

# **Monetary policy and management of capital flows in a situation of high euroisation - the case of Croatia**

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## **1. Introduction**

Typically, emerging economies seek foreign savings to solve the intertemporal savings-investment problem, while countries with current account surpluses seek opportunities to invest their savings. To the extent that capital flows from surplus to deficit countries are well intermediated, and therefore put to productive use, they increase welfare. Capital flows can, however, also be dangerous, as shown by many currency and banking crises, such as those in Korea, Mexico, Sweden or Turkey (see IMF (2001)). They can make countries more vulnerable to exogenous shocks. In particular, if serious macroeconomic imbalances exist in a recipient country and if its financial sector has poor risk management, prudential regulation and supervision, large capital flows can easily lead to a crisis.

Views differ markedly on the role of “contagion” in crises. In one corner, many economists, especially from crisis-hit economies, claim financial markets will hit you even if you do everything right because of the notorious herd behaviour of investors. Economists in the other corner, often from financial markets, claim that affected countries are hit because their fundamentals are weak. An increasingly accepted intermediate view is that while emerging markets are often hit by a reversal of capital flows or worsening borrowing conditions even if they do nothing wrong, those hit the most are the countries with weaker fundamentals. Markets seem recently to have distinguished better between different countries; there appeared to be less “herding” following the problems in Argentina and Turkey in 2001.

The consensus is now that careful and gradual capital account liberalisation should follow other major economic reforms; McKinnon (1991) is an early proposal and Wyplosz (2002) is based on experience. Countries have sometimes resorted to forms of capital controls, the best known being the Chilean type, praised by eg Valdes-Prieto and Soto (1996) while discounted by others eg Edwards (2000).

Since the beginning of the transition, Croatia has undergone three distinct phases of capital flows. First came capital outflows during the war when, due to the repressed domestic demand, the economy recorded current account surpluses. Then followed the repatriation of foreign currency savings to the domestic banking system and, since 1998, foreign direct investment.

This paper analyses the causes, as well as the macroeconomic and microeconomic consequences, of capital flows. Section 2 decomposes and analyses the magnitudes and causes of capital flows in Croatia. Section 3 describes the nature of monetary policy in a situation of high euroisation and strong capital flows. Section 4 analyses what seemed to be an onset of twin crisis in 1998-99, when problems in the banking sector were accompanied by a high current account deficit and exchange rate pressure. It explains how policymakers coped with the twin problems and avoided a crisis, and how, in the process, capital flows were moderated and better intermediated. Section 5 describes capital controls and capital account liberalisation. The paper concludes by asking what the future holds for Croatia.

## **2. Capital flows in Croatia**

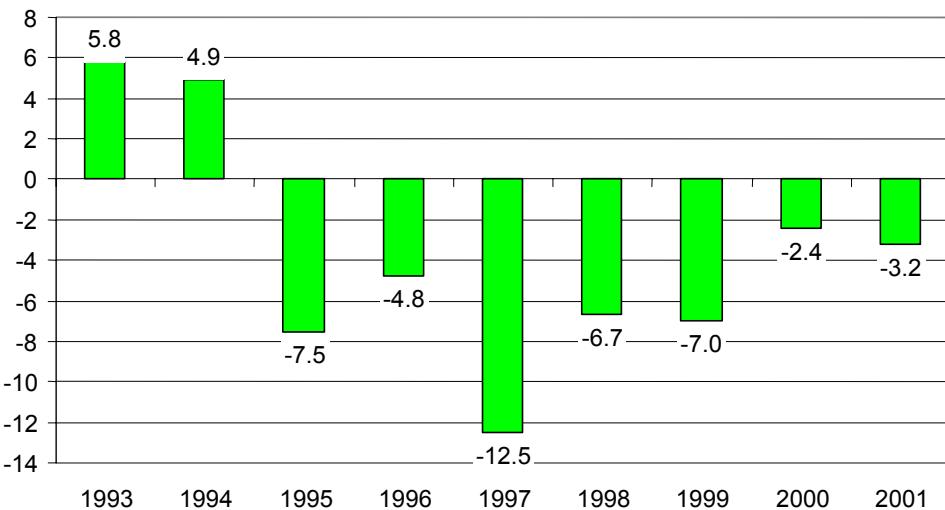
Croatia became independent in 1991. However, as much of its borders were not controlled by the government during the war, balance of payments data were of poor quality. In 1993-94 the current

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account was in surplus (Graph 1) due to a war-related drastic decline in real domestic demand. At the lowest point, in 1993, real wages were only 28% of the 1990 level. At the same time, much of the domestic savings fled the banking system and/or country. The vast majority of savings were traditionally kept in foreign currencies, mostly held under mattresses or in foreign banks (abroad). It is likely there was capital flight and a current account surplus in 1992. Unlike most transition economies, during the initial stages of the transition, Croatia exported rather than imported capital.

Graph 1  
**Current account balance**  
As percentage to GDP



Source: CNB.

During 1995-99 the current account deficit was generally reported as above 5% of GDP. However, given the grey economy was estimated at 25% of GDP (see Institute for Public Finance (1997)), this is probably an overestimate. There were three main sources of the deficit financing. In the beginning there was a large repatriation of foreign currency savings to the banking system (as Croatians held approximately 80% of their savings in foreign currency). Once these tapered off, and the deficit widened even more in 1997, debt creation was the main source of deficit finance. Recently, the current account deficit was sharply reduced and FDI became the dominant source of capital inflows (Graph 5).

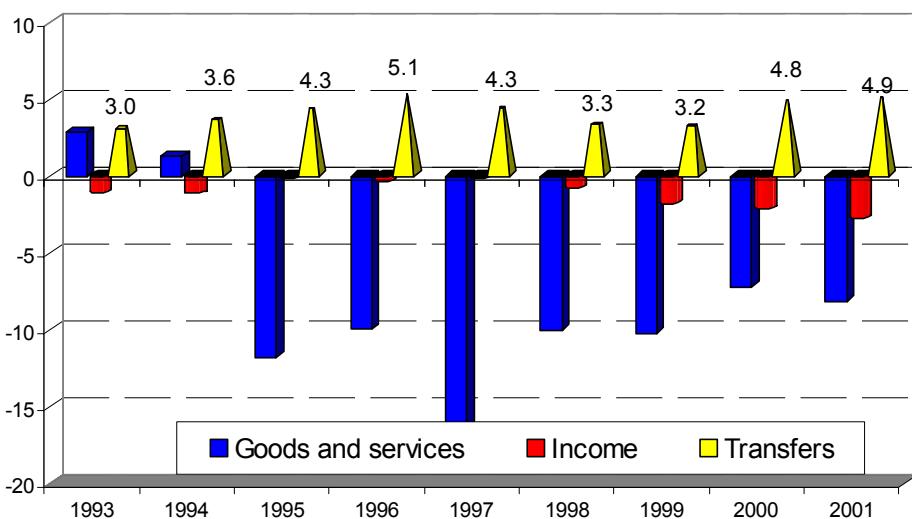
After the war, Croatia was gradually integrated into international financial markets. In 1995-96 the rehabilitation process started in four large state-owned banks ruined by their pre-1990 legacy and the war (ranked two to five in the market by assets). Bad assets were carved out, management was changed, and the banks recapitalised and prepared for privatisation between 1997 and 1999. Fixing the banking system was a major precondition for a functioning financial system and for integrating the country into the international financial markets. In 1995-96, another essential precondition for this integration was met after the agreement on debt allocation was signed with the Paris and London clubs. Finally, in 1997 Croatia obtained an investment grade credit rating. That has opened the door for the government, banking and corporate sectors to tap the international markets and has enabled financing of the record current account deficit in 1997, which amounted to 12% of GDP.

### Composition of flows

Croatia differs from other central and eastern European countries (CEECs) in the importance of the household sector in capital flows, both as recipients of transfers in the current account (Graph 2) and as depositors in the capital account. Except during the banking crises of 1993-94 and 1998-99, net transfers to Croatia were between 4 and 5% of GDP. This mainly reflects the large and widespread Croatian diaspora. Many post-WWII economic emigrants regularly send remittances back home to their families and an increasing proportion of them have recently returned to Croatia, and receive their pensions from abroad via remittances. In a way, Croatia is becoming a "Florida" for its recent

economic emigrants, receiving both an inflow of retirees and associated funds. Until the war's end in 1995, general government transfers were significant as the international community helped a huge number of refugees and displaced persons.

**Graph 2**  
**Current account: the importance of transfers**  
(as percentage to GDP)

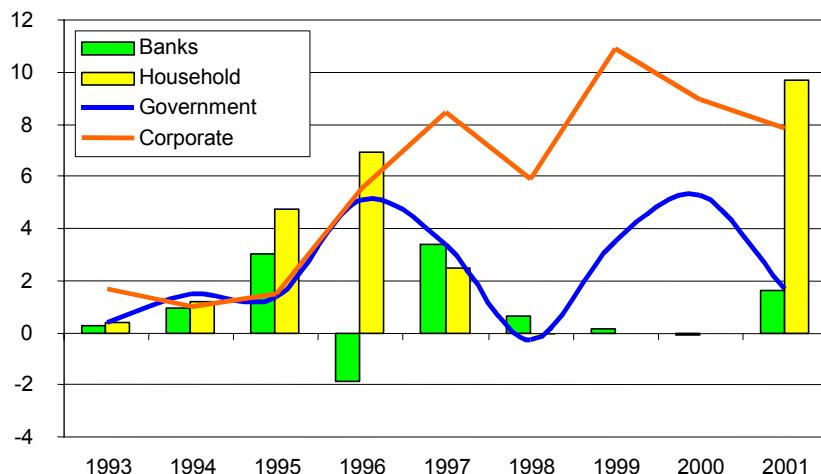


Source: CNB.

Graph 3 shows the rapid rise in capital inflows from 1993 until 1997. In 1995-96 the current account deficit was mainly financed through an inflow of foreign currency deposits to the domestic banking system, mainly due to:

- regained confidence after prices and the exchange rate had stabilised, and growth resumed;
- regained trust in the banking system after the rehabilitation process started in 1995; and
- high interest rates on deposits in Croatian banks relative to foreign interest rates.

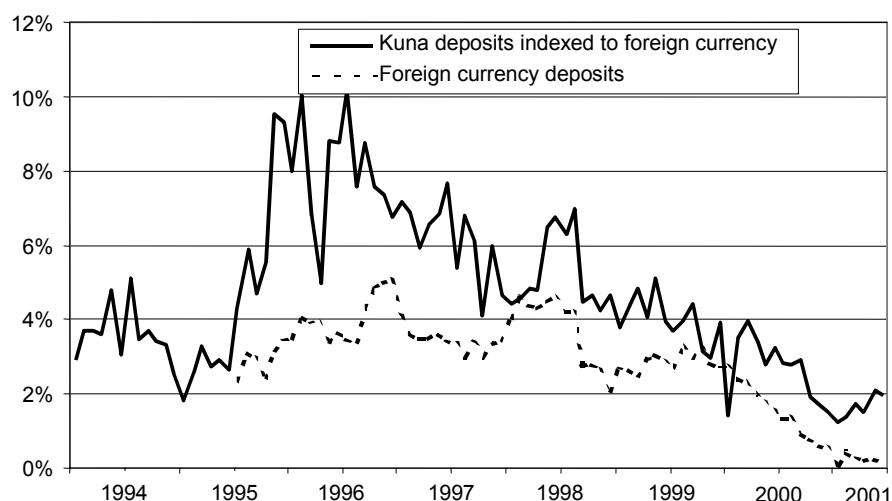
**Graph 3**  
**Capital inflows by sector**  
(as percentage to GDP)



Source: CNB.

The spread on foreign currency deposits and kuna deposits indexed to foreign currency rapidly grew from mid-1995 until mid-1998 (Graph 4). Together with the regained confidence in economic stability and the banking system, this explains the large reflow of foreign exchange deposits into the domestic banking system. The exchange rate stabilised, and kuna deposit interest rates were much higher than foreign currency deposit rates resulting in a gradual crowding-out of the Deutsche mark as a transaction currency. As shown in Šonje and Vujčić (2001), in late 1998, however, when a number of banks failed, and depreciation expectations rose, banks stopped compensating for the expected depreciation through higher interest rates on domestic currency time deposits. Such a policy would have required extremely high interest rates on these deposits, which banks did not want to pursue for various reasons: a fear of adverse selection (prudential reason), low inflation expectations (credibility reason), and the low interest rate elasticity of domestic currency deposits. Reverse currency substitution therefore stopped in 1998 and 1999, and in 1999-2000 the household sector recorded capital outflows. On a net basis, the corporate sector contributed most to the capital inflows in the late 1990s, while government contributed only moderately.

**Graph 4**  
**Spread between the deposit rate in Germany and Croatia**  
(three-month deposit rates, in percentage)

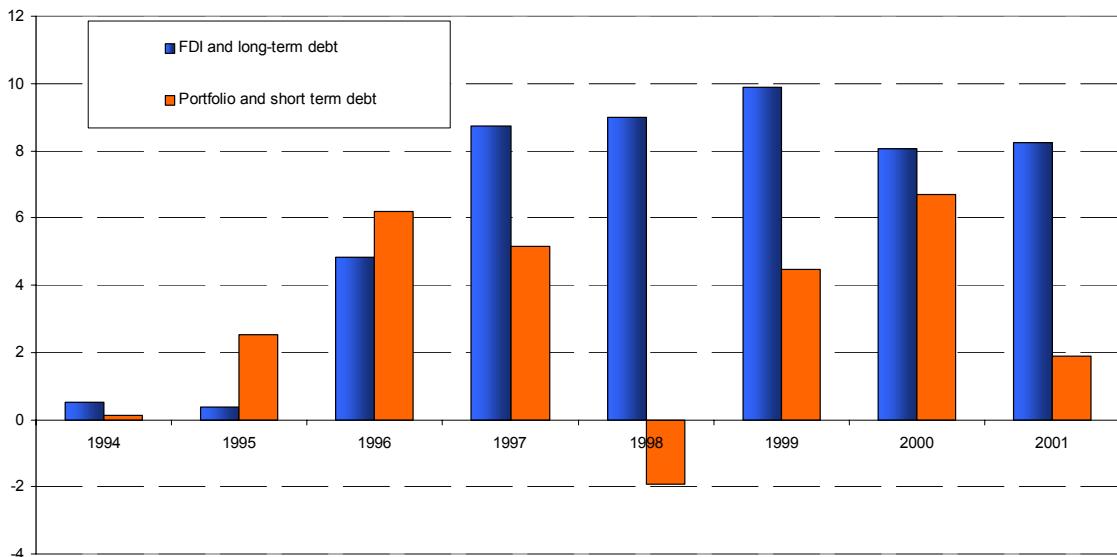


From the maturity standpoint, capital inflows look good (Graph 5). Long-term borrowing and foreign direct investment dominated total capital inflows throughout the period. Portfolio and short-term flows, which are more volatile, were moderate. As expected, they exhibited more sensitivity to market conditions, being low before the end of the war, and then again during the mini banking crisis and the slowdown in 1998-99. Short-term capital inflows slowed in 1998, in part due to Chilean-type capital controls introduced at the beginning of 1998. These, however, were removed in October 1998 as the international financial crisis took care of most of the capital inflow problem.

Foreign debt has grown rapidly since 1996-97, when the London club debt and Paris club debt were included in the statistics, and is reaching a level relative to GDP where policymakers must be careful not to create future debt servicing problems. The term structure of foreign debt, however, is favourable, as short-term debt has been kept low. At the moment, the debt repayment schedule for Croatia looks relatively smooth, but the emphasis must be placed on fiscal adjustment. The large government deficits (above 6% of GDP) since 1999 are unsustainable and risk debt dynamics pushing the level of public debt and external indebtedness above prudent levels.

As noted above, since 1996, FDI has become the dominant method of financing the current account deficit. Prior to 1996, the level of perceived business risk associated with the war in the region was extremely high and, consequently, when other CEECs started to receive foreign capital, the level of foreign investment in Croatia was very low. From 1996, FDI started to flow in quickly, and from 1999 to 2001 FDI fully financed the current account deficit. Most of the FDI inflows, however, have been connected to government privatisation projects, and have been used to cover budget deficits. Therefore, it is necessary for the government to bring down the budget deficit before the privatisation revenues come to an end.

**Graph 5**  
**Total capital inflows**  
(as a percentage to GDP)

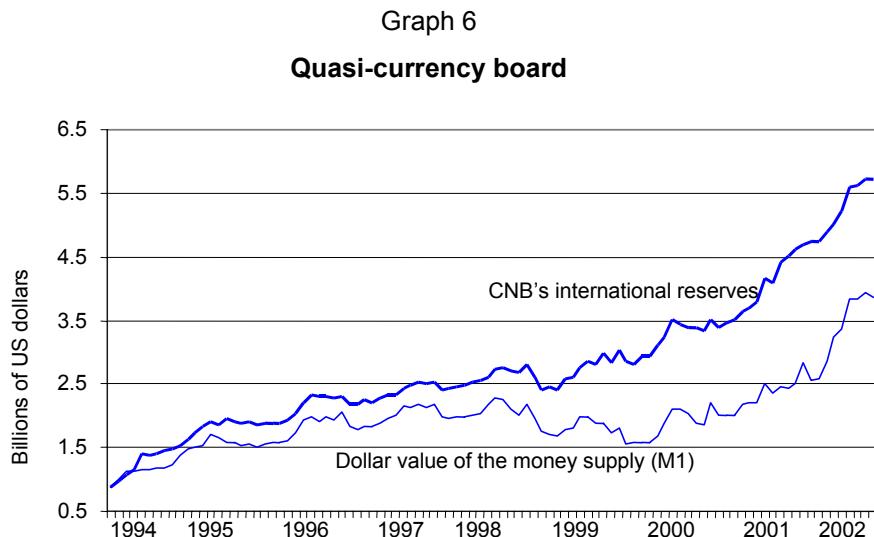


Source: CNB.

The first major portfolio inflow occurred in 1997 when, after obtaining an investment grade credit rating, the government started tapping the international bond market. Equity and money market investments have remained negligible.

### 3. Monetary policy

Since the 1993 stabilisation programme, Croatian monetary policy might best be characterised as a quasi-currency board, as the central bank's foreign exchange reserves have always been higher than the dollar value of the money supply, and domestic money has been created almost exclusively through foreign exchange interventions (Graph 6).

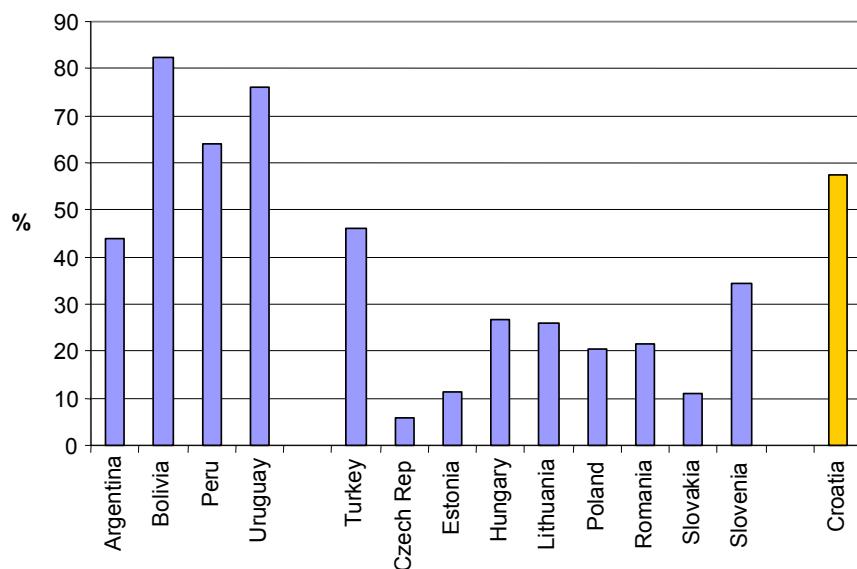


Source: CNB.

A currency board policy, however, has never been an explicit goal of the central bank. The exchange rate has never been fixed, although it remained very stable during eight post-stabilisation years (Graph 9). A pure currency board policy would have also required a clear legal mandate for the central bank. Such a mandate constitutes a policy constraint which substitutes for a lack of credibility on the part of the policymakers. The credibility of the Croatian National Bank (CNB), however, despite years of high inflation and an unstable exchange rate, has been built without legal constraints on policymakers, and without a priori commitments.

The main reason for the quasi-currency board monetary policy lies in the high level of currency substitution in Croatia and a long history of high inflation and an unstable exchange rate. Croatia has the highest level of currency substitution among CEECs (see Graph 7 and Table 10 on page 24 of this volume). Its financial market history is more of a Latin American than a communist type, with long periods of instability (since the 1960s) in which episodes of inflation were followed by hyperinflation, stabilisation, and again inflation. The exchange rate was extremely unstable and dual exchange rates existed. This financial history has led to widespread currency substitution. Financial depth, which is negatively correlated with the level of currency substitution (and the development of the grey economy), was consequently the lowest among the peer group of countries.

**Graph 7**  
**Currency substitution in various countries**  
(foreign currency deposits as a percentage of broad money)

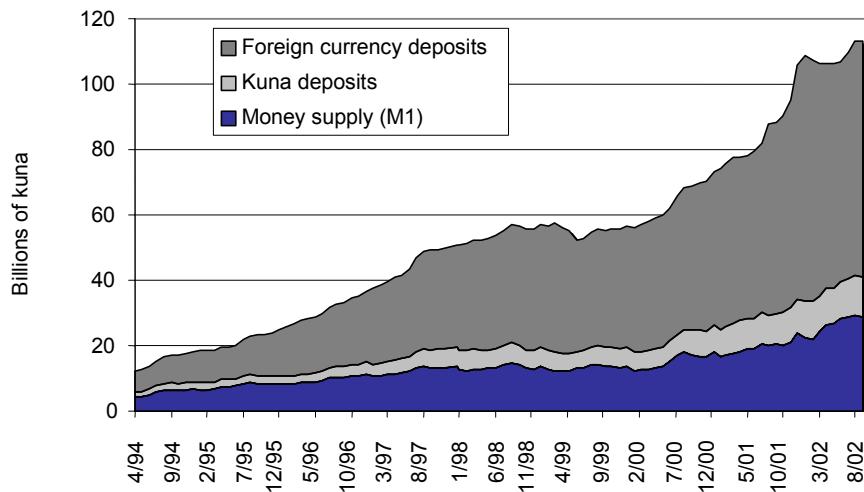


Source: IMF, *International Financial Statistics*.

Since 1995, the level of currency substitution, as measured by the share of foreign currency deposits in broad money has risen further as foreign currency deposits have returned to the domestic banking system. The euro changeover has further increased currency substitution, as most foreign currency cash previously in circulation was deposited in the banking system.

In such circumstances, a currency board-like monetary policy is an optimum strategy for a central bank. The incentives for conducting a prudent monetary policy in a country with such a history are very high, since the stability-oriented policy is rewarded not only by FDI, but also by a continuous reflow of the substantial capital kept in foreign currencies at home or abroad. On the other hand, any "misbehaviour" is met by an immediate reaction from both foreign investors and the domestic population, which has an inbuilt instinct to run away from a weak currency. Such a fear of weak currency dates back to ex-Yugoslavia's hyperinflationary episodes and occasional partial expropriations of foreign currency savings, with the last episode being the freezing of foreign currency savings by the Croatian government after independence. In a small, open and highly "euroised" (previously "Deutsche-markised") economy, exchange rate stability is simply a natural cornerstone of overall macroeconomic stability.

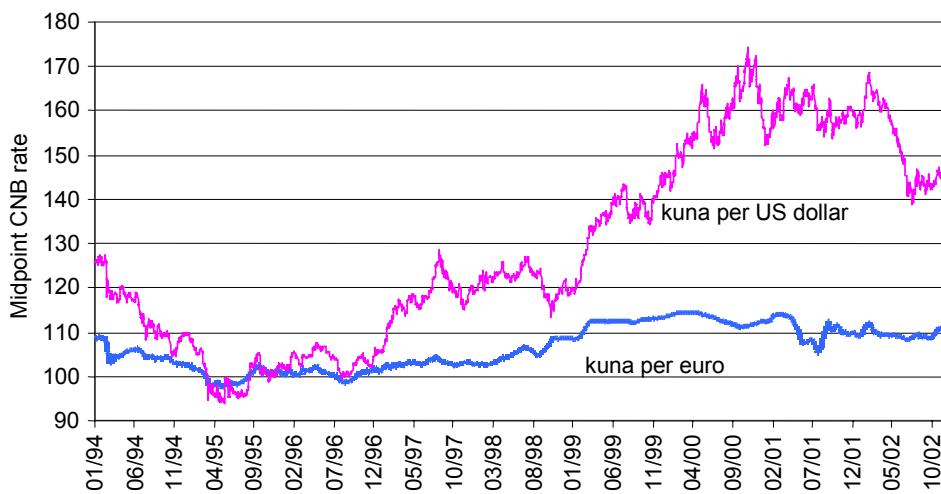
**Graph 8**  
**Broad money**



Source: CNB.

Although in a regime of managed floating, during the last eight years the kuna has been fluctuating in a narrow “ex post” band of approximately  $\pm 7\%$  around the euro. Exchange rate stability has played a major role in anchoring inflationary expectations. On the other hand, it has been possible to keep the nominal exchange rate steady because, after stabilisation, inflation has remained at very low levels for a country in transition, not causing the real exchange rate appreciation due to price movements, which is often associated with the Balassa-Samuelson effect. Reverse currency substitution has helped the policymakers to keep inflation low and the exchange rate stable at a time of increasing capital inflows.

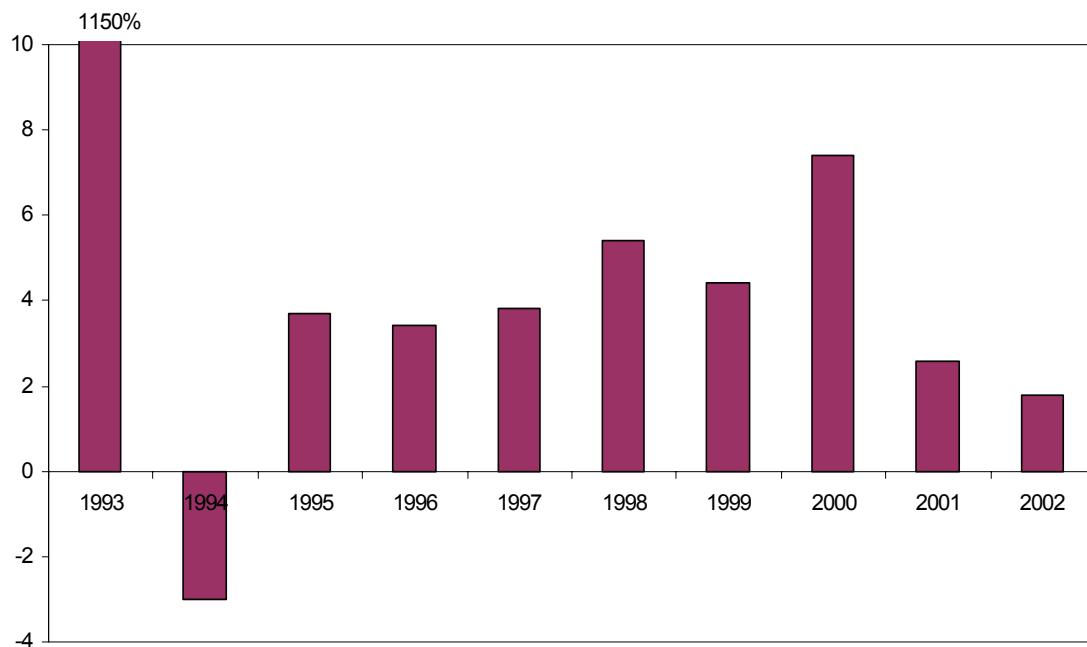
**Graph 9**  
**Exchange rate indices**  
(kuna vs US dollar and euro, 1995 = 100)



Source: CNB

Thanks to the low inflation since 1994 (Graph 10), the real effective exchange rate has not appreciated, as has been the case in some other CEECs, even though the nominal exchange rate remained stable. Instead, the real effective exchange rate has depreciated after the stabilisation.

Graph 10  
**Consumer price index**  
(annual percentage change)



Source: CBS.

A quasi-currency board monetary policy is actually a policy of trying to obtain the best of both worlds. On the one hand, it provides the central bank with the necessary credibility associated with exchange rate stability and low inflation. On the other, it retains a two-way risk in the foreign exchange market, which helps to discourage speculative capital inflows. It also allows the exchange rate to reflect changes in fundamentals, although in a limited way. That is why, after the first months of the stabilisation programme, the CNB never made a commitment to defend any exchange rate band. With the benefit of hindsight, this turns out to have been a wise choice, since it has introduced some helpful uncertainty in the foreign exchange market, preventing a massive inflow of speculative capital, while allowing the central bank enough room for manoeuvre.

Such a policy is, however, a difficult game to play. In a small and open country like Croatia, external financial shocks can be large, reaching an order of magnitude of several percentage points of annual GDP. The current account of the balance of payments can exhibit significant changes as long as (net) capital inflows do the same. But it is not only short-run speculative inflows that can create volatility. In transition, all types of inflows can change rapidly. Šonje and Vujčić (2001) show that the volatility of capital inflows (measured by the standard deviation of the net capital inflows to GDP ratio) was higher in the transition countries than in other developing countries, and that in Croatia it was much higher than the average for transition economies.

In particular, Croatia is characterised by what can be called “lukewarm capital”, which reacts to bad news and exchange rate movements, but not to the extent that the hot capital does. Hot capital is typically held by foreign investors looking for a quick profit opportunity. Such capital rapidly moves in and out of the country, and its movements are characterised by herd behaviour. Lukewarm capital is held by domestic residents. In Croatia, where the population holds more than 80% of its savings in foreign exchange deposits, and foreign exchange deposits make up almost three quarters of broad money, changes in exchange rate expectations and banking system confidence can cause large shifts in currency portfolios, which are characteristic of a currency attack or a run on the banks.

In such a situation policymakers face many instead of few important players in the domestic foreign exchange market. An attack on the currency does not come from hedge funds, or investment banks, but from domestic residents. And an important role is played by the household sector. Due to their large holdings of foreign exchange and great (historical) sensitivity to exchange rate movements, households have long played a dominant role in the Croatian foreign exchange market.

Lukewarm capital also exhibits elements of herd behaviour, but domestic players are different from institutional investors such as pension funds, investment banks or hedge funds. They are slower to react to bad news, and they react much less to news and more to market developments. Therefore, if nothing really starts to go wrong, nothing will go wrong. However, if the market situation worsens, as perceived by domestic agents, for example if the currency starts to depreciate relatively quickly, or if a couple of significant banks get into trouble, there is an imminent and real danger of a snowball effect. A large number of different economic agents (households, corporates, banks) could start to shorten their kuna positions and/or start to withdraw their deposits from the banking system. This would add to the foreign currency market pressure and cause other weak banks problems. The vicious circle quickly starts. In such a situation it is very difficult for the central bank to stop the meltdown. It is important to notice that the vast majority of contracts are indexed to "hard" foreign currency, and that domestic agents can easily shorten their kuna positions. Therefore, it might be more difficult for a central bank to control such a domestically induced currency/bank attack than the canonical one in which the main role is played by foreign speculators.

In a country like Croatia, constantly facing potentially huge lukewarm capital flows, the central bank tries to discourage short-term capital flows induced from abroad, even if they are not very large, because they can act as a trigger for large domestic capital flows. A couple of things helped the CNB to keep hot money at bay during the 1990s.

The first was the low degree of integration into the international financial markets, reflecting Croatia's overall low level of economic integration in comparison to the front-running transition countries such as the Czech Republic, Hungary and Poland. Croatia was, mainly on political grounds, until 2000 excluded from all major economic and political integration processes. It was neither a candidate for EU entry, nor WTO or CEFTA. The entry of foreign investors, particularly foreign banks, occurred only at the end of the 1990s. The international community only became receptive to the acceptance of Croatia into various economic integration processes after the 2000 elections.

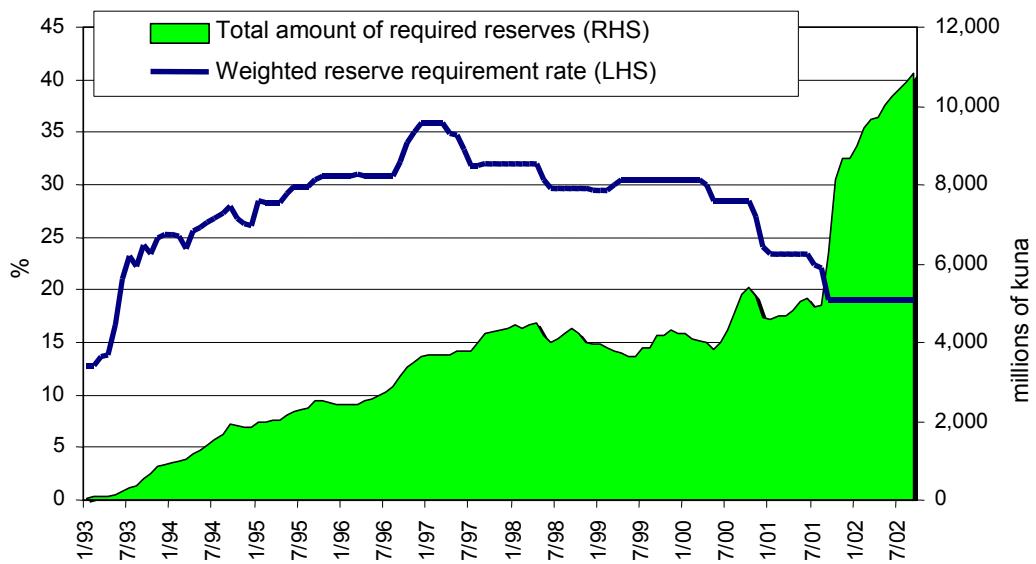
The second was capital controls. Explicit controls were introduced in 1998, and will be discussed in more detail below. Implicit capital controls took a number of different forms. Initially it was the war and regional political instability, which deterred foreign capital inflows in the first half of the 1990s. Later it was the continuous political isolation and a lack of integration with the European Union. These two implicit capital controls were exogenous to the policymakers. In addition, the previously explained exchange rate policy kept a two-way risk in the foreign exchange market and, therefore, also helped to discourage short-run capital inflows.

As shown in Graph 5, strong capital inflows started after the end of the war in 1995, and were accompanied by an equally rapid monetary expansion. One thing that helped at that time was a relatively rapid (reverse) currency substitution, which allowed the central bank to keep the exchange rate and prices stable in a situation when it was overshooting its monetary targets. However, the sterilisation problem was still present.

Initially, high reserve requirements (Graph 11), and at times obligatory holding of CNB bills, were practically the only sterilisation tools. Even very high interest rates on CNB bills in 1995-96 (Graph 12) were insufficient to induce banks to buy central bank paper. In such a situation the CNB resorted to obligatory CNB bills, which were remunerated at rates much higher than the deposit interest rates (in 1996 the rate was 18%) and somewhat lower than interest rates on voluntary bills. As the liquidity of the banking system continued to increase, and as a perception of the currency risk diminished, the amount of voluntary CNB bills rose. Obligatory bills were abandoned by the end of 1996, and in 1998 foreign currency bills were introduced and remunerated at the market rate.

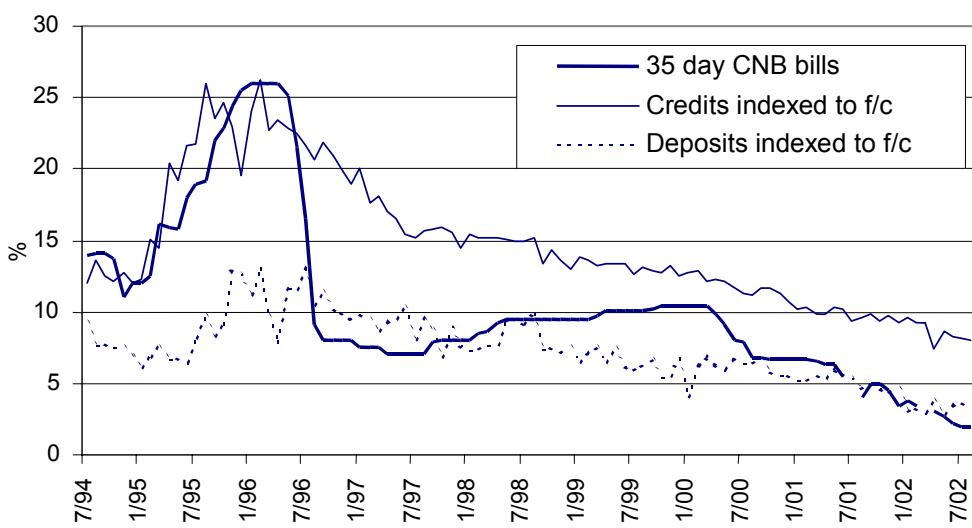
Gradually, the CNB is switching from the reserve requirement to CNB bills as the main sterilisation tool. Since 1997, the reserve requirement has been lowered from 37% to 19%, with the aim of soon going below 10% (Graph 11). Of course, it is more difficult to lower the reserve requirement than to raise it. A vehicle that might be used to lower it is unification of the remuneration currency. At the moment, the reserve requirement on foreign exchange deposits is remunerated 75% in foreign exchange and 25% in domestic currency, while that on kuna deposits is remunerated in kunas. Switching to a single remuneration currency - the kuna - would enable the CNB to lower the reserve requirement sharply without any monetary effects in terms of kuna liquidity. However, such an operation would worsen the foreign currency exposure of the banks.

**Graph 11**  
**Reserve requirement**  
(monthly rate and volume)



Source: CNB.

**Graph 12**  
**Interest rates on CNB bills, credit and deposits**



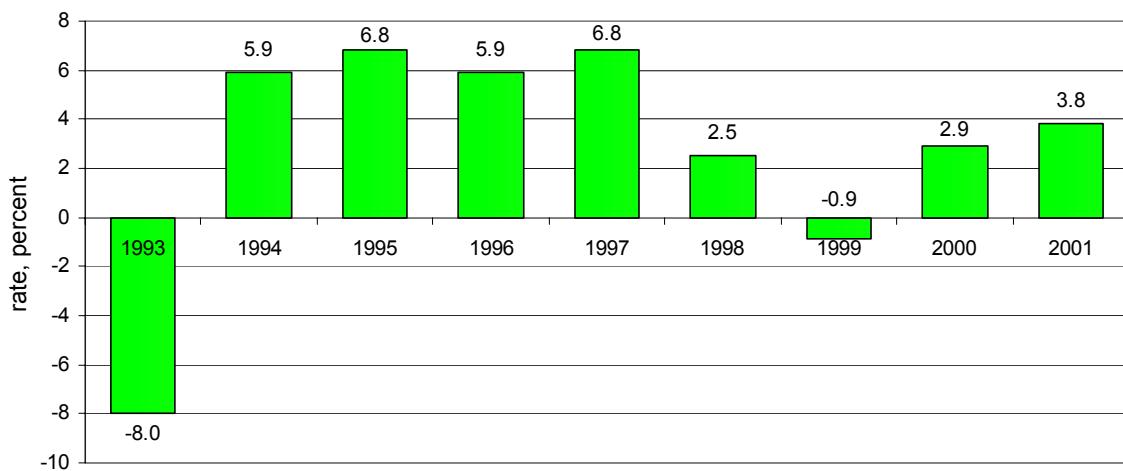
Source: CNB.

#### 4. Coping with problems

##### On the brink of a twin crisis

The economic situation after the successful stabilisation programme had many boom-bust features. The war-related slump was followed by a strong recovery in the post-stabilisation period (Graph 13), which was, however, based entirely on personal and government consumption as exports were flat. As noted above, the current account deficit remained relatively large and fiscal policy was expansionary.

Graph 13  
**Gross domestic product**  
(annual percentage change)



Source: CBS.

Financing the budget deficits has been relatively easy due to Croatia's investment grade credit rating, its favourable access to the international capital markets, and the continuous substantial inflow of privatisation revenues. The government raised debt abroad because the interest rate was much lower. Domestic interest rates were higher mainly due to the relatively inefficient, bank-dominated, financial sector, but also because of the continuing lack of confidence in the domestic currency.

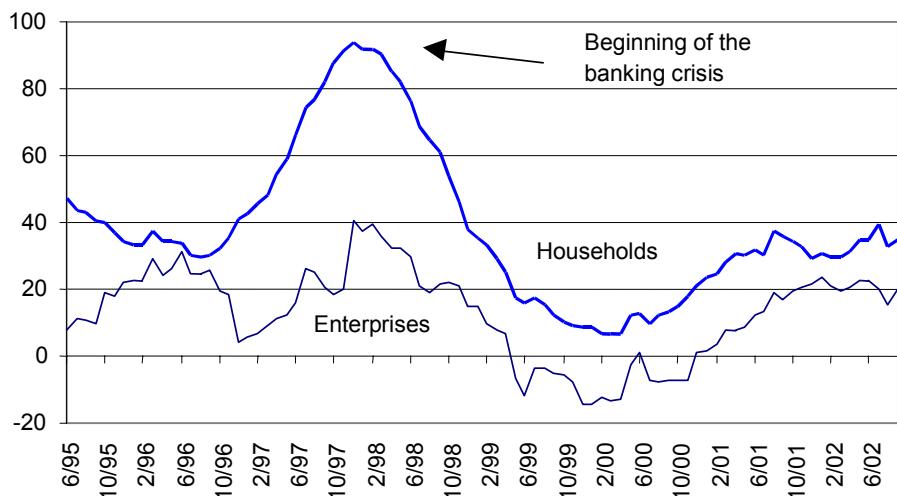
Household consumption was financed mainly by domestic banks. Much of the capital inflows were poorly intermediated via the weak banking sector. Lending exhibited a typical boom-bust cycle, with rapid credit growth in the wake of the banking crisis. Immediately before the fifth largest bank failed in early 1998, the situation was the following: (i) GDP growth was 6.8%; (ii) the current account deficit stood at 11.6% of GDP; (iii) capital inflows were at their peak, amounting to over 15% of GDP; and (iv) credit to households was growing at almost 100%, and to enterprises by 40% (Graph 14).

Then, problems started in the banking sector with the collapse of a few aggressive banks in 1998. From the beginning of the transition process, the Croatian banking system had been characterised, on the one hand, by weak old state-owned banks with a heavy legacy of non-performing loans and poor management and, on the other, by liberal licensing of new banks. As a result, the market was overbanked (Graph 15) and inefficient. This resulted in two banking crises. The first one, in the mid-1990s, was related to the large old state-owned banks. These old banks were rehabilitated between 1995 and 1996, and then sold to foreign strategic owners in 1997-99. The cost of that operation was huge: 22% of GDP according to Babić et al (1999).

The second banking crisis was related to a number of small and medium-sized banks, which were aggressive, often undercapitalised and poorly managed. The main reasons for their failures in 1998-2000 was very weak corporate management, which resulted in typical wrongdoings such as connected lending; a weak regulatory framework and inadequate supervision. A number of medium-sized aggressively growing banks based their business development on extremely high deposit interest rates that served as the main vehicle for attracting foreign exchange inflows. While good banks were

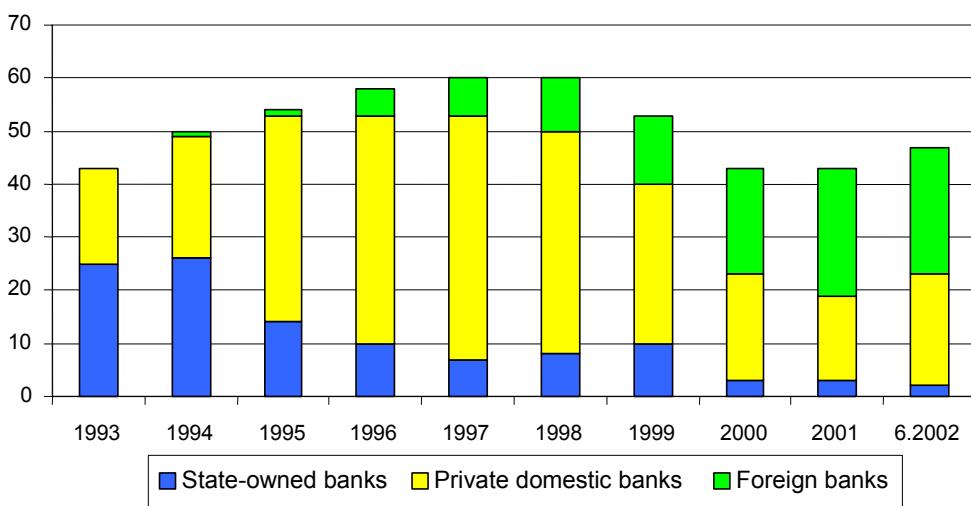
paying a reasonable premium over the foreign interest rate on foreign exchange deposits (approximately 100 bp), bad banks were offering interest rates on foreign exchange deposits that were almost twice as high as those of the good banks. This led to a rapidly growing share of bad banks in the also rapidly growing foreign currency deposit base. Their share had reached 30% by early 1998 (Šonje and Vujičić (2001)), when the fifth largest bank failed.

Graph 14  
**Credit growth**  
(in percentages)



Source: CNB.

Graph 15  
**Number of banks**



Source: CNB.

All the major ingredients of a banking crisis were therefore present at the beginning of 1998. Luckily, at that time the large banks were already restructuring, and were not affected by the failures of small banks. That is why the cost of the second banking crisis, sometimes called the “mini crisis”, was much smaller; about 7% of GDP. Fourteen small and medium-sized banks went bankrupt, and insured deposits in them were paid out, while two banks were rehabilitated.

At the end of 1998 and at the beginning of 1999, the second banking crisis was about to end in a twin crisis, as had happened before in other countries. Twin crises might be triggered either via currency

problems spilling over into the banking sector or by banking sector problems spilling over into the foreign exchange market. In this case, banking sector problems threatened currency stability and the stability of other banks. In late 1998, and early 1999, the kuna was weakening rapidly by Croatian standards (Graph 9), and the banking sector started to experience outflows of deposits. Deposits were being withdrawn not only from banks affected by problems but also from healthy large banks. That was a sign of the contagion effect in the domestic banking market. It was the combination of bank failures and currency weakening that prompted deposit withdrawals from the banking sector and increasing pressure on the domestic currency.

One issue is the extent to which deposit withdrawals were the result of kuna depreciation or of banks' failures. Table 1 shows that currency depreciation did not have an effect on deposit withdrawals, but the banking crisis did. The table presents a simple maximum likelihood estimation of the effect of currency depreciation and bank failures on kuna and foreign currency deposits. Dependent variables are total, kuna and foreign currency deposits in the banking system, while explanatory ones are the exchange rate and bank failures measured as a share of assets of problem banks (temporary administration, or a bankruptcy) in total assets of the banking system. The crisis 1 model includes all deposits in the banking system, while the crisis 2 model excludes deposits in failed banks.

**Table 1**  
**Sensitivity of bank deposits to exchange rate and banking sector problems**

$$\ln(y)_t = b_0 + b_1 \ln(ER)_t + b_2 (ACrisis)_{t-1} + b_3 (trend) + b_4 (trend^2) + \sum_{i=1}^{11} s_i (\text{season})_{t-i} + \varepsilon_t$$

	y	$\rho$	$b_0$	exchange rate	bank failures	R <sup>2</sup>	DW
Crisis 1	Total deposits	0.94 (13.9)	3.94 (1.5)	0.84 (1.9)	-0.49 (3.3)	0.98	1.61
	Kuna deposits	0.93 (15.6)	19.52 (4.7)	-2.05 (2.9)	-0.53 (2.4)	0.99	1.79
	Foreign currency deposits	0.93 (12.9)	0.80 (0.3)	1.33 (2.9)	-0.49 (3.3)	0.99	1.55
Crisis 2	Total deposits	0.93 (12.4)	4.22 (1.6)	0.80 (1.7)	-0.48 (3.4)	0.99	1.69
	Kuna deposits	0.94 (10.7)	20.24 (4.8)	-2.18 (3.1)	-0.52 (2.4)	0.99	1.81
	Foreign currency deposits	0.90 (10.7)	1.00 (0.4)	1.31 (2.8)	-0.49 (3.5)	0.99	1.62

$(\varepsilon_t = \rho \varepsilon_{t-1} + u_t)$  where  $u_t$  are non-autocorrelated residuals of the transformed model, and  $\varepsilon_t$  residuals of the original model. An increase in the exchange rate means a depreciation. t-statistics in parentheses.

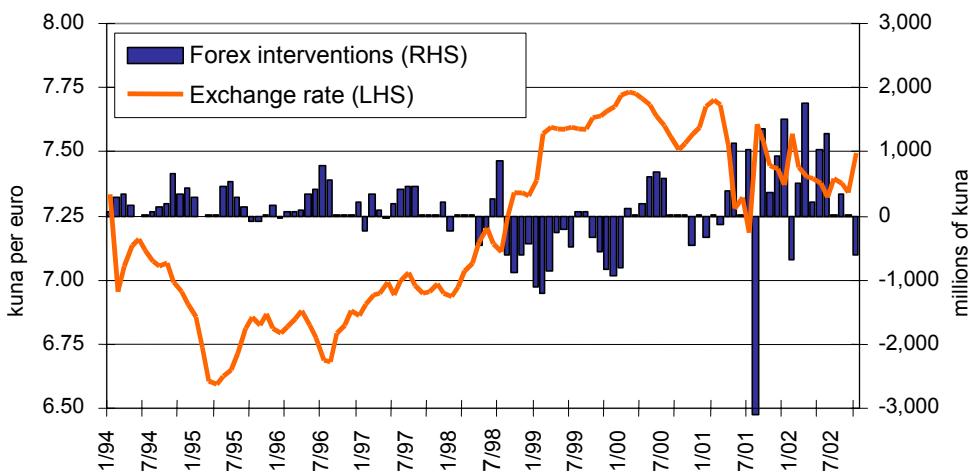
Only a shortened set of results is presented. The model was tested in different specifications, with different subperiods, but the three main conclusions remained unaltered. The first is that even a relatively small exchange rate movement (well within a 10% range) prompts (reverse) currency substitution. A weakening of the domestic currency immediately and significantly leads to changes in the currency portfolio allocation of domestic economic agents. Second, exchange rate movements do not have a significant impact on total deposits. Third, bank failures do. Both kuna and foreign currency deposits decline after bank failures.

In late 1998 and early 1999 there were both currency portfolio substitutions and deposit withdrawals. Therefore, the situation was very serious because the lukewarm capital was obviously on the move, and it was well known within the central bank how difficult it would be to stop it were the "snowball" to reach a sufficient size. An immediate and decisive reaction was needed to forestall the looming twin crises. If the currency had further devalued significantly, it would have prompted further currency substitution and further bank failures might have caused runs on the healthy banks and, consequently, bank failures, which would have pushed the currency further down, and so on, in a vicious circle.

The central bank therefore decided to intervene heavily in order to stop the currency plunging further, and to help those banks with liquidity problems to stay afloat. In addition, it proposed to the government to rehabilitate a medium-sized problem bank with a nationwide branch network. The assumption was that letting it fail in such a situation would have created more uncertainty and prompted further withdrawals of foreign currency deposits from the banking system as a whole. Rehabilitation in that situation, on the other hand, might have had a calming effect on the depositors, particularly because the bank had a nationwide presence.

The CNB, for the first time, gave up the currency board policy, and injected a lot of money (1.5 billion kuna) into those banks that faced liquidity problems. On the other hand, as demonstrated in Graph 16, the CNB strongly and continuously supported the kuna in the foreign exchange market from September 1998 to the beginning of 2000, ie for almost a year and a half, until the situation in the foreign exchange market finally calmed down. Without such action, a number of other banks would have failed and the currency would have gone under, with all the collateral damage that a serious twin crisis does to the economy, particularly a heavily euroised and foreign currency indexed one.

Graph 16  
CNB foreign exchange interventions



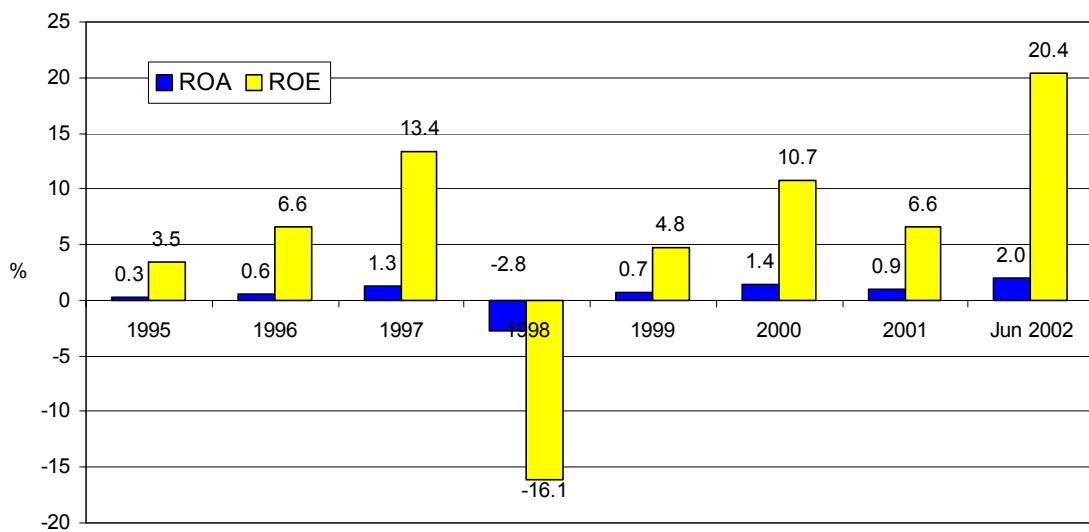
Source: CNB.

### The response to the bust part of the cycle

In 1998 and 1999, growth slowed (Graph 13). In response, fiscal policy was tightened. Under the IMF arrangement, the consolidated central government deficit was cut from 7.4% of GDP in 1999 to a still high 5.4% by 2001. Coupled with stabilisation of the banking sector, this allowed a more relaxed monetary policy, which facilitated a rapid decline in interest rates, without an adverse effect on the exchange rate or inflation. The banking sector was cleansed of unsound banks, while large state-owned banks were sold to foreign owners (Graph 15). In 1998 only 7% of the banking sector was in the hands of foreigners, while by 2000 84% of the banking industry was foreign controlled, all but one being strategic investors. The result is a much healthier, more competitive and more efficient banking system, as shown by the significant increase in the after-tax return on assets and equity in the banking sector (Graph 17) in a situation of rapidly declining interest rate margins (Graph 18).

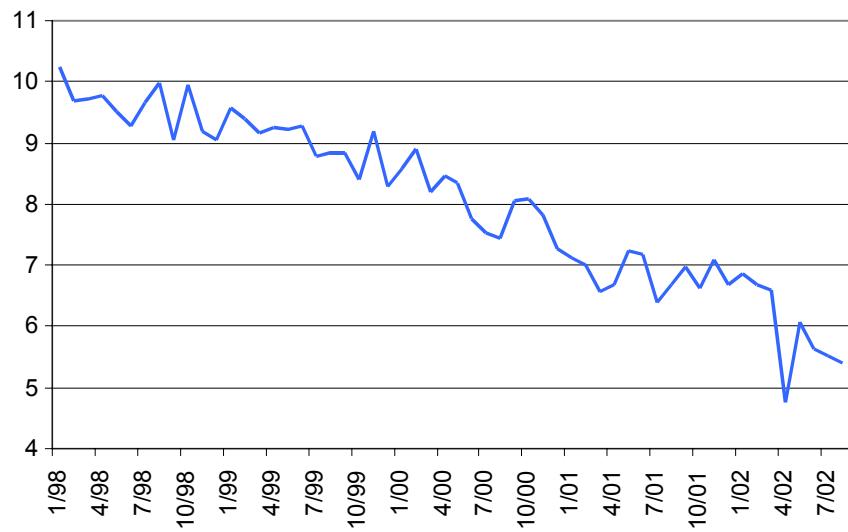
Such a completely reshaped banking system now ensures much better financial intermediation than was the case prior to the crisis. Finally, real output recovered (Graph 13), the current account deficit declined (Graph 1), exchange rate pressures eased (Graph 9) and capital inflows moderated (Graph 5) and were better intermediated.

Graph 17  
**Return on assets and equity after tax**  
 (in percentages)



Source: CNB.

Graph 18  
**Interest rate spread**  
 (Difference between interest rates on credits in kuna and  
 on deposits in foreign currency, in percentage points)



Source: CNB.

## 5. The role of capital controls and foreign exchange liberalisation

Two episodes in recent (transition) history deserve a closer look. One is the introduction of Chilean-type capital controls in 1998. The other is the liberalisation of the foreign exchange market in 2001 and its consequences.

From the beginning of the transition, foreign short-term capital was generally absent in Croatia. However, in late 1997 and at the beginning of 1998, at the peak of the boom phase, when economic activity, credit expansion and current account deficits, as explained above, were high, short-term capital inflows emerged. At that time, interest rates were relatively high and only one large investment bank had over USD 200 million in short-term kuna-denominated assets (which was a significant amount given the narrow and shallow Croatian market). Domestic banks were increasingly borrowing short-term abroad and converting those inflows into kunas in order to finance the lending boom.

In order to curtail those surging short-term inflows, at the beginning of April 1998 the CNB introduced a set of Chilean-type capital controls:

- For all financial credits taken for conversion into domestic currency, banks were required to deposit (in domestic currency) with the central bank 30% of the amount for short-term credits (up to one year), and 5% for longer-term credits.
- When issuing guarantees on the credits for conversion into kunas, banks were required to deposit (in domestic currency) 10% of the amount of the guarantee.
- Banks were required to deposit 15% of the foreign exchange deposits of foreign banks (again in domestic currency) in a separate account with the CNB.

These capital controls worked well in the beginning, and the inflow of short-term capital significantly declined. By the autumn of 1998, however, the international financial crisis had taken care of most of the capital inflow problem. Foreign investors suddenly lost their appetite for emerging markets and, by autumn, it became quite difficult for both domestic banks and the corporate sector to raise any kind of capital abroad. Due to these changed circumstances, in October 1998 the CNB removed all capital controls for financial credits or deposits with maturity exceeding one year.

One can say that capital controls of the type introduced in Croatia worked well in the beginning, but their lifetime (particularly their effective lifetime, before the 1998 crisis) was too short to allow for any firmer conclusion. The presumption in most of the literature on the capital controls is that such types of controls often work well initially, but might lose effectiveness over time as economic agents find ways to avoid them. The Croatian case confirmed the first part, but did not allow for enough time to test the second part of that hypothesis.

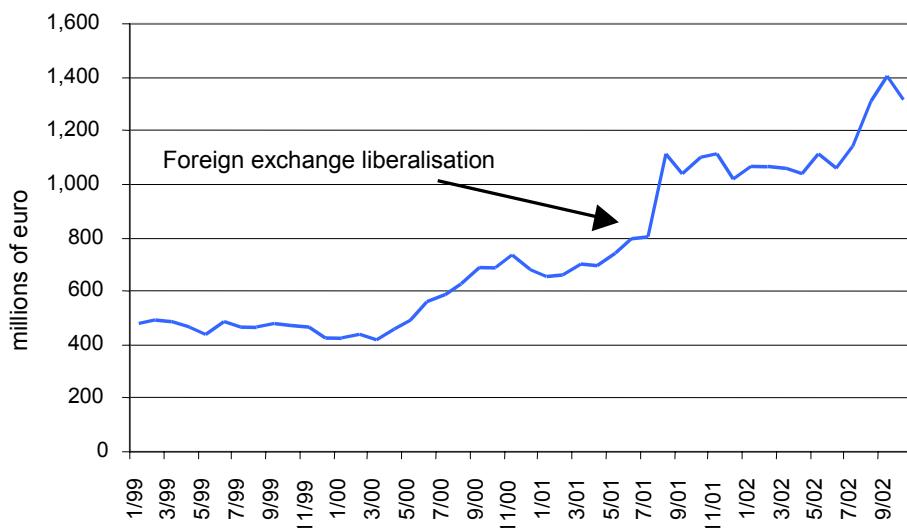
The second interesting episode was a major liberalisation of the foreign exchange market. In mid-2001 the corporate sector was for the first time allowed full access to the foreign exchange market. Prior to that, companies had been allowed to buy foreign currency in the foreign exchange market only if that was justified by import needs. In other words, they could only buy foreign exchange in order to pay for imports or a loan liability which had become due, but not just to hold foreign currency in their accounts. The removal of that restriction in 2001 allowed corporations free participation in the foreign exchange market. In addition, the surrender requirement, which obliges companies to repatriate foreign currency receipts, had previously been lengthened from 90 to 150 days, with the possibility of prolongation by a further 60 days. The effect of the substantial extension of the surrender requirement was negligible, and now a complete removal of the surrender requirement is proposed for 2003.

There are two obvious benefits of the corporate sector's access to the foreign exchange market. First, as companies are free to decide on the currency composition of their portfolio holdings, they can manage foreign exchange risks better. Second, liberalisation has deepened and broadened a relatively shallow and narrow Croatian foreign exchange market.

The downside is that this liberalisation has caused unusual depreciation pressure in the foreign exchange market (Graphs 9 and 16). In August 2000 the exchange rate rapidly depreciated by 8%. Given the nominal exchange rate's remarkable stability in Croatia since end-1993, during which period the exchange rate has fluctuated in a relatively narrow band of  $\pm 7\%$ , such an abrupt depreciation has created nervousness in the market and triggered speculation. Companies did not react immediately to the liberalisation in April, because they expected the usual seasonal (summer tourism) appreciation of the kuna. In August, however, when foreign currency was cheap, and kuna liquidity abundant, expectations changed, additionally fuelled by rumours about a possible kuna depreciation.

A few large companies decided to buy significant sums of foreign currency. Graph 19 shows how abruptly the corporate sector increased foreign currency deposits in August 2001. In a small market in which the average daily turnover is approximately 30 million euros, news that a couple of companies are buying a few hundred million euros immediately drives up the price of foreign currency. Of course, that was not a very smart move as the companies effectively bid up the price they eventually paid.

Graph 19  
Foreign exchange deposits of the corporate sector



Source: CNB

Obviously, at that time, that was not clear to many companies unaccustomed to free access to the foreign exchange market. In addition, some banks tried to take advantage of the situation and fuelled the corporate sector demand by recommending that companies buy foreign exchange as soon as possible and suggesting the domestic currency would drop further. In order to stop the nervousness, the central bank had to intervene substantially.

Thanks to a comfortably high level of foreign exchange reserves it was possible to calm the situation purely through market intervention. However, the CNB was constrained in doing so because of the very tight floor under the foreign exchange reserves set by the IMF within the standby arrangement. Ironically, the floor was substantially raised after the liberalisation and less than one month before the depreciation pressures started. In order to stop the speculation and observe the floor, the CNB then resorted to an unorthodox measure. To sterilise local currency liquidity, it asked banks to hold 20% of the reserve requirement on foreign currency deposits in local currency.<sup>2</sup> This was later increased to 25%. By increasing the demand for the local currency, this measure has propped up the exchange rate, and halted the speculation.<sup>3</sup>

<sup>2</sup> Previously the reserve requirement on foreign currency deposits has been held in foreign currency, while the reserve requirement on local currency deposits has been held in local currency.

<sup>3</sup> A negative aspect of such a requirement is that it creates a mismatch in banks' balance sheets, but this has not proved to be an important issue. Banks are not allowed to have net foreign currency positions in excess of 20% of the liable capital.

An important point is that the holding of local currency reserves on foreign exchange deposits is also a useful “automatic stabiliser” in a highly “euroised” economy. This is due to the very high foreign exchange deposit base. When the domestic currency depreciates, banks are required to deposit more of the domestic currency as a reserve requirement. When it appreciates, more of the domestic currency is freed from the reserve requirement deposits. That helps stabilise currency fluctuations, which is particularly important in a situation where exchange rate movements are the most important transmission channel of monetary policy. These effects would, of course, be weaker in countries with lower levels of “euroisation”.

## 6. What does the future hold for Croatia?

The future will clearly involve further and more rapid integration into the international financial markets. That process will be boosted by EU convergence, which has been missing so far from the Croatian transition story. Further integration is likely to attract more of both FDI (“good cholesterol” in the terminology of Hausmann and Fernández-Arias (2000)) and short-term capital inflows (“bad cholesterol”). Increased capital flows in principle reflect the fact that the country has been doing well and, in that sense, should be regarded as positive. However, they are a mixed blessing to the extent that it might become more difficult to control them, and consequently also the exchange rate and/or interest rates. That increases risks in the foreign exchange market and, in the case of the highly euroised country, overall economic risks.

With increasing integration into international capital markets, and accompanying increasing risks, it might be desirable to adopt the euro sooner. This would eliminate the problem of exchange rate control, and diminish the interest rate control problem. It would also lower interest rates and diminish risks associated with sudden capital flow reversals. Exchange rate risk would remain but on a macroeconomic level - in the balance of payments. For a country like Croatia, such an option is particularly attractive for at least three reasons. First, Croatia is already heavily euroised. With almost three quarters of broad money in foreign currency (mostly euros) and with foreign exchange reserves much higher than the euro value of money supply (the technical condition for a unilateral euroisation is in fact high-powered money), it would not be difficult to switch to a new currency, even unilaterally. Technically, Croatia has already changed currency twice during the last decade, and economic agents are well accustomed to foreign currency use. Second, Croatia is politically still relatively far away from EU/EMU entry. It is likely to join second wave candidate countries, which means that it might join the EMU by, say, 2010 (if, optimistically, in 2008 it becomes an EU member state). That leaves almost another decade of uncertainty and of coping with balance sheet risk and bearing costs associated with that risk. Third, the degrees of freedom for an independent monetary policy are anyway heavily reduced under an almost complete euroisation, creating a situation where “if you’ve got (almost) nothing, you’ve got (almost) nothing to lose”.

There are two main risks associated with such an option. First, if a serious negative external shock happens during the next few years, there would be no exchange rate mechanism to adjust to it. However, due to the large balance sheet risk, the exchange rate adjustment mechanism is anyway a very limited one. Second, early euroisation might exacerbate the problem of meeting the Maastricht inflation criterion. Since the nominal exchange rate would be locked, and the substantial positive productivity differential would most likely exist vis-à-vis the European Union, inflation pressure would be strong. Moreover, the likely increase in capital inflows that would precede the EU/EMU entry would, without the exchange rate instrument, put additional pressure on inflation. The question of how suitable the Maastricht inflation criterion is for the accession countries is outside the scope of this paper, but there is a growing literature that deals with that question. One thing that seems to be clear, however, is that one way of lessening a problem under both monetary policy options would be for Croatia to retain controls on short-term capital inflows all the way until EMU entry.

If an early adoption of the euro remains unfeasible in the near future (say for political reasons), Croatia will have to be careful in liberalising the remaining capital flow restrictions. Under the proposed new foreign exchange law, the most important remaining restriction will be on short-term capital inflows. Capital controls, or the possibility of introducing them as a useful tool of monetary policy in an open and heavily “euroised” country, should be retained until entry into the monetary union.

Due to a much healthier banking system and better regulation and supervision, there are less concerns about capital flows now than was the case before the 1998-99 banking crisis. In 1998, prior

to the introduction of the Chilean-type capital controls, a significant amount of capital inflows was converted into kunas and poorly intermediated by a number of unsound banks. In that sense, a typical danger that a surge in short-term capital inflows, which often shows up as an expansion in short-maturity bank deposits, will be poorly managed in a situation of inadequate regulation and supervision of the domestic banking sector and a lack of lending expertise is now substantially lessened.<sup>4</sup>

However, a successful EU candidate country will become an increasingly attractive target for significant capital inflows, which can cause a rapid appreciation of the real exchange rate or, in a different scenario, an increase in inflation. Even if the sharp real appreciation is subsequently reversed, it might still have a strong effect on exports due to the hysteresis effect. Also, as long as these inflows are of a short-term nature, they also present a danger of a sudden reversal and can easily trigger a currency confidence crisis in a highly euroised environment. The possible adverse impact of capital flows on monetary policy in Croatia is reinforced by the fact that, due to the high level of euroisation, Croatia is unable to develop a set of full-blown indirect instruments of monetary policy.

Of course, capital controls are not a long-term solution, especially because they tend to lose their effectiveness as economic agents find ways to avoid them.<sup>5</sup> Nevertheless, although not a panacea, capital controls could be a useful additional instrument for restricting short-term capital flows<sup>6</sup>, therefore lowering the pressure on the exchange rate/prices and the probability of a sudden reversal of capital flows. If not misused, capital controls can, at times, have a useful role to play in a small, open and heavily euroised country in which capital flows can be particularly volatile and in which the instruments of indirect monetary control are insufficiently developed. Therefore, their complete removal would best be left until the end of the process of accession.

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<sup>4</sup> Although, there are examples of banks that have relatively quickly accumulated a large amount of bad debts even after the bank rehabilitation and full or partial privatisation have been accomplished.

<sup>5</sup> This is, however, primarily a problem with restrictions on outflows.

<sup>6</sup> Although it may be difficult to design capital controls to target specifically short-term inflows. Not only is it difficult to design policies that influence only outflows or only inflows (in Yugoslavia and Chile at the beginning of the 1990s, for example, liberalisation of outflows - which might theoretically be a policy that counteracts heavy capital inflows - in fact induced heavier inflows due to the credibility effect vis-à-vis foreign investors), but it is also difficult to distinguish with certainty whether certain brands of capital are short-term or long-term. For a more detailed discussion, see IMF (1995).

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