an auction-determined unified exchange rate. The central bank intervention in the foreign exchange market is motivated by macroeconomic stabilization.
Albania	Lek	Managed float	
Romania	Romanian leu	Independent float	The exchange rate against the U.S. dollar is determined in the interbank foreign exchange market. The National Bank of Romania intervenes in the exchange market to smooth out exchange rate fluctuations and to build foreign exchange reserves.

TABLE 1—*Continued*

Country	Currency	Exchange rate regime	Description
		Group II: Lagging economies	
Kyrgystan	Som	Fully floating	The exchange rate is market determined with full current account convertibility.
Kazakstan	Tenge	Managed float	The exchange rate is unified.
Moldova	Leu	Floating with limited open-market management by the National Bank of Moldova	The exchange rate is fundamentally market driven, being determined by three forces: the daily fixing sessions of the Chisinau Interbank Foreign Currency Exchange (with less than 5% of operations), the interbank market outside the fixing session, and the cash market. There are no restrictions on current account transactions. Capital account transactions require licenses from the central bank.
Belarus	Belarus rubel	Managed float	The exchange rates were unified on February 3, 1997 under a managed float system in which the official exchange rate is set on the basis of (foreign exchange) supply and demand and the inflation rate.
Georgia	Lari	Managed float	The regime consists of a relatively clean float with an auction-determined, unified exchange rate. The central bank intervention is limited.
		Group III: Trailing economies	
Bulgaria	Lev	Independent float	The exchange rate is determined on the basis of a weighted average of transactions in the interbank market during the previous trading day.
Russia	Ruble	Flexible, managed float within a band	The official exchange rate is quoted daily by the central bank on the basis of the daily trading rates in the Moscow Interbank Currency Exchange

TABLE 1—*Continued*

Country	Currency	Exchange rate regime	Description
		Group III: Trailing economies	
			(MICEX). The market rate closely follows the official rate. The regime is quite transparent. Russia signed Article VIII of the International Monetary Fund in 1996.
Uzbekistan	Som	Managed float	A multiple exchange rate system is in place reflecting a comprehensive, nontransparent system of exchange allocation and licensing. While the primary rate is the auction rate, it is a non-market-clearing rate de facto set by the central bank; the official rate is the average of the previous, three-weekly auction rates. The black-market premium is over 100%.
Ukraine	Hryvnia	Managed float	The National Bank of Ukraine (NBU) conducts daily foreign exchange auctions in which the official exchange rate of the hryvnia is determined. The official rate applies to transactions of the NBU with the government. The interbank rate may not differ by more than 0.6% from the official rate.
Turkmenistan	Manat	Managed float	The exchange rate regime consists of rates with a spread of about 25%. The foreign exchange market is subject to restrictions and exchange rates are determined by the Central Bank of Turkmenistan (CBT) which determines the official (noncash) and the commercial bank (cash) exchange rates, the former in weekly auctions and

TABLE 1—*Continued*

Country	Currency	Exchange rate regime	Description
		Group III: Trailing economies	
			the latter by providing an indicative rate to banks. The weekly auctions serve essentially to channel limited amounts of foreign exchange to priority sectors at the preannounced official exchange rate, with access to the market restricted via screening of bids by the Foreign Exchange Committee and the CBT.
Tajikistan	Ruble	Managed float	The exchange rate is determined in the interbank market. The currency is convertible for current account transactions.

Source. Exchange Arrangements and Exchange Restrictions, Annual Report 1997, IMF and IMF Reports.

and inducing a downward pressure on inflation via exchange rate manipulation. The concluding Section 4 emphasizes the continuing predicament of the leading transition economies with positive growth rates: their policymakers are under pressure to maintain high real interest rate differentials such that foreign capital inflows can continue financing the current account deficits resulting from surging import demand.

2. THE CONUNDRUM OF HIGH INFLATION RATES AND THE PROGRESSION TO CORRECT RELATIVE PRICES

With regard to inflation control in the economies under consideration, countries are listed in Table 2 in descending order of performance in terms of their growth and inflation rates and classified in the three groups of leading, lagging, and trailing transition economies. Table 2 shows that the annual average inflation rates declined everywhere during the period, including in the post-Soviet states from their initial quadruple- and triple-digit levels. The Slovak and Czech Republics and Slovenia and Croatia had single digit inflation rates for 1996. The three Baltic states of Estonia, Latvia, and Lithuania, and Poland and Hungary by contrast, continued to experience high inflation rates ranging from 17 to 25%.

The post-Soviet states recorded high rates exceeding these levels reaching 80% for Ukraine and triple-digit numbers for Turkmenistan and Tajikistan.

The nine economies of the Czech and Slovak Republics, Slovenia, Croatia, the three Baltic states, Poland, and Hungary are grouped as the leading transition economies in our analysis. The former four had positive growth rates (for at least three years) and single digit inflation rates. The latter subset had positive growth rates but double digit inflation rates. Macedonia, Azerbaijan, Armenia, Albania, Romania, Kyrgyzstan, Kazakstan, Moldova, Belarus and Georgia are excluded from the leading economies group despite positive growth rates and comparable double-digit 1996 inflation rates in Table 2 because their growth rates were negative in the immediate past, their inflation rates were extreme, generally in the triple-digit ranges in the immediately preceding years, and their budget deficits high and volatile. In other words, this second group lacked the sustained performance of the leading economies in terms of positive growth rates and inflation control. The remaining economies in the third category trail farther behind with negative growth rates that may have plateaued and triple digit inflation rates.

Extreme inflation rates persisted in some of the post-Soviet states because of relatively lax monetary policies that accommodated shaky budgetary management. However, inflation remained high even among some leading contenders, partly because administered prices were not freed in a single shot. Utility and energy prices were generally decontrolled in stages with the result that their impact on relative prices and on the price level continued to be felt with a lag. In some post-Soviet states, the continued budgetary subsidization via inflationary means of inefficient industrial enterprises put upward pressure on the price level from the failure of relative prices to adjust fully. In the absence of such subsidization, the efficient enterprises facing fully adjusted relative prices would have expanded and the unviable enterprises would have disappeared, resulting in a downward pressure on prices in an environment of prudent fiscal and monetary management. Budgetary management shows an uneven pattern, the worst practitioners again being some of the post-Soviet states, which exhibit extreme growth rates of broad money in Table 2.

3. FISCAL MISMANAGEMENT AND ITS IMPLICATIONS FOR MONETARY POLICY

Excepting the leading economies in the first group, high and uneven budget deficits were the norm as suggested by the information in Table 2. Among the leaders in the first group, the Baltic states, Poland, and Hungary could have trimmed their budget deficits and reined in inflation further if they had managed to bring budget outlays more in line with revenues. Hungary had the worst record in this regard. Even so, fiscal management in the first group was plagued more by the inability to cut expenditures than to collect revenues. By contrast, budgetary expenditures, as proportions of GDP, declined sharply in the post-

TABLE 2

Performance Indicators in Transition Economies, 1990–1997

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group I: Leading economies			
Czech Republic	1990	−1.2	10.8	na	na	0.5
	1991	−11.5	56.6	na	na	26.8
	1992	−3.3	11.1	na	na	22.8
	1993	0.6	20.8	2.7	41.9	19.8
	1994	2.7	10.0	0.8	43.3	19.9
	1995	5.9	9.1	0.4	43.4	19.8
	1996	4.1	8.8	−0.2	42.8	9.2
	1997	1.0	9.5	−1.0	na	na
Slovak Republic	1990	−2.5	10.8	na	na	na
	1991	−14.6	61.2	na	na	na
	1992	−6.5	10.1	na	na	na
	1993	−3.7	23.2	−7.0	51.0	16.8
	1994	4.9	13.4	−1.3	48.0	20.1
	1995	6.8	9.9	0.1	47.0	19.1
	1996	6.9	5.8	−1.2	46.0	16.6
	1997	4.5	6.5	−3.5	na	na
Slovenia	1990	−4.7	550.0	−0.3	49.6	na
	1991	−8.9	118.0	2.6	41.1	na
	1992	−5.5	201.0	0.2	45.8	131.6
	1993	2.8	32.3	0.3	46.7	64.2
	1994	5.3	19.8	−0.2	46.1	50.7
	1995	4.1	12.6	0.00	45.7	30.2
	1996	3.1	9.7	0.30	45.7	19.4
	1997	4.0	9.0	−1.0	46.0	na
Croatia	1990	−6.9	610.0	na	na	na
	1991	−19.8	123.0	na	na	na
	1992	−11.1	666.0	−4.0	37.0	na
	1993	−0.9	1518.0	−0.8	33.0	na
	1994	0.6	97.6	1.7	42.0	112.0
	1995	1.7	2.0	−0.9	47.0	25.0
	1996	4.2	3.5	−0.5	47.0	38.0
	1997	5.0	3.7	−2.7	na	na
Estonia	1990	−8.1	23.0	na	na	na
	1991	−7.9	211.0	5.2	na	na
	1992	−14.2	1076.0	−0.3	34.9	71.0
	1993	−8.5	90.0	−0.7	40.3	87.0
	1994	−1.8	48.0	1.3	38.3	31.0

TABLE 2—*Continued*

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group I: Leading economies			
	1995	4.3	29.0	−1.2	40.8	30.0
	1996	4.0	23.0	−1.5	40.4	37.0
	1997	7.0	11.0	na	na	na
Latvia	1990	2.9	10.5	na	na	na
	1991	−10.4	172.0	na	na	153.0
	1992	−34.9	951.0	−0.8	28.2	170.0
	1993	−14.9	108.0	0.6	35.2	84.0
	1994	0.6	36.0	−4.1	38.2	48.0
	1995	−0.8	25.0	−3.5	40.5	−23.0
	1996	2.8	18.0	−1.4	40.2	20.0
	1997	3.4	8.0	−0.9	na	na
Poland	1990	−11.6	585.8	3.1	39.8	160.1
	1991	−7.0	70.3	−6.7	48.9	37.0
	1992	2.6	43.0	−6.6	50.4	57.5
	1993	3.8	35.3	−3.4	50.5	36.0
	1994	5.2	33.2	−2.8	49.2	38.2
	1995	7.0	27.8	−3.6	49.9	35.0
	1996	6.0	19.9	−3.1	na	29.3
	1997	5.5	16.0	−4.0	na	na
Hungary	1990	−3.5	28.9	0.4	53.5	29.2
	1991	−11.9	35.0	−2.2	54.3	29.4
	1992	−3.1	23.0	−5.5	61.6	27.3
	1993	−0.6	22.5	−6.8	62.2	17.2
	1994	2.9	18.8	−8.2	62.1	13.0
	1995	1.5	28.2	−6.5	56.1	18.5
	1996	1.0	23.6	−3.5	50.0	20.9
	1997	3.0	18.0	−5.0	na	na
Lithuania	1990	−5.0	8.4	−5.4	49.1[a]	55.0
	1991	−13.4	224.7	2.7	38.7	143.0
	1992	−37.7	1020.5	0.8	31.3	245.0
	1993	−24.2	410.4	−3.1	33.3	100.0
	1994	1.0	72.1	−4.2	29.3	64.0
	1995	3.1	39.5	−3.3	27.9	30.8
	1996	3.6	24.7	−3.6	26.9	−2.0
	1997	4.5	9.0	−2.8	29.3	na
			Group II: Lagging economies			
Macedonia	1990	−9.9	608.0	na	na	na
	1991	−12.1	115.0	na	na	na
	1992	−21.1	1691.0	−9.6	48.2	na
	1993	−8.4	350.0	−13.6	54.5	na

TABLE 2—*Continued*

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group II: Lagging economies			
	1994	−4.0	122.0	−3.2	54.2	na
	1995	−1.4	16.4	−1.3	46.5	0.3
	1996	1.1	3.1	−0.4	44.3	0.5
	1997	2.0	6.0	−1.0	40.0	na
Azerbaijan	1990	−11.7	7.8	na	na	na
	1991	−0.7	106.0	na	na	na
	1992	−22.6	616.0	2.8	46.3	na
	1993	−23.1	1130.0	−12.7	46.1	686.0
	1994	−18.1	1664.0	−11.4	36.0	486.0
	1995	−11.0	412.0	−4.2	19.5	122.0
	1996	1.3	19.8	−2.6	19.0	27.0
	1997	5.2	7.0	−2.0	na	18.0
Armenia	1990	−7.4	10.3	na[b]	na[c]	na
	1991	−10.8	100.0	−1.8	7.3	na
	1992	−52.4	825.0	−8.1	12.3	na
	1993	−14.8	3732.0	−56.1	59.5	na
	1994	5.4	5273.0	−16.5	34.3	684.0
	1995	6.9	177.0	−11.1	22.5	69.0
	1996	5.8	18.5	−9.3	19.4	35.1
	1997	5.8	15.0	−6.7	18.2	14.8
Albania	1990	−10.0	0.0	−15.0[k]	62.1[l]	23.4
	1991	−27.7	36.0	−31.0	61.9	104.0
	1992	−7.2	226.0	−22.0	43.9	153.0
	1993	9.6	85.0	−15.0	40.2	75.0
	1994	9.4	23.0	−12.0	36.3	41.0
	1995	8.9	7.8	−10.0	34.3	52.0
	1996	8.2	12.7	−12.0	29.0	47.0
	1997	−15.0	33.4	na	na	na
Romania	1990	−5.6	5.1	1.0	38.7	22.0
	1991	−12.9	161.0	3.3	38.7	101.0
	1992	−9.8	210.0	−4.6	42.0	80.0
	1993	1.3	256.0	−0.4	34.2	141.0
	1994	3.9	137.0	−1.9	33.9	138.0
	1995	7.1	32.0	−2.6	34.5	72.0
	1996	4.1	39.0	−3.9	33.7	66.0
	1997	−1.5	145.0	−4.5	na	na
Kyrgyzstan	1990	3.0	na	0.3	38.3	na
	1991	−5.0	85.0	4.6	30.3	84.0
	1992	−19.0	855.0	−17.4	33.9	428.0
	1993	−16.0	772.0	−14.2	39.1	180.0
	1994	−20.0	229.0	−7.7	28.6	125.0

TABLE 2—*Continued*

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group II: Lagging economies			
	1995	1.3	53.0	−13.5	30.2	78.0
	1996	5.6	30.0	−6.4	23.4	22.0
	1997	6.0	27.0	−5.3	22.3	na
Kazakstan	1990	−0.4	na	1.4[f]	31.4	na
	1991	−13.0	78.8	−7.9	32.9	211.0
	1992	−14.0	1381.0	−7.3	31.8	391.0
	1993	−12.0	1662.0	−1.3	25.2	692.0
	1994	−25.0	1892.0	−7.2	25.9	576.0
	1995	−8.9	176.0	−2.0	20.7	103.8
	1996	1.1	39.1	−2.5	18.5	14.7
	1997	2.0	18.0	−4.2	na	na
Moldova	1990	−2.4	4.0	na[h]	na	na
	1991	−17.5	98.0	0.0	24.7	na
	1992	−29.0	1208.0	−26.2	28.5	358.0
	1993	−1.0	1283.0	−7.4	23.4	317.0
	1994	−31.0	330.0	−8.7	30.5	94.0
	1995	−3.0	30.0	−5.7	29.9	64.0
	1996	−8.0	23.5	−6.7	31.9	17.0
	1997	−2.0	12.0	−4.5	na	na
Belarus	1990	−3.0	na	na	na	na
	1991	−1.2	84.0	na	na	na
	1992	−9.6	969.0	na	na	na
	1993	−10.6	1187.0	−1.9	56.6	954.0
	1994	−12.2	2221.0	−2.6	50.5	1878.0
	1995	−10.2	709.0	−1.9	45.1	158.0
	1996	2.6	53.0	−1.6	43.5	67.0
	1997	3.0	78.0	−2.7	na	na
Georgia	1990	−12.4	3.3	na[d]	na[e]	na
	1991	−13.8	79.0	−3.0	33.0	na
	1992	−44.8	887.0	−25.4	39.0	464.0
	1993	−25.4	3126.0	−26.2	36.0	4319.0
	1994	−11.4	15606.0	−7.4	24.0	2229.0
	1995	2.4	163.0	−4.5	12.3	146.0
	1996	10.5	39.0	−4.4	13.9	42.0
	1997	10.5	9.0	−3.5	na	na
			Group III: Trailing economies			
Bulgaria	1990	−9.1	26.3	na[g]	65.9	17.0
	1991	−11.7	333.5	na	45.6	125.0
	1992	−7.3	82.0	−5.2	45.4	42.0

TABLE 2—*Continued*

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group III: Trailing economies			
	1993	−2.4	73.0	−10.9	48.1	48.0
	1994	1.8	96.3	−5.8	45.7	79.0
	1995	2.1	62.0	−6.4	43.0	40.0
	1996	−10.9	123.0	−13.4	47.6	111.0
	1997	−7.0	1049.0	−6.3	na	na
Russia	1990	na	5.6	na	na	17.6
	1991	−5.0	93.0	na	na	126.0
	1992	−14.5	1526.0	−21.6	65.8	568.0
	1993	−8.7	875.0	−7.2	43.3	409.0
	1994	−12.6	307.4	−10.4	45.0	200.0
	1995	−4.0	197.7	−5.5	37.7	126.0
	1996	−5.0	47.7	−8.3	38.7	33.7
	1997	1.0	17.0	−8.0	na	na
Uzbekistan	1990	1.6	3.1	−1.1	46.1	na
	1991	−0.5	82.2	−3.6	52.7	na
	1992	−11.1	645.0	−18.4	43.4	468.0
	1993	−2.3	534.0	−10.4	38.8	784.0
	1994	−4.2	1568.0	−6.1	33.3	680.0
	1995	−0.9	305.0	−4.1	37.6	158.0
	1996	1.6	54.0	−7.3	36.2	100.0
	1997	1.0	65.0	−3.0	30.0	na
Ukraine	1990	−3.4	4.2	na	na[i]	na
	1991	−11.6	91.0	na	na	na
	1992	−13.7	1210.0	−25.4	58.4	na
	1993	−14.2	4700.0	−16.2	54.5	758.0
	1994	−23.0	891.0	−7.8	48.1	568.0
	1995	−11.8	376.0	−4.9	42.7	173.0
	1996	−10.1	80.0	−3.2	40.4	32.0
	1997	−3.0	20.0	na	na	na
Turkmenistan	1990	2.0	4.6	1.2[j]	43.6	na
	1991	−4.7	103.0	2.5	38.2	na
	1992	−5.3	493.0	13.2	42.2	na
	1993	−10.0	3102.0	−0.5	19.2	na
	1994	−19.0	1750.0	−1.4	11.9	1084.0
	1995	−8.0	1005.0	−1.6	14.0	548.0
	1996	−3.0	992.0	−0.2	15.7	529.0
	1997	−15.0	90.0	na	na	na
Tajikistan	1990	−1.6	4.0	na	na	na
	1991	−7.1	112.0	−16.4	49.6	68.0
	1992	−29.0	1157.0	−31.2	57.8	579.0
	1993	−11.0	2195.0	−25.0	52.1	1429.0

TABLE 2—*Continued*

Country	Year	Real GDP growth rate (percentage change)	Inflation rate (percentage change)	Government balance (percent of GDP)	Government expenditure (percentage of GDP)	Broad money (percentage change)
			Group III: Trailing economies			
	1994	−21.5	350.0	−10.5	55.0	159.0
	1995	−12.5	609.0	−11.2	30.5	413.0
	1996	−7.0	418.0	−5.3	17.6	144.0
	1997	−3.0	60.0	na	na	na

Source. The table is put together from information in Transition Report Update 1997 (EBRD), and IMF reports.

Notes. Changes in real GDP growth and inflation rates are annual average changes in percent over the previous year.

Broad money at year end, M3, includes currency in circulation outside banks and demand deposits of households and enterprises (M2) plus foreign currency deposits of households and enterprises.

[a] Lithuania's government expenditure includes net lending.

[b] Armenia's government balance is consolidated central government balance on an accrual basis.

[c] Armenia's government expenditure is consolidated central government expenditure on an accrual basis.

[d] Georgia's government balance is consolidated government balance on a cash basis.

[e] Georgia's government expenditure is consolidated government expenditure on a cash basis.

[f] Kazakstan's government balance is central government balance.

[g] Bulgaria's government expenditure is general government expenditure on a cash basis.

[h] Moldova's government balance is general government balance.

[i] Ukraine's government expenditure is state budget expenditure.

[j] Turkmenistan's government balance is central government balance.

[k] Albania's government balance is general government balance which is domestically financed.

[l] Albania's government expenditure is general government expenditure on a commitment basis.

Soviet states that straddle the second and third groups because revenues fell drastically. Budget deficit management involved nonpayment of wages and salaries to state employees, reaching extreme levels in Russia in 1996.[4] Again, the sharp growth rates of broad money in Table 2 in the second and third groups resulted from rapid credit expansion by unregulated commercial banks.[5]

[4] For an analysis of the wage nonpayment problem in Russia based on a multivariate model involving demographic, occupational, and job location groups of household respondents from 1994 to 1996, see Desai and Idson (1997).

[5] Occasionally, the velocity of circulation of broad money, not reported in Table 2, has been excessive, reflecting conversion of local currency into foreign exchange. The high velocity numbers, for example, for Kyrgystan in 1994, Belarus in 1993 to 1995, and Uzbekistan in 1995 also show sharp nominal devaluation of their currencies in these years.

The less than satisfactory fiscal management in the first group of leading economies and the acute shortfall of ex post revenues in relation to planned expenditures in the rest resulted in excessive reliance on monetary policy via sharp cutbacks over time in growth rates of money supply to bring inflation under control. Negative real interest rates in the early phase of the transition with inflation rates exceeding the regulated nominal interest rates were converted into positive real interest rates with market-determined interest rates exceeding the inflation rates. With lagging tax revenues and tightening IMF discipline directed at central bank borrowing, governments in the second and third groups borrowed from the markets, pushing domestic yields on government credit instruments upward. As a result, domestic financial assets continued to be attractive investments for domestic and foreign investors. As argued below, sustained inflows of foreign capital provided the cash for financing higher trade deficits but also posed the risk of currency appreciation and damage to foreign trade competitiveness.[6]

Government budget deficits unmatched by net private savings spill over into current account deficits. As the economies of East-Central Europe and the Baltic states in the first group turned around and began experiencing positive growth rates, imports went up. For these leading economies, the deficits in current accounts were financed by capital inflows. These inflows, exceeding the surge in imports, required sterilization operations of varying amounts by monetary authorities in the Czech and Slovak Republics, Slovenia, Croatia, the Baltic states, Poland, and Hungary.[7]

Policymakers can handle this situation in various ways. One choice is to let the currencies appreciate in nominal terms making them more expensive for foreigners. This could hurt exports, especially of products turned out by the more efficient, privatized industry, and damage the competitiveness of import substitutes. Another possibility is to curtail private demand spilling into imports via a restrictive wage policy in combination with lowering of interest rates to discourage capital inflows. Policymakers, on the other hand, may choose to utilize foreign credits to finance increased demand for consumer goods and to encourage foreign direct investment to finance capital and intermediate goods imports.

[6] Among other possible consequences and policy dilemmas posed by a higher than warranted, continuing differential between domestic and foreign interest rates, see Nuti (1996, pp. 150–151). In his view, "the move towards positive real rates of interest was an overdue correction with respect to earlier rates which were negative and large in absolute terms. But real rates soon exceeded sustainable levels, i.e., levels geared to the real rate of return obtainable on productive investment, thus becoming an undue brake on investment and sustainable growth." (Nuti, 1996, p. 148). Again, "domestic interest rate differentials with respect to hard currency interest rates were as a rule always higher than necessary to offset the subsequent nominal devaluation of the domestic currency; indeed interest rates were higher than necessary to offset even differential inflation rates. In other words, domestic currency deposits yielded much higher rates of return than hard currency deposits."

[7] If increased imports are financed, dollar for dollar, by capital inflows, then sterilization will not be necessary because there is no increase in money supply induced by a rise in the foreign exchange reserves of the central bank.

Continuing portfolio inflows can also be used to finance imports of capital goods. Most governments have continued to opt for a regime of interest rate differential and continuation of capital inflows for financing trade deficits combined with exchange rate policies involving a sufficiently wide band for the exchange rate to forestall speculative capital inflows.[8] This policy stance has left several economies exposed to sudden withdrawals of short term capital, and further hikes in interest rates to counter the pressure on domestic currencies as was demonstrated in the latest currency turmoil originating in South-East Asia. The management of the exchange rate regimes in all economies was further complicated by the initial disequilibrium between the actual values of the nominal exchange rates and their PPP valuation.[9]

4. COMPLICATIONS INTRODUCED BY THE DISEQUILIBRIUM EXCHANGE RATES

The initial undervaluation of the nominal exchange rates of these economies in relation to their purchasing power parity estimates had resulted from a highly undervalued parity for the exchange rate as in the case of the Polish zloty or extreme inflation that had eroded the values of the local currencies, for example, of the Russian ruble in 1992. Therefore, the disequilibrium required real appreciation of the currencies, in turn creating a negative impact on foreign trade competitiveness.

The real exchange rate estimates presented in Figs. 1, 2, and 3 reveal an interesting pattern. First, the substantial real depreciation of currencies at the start of the reforms for a number of the countries in the three groups resulted from the initial large nominal devaluations. Second, countries in the first group follow a trend with real currency appreciation slowing off from 1994, even exhibiting real depreciation for Croatia, Hungary, and Slovenia in 1996.[10] The Baltic countries exhibit double-digit, real currency appreciations in 1996 ranging from 10 to 22%, raising concern about the advisability of continuing with fixed exchange rate regimes, including currency boards for Estonia and Lithuania and a virtually fixed peg for Latvia without a currency board, in view of the damaging impact

[8] For an analysis of the problem of large capital inflows and sudden reversed outflows in the context of fixed and flexible exchange rate systems, see Orlowski (1997b).

[9] A consensus had emerged on this issue as suggested by Portes (1994), Nuti (1995), de Melo *et al.* (1996), and Halpern and Wyplosz (1997). According to Nuti (1996): "Exchange rates at which convertibility was introduced were everywhere well below and occasionally grotesquely below PPP rates. Except for Hungary, throughout the area US$ rose to at least 4 times its PPP value: 4–5 times in Poland and in Czechoslovakia, 9 times in Bulgaria, and about 136 times in Russia, at the inception of their respective stabilization plans. . .." (p. 140).

[10] For the Czech Republic, Hungary, and Poland, Orlowski and Corrigan (1997) recommended the adoption of a more flexible exchange rate regime, involving a wide band for Hungary and Poland, accompanied by continuing fiscal restraint and gradually expanding currency convertibility with a view to preparing them for European Union membership.

	Croatia	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Slovak Republic	Slovenia
1991		-11.5		12.4			54.7	-6.9	-30.7
1992	-537.0	12.2		14.4		657.0	11.2	11.2	3.7
1993	234.2	14.6		3.2	114.3	504.9	-0.6	11.4	-9.9
1994	28.5	8.8	46.9	1.7	50.4	77.9	5.2	6.9	3.4
1995	11.9	13.9	37.7	5.9	27.9	36.1	18.3	14.3	17.8
1996	-3.2	4.0	15.8	-1.7	10.3	22.1		-0.1	-12.6

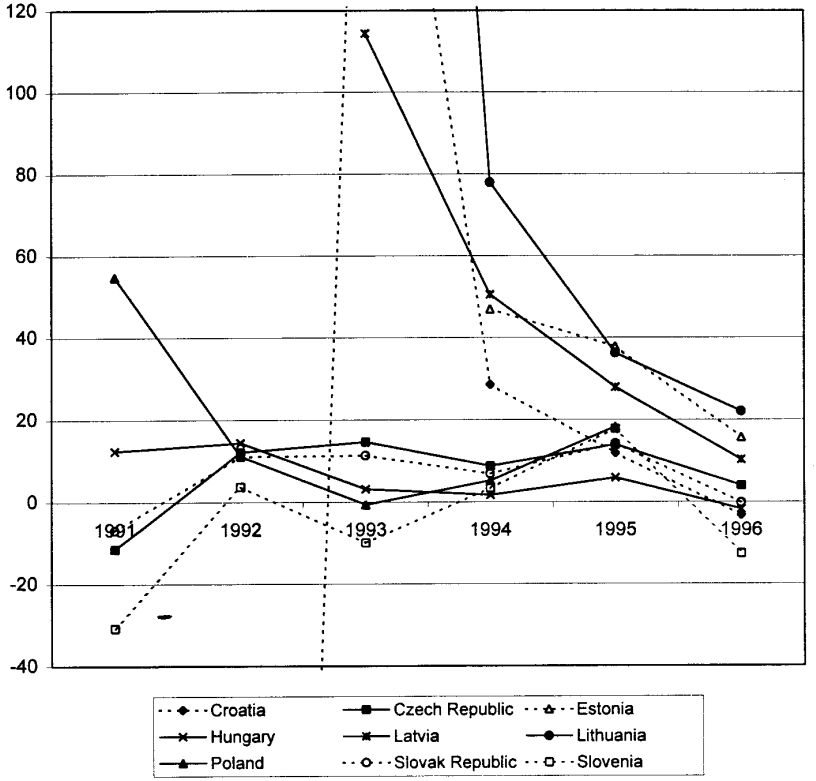

FIG. 1. Real exchange rate changes in transition economies, 1991–1996 (Group I). All figures are in percentages. Positive numbers indicate real appreciation and negative numbers real depreciation of the exchange rate which is defined with the U.S. dollar as the numeraire. The formula underlying the calculations is: percentage change in real exchange rate = percentage change in nominal exchange rate—(percentage change in country consumer prices—percentage change in U.S. consumer prices). Source. The original data are from Transition Report Update 1997 (EBRD).

of such appreciation on export competitiveness. The three Baltic economies, with fixed exchange rates without a band, are the exceptions to the variety of alternative exchange rate regimes of Table 1 currently operating in our transition economies. Third, the rates of currency appreciation decline for countries in the second group as well, but the process starts a year later, the peak being in 1994 here instead of in 1993 for members in the first group. By contrast, real exchange

	Azerbaijan	Belarus	Macedonia	Kyrgyzstan	Romania
1991				-119.2	-70.3
1992				-7992.4	95.8
1993	-8.5	-297.4		1302.2	106.3
1994	1634.6	944.2	32.8	197.1	20.5
1995	200.3	494.0	25.4	42.0	0.6
1996	23.8	30.0	-4.2	8.6	-12.0

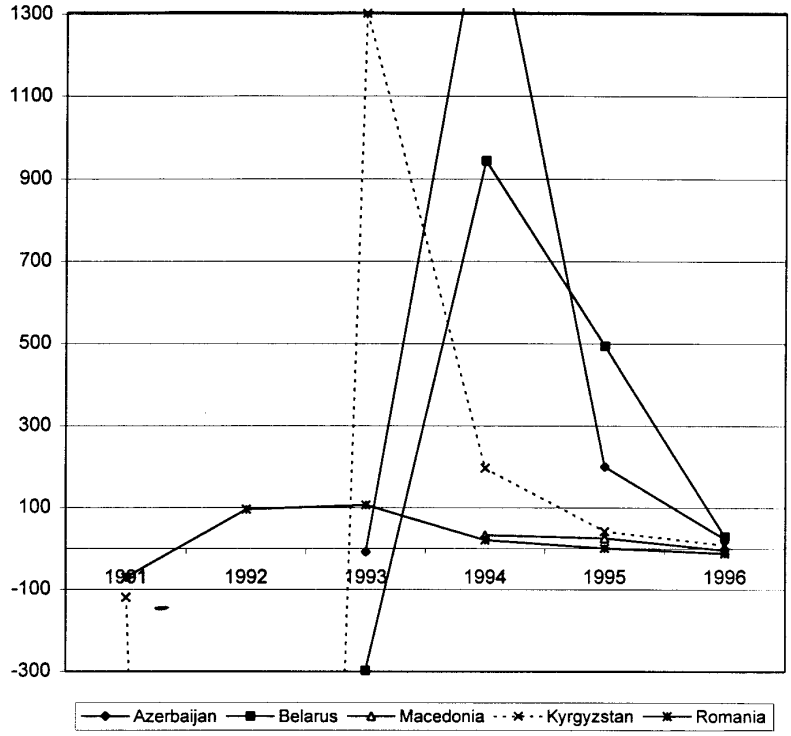

FIG. 2. Real exchange rate changes in transition economies, 1991–1996 (Group II).

rate movements in the third group are volatile except for Russia for which the rates of exchange rate appreciation declined over time along with declining inflation rates.

Two inferences can be drawn from the pattern of exchange rate appreciations of Figs. 1 through 3. First, while annual inflation rates diminished as a result of tightening budgetary policies and heavy reliance on monetary control dictated by exogenous considerations, the almost universal adoption of flexible nominal exchange rate regimes allowed policymakers the option of manipulating the real exchange rates to convey inflation control signals. In other words, a higher real appreciation ceteris paribus would contain inflationary pressures more than a lower appreciation. Second, the rates of real appreciation were generally higher

	Bulgaria	Russia	Turkmenistan	Uzbekistan
1991	-34.8			79.7
1992	49.7			37533.9
1993	51.6	572.8		210.7
1994	-1.6	163.1	897.4	1664.2
1995	35.0	80.2	518.0	141.7
1996	-63.1	32.5	-1822.6	

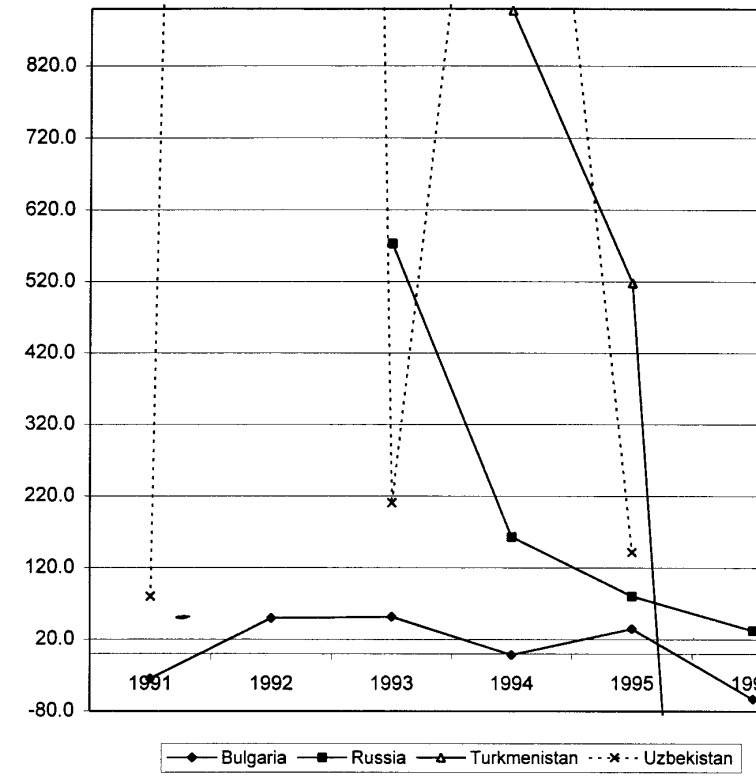

FIG. 3. Real exchange rate changes in transition economies, 1991–1996 (Group III).

in the earlier years of high inflation rates. By 1996, lower inflation rates required less currency appreciations posing less damage to foreign trade competitiveness.

This conclusion is illustrated by the striking association between annual percentage changes in consumer prices and real exchange rates for Russia. The former declined from 896 in 1993 to 302 in 1994 to 190 in 1995 ultimately falling to 48 in 1996. The ruble real appreciation estimates are 573, 163, 80, and 32 percent for the four years.[11] The figures are annual, average percentages. What

[11] The declining rates of the ruble's real appreciation have continued through the first quarter of

lessons does our analysis provide for the continuing interaction between macroeconomic stabilization and exchange rate management?

5. MACROECONOMIC STABILIZATION AND EXCHANGE RATE MANAGEMENT: LESSONS FROM THE RECORD

The major lesson of the transition record is that the adoption of exchange rate management as a weapon for exerting downward pressure on inflation can play only a limited role in disequilibrium situations in which the nominal exchange rates deviate sharply from their PPP valuations. If inflation rates are high, the required real appreciation of the currencies as an instrument of inflation control also has to be significant, resulting in a substantial negative impact on trade competitiveness. Again, the persistence of unwarranted interest rate differentials, a consequence of the domination of monetary control over prudent fiscal management, and the associated inflows of foreign funds put an upward pressure on the exchange rate, exacerbating trade competitiveness.

Therefore, the problem of high inflation has to be attacked at its source, i.e., high budget deficits, unregulated banking systems, and fragile revenue collections, especially in the economies of the second and third groups of this paper. Even among the leaders of the first group, who have effective institutional infrastructure, the persistence of high inflation requires further slashing of government and private consumption expenditures that spill over into current account deficits. For these economies, innovative exchange rate regimes can provide only an interregnum during which sound fiscal management needs to be put in place.[12] In conclusion, it would seem that the medicine is old. Only the bottles are new.

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1998 encouraging Sergei Dubinin, the chairman of Russia's central bank, to suggest that the ruble must be gently devalued in line with inflation to help Russia's battered exporters compete worldwide (Financial Times, April 1, 1998, p. 16).

[12] It is clear that efficient restructuring of industrial enterprises involving new investments, advanced technologies, and labor layoffs that can boost exports is also necessary. This microeconomic adjustment problem has not been dealt with in the analysis. The issue of a suitable time path in exchange rate management by policymakers who may find it advisable, with declining inflation rates, to exit from a fixed exchange rate to an adjustable or a crawling peg to a crawling band has also not been addressed. For an excellent discussion of the analytics of exchange rate exit strategies, see Orlowski (1997a).

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