

Journal of Central Banking Theory and Practice, 2013, 3, pp. 71-84
Received: 20 September 2013; accepted: 30 September 2013

UDC: 336.745(100)

Novak Kondić *,
Borivoje D. Krušković **

** Economics Faculty in
Banja Luka*

*Email:
novak.kondic@efbl.org*

*** Economics Faculty in
Banja Luka*

*Email:
borivoje.kruskovic@efbl.org*

Unemployment Gap in the Currency Board Regime

Abstract: A currency board combines three elements: a fixed exchange rate between a country's currency and an "anchor currency," automatic convertibility, and a long-term commitment to the system, often made explicit in the central bank law. The main reason for countries to consider a currency board is to demonstrate that they are pursuing an anti-inflationary policy.

The mechanism works through changes in the money supply, which lead to interest rate changes, which, in turn, encourage funds to move between the domestic and the anchor currency. This is essentially the same mechanism that operates under a fixed exchange rate, but the exchange rate guarantee implied in the currency board rules ensures that the necessary interest rate changes and the attendant costs for the economy will be comparatively lower.

Key words: currency board, exchange rate, devaluation, inflation.

JEL Classification: E31, E52 and E58.

1. Introduction

A currency board combines three elements: a fixed exchange rate between a country's currency and an „anchor currency“, automatic convertibility, and a long-term commitment to the system, often made explicit in the central bank law. The main reason for countries to consider a currency board is to demonstrate that they are pursuing an anti-inflationary policy.

A currency board is credible only if a country's central bank holds sufficient official foreign exchange reserves to cover at least its entire monetary liabilities, thereby assuring financial markets and the public at large that every domestic-currency bill is backed by an equivalent amount of foreign currency in the official coffers. Demand is higher for a „currency-board currency“ than for currencies without guarantees because holders know that, rain or shine, their liquid money can easily be converted into a major foreign currency. Were it to come to such a testing of the system, its architects contend, automatic stabilizers would prevent any major outflows of foreign currency.

The obvious advantages of a currency board are economic credibility, low inflation, and low interest rates. But currency boards can prove limiting, especially for countries that have weak banking systems or are prone to economic shocks. With a currency board in place, the central bank can no longer serve as a lender of last resort for banks in trouble. At most, it is limited to acting as an emergency fund that is either set aside at the time the currency board is introduced or funded, over time, out of central bank profits. Another disadvantage is that, with a currency board arrangement, it is not possible to use financial policies – that is, adjustments of domestic interest or exchange rates – to stimulate the economy. Instead, economic adjustment can be achieved only through wage and price adjustments, which can be both slower and more painful.

2. The arguments for establishment of the currency board

The currency board has appeared in the world in the mid-19th century as the regime for conducting monetary policy. From its first appearance to present day, it has been topical, in some periods more, in some less. The currency board combines three elements: a fixed exchange rate between a country's currency and an „anchor currency“, automatic convertibility, and a long-term commitment to the system, often made explicit in the central bank law. The main reason for countries to consider a currency board is to demonstrate that they are pursuing an anti-inflationary policy.

The currency board¹ is usually introduced in small open economies, which have in recent years faced macroeconomic instability, mostly high inflation (or hyper-

¹ The currency board regime has a relatively long history and has originated in the British colonies. The first idea of the establishment and functioning of the currency board comes from a group of economists known as the Currency School and has appeared in the first half of the nineteenth century. In the period after World War II there was a significantly reduced interest in this regime so despite the good results of the currency board arrangements, they have

inflation) or a lack of confidence in the monetary policy makers. The currency board is a temporary exchange rate regime in the countries that have obvious commercial and other interests, by tying with a strong currency. Countries that are exposed to speculative influences or which can enter into a phase of strong, real depreciation, tend to have a currency board as a long-term arrangement. In some cases, the currency board may be the solution in the transitory period, to support the currency, while the credibility and the institutions of the system are strengthened or while large exogenous changes in the economic environment do not create the possibility of a different exchange rate regime or currency (Kwan & Lui, 1996).

Currency board regime was established in the following cases:

- In small countries with limited expertise in monetary management or poor financial systems.
- In the aftermath of the economic crisis and the loss of credibility in the current economic policies (cases of Argentina and Hong Kong)
- In support of stabilization programs (cases of Bulgaria and Bosnia and Herzegovina)
- In order to help facilitate a smooth transition (Lithuania and Estonia)
- Due to counteract speculative pressures when the lack of credibility constrains effective conduct of monetary policy (this is particularly present in countries that have emerged from crisis and have gone through hyperinflation, as was the case in Argentina and Bulgaria).

The basic characteristics of the currency board include (Kondić, 2004):

- Convertibility – with currency board arrangement, unrestricted convertibility is sustained at a fixed exchange rate between the banknotes and coins on one hand and reserve currency or commodities from other parties.
- Reserves – currency board have to hold reserves of at least 100% of its obligations (coins and notes in circulation) as determined by law, but usually the percentage of coverage is 105–110% as a precaution, since most of the money is issued by commercial banks that are not obliged to 100% cover.
- Emission period – currency board generates revenue (emission period) from the difference between the interest earned on its reserve funds and the cost of carrying out its duties. After covering operations cost, the currency board leaves all the profit at the disposal of the state.

become less popular. The countries, most of them the former European colonies, wanted the monetary independence, so they opted for their own central bank and sovereignty over its currency.

- Monetary policy – monetary policy in a currency board regime is implemented on the basis of automatism, as the currency board performs the issuing or withdrawal of local currency only to the extent that there is an equivalent inflow or outflow of reserve currency. The quantity of money in circulation is affected by demand, and the currency board performs the emission in such quantities, provided that its emission has a cover in reserve currency. By definition, the currency board has no discretion rights. The currency board arrangement (CBA) does not have any influence on the money supply. Market factors determine the total supply of money in circulation that the CBA emits. Changes in money demand are matched to endogenous changes in the international reserves through the balance of payments, rather than variations in the net domestic assets, which would be the case with the regime which involves the Central Bank arrangement (Gilson, 2002). Unlike the Central Bank, currency board regime is not able to offer loans to the state or other sectors and therefore cannot emit fiduciary money and cannot affect the inflation for the same reason. The currency board promotes the “hard budget constraint” in public finance where expenditures can be financed solely by taxes and other contributions and commercial debt instruments.
- Interest rate and inflation – in essence there is no control of capital flows in the currency board regime. Monetary policy of the country whose currency serves as a nominal anchor is imported, i.e. the country for whose currency is local currency fixed. Therefore, interest rate in currency board regime should be converged and follow the currency rate in the country with whose currency they are tied, except difference in the risk premium on domestic markets. In the same way, the inflation should converge with the inflation rate in the country whose currency serves as a nominal anchor.

All these characteristics are typical for a traditional currency board regime. A modern currency board has deviated from the original currency board regime in an effort to ensure the appropriate relationship in the compromise between the currency board regime and its ability to influence inflation, interest rate and money supply. Countries with a modern currency board regime in many cases have preserved elements of discretionary monetary policy, mainly through the instruments of required reserves and the last resort lenders.

The consequences of the currency board regime failure can be large. In this regard, various exogenous shocks (movements in the international market of goods, capital and services) and endogenous shocks (mainly caused by disrespect or inappropriate implementation of currency board rules) can lead to adaptation,

and even exit from the currency board regime. Adaptation of the regime is performed through appreciation, depreciation, switching to fluctuation or switching to new reserve currency. Exit from currency board regime can be performed in two ways: a) return of full monetary sovereignty, through the classic central bank and b) loss of total monetary sovereignty by introduction of dollarization (Katsimi, 2004). Which of the previous modalities will occur depends primarily of the reasons that caused the need for the regime adaptation or the need to abandon the regime.

Abandoning the currency board regime may be necessary due to:

- large external shocks or internal pressures that the currency board regime can no longer absorb and the consequences can affect the established currency stability
- reduction of perseverance of established regime credibility or in formation of new institutions
- determination to enter the monetary union.

The weakness of this monetary regime is that of losing a significant number of monetary policy instruments. However, as a rule, this regime is usually approached in the conditions of pronounced or long-term monetary weaknesses, and then taking away part of the discretion rights from creators of monetary policy can be an advantage. The next drawback of this regime is reflected in fact that the country to whose currency domestic currency is fixed may lead different monetary policy than the one which would be desirable in the country that performs the fixation of the currency. A particular difficulty in this regime is related to formulating an exit strategy from this regime, i.e. how it would influence the inflationary expectations.

The primary goal of a modern currency board is to provide a credible basis for monetary stability (exchange rate stability) and low inflation (Ghosh, Gulde & Wolf, 1998). To ensure this credibility, three conditions must be fulfilled: sufficient coverage of primary money, sufficiently restrictive fiscal policy and reasonably healthy banking system. In addition, it is necessary that countries with the currency board regime are ready to cope with potentially large capital inflows and asymmetric external shock.²

² It is obvious that the strong commitment to a fixed parity is credible only if the commitment to consistent economic policies was previously signalled, particularly by a sustainable course of the fiscal policy.

3. Advantages and disadvantages of the currency board

Advantages of the currency board derive primarily from the achievement and maintenance of trust and consistency. Without these conditions, the advantages of the currency board would be unreliable. Namely, we can highlight the following basic advantages of the currency board, which are (Williamson, 1995):

- it ensures convertibility,
- introduces macroeconomic discipline,
- synchronizes the mechanism for adjusting the guaranteed payments,
- due to previous qualities, creates reliability in the monetary system, and
- promotes trade, investment and development.

In addition to these advantages, we can point out the following:

- the currency board stabilizes the local currency at a time when its stability is reduced;
- the currency board channels inflation and the interest rate in the same direction. Namely, the currency board reduces inflation, stabilizes the economy and decreases the interest rate. Of course, there are exceptions in certain circumstances where the currency board is introduced, and these two factors have not had the same trend;
- funding of public spending can be allowed exclusively from public funds. That makes authorities responsible for law enforcement in the fiscal sector and the rationalization of public spending;
- the currency board guarantees that devaluation or inflation will not surprise most people, and it usually finds its place in the countries with the poorest population.

The most significant disadvantages of the currency board regime are:

- the rigidity of nominal exchange rate – disadvantages related to the adoption of the currency board relate primarily to the loss of discretionary monetary policy and the loss of exchange rate instrument to level the balance of payments. Net export is the channel through which the exchange rate may increase output in the economic cycle. Fixed exchange rates and the currency board arrangements are associated with the foreign currency appreciation, loss of competitiveness and worsening of the trade balance and the current account. However, with a greater mobility of capital, the link between depreciation of the exchange rate and improvement in the current account is looser. In addition, the effect of exchange rate depreciation on the real revenue could neutralize the growth stimulation of net ex-

port. This effect depends on the elasticity of trade flows in terms of prices and their reaction to exchange rate changes. For these reasons, the currency board regime could be more suitable to small and open economies;

- non-compliance with the monetary policy of the country for whose currency the domestic currency is linked. Changes in the monetary policy in that country will be inappropriate if the business cycle of the “spare” country and the country with the currency board regime do not match. It is clear that the inability of the currency board to perform appreciation or depreciation in order to protect the economy from external shocks produces high costs. Other risks of the currency board regime can occur when the value of reserve currency changes in relation to the currencies of other trading partners. Weakening of the reserve currency assumes imported inflationary pressures that may seriously undermine the currency board credibility and export competitiveness. The explanation of this fact is simple because within the currency board regime it is not possible to change the nominal exchange rate and the only way to change the exchange rate is by a change in the price level;
- lack of function of the lender of last resort – a lack of this function within the currency board regime may prove problematic for countries with weak banking systems that are prone to systematic crisis;
- deflation – if in the country with a currency board regime occurs serious inflationary pressure, the only way to affect the inflation is by fiscal contraction and generating significant (fiscal) surpluses. This would lead to a reduction in consumption and imports, and as a consequence there would be a recession. This would then impact on unemployment and wages, which would eventually lead to a reduction of the general price level, i.e. deflation. However, from an economic standpoint, this is a very expensive solution since it entails high costs and additional macroeconomic risks.

Consistency of each monetary regime in a country is a necessary prerequisite for its sustainability. The currency board should also fulfil the condition of consistency that can be easily tested on a model known as the “impossible trinity”.³

³ This model is based on the principle that in relation to three key monetary elements - exchange rate, monetary policy and transparency of capital and financial transactions - each country has three options: 1. If the state, as in the case of Bosnia and Herzegovina has a currency board or some form of fixed exchange rate regime, which wants to keep in the long term, it is necessary to have a passive monetary policy (i.e. not use the instruments of monetary policy) and transparent capital accounts and financial transactions. 2. If the state wants to engage in active monetary policy and a liberal flow of capital on the capital and financial account, it is necessary to opt for the fluctuating exchange rate. 3. If a state wants to maintain a fixed exchange rate and at the same time use the instruments of monetary policy, it is necessary to impose restrictions on the movement of capital in its capital account and financial transactions.

More formally, if monetary policy is imported, then the domestic interest rate, i , is the same as the foreign interest rate, i^* *i.e.* $i=i^*$. If the fixed exchange rate system is adopted, then the local currency, for example BAM, is exchangeable at a fixed exchange rate S , in euro or E , *i.e.* $BAM = S * E$. If in the end there are no restrictions to cross-border movement of money and capital, the prices should be competitively set in domestic and world markets, which leads to the fact that they equate or show similar growth rates, *i.e.* inflation, with domestic inflation π which is equated with world inflation π^* . If a barrier is introduced between these equations, it will lead to the demise of at least one of these equations. Therefore, if domestic inflation is faster than the inflation in the country to whose currency the domestic currency is fixed, it is necessary to perform the following: either increase interest rates or correct the exchange rate. The model of fixed trinity suggests that due to the fact that Bosnia and Herzegovina has a fixed parity of the euro to BAM, it is necessary that the Central Bank of Bosnia and Herzegovina has a passive monetary policy and open financial and capital transactions.

When a country has the currency board regime in place, the macro framework in that country should ensure a prudent fiscal policy, a sound financial system, careful management of foreign debt and, of course, a flexible and noninflationary labour market and hence the price mechanism. If there are serious imbalances in one of these mechanisms with the macro framework, it is a clear indicator of potential vulnerability and threat to the currency board regime.

4. Unemployment gap in the currency board regime

Developing countries have fixed their currencies during the past thirty years due to their experience with high inflation rates, fiscal deficits, deteriorating balance of payments, relatively large external debt and lack of investor confidence. The currency board was usually introduced in countries whose aim was to achieve economic stability after a certain crisis situations.

Appropriate analysis suggests that the currency board best behaves in the conditions of average performance. In those periods in which an economy has been hit by large shocks, the currency board may further worsen the situation more than any other monetary regime that is more flexible. This was the example of Hong Kong and Argentina recovery, during and after the East Asian and Brazilian crises. This model emphasizes the credibility achieved by the currency board, but also the inability to address the issue of unemployment and stagnant economic growth in a certain period (Drazen & Masson, 1994). The role of credibility and stabilization in the choice of alternative regimes can be modelled us-

ing the three-level regime. Status quo is the standard determining regime with given exchange rate. After determining the type of government (solid or flexible), comes the choice of currency regime (currency board or standard regime).⁴ The government analyzes the shocks that affect the economy when it makes decisions on economic policy and assumption is that it has an advantage over the private sector regarding the available information.

Fixed exchange rate regime allows a choice between retaining a predetermined level of exchange rate or devaluation at a certain rate Δs in the first period, as well as in the second period. In contrast, the currency board has been disabled to make devaluation in the first period, but there is a possibility of devaluation and exit from the currency board in the second period (Kondić, 2004). The private sector solves the problem of forecasting first by determining whether the government is solid or flexible, and second by determining whether to devalue the exchange rate or to exit from the currency board regime, by which the valuation ends.

For the gap between the actual and natural rate of unemployment, u , it is assumed to be positively correlated with the shock of rising unemployment, and negatively correlated with the deviation of expected inflation, $\pi_t - \pi_t^E$, and also positively correlated from the previous unemployment deviation from natural rate of unemployment, $u_{t-1} - u_N$, which is expressed algebraically as follows (Riwera & Amadou, 2000):

$$u_t = u_N + n_t - \sqrt{a} \left[(\pi_t - \pi_t^E) - \partial(u_{t-1} - u_N) \right] \quad t = 1, 2 \quad (1)$$

making the two periods explicit, we have

$$u_1 = u_N + n_1 - \sqrt{a} (\pi_1 - \pi_1^E) \quad (2)$$

$$u_2 = u_N + n_2 - \sqrt{a} \left[\pi_2 - \pi_2^E - \partial(u_1 - u_N) \right] \quad (3)$$

where the unemployment gap inherited in the first period, is equal to the zero.⁵

⁴ If the government chose the standard regime, the private sector knows that the government will sometimes use devaluation, depending on the severity of the shock to the economy, while in the currency board regime that is not possible, regardless of the strength of the shock to a given economy.

⁵ Lets remember that: u = unemployment, π = inflation, $\pi_t - \pi_t^E$ = gap between real and expected inflation rate, $u_t - u_N$ = gap between real and natural unemployment rate, t = time period, Δs = rate of devaluation of exchange rate.

If actual inflation in the period t exceeds the forecasted inflation given as $t-1$, real earnings in the period t will be less than expected and employment will grow. The choice of currency board regime, instead of the standard regime (Central Bank) shows that the government will not make devaluation in the first period. This means that the government will be determined to withstand higher unemployment in the first and second period.⁶

Lets assume that the parity of purchasing power always exists, i.e. $P_t = S_t P_t^*$, where the P_t is the level of domestic prices, the S_t is the nominal exchange rate, and the P_t^* is the foreign price level. Measurement variables in logarithmic units (written in small letters) assume that the P_t^* constant is normalized at a certain value (so that $p_t^* = 0$) implies the logarithmic price level p_t is equal to logarithmic exchange rate s_t , $p_t = s_t + p_t^* = s_t$. Inflation and unexpected inflation are given as (Kondić, 2004):

$$\pi_t = p_t - p_{t-1} = s_t - s_{t-1}$$

$$\pi_t - \pi_t^E = (s_t - s_{t-1}) - (E_{t-1} s_t - s_{t-1}) = s_t - E_{t-1} s_t.$$

Previous equation implies that the exchange rate devaluation leads to inflation and that unexpected changes in the exchange rate equal to unexpected changes in the price level. Unexpected devaluation reduces welfare and increases inflation and unexpected inflation increases welfare by reducing unemployment.

5. Conclusion

Although theoretical arguments have dominated the debates about currency boards, little empirical work has been undertaken on the subject. The most authoritative empirical analysis available finds that currency boards are associated with lower inflation than either floating or conventional fixed exchange rate regimes. This result is highly robust. Currency boards also appear to be associated with higher GDP growth rates, although the reasons for this are not clear. It may be that countries with better overall economic policies self select in choosing to establish a currency board. It may be that most countries introduce a currency board following a severe macroeconomic crisis, and the better growth performance observed in the first few years of the new arrangement reflects a post-crisis „rebound effect“. At the very least, currency boards have not been associated with

⁶ The higher value of the persistence parameter δ means a higher level of unemployment in the second period, resulting from a shock of rise in unemployment in the first period.

lower GDP growth rates, although there is some evidence that output tends to be more volatile. Finally, the currency board appears to be associated empirically with lower money supply growth rates, smaller budget deficits, and better export performance.

In conclusion, the currency board arrangement offers significant benefits but also has serious drawbacks. Although it is neither a quick fix nor a panacea for all economic ills, in some cases it can deliver monetary discipline and low inflation.

A credible currency board reduces currency and default risk, which leads to lower domestic interest rates. It can boost the development of long-term financial markets, which are sorely lacking in many developing countries. By reducing transaction costs, the fixed exchange rate can promote trade and foreign direct investment. Finally, by establishing monetary discipline, a currency board can serve as a catalyst for a broad range of other reforms.

A serious drawback of currency boards is that they make the adopting country more vulnerable to external shocks, particularly terms-of-trade shocks, large capital inflows or outflows, or shocks emanating from the country issuing the anchor currency. Arguably, high interest rates in the United States and the strength of the dollar against the euro and the Japanese yen contributed to the demise of Argentina's currency board, in addition to lack of fiscal discipline within the country, especially at the provincial level. As Argentina's experience with deflation in 1999-2001 also demonstrates, currency boards (or indeed fixed exchange rates in general) are probably not a good monetary arrangement for relatively closed economies. The less open the economy, the larger the real depreciation necessary to eliminate a given balance of payments deficit. Under the fixed exchange rate, real depreciation can happen only through a fall in domestic prices. Such price adjustments can be slow and painful.

The primary objective of modern currency boards is to ensure credible basis for monetary stability (stability of the exchange rate). In order to ensure the credibility, three conditions must be fulfilled: a sufficient coverage of primary money, sufficiently restrictive fiscal policy, and a reasonably sound banking system. In addition, it is necessary that countries with the currency board regime are prepared to deal with potentially large capital inflows and asymmetric external shocks.

The weakness of this monetary regime is the loss of a significant number of monetary policy instruments. However, as a rule, this regime is most commonly used in the conditions of significant or long-term monetary weakness, then taking away a part of discretionary rights from policymakers may be an advantage. The

next disadvantage is reflected in the fact that the country with whose currency the domestic currency is fixed can pursue a different monetary policy than desirable for the country which fixes its currency. Special problems of this regime are related to how to formulate an exit strategy from this regime and what impact it would have on inflation expectations.

References

1. Alonso-Gamo, P. (2002). Lithuania: History and Future of the Currency Board Arrangement. *IMF Working Paper* 02/12.
2. Balino, T. and C. Enoch. (1997). Currency Board Arrangements: Issues and Experiences. *IMF Occasional Paper*, No. 151.
3. Drazen, A. and Masson, P. (1994). Credibility of Policies Versus Credibility of Policymakers. *Quarterly Journal of Economics*, No. 109.
4. Fabris, N. (2006). *Centralno bankarstvo u teoriji i praksi*. Centralna banka Crne Gore, Podgorica.
5. Ghosh A.R, Gulde A. M. and Wolf H. (2000). Currency boards: More than a quick fix, *Economic Policy. Volume 15*, No. 31.
6. Gilson, M. (2002). Policy Pre-Commitment and Institutional Design: A Synthetic Indicator Applied to Currency Boards. *OECD Working Papers*, No. 330, OECD Paris.
7. Hanke, S.H., L. Jonung and K. Schuler. (1993). Russian Currency and Finance: A Currency Board Approach to Reform. London: Routledge.
8. Hanke, S.H. (2007). Bulgaria and Bosnia After Ten Years. *Globe Asia*, September Issue.
9. Katsimi, M. (2004). Exchange Rate Strategies towards EMU for Accession Countries with Currency Boards. *EUI-RSCAS Working Papers* 18, European University Institute.
10. Kondić, N. (2004). *Monetarni sistemi: sistem centralne banke i valutnog odbora*. Banja Luka
11. Krušković, B. (2007). Transparentnost centralne banke u procesu kreiranja monetarne politike. Ekonomski fakultet u Beogradu.
12. Kuttner, K. i Posen, A. (2001). Beyond Bipolar: A Three-Dimensional Assessment of Monetary Frameworks. *Working Papers* 52, Oesterreichische Nationalbank.
13. Latter, T. (2002b). Who or What Determines Monetary Policy in Hong Kong? *HKMA Quarterly Bulletin*, May, 56-64.
14. Ow, C.H. (1986). The Currency Board Monetary System – The Case of Singapore and Hong Kong. Unpublished Ph.D. dissertation, Johns Hopkins University, USA.
15. Riwera, L.B. and Amadou N.R..Sy. (2000). Currency Boards Credibility, and Macroeconomic Behavior. *IMF*, WP/00/97.
16. Schwartz, A.J. (1993). Currency Boards: Their Past, Present and Possible Future Role.
17. Tsang, S.K. (2000a). *The Evolution and Prospects of the Hong Kong CBA*. Hong Kong Baptist University Press.

18. Tsang, S.K. and Y. Ma. (2002). Currency Substitution and Speculative Attacks on a Currency Board System. *Journal of International Money and Finance*, Vol. 21, No.1, 53-78.
19. Williamson, J. (1995). What Role for Currency Boards? *Institute for International Economics*.