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**Design and Operation of Existing Currency
Board Arrangements**

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Materials published here have a working paper character. They can be subject to further publication. The views and opinions expressed here reflect Authors' point of view and not necessarily those of CASE.

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Contents

Abstract	5
1. Definition	6
2. How are Currency Boards Related to Other Monetary and Exchange Rate Regimes?	6
3. Experience from Existing Currency Boards	8
3.1. Design of Existing Currency Board	8
3.2. Implementation Experience and Long-Term Effects	11
4. Advantages and Disadvantages of the Currency Board Arrangement	17
5. What Conditions Must Be Satisfied in Order to Be Able to Implement a Currency Board Regime?	20
References	22

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Abstract

This paper summarizes recent literature on the experience of some existing currency boards. It begins with the definition of the currency board and the description of some existing currency boards. It then discusses advantages and disadvantages of implementing the currency board regime, and concludes with a list of conditions that must be satisfied if a country wants to adopt this monetary framework.

I. Definition

From the wide range of currency regimes, the choice of currency board has become very popular in the 1990s. Under this framework, the use of monetary policy is very restricted, and under the strict currency board, a government cannot operate any monetary policy at all. The currency board is – after the monetary union – the second most rigid form of exchange rate regimes.

Exchange rate regimes can be classified into floating, fixed, and all the varieties of pegged and target bands, and managed float that lie between the two extremes. Currency board in its orthodox form is a fixed exchange rate regime. The role of monetary authorities is reduced to issuing notes and coins that are fully backed by a foreign reserve currency or – less frequently – to a basket of currencies. The central bank is obliged to exchange domestic currency for a reserve currency on demand at a fixed exchange rate. There is a minimum of 100% foreign reserve requirement, and currency boards often hold excess reserves to guard against asset valuation changes. These excess reserves are related to the net worth of the currency board [Pautola and Backé, 1998], because seignorage can be earned only from interest on reserves. What is important, currency boards are established by law in order to protect them from political and various interest group pressures.

The currency board regimes have been usually implemented in order to gain credibility and thus reduce inflation. Under this framework, monetary authorities are unable to grant credits to the government or to troubled financial institutions. The monetary policy is determined solely by market forces and the currency board cannot intervene on the market. However, the monetary authority has some flexibility under less rigid types of currency board regime.

2. How are Currency Boards Related to Other Monetary and Exchange Rate Regimes?

As it was already mentioned, the currency board is a very rigid form of fixed exchange rate commitment. Somewhat less rigid exchange rate regime is the fixed exchange rate of the West African and Central African currency unions that fixed their currencies either to the French franc or to the dollar. Next comes the adjustable peg, where the exchange rate is declared fixed, but in fact undergoes realignments from time to time.

When the crawling peg is regularly reset, monetary authorities can either try to reduce inflation or they have the tools to keep the real exchange rate steady. A more flexible type of exchange rate peg is the basket peg, and extra flexibility comes from the fact that the weights of the basket currencies are often kept in secret. Target zone or target band allows for interventions when the exchange rate hits a band of either side of parity. When the target band is sufficiently wide, it approaches a float. Managed float allows for interventions at a foreign exchange market. These are usually buying the currency when it is rising and selling when it is falling in order not to allow that all the variation in the demand for this currency is shown in the exchange rate. Finally, the free float means that there are no interventions on the foreign exchange market, but private supply and demand for currency clear the market [Frankel, 1999].

As can be seen from the above brief characteristics of the different types of the exchange rate regimes, the ability to pursue an independent monetary policy is closely related to the degree of flexibility of the exchange rate. While domestic monetary policy does not exist under the monetary union or under the currency board and the interest rates are solely market-determined, there is a scope for an independent monetary policy under the pure float, but the exchange-rate policy has to be abandoned. Thus under both the free float and the fixed exchange rate regimes, conflicts between monetary and exchange rate policies do not arise. Conversely to this, it is argued [Culp et al., 1999] that classical balance of payments crises are inevitable when monetary authorities try to control both the exchange rate and the monetary policy, as in the pegged rates and pure floats.

Frankel (1999) suggests that the reason behind this is that in a world of high capital mobility, it is impossible to attain both exchange rate stability and monetary independence, and that higher capital mobility means narrowing the choice of among the extent of capital controls, monetary independence and exchange rate stability into the simple choice of the exchange rate regime. And since the only choices that cannot be subject to speculative attacks are the two extremes, the currency board system is often an optimal solution for some small, open economies.

Although in principle an orthodox currency board has no central bank and no room for discretionary monetary policy, there exist "currency-board-like" regimes, when some discretionary monetary policy is allowed. In such modified systems central bank has some flexibility to provide financial support to banks from its reserves or by borrowing money on the foreign exchange market. The monetary authorities may sometimes issue securities. In the case of Argentina, for example, local currency is not fully backed by the foreign currency reserves, which gives another instrument for discretionary monetary policy [Hanke and Schuler, 1999] [1].

[1] Only 66.6 of the monetary base has to be kept in foreign assets and gold.

3. Experience from Existing Currency Boards

The idea of the currency board arrangements has been invented for the British colonies in the XIXth century. There, they provided both fiscal revenues and monetary stability [Ghosh et al., 1998]. After these countries gained independence, the currency boards generally fell into disuse. Now, in recent years, the idea of the currency board has become again popular.

The currency boards introduced in Hong Kong (1983), Argentina (1991), Estonia (1992), Lithuania (1994), Bulgaria (1997), and Bosnia (1997) are not the orthodox currency boards, but rather the currency-board-like systems, where monetary authorities have some scope for discretionary policy. The currency board regimes were implemented in these countries as a response to macroeconomic crises: falling output, high inflation etc., and the primary reason for having a currency board arrangement was stabilization and credibility (see Table 1). Another set of countries that are now operating currency boards – Brunei Darrussalam (from 1967), Djibouti (1949), and member countries of the Eastern Caribbean Central Bank (from 1965) – did not establish currency board regimes because of macroeconomic crises, but rather opted for fixing their exchange rates because they were small, open economies with little experience in the monetary policy management [Santiprabhob, 1997]. In the following discussion on the experience of currency board countries, the attention will be put on the former group of countries, those who established currency board arrangements in response to unfavorable macroeconomic conditions. The discussion on Bosnia will be also skipped.

3.1. Design of Existing Currency Boards

Usually, the existing currency boards combine a fixed exchange rate, either to a dollar or to the German mark, the right to exchange domestic currency at this rate on demand, and a long-term commitment to the system, often set out directly in the central bank law. The central bank is required to hold sufficient foreign reserves to cover its monetary liabilities. Under a strict currency board regime, the role of the central bank is limited to issuing notes and coins, and the central bank cannot act as a lender of last resort in the case of a liquidity crisis. However, under a modified arrangement, there is a possibility to introduce some monetary policy instruments in order to be able to provide liquidity to temporarily illiquid but solvent banks.

Although in principle often everybody has the access to convertibility at the monetary authority, usually in practice only banks are able to convert local currency there. From all considered countries, only Bulgaria guarantees access to foreign exchange at the central bank to general public [Santiprabhob, 1997].

As to the backing rule, usually monetary authorities are required by law to keep 100 percent of monetary base in foreign assets and gold. Argentina is the exception, with compulsory coverage of backing of 66.6 percent of monetary base. This is because one third of the reserves against the monetary base can be held, since 1995, in Argentine government bonds [Hanke, Schuler, 1999:2]. Usually monetary authorities keep coverage in excess of 100 percent, as in the case of Estonia – 125% in May 1998 [Pautola and Backé, 1998], Bulgaria – 134% in 1999 [Anastassova, 1999], and Lithuania – 141% in April 1999 [IMF, 1999c]. These excess reserves are held to protect the currency boards in case the securities they held lost value and can be used in a discretionary fashion, like repurchases or foreign currency dealing.

Usually, the legislation prevents these currency boards from printing money to bail out the government-owned banks, financial institutions, or state-owned enterprises, as in the case of Argentina (1991 Convertibility Law), Estonia (1992 Foreign Currency Law, Currency Law, Law on the Security of Estonian Kroon, and 1993 Law of the Central Bank of Republic of Estonia), Lithuania, and Bulgaria (Bulgaria National Bank law). The exception is a narrowly defined credit to temporarily troubled financial institutions. Although this last activity is subject to many constraints.

Successful functioning of a currency board often required the reorganization of the administrative agency. Both Bulgaria National Bank and Bank of Estonia reorganized their central banks into the Issue Department and the separate Banking Department. The Issue Department is responsible for the issuing and redeeming monetary liabilities to the peg currency at the official exchange rate on demand, that is it has the function to run the currency board. The Banking Department manages "excess coverage", and can also hold all other assets and claims on the central bank [Gulde, 1999]. Monetary authorities of Lithuania, Argentina, and Hong Kong maintain all accounts on a unified balance sheet.

There has also been a need to introduce some additional measures enhancing macroeconomic stabilization along the legal changes. Bulgaria, in order to end previous large-scale financing of the budget, created the Fiscal Reserve Account aimed to restrict any short-term financing requirement of the budget. Thus, the budgetary accounts were consolidated, and their balances – held in the Issue Department – are now showing funds available to the government [Gulde, 1999]. Maintaining a minimum balance provides public assurance that the government will honor its commitments, and that there won't be too

much volatility of these balances, translating itself into the volatility of foreign reserve coverage.

Generally, the power to change the backing rule and the exchange rate rule does not lie in the competencies of the central bank. The Bank of Estonia has the right to revalue the exchange rate, but devaluation can only be done by the act of Parliament. The exchange rate can be changed by the Bank of Lithuania, but only under extraordinary circumstances and in consultation with the government. The exchange rate can be changed in Bulgaria only by the act of Parliament, and only by the act of Congress in Argentina. However, Argentine central bank is not required to buy foreign exchange at the fixed exchange rate and, thus, can let the peso appreciate [Santiprabhob, 1997].

All the selected currency board arrangements were implemented as a response to a macroeconomic crisis. Hong Kong, which introduced the currency board arrangement in 1983, was experiencing a downward pressure on the Hong Kong dollar, and was running trade deficits during the earlier period of free-float. There was a stock market crash, there were runs on small banks, and real estate prices collapsed [Kwan and Lui, 1996]. Argentina had chronic inflation and periodic hyperinflation during the 1980s, which led to the widespread dollarization of the economy. Moreover, chronic public sector deficits were crowding out private sector credit [Garcia-Herrero, 1997]. More recently, countries of Eastern Europe found themselves in a very bad macroeconomic situation after the collapse of the Soviet Union. Estonia experienced in 1992 a sharp fall in output, high inflation, and a trade shock leading to the loss of exports markets, and to the shortage of goods. Monetary arrangements and payments systems were badly functioning [Pautola and Backé, 1998]. Lithuania left the ruble zone also in 1992, but before decided to adopt a currency board regime in 1994, suffered from high inflation, falling production, budget deficit, and trade and current account deficits. Increasing number of transactions taking place in Lithuania at this time was conducted in foreign currency [Pautola, Backé, 1998]. Bulgaria had a period of near hyperinflation at the beginning of 1997. Monetary authorities were providing money to the weak banking system, and were continuously financing growing budget deficit. The confidence in the domestic currency was falling. International reserves held at the central bank were low. Real GDP fell by over 10% in 1996. Low credibility in the pre-currency board Bulgarian banking system manifested itself also in bank runs [Gulde, 1999].

The primary reason for putting into force currency board regimes in these countries was to immediately gain credibility and stabilize the economy. As the following section shows, the quick implementation of the currency board rules together with some additional measures generally allowed achieving these goals.

3.2. Implementation Experience and Long-Term Effects

The effects of having currency board in operation are significantly positive for Estonia and Bulgaria. Currency board contributed to Estonian growth by enhancing both foreign and domestic investment and confidence in maintaining strict monetary policy. Expanding capital inflows reduced interest rates, although not to the level of German ones. The operation of currency board in Estonia has been also associated with fiscal discipline. And although Estonian kroon felt pressures on several occasions, and some of them led to banks' collapse, the government remained committed to this monetary regime since its implementation in 1992 [Pautola and Backé, 1998].

Under the currency board, Bulgaria managed to reduce inflation and rebuilt foreign reserves. Interest rates went down, and retail interest rates practically converged to the levels of German ones [Gulde, 1999]. The demand for lev-denominated cash has risen [Pautola and Backé, 1998]. So far, there were some slippages in the field of structural reforms, but the general record is satisfactory. There was no need for the Banking Department to act as a lender of last resort. What is interesting, despite close economic ties, Bulgaria was not affected by the Russian crisis of 1998 [Gulde, 1999]. It is a success story so far.

In order to achieve so much desired economic stabilization, governments of Estonia and Bulgaria had to implement a number of reforms and standards. They also had to maintain fiscal discipline. In spite of creating legal and institutional framework for the currency board arrangement, and accumulating enough foreign reserves, Estonian authorities fully liberalized current account, and later – also capital account transactions. The government has showed its deep commitment to maintain the currency board. Banking sector was reorganized and privatized. Estonian authorities have also taken a number of measures to strengthen the financial system – like setting the capital adequacy requirements to limit commercial bank credit, introducing appropriate risk management standards, and official supervision [Pautola and Backé, 1998].

Bulgaria had to eliminate previous large-scale financing of the budget and barriers to bank privatization. The monetary authorities had to restructure country's foreign exchange reserves to match the link with the German mark – Bulgarian central bank opted for safe DM-denominated assets. Monetary authorities strengthened banking supervision and introduced clear rules on accounting and reporting requirements [Pautola and Backé, 1998]. Bulgaria also reformed tax system in 1997, speeded up the privatization, and improved business environment for foreign direct investors.

Contrary to the examples of Bulgaria and Estonia, the experience of the currency board arrangement in Lithuania is more mixed. Although its operation has not been

associated with very sound fiscal performance, inflation has fallen, and so have the interest rates. Output started to recover in 1995. However, fiscal deficit has been all the time at the level of about 2% of GDP, and both current account and trade deficits significantly increased. Moreover, Lithuanian interest rates have not yet converged with the rates in developed industrial countries. The advantages of operating the currency board in Lithuania are directly associated with the creation of legal institutional framework and with launching the privatization in the banking sector. The slow pace of this privatization, however, accounts for major banking problems experienced during 1994–1996.

When, at the end of 1994 and in 1995, some Lithuanian banks experienced liquidity problems, the Bank of Lithuania loosened reserve requirements for commercial banks. As a result, problems in the banking sector deepened. Two commercial banks were closed and the two state-owned banks were recapitalized. Generally, the Lithuanian currency board suffered from shaken credibility and the devaluation rumors. In 1995, the Bank of Lithuania lost more than a tenth of its reserves in two months. The situation has prevented Lithuanian interest rates from converging to the developed countries' levels. After the banking crisis, however, the monetary authorities introduced capital adequacy rules, minimum capital requirements, standards for foreign exchange exposure, and liquidity limits [Pautola and Backé, 1998].

The outcomes of two other still operating currency board regimes – of Argentina and Hong Kong – occupy the middle ground between the experience of the two countries that succeeded in providing credibility and stabilizing the economy and the somehow mixed experience of Lithuania. Although both Argentina and Hong Kong faced some disruptions during the recent years, the operation of currency boards there brought important advantages, and their governments remain committed to this type of monetary arrangement.

The story of Argentina resembles a little Lithuanian experience. Argentina was strongly affected by the Tequila crisis in 1995, and bank runs that happened resulted in the elimination of some weakest financial institutions [IMF, 1998]. During this year Argentine GDP fell down by over 4% [Garcia-Herrero, 1997]. Nevertheless, the long run effects associated with the currency board arrangement in Argentina manifested itself in lower inflation, reduced fiscal deficit, and accelerated economic growth (8% in 1997) [IMF, 1998]. Generally, the Convertibility Plan adopted in 1991 fundamentally changed the nature of the economy, and the currency board has worked for Argentina. However, the country still has large and growing current account deficit and a very high rate of unemployment.

Generally, the basis for the successful stabilization in Argentina were created by the adoption of 1991 Convertibility Law, which established the currency board monetary

arrangement, and by the financial systems reforms. Argentina also eliminated, by 1993, restrictions on capital flows, and relaxed or abolished barriers to export and import. The government eliminated all price controls, and deregulated trade and some professional services between 1989 and 1992. Until 1994 about 90% of all state-owned enterprises was privatized, and this brought considerable gains in economic efficiency. Finally, after the 1995 crisis, financial regulations were tightened and some structural measures to accelerate the consolidation of the banking system and to foster financial intermediation were introduced. This lowered costs of financial services [IMF, 1998].

Hong Kong's banks experienced some problems under the currency board regime in the 1980s, and the government was supporting them by emergency funds at that time. There were also some short-lived bank runs in 1991. Occasionally, Hong Kong dollar has been subject to speculative pressure, like recently, as a result of 1997 Asian financial crisis [IMF, 1999A]. Despite these disruptions, Hong Kong authorities remained committed to the currency board regime since 1983. The currency board arrangement brought many advantages; among others it managed to lower inflation, although it also reduced the growth rate. Kwan and Lui (1996) point at stabilization property of the Hong Kong currency board – they found that output and prices were less volatile under the currency board than under free floating.

Under the currency board arrangement output can be very sensitive to demand shocks. It is argued that the steady, rule-based fiscal policy facilitated to keep output relatively stable in Hong Kong [IMF, 1999A]. Government has maintained self-discipline in fiscal policy: budget has been balanced, and the size of the government itself has been kept small. It should be mentioned that fiscal restraint also strengthened credibility in the exchange rate system, especially when Hong Kong Monetary Authority has been acting as a lender of last resort in the 1990s.

From all the considered examples of existing currency board arrangements only Lithuania has begun a gradual exit from this exchange rate regime. Mainly for the reason of gaining more experience in operating monetary policy, the three-stage exit procedure started in 1997 [Pautola and Backé, 1998]. Firstly, the Bank of Lithuania launched some new monetary instruments, with a view to harmonize them with the instruments of the European Central Bank, while still fully backing the reserves. The central bank law was supposed to be amended at this stage, however as a result of the Russian crisis, the exit from the currency board has been postponed [IMF, 1999c]. The second stage, during which the introduction of a more active control of money supply and interest rates was planned, together with the broadening of assets eligible for backing, is not being actively considered. New Monetary Policy Program, which ought to be drawn in late 1999, should specify future exchange rate and monetary policies. Nevertheless, the Bank of

Lithuania has begun to gradually diversify its international reserves to reflect an increased share of EU currencies. It was intended that in the last stage, the litas would be pegged to the euro. However, even the move to peg the litas to the 50–50 euro and dollar basket is unlikely to take place earlier than 2000 [IMF, 1999c:7].

One of the main objectives of this program was to slowly transform the currency board arrangement in order to allow the central bank to act in the traditional way,

Table I. Basic descriptions of some existing currency board regimes

Country	Bulgaria	Estonia
Date established	July 1997	June 1992
Structure of administrative agency	Bulgaria National Bank divided into Issue Department and Banking Department	Bank of Estonia divided into Issue Department and Banking Department
Reserve currency	Deutsche mark	Deutsche mark
Access to convertibility at the monetary authorities	General public	In principle, the general public, in practice only banks
Backing rule	100% of monetary base	100% of monetary base
Assets eligible for backing	Foreign assets and gold	Foreign assets, mainly gold and DM interest-bearing assets
Reasons behind implementation	Credibility and stability (in the period of near-hyperinflation, falling GDP, growing budget deficit, low international reserves, and bank runs)	Credibility and stability (in the period of high inflation, sharp fall in GDP, malfunctioning payments and monetary arrangements, shortage of goods and raw materials, and loss of export markets)
Major disruptions during operation of CB	none so far	Two banking crises (1992 and 1994) when many banks collapsed due to their weak balance sheets and tight monetary conditions implied by the currency board regime
Major successes	Formation of a credible rule-based system, reduced inflation, rebuilt reserves, interest rate practically converged to the level of German rates	Macroeconomic stabilization with lower inflation, enhanced growth, and increased both public and foreign investors' confidence

Table 1. Basic descriptions of some existing currency board regimes (continued)

Country	Lithuania	Argentina
Date established	April 1994	March 1991
Structure of administrative agency	Bank of Lithuania with the unchanged structure (International and Monetary Policy Departments)	Central Bank of Argentine Republic
Reserve currency	U.S. dollar	U.S. dollar
Access to convertibility at the monetary authorities	Commercial banks	In principle, the general public, in practice only banks
Backing rule	100% of monetary base and the central bank's liquid liabilities	Minimum 100% of monetary base (although since 1995 1/3 of this may be held in government bonds)
Assets eligible for backing	Foreign assets and gold; increasing share of EU currencies	Foreign assets, gold, and U.S. dollar denominated Argentine government debt
Reasons behind implementation	Credibility and stability (in the period of falling output, high inflation, current account and trade deficits)	Credibility and stability
Major disruptions during operation of CB	Banking crisis during 1994–1996, when banks had liquidity problems, and when, in 1994, the Bank of Lithuania made exemptions from reserve requirements Financial contagion and real sector problems as a result of the Russian crisis, which led to the abandonment of exit from currency board	Argentina suffered from the 1995 Tequila crisis (GDP went down by 4%)
Major successes	Macroeconomic stabilization with falling inflation, lower interest rates (although not equal to the levels of developed industrial countries), and modest output growth	Credibility, lower inflation, limited fiscal deficit and encouraged domestic growth

Table 1. Basic descriptions of some existing currency board regimes (continued)

Country	Hong Kong
Date established	October 1983
Structure of administrative agency	Exchange Fund under the supervision of the Hong Kong Monetary Authority
Reserve currency	U.S. dollar
Access to convertibility at the monetary authorities	Note-issuing banks
Backing rule	Minimum 100% of Certificate of Indebtedness issued to the note-issuing banks as back up for currency
Assets eligible for backing	Foreign assets
Reasons behind implementation	Credibility and stability
Major disruptions during operation of CB	Banks in troubles in the 1980s; occasionally Hong Kong dollar has been subject to speculative pressure
Major successes	Low inflation, output and price stability

Source: Santiprabhob (1977:35-36), Pautola and Backé (1998), Gulde (1999), Anastassova (1999), Hanke and Schuler (1999), Camard (1996), Garcia-Herrero (1997), IMF (1998), IMF (1999a), Kwan and Lui (1996), IMF (1999c)

smoothing undesired fluctuations coming from supply or demand shocks [Anastassova, 1999]. This argument seems to be of high importance since it is claimed that Lithuania is and will be very sensitive to external shocks. Moreover, the positive experience from operating the currency board proves that some credibility has been already gained [Pautola and Backé, 1998]. On the other side, the arguments in favor of exit from the currency board have been partly of political nature: the regime was introduced by the post-communists, and the current government coalition has demanded its abandonment from the very beginning.

At the moment there is no need to abandon the currency board regime in Estonia, although some economists argue that it should happen in the future [Pautola and Backé, 1998]. As to Bulgaria, the question of exit the currency board is not an option at the present stage [Pautola and Backé, 1998].

4. Advantages and Disadvantages of the Currency Board Arrangement

One of the main advantages of the implementation of the currency board is that it **allows to quickly build up credibility**. This feature is particularly important in times of economic crises, as was pointed out in the previous section. The institutional regulations, that need to be imposed to have a currency board in place, prohibit government borrowings from central bank, and require that monetary authorities hold enough reserves to at least cover its entire monetary liabilities. Financial markets can thus be assured that every domestic currency bill is backed by an equivalent amount of foreign currency, and no matter what, the liquid money can be always converted into some „hard" currency. The demand for domestic currency is therefore higher [Gulde, 1999].

The currency board **arrangement provides an automatic balance of payments adjustment mechanism**. Because monetary authorities cannot sterilize capital flows, a balance of payments deficit coming from a fall in the foreign exchange reserves tightens domestic liquidity, which leads to higher interest rates, then to reduced absorption, and finally reverses the deficit [Pautola and Backé, 1998; Santiprabhob, 1997].

Another argument in favor of currency board is that it often **promotes transparency in the banking system**. Monetary authorities are obliged to publish frequently their accounts in order to ensure that the backing rule is always observed, and that the credibility is always maintained. The transparency is very important when monetary authorities under the currency board arrangement want to provide lender of last resort assistance [Santiprabhob, 1997]. The currency board may also limit moral hazard in the banking system restricting support to the banks that are poorly managed or badly supervised [Pautola and Backé, 1998].

Moreover, the currency boards **tend to promote sound fiscal policy**, as in the case of Estonia, Bulgaria, Argentina, and Hong Kong. The restrictions connected with the currency board regime limit the room for maneuver of fiscal policy, and thus force the government to follow more tough fiscal policy. But it should be noted that this is the simultaneous implementation of the fiscal discipline and the currency board regime that leads to the macroeconomic success [Pautola and Backé, 1998].

Empirical studies prove that currency boards tend to **deliver low inflation and better growth results** than other economies. Ghosh et al. (1998) examined data on 10 currency board countries that operated a currency board during the 1970–1996 period (Antigua and Barbuda, Argentina, Dominica, Djibouti, Estonia, Grenada, Hong Kong,

Lithuania, St. Lucia, St. Vincent and the Grenadines). They found that inflation under the currency board arrangements was about 4 percentage points lower than under other pegged exchange rate regimes, and that the majority of this differential can be explained by higher money demand for a given money growth rate in these countries. Countries with currency boards were also found to grow faster on average than countries with pegged exchange rate regimes. Although these higher growth rates cannot be ascribed to the choice of the exchange rate regime alone, the alternative hypothesis, that currency board countries grow actually slower, did not find support in the data. Anastassova (1999) analyzed data on 6 countries, that recently adopted the currency board, for the 1984–1998 period (Argentina, Bosnia, Bulgaria, Estonia, Hong Kong, and Lithuania) and came to the similar conclusions. Countries in her sample exhibited almost 3 percentage points lower inflation differential when put against other pegged exchange rate systems, and 1 percentage point advantage over the countries with the exchange rate systems similar to currency boards. The results for growth were identical to those obtained by Ghosh et al. (1998). The rationale for having better inflation performance for any given level of output comes from the fact that firms and households have lower inflation expectations, due to the credible peg of the exchange rate, so they tend to set wages and prices accordingly [Frankel, 1999].

The currency board may be **particularly attractive for countries where foreign currencies are used in a parallel manner to legal domestic currency**, which is the case of many transition economies. In such cases, the country can gain more by linking tightly the domestic currency to this "target" currency via a currency board and thus stabilize the economy [Pautola and Backé, 1998].

Moreover, since money supply is determined solely by market forces, and there is no room for monetary policy under the currency board, this type of exchange rate arrangement may be a **very good option for countries with limited expertise in monetary management and a weak political commitment in favor of anti-inflationary policy**.

The most frequently listed disadvantage of the currency board is that the **central bank cannot act as a lender of last resort** providing liquidity to the banks in financial trouble. At most, the lender of last resort role is limited to the emergency fund that is financed from the central bank profits [Gulde, 1999]. Since this support can often mitigate the effects of a liquidity crisis and containing spreading risks, its absence may cause spreading out individual bank's problems to the whole banking system more easily. Exactly this situation took place in Argentina in 1995 [Santiprabhob, 1997].

Another important disadvantage of the currency board regime is **that this purely rule-based arrangement tends to be inflexible**, which can be particularly painful

in case of external shocks. Since there is no monetary policy, wages and prices have to adjust. And since wages are often sticky, the adjustment process is both more costly in terms of output and unemployment [Pautola and Backé, 1998], and the country must live with the recession – in case of an adverse disturbance – for some time [Frankel, 1999]. On the other hand, flexibility is a price for credibility. And since it is impossible to have both credibility and flexibility, and a country lacks credibility for any reason, its choice is limited.

The currency board arrangements are often likely to face **higher short-run interest rate volatility**, since the interest rates play a major role in the market clearing under the currency board regime, when monetary operations are constrained by the backing rule. This is to say that banks have to accept the burden of adjustments [Santiprabhob, 1997].

It is also argued that the currency board **arrangement can slow down learning process in transition economies**, where this type of monetary regime was implemented in times of economic crisis, and since then a country has had no experience in designing and conducting monetary policy. Besides, the choice of monetary policy instruments is limited. On the other hand, however, countries with currency boards learn that prospects of economic growth do not depend on manipulation of monetary aggregates.

There is also a **problem of a real misalignment**. The local currency can become overvalued when the country's inflation remains higher than that of the country to which the currency is pegged. But, as Pautola and Backé (1998:76) write, this happens only when real appreciation exceeds "the trend appreciation of the equilibrium real exchange rate that is associated with above-average efficiency gains".

Other disadvantage of the currency board may manifest itself in the **problem of collecting sufficient levels of foreign reserves** to fully back monetary base, when the economy that wants to adopt the currency board is not very small [Pautola and Backé, 1998].

Finally, it should be stressed once more that the **introduction of the currency board does not guarantee sound fiscal policy**. If the government has an access to international financial markets, it can still go into debt there.

Generally, the currency board can build up credibility of the monetary authorities, enhance economic growth, result in lower inflation, and foster sound fiscal policy. However, under the currency board arrangement, the monetary authority cannot act as a lender of last resort, and the process of adjustment to adverse external shocks can be long and painful due to wage rigidities. However, one can argue that the extent of wage rigidities is smaller when wage setters cannot anticipate monetary or exchange rate accommodation of their decisions.

5. What Conditions Must Be Satisfied in Order to Be Able to Implement a Currency Board Regime?

After having discussed the design of the currency board arrangements, the examples of existing currency boards, and the pros and cons for operating this type of exchange rate regime, this final section lists the preconditions that should be fulfilled if a country wants to implement this monetary framework.

Following Frankel (1999), it should be noted that the traditional argument of being a small, open economy, where the exchange rate uncertainty is a serious issue, brings the considerations of fixed exchange rate regime. However, a country that wishes to succeed in the currency board based stabilization program, needs to satisfy some additional criteria.

Firstly, it should have a strong need to import monetary stability and a desire for further close integration with the particular trading partner, which gives the advantage of strengthening political credibility of the commitment. To build up credibility, the country must also have an access to an adequate level of reserves. Furthermore, the implementation of the currency board can be beneficial if adopted in an economy, where the foreign currency is already widely used [Frankel, 1999].

Experience of existing currency boards shows, that the implementation of this type of arrangement requires the construction of the coherent legal framework, and hence, the broad-based parliamentary support. The operation of a currency board must have a strong support in law. Besides, the currency board is only one element of the stabilization program. Its relative success depends on the implementation of appropriately designed supporting measures [Gulde, 1999], form which fiscal discipline, deregulation, and privatization are the most important. As has already been described, countries that maintained fiscal discipline (Estonia, Bulgaria) did very well, while Lithuania – where the implementation of the currency board was not associated with fiscal discipline – experienced problems under a currency board system.

One of the important preconditions for implementing the currency board is that the country in question must have a healthy and well-supervised financial system. Because monetary authority under the currency board cannot pursue monetary policy, the country that wish to adopt the currency board must in particular satisfy some conditions consistent with maintaining bank soundness. First of all, in most cases government should implement a contingent bank restructuring program into its stabilization plan, and should clearly allocate recourses for this purpose in the budget or obtain them from some external sources. This will help to reduce short run interest rate volatility. The emergency

fund of the monetary authorities that provides some support to banks in trouble, should make sure that loans are collateralized by safe assets, and that they are granted only on the short term basis to solvent but temporary illiquid banks, and that there is a penalty rate. This would limit moral hazard in the banking system. The establishment of high reserve requirements, that can be relaxed during the banking crisis, thus allowing to compensate central bank inability to act as a lender of last resort, should be also taken into account. In order to ensure stability in the banking system, there is often a need to impose banking regulation and supervision that are stronger than the international standards. To prevent deposit runs resulting from losses of an individual bank, deposit insurance scheme should be introduced. Moreover, since under the currency board arrangement monetary authority cannot actively provide support to the banking system, insolvent banks should be closed before the implementation of the currency board. To improve the liquidity management, the monetary authority should develop the necessary infrastructure for inter-bank dealing. Finally, financial systems of a currency board country should be opened to foreign financial institutions that are adequately supervised in their home countries, since these institutions can rely on their headquarters in obtaining liquidity when needed and they tend to promote competitiveness and efficiency in the whole banking system [Santiprabhob, 1997].

Generally, if the currency board is to be successful, there must exist an adequate level of reserves, fiscal discipline, healthy and well supervised financial system, and a rule of law [Frankel, 1999].

The attractiveness of the relative success of currently existing currency board countries convinced some advocates of currency boards to call further for the orthodox currency board systems in countries suffering from macroeconomic crisis, like Russia, that do not have typical characteristics of a currency board candidate. The main argument in favor of a successful implementation of a currency board there is that only an orthodox currency board system is able to deliver credibility and promote transparency.

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-
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-
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-
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-
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-
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-
- 175 Mateusz Walewski, A Short Play on the Idea of the Laffer Curve in Transition Economies
-
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-
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-
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-
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-
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-
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-
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-



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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-
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-