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CZECH EXCHANGE RATE CRISIS**

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## ABSTRACT

### Pegging Out: Lessons from the Czech Exchange Rate Crisis\*

In May 1997 the Czech Republic abandoned its exchange rate peg, the centrepiece of macroeconomic strategy since 1991. I examine the usefulness of theories of speculative attack in interpreting the crisis. Significantly, after the crisis subsided, competitiveness returned to its earlier level. One interpretation is that the koruna was the innocent victim of turmoil in Asia. This neglects the trend deterioration of competitiveness prior to the crisis. I therefore conclude that the crisis provoked a much-needed adjustment in fiscal policy, which altered the monetary-fiscal mix and consequent equilibrium exchange rate. Sterilization during 1994–6 unhelpfully delayed adjustment. Earlier abandonment of the parity would have helped only if it had also induced the required fiscal adjustment.

JEL Classification: E58, E65, F31

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## NON-TECHNICAL SUMMARY

This paper is motivated by two related concerns. One is the recent wave of speculative attacks on exchange rate parities in many emerging market economies. The other is the more general question of the design of macroeconomic policy in a transition economy that is subject to a high degree of international capital mobility. The experience of Mexico during 1994–5 has been extensively studied, and problems of East Asia since 1997 are now the focus of much research. This paper develops similar points using a different example – the experience of the Czech Republic. Having pegged its exchange rate since the outset of reform in 1991, the Czechs were finally forced to abandon the peg in May 1997. What lessons does this episode contain for the design of macroeconomic policy?

The paper documents the evolution of the Czech economy, initially part of Czechoslovakia, then, since 1993, as the Czech Republic. Rapid disinflation, coupled with fiscal prudence, soon led to substantial capital inflows. The current account deficit, initially small, steadily increased. Nor should one forget the underlying microeconomic context: a transition economy striving to accomplish structural adjustment, with a fragile banking system vulnerable to sudden pressures from an outflow of funds.

Theories of speculative attack emphasize either persistent trend deterioration in the fundamentals, and hence a finite life for a pegged nominal exchange rate regime, or the possibility that, despite no trend in fundamentals, multiple equilibria may exist because it is optimal for policy-makers to accommodate some types of private sector behaviour. Either version may include contagion across countries, whether as a coordinating device for self-fulfilling expectations; as the final revelation of cumulated inside information; or even as sequential spillovers in which devaluation of one currency then alters the sustainable equilibrium of another currency. Whatever the theoretical arguments, there is powerful empirical evidence that crises are clustered in time.

Stylized models provide only clues about where to look for explanations, they are rarely the complete story. Nevertheless, the paper investigates, for the Czech Republic, the evolution of the principal fundamentals that might be the ingredient to one or other model of a crisis. During the 1990s, the Czech Republic witnessed a substantial real appreciation. Had it simply become uncompetitive? Transition economies can generally cope with some real appreciation. Not only did most begin reform with a deep devaluation,

productivity should be growing more rapidly than elsewhere. I adduce evidence to suggest that whilst the exchange rate had not yet become uncompetitive, the existing trend was indeed unsustainable. In that sense, speculative capital exited when it foresaw that the policy mix would have to change. Nevertheless, a convincing interpretation must recognise that, by a few months after the crisis, the real exchange rate had returned to its level of the previous year. The function of the crisis was not therefore to force a sustained real devaluation.

The other fundamental I investigate is the trend in reserves and the possibility that solvency was deteriorating. From such a standpoint, the function of the crisis is to restore solvency by terminating a regime that must lead to insolvency. Since measured domestic fiscal policy was close to budget balance throughout, it is to external solvency that such an argument must appeal. For most of the period, this is simply not the case: capital inflows were enormous. Nor should this be a surprise. Transition economies successfully disinflating are usually pursuing tight monetary policy with high real interest rates. Since the equilibrium real exchange rate is also appreciating, any regime that keeps real exchange rates close to equilibrium levels is likely to induce substantial capital inflows: only substantial initial appreciation (hence the prospect of subsequent depreciation) will eliminate large deviations from interest parity. Credible countries that pursue narrow exchange rate bands almost always face capital inflows.

Where these reflect international willingness to hold the currency, they can be accommodated by printing domestic money; where instead they reflect increased creditworthiness based on optimism about structural adjustment, the private desire to borrow in order to spend must be allowed to spill over into imports if the domestic economy is not to overheat. But escalating imports test the nerve of international lenders. Any signs that optimism is exaggerated – for example backtracking on previous commitments to structural adjustment – may trigger a rapid reversal in confidence. Since capital inflows are often intermediated through banks, the resulting outflow may place irresistible pressure on fragile domestic banks.

It is often said, wrongly, that the Czechs should simply have floated earlier. For reasons given above, this would simply have induced an initial (overshooting) real appreciation, bringing forward the crisis by making the trade balance collapse earlier. A government wishing to maintain the real exchange rate close to its equilibrium level must instead change the policy mix. Tighter fiscal policy accompanied by lower interest rates will preserve the desired path of inflation whilst reducing the incentive for capital inflows. Had

such a policy been adopted several years earlier, the Czech Republic would not have attracted so much financial capital on whose continuing confidence it then became dependent. Sometimes, even budget balance is not enough, only a surplus will suffice. In the event, once the crisis occurred, its consequence was to force precisely such a tightening of fiscal policy.

## 1. Introduction

On May 26 1997, the Czech Republic was forced finally to abandon the fixed exchange rate parity that had been pegged, essentially unaltered, since the outset of reform at the start of 1991. The parity had been defended with determination, despite much conflicting advice during the previous two years. Such advice had included: exchange rate appreciation to stave off large capital inflows; exchange rate depreciation to address the ballooning current account deficit; extensive sterilised intervention to insulate the money supply from capital inflows; avoidance of sterilisation because of its fiscal costs and increasing ineffectiveness; higher reserve requirements to prevent undue monetary expansion; avoidance of such additional burdens on banks until they were in sounder health; fiscal contraction to reduce overheating; fiscal expansion to counter the economic slowdown caused by export stagnation; monetary tightening to curb import demand; and monetary relaxation to ease interest rates and allow some exchange rate depreciation. Nor were disagreements entirely *ex ante*: since the crisis, there have been a variety of *ex post* rationalisations for what took place. The economy overheated; foreign lenders lost their nerve; corporate control was exposed as inadequate; mistakes in monetary and fiscal policy were made.

This paper examines the Czech experience in order to understand, and arbitrate between, these competing claims. The episode, and the policy dilemmas it reveals, are, of course, of wider significance, and the paper therefore aims to draw wider lessons for policy design. Section 2 provides a brief history of the Czech economy. Section 3 draws on the theoretical literature on speculative attacks to ask for which clues we should be looking. Section 4 evaluates competing accounts of what occurred and discusses whether other policies would have made a difference. Section 5 assesses early evidence on how hard a landing the Czech economy then made. Section 6 draws more general lessons.

## 2 The evolution of the Czech economy

Table 1 provides key macroeconomic data on the Czech economy during 1991-96. The Czechs and Slovaks were divorced in 1993, although inflation and output estimates are available for the Czech part of the CSFR in 1991-92. Table 1 records rapid disinflation to below 10% a year, the resumption of moderate growth after 1993, a current account deficit that spiralled to 8% of GDP by 1996 financed essentially by capital inflows, a central government budget close to balance, and persistently low unemployment.

**Table 1 Czech Economic indicators 1991-96, end year**

	1991	1992	1993	1994	1995	1996
Inflation (%)	52	13	18	10	8	9
Real GDP growth (%)	-12	-4	-1	3	6	4
Current account/GDP (%)			0	0	-3	-8
Budget surplus/ GDP (%)			0	1	1	0
Unemployment (%)			3	3	3	3
Nominal exchange (Crowns/\$)	28	29	30	28	27	27
Real effective exchange rate index		100	118	122	125	133

Sources: EBRD (1996) & data supplied to author by Czech National Bank.

Notes: Data before 1993 refer to the Czech component of Czechoslovakia. Exchange rates (at end year) fluctuate against the \$ since 1993 because of (a) adoption of peg against a basket (DM & \$), and (b) introduction of wider bands in 1996. REER based on relative producer prices.

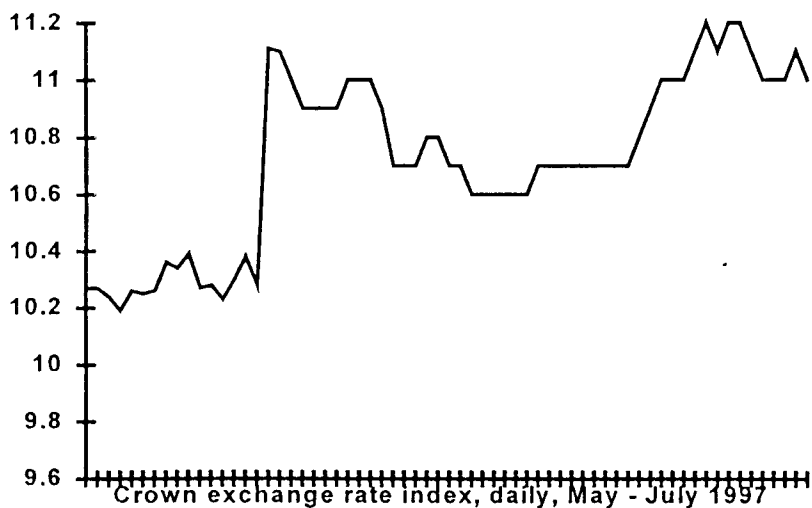
The exchange rate was pegged in January 1991 at 28 Crowns/dollar, with a narrow band of plus or minus 0.5%. In May 1993 the peg was redefined against a basket of 65% DM and 35% US \$, but the narrow band was maintained. In February 1996, the band was widened to plus or minus 7.5%, but the central parity was maintained. Finally, in May 1997 speculative pressure forced abandonment of the peg in favour of a managed float. The exchange rate depreciated initially to 10% below the original parity, before making a partial recovery.



### Box : The crisis of May 1997 and its aftermath

The crisis began in the early hours of May 15 when the Crown fell sharply within the band to 5% below the central parity. To defend the currency, the central bank engaged in substantial unsterilised intervention, reflected in reserve losses and sharply higher interest rates. Access to Lombard credit was first restricted and then terminated. Only a radical fiscal adjustment might have enabled the original exchange rate to survive in the medium run; with the government unwilling, and perhaps unable, to attempt such a policy, an announcement was made on the evening of 26 May that band was being abandoned in favour of a managed float, using the DM as a reference currency.

In the immediate aftermath of the crisis, Lombard credits remained closed, and interest rates remained high. Interest rate spreads were high, reflecting uncertainty in banking. Within a month, confidence improved, interest rates were eased, Lombard credit reopened, and spreads began to fall. July and August saw further consolidation. By the end of August 1997, real interest rates had returned almost to pre-crisis levels.



Three aspects of microeconomic reform should also be emphasised. First, the task for structural adjustment was enormous. The CSFR had been 97% state owned prior to reform. Second, mass privatisation through vouchers was pursued vigorously in the Czech Republic. Privatisation Funds enabled some diversification of risk, but ownership of these funds was quickly concentrated in banks, some of the largest of which were still state owned. Third, as in other transition economies, the solvency of banks was precarious and early emphasis on financial regulation insufficient.

### **3 Theories of speculative attack**

A speculative attack is a discrete change in private sector behaviour in financial markets in anticipation of a change in the policy regime. The jump may be reflected in asset quantities or asset prices, though in the latter instance something stochastic is required to explain why excess profit opportunities were not foreseen by the market.

Models of speculative attack essentially fall into three types. The family of models sired by Krugman (1979) assume an initial policy regime that is not sustainable for ever. Exogenous trend deterioration of the fundamentals leads to a speculative attack, accompanied by a change of regime, namely reversion to floating, as soon as it can succeed. Being foreseeable, the attack is reflected in reserves but not interest rates or the exchange rate. Making trend deterioration in fundamentals stochastic rather than deterministic allows some discrete exchange rate depreciation in the crisis and therefore introduces a risk premium into interest rates prior to this date.

Such insights can be recast within a target zone, most interestingly within a one-sided target zone (Krugman and Rotemberg, 1992) with a firm commitment only to prevent undue depreciation. Even if fundamentals follow a trendless random walk, their intermittent triggering of defence of the band against depreciation will on average provide a reserve drain. Once

reserves fall below some critical level, a speculative attack becomes possible. Elimination of foreseeable profits again implies that the attack occurs as soon as it will first succeed.

This family of discrete change in regime models fails to explain why policymakers optimally choose this sequence of regimes, not least because all available reserves are pledged solely to support of the first regime (Obstfeld and Rogoff, 1996). Regimes with multiple equilibria (Obstfeld, 1994, 1996) offer an alternative rationale, balancing the reputational costs of changing the regime against costs to the real economy of maintaining an inappropriate nominal exchange rate. Since private expectations affect the nominal variables that policymakers must decide whether or not to accommodate, self-fulfilling expectations can validate different equilibria. Crisis may then reflect changes in regime fuelled by changes in expectations rather than by changes in observable fundamentals.

This is not to say that fundamentals are irrelevant. Even fundamentals are endogenous once we model policy selection. The structural parameters that govern the evolution of policy variables also determine the ranges in which multiple equilibria are feasible. Economies exhibiting strong fundamentals are innately less prone to speculative attacks whose function is to shift the economy from one feasible equilibrium to another (Jeanne, 1995; Obstfeld, 1996; Velasco, 1997). Obstfeld and Rogoff (1996) argue the pervasive failure of interest rates to anticipate attacks before they come over the horizon suggests attacks are rarely associated with evident trend deterioration of fundamentals; moves between multiple equilibria may be an alternative rationalisation.

A third, possibly related, interpretation of attacks is that they reflect contagion, the triggering of sequential crises across countries. This may be viewed as a sunspot mechanism, of no innate fundamental significance but nevertheless a coordination device for expectations of market participants, thereby facilitating a self-fulfilling shift in expectations and equilibrium; as an information cascade, the final revelation of cumulated inside information, for example a reassessment of the degree of capital mobility; or as sequential spillovers, in which the each

depreciation then affects the equilibrium exchange rate for the next country. Whatever the theoretical arguments about contagion, there is powerful empirical evidence (Eichengreen, Rose, Wyplosz, 1996) that exchange rate crises in different countries are closely clustered in time.

Formal models of crises give us indications of what evidence to seek, but they are not the whole story. Tractable models so streamline the specification, both of policy and of private behaviour, that they provide at best stylised accounts of what might take place. The ensuing discussion of the Czech Republic therefore pays additional attention both to the dilemmas of policy design and the context of an economy in transition.

#### **4 Competing diagnoses of causes of the crisis**

Models of speculative attack are driven by two different types of fundamentals: solvency and competitiveness. The latter of course presupposes some nominal inertia, but that is a reasonable assumption in Europe, even in transition economies (see Griffiths and Pujol, 1996; Cottarelli and Szapary, 1998). I begin with competitiveness.

##### **4.1 Pegged exchange rate, continuing inflation: had the exchange rate simply become overvalued?**

The original parity, adopted in January 1991, had involved a substantial depreciation and was intended to ensure that initially the economy was highly competitive. Despite dramatic disinflation after initial price liberalisation, Table 1 confirms that the Czech Republic had continued to experience annual inflation around 10%, well in excess of that experienced in

its western trading partners. Had the Czech exchange rate simply become overvalued? Any assessment must rest on two judgements, the initial level of competitiveness and subsequent changes in that position. The latter calculation is shown in Table 2.

**Table 2 The real exchange rate, and indicators of competitiveness**

Czech Republic	92	93	94	95	96	97i	97ii	97 June
<b>Real effective exchange rate: (relative producer prices)</b>	100	118	122	125	133	142	134	129
<b>memo items</b>								
Consumer price index	100	121	133	145	157	164	166	167
Producer price index	100	113	119	128	134	138	139	139
industrial productivity								
large firms	100	101	108	118	131			
also including smaller firms	100	99	104	115	125			
annual % real GDP growth	-4	-1	3	6	4	2	1	
goods & services (% of GDP)								
exports		57	52	59	58			
imports		55	56	64	66			
trade balance		2	-4	-5	-8			
% annual increase in unit labour costs (business sector)								
Czech Republic			17	17	12			
Germany			0	-2	0			
Austria			0	2	1			
USA			2	3	3			

Sources: OECD (1997), IMF (1997) and data supplied to author by Czech National Bank

Line 1 of Table 2 reports the real exchange rate, calculated from the evolution of the nominal effective (trade weighted) exchange rate and producer prices in the relevant countries. Czech inflation, coupled with a fixed nominal exchange rate, induced a real appreciation of 40% between 1992 and 1997i. However, Halpern and Wyplosz (1996) have shown that real appreciation is a trend phenomenon pervasive in transition economies, consistent with the Balassa-Samuelson view that rapid productivity growth in traded goods allows *equilibrium* real appreciation of the exchange rate. Table 2 confirms that during 1994-96 industrial productivity

was growing quite rapidly, certainly more rapidly than in the Czech Republic's main trading partners.

Two considerations suggest that productivity growth was probably insufficient to prevent an erosion of competitiveness and hence of profits from exporting. First, OECD (1997) contains direct estimates of nominal unit labour costs. These are shown at the bottom of Table 2. Whereas in competitor countries wage growth scarcely exceeded productivity growth, in the Czech Republic wage growth was *substantially* above increases in industrial productivity, leading to double digit increases in nominal unit labour costs. Unless the traded goods sector was wildly different from these estimates of the whole business sector, which I doubt<sup>1</sup>, the conclusion must be that rapid wage growth undermined competitiveness despite modest increases in productivity.

Second, we can look at trade performance directly. Table 2 shows that by 1996 exports were scarcely a larger share of GDP than in 1993. Export growth, which in 1994-95 had finally attained respectable rates, began to fall back in 1996. However, export growth was still positive (OECD, 1997, estimate 5.3% for real export growth in 1996). Table 2 shows that the big external story was the dramatic and sustained rise in imports. With no equivalent collapse in exports, this reminds us that the diagnosis of stagnating competitiveness should not be oversold<sup>2</sup>.

Two further pieces of evidence suggests it is unlikely that competitiveness had fallen much below its equilibrium level: (a) sharp export growth had resumed in 1997ii before the exchange rate depreciation, despite the fact that (b) shortly after the crisis, the real exchange rate was identical to its 1996 value. Table 3 gives brief details.

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<sup>1</sup> Although I have been unable to obtain data distinguishing productivity by sector, Table 2 does report estimates of productivity growth not merely in large firms usually recorded in international statistics but also for a sample containing smaller firms as well. Since some of the largest firms are in *nontraded* goods such as transport, domestic energy, it is hard to argue that comparison of the two rows of productivity data in Table 2 provides support for the proposition that productivity growth in traded goods was sufficiently fast to prevent all erosion of competitiveness.

**Table 3 External trade and the real exchange rate**

	1996	96i	96ii	96iii	96iv	97i	97ii
Real exchange rate (producer prices)	132.4				135.6	142.0	133.7
Real growth (%. year on year)							
exports of goods & services		5.0	2.1	3.6	2.7	-0.4	15.4
imports of goods and services		11.6	7.9	18.5	9.4	6.7	10.5

Source: Data supplied to author by Czech National Bank

It is possible to get a cross check on these inferences from Tables 2 and 3. Using data from economies other than those in transition, Halpern and Wyplosz (1996) estimate equations relating equilibrium real exchange rates (measured by the dollar value of domestic wages) to easily measurable data that can then be used to deduce the equilibrium path of competitiveness in transition economies. Their estimates for the Czech Republic are reproduced in Figure 1, which corroborates the diagnosis of the preceding paragraphs. Strong wage growth had been steadily eroding competitiveness, raising the dollar value of domestic wages, but not yet to a level at which dollar wages exceeded their estimated equilibrium path.

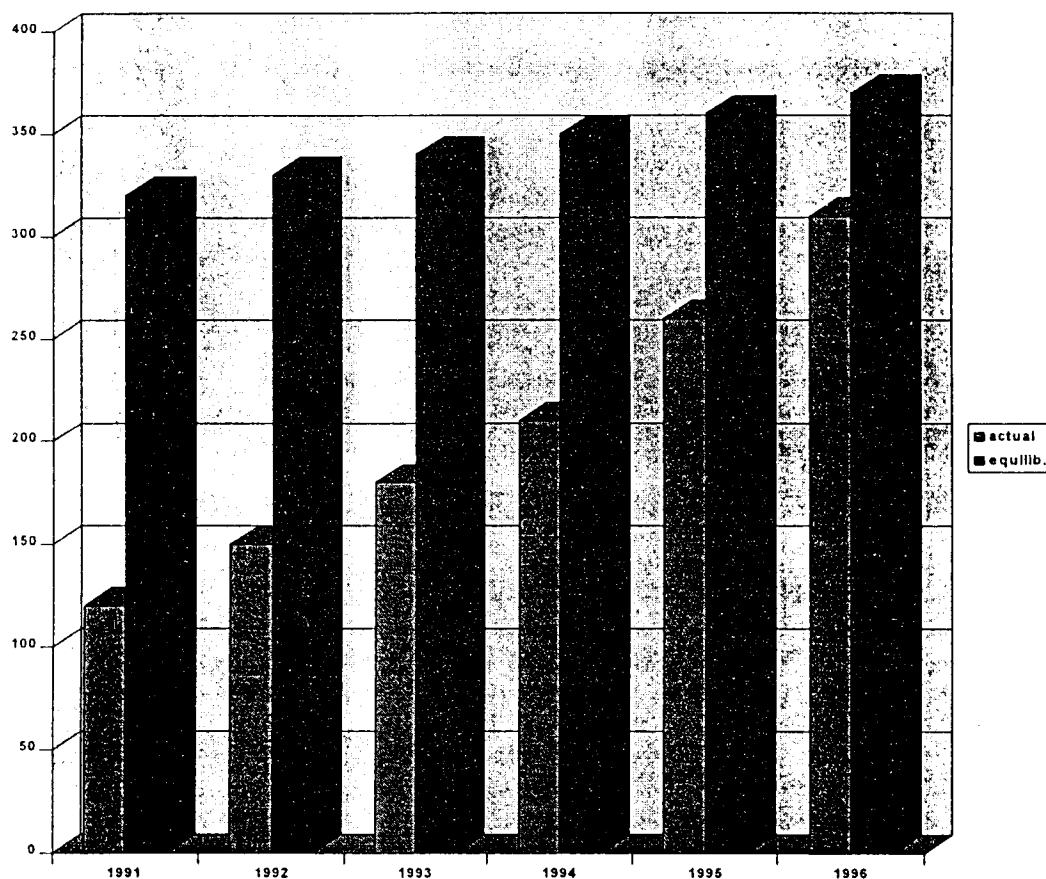
Figure 1 suggests that, while the *level* of competitiveness was still adequate, its *rate of deterioration* could not have been sustained indefinitely. Two features of the Czech experience, intelligent anticipation of future problems with fundamentals and a relatively soft landing for the real exchange rate after the crisis, have attributes of the classic balance of payments crisis (Krugman, 1979). However, in key aspects the crisis did not conform with this stereotype.

First, as Table 1 reveals, the measured budget deficit of central government was essentially in balance. Core inflation in the Czech Republic was less a need for inflation tax revenue than the consequence of inflation inertia; of protracted structural adjustment and

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<sup>2</sup> Moreover, as we shall shortly see, some of the import surge can be associated with imports of

essentially in balance. Core inflation in the Czech Republic was less a need for inflation tax revenue than the consequence of inflation inertia; of protracted structural adjustment and only gradual elimination of price controls for household heating and rents; weak corporate control and wage discipline; and remarkably low levels of unemployment. Some of these difficulties are slowly being overcome, allowing the prospect of some future disinflation,



**Figure 1 : Index of actual and equilibrium Czech exchange rate 1991-96  
(Monthly wages in US \$, actual and estimated equilibrium level)**

*Source:* Halpern & Wyplosz (1996)

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capital goods likely to enhance productivity and competitiveness at some future date.



unlike the Krugman model, which posits perpetual inflation after the crisis occurs. This may also help explain the softer landing, in particular in respect of reserve depletion.

#### 4.2 Deteriorating solvency and steady reserve depletion?

Not only did the Czech experience fail to exhibit the fiscal fundamentals required for a Krugman crisis, it only partly exhibited the key symptom: steadily diminishing reserves before the event and a discrete collapse of reserves during the crisis. Table 4 shows the evolution

**Table 4** Official foreign currency reserves

	1993	1994	1995	1996	97i	97ii	97 July
reserves (US \$ bn)	3.8	6.2	13.9	12.4	11.6	10.7	10.8
reserves / imports	0.29	0.41	0.55	0.45	0.38	0.41	0.41

Source: IMF (1997)

Note: Second row denotes stock of reserves divided by annualised flow of merchandise imports.

of official reserves of foreign currency, which *increased* steadily until early 1996, then began to fall, especially in 1997. It was indeed a crisis, but not to the extent implied by a conventional crisis model.

It was of course the massive capital inflows of 1994-96 that allowed reserves to build up despite the current account deficits recorded in Table 1. The eventual balance of payments crisis reflected a switch from capital inflows to incipient outflows. There are several possible explanations that should be examined more closely: a waning commitment to structural adjustment and consequent crisis of confidence of foreign investors, leading to a reversal of FDI; a change in the configuration of interest differentials and likely exchange rate changes, inducing an outflow of hot money; and the cumulative effect of the previous response to monetary inflows, a vast programme of sterilised intervention that delayed rather than promoted necessary macroeconomic adjustment.

Table 5 shows balance of payments flows during 1993-96, giving details of the capital flows that financed current account deficits. Inflows peaked during 1995 when capital inflows reached a massive 17.4% of GDP. The payments deficit in 1996 took place *despite* continuing capital inflows of 7.4% of GDP.

Decomposing capital flows into their components sheds light on whether inflows were primarily reflected direct and portfolio investment associated with privatisation, or whether primarily they reflected other capital flows, such as hot money and medium-term borrowing by residents, reflecting either perceived deviations from uncovered interest parity or simply domestic capital market imperfections<sup>33</sup>.

**Table 5 Capital flows 1993-96 ( % of GDP)**

	93	94	95	96
<b>Balance of payments surplus</b>	<b>9.8</b>	<b>9.7</b>	<b>15.8</b>	<b>-1.5</b>
<i>of which</i>				
<b>current account</b>	<b>2.2</b>	<b>-0.2</b>	<b>-2.9</b>	<b>-8.2</b>
errors and omissions	-0.3	-2.6	1.3	-0.7
<b>capital account</b>	<b>7.9</b>	<b>12.5</b>	<b>17.4</b>	<b>7.4</b>
<i>of which</i>				
capital transfers	-1.8	0	0	0
net FDI	1.8	2.1	5.4	2.5
net portfolio investment	5.1	2.3	2.9	1.3
other capital flows	2.8	8.1	9.1	3.6
<i>of which</i>				
mon. authorities	0.3	-0.1	0.1	0
general govt.	0	1.3	-1.0	0
banks	0.1	2.0	6.5	0.7
other	2.4	4.9	3.5	2.9

Source: IMF (1997), data supplied by the Czech National Bank, & author's calculations

<sup>33</sup> Begg (1996) discusses the claim that Czech firms and banks borrowed abroad because there were no domestic sources of medium term loans. To the extent this is correct, it increases the presumption that capital inflows were associated with spending rather than portfolio shifts in accumulated savings, and thus were likely to fuel overheating of the Czech economy.

Together, FDI and net portfolio inflows amounted to 4.4% of GDP in 1994, 8.3% in 1995 when the telecommunications sector was privatised, but only 3.8% in 1996 when the pace of privatisation slowed. With the commitment to further privatisation waning, investors may rationally have expected structural capital inflows to be more modest in future<sup>4</sup>. Deprived of this source of payments financing, adjustment in the current account suddenly became a critical issue. To the extent this interpretation is correct, it draws attention to two issues to which I return later: the importance of domestic politics and the question of whether, by retaining the exchange rate peg too long then scared off FDI inflows which otherwise might have been enjoyed for longer.

Interestingly, Table 5 does not support the view that capital inflows were principally related to privatisation, either as FDI or via more general portfolio investment. Other capital flows, 8% of GDP in 1994, 9.1% in 1995, and 3.6% in 1996, were even more important than direct and portfolio investment in explaining both the flood of capital inflows in 1994-95 and the slowdown thereafter<sup>5</sup>. While the exchange rate remained credibly pegged within a narrow band, substantial interest differentials encouraged foreign borrowing by Czechs and foreign lending to Czechs.

In February 1996, the narrow exchange rate band was widened, although the parity remained unchanged. One purpose in adopting wider bands was to introduce more short-term uncertainty about the exchange rate, thereby hoping to throw risk into the wheels of capital mobility. Initially, the change in regime appeared highly successful: during the first two quarters of 1996, cumulative inflows under 'other capital flows' were close to zero. The temporary resumption of inflows thereafter does not disprove the usefulness of the wider exchange rate band but rather was a response to an unhelpful change in the monetary-fiscal mix that I discuss shortly.

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<sup>4</sup> Since privatisation of banks had been on the agenda for some time, it is of course difficult to assess after the fact what would have been reasonable expectations to have held at time.

<sup>5</sup> Begg (1996, 1998) discusses perceived deviations from uncovered interest parity.

Table 5 makes another point vividly. The source of these financial inflows was not the government or the monetary authorities; rather it came through banks and other activities of firms and households. In part, this reflected an increase in the demand for domestic money. Although on average likely to be sustained, and therefore met properly by allowing an increase in money supply, money demand was also potentially volatile: agents familiar with the use of foreign currency deposits and facing increasing degrees of capital mobility were always likely to consider currency substitution and be capable of temporarily reducing demand for domestic money when the prospect of a crisis threatened higher yields on overseas assets<sup>6</sup>.

To the extent banks and the public did not intend to use capital inflows to add to money balances they must have planned to spend them on consumption or physical investment. With the economy close to full capacity, such demand had to spill over into imports; hence the dramatic increase in the current account deficit in 1996-97. The key issue was whether it was reasonable to have expected such deficits to continue to be financed by capital imports, or whether other policy action should have been taken earlier<sup>7</sup>. One interpretation of the inflow was that the creditworthiness of the Czech Republic had increased, permanently; if so, the textbook response was to utilise additional borrowing to implement some intertemporal smoothing, borrowing against the future success of transition. Imports of investment goods, and even consumer goods, were then the symptom of this increased creditworthiness and the only non-inflationary way to meet the additional demand when the economy was already at full capacity.

However, it may not have been reasonable for policy to be based on the assumption that inflows would continue not merely at the exceptional levels of 1994-95 but even at the

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<sup>6</sup> For an early examination of money demand not only in Czech Republic but also in other transition economies, see Begg, Hesselman & Smith (1996).

<sup>7</sup> Portes and Vines (1997) stress that, when capital inflows are flows sustained for a long time, the fundamental equilibrium exchange rate appreciates for the foreseeable future and the appropriate policy response is to allow the real appreciation to take place.

substantial levels of 1993 or 1996; after all, capital inflows sustained at nearly 8% of GDP that inflows would continue not merely at the exceptional levels of 1994-95 but even at the would have come close to financing even a current account deficit of 8.2%. First, Figure 1 indicates that competitiveness was steadily being eroded; it was going to become a problem unless the trend growth of unit labour costs could be curtailed either by faster productivity growth or by slower wage growth. The perception of a weakening of momentum in microeconomic reform made the first unlikely, and the fact that the economy was overheating made the second unlikely. Second, to the extent that inflows were tied to privatisation directly, a reduced pace of privatisation may directly have reduced inflows themselves.

Nevertheless, two factors delayed the crisis by providing more optimism about the long run and some immediate relief in the short run. First, the sheer volume of gross fixed

**Table 6 GDP and its components**

	GDP	Consumption		Investment		Exports	Imports
		household	government	total	fixed		
<b>Real growth (%)</b>							
1995 i	5.4	4.9	2.2	35.9	21.9	18.0	28.9
ii	6.5	6.0	1.7	25.1	25.0	10.6	19.5
iii	6.3	6.1	-3.3	10.4	25.0	17.6	15.4
iv	5.5	7.6	1.0	18.7	18.9	16.9	24.2
1996 i	4.4	6.6	0.7	18.1	17.0	5.0	11.6
ii	4.0	7.2	3.7	9.8	11.1	2.1	7.9
iii	3.9	6.7	2.5	28.0	6.2	3.6	18.5
iv	3.9	4.8	3.9	14.3	5.3	2.7	9.4
1997 i	1.5	5.2	3.6	8.7	1.8	-0.4	6.7
ii	1.2	5.6	1.9	-10.0	-4.8	15.4	10.5
<b>Share of GDP (%)</b>							
1994 i		51	24	23	20	56	54
1995 i		51	23	29	23	61	65
1996 i		52	22	33	24	60	65
1997 i		53	20	34	24	55	63

*Source* : Czech Statistical Office data made available to the author via the Czech National Bank.

*Notes* : Growth measured relative to same quarter in preceding year. Total investment comprises gross fixed investment plus inventory accumulation.

capital formation had increased to over 25% of GDP (see Table 6) which carried with it the prospect of substantial future increases in productivity. But investment takes time to gestate<sup>8</sup>. The second question therefore became whether other policies, for example monetary policy and/or exchange rate policy, could provide the requisite incentives to maintain capital inflows until structural investment could yield its fruit

### 4.3 Monetary policy issues

Although the exchange rate peg served Czechoslovakia well, allowing rapid disinflation and visible commitment to stabilisation, it is ironic that the same policy created many more problems for the Czech Republic after the separation from Slovakia in 1993. As the Czech Republic, having achieved low inflation and pressing on with mass privatisation, became one of the darlings of global investors and international agencies, the capital inflows documented above became massive.

In principle, those inflows prompted by higher money demand should have been accompanied by *unsterilised* intervention; Sachs (1996) argues one of the principal potential advantages of an exchange rate peg is that it allows liquification of the economy, as confidence increases, without any need for domestic credit creation that might cast doubts on the commitment to future prudence in macroeconomic policy. Conversely, to the extent that global markets took the view that substantial investment in infrastructure and physical capital was enhancing future competitiveness, the appropriate policy response is to allow a real appreciation of the exchange rate (Begg, 1996; Portes & Vines, 1996).

In practice, the authorities embarked on a vast campaign of sterilisation, retaining the narrow exchange rate band and neutralising monetary inflows through sales of domestic instruments. Table 7 highlights the extent of sterilisation: during 1993-96 the increase in net foreign assets of the monetary authorities *exceeded* the increase in the monetary base: net

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<sup>8</sup> Moreover, the failure of high investment under central planning to generate sustained and rapid growth reminds us that market incentives and corporate governance are critical in

**Table 7 Balance sheet of the monetary authorities 1993-97 (bn Crowns)**

	93	94	95	96	97 Nov
<b>Assets</b>					
Net foreign assets	17	83	180	364	341
Net domestic assets	99	29	-33	-170	-91
<b>Liabilities</b>					
Narrow monetary base	111	112	147	194	250

*Source:* Data supplied to author by the Czech National Bank

*Notes:* The above refers to the narrow monetary base. Data in IMF (1997) refer to the wide monetary base, including CNB bills & other deposits with the CNB; on the asset side, net domestic assets are correspondingly higher when such claims are recorded as liabilities rather than deducted from net assets. Despite rapid increases in the narrow monetary base during 1994-97, broad money increased much more slowly (at annual rates of 19.4% in 1995, 7.8% in 1996, 6.3% in 1997i, and 6% in 1997ii). The consequent falls in the money multiplier were in part deliberate as the authorities undertook measures, such as higher reserve requirements, to help sterilise monetary inflows.

domestic credit creation was minus 190 bn crowns, despite the fact that the narrow monetary base more than doubled; Table 7 records an increase of 139 bn crowns!

Given the extent of capital mobility, some attempts to reimpose capital controls notwithstanding, sterilisation was always a dangerous policy (Begg, 1996). It prevented the essential adjustment required, thereby inducing additional and unnecessary monetary inflows that had the potential later to become outflows. Nor were the authorities acting without the benefit of experience elsewhere. In addition to examples more remote in time and relevance, the more obvious parallel was the Mexican crisis of late 1994. Analyses of the Mexican crisis, such as that of Sachs, Tornell and Velasco (1996), accord a significant role to the policy of sterilisation.

The avowed purpose of the exchange rate peg was to make disinflation easier in the Czech Republic. The supreme paradox is that by 1995-96 adherence to the peg, by utilisation of extensive sterilisation, was making disinflation more difficult. Since capital mobility was by no means low, some sterilisation was ineffective<sup>9</sup> This suggests that monetary growth was in

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translating greater availability of capital into larger output from capital. Whether the Czech Republic could make effective use of new investment is to some extent still unproven.

<sup>9</sup> Contemporaneous estimates of the 'offset coefficient' ranged from one third to two thirds

fact higher than intended, and disinflation slower than projected. This prolonged disinflation but therefore also hastened the demise of the peg.

By 1996, with the unit labour costs increasing steadily, the current account deficit increasing sharply, and capital inflows starting to abate, it was evident that some policy response was needed. Given the persistent failure of the government to tighten fiscal policy substantially, a symptom of political weakness as well as inappropriate analysis (section 4.4), the Central Bank was forced to act. Table 8 shows the fall in the real stock of broad money (M2) and accompanying increase in the Prague interbank offer rate<sup>10</sup>; real interest rates thus increased and real exchange rate appreciated in late 1996 and early 1997.

In February 1996 the exchange rate band had been widened, and during the first two quarters this was successful in introducing additional risk and staving off capital inflows<sup>11</sup>. Subsequent monetary tightening however was a two-edged sword: by reducing aggregate demand it reduced import demand, but by raising real interest rates it provided further capital inflows or, for the first time, the possibility of nominal appreciation within the wider band, thereby reducing competitiveness. In practice, there was some resumption of inward capital flows, hence the annual inflow data in Table 5, and some real appreciation, as shown in Table 8. The simultaneous impact of the credit squeeze and real appreciation helps explain the significant slowdown of the Czech economy in the first few months of 1997. Although import growth was reduced, exports also fell. Since confidence in the peg, despite a measurable and sustained appreciation in the real exchange rate over several years, required belief in continuing rapid productivity growth in the traded good sectors, any indication of an export

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(Begg, 1996).

<sup>10</sup> Increases in PRIBOR exceeded those in officially set interest rates. Although in part this may suggest an increase in equilibrium risk premia, a clue for which some crisis models suggest we should be looking, the increase is also consistent with the use of open market operations to tighten monetary policy deliberately. The wide monetary base fell from 4% from end 1995 to 1997i despite an increase of 10% in the price level during the same period (IMF, 1997).

<sup>11</sup> Leiderman and Bufman (1996) argue that band widening diminished capital mobility in Israel.



slowdown, whatever the causes, ran the risk of jeopardising optimistic projections about future export growth.

**Table 8 Recent developments in monetary policy**

	94	95	96iv	97i	97ii
Real money growth (%annual change in M2/CPI)	10.8	10.3	-1.0	-0.8	-0.9
PRIBOR (3 month, %, at annual rate)	9.1	11.0	12.7	12.4	19.4
CPI inflation (% , year on year)	10.0	9.1	8.6	7.2	6.6
Implied real interest rate	-0.9	1.9	4.1	5.2	12.8
Real effective exchange rate (producer prices, 1992 = 100)	122	125	136	142	134

Source: Data supplied to author by Czech National Bank

#### 4.4 There was of course a better way

So far I have portrayed the problem as increased creditworthiness, reflected in substantial foreign borrowing to finance not merely investment but also consumption, demand that spilled over into substantial imports because the domestic economy was close to full capacity. Because many of the imports of capital goods were for infrastructure projects with long gestation periods, they had yet to have a large effect on productivity and competitiveness. Meanwhile, with competitiveness being eroded and external solvency deteriorating, tightening of monetary policy may have exacerbated the problem by inducing a further real appreciation and calling into question the reliability of projections of sustainable export growth. The visible waning of political commitment to further microeconomic reform<sup>12</sup> further undermined confidence in those projections.

If policy makers wished to retain the exchange rate regime, there seemed to be two simple textbook prescriptions. First, to the extent that the strategy relied on maintaining the confidence of foreign investors until substantial physical investment had time to be reflected in

<sup>12</sup> One of the proximate causes of the crisis was the refusal of the government in April 1997 to approve further microeconomic reforms seen as desirable by international agencies and considered by the Czech National Bank to be necessary for underpinning the existing

productivity, confidence should not have been jeopardised by allowing the momentum of structural adjustment to diminish substantially. Second, because competitiveness would remain a concern during this interim period, and perhaps longer if the trend in Figure 1 could not be arrested, fiscal policy had to be tightened. This would have had two distinct functions. First, it would have removed excess aggregate demand and overheating. Second, it would have allowed correction of the fiscal-monetary mix. Failure to tighten fiscal policy by 1996 was a policy error.

Policy makers achieved near budget balance during 1996 and were planning for something similar in 1997. It is an error commonly made, such as in the UK during 1987-89. Where borrowing constraints are relaxed, whether as a result of financial deregulation or increased creditworthiness, a boom in consumption and investment is inevitable and is likely to cause both domestic inflation and current account deficits. With substantial foreign assets and a flexible exchange rate, as in the UK during 1987-89, riding out the external pressure may be possible; provided consumers and investors are planning to satisfy their intertemporal budget constraints, all that is required is that this is credible to lenders. Even then, however, it is desirable to prevent substantial domestic overheating. Budget balance may be quite inadequate: a substantial budget surplus may be temporarily required when the private sector is temporarily running a large deficit. The famed "Lawson boom" in the UK took place *despite* running the only two years of budget surpluses in the past three decades.

By 1997 the Czech boom was fading out, but that was principally the result of monetary policy - maintenance of the parity despite continuing inflation and deteriorating competitiveness, then the additional *tightening* of monetary policy in 1996 described above. The longer the introduction of tighter fiscal policy was delayed, the more it became likely that fiscal tightening would have to be accompanied by (an appropriately) looser monetary policy, in other words a change in the monetary-fiscal mix.

Tighter fiscal policy, to some extent accompanied by looser monetary policy, would have allowed a much earlier abatement of capital inflows: with lower interest rates, deviations from interest parity would have been less pronounced during 1995-97. This would have had three benefits: a lower fiscal cost of sterilisation; less leakage from ineffective sterilisation into unnecessary growth of the domestic money supply, thereby reducing the loss of competitiveness implied at the fixed nominal parity or, alternatively, a lower burden on banks, who would not have faced higher reserve requirements to prevent the higher monetary base feeding through to broad money; and a lower subsequent vulnerability to capital outflows<sup>13</sup>.

Failure to tighten fiscal policy also increased the nature of the one-way bet for speculators by revealing that, if defence of the parity became necessary, it would initially be undertaken by some combination of raising interest rates and selling of foreign exchange reserves.<sup>14</sup> Speculators might well have time to get out. Given commitments to disinflation, only the willingness to use fiscal policy could have raised ex ante the prospect of serious interest rate *reductions* and a danger of accompanying exchange rate depreciation that would have inflicted capital losses on speculators in Crowns during 1995-96. Indeed, one way to interpret the drying up of capital inflows when the band was first widened in 1996 is precisely that speculators took account of the possibility of accompanying fiscal action. Once this failed to materialise, and it became evident that monetary policy was the only defence, this paradoxically provided a window in which inflows became attractive once more.

Having appreciated to near the edge of the band, in 1997i, the nature of the one-way bet then reversed: since an appreciation of the parity was implausible given the 8% current account deficit, the prospect of further capital gains on the currency was eliminated. Henceforth, only capital losses were possible. Capital inflows abated because perceived

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<sup>13</sup> The true fiscal cost of sterilisation is the deviation from interest parity multiplied by the stock of cumulated inflows thereby unnecessarily attracted.

<sup>14</sup> Revision of private sector beliefs about the preferences of government is of course capable of triggering a sharp revision in expectations about the future policy regime, a process that falls squarely within the analysis of Obstfeld (1994, 1996).

deviations from interest parity were no longer favourable; coupled with the large current account deficit, this induced a balance of payments deficit and reserve outflows. In such a vulnerable position, sooner or later an exchange rate crisis was extremely likely.

Tighter fiscal policy might have had one further advantage: it might have achieved a better composition of aggregate demand. Table 5 makes clear that the 1997 slowdown failed to take place in household consumption. Given what we know from monetary transmission in OECD countries, it would in any case have been surprising if monetary tightening in 1996 had worked through that quickly to consumer expenditure. Yet slower consumption growth had to be an integral part of any attempt to retain the parity. Higher taxes would have bit more quickly on consumption.

### **3.5 Did microeconomic failures compound the problem?**

After initial stabilisation, successful transition is mainly about microeconomics: the job of macroeconomics thereafter is not to get in the way. Getting in the way includes adopting an unhelpful policy mix that creates substantial strains through overvaluation, overheating, or confidence crises about internal or external solvency. In this section, my concern is not whether macroeconomic policy impeded structural adjustment, but whether inadequate structural adjustment made the operation of macroeconomic policy much more difficult. Three areas deserve further examination: fragility of banks, off-balance-sheet fiscal liabilities, and inadequate corporate control. They are of course connected, and they raise difficult issues faced by all transition economies.

The fragility of banks during transition is by now well understood, and perhaps should have been anticipated more than it was; such problems had been prevalent for example in Latin America during the previous two decades. Increasingly, the importance of financial regulation has been recognised; in this I include licensing of banks, financial disclosure, provisioning for bad loans, and capital adequacy requirements. Banks are important for their role in corporate governance and in the transmission of monetary policy. A fragile banking

system thus gives rise to two problems critical in the defence of an exchange rate parity in time of crisis: the standard medicine of squeezing credit may be imperfectly applied, for example because banks fear for the consequences either for their clients or themselves, and, anticipating this, policymakers may be reluctant to administer the medicine in full strength<sup>15</sup>. Despite these considerations, it is evident that the credit squeeze was eventually administered with considerable severity in the Czech Republic: PRIBOR 3-month interest rates rose from 12.4% during Jan-April 1997 to 20% in May, the month of the crisis, and 26% in June, before falling back to 17% in July.

The banking system is also a channel, though not necessarily a cause, of a second way in which microeconomic foundations impinge on macroeconomic policy, namely via off-balance-sheet liabilities accumulated through the banking system but ultimately a fiscal liability of the government, the classic mechanism of the soft budget constraint. In the Czech Republic receipts accumulated in the state-owned Privatisation Fund were then pledged on occasion as collateral for guarantees to banks of loans to individual enterprises whose demise or contraction the government was anxious to avoid. Where bad debts arose, they were slow to be acknowledged. Although it would be wrong to compare the Czech Republic unfavourably with other transition economies in a similar position, nevertheless such practices were tantamount to a hidden fiscal expansion unrecorded in national income statistics for annual flows. In this regard, the earlier portrayal in Table 1 of fiscal rectitude by central government overstates the case. By the same token, recognition of reality strengthens the argument that an earlier fiscal tightening would have been desirable.

The third channel through which microeconomics made macropolicy more difficult was the concern that there was insufficient discipline on wage setting, in part because of inadequate corporate governance. Section 4.1 argued that, for several years, wages had

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<sup>15</sup> Begg (1996) notes that, in addition to sterilisation of the monetary base, many countries including the Czech Republic had also pursued sterilisation of capital inflows by policies to reduce the money multiplier by raising reserve requirements, essentially a tax on banks. Taxing

been growing substantially in excess of productivity. Clearly, this partly reflected the unwinding of the substantial real wage cut imposed by the 1991 devaluation at the start of the peg. Moreover, it could be argued that 4% unemployment was *insufficient* to provide labour market discipline. Since the import surge partly reflected booming consumption, more effective corporate governance and wage discipline might have mitigated this pressure.

#### **4.6 Should the peg have been abandoned earlier?**

Thus far, I have tried to view the dilemma through Czech spectacles, discussing alternative policies without the sacrifice of Czech exchange rate virginity. I now ask whether the exchange rate peg should simply have been abandoned earlier. The time to exit smoothly from an exchange rate peg is before the market expects it; once it looks the last remaining resort, it is already too late. Widening the band in February 1996 did of course allow a greater degree of exchange rate flexibility than before; the lessons drawn in sections 4.4 and 4.5 are relevant to the issue of what complete abandoning of the parity would have implied.

Suppose in 1996 a managed float had been adopted. The economy was overheating; disinflation remained a priority; reluctance to countenance fiscal tightening was a political reality. The central bank would thus have been driven to tighten monetary policy and the exchange rate would have appreciated, perhaps even more than its actual appreciation within the wide band. The trade deficit would have widened even more quickly. If by some chance the floating exchange rate had not appreciated, or had even depreciated, domestic overheating would have been that much greater, the eventual monetary medicine that much tougher, and the inappropriate monetary-fiscal mix that much more dramatic.

What this thought experiment reveals is that fiscal adjustment was necessary whatever the exchange rate regime. Given the political situation, it probably required a crisis

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banks that are already fragile may frustrate progress with structural adjustment.

to make that adjustment politically feasible. Whether the trigger was a steep depreciation of a floating exchange rate or a run on reserves of a pegged rate may not have mattered<sup>16</sup>.

## 5. How hard a landing?

However traumatic the events culminating in May 1997 were to those in the Czech Republic, to many outside observers there has been a reasonably soft landing since the adoption of the managed float in May 1997. Official foreign exchange reserves, some \$12.4 billion in 1996iv, had fallen by \$1 billion by April 1997, then fell sharply to \$10 billion during May. Yet once the crisis was over, and some accompanying fiscal adjustment undertaken, by July reserves had been rebuilt to \$10.8 billion; at no stage was external assistance requested or required. PRIBOR, which had averaged 12% in 1996, reached 20% in May 1997 and 26% during June, but by July had fallen to 20%. There was no banking crisis. By 1997ii, for the first time for two years, export growth was exceeding import growth.

By July 1997 the real exchange rate index (as defined in Table 3) was 129.4, compared with 125.4 in 1995 and 132.6 in 1996. In view of Figure 1, it is important to restate that the crisis merely restored competitiveness to its levels of the recent past. In part this reflects a subsequent rebound of the nominal exchange rate, in part the passthrough of devaluation into wages and prices. If the landing, initially soft, is sustained, it will be because it has forced belated adjustment of other policies, most notably fiscal policy, not because of its direct effects on competitiveness: expenditure reduction, not expenditure switching. By the same token, any early easing of policy risks rapid precipitation of another crisis.

Official data for the state budget had recorded a small surplus of 0.5% of GDP in 1995 followed by a small deficit of -0.1% in 1996. However, these data understate the deficit in the

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<sup>16</sup> In their empirical examination of speculative attacks in many countries throughout the last three decades, Eichengreen, Rose and Wyplosz (1996) observe that crises are by no means confined to countries on fixed exchange rates.

ways mentioned above, most notably by ignoring deficits of local governments and by treating depletion of the Privatisation Fund as revenue rather than financing of a deficit. Properly measured, the budget deficit had been 1.8% in 1995 and 1.2% in 1996. The crisis of April-May 1997 finally provoked expenditure cuts totalling 2.5% of GDP, which should go some way to provide the fiscal tightening suggested above. However, these cuts were not intended to be entirely reflected in the structural budget position: to some extent they were a response to the first-quarter slowdown and consequently lower projections for future tax revenue. The implication of my previous analysis is that further changes in the monetary-fiscal mix may yet be desirable.

Although the peg was abandoned on May 27, policy discussions had been intense since a sharp depreciation within the band on May 15. Because the speculative attack on the Thai baht had taken place only a few days earlier<sup>17</sup>, contagion may have played some role in the timing of the crisis. However, it is difficult to see the Czech crown as the innocent victim of speculative frenzy. The trend deterioration of competitiveness, sustained over several years, was evident. The fact that, once the crisis was over, the real exchange rate has reverted almost to the levels of 1996 suggests that some other change in fundamentals must have taken place. The induced change in fiscal policy must be the prime suspect.

## **6. More general lessons**

Macroeconomic orthodoxy, not least that advocated from Washington, often stresses that lax fiscal policy is the source of many macroeconomic evils. It is an argument I have made myself (Begg, 1996). But lax relative to what? It is natural, but misguided, to fall into the trap of assuming that a balanced budget is therefore sufficient for the avoidance of such difficulties.

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<sup>17</sup> The Czech crown and the Thai baht had previously had similar risk characteristics and therefore had often tended to be bracketed together by investors in emerging markets (see Czech National Bank, 1998).



The Czech example is a salutary lesson that sometimes only a fiscal surplus will suffice. Simplistic judgements should therefore be avoided.

Nor is it sufficient to diagnose the fiscal policy that is needed: it must also be politically feasible to implement it. Sometimes this becomes known only when urgent action becomes required; sometimes old assumptions are rendered obsolete by changes in domestic politics. The Czech example illustrates again the danger of committing one's monetary hands in an environment where fiscal hands may also be, or may become, tied behind one's back. Promises to hold the exchange rate parity are rarely credible when supporting policies cannot be seen to be capable of being deployed appropriately. Relatively fixed parities, circumstances conducive to both occasional dramatic flows and discontinuous adjustment of asset prices, also place severe strains on banks, bank solvency and bank regulators. Other things equal, these pose greater problems for transition economies than mature economies.

While these observations caution against the adoption of narrow bands, they do not imply that the increasing prevalence of wide bands in such economies is an error, though sometimes even wider bands may not have been wide enough. The Czech example does not prove the failure of the wide band that was belatedly adopted there in 1996. By that date, vulnerability had already been increased by massive inflows. Even then, a change in fiscal policy might have been adequate. Had that been undertaken earlier, it is likely that a less dramatic fiscal adjustment would have been required.

Finally, the Czech example provides no comfort to those who believe in the twin orthodoxies of low inflation and privatisation. Displaying these in undue measure for a transition economy elevated the Czech Republic to star status. However, as the seventh anniversary of big bang approaches, cumulative output performance has remained disappointing, progress with structural adjustment has been limited, czechbook privatisation has not conferred reliable corporate governance, and the development of a healthy banking system is a task begun but not yet completed. As we have learned more recently from East

Asia, the roots of crisis are not always to be found in macroeconomics; and, however useful it may be to enjoy an apparently stable macroeconomic environment, healthy microeconomics matters too.

Transition economies offer the promise of sounder microeconomics in the future. Where, as par excellence in the Czech Republic, the macroeconomic strategy came to rely on substantial foreign borrowing against the prospect of this future success, maintaining the confidence of lenders is intrinsic to success. Although much of my analysis has examined the evolution of macroeconomic pressures, about which data is so much more readily available, this in no way implies I consider the microeconomic issues to be unimportant.

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