

The Currency Board and Bulgaria's Accession to the European Monetary Union

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Introduction

At its Helsinki summit of 10-11 December 1999, the European Council decided to extend invitation for accession negotiations to six European nations¹⁾, thereby increasing the number of countries likely to join the European Union (EU) in the first decade of the XXI century to twelve²⁾. The prospects of EU membership have raised the question of how new members will move on towards adopting the euro by full membership in the European Monetary Union (EMU). In particular, the discussion has focused on the optimal exchange rate regime in preparing for EMU accession. Some preliminary results suggest that Central and East European countries (CEECs) preparing to join the euro zone are faced with a trade-off between low inflation and exchange rate stability. These countries may choose either the former by adopting inflation targeting combined with a flexible exchange rate system, or the latter by pegging their national currencies to the euro (Frensch, pp. 175-179).

Presently three of the accession countries – Bulgaria, Estonia, and Lithuania – have currency board arrangements (CBAs) pegging their national currencies to the euro³⁾. In spite of having experienced low inflation and relatively high GDP growth after the currency boards introduction, these countries exchange rate regime is called into question as it is formally incompatible with the standard procedure of EMU membership. After EU accession, EMU candidates are required to participate in ERM II⁴⁾, which means they should fix their currencies to the euro and allow fluctuations of their exchange rates within a band of ± 15 percent for two years. Therefore, if Bulgaria, Estonia and Lithuania decide to keep to the standard procedure of EMU accession, they would have to abandon their currency boards.

This paper argues on the case of Bulgaria that countries with CBAs should be allowed to

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1) Bulgaria, Latvia, Lithuania, Malta, Romania and Slovakia.

2) In 1997, invitation to start accession talks was extended to Cyprus, the Czech Republic, Estonia, Hungary, Poland and Slovenia. Ten of the twelve countries currently negotiating for accession are expected to join the EU by 2004-2005. The two exceptions are Bulgaria and Romania, which seem likely to be relegated to a second round of EU enlargement due in 2007-2008.

3) As Estonia and Bulgaria had initially fixed their currencies to the German mark, with the introduction of the European single currency in 1999 the kroon and the lev respectively became actually pegged to the euro. Lithuania had initially fixed its currency (the litas) to the US dollar but has recently announced its intention to switch its peg to the euro.

4) ERM (Exchange Rate Mechanism) is the system of fixed exchange rates within a target zone ($\pm 2.25\%$), that was established in 1979 as part of the European Monetary System. ERM II is its contemporary version. It was introduced by a resolution of the European Council at the latter's meeting in Amsterdam in 1997.

become members of the EMU without passing through ERM II, if they prove they are able to meet the Maastricht convergence criteria and to deal successfully with external shocks. To support our argument, we have organized our paper as follows. In Section 1, we examine the conditions in which the Bulgarian currency board was established and its main characteristics. Section 2 analyzes some changes that have occurred in the Bulgarian economy since the currency board's introduction. In Section 3 we consider the advantages and disadvantages of having a currency board during the period of Bulgaria's accession to the EU. Section 4 contains a discussion of two exchange rate strategy options: (1) keeping the CBA until Bulgaria joins the euro zone (the CBA scenario), and (2) adopting the euro as legal tender, unilaterally or under a bilateral agreement, before EMU membership (the so-called "euroization" scenario). In the end, we summarize and draw the main conclusions.

I The Economic Crisis of 1996-97 and the Currency Board's Introduction

The economic crisis that occurred in Bulgaria in 1996-97 and the subsequent introduction of the CBA have been well documented (see, for instance, OECD, 1999). Here we provide just a brief overview of the main developments leading to the crisis, as well as a short summary of the Bulgarian CBA's principles of operation and main characteristics.

Compared to Central European transition economies such as Poland, Hungary, the Czech republic and Slovakia, Bulgaria's starting conditions were much more unfavorable. Bulgaria inherited from the communist regime a huge foreign debt and an industrial structure heavily dependent on COMECON trade (Dobrinisky, 1997). Moreover, the country had relatively shorter period of experience with market economy and was located farther to the east from EU member countries. In addition, wars in neighboring Yugoslavia in the 1990s frightened away many potential foreign investors and incurred heavy costs on Bulgarian exporters by depriving them from their most direct transportation route to EU markets. However, the main reason for the 1996-97 crisis was the lack of political will to implement fully macroeconomic stabilization and painful structural reforms. Bulgaria started its transition with a floating exchange rate regime and a discretionary monetary policy to be carried out by the presumably independent Bulgarian National Bank (BNB).⁵⁾ Although the BNB law of 1991 declared the independence of the central bank, the latter's actions were heavily influenced by political pressure to lower the base interest rate, refinance the banks and extend direct loans to the government. With BNB refinancing easy to obtain, Bulgarian banks kept extending "soft" loans to loss-making state-owned enterprises (SOEs). The delay of privatization and closure of inefficient SOEs eventually led to the transfer of SOE losses to the banking sector and the budget.

Government bailouts of troubled state-owned banks in 1995 and rising interest payments on government debt in 1995-96 resulted in huge budget deficits and higher inflationary pressure. In May and September 1996, BNB finally acted to place fifteen banks (about one-third of all banks) under conservatorship. In December 1996, to prevent government default on domestic

5) It is interesting to note that most accession countries started their transitions with some kind of fixed exchange rate regimes. The decision to establish a floating exchange rate in Bulgaria was reportedly based on the lack of sufficient foreign exchange reserves needed to peg the national currency to a major currency such as the US dollar or the German mark.

debt, the BNB had to extend a direct loan to the government equal to 18% of the country's GDP. By that time, the Bulgarian people had completely lost their confidence in the banking system, the BNB and the government. Flight from the lev and soaring inflation became uncontrollable.

In early 1997 Bulgaria experienced a period of hyperinflation and collapse of the national currency. Inflation was 43% in January and soared to 240% in February. The lev fell from 1 USD=350 BGL in November 1996 to 1USD=3200 BGL in the beginning of February 1997. Real output, which had slightly grown in 1994 and 1995 for the first time since the start of reforms, contracted by almost 18 percent in 1996-97 (see Table 4). The banks under conservatorship were closed, and the government expenditures needed to deal with the banking crisis (on a cumulative basis over the 1991-98 period) were estimated at 22 percent of GDP (The World Bank, 2001, p.2).

Under these conditions, a radical institutional change was deemed necessary to recover public confidence in the banking system and government institutions. In November 1996 the IMF proposed to the Bulgarian government the currency board system as a way to ensure financial discipline and macroeconomic stabilization, and a broad public discussion ensued. In spite of some initial opposition, the proposal gradually gained wide popularity because other stabilization schemes tried before had failed and because the design of the CBA would not allow political interference to block any further macroeconomic stabilization and structural reforms. A new stand-by agreement was signed with the IMF in April 1997, and the currency board was launched in July 1997 with a start-up loan from the IMF as part of its foreign currency reserves.⁶⁾

The principles of the CBA's operation were established through the Law on the Bulgarian National Bank passed in June 1997. According to this law, the lev was fixed to the German mark (the currency board's reserve currency) at the rate of 1 DM=1000 BGL⁷⁾, and neither the central bank, nor the government could change the exchange rate at their own will. This could be done only through qualified majority voting by the national parliament. In addition, the 1997 Law on the BNB guaranteed that 1) central bank liabilities⁸⁾ would be 100 percent backed by CBA's foreign currency reserves, 2) the central bank would convert national and reserve currencies on demand and without limit at the fixed exchange rate, 3) central bank lending to the government as well as refinancing of commercial banks would be suspended. The fact that the principles of the CBA's operation had been made explicit in the 1997 Law on the BNB helped ensure policy transparency and enhance the credibility of the new institutional arrangement.

The specific design of currency boards in Bulgaria, Estonia and Lithuania has attracted the attention of researchers around the world due to their substantial differences from orthodox CBAs. In particular, new-generation currency boards have been characterized not just by rules

6) The consensus in Bulgarian political and business circles on the need of currency board's introduction should not be mistaken for strong political resolve to undertake radical economic change. Rather, the CBA should be viewed as a tool to guarantee external debt service, or as an institutional arrangement designed to serve the interests of foreign creditors, including the IMF. A basic difference with the Estonian CBA is that the Bulgarian one was imposed from the outside (by the IMF) and was not the result of domestic political will for macroeconomic stabilization and structural reforms (Nenovsky et al., 2001b).

7) Since the denomination of the lev in July 1999, the exchange rate has been fixed at 1 DM=1 BGL. And since the introduction of the European single currency, the lev has been pegged to the euro in accordance with the conversion rate of the German mark against the euro at 1 EUR=1.95583 BGL.

8) The monetary base, or M0 (currency in circulation + commercial bank deposits at the central bank).

ensuring strict financial discipline, but also by rules allowing a certain degree of flexibility required in case of external shocks and systemic banking crises. To start with, unorthodox CBAs preserve a traditional monetary policy tool such as commercial banks' minimum reserve requirements. Furthermore, these CBAs maintain to a certain degree the central bank's ability to perform the lender-of-last-resort (LLR) function, leaving room for intervention in the event of a liquidity risk threatening the banking system's stability. In Estonia and Bulgaria, the central bank is divided into Issue and Banking departments, each of them having a separate balance sheet. The former is directly responsible for the CBA's operation, whereas the latter stands ready to perform the role of lender of last resort.

The structure of the balance sheets of the above departments in Bulgaria is given in Table 1. The liabilities of the Issue department (currency in circulation, commercial bank deposits, fiscal reserves and Banking department deposit) are fully backed by foreign exchange reserves. The "Banking department deposit" on the liabilities side is the net worth of the currency board, i.e. the CBA holds excess foreign exchange reserves equivalent to the amount of that deposit. In the event of a liquidity risk for the banking system, as defined by Regulation No. 6 of the BNB⁹⁾, the Banking department can extend short-term (up to three months), lev-denominated loans to solvent banks up to the amount of the CBA's excess foreign exchange reserves. Therefore, under the new-generation currency boards the LLR function has been preserved.

Table 1: Balance sheets of the Issue and Banking departments

Issue Department	
Assets	Liabilities
Foreign exchange reserves (cash and accounts in foreign currency, monetary gold, and foreign securities)	Currency in circulation Commercial bank deposits Fiscal reserves (government deposit) Banking department deposit (net worth)
Banking Department	
Assets	Liabilities
Non-monetary gold and other precious metals Investment in securities Loans and advances to banks Claims on government Bulgaria's IMF quota and holdings in other international financial institutions Deposit with the Issue department	Borrowings from the IMF Liabilities to other international financial institutions Capital Reserves Retained profit

Source: Nenovsky and Hristov (2001).

- 9) Liquidity risk for the banking system is in place when the amount of ordered but unpaid payment documents exceeds 15 percent of their total amount for each of the last two days, or when an individual bank delays the settlement of payment documents for more than three days (on the condition that the bank has had at least 8 percent share of all interbank payments for each of the last five working days prior to filing a loan request with the BNB).

The third main characteristic of the Bulgarian CBA is the presence of fiscal reserves (government deposit) in the liabilities of the Issue department¹⁰⁾. Borrowings from the IMF and other international financial institutions, as well as privatization revenues, are accumulated there upon receipt. IMF loans also appear as assets (foreign currency reserves) on the balance sheet of the Issue department. The central bank can officially lend to the government the received IMF loans but only if the maturity of government debt to the BNB matches that of BNB debt to the IMF. If the government decides not use its borrowings from the IMF and other financial institutions, these may be amassed in the Banking department deposit, thus providing larger possibilities for the department to serve as LLR.

The specific design of the Bulgarian currency board helps alleviate the effects of huge borrowings from international financial institutions as well as of large foreign debt service obligations on money supply. In contrast to orthodox currency boards, changes in foreign exchange reserves linked to IMF loans and external debt repayment do not affect the monetary base, thereby reducing the volatility of money supply (Miller, 1999). However, including the government deposit in the liabilities of the Issue department has a drawback: the automatic link between the balance of payments and reserved money is severed, and the government induces unintentionally expansions and contractions of money supply through its fiscal behavior. For example, a decline in tax revenue and/or an increase in government spending cause an involuntary monetary expansion and vice versa (Nenovsky and Hristov, 2001).

II Economic Performance after the Currency Board's Introduction

After launching the currency board in mid-1997, Bulgaria has achieved remarkable macroeconomic stability and three successive years of economic growth. Table 4 summarizes the dynamics of some key macroeconomic variables in 1996-2000. Inflation measured by CPI growth has been brought down to single digits (0.9% in 1998 and 6.2% in 1999). Prices increased somewhat faster in 2000 (11.4%), which can be in part attributed to unfavorable external circumstances such as the appreciation of the US dollar against the euro and the rise in world oil prices¹¹⁾. Government finances have also been quite stable. After registering a surplus of 0.9 percent of GDP in 1998, the government managed to keep fiscal deficits in 1999-2000 at relatively low levels (- 0.9% and -1.1% of GDP). Foreign exchange reserves have marked a more than six-fold increase: from US\$ 518 million in 1996 (less than two months of imports) to an estimated US\$ 3, 300 million in 2000. The reserves cover entirely the monetary liabilities of the BNB, guaranteeing national and reserve currencies' convertibility at the fixed exchange rate.

Growth in real GDP has also picked up. The year 2000 saw the highest increase in real GDP (5.8%) since the start of the transition. Growth in 1998-99 was somewhat lower partly as a result of external shocks such as the Russian financial crisis and the war in Kosovo. The main engines of growth were investment and exports. Gross domestic investment as percentage of

10) This is a common characteristic of the currency boards in Bulgaria and Lithuania, but in Estonia the government holds its fiscal reserves in individual commercial banks.

11) A stronger dollar implies higher foreign debt servicing costs since most of Bulgaria's external debt is denominated in US dollars. On the other hand, over half of Bulgaria's exports go to the EU, bringing export earnings in the weaker (against the US dollar) euro. Furthermore, as the Bulgarian economy is heavily dependent on oil imports, higher world oil prices affect negatively the country's trade balance and lead to higher domestic prices of inputs (imported inflation).

GDP doubled in 1997-2000 but its 2000 level (15.7% of GDP) was still quite low by Central Europe's transition economy standards. 1999 and 2000 were years of substantial FDI inflows in Bulgaria. Foreigners invested US\$ 1, 001.5 million (8.4% of GDP) in Bulgarian enterprises in 2000, marking the greatest amount of annual FDI inflow reported since the start of the transition. Exports slumped in 1998-99 due to unfavorable external environment and to privatization-related enterprise restructuring but have recovered quickly since mid-1999. But, in spite of the growth achieved in 1998-2000, the estimated level of real GDP in the end of 2000 was still about 76 percent of the 1989 level (1989 = 100).

The currency board's introduction was also followed by some radical reforms in the real sector of the economy. Most administered prices were liberalized. The pace of large-scale privatization was accelerated, and a number of big loss-making SOEs, for which it proved impossible to find buyers, were forced into liquidation. Bank credit for others was cut off¹²⁾. More than two-thirds of GDP were produced in the private sector at the end of 2000. Furthermore, major changes in commercial bank lending behavior were observed after the launch of the CBA. Banks drastically reduced lending to the real sector. In particular, lending to the public sector dropped sharply. Between 1995 and 1999, loans to non-financial SOEs declined from 22.3 percent to 3.5 percent of GDP: another sign of tightening budget constraints since mid-1997 (Ulgenerk and Zlaoui, 2000, p. 8).

After the exit of 15 failed banks in 1996-97, the Bulgarian banking sector has been characterized by high solvency and liquidity. Total risk-weighted capital adequacy increased from 5.5 percent in 1996 to 35.5 percent in the end of 2000, which is far above the required 12 percent (BNB Annual Report, 2001, p. 80). Between 1996 and 1999, classified loans declined from 47.5 percent to 13.8 percent of the outstanding total loans (Ulgenerk and Zlaoui, 2000, p. 40). Another area where there has been substantial change over the past three years is the privatization of the banking system. At the end of 2000, the share of private banks in total bank assets was 80.3 percent. 73.3 percent of bank assets were owned by foreign investors (BNB Annual Report, 2001, p. 76). The BNB has considerably strengthened regulation and supervision of the banking sys-

Table 2: Development of the Banking System in Bulgaria

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number of banks	70	53	56	37	42	44	45*	34	34	35
Number of privatelyowned banks	1	3	6	10	18	22	23	28	29	29
Foreign Banks	0	0	0	0	2	4	7	9	10	19
Market share (assets) of largest banks (number of banks in parenthesis)	n.a	77.8% (6)	74.8% (8)	81.6% (13)	78.5% (13)	74.9% (7)	67% (7)	75.4% (7)	70.4% (7)	70.2% (7)

* Banks in liquidation are included.

Source: BNB Annual Reports

- 12) One year before the launch of the currency board, in the summer of 1996, under pressure from the IMF the Bulgarian government initiated the closure of 64 and the restructuring of 71 big SOEs. The latter were cut off from bank credit and divided into two groups, A and B. Group B enterprises were either privatized or liquidated by the end of 1999, while Group A ones (the state-owned utilities) were restructured and rehabilitated.

tem, thereby inducing commercial banks to improve their compliance with the main prudential requirements.

In spite of the above achievements, it is too early to say that macroeconomic stability and economic growth can be sustained in the medium and long term. With large-scale privatization nearing its end, the government cannot rely further on privatization revenues to fill holes in its finances. Foreign and domestic borrowing will be the only means of deficit financing if the CBA is maintained. In case of unfavorable external developments, Bulgaria might experience problems in meeting its foreign debt repayment requirements. It has the highest public debt burden among EU accession countries. In the end of 2000, Bulgaria's public debt was US\$ 9, 246.7 million or 77.2 percent of GDP, much higher than the maximum level allowed by the Maastricht convergence criteria (60%). A recent World Bank study has identified refinancing, currency and interest rate risks as potential threats to the country's fiscal stability in the future (Brixi, Shatalov and Zlaoui, 1999). In particular, rising foreign debt service, limited access to world capital markets, changes in the US dollar exchange rate against the euro, and LIBOR increases might endanger Bulgaria's fiscal balance (*ibid.*, pp. 14-17).

The government is also under strong political pressure to increase wages in the public sector and to expand social spending as well as public investment. Economic growth after the CBA's introduction has not brought a tangible improvement of living standards for the majority of the population. At the end of 2000, unemployment was at 18 percent of the labor force, with more than half of the unemployed being out of work for more than a year. Furthermore, in the years prior to EU membership, the government needs to maintain a high level of public investment to meet EU environmental and other accession requirements. In short, Bulgaria faces the so-called "debt-investment dilemma" (The World Bank, 2001, p.14). Due to its already high level of indebtedness, the country would better adhere to a very conservative stance toward debt and fiscal risk. But that strategy implies there would be fewer resources for public investment in infrastructure and for alleviating poverty and unemployment. The general elections in June 2001 brought to power a new government led by the former Bulgarian king (Simeon Saxe-Coburg-Gotha). With people's expectations for faster growth in real incomes high, it will have the difficult task to promote investment, exports and economic growth while preserving fiscal balance and macroeconomic stability.

Progress in privatization and structural reforms needs to be sustained. The tightening of budget constraints after the CBA's introduction has precipitated a marked increase in enterprise arrears to the national electricity company, the gas company and the social security agency. And in many cases privatization has not led to improvements in company performance. Many former SOEs were sold off to teams of managers and workers who do not have the capability to turn around their companies. Introducing new technologies, equipment and modern management techniques is still limited to the few former SOEs bought by foreign strategic investors. Export growth since mid-1999 should not be mistakenly attributed to a rise in the international competitiveness of Bulgarian manufacturers.

High capital adequacy ratios in the banking sector reflect the policy of placing funds into low-risk investments pursued by commercial banks. The latter prefer to invest in domestic and foreign securities rather than lend to enterprises and individuals. The low degree of financial intermediation, typical for almost all transition economies, is the consequence not only of legal

environment problems (weak creditor rights) but also of the low capacity of banks for credit risk assessment. In addition, although the banking sector seems stable and sound, public confidence in the banks has not been restored fully. Most of the deposits are short-term, and the dollarization rate has remained high, with more than half of the deposits denominated in foreign currency (The World Bank, 2001, p. 59).

Another problem with optimistic estimates of Bulgaria's economic performance in 1998-2000 is that the extent to which the CBA has contributed to better inflation, fiscal balance and economic growth records is difficult to assess. It is possible to argue that much of the achieved progress could have been made under a standard tight monetary policy framework. According to some authors (Gulde et al., 2000), the main factors behind the impressive growth performances of Estonia and Lithuania are fast-paced structural reforms and the favorable investment climate, rather than strictly the effects of CBA's operation. In other words, the Baltic states would have probably done well under a different exchange rate regime as well. By contrast, the introduction of the currency board in Bulgaria is considered of utmost importance for stopping the vicious cycle of soaring inflation and rapid currency depreciation. We believe that the Bulgarian CBA has played a crucial role in reestablishing confidence in the national currency, the banking system and the government. In the next section we discuss the advantages and disadvantages of currency boards on the case of Bulgaria.

III Advantages and Disadvantages of Currency Boards

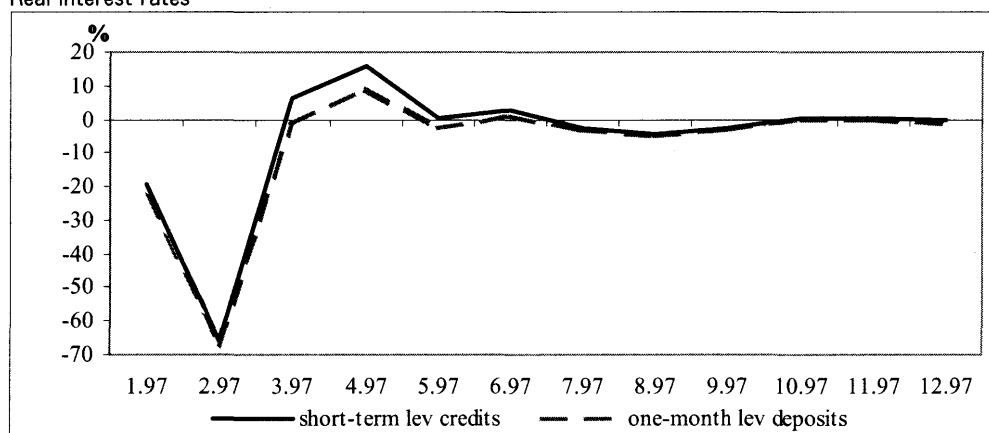
A recent empirical study (Ghosh et al., 1998) suggests that historically countries with currency boards have on average experienced lower inflation compared with floating regimes and ordinary pegs. This may be considered as natural result of the monetary discipline introduced by the CBA. As discussed earlier, the Bulgarian one eliminated monetary sources of inflation and restored confidence in the national currency by importing Bundesbank's (since 1999, the European Central Bank's) monetary policy. However, in spite of having a common monetary policy, inflation differentials between Bulgaria and the euro zone may emerge due to substantial differences in levels of economic development and other factors. In 1998, per capita GDP and relative price index in Bulgaria were 23.5 percent and 28.8 percent respectively of those in the EU (Nenovsky et al., 2001a, p. 49). In the process of convergence to EU averages, it is quite natural to expect growth and inflation rates in Bulgaria to exceed those of EU member countries (due to the so-called "Balassa-Samuelson effect"). Moreover, as a result of Bulgaria's strong dependence on the imports of fuels and raw materials whose prices are quoted in US dollars, a strengthening of the US dollar against the euro (respectively against the lev) can bring the country's inflation rates to levels much higher than those in the euro zone.

As we pointed out in the previous section, the period after the CBA's introduction in Bulgaria has been characterized by more or less balanced public finances. While this phenomenon can be partly explained by high inflation that reduced the value of lev-denominated government debt from 70 percent of GDP in 1996 to less than 15 percent of GDP in 1998 (Miller, 1999, p. 12), it is obvious that the currency board system requires a better fiscal discipline from the government. As fiscal deficits cannot be financed by just printing money and borrowing may be

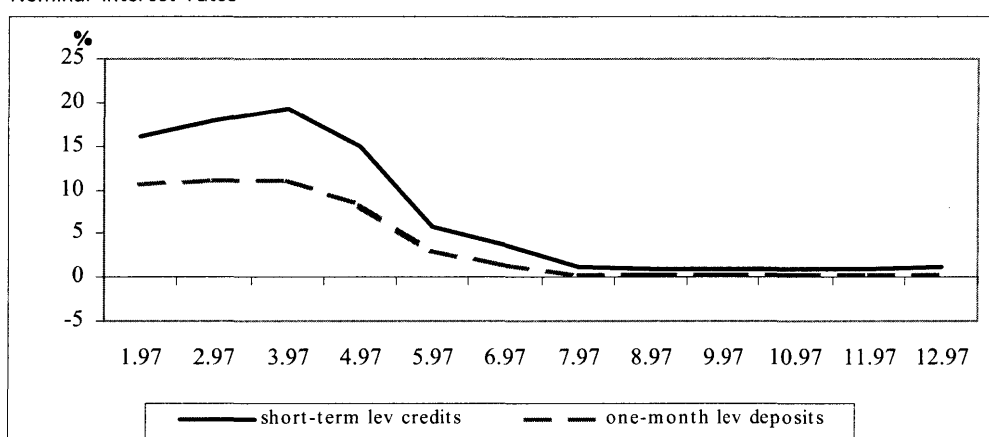
prohibitively costly, the government has a strong incentive to keep the budget in balance by limiting spending and raising tax revenues. However, if the government becomes captured by special political interests, the CBA may not be sufficient to control budget deficits¹³⁾.

A third advantage is the convergence of interest rates to the reserve currency country level. As illustrated in Fig. 1, nominal interest rates fell sharply in March-June 1997, before the launch of the currency board. Since the establishment of the new exchange rate regime in July, they have stayed firmly at single-digit annualized levels. Significantly lower interest rates have also helped the government achieve relative fiscal balance in 1998-2000. However, interest rates in Bulgaria are still higher than those in the euro zone because of country and exchange risks, and because of inflation differentials. In addition, short-term lending spreads are much larger due to insufficient competition in the banking sector and to a limited borrower base (The World

Real interest rates



Nominal interest rates



Source: BNB Annual Report, 1998.

Fig. 1. Real and nominal interest rate dynamics during 1997

13) This is the political problem of CBAs identified by John Williamson (Williamson, 1995).

Bank, 2001, p.59).

Furthermore, the CBA reduces considerably the exchange risk, thereby helping diminish uncertainty and foreign trade transaction costs. But the risk of devaluation is not eliminated altogether because the national parliament can decide to change the fixed exchange rate. On the whole, by ensuring lower interest rates as well as exchange risk, the currency board regime creates a more stable and predictable business environment.

Finally, a more stable banking system and a more flexible labor markets should be mentioned among the advantages of countries with currency boards. The changes in the Bulgarian banking system after the CBA's introduction were discussed in the previous section. As for the labor market, under a currency board system economic adjustment to shocks has to be done through wage and price movements. Therefore, real wage flexibility is a necessary condition for the stable operation of a CBA. A recent study has shown that real wages in Bulgaria are still far less flexible than those in the EU and other advanced countries (Nenovsky and Koleva, 2001).

In a nutshell, the currency board has a strong credibility effect which is the result of simple and transparent rules of policy making. If these rules are strictly followed, the CBA can create confidence, leading to higher investment, trade and growth. We believe that was the case of Bulgaria after mid-1997. However, on the other side of the coin are the following disadvantages of the currency board¹⁴⁾.

First, the ability of the central bank to perform the role of LLR is restricted. As shown in Section 1, BNB can refinance commercial banks in the event of a systemic crisis up to the amount of its excess foreign exchange reserves, which are equivalent to the deposit of the Banking department in the Issue department. Yet, the volume of excess reserves may be insufficient to meet bank liquidity requirements. One solution to this problem is to allow the prevalence of foreign banks in the banking sectors of countries under currency board regimes. The reasoning behind this is that foreign-owned subsidiaries can have lines of credit from their parent banking institutions in the case of liquidity crises (Miller, 1999, p. 19). But there is no guarantee foreign bank branches will not just choose exit and contribute to the flight of capital, instead of helping to restrain it. Another solution is to secure credit lines from foreign central and commercial banks, which can be used in times of systemic banking crises.

At present, the Bulgarian banking system seems rather sound and the large share of foreign ownership is consistent with the first solution discussed above. However, apart from the top 12 banks which hold 85 percent of total assets and 87 percent of total deposits, there is a dozen of small and undercapitalized banks that may pose a threat to the banking system's stability in the future (Ulgenerk and Zlaoui, 2000, p. 11-15). As competition in the banking sector intensifies, it can be expected that banks will have to increase their exposure to the real sector and take more risks, making them more vulnerable to sudden losses of investor confidence. Another potential threat stems from asset volatility due to capital inflows and outflows. The example of Estonia's asset bubble in 1997-98 shows that large capital inflows may cause a boom in domestic lending, leading to serious bad loan problems after the subsequent capital outflow and correction in asset prices. So far volumes of foreign portfolio investment in Bulgaria have been rather small mainly because of the underdeveloped state of the capital market and because of the withdrawal

14) Most of the discussed disadvantages are common for all fixed exchange rate regimes.

of investors from emerging markets following the Russian financial crisis.

In a country with a recent history of banking crisis such as Bulgaria, the long-term sustainability of the CBA will depend on the ability of the authorities to ensure the orderly exit of insolvent banks. The handling of two bank failures in 1999-2000 provides grounds for cautious optimism. These failures did not produce a loss of confidence in the banking system as the policy actions taken by authorities were based on clear and transparent rules. Deposits in the failed banks were paid by the Bank Deposit Insurance Fund up to the legally defined maximum limit.

Secondly, the inability of the central bank to use independent monetary policy (through adjustments of interest rates or the exchange rate) is also considered a disadvantage of currency boards. The central bank cannot influence interest rates and/or devalue the national currency to help the economy absorb external shocks. In the absence of independent monetary policy, as in the case of countries with CBAs, the economic adjustment should take place through wage and price movements, which is considered slower and more painful.

The above may be true for countries where the central bank has had a long history of successful implementation of monetary policy. Bulgaria does not belong to that group. In 1991-97, the Bulgarian central bank used monetary policy not to stabilize but to destabilize the economy. During the economic crisis of 1996-97 it had full control of interest rates and used its powers to raise them to very high levels. But the high degree of dollarization, or the flight from the lev, rendered central bank actions totally ineffective. People's confidence in the central bank was lost completely. Therefore, in Bulgaria the inability of the BNB to use independent monetary policy may be considered an advantage rather than disadvantage.

As for the absence of a possibility to devalue the national currency to help exporters, we believe devaluation may have more harmful than beneficial effects in the case of a small, open economy heavily dependent on the import of fuels and basic materials like Bulgaria. Devaluation makes inputs needed for the production of goods for export more expensive, eliminating the presumed benefits for exporters. Furthermore, devaluation may ignite inflationary expectations and incur heavy costs on banks or firms with extensive borrowings from abroad. Thus, the inability to use devaluation to absorb external shocks may be also seen as an advantage rather than disadvantage of the CBA in Bulgaria.

The limited ability to use expansionary fiscal policy to stimulate the economy is often cited as another disadvantage of currency boards. However, the possibility to loosen fiscal policy depends on the degree of a country's public debt. In the previous section we discussed the "debt-investment dilemma" faced by the Bulgarian government. Due to its already high level of indebtedness, the government is forced to adopt a conservative stance towards fiscal spending. This may be considered a necessary cost of preserving macroeconomic stability brought by the CBA. A country with a currency board but relatively lower public debt such as Estonia could afford to reduce radically taxes to improve its business environment. In addition, low fiscal deficits are one of the Maastricht convergence criteria, and even accession countries without currency boards have to refrain from promoting their national economies through increased budget expenditures.

The fourth disadvantage is that exporters of countries with currency boards may lose their international competitiveness as a result of real appreciation of the national currency. An obvious example is Argentina whose currency has been absolutely fixed to the US dollar since 1991. In

the end of the 1990s, the competitiveness of Argentina's exporters suffered due to the strong dollar and the depreciation of Brazil's real. Naturally, doubts may arise on whether the Bulgarian lev has not appreciated in real terms since the CBA's introduction. In particular, the question is whether rising current-account deficits in 1999-2000 (Table 4) may be seen as consequence of a higher lev in real terms, which has led to lower international competitiveness of Bulgarian exporters.

Our view is that Bulgaria's current-account deficits are the result of a combination of factors. As we discussed earlier, external factors such as the strong dollar, higher world oil prices, the Kosovo war, etc., have had a negative impact on the country's terms of trade. The closure and the privatization-related restructuring of former SOEs may have also contributed to the fall of exports in 1998-99. But the most important factor is that Bulgaria, like all other accession countries, is in the process of catching up with EU capital and income levels. During the period of convergence to advanced country levels, these countries will exhibit a strong demand for imported intermediate and investment goods, which may lead to persistently large current-account deficits. Moreover, existing estimates of productivity-based dollar wages in Bulgaria confirm that the competitiveness of the country's exporters is not at risk (The World Bank, 2001, p. 83). Therefore, we reject the hypothesis of lev's real appreciation as an explanation of Bulgaria's current-account deficits in 1999-2000.

IV CBA and "Euroization" Scenarios for Joining the EMU ¹⁵⁾

As we saw in the previous section, most of the presumed disadvantages of currency boards may be regarded as advantages in the case of Bulgaria. This enables us to support the view of maintaining the CBA until Bulgaria's accession to the EU and the EMU (the CBA scenario). However, the country's present exchange rate regime is formally incompatible with the standard procedure of EMU membership. Now the lev is absolutely fixed to the euro, whereas the required participation in ERM II would imply a two-year transition period of greater exchange rate flexibility, i.e. a fluctuation band of ± 15 percent¹⁶⁾ around the fixed rate. Below we discuss some merits and demerits of following the standard procedure for joining the euro zone and present arguments in favor of maintaining Bulgaria's currency board until EMU membership.

Here are some of the merits (Gulde et al., 2000, p. 18). First, it is argued that participation in ERM II would allow markets to test the candidate country's exchange rate stability. If over the two-year transition period its exchange rate is stable, the country can become a member of the EMU. However, if markets judge that the candidate's currency is overvalued in real terms against the euro, there might be speculative attacks leading to high exchange rate instability. As

15) Discussion in this section draws on Gulde et al. (2000) and Nenovsky et al. (2001a).

16) A narrow fluctuation band of ± 2.25 percent can be negotiated too. Currently, Denmark applies the ± 2.25 percent band.

17) The prior-to-entry exchange rate is determined before the start of the two-year transition period through negotiations with the finance ministers and central bank governors of the countries participating in the euro zone and the ECB. All participants in the negotiations have the right to initiate a posteriori a confidential procedure to reconsider the rate level.

the European Central Bank (ECB) is not firmly committed to maintaining the candidate's exchange rate at the prior-to-entry level¹⁷⁾, there might be a correction, i.e. devaluation of the candidate country's currency. Thus, the market test would ensure the country entered the EMU at an appropriate exchange rate against the euro.

Another merit is that the two-year transition period would give the candidate country's authorities the opportunity to gain experience in monetary policy management and prepare them for operation within the euro zone. Finally, it is believed that a certain degree of exchange rate flexibility would facilitate nominal convergence, i.e. help the candidate country meet the Maastricht criteria, by absorbing the effect of real exchange rate appreciation and by allowing the nominal exchange rate to react to asymmetric external shocks.

The largest demerit of participation in ERM II is the expected higher degree of uncertainty in the candidate country's economy. The lack of credible commitment by the ECB to support the prior-to-entry exchange rate provides possibilities for market participants to speculate about the entry rate. Due to the lack of depth of Bulgaria's foreign exchange market, it is likely that the transition period to EMU membership will be characterized by wide swings in the exchange rate of the lev against the euro (Gulde et al., pp. 19-20). A sharp devaluation of the lev would certainly lead to rising inflation and higher interest rates, making the desired nominal convergence more difficult.

In countries with currency boards like Bulgaria in particular, uncertainty about future levels of interest and exchange rates would incur heavy costs on economic agents. The stable and predictable business environment brought by the CBA will quickly become a thing of the past. Economic agents will have to insure themselves against interest rate and exchange risks. Banks and firms with large borrowings from abroad might not be able to withstand substantial lev devaluation. The latter might trigger a banking crisis, launching the start of a vicious cycle of currency depreciation, higher inflation and economic recession.

We believe that there is a diversity of paths to meeting the Maastricht convergence criteria and that each accession country should be able to choose the path that suits her best. The currency board system seems fit to serve Bulgaria well on its road to EMU membership. We agree with Gulde et al. (2000) that the market test of exchange rate stability can be done within the framework of the CBA. As noted above, real exchange rate appreciation in countries with currency boards should not be a problem if prices and wages are flexible enough. Higher inflation rates during the period of EMU accession are the consequence of the "Balassa-Samuelson effect" and other factors discussed earlier, but not of worsening economic fundamentals.

As for the need to gain experience in monetary policy management, it should be pointed out that EMU members like Austria, the Netherlands and Belgium did not pursue an independent monetary policy during their transition to the euro zone. Their experience shows that following strictly Bundesbank's (at present, ECB's) monetary policy through a hard fix to the German mark (today, the euro) helps achieve faster nominal convergence. The currency boards in accession countries should be able to play a similar role.

Finally, the costs of exit from the CBA in Bulgaria would be prohibitively high also because abandoning the present exchange rate system would require large-scale investment in a new monetary policy framework. If that is inflation targeting, Bulgaria will need flexible exchange rates precluding its participation in ERM II. And the prospects of success of such a

monetary regime look very uncertain due to the high level of dollarization of the country's economy.

On the whole, if the discipline provided by the CBA in Bulgaria helps it achieve nominal convergence faster, there is no need to pass through ERM II on the road to the EMU. However, as Gulde et al. (2000) point out, maintaining the currency board until membership in the euro zone might be a difficult and challenging task. Bulgaria would have to sustain a conservative fiscal stance, strengthen further its banking system, manage better its external debt problem, and pursue structural reforms to increase labor market flexibility. It should be also better prepared to deal with large capital inflows or outflows and with asymmetric external shocks. A tough road lies ahead. In the rest of this section we outline an alternative path to EMU membership, that is the "euroization" scenario, and compare it with the strategy of keeping the CBA until joining the euro zone (the CBA scenario).

By "euroization" we mean adopting the euro as legal tender, unilaterally or under a bilateral agreement, prior to Bulgaria's EMU membership. One option is to introduce the euro under an agreement on seigniorage compensation between Bulgaria and the EU. This may be called "coordinated euroization", implying it is considered by the EU compatible with the standard procedure for joining the EMU. Under the "unilateral euroization" option, not only Bulgaria will not receive any compensation for abandoning its own national currency, but it will also bear the risk of political tensions with EU member countries as the latter rally against the decision to "euroize".

What are the expected advantages of adopting the euro prior to joining the euro zone? First, exchange risk¹⁸⁾ will be completely eliminated, leading to lower interest rates. Although the exchange rate of the lev against the euro is absolutely fixed under the CBA, the risk of lev devaluation, albeit small, still remains. Interest rates on lev-denominated loans include an exchange risk premium reflecting the risk of lev devaluation. Replacing the lev by the euro will remove this premium. Of course, in theory "euroization" might be suspended too, but in practice this possibility can be ignored because of the enormous price the country would have to pay for restoring its national currency.

Another advantage is that the link between exchange and banking crises will be severed. With the introduction of the euro, lev devaluation would not anymore be a threat to the banking system. Under the present CBA, the risk of lev devaluation is in itself a risk of exchange crisis turning into a banking one, with the latter leading to further lev depreciation and so on. The link between exchange and banking crises (a vicious cycle) became evident during the Mexican and Asian financial crises of the 1990s. Moreover, the adoption of the euro will help overcome the inability to raise long-term funds in international financial markets. Due to the underdeveloped state of the country's financial market, it is now almost impossible to borrow long term in lev without having the banking system bear the burden of either exchange or maturity risks¹⁹⁾. With the euro replacing the lev, Bulgarian companies may finally obtain access to much needed long-term loans, whereas banks would not need to worry about the above risks. Lower interest rates

18) Exchange risk stemming from the possibility of devaluing the lev against the euro. Exchange risk related to fluctuations of the euro against other major currencies will remain.

19) Banks either take exchange risk by borrowing long-term funds in foreign currency to lend them in lev, or maturity risk by borrowing short term to lend long term in lev.

Table 3. Seigniorage in Bulgaria (1995 - 2000)

%	1995	1996	1997	1998	1999	2000
C/GDP	7.0	7.2	7.7	8.1	8.6	9.8
S/GDP	4.4	4.9	0.9	0.8	1.4	1.6
S/TR	24.4	14.8	38.3	22.2	2.4	10.8
S/TotalR	19.8	12.1	35.0	20.9	1.9	8.6

Source: authors' calculations.

C: banknotes and coins in circulation; S: seigniorage; TR: tax revenues of the government; TotalR: total government revenues; GDP: gross domestic product.

and access to long-term borrowing are expected to stimulate investment and economic growth.

Furthermore, price transparency, elimination of transaction costs stemming from the exchange of euros for levs, and further reorientation of Bulgaria's foreign trade toward the countries of the euro zone are also, among others, advantages that can be expected from "euroization". Adopting the euro will give Bulgarians the opportunity to directly compare prices in their country with those in the euro zone. And foreign trade with the EU will be accounted as internal trade, helping reduce the country's present current-account deficit by approximately 35 percent (Nenovsky et al., 2001a, p. 101). This will, in turn, free resources currently used as foreign exchange reserves and make them available for investment.

As mentioned above, "unilateral euroization" would have two clear disadvantages for Bulgaria. First, there will certainly be a loss of seigniorage. Table 3 shows that before the economic crisis of 1996-97 central bank revenues from seigniorage as percentage of GDP were quite significant but with the achievement of low inflation and fiscal balance in 1998-2000 have dropped considerably. The unilateral adoption of the euro would also mean the loss of seigniorage as "revenue of last resort", i.e. the government will not be able to rely on substantial revenues in the event of unexpected crises. In contrast, "coordinated euroization" presumes Bulgaria would receive at least a partial compensation from the ECB for the loss of seigniorage.

The second disadvantage arises from the expected deterioration of relations with the EU. Euro zone countries will probably consider Bulgaria's "unilateral euroization" as an attempt to join the EMU through the backdoor, without passing through the standard procedure of EMU membership. The adoption of the euro prior to achieving nominal convergence to the Maastricht criteria may create a negative sentiment toward Bulgaria and erect additional barriers to the country's integration with the EU. "Coordinated euroization" will minimize such political costs as it will be based on a bilateral agreement and will be possible only if Bulgaria sustains its macroeconomic stability and structural reforms in the future.

The absence of lender of last resort is usually regarded as yet another disadvantage of "euroization" in general, but in the Bulgarian case, the Banking department of the central bank can continue to play its role of LLR even after the adoption of the euro. And with the elimination of exchange risk and further integration into European financial markets, it is hoped that the Bulgarian commercial banks will become far more stable and resilient to liquidity crises. In addition, if "euroization" takes place in coordination with the EU, the received compensation for the loss of seigniorage may be used as collateral for emergency loans to banks in the event of sudden

shocks.

“Euroization” costs will also include the necessary one-off expenses to acquire euro notes, to change prices and software, etc. Moreover, the country will completely lose its control over money supply. Decisions about monetary policy in the euro zone are made in the Governing Council of the ECB, and under “unilateral euroization” Bulgaria will not have the right to vote there. However, the country has already experienced a loss of monetary sovereignty as a result of the CBA’s introduction with benefits exceeding the costs. And ECB decision making is not likely to be swayed by small accession countries like Bulgaria, even if they had the right to vote in the Governing Council.

Finally, there are some doubts whether “euroization” will really bring lower interest rates and more investment. Even after the adoption of the euro, a risk premium will continue to exist not just because of the absence of nominal convergence, but also because of the country’s weak institutional environment. Introducing the euro is not a panacea to structural problems such as lack of the rule of law, prevalence of corruption, inefficiency of the legal system and the government administration, etc.

Conclusion

Since Bulgaria established a currency board in mid-1997, it has achieved remarkable macroeconomic stability and three consecutive years of economic growth. Although other factors such as the rebound effect from the economic crisis in 1996-97 have certainly played a role, the financial discipline instilled by the CBA was crucial for the country’s accomplishments in 1998-2000. However, its present exchange rate system is formally incompatible with the standard procedure of EMU membership, namely with the requirement to participate in ERM II for two years. Therefore, policy makers are faced with the dilemma of whether to maintain the CBA until joining the euro zone, or whether to switch to some other monetary regime.

To understand whether Bulgaria’s present exchange rate system can serve it all the way up to the adoption of the euro, we examined the advantages and disadvantages of currency boards. We found out that by creating a stable and predictable economic environment, the CBA can promote investment, trade and growth. Furthermore, we concluded that this monetary regime is well suited to help Bulgaria achieve nominal convergence in accordance with the criteria decided by the Maastricht treaty. The disadvantages of currency boards that are well known from previous experience are mitigated by the specific design of the Bulgarian CBA and by Bulgaria’s failure with independent monetary policy in 1991-97.

We also analyzed the merits and demerits of following the standard procedure of EMU membership. We found that abandoning the currency board to participate in ERM II would produce a high degree of uncertainty and might have disastrous consequences for the country’s economy. Switching to another monetary regime such as inflation targeting combined with flexible exchange rates would require large-scale investment, while the prospects of its success look uncertain due to the high degree of currency substitution. We concluded that if the discipline provided by the CBA in Bulgaria helps it achieve nominal convergence faster, it would benefit from not participating in ERM II on the road to the EMU. However, this would require sustaining a conservative fiscal stance, strengthening the banking system, and pursuing structural reforms to

Table 4: Economic Changes Since Currency Board's Introduction in Bulgaria

	1996	1997	1998	1999	2000
GDP growth (percentage change in real terms)	-10.9	-6.9	3.5	2.4	5.8
Consumer prices (percentage change)	310.8	578.6	0.9	6.2	11.4
Interest rates (BNB base rate) (in percent)	435	7	5.2	4.6	4.7
Government budget balance (in percent of GDP)	-10.4	-2.1	0.9	-0.9	-1.1
Current account balance (in mln. US dollars)	16	428	-62	-681	-701.4
Current account/GDP (in percent)	0.2	4.2	-0.5	-5.5	-5.9
Trade balance (in mln. US dollars)	188	380	-381	-1,081	-1,175
Gross domestic investment (in percent of GDP)	8.4	11.4	14.7	19	16
Foreign direct investment (in mln. US dollars)	138	507	537	806.1	1,002
Gross reserves, excl. gold (in mln. US dollars)	518	2,121	2,679	2,892	3,300
Gross foreign debt (in mln. US dollars)	9,602	9,760	10,260	9,989	10,364
Gross foreign debt/GDP (in percent)	97.7	95.8	83.7	80.5	86.5
Gross foreign debt service/exports of goods and services (%)	16.3	12.8	20	18	16.7
Private sector share in GDP (in percent)	55	60	65	65.3	69.3
Unemployment (in percent of the labor force)	12.5	13.7	12.2	16	18

Sources: EBRD (Transition report 2000), Bulgarian National Bank, National Statistical Institute, and the Bulgarian government's report for 2000 (<http://www.government.bg/bg/index.html>)

increase labor market flexibility. The country also needs better preparation to deal with large capital flows and with external shocks.

Finally, we discussed the so-called "euroization", that is adopting the euro prior to membership in the EMU unilaterally ("unilateral euroization") or under a bilateral agreement with the EU and the European Central Bank ("coordinated euroization"). We found that "unilateral euroization" will be very costly due to the loss of seigniorage and the expected deterioration of relations with euro zone countries. "Coordinated euroization" which presumes the EU's and the ECB's consent on such path to EMU membership is the desirable option. However, this is a medium-term solution as Bulgaria has to prove first to the EU that it can achieve nominal convergence. Until then, it should be served well by its present currency board system.

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