The Political Economy of Currency Boards: Case of Bosnia and Herzegovina

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Abstract:

Currency Board Arrangements (CBAs) operate in several post-socialist European economies as an alternative to traditional central banking. The CBA literature primarily focuses on the discipline of the fixed exchange rate, suggesting that the gain of reduced exchange rate volatility and monetary stability outweigh the loss of independent monetary policy. It does not address the role and impact of foreign ownership of the banking system on currency board dynamics. Through a case study of the CBA in Bosnia and Herzegovina over a ten-year period, including the global financial crisis of 2008-09, this paper suggests that monetary policy is not abandoned; it is decentralized and privatized and critical to the maintenance of financial stability of the CBA.

Keywords: Currency Board; transition economies; Bosnia and Herzegovina; monetary policy; southeast Europe

JEL: E5, G1, G2, P2, P3

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1. Introduction

A currency board is an alternative to the traditional central bank. Under a currency board arrangement (CBA), monetary authorities explicitly commit to exchange domestic currency for a specified foreign currency at a fixed exchange rate. Currency boards have been in existence for more than 150 years, but primarily in small, British colonial territories. (Schwartz 1993) Recently currency boards have been installed in Lithuania (1994), Estonia (1992), Bulgaria (1997), and Bosnia and Herzegovina (1998) under the guidance of the International Monetary Fund with the hope of addressing the legacy of soft budget constraints, over-issue of money notes by the post-socialist governments, and the time-consistency problem. (Wolf, et. al. 2008)

Unlike the traditional central bank, a currency board is unable to directly control its own assets. It may neither purchase assets from commercial banks via the discount window nor engage in open market operations; hence, the monetary base is beyond its control. *It passively waits for requests from banks to sell foreign exchange for domestic currency.* The literature primarily focuses on the discipline of the fixed exchange rate, viewing the

currency board as a “super-fixed” exchange rate system. The tradeoff is one of reducing exchange rate volatility and promoting monetary stability versus implementation of discretionary monetary policy.

While lip service is paid in the literature to the *sources* of the foreign exchange that is exchanged for domestic currency, namely net exports, remittances, and foreign capital inflow, there has been little analysis of how the ownership structure of the domestic banking system impacts the flow of foreign exchange reserves and affects monetary stability. Through a case study of the currency board regime in Bosnia and Herzegovina over a ten year period, including the global financial crisis of 2008-09, we will see that foreign bank loans disbursed through local subsidiaries have been the main source of credit growth, imposing serious risks to financial stability and necessitating emergency monetary policy-like initiatives

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in order to maintain the convertibility of the currency. While the literature may suggest that monetary policy is deactivated and unnecessary under a currency board regime, we will argue that this is not the case. This paper suggests that the monetary policy is decentralized and privatized and critical to the maintenance of financial stability under the currency board arrangement.

2. Theory and Operation of the Currency Board

The primary difference between a currency board and traditional central bank centers on what may be held as assets against the monetary base. Traditional central banks may hold foreign as well as domestic assets, i.e., government debt and commercial paper, against domestic currency and the reserve deposits of commercial banks. A currency board, however, may only hold foreign currency assets against its liabilities of base money (domestic currency and bank reserves).

The prohibition against holding domestic assets has implications concerning the ability of a currency board to carry out monetary policy. While a traditional central bank may pursue discretionary monetary policy by altering its portfolio of domestic assets to change the monetary base or support the exchange rate, the monetary authority under a CBA may neither purchase assets from commercial banks via the discount window nor engage in open market operations; hence, the monetary base is beyond its control. A purchase of foreign exchange (FX) is recorded on the asset side of the balance sheet of the currency board as an increase in FX assets and simultaneously on the liability side as an increase in domestic-currency denominated reserves in the banking system. Under the rule-based CBA, market forces determine the monetary base; it is increased when the private sector commercial banks sell foreign currency to it at the fixed exchange rate and is decreased when commercial banks purchase foreign currency from it, for example, to finance a balance of payments deficit. (Williamson 1995; Berensmann 2004) The only traditional monetary policy tool available to a central bank operating a currency board is the reserve requirement.

Figure 1 illustrates the relationship of foreign currency reserves and the monetary base for the CBA in Bosnia and Herzegovina where the anchor currency is the euro and the domestic currency the Bosnian convertible mark, BAM (locally abbreviated in the Latin and Cyrillic alphabets as KM). The exchange rate is set at 1 euro = 1.95 BAM. The chart is composed of two tables and shows that the

monetary base varies under the influence of KM sale and purchase transactions conducted by commercial banks and the currency board. Table 1 shows the monthly sale of KM (purchase of euro) and purchase of KM (sale of euro) with the currency board. The annual balance of sales and purchases explains the cumulative change of foreign exchange that the board holds. For example, at the end of 2008, the net outflow of euro totaling KM 631.1 million explains the source of the decrease in the cumulative balance from KM 5,936 million in 2007 to KM 5,304.9 million in 2008. The buy/sell cumulative balance explains the change in the total amount of foreign assets held by the currency board *as well as* the decrease in the total amount of foreign assets held by the currency board to KM 6,323.6 million.¹ Table 2 shows that at the end of 2008 the monetary base--reserves (R) and currency in circulation (C)--totaled KM 5,704 million and was covered by the foreign assets of KM 6,323.6 million at the end of December 2008.

Currency boards function within a fractional reserve banking system. Commercial banks accept both foreign currency and domestic currency denominated accounts. The liabilities of commercial banks are not covered by currency board assets; therefore, they must self ensure that they have sufficient reserves and other liquid assets to meet depositor demands for either domestic currency or euro. Monetary authorities typically spell out liquidity asset requirements on deposits in addition to traditional reserve requirements to safeguard against foreign exchange and liquidity risk.

2.1. Currency Board, Money Supply Endogeneity and the Classical School

The CBA is rooted in the classical paradigm. The mechanisms assumed to maintain financial equilibrium and restore full employment and the balance of payments occur through the adjustment of national price levels and the free flow of specie. Money supply endogeneity is traced through Δ international reserves $\rightarrow \Delta$ monetary base $\rightarrow \Delta$ broad money. The metaphor most often cited to explain the simplicity and rule-bound nature of the CBA borrows from the price/specie flow mechanism of Hume's gold standard. (See Williamson 1995; Hanke and Schuler 1991; Kopcke 1999; Desquilbet and Nenovsky 2004; Wolf *et. al.* 2008) In these accounts, a current account deficit will lead to a reduction in the monetary base as the public trades domestic currency for foreign currency. This will cause a rise in interest rates,

fall in aggregate demand, and depreciation of the real exchange rate that set into motion a restoration of equilibrium. The contraction in the money supply also reduces demand for labor and other factors of production, reducing the country's prices relative to other countries.² A variant of this analysis uses the insight of the fixed exchange rate version of the Mundell-Fleming model, where under a super-fixed rate regime it is impossible to simultaneously have independent monetary policy, open capital markets, and a fixed exchange rate—the so-called “Impossibility of the Holy Trinity.” (Wolf *et. al.* 2008; Dornbusch and Giavazzi 1999)

The apparent attractiveness of the currency board lies

in its rigidity: by fixing the nominal exchange rate, tying the hands of the monetary authorities from monetizing state debt, and guaranteeing convertibility of the domestic currency into foreign exchange, it addresses the time-consistency problem and invites confidence—for the domestic public as well as foreign investors. (Wolf *et. al.*)

While much of this literature suggests that the issue of money under a currency board regime expands and contracts in line with the surplus or deficit on the current account (i.e., the balance of trade), this is technically incorrect. It is the balance of payments, including the transfer of workers' remittances and net private capital

Figure 1

KM millions

Year	Selling KM	Buying KM	Balance	Cumulative Balance	Foreign Assets CBBH
2003	2,026.5	1,751.7	274.8	2,398.1	2,820.7
2004	4,295.9	3,648.6	647.3	3,045.4	3,506.8
2005	3,324.4	2,623.4	701.0	3,746.4	4,252.3
2006	3,316.1	2,181.7	1,134.3	4,880.8	5,479.5
2007	3,878.1	2,822.8	1,055.2	5,936.0	6,726.3
2008	4,933.2	5,564.3	-631.1	5,304.9	6,323.6
2009	4,197.6	4,234.4	-36.849	5,268.1	6,239.9

Source: CBBH Bulletin 2009b

Table 1: Central Bank of Bosnia and Herzegovina (CBBH)
Buying and Selling of KM

KM millions

ASSETS				LIABILITIES			
	2007	2008	2009		2007	2008	2009
FOREIGN ASSETS	6,726.3	6,323.6	6,239.9	CURRENCY OUTSIDE MONETARY AUTHORITIES, C	2,439.7	2,552.4	2,267.7
				BANK RESERVES, R	3,789.3	3,151.6	3,381.2
CLAIMS ON PRIV. SECTOR	2.2	2.0	1.9	FOREIGN LIABILITIES	.9	1.0	.9
				CENTRAL GOVT DEPOSITS	74.8	23.4	413.2
				CAPITAL ACCTS	387.3	499.3	552.3
				OTHER	36.4	97.9	-22.3
TOTAL	6,728.4	6,325.6	6,464.2	TOTAL	6,728.4	6,325.6	6,464.2

Source: CBBH Bulletin, 2009b

Table 2: Balance Sheet of the Central Bank of Bosnia and Herzegovina, 2007 – 09

inflow, that determines changes in gross foreign exchange reserves and hence the domestic monetary base. It is critical to bear this in mind: the money supply in each of the four European economies operating under a CBA has moved *in the direction opposite* to the balance of trade—contrary to what the literature would predict—suggesting a different source of money supply endogeneity than the current-account-adjustment parable touted in the CBA literature. (For more on this point see Poirot 2003; Gedeon and Djonlagic 2009; Ponsot, 2006; Brixiova, Vartia, Worgotter 2009)

2.2. Shortfalls of the Currency Board Arrangement

Ironically the shortfalls of the CBA stem from its main strength—its rigidity. Skepticism about the stability properties of a CBA can be placed into three categories: (1) concern about price and wage flexibility that would be required—in the absence of nominal exchange rate changes—to correct for disequilibrium; (2) absence of lender of last resort; and (3) concern about the impact of capital inflows and external debt on monetary stability.

Price/wage flexibility and economic adjustment. The fundamental pro-CBA argument is that under super-fixed exchange rate regimes, any kind of shock must be absorbed through price and wage adjustments and not through monetary policy. Skeptics raise the issue that relative price changes are often difficult to engineer and point to labor market rigidities, institutional and legal/political obstacles to bankruptcy and property transfer, and to extreme structural unemployment. To the extent that factor markets do not adjust quickly, negative shocks will be amplified. This can lead to financial turmoil, economic slowdown, and higher unemployment. (Poirot 2003; Edwards 2003; Silajdzic 2005; Chang and Velasco 1999)

Absence of lender of last resort. There is no designated lender of last resort under a currency board system. The standard argument is that the CBA can induce extremely rigorous macroeconomic discipline *by prohibiting* lending of last resort to both government and banks. In their defense of the self-regulating properties of a CBA, Balino *et. al.* (1997) explain that the absence of a lender of last resort promotes market discipline, limits moral hazard and induces banks to lower their exposure. It is assumed that domestic banks (or their parent banks) will lend reserves to each other through an inter-bank (federal funds) market, screening out those they deem insolvent. Hence, adverse selection is not seen as an obstacle since

banks are assumed to be well placed to evaluate peer banks' financial situations.

Dornbusch and Giavazzi (1999) mention that currency boards could require banks to secure agreement from foreign financial institutions that they be provided with lender of last resort services, privatizing lender of last resort and regulatory services. But they do not address the issue of how parent banks would cope with subsidiary distress when the parent bank itself faces liquidity challenges. However, Humphrey (1989) Freixas *et. al.* (2002) and Joksas (2004) discuss a variety of reasons why the inter-bank market may not be a reliable substitute for the central bank: (1) information asymmetry may cause banks to hesitate to lend to another bank. An otherwise sound bank that for whatever reason is refused credit can become unsound, and this can exacerbate a financial crisis; (2) the inter-bank market may become more cautious in times of crisis and may withhold excess reserves from the market when they are most needed; and (3) a liquid bank may decide to risk lending to a few banks in trouble, but not all. It may be unwilling to "diversify its portfolio" in the same way that a central bank would. (Humphrey 1989; Freixas, Hoggarth, Soussa 2002; Joksas 2004)

Without a designated lender of last resort with unlimited international resources, a loss of depositor confidence can trigger a deposit run, forcing the currency board to sell foreign exchange, thereby contracting the monetary base. This can increase the risk of creating a deeper and more prolonged recession. It is also possible during a financial crisis that foreign banks may determine that it is not in their private interest to remain exposed and invested in the CBA country or region as a whole. Uncertainty about other banks' commitments to support subsidiaries may tempt risk-adverse agents to cut back on lending or abandon the region, causing a withdrawal of foreign exchange and investment capital. (Winkler 2009)

Impact of capital inflows and external debt on monetary stability. One of the fundamental propositions of the CBA is that free capital mobility coupled with fixed exchange rates promotes lower domestic inflation and higher growth potential. (Hanke and Schuler 1991; Ghosh, Gulde, Wolf 1998; Wolf *et. al.* 2008; Williamson 1995) Lower interest rates in the developed industrial world drive investors to seek higher yields in emerging markets, and both investor and recipient are assumed better off. For the investor, capital flows diversify risks and maximize profits. For the recipient, foreign capital can finance investment and stimulate economic growth, thereby

improving trade capabilities and creating the resources to support external debt.

However, this discussion assumes that the foreign capital primarily flows into manufacturing and the real production sectors where it provides for the development of an export sector. It ignores the growing importance, motivation and effects of *financial sector* foreign direct investment, namely, the establishment of branches and subsidiaries of banks from the industrialized economies. Recently a number of economists have examined the impact of parent bank financial capital flows to subsidiaries in emerging markets in economies of southeast Europe (SEE).⁴ (Ostry *et. al.* 2010; Winkler 2009; Sorsa *et. al.* 2007; Zettelmeyer 2009; Arvai, Driessen, and Otker-Robe 2009; Aydin 2008; Mihaljek, 2006a, 2006b; Kraft and Jankov 2005; Aristovnik 2007; Backé and Walko 2006) This literature challenges some of the conclusions of the free capital mobility argument, pointing to the negative consequences of unregulated open capital markets. These include lending booms fueled by credit drawn on parent banks, widening current account deficits, inflation pressures, and susceptibility to credit shocks.

The insight of this literature contributes to understanding further the shortfalls of the currency board argument. They can be summarized under three topics: (1) speed of entry of capital; (2) stop or reversal of capital flow; and (3) external indebtedness.

Speed of Entry and Investor Myopia: In the past 10 years foreign liabilities provided to subsidiaries by parent bank groups have fueled extraordinary growth in domestic credit and the broad money supply in SEE economies, averaging annual increases in loans of 27%. (Backe and Walko 2006; Mihaljek 2006a) The speed itself appears associated with a kind of herd behavior that fuels excessive optimism on the part of foreign lenders that induce responses to changes in risk. Perhaps because of difficulties in measuring the time dimension of risk, it drives subsidiaries to establish and expand market presence, but it can also strain the capacity of banks to properly evaluate credit applications and monitor exposure, raising credit risks. Evidence suggests that rapid credit growth generates large exposures by the household and corporate sector to banks, real estate and other asset bubbles, widens current account deficits and increases inflationary pressure. (Ostry *et. al.* 2010; Aydin 2008)

The problem is compounded in countries with a CBA because there are virtually no tools available to mop up

excess liquidity. In order to constrain money supply growth, the central bank can use the required reserve ratio and impose stiffer liquidity requirements on banks, but in none of the European countries governed by CBAs has this tool been effective. (Minea and Rault 2008; Causevic 2009; Niksic 2009; Brixiova, Vartia, Worgotter 2009)

Stops and Vulnerability: The loss of access to international capital markets can create a swift and drastic reversal of capital flows if depositors and banks move funds out of the domestic banking system. The loss of international reserves—due in many cases to a change in conditions in parent home countries that make lending more difficult or less profitable—especially affect countries under a CBA because it immediately reduces the monetary base and with it the money supply, creating a whiplash effect. (Arvai 2009)

External indebtedness. Capital inflows can fund any kind of domestic activity, and among the SEE countries, most financial sector FDI has been directed to investment in trade and real estate rather than manufacturing. This raises the external debt-to-GDP ratios but does not necessarily improve export competitiveness, upon which rests the means to service the debt.⁵

3. Macroeconomic Performance in BiH under the Currency Board Regime: 2000-2009

As mentioned above, CBA literature contends that the domestic money supply adjusts endogenously to changes in the balance of payments, mimicking the self-regulatory mechanism of the gold standard. A trade deficit should trigger reserve losses, and the automatic link between reserve losses and tightening of domestic credit is the “poison pill” that is said will harden budget constraints, maintain transparency and confidence, and render monetary policy dispensable. Using Bosnia and Herzegovina as a case study, we focus on the coincidence of long-term balance of payments deficits and *expansionary* credit growth from 2002-2008 and the whiplash effect arising from the global financial crisis in 2008. We agree that money supply growth under this CBA has endogenous sources, but they appear to be linked to the needs of foreign bank groups and not the outcome of domestic economic activity.

From 2000 to 2008, Bosnia and Herzegovina experienced robust real GDP growth rates that averaged 5.3% annually and nominal GDP growth that averaged 12% annually. GDP growth was accompanied by rapid

credit growth financed primarily by foreign euro area banks which eagerly entered the Bosnian and Herzegovinian financial services market. Through 'greenfield' investment and merger, banks primarily from Austria, Germany, and Italy quickly established subsidiaries⁶ and seized market dominance. By 2006, 90 percent of commercial bank assets in Bosnia and Herzegovina were controlled by foreign owned banks, the top three of which owned 45 percent of total bank assets.⁷

3.1. Role and purpose of foreign liabilities.

According to the IMF (2007) the 23 percent annual growth in credit to the real private sector between 2001 and 2006 was financed primarily from capital inflows. (p. 59). The credit-to-GDP ratio reached 54% in 2006 and by 2009 was nearly 60% of GDP. Parent bank-related inflows were the major source of the increase in international reserves of the currency board and foundation for the growth of the broad money supply, M2, which grew at an average rate of 21% between 2000 and 2008.

Parent bank short and long-term loans to their subsidiaries flow into the commercial banking system primarily as foreign liabilities (non-resident deposits). In 2008, of all foreign liabilities held on the consolidated balance sheet of banks, 93 percent belonged to parent

bank groups.⁸ By the end of 2006, foreign liabilities reached 25 percent of GDP, and in 2009 one-third of all commercial bank deposits belonged to parent bank groups!⁹ Foreign liabilities play two roles: they serve to provide the long term liabilities against which long term domestic loans are issued, and they provide the funds to finance domestic consumption and investment demand.

Banks operating within a CBA, like banks in any capitalist economy, face liquidity challenges owing to mismatches in maturity between deposits and loans. In fact, the risk of maturity and currency mismatch in the banking system of Bosnia and Herzegovina is pronounced. In 2008, nearly half of all deposits were held as very short-term demand deposits, but three quarters of all loans were long term. Even though only 33 percent of resident deposits were euro denominated, nearly 70 percent of all loans were either euro denominated or euro indexed. Within the household sector, 90 percent of loans were issued as long term but only 58 percent of household deposits were long term. (CBBH 2009b) These mismatches tug at banks to maintain high excess reserve ratios and to hold secondary reserves.

The holding of secondary reserves and the demand for parent bank loans are tied. As Gedeon and Djonlagic (2009) explain, the need to convert short term resident liabilities into long term loans cannot be satisfied through either central bank overdraft/discount window facilities

KM millions (unless otherwise noted)

	2004	2005	2006	2007	2008	2009
Foreign Liabilities, FL*	2,652	3,560	4,034	5,160	6,309	5,747
Domestic Deposits (inc. Government)	5578	6876	8838	12,139	12,024	12,188
FL as a % All Bank Deposits (%)	32	32.5	31	30	34.5	32
Foreign Assets of Banking System	1,906.1	2,096.6	2,328.6	3,548.4	3,098.0	2,970
Net Foreign Liabilities, NFL	746	1,462.7	1,704.2	1,611.1	3,211.7	2,777
Credit to Domestic Sector	5,882.9	7,495.7	9,241.5	11,823.4	14,287.3	13,757
GDP	15,786	16,928	19,121	21,647	25,100	23,950
Consumer prices annual growth rate (%)	0.4	3.8	6.1	1.5	7.4	0
Broad Money, M2	6831.6	8075.1	10,032.2	12,211.7	12,701.5	12,998.3
NFL/Credit to private sector (%)	12.7	19.5	18.4	13.6	23.3	20.2
Growth in Credit to private sector (%)	15.8	27.4	23.3	27.9	20.8	-3.7
FL/GDP (%)	16.8	21	21	23.8	25	24.6
Monetary Base Growth, Year on year (%)	24	22	27	23	-8	1
Broad Money Growth, year on year (%)	25.3	18.2	24.2	21.7	4.0	2.3

*Nearly 93% of all foreign liabilities on the consolidated balance sheet of commercial banks are those deposits and loans of parent bank groups to their Bosnian-based subsidiaries. (CBBH)

Source: CBBH, *Bulletin* 2009b

Table 3: Selected Data: Bosnia and Herzegovina 2004 - 2009

or via the domestic capital market. Therefore, quasi central bank intermediation has developed. Once a long term corporate or real estate loan has been negotiated, the Bosnian subsidiary moves foreign assets (secondary reserves) to the parent bank abroad to serve as collateral against a loan that the parent bank will now create for the subsidiary. This loan appears as new foreign liabilities of the commercial bank. The bank can sell some of the foreign exchange to the currency board, holding the domestic currency as reserves against the new foreign liabilities while the currency board shows an equal increase of its foreign currency assets against the new increase in reserves. In this process the consolidated balance sheet for the commercial banks shows an increase in foreign liabilities, and the balance sheet of the currency board show an increase in assets. This is the process that Goodfriend and King (1988) term “unsterilized discount window lending.” It explains how the broad money supply grew by over 20% each year since 2000.

The inflow of capital between 2000 and 2008 was largely absorbed by the nontradables sectors, namely consumer durables, real estate, financial, and construction. Approximately 47% of total credit to the private sector went to households as variable rate long-term loans.¹⁰ (CBBH/2009b) Between 2001 and 2006, the average real growth of credit to households was 50% while the average real growth of credit to enterprises was 13.5%.

Obviously domestic saving is negative, and the use of foreign saving to finance consumption and investment explain the hyperactive growth in the money supply, but it has also created a precarious external position for the country because of the pressure to service the debt. The CBBH estimates that between 2006 and 2008, the deficit on the current account was financed in the range of 37 – 52 percent through capital inflow into the banks in Bosnia and Herzegovina. (Hadziomeragic 2009, 202)

The monetary authorities have one tool available to soak up excess reserves and to prevent an explosive expansion of the money supply, namely requirements on reserves. In an attempt to slow the growth of credit, the bank regulatory agencies in each of the two entities of Bosnia and Herzegovina increased the required reserve ratio. In September 2004 the reserve requirement was increased to 7.5%, and in December 2004 to 10%. From December 2005 – December 2007 it was 15%, and was raised to 18% in January 2008. However, it is widely acknowledged that these efforts were mostly of a

signaling nature and had little impact on constraining credit growth. (Gedeon 2009; IMF 2007)

A highly leveraged economy can produce impressive economic growth statistics, but it also invites financial fragility and increases vulnerability to contraction or slowdown of capital and financial flows. The speed of the credit expansion suggests that banks may have underestimated the level of risk associated with its lending program, especially in light of the fact that rapid and protracted credit growth can mask signals that the nonperforming loans may be on the rise.¹¹ Furthermore, financing through foreign channels means that principal repayments increase over time, and they demand a trade surplus if the country's external position is to stabilize or decline relative to the size of the economy. (IMF 2008) In Bosnia and Herzegovina there are multiple sources of financial fragility, including the following:

Household indebtedness. The World Bank refers to the debt levels of the country's households as “worrying.” (World Bank 2009) From the standpoint of debt burden, by 2007 the average debit card debt was consuming 41 percent of net wages, and the median household was carrying balances that had hit the approved ceiling. In 2007 almost 40 percent of households spent 20 percent of their income for debt repayment, and as many as 16 percent of households spent more than 30 percent of income servicing debt, while 15 percent of households with debt had no income whatsoever. (p. 33)

Dependence on workers' remittances. The economy is highly dependent on workers' remittances, accounting for 20 percent of GDP. This places Bosnia and Herzegovina fifth in the world and first among its Balkan neighbors. (Cirasino and Hollanders 2006) The economic slowdown in 2008 reduced the inflow of money remittances from abroad by 6.7 percent, placing more stress on households to meet current liabilities. (CBBH 2008a, 39) Stress tests conducted by the World Bank show that given the high personal and corporate debt levels denominated in euro, the slowdown in remittances to Bosnia and Herzegovina substantially raises liquidity risk and overall financial fragility. (World Bank, 2009, 37)

Rising wage and price levels. Although moderated during the global crisis, inflation accelerated sharply between 2005 and 2009. The global rise in food and fuel prices contributed, but the fundamental cause of domestic inflation has been demand driven. The World Bank noted in 2009 that “domestic demand has risen too fast and is the source of the observed surge in the price

Note: Due to data availability for countries with an asterisk data are for 2006

Source: Shelburne, p. 9 (http://works.bepress.com/robert_shelburne/38/)

Figure 2: Current Account and Basic Balances in European Emerging Markets 2007

level. Signs of intensifying demand pressures are sharp growth in net wages and expanding current account deficit." (p. 4) Despite an unemployment rate of 20 percent, wage growth rose sharply between 2007 and 2008. With increases in public sector wages spilling over to the private sector, there is concern about the impact on public finances and export competitiveness. (World Bank 2009; IMF 2009b)

Current account deficit. Bosnia and Herzegovina has experienced chronic and widening balance of trade deficits which have contributed to double-digit current account deficits. (See Table 4) Although its current account position improved slightly in 2006 and 2007 (due in part to the rise in world metal prices), it remains at 20 percent of GDP. As Figure 2 shows, among the 27 emerging European markets in 2007, only Latvia and Montenegro had higher current account-to-GDP ratios.

The high current account deficit is of concern for a number of reasons. First, the current account deficit has been primarily financed from long-term commercial bank borrowing and other FDI (IMF 2008). This carries with it the burden of investment income and principal repayments over time. Second, as Table 4 indicates, the trade deficit has worsened over time. It grew by 17 percent in 2007 and 16 percent in 2008, largely because of the growth in imports. (CBBH 2008a) Its narrowing in 2009 was due to a dramatic fall in imports, attributed to the income effects of the global recession. Third, the BH

export base is narrow. Bosnia and Herzegovina sends 45 percent of its exports to neighbors Croatia, Slovenia, and Serbia, making it dependent on the economic climate of the region. And fourth, nearly one quarter of its world exports are in semi-finished metal products which are highly sensitive to world metal prices. (IMF 2009a)

A current account is often viewed to be problematic if it is unsustainable, that is if the current account is creating an increasing debt-to-GDP ratio. A widening current account deficit and growing current account-to-GDP ratio can mean that the pace of growth of domestic demand cannot be sustained, especially if external financing is unstable. While the IMF (2009a) was optimistic that the BH current account deficit was sustainable, its stress tests were conducted before the global economic slowdown.

3.2. Global Financial Crisis: Monetary Policy Intervention

The global financial and economic crisis of 2008-09 put the banking system and currency board under great strain. International banking groups withdrew liquidity from the local subsidiaries between March and September 2008, and when news about parent bank losses became public, it triggered a brief run on the banks. Between October 2008 and May 2009, the currency board lost 16% of its reserves. (IMF 2009a, 5)

	2004	2005	2006	2007	2008	2009
Current Acct	-2,579	-2,933	-1,505	-2,261	-3,734	-1,807
• Goods	-7,193	-7,749	-6,661	-8,101	-9,426	-6,663
• Services	678	873	1,034	1,212	1,344	1,049
• Income	798	737	649	773	800	509
• Transfers	3,137	3,206	3,472	3,863	3,606	3,297
Capital Acct	1,970	2,641	1,245	2,063	3,934	1,781
• Capital	474	443	457	432	388	347
• Financial*	1,496	2,197	788	1,632	3,546	1,434
Current Account Balance/GDP (%)	-16.3%	-17.1%	-7.8%	-10.4%	-15.1%	-7.5%

*The financial account includes FDI, portfolio and bank transfers, and the reserve assets.

Source: CBBH. *Bulletin* 2009b, 2010

Table 4: Balance of Payments: Bosnia & Herzegovina

The fourth quarter of 2008 was most dramatic. During the fourth quarter of 2008, foreign exchange reserves of the currency board contracted by 8%—the largest decline recorded in a single quarter. This was due to the 17% drop in bank reserves (KM 705 million) from the withdrawal of deposits from the banks. The decrease of foreign exchange brought about a fourth quarter contraction of the monetary base by 9% and a contraction of the broad money supply, M2, by 4.8%. Compared to the second quarter of 2008 which saw a 5 percent increase in the broad money supply, the “whiplash” was significant: a quarterly decline in M2 of 9.8 percent. (CBBH 2008a, 36 – 42)

Amidst fear that their parent bank credit lines would be cut, worry about maturity mismatch and illiquidity due to loss of deposits, and concern about increased moral hazard, commercial banks responded by slowing down lending to the private sector, increasing holding of excess reserves by 14% and of foreign assets (secondary reserves) by 8.6%.¹² Interest rates were raised to 12% on loans to households and nearly 11% to enterprises. The combined effects of (i) the screeching halt in balance sheet growth, (ii) the currency board’s loss of foreign exchange reserves, (iii) rise of interest rates, and (iv) whiplash contraction of the money supply caused the monetary authorities to sound the alarm bell. (*Nezavisne Novine*, October 27, 2008) Policymakers in the Agencies for Banking as well as in the Central Bank became increasingly concerned that foreign-owned banks, despite their declared long-term interest in Bosnia and Herzegovina (as well as the region) would choose to cut their losses and run. Because much of the current account deficit had been financed by short-term foreign debt, a capital inflow slowdown or reversal could push the country into insolvency. In an October 2008 interview with *Dnevni Avaz*, Kemal Kozaric, Governor of

the Central bank, indicated that the public’s uncertainty about the commitment of foreign parent bank groups to BH could trigger “rational fears” about the liquidity of the subsidiaries.

Initially moral suasion was used to persuade banks to petition the parent for emergency lines of credit. (Kozaric 2009) In response, parent banks moved funds: “other” long term foreign liabilities increased from KM 2 million in August 2008 to KM 62 million in September 2008, and by year end KM 103.5 million.¹³ Taken together, in the third quarter of 2008 foreign liabilities of the commercial banks increased at the annual level of 23 percent. (CBBH, *Bulletin*, 2008b, 58).

In addition to the petition to parent bank groups for emergency funds, the CBBH implemented three measures that would reduce the costs for commercial banks to maintain deposits in the country. (Kozaric 2009) In October 2008 it lowered the required reserve requirement from 18% to 14% (hoping that banks would lend the excess reserves). Because the effort did not halt the contraction of credit, the CBBH agreed shortly afterward that all new parent bank credit would be entirely free from required reserve calculation, explaining that “This measure was aimed at stimulating the inflow of capital from foreign countries in the local banking sector and providing additional incentives to the credit activity of commercial banks.” (CBBH 2008a, 58) Explicitly for the purpose of stimulating larger credit activity, it reduced the reserve requirement again in December 2008, but only on long-term deposits.

There was also fear of a herd effect (collective action problem) among the banks themselves. One European bank group’s reassessment of the macroeconomic outlook in Bosnia and Herzegovina or the region could affect the value of the market presence of other bank groups. According to Erik Berglof, chief economist at the

European Bank for Reconstruction and Development (EBRD) and Anne-Marie Gulde, senior advisor in the IMF's European Department, parent bank group behavior was key to macroeconomic stability in SEE. With banking systems as highly concentrated as that in SEE, one stakeholder announcing skepticism about the stability of the region could trigger a sudden reversal of capital flows, creating unsustainability of current account deficits and a balance of payments crisis. (IMF 2009b).

In order to prevent a crash in the price of assets which could lead to liquidity crises in financial institutions and further bank panics, a lender of last resort would need to be created to provide emergency liquidity and restore confidence in the banking system of Bosnia and Herzegovina as well as to the region as a whole. A number of international financial agencies shared these concerns, including the IMF, EBRD, European Commission, European Investment Bank (EIB), European Central Bank (ECB) and World Bank. By late October 2008 consensus had been reached among them that measures would need to be taken to prevent foreign banks from pulling capital out of the region. To avert a regional financial crisis, international parent bank groups would need to recapitalize their subsidiaries and agree to maintain their exposure to the region. Lender of last resort intervention would have to be voluntary, and moral suasion would be the monetary policy tool of choice. (IMF 2009c).

The Vienna Initiative, as it was to be known, began work in late 2008 with a consortium of 15 private European bank groups, fiscal and monetary authorities from each country in southeast Europe, and the IMF, EBRD, EIB, World Bank, and ECB. As for the agreement regarding Bosnia and Herzegovina, in return for committing to remain in the region for two years and recapitalize subsidiaries as needed, parent bank groups with exposure in Bosnia and Herzegovina won the commitment of massive international balance of payment support from the IMF, EU, IBRD and bilateral donors. They also won agreements from fiscal authorities to wage controls and other austerity measures to trim domestic fiscal budgets. (IMF 2009c)

In its Request for Stand-by Arrangement to the IMF, the Bosnia and Herzegovina Ministers of Finance with the Governor of the Central Bank listed four primary reasons for this emergency \$1.6 billion infusion of funds. It is noteworthy that at the top of their list was "the safeguard of the currency board." Other objectives included consolidation of public finances, maintenance of

adequate liquidity and capitalization of banks, acquisition of sufficient external financing, and improvement of confidence. They noted the 16% loss of the currency board's gross international reserves, the rise in core inflation, the need for public-sector wage restraint, and the vulnerability of the financial system to an increase in nonperforming loans, large shocks in funding costs, indirect effects of depreciation and a deposit run. (IMF 2009a, 1-12).

The worsening of the global financial situation poses exceptionally uncertain prospects: with credit growth coming to a halt and higher funding costs, bank profitability is deteriorating. This necessitates coordinated action, including support of parent banks and home country authorities. To this end, following the staff-level agreement on this program, we will seek a pledge from foreign banks to maintain exposure to their BiH subsidiaries and to recapitalize those as needed over the program period. (p. 8)

The IMF approved a total of \$1.57 billion over a period of 3 years, with the first installment of \$282.37 million made available in July 2009. Funds were transferred to off balance accounts of the CBBH and distributed to the fiscal authorities in each of the entities where they were deposited in commercial banks and monetized.¹⁴ As can be seen in Table 5, the positive balance of KM sales on the currency board shown in July and August 2009 is the result of the inflow of foreign currency funds from the first tranche of the stand-by arrangement in the amount of SDR 182 million. (CBBH 2009a)

KM millions		
Year	Month	Sell-Buy Balance
2006		1,134
2007		1,055
2008		-631
2009		-37
2008	07	136
2008	08	74
2008	09	-4
2008	10	-475
2008	11	-201
2008	12	48
2009	01	-168
	02	-92
	03	-21
	04	-12
	05	-208
	06	-42
	07	473
	08	108

Source: CBBH, Bulletin 2009(b)

Table 5: Currency Board Sell-Buy Balance 2006 – 2009

Far from over The effects of bank reticence to lend was felt throughout 2009; loans to the domestic sector fell by 1.6%, causing the Federal Banking Agency to once again warn that "it should be expected in the upcoming period to see more increasing adverse impacts and effects, especially through a deterioration of the credit portfolio quality, increase of bad placements, and consequently credit losses, which will have an adverse reflection to the financial result of banks." (FBA, 2009, p. 23).

There has been strong resistance to austerity measures proposed by the IMF, especially regarding the imposition of restraints on public wages and the reduction of public spending. But in its First Review under Stand-By Arrangement, the IMF noted that despite a projected decline in GDP and continued fiscal deficits, "The financial sector has coped well with the crisis. The commitment of foreign parent banks to maintain their exposure vis-à-vis Bosnia and Herzegovina and to keep their subsidiaries well capitalized has had a stabilizing effect." (IMF 2010)

4. Conclusion

The currency board is presented as a rules-bound, neutral monetary institution which promotes market discipline, confidence, and fiscal conservatism by means of prohibiting lender of last resort to government or banks, maintaining the fixed exchange rate, and encouraging open capital markets. The prevailing idea is that the only way for the board to acquire new reserves is to obtain foreign exchange from the reserve currency country, and this implies that the CBA country must run a balance of payments surplus.

The rigidity built into the CBA implies that the burden of macroeconomic adjustment falls on the banking system, and through it, on the economy as a whole. Any kind of a crisis that causes a drain of currency and consequent contraction of the monetary base must result in rising interest rates to equilibrate financial markets and a contraction of banks' balance sheets and/or borrowing of reserves from abroad. It relies on prompt and complete adjustment of prices to match demand with supply in its factor and product markets.

But the literature boasts further that the benefits of a currency board arrangement is that the fixed exchange rate and open capital market increases credibility and lessens the vulnerability of a country to destabilizing capital flows. Wessels (2006) summarizes this most succinctly:

A CBA not only simplifies the operation and monitoring of the foreign exchange market, but, because it increases credibility and reduces uncertainty, also lessens the vulnerability of a country to destabilizing capital flows and their concomitant contagion. In this way, the CBA facilitates access to international financial markets and participation in external trade. The latter may enhance foreign direct investment and allow the country to tap into the financial markets of the anchor and other countries in the common currency area. (355)

The literature misses the point that parent bank groups are re-created as private central banks although no legal relationship between subsidiary and parent bank binds them. Capitalist finance requires a transformation of short-term liabilities into long-term assets. Absent a domestic capital market and/or central bank discount window, this places the burden of liquidity management on the tenuous relationship between the subsidiary and parent bank group. The unintended consequences are that "discount-window" type loans are monetized and directly increase the monetary base of the currency board, fueling hyperactive credit growth. Hesitancy on the part of the parent bank to maintain the overdraft services can lead to a "sudden stop" set of problems and destabilize the system.

An issue discussed in this article is why banks expand so much credit, given known risks that can lead depositors and shareholders into trouble at business cycle turning points. While it does not seek to explain the motivation of parent bank groups, it clearly demonstrates that money supply endogeneity is rooted in decisions by foreign banks regarding exposure to Bosnia and Herzegovina and the region as a whole. Minsky (1985, 1986) believed that the post WWII free market economy has a natural tendency toward financial instability on the aggregate level. In good times, agents consume and invest, generating more income, acquiring the funds from accommodating financial institutions and central banks. As euphoria and gregarious behavior pick up, herd behavior leads to more speculative or even "ponzi" finance. The boom is fed by an over-expansion of bank credit until some exogenous outside shock to the macroeconomic systems ends it. The ability of the banks to acquire funds from its parent bank at a relatively cheap price implies that unless (and until) the bank (or its parent) decides that acquiring the funds may be harmful to its own long run profitability or solvency, it will continue to lend. A kind of independent, private, and

decentralized open market operation provides desired liquidity to accommodate the needs of the corporate sector.

Throughout the credit growth period of 2002-08, the CBBH observed the stimulating effects of the inflow of parent bank group funds—annual 25 percent growth of the money supply, 12 percent growth of GDP, and brisk growth of consumer demand. It tried to constrain the growth with increases in the reserve requirements, but with little effect. The CBBH also noted the negative effects of such rapid inflow of bank capital—the growing net foreign liabilities, gaping current account deficits, increase in the price level, and rising debt levels of households.

The breakdown in the resolve of the CBBH/currency board to refrain from using monetary policy occurred during the world global economic crisis when credit from abroad dried up and domestic depositors, fearing bank pullout, withdrew deposits. We have seen that the “whiplash” effect created such concern on the part of the currency board that it was compelled to *reinvent* lender of last resort monetary policy. An 8 percent loss of gross foreign exchange reserves forced not only the creation of a consortium of private foreign banks to function as “Big Bank lender of last resort” but also a *quid pro quo* that the IMF and other international financial agencies act as “Big Spender of last resort.” To the extent that CBBH/currency board used its own tools of monetary policy, namely changes in the reserve requirements, it can be said that this was in reaction to actions taken by banks to first fuel a credit expansion and then to halt credit expansion.

This suggests that the nature of monetary endogeneity is more in line with a Post Keynesian analysis. During the 2002-07 period of rapid credit growth, the process can be outlined as: $\text{loans} \uparrow \rightarrow \text{foreign reserves} \uparrow \rightarrow \text{monetary base} \uparrow \rightarrow \text{M2} \uparrow$. This may call forth reaction by the central bank to raise reserve requirements to mop up some of the money supply, but this is in reaction to actions taken by banks to fuel a credit expansion. With loans financed by low cost financial liabilities from parent banks located abroad, this process raises the question of when will financial fragility (rising leverage and household debt, current account deficit, slowdown in remittances) become a Minsky moment with a surge in capital flows in the reverse direction.

During the 2008 financial crisis, parent banks’ reassessment of their own financial fragility led to withdrawal of support of subsidiaries, and the process reversed. Capital inflows slowed down, creating

conditions of systemic illiquidity that forced the monetary authorities to intervene: $\text{loans and deposits} \downarrow \rightarrow \text{foreign reserves} \downarrow \rightarrow \text{monetary base} \downarrow \rightarrow \text{M2} \downarrow \rightarrow \text{creation of international LLR}$.

This paper has challenged the prevailing argument that under a CBA monetary policy is rendered passive or is deactivated by motivating the reasons within the rules of the CBA that call forth monetary policy reactions by the central monetary authorities. It has attempted to develop an analysis that shows that when profit-seeking banks identify potential borrowers who meet the banks’ risk threshold, they negotiate the loan and then refinance their portfolios to cover whatever cash drain that might arise. The paper suggests that contrary to the literature on currency boards that boasts the retirement of monetary policy under currency board regimes, monetary policy, especially open market operations and lender of last resort lending, is carried out under the cloak of conversations between the currency board and the representatives of the parent banks. In short, monetary policy under the currency board regime in Bosnia and Herzegovina has been privatized and decentralized, not abandoned.

Endnotes

1. The discrepancy is due to earnings on foreign exchange deposits held abroad. CBBH, Bulletin, 2009a, 54.

2. Steve Hanke explains the mechanism in the following way:

A balance of trade deficit causes gold to flow out of the country. This causes the domestic money supply to shrink and domestic interest rates to rise. A rising interest rate has two effects: (i) it discourages new loans which causes income to drop, domestic prices to fall, and a real depreciation of the exchange rate. This creates the conditions for re-establishment of equilibrium on the current account as imports, Z, fall and exports, X, rise. (ii) if the domestic interest rate exceeds world interest rates, it encourages foreign capital (gold) inflows, K, as foreigners buy securities denominated in local currency. The money supply is restored.

According to Federal Reserve of Boston Vice President Richard Kopcke,

Currency boards essentially enforce modern versions of the venerable specie-flow standard, which in the past commonly took the form of a gold standard. In theory, a country that varies its supply of base currencies adopts a monetary regime that automatically regulates the level of its prices and the growth of the economic activity. For example, when the prices of the country’s factors of production, goods, and services in world markets rise more rapidly than the prices for other countries, its balance of trade deteriorates, causing its holdings of reserve currencies and base money to grow more slowly. Its domestic supplies of money and credit also decelerate which raises its domestic interest rates and

reduces the demand for its factors and products, thereby depressing its prices relative to those of other countries. (p. 26)

3. Dornbusch and Giavazzi (1999) mention that currency boards could require banks to secure agreement from foreign financial institutions that they be provided with lender of last resort services, privatizing lender of last resort and regulatory services. But he doesn't address the issue of parent bank distress during crises and capability of fulfilling the obligation.

4. The region is defined as including the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the FYR Macedonia, Montenegro, Serbia, and Romania.

5. "The dominance of nontradables sectors is likely to reflect strong expectations of real appreciation as incomes converge to EU levels. This makes returns in nontradables more attractive. The investments may also have been influenced by weak institutional frameworks that make investing in activities with short pay-off periods, such as trade and real estate, more appealing than manufacturing. However, the appreciation expectations may overshoot. Together with the apparent currency mismatch, the increase in liabilities in nontradables sectors can affect the countries' ability to service debt liabilities over time, especially should there be large movements in the exchange rate or a slowdown in growth." (Sorsa et. al., p. 13)

6. Unlike branches, subsidiaries are separate entities, and the parent bank is not responsible for the subsidiary's liabilities; financing of the subsidiary depended on the relationship between it and the parent bank. (Hadiomeragic, 193).

7. Raiffeisen Bank, UniCredit, and Hypo Alpe-Adria Banks are the largest.

8. CBBH. Data prepared at request of author.

9. Federal Banking Agency, Bosnia and Herzegovina. Data prepared at author's request.

10. Foreign direct investment is often cited as the driver of export development, but between 2004 and 2007, manufacturing accounted for only 20 percent of the total FDI inflows and metal industries 6 percent. Most FDI was absorbed by the nontradables sectors: the financial sector absorbed 41 percent of FDI over 2004-2007 followed by telecommunications (26% in 2007 alone due to the privatization of Telekom Srpske). (Kaminski and Ng, p. 18)

11. Kemal Kozaric, Governor of the CBBH, is reported to have said that nine banks together recorded losses from non-performing loans totaling \$15.1 billion in 2009—approximately 2.8% of commercial banks' total assets—and that they would most likely have to "dive into their capital assets to cover the loss." In "Bosnia's Banks Must Tackle Bad Loan Rise." December 11, 2009. *Syminvest* <http://www.syminvest.com/market/news/microfinance/bosnias-banks-must-tackle-bad-loan-rise-/2009/12/11/2181>.

12. CBBH. Data prepared at request of author.

13. CBBH. Data prepared at request of author. The Federal Banking Agency reported that "as a result and consequence of the global financial crisis, domestic banks in the FBiH owned by foreign banking groups have received a significant financial support from the groups, through a long term and short term/revolving credit line (increase in the

fourth quarter of KM 277 million), deposits (increased in the fourth quarter by KM 208 million), new stand-by arrangements and, finally, through inflow of new green capital, which only over the last three months of 2008 amounted to KM 130 million, the capital base of individual banks and the entire banking sector of the FBiH has been strengthened." (2009a, p. 26)

14. Interview, Milan Cuc, Resident Representative, International Monetary Fund, February 2010, Sarajevo.

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