CURRENCY BOARD ARRANGEMENTS: ARGUMENTS FOR AND AGAINST ADOPTION IN INDONESIA

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Abstrak

Tulisan ini mendiskusikan argumen-argumen pro-kontra perancangan "currency board" di Indonesia. Pada waktu krisis ekonomi melanda Indonesia, pemerintah pernah mempertimbangkan kemungkinan pengadopsian "currency board" guna mengatasi krisis dan menstabilkan perekonomian. Berdasarkan perdebatan panjang mengenai keuntungan dan kerugian penerapan "currency board" di Indonesia, dapat disimpulkan bahwasanya "necessary condition" bagi Indonesia untuk mengadopsi "currency board" selama krisis tidak terpenuhi. Indonesia tidak mempunyai cukup cadangan valuta asing untuk menyokong basis moneter dan sistem perbankan belum siap menerima kondisi "no the lender of last resort." Keputusan untuk tidak menerapkan "currency board" selama krisis ekonomi merupakan keputusan yang rasional.

Kata Kunci: Currency Board

A. Introduction

In recent years, Currency Board Arrangements (CBAs) have gained increasing popularity. There has been a growing literature on the advantages and disadvantages of such arrangements, and on the principal considerations as to whether a country should adopt a CBA (see for example Hanke and Schuler, 1994; Walters, 1992; Osband and Villanueva, 1993; Schwartz, 1993; Bennett, 1994; Williamson, 1995; Zagazaga, 1995; Balino et. al., 1997; and Enoch and Gulde, 1997).[1] This increasing popularity was related to the recent belief that CBAs were not only suitable

[1] Although the theoretical literature on CBAs has extended rapidly, the empirical examination about these arrangements are difficult to find. There are still a few empirical studies examining the macroeconomic performance of countries adopting CBAs due to the unavailability of systematic data. McCarthy and Zanalda (1996) compare the inflation and growth performances of Caribbean countries. Kwan and Lui (1996) compare the performance of Hongkong under its CBA (October 1983 onwards) to its previous regime (1973-1983). Ghosh, Gulde, and Wolf (1998) compare the macroeconomic performance of countries with currency boards to those with other forms of pagged exchange rate regimes.

for small open economies but also for mid-size and even larger countries (see Hanke, Jonung and Schuler, 1993, and Balino et. al., 1997).[2]

During the 1990s, five countries established CBAs. They are Argentina[3] (in 1991), Estonia (in 1992), Lithuania (in 1994), Bulgaria (in 1997), and Bosnia and Herzegovina (in 1997). Some other countries considered adopting such arrangement. El Salvador expressed interested in establishing one as a way to enhance credibility and transparency. For the same reason, Mexico, Peru, Brazil, and Russia have also considered establishing the arrangement during economic crisis.

In the Southeast Asian region, Indonesia was one country that considered seriously adopting CBA during the Asian financial crisis. There was a huge debate about the possibility of Indonesia adopting a CBA. On the one hand, proponents of CBAs, such as Hanke and Schuler, recommended CBAs as a cure for the exchange rate instability in Indonesia. They argued that the exchange rate of rupiah to US dollar would achieve stability through the adoption of CBAs (Schuler, 1998). They supported their argument by pointing out the rise of the rupiah by 30 percent when the Indonesian government announced that a currency board might soon be introduced. On the other hand, the IMF disagreed with the adoption of a CBA in Indonesia during the crisis. The managing director of the IMF, Michel Camdessus, argued that the time has not yet come to Indonesia to adopt a CBA. Some necessary conditions should be satisfied before Indonesia adopts this arrangement. Among those is the need for Indonesia to obtain substantial dollar reserves and strengthen the country's banking system. Without the capability to sustain a fixed exchange rate, adopting a CBA would not result in exchange rate stability.

The interest of the Indonesian President at that time, Suharto, to adopt a CBA for Indonesia was based on his perception that the economic crisis was nothing more than a financial crisis or, to be more specific, an exchange rate problem. By stabilizing the exchange rate, he thought the economic crisis might soon end. This was the main reason why he then invited Hanke to come to Indonesia and asked Hanke as an advisor for the planning of a CBA in Indonesia.

The debate along the possibility of adoption of a CBA in Indonesia during the economic crisis is interesting to examine. This paper attempts to discuss the arguments for and against the possible adoption of a CBA for Indonesia. The remainder of this paper proceeds as

[2] It is worth emphasizing that it is economic, not geographic or population size factors which matter in this respect.

[3] Argentina did adopt a CBA on 1 April 1991, but then she abandoned the system on 6 January 2002.

follows. Section 2 presents the theoretical background for CBAs in order to give a clear description about what CBAs are, what is the basic characteristics of currency boards, and what is the difference between currency boards and central banks. Section 3 discusses the practical side of CBAs in order to show their performance in countries that established CBAs. This section is divided into three parts: a brief history of CBAs, experiences in two countries, and some related-studies about CBAs. Based on the theoretical background, the practical evidence, and the domestic institutions in Indonesia, section 4 explains the specific case of a CBA for Indonesia, such as the motivation of Indonesia's government to consider adopting a CBA and arguments for and against a CBA in Indonesia. Concluding remarks are given in section 5.

B. Theoretical Background of CBAs

Before discussing the specific case of Indonesia, one needs to know the theoretical framework of CBAs in order to obtain a clear picture. This section presents a definition, basic characteristics, a comparison between characteristics of a typical currency board and a typical central banks, and a money supply creation in CBAs, as a theoretical background for more specific analysis about a CBA for Indonesia.

1. Definition

A currency board arrangement can be categorized as a fixed exchange rate regime (Frankel, 1999). Some authors, such as Balino, et. al. (1997), Enoch and Gulde (1997), and Ghosh, Gulde and Wolf (1998), considered it as a special case of a rule-based monetary system. It is a system based on rules rather than discretion that serves to establish credibility and transparency, and avoids loss from monetary decisions.

In its orthodox form[4], a CBA can be defined as a monetary regime based on an explicit legislative commitment to exchange of domestic currency for a specified foreign currency at a fixed exchange rate, with the currency board as an monetary authority to ensure the fulfillment of its legal obligations (Balino et. al., 1997). The domestic currencies are issued only if fully backed by the foreign anchor currency. In this structure, the traditional central bank that acts as a monetary regulator and the lender of last resort is eliminated and replaced by a currency board that maintains the exchange rate at a truly fixed rate.

[4] The orthodox currency board has a different characteristic with currency board-like systems. Some authors, such as Balino et. al. (1998), Enoch, Gulde and Wolf (1997), Roubini (1998) and Williamson (1995), failed to distinguish these two forms. For a useful explanation about the differences between the orthodox currency board and currency board-like systems, see Hanke and Schuler (2000).

From today's perspective when fiat money is universally used, the restrictions on currency issuance and the reserve-backing rule of orthodox CBAs appear quite stringent. In practice, almost every country that has established a CBA has introduced modifications to capture local factors.[5] In Djibouti and Hongkong, the CBA maintained at least 100 percent backing of currency in circulation with foreign assets and gold. In Argentina, Estonia and Lithuania, the CBA also backs the deposits held by commercial banks at their central banks, as the latter continue to provide payments and settlement services. In Argentina, the law required that one-third of the reserve backing was in US dollars and two-thirds was in foreign assets. In practice, the actual foreign assets of base money in Argentina were around 95 percent. The CBA of Lithuania backs 100 percent of currency in circulation and all other central bank liquid liabilities. The CBA of Brunei Darussalam and the Eastern Caribbean Central Bank (ECCB)[6] are required to back only 60 to 70 percent of reserve money with foreign assets.

The orthodox CBAs do not require central banks for their operation. However, the currency board-like systems established institutional frameworks allowing the existence of a central bank. Argentina, Estonia and Lithuania institutionally established central banks and retained some or all functions of central banks. For example, the Bank of Estonia (BOE) regularly informed the public if it held foreign exchange reserves as backing of currency. The BOE holds the excess foreign reserves, takes monetary operations, and exercises bank supervision. The CBAs of Argentina and Lithuania also retain many traditional central bank functions, including settlement of payments system transactions.

2. Basic Features of CBAs

CBAs differ from the conventional pegs (adjustable peg, crawling peg, and basket peg) in the nature of the restriction they set on changing the level of the exchange rate and the sources of reserve money creation (Balino et. al., 1998). The main characteristics of CBAs are as follow (Hanke and Schuler, 1994; Frankel, 1999):

a. Anchor currency

The anchor currency is a currency chosen for its expected stability and international acceptability. The anchor currencies usually used by CBAs were the British pound and the US dollar. Some recent currency

[5] These modified CBAs are categorized as currency board-like systems by Hanke and Schuler (1994).

[6] Hanke and Schuler (1994) did not classify the ECCB as a CBA or a currency board-like system. They argued that the ECCB is a monetary system that maintains a certain amount of reserves which has discretion to lend to commercial banks and member governments.

board-like systems used the Euro as the anchor currency. A few CBAs have used gold as the anchor currency.

b. Convertibility

CBAs maintain full-unlimited convertibility between its notes and coins and the anchor currency at a fixed rate of exchange. Although an orthodox currency board typically does not convert local deposits denominated in its currency into the anchor currency, banks will offer to do so for a small fee. A currency board has no responsibility for ensuring that bank deposits (demand deposits) are convertible into currency board notes. It is banks that have responsibility to ensure the convertibility of bank deposits. The currency board is concerned only with the notes and coins that it issues. The full-unlimited convertibility into the anchor currency means that in an orthodox CBA, no restrictions exist in current-account transactions (buying and selling goods and services) or capital-account transactions (buying and selling financial assets, such as foreign bonds).

c. Law

The exchange rate is fixed not just by policy, but also by law. The currency board can not alter the exchange rate, except in the emergency case. Before altering the exchange rate, the currency board has to change the law that regulates the exchange rate.

d. Reserves

In order to ensure all holders that its notes and coins can be converted into the reserve currency, an orthodox CBA maintains an adequate amount of reserves. Usually, the reserves are equal to 105 or 110 percent of its monetary liabilities in order to have margin protection if the bonds it holds lose value.

e. Profits

Unlike bonds or most bank deposits, notes and coins do not pay interest. They are like an interest free loan from the people who hold them to the issuers. The issuer's profit equals the interest it earns on its reserve assets minus the expense of maintaining its liabilities. Typically, the expense is not more than one percent of the total assets per year.

f. Self-correcting balance of payments mechanism

There is no balance of payment problems in countries that established CBAs. A balance of payments deficit automatically contracts the money supply, resulting in a contraction of spending. The same mechanism also happens within a balance of payment surplus. A balance of payments surplus automatically expands the money supply, resulting in an expansion of

spending. A currency board does not have to intervence in the money market in order to correct the disequilibrium. The detailed explanation about this mechanism is presented in sub section 4 when we discuss money supply creation in CBAs.

g. Monetary policy

By design, an orthodox currency board has no discretionary power. Its operations are completely passive and automatic. Its main function is to exchange notes and coins for the anchor currency at a fixed rate. An orthodox currency board does not lend to the domestic government, to domestic companies, or to domestic banks. In CBAs, the government finances its spending from only taxes and/or debts. The government can not finance its budget by printing money because all new coins and notes should be backed by reserve assets.

h. Interest rate and inflation

In orthodox CBAs, the currency board does not try to influence interest rates. The fixed exchange rate with an anchor currency encourages arbitrage that tends to keep domestic inflation and interest rates equal to international inflation and interest rates. However, exceptions occur in countries that replace highly inflationary central banks with currency boards. In such cases, prices for many goods are initially low in terms of the anchor currency, because the domestic currency has very low value. The inflation, even though lower than before a currency board established, is higher than in the anchor-currency country.

i. Relation to banks

Since a currency board has no share in the profits of banks, it has no responsibility as a lender of last resort to protect them from losses. Bank failures have been rare in orthodox CBAs. However, in recent currency board-like arrangements, especially those that replace central banks with currency boards during banking problems, bank failure usually happened.

The above characteristics are usually found in an orthodox currency board. In currency board-like arrangements, the characteristic has been modified, depending on the institutional prevalence when the CBAs were established.[7] Some countries that established currency board-like arrangements hold reserves less than 100 percent of its liabilities and some others maintains central banks in their monetary systems.

[7] For discussion about institutional framework of CBAs, see in particular Cammilleri Gilson (2002).

Table 1. A Typical Currency Board And A Typical Central Bank

Typical currency board	Typical central bank
Usually supplies notes and coins only	Supplies notes, coins, and deposits
Fixed exchange rate with reserve currency	Pegged or float exchange rate
No conflict between exchange rate policies and monetary policies	Frequent conflicts between exchange rate policies and monetary policies
No balance of payments crises	Frequent balance of payment crises
Foreign reserve of 100 percent	Variable foreign reserve
Can not become insolvent	Can become insolvent
Does not hold domestic assets	Does hold domestic assets
Full convertibility	Limited convertibility
Rule-bound monetary policy	Discretionary monetary policy
Not a lender of last resort	Lender of last resort
Does not regulate commercial banks	Often regulate commercial banks
Transparent	Opaque
Immune from corruption scandals	Prone to corruption scandals
Protected from political pressure	Politicized
High credible	Low credible
Earn seigniorage only from interest	Earn seigniorage from interest and inflation
Cannot create inflation	Can create inflation
Cannot finance spending by domestic government	Can finance spending by domestic government
Requires no preconditions for monetary reform	Requires precondition for monetary reform
Rapid monetary reform	Slow monetary reform
Small staff	Large staff

Source: Hanke and Schuler (1994), Hanke (2002)

3. A Typical Currency Board Versus a Typical Central Bank

In Indonesia, a currency board is foreign. A central bank is the familiar institution. This is because the current monetary system in Indonesia comprises a central bank (Bank Indonesia), commercial banks, and other financial institutions. The comparison between typical currency boards and typical central banks may be helpful to explain a currency board to Indonesian. Without a proper concept about a currency board, establishing a currency board in Indonesia would only create a psychological panic.

Table 1 itemizes the features that distinguish typical currency boards and central banks. The items in Table 1 are generally self-explanatory. This paper will not explain all these items in great detail.[8] Only several items merit further

[8] For detailed explanation about these items see Hanke and Schuler (1994, 2000) or Schuler (1998).

comment. The comment are summary in three basic features as follows:

a. Balance sheets

A balance sheet reveals a monetary authority's liabilities (high-powered base money or monetary base). It is also shows the make-up of those liabilities, or the split between net domestic assets (the domestic component of monetary base) and net foreign assets (the foreign component of monetary base). A currency board's balance sheet contains only net foreign reserves because it can not sell and buy domestic assets. As a result, a currency board can not engage in discretionary monetary policy, and its monetary liabilities (monetary base) are exclusively made up of foreign components (Hanke, 2002). Changes in monetary base are exclusively driven by changes in the net foreign reserves.

In contrast, a central bank's balance sheet contains both net domestic assets and net foreign assets. This means that a central bank can engage in discretionary monetary policy by buying and selling domestic assets. As a result, a central bank can change the monetary base at will, or with the approval from the government. Changes monetary base, both domestic and foreign components, changes the money supply, and then in turn will change the exchange rate. Figure 1 shows the comparison of a typical currency board balance sheet and a typical central bank balance sheet.

Since the function is only to store foreign assets that backs its notes and coins in circulation without ability to conduct monetary policy, currency boards operate their activities transparently. They post their current balance sheets on web sites (Hanke, 2002). This is not the case for central banks. Of the 174 central banks, only 124 have web sites, and only 14 display current balance sheets (Hanke, 2001).

b. Exchange rate regimes

With currency board rules, a monetary authority sets the exchange rate fixed at a specific anchor currency, usually a hard currency. The quantity of monetary base in CBAs is solely determined by the demand for it in the market. As a result, there can be no conflicts between exchange rate policy and monetary policy in the arrangements. There is also no balance of payments problem in CBAs because market forces automatically act to rebalance financial flows.

As a contrast, central banks in developing countries simultaneously manage exchange rate policies and monetary policies. They usually operate with pegged exchange rates

i. Currency Board balance sheet	
Assets	*Liabilities*
Foreign reserves	Notes and coins in circulation
	Deposit of commercial banks (optional)
	Net worth
ii. Central Bank balance sheet	
Assets	*Liabilities*
Foreign reserves	Notes and coins in circulation
Domestic assets (including government debt)	Deposit of commercial banks
	Net worth

Figure 1. Comparison of Currency Board and Central Bank Balance Sheets (Camilleri Gilson, 2002)

(adjustable peg, crawling peg, basket peg, target zone, or managed float). With pegged exchange rate regimes, conflicts between exchange rate policies and monetary policies frequently happen. For example, when capital inflows become excessive under a pegged exchange rate regime, the net foreign assets increase. A monetary authority often attempts to sterilize the effect by reducing the net domestic assets in order to maintain the same amount of monetary base. The same mechanism also happens when there is an excessive capital outflow. A monetary authority often attempts to offset the decrease in net foreign assets with an increasing in net domestic assets in order to maintain the same amount of monetary base. Balance of payments crises erupt as a monetary authority increasingly offsets the reduction in net foreign assets.

c. The issuance of credit by a monetary authority

A typical currency board is not a lender of last resort. It does not lend to commercial banks or other firms to help them avoid bankruptcy. A typical central bank, in contrast, is a lender of last resort. In Indonesia, this function of the central bank has created a problem in banking systems. Theoretically, central banks lend to commercial banks only in emergencies (Goodhart, 1988). Unfortunately, Bank Indonesia is not so self-disciplined. It lends to commercial banks in situations that are not emergencies. As a result, commercial banks always depend on Bank Indonesia as a lender. Bank

Indonesia is not a lender of last resort anymore but in fact it has become the lender of first resort. Every time the commercial banks need cash, they always come to Bank Indonesia. Some commercial banks even used this opportunity to speculate with risky projects. They lend the money from customers to high-risk projects with high returns. If the project fails, they depend on Bank Indonesia to help them.

Currency boards can not lend money to the domestic government in order to finance budget deficits or to domestic state enterprises to finance their operations because the currency boards are not allowed to lend money to them. In contrast, central banks finance spending by the domestic government. It had happened in Indonesia before the 1980s. Bank Indonesia printed money to finance the government budgets. In the early 1980s, a law that prevented Bank Indonesia financing government budget deficits was implemented.

4. The Money Supply Creation in CBAs

Since a currency board's balance sheet only contain foreign asset component of the monetary base without ability to conduct monetary policy whereas a central bank's balance sheet contains both foreign and domestic components of the monetary policy, the mechanism to create money supply would be different. This part will show the supply of money in a currency board system and a central bank system in order to compare the mechanism of the supply of money in these two systems.

a. The supply of money in a currency board system

In a currency board monetary system, a currency board has no active role on determining the monetary base. It can not increase or decrease the monetary base at its own discretion. It also can not influence the relationship between the monetary base and the money supply by changing reserve requirement ratio or regulating commercial banks. The supply of money in currency board system is determined entirely by market forces.

Since the only asset in a currency board is foreign reserves, the only source that can change the monetary base is the changing in net foreign reserve. Changing in net foreign assets is resulted from the imbalance in overall balance of payment. By making certain simplifying assumption, a surplus in overall balance of payment increases the monetary base, and hence the supply of money will also increase. A deficit in overall balance of payment decreases the monetary base, and hence the supply of money will also decrease. Figure 2 illustrates the surplus in overall balance of payment that affects the increasing in money supply. Let us start with the initial situation where the overall balance of payment is zero.

1. Overall balance of payment is zero – initial equilibrium
2. Foreign demand for goods of currency board system increase
3. Surplus in the overall balance of payment
4. Reserve of commercial bank increase
5. Commercial banks increase loans and decrease interest rates
6. People spend some of the new loans, raising prices of domestic goods
7. Foreign demand for goods of currency board system decreases
8. Balance of payment return to zero – new equilibrium

Figure 2. Money Supply Increase in A Currency Board System
(Hanke and Schuler, 1994; Schuler, 1998)

Suppose that foreign demand for domestic goods increase (exports increase). It causes a surplus in the overall balance of payment. Through the mechanism depicted in Figure 2, the overall balance of payment returns to zero with a new equilibrium and the relevant markets clear.

In the case of overall balance of payment deficit, the deficit will then decrease the money supply through the sequencing depicted in Figure 3. When the overall balance of payment deficit, bank reserve decrease. Banks decrease loans and increase interest rates. As a result, people have less money to spend and it lowering prices of domestic goods. The overall balance of payment returns to zero with a new equilibrium in relevant markets.

b. The Supply Of Money in A Central Banking System

A central bank has an ability to alter the money supply. Since the assets in a

1. Overall balance of payment is zero – equilibrium
2. Foreign demand for goods of currency board system decreases
3. Deficit in the overall balance of payment
4. Reserve of commercial banks decrease
5. Commercial banks decrease loans and increase interest rates
6. People have less money to spend, lowering prices of domestic goods
7. Foreign demand for goods of currency board system increases
8. Balance of payment returns to zero – new equilibrium

Figure 3. Money Supply Decrease in A Currency Board System
(Hanke and Schuler, 1994; Schuler, 1998)

central bank's balance sheet contain both the domestic component and the foreign component of the monetary base, a central bank can increase or decrease money supply through the change in domestic component of the monetary base, for example through buying or discretionary control on the monetary base.

Suppose in this case, a changing in money supply is because of the changing in the domestic component of monetary base. Figure 4 presents the sequences of increasing in money supply in a central

1. Equilibrium – for example, 10,000 rupiah = US$1
2. Unexpected decision by central bank to increase monetary base (for example, by lending to Government)
3. Reserves of commercial banks increase
4. Loans by commercial banks increase
5. People spend some of the new loans, raising prices of domestic goods
6. They also spend more on buying foreign currency, making the exchange rate depreciate, for example to 10,500 rupiah = US$1 (new equilibrium)

Figure 4. Money supply increase in a central bank with a floating exchange rate (Hanke and Schuler, 1994; Schuler, 1998)

1. Equilibrium – for example, 10,000 rupiah = US$1
2. Unexpected decision by central bank to decrease monetary base (for example, by selling assets)
3. Reserves of commercial banks decrease
4. Loans by commercial banks decrease
5. People have less money to spend, lowering prices of domestic goods
6. They also spend less on foreign currency, making the exchange rate appreciate to, for example, 9,500 rupiah = US$1 (new equilibrium)

Figure 5. Money Supply Decrease in A Central Bank With A Floating Exchange Rate (Hanke and Schuler, 1994; Schuler, 1998)

selling government bonds. Therefore, the money supply in a central bank system depends on changing in both net foreign assets and net domestic assets. Let us assume that the central banking system adopts free float exchange rate regimes. Hence, the central bank has a full bank system with a floating exchange rate, and figure 5 depicts the sequences of decreasing in money supply in a central bank system with a floating exchange rate.

C. Practical evidence of CBAs

We have discussed the theoretical side of CBAs in previous sections. It is time to discuss the practical side of these arrangements in countries that established CBAs. We start with a brief history about CBAs from the colonial era to the recent CBAs. Then in the second part, we discuss the experiences of CBAs in two countries, Hong Kong and Argentina. We consider Hong Kong's CBA as a "success" story and Argentina's CBA as a "failure" story. The third part presents studies done by some experts who compared the performances of countries that established CBAs with countries adopting other pegged exchange rate arrangements or even with countries adopting floating exchange rate arrangements.

1. A brief history of CBAs

This sub-section explains a brief history of CBAs[9] and the existing CBAs and currency board-like arrangements. Until recently, CBAs have existed in more than seventy countries.[10] The first CBA was established in 1849 in the British Indian Ocean colony of Mauritius, based on the idea of the Currency School. The CBA achieve its mature orthodox form with the West African Currency Board, established in 1912 for the British colonies of Nigeria, the Gold Coast (Ghana), Sierra Leone, and the Gambia. The West African Currency Board was a model for many later CBAs. In the 1930s, CBAs were widespread in 70 British colonies in Africa, Asia, the Caribbean, and the Pacific Islands.[11] CBAs have also existed in a number of independent countries and city-states, such as Danzig and Singapore. One of the most interesting CBAs was installed in North Russia on 11 November 1918, during the civil war. Its architect was John Maynard Keynes, who was a British Treasury official responsible for war finance at the time (Hanke, Jonung, and Schuler, 1993). The used of CBAs peaked in the 1940s and declined thereafter.

In the 1950s and 1960s, CBAs disappeared because of the intellectual fashion in favor of central banks (Schuler, 2002). Another reason that CBAs disappeared was that most CBAs existed in British colonies, and when the colonies achieved independence they indiscriminately replaced many existing institutions (Ghosh, Gulde, and Wolf, 1998; Frankel, 1999). Many newly independent African countries replaced

[9] For detail discussion about the history of currency boards, see King (1957), Schuler (1992) and Schwartz (1993).

[10] For a list of countries which established CBAs, see Hanke, Jonung, and Schuller, 1993, Appendix C.

[11] The purpose was to provide the colonies with a stable currency without the associated difficulty of issuing sterling notes and coins that were costly to replace if lost or destroyed. The colonies also benefited from this approach in that they could earn interest on the foreign currency assets being held in reserve.

Table 2. Currency boards and currency board-like systems as of June 2002

Country	Population	GDP (US$)	Began	Exchange rate	Remarks
Bermuda (UK)	63,000	$2 billion	1915	Bermuda $1 = US$1	Loose capital controls
Bosnia	3.8 million	$6.2 billion	1997	1.95583 convertible marks = 1 euro	Currency board-like
Brunei	336,000	$5.6 billion	1952	Brunei $1 = Singapore $1	Currency board-like
Bulgaria	7.8 million	$35 billion	1997	1.95583 leva = 1 euro	Currency board-like
Cayman Islands (UK)	35,000	$930 million	1972	Cayman $1 = US$1.20	
Djibouti	450,000	$550 million	1949	177.72 Djibouti francs = US$1	Currency board-like
Estonia	1.4 million	$7.9 billion	1992	8 kroons = 0.51129 euro	Currency board-like
Falkland Islands (UK)	2,800	Unavailable	1899	Falklands £1 = UK £1	
Faroe Islands (Denmark)	45,000	$700 million	1940	1 Faroese krone = 1 Danish Krone	
Gibraltar (UK)	29,000	$500 million	1927	Gibraltar £1 = UK £1	
Hong Kong	7.1 million	$158 billion	1983	Hong Kong $7.80 = US$1	More orthodox since 1998
Lithuania	3.6 million	$17 billion	1994	3.4528 litai = 1 euro	Currency board-like

Source: Schuler, 2002.

their currency board with a central bank in the 1960s, and most other countries followed suit in the 1970s.

The recent CBAs mostly are currency board-like arrangements. They are different from the orthodox CBAs in their characteristics and functions. Most currency board-like arrangements modified the orthodox form and adjusted it into the domestic institutions (Schuler, 1992; Balino et. al., 1998; Cammileri Gilson, 2002). The more or less orthodox CBAs exist in Bermuda, the Cayman Islands, the Falkland Islands, Gibraltar, and the Faroe Islands (Table 2 presents countries that established CBAs). All these countries are very small in term of economic size and lack global influences. Therefore, the studies about the experiences of CBAs in these economies are often neglected. With the existence of a CBA in Hong Kong and the existence

of currency board-like arrangement in Argentina, Estonia, Lithuania, Bulgaria, and Bosnia recently, the discussion about CBAs has expanded rapidly.

2. Experiences in Two Countries

This part presents the experiences of two countries that established CBAs. Those countries are Hong Kong and Argentina. Hong Kong's currency board is considered as the most prominent and successful currency board in recent times. In contrast, Argentina's currency board is considered as an unsuccessful currency board.

a. Hong Kong

Hong Kong's currency board is an attractive example of a "success" story of currency boards. Proponents of currency boards often point out Hong Kong's currency board as a benchmark for the adoption of CBAs in several countries (for example, Hanke, Jonung, and Schuler, 1993; Hanke and Schuler, 1994; Schuler, 1998). There are three reasons why Hong Kong's currency board is attractive to examine. First, Hong Kong's dominant monetary institution since 1935 has been the currency board, with episodes of abolition and re-adoption. Second, Hong Kong is a large country, in terms of economic size, which is open to international trade. The argument that CBAs are only for small and very open economies does not hold in the case of Hong Kong's currency board. Third, the Hong Kong dollar has gone through several speculative attacks, some of which had serious consequences on the economy. However, the currency board still works consistently in this economy.

Hong Kong's currency board (officially known as the Exchange Fund) was introduced in 1935 when the government decided to abandon the silver standard. Table 3 shows the chronology of major events in Hong Kong's currency board. From 1935 to 1967, with the exception of four years of World War II, the Hong Kong dollar was pegged to the British pound sterling at the exchange rate of HK$16 to British £1. The exchange rate was revalued from HK$16 to HK$14.55 per British pound sterling. From 1972 to 1974, it was pegged to the US dollar. The government decided to let the currency float on 25th November 1974.

The financial crisis induced by the Sino-British negotiation over the future of Hong Kong caused downward pressure on the exchange rate, and forced the government to go back to the currency board system, with fixed exchange rate HK$7.80 per US$. The actual exchange rate in the market, however, generally differed from parity. This fixed exchange rate is maintained until today.

Since 1988, Hong Kong's currency board has undergone a series of institutional changes initiated by the Hong Kong Monetary Authority (HKMA). This institutional change has gradually increase the power of the HKMA to act like a central bank in some respects. In 1988, the HKMA introduced some new

Table 3. Chronology of Major Events on Hong Kong's Currency Board

Year	Events
1935	The government of Hong Kong decided to abandon the silver standard and established a currency board, with an official name the Exchange Fund
1935 – 1966	The Hong Kong dollar was pegged to the British pound sterling at the rate of HK$16=UK£1
1967	The exchange rate revalued to HK$14.55=UK£1
1972 –1974	The Hong Kong dollar was pegged to US$
25th November 1974	The Hong Kong dollar was floated
Around 1976	Because of financial crisis introduced by the Sino-British negotiation over the future of Hong Kong, the Hong Kong dollar dropped sharply. The government decided to re-established a currency board system at a fixed rate HK$7.8 = US$1
1988	New "accounting arrangement" was introduced, which allows HKMA to perform open market operations. From this stage, Hong Kong currency board was not orthodox.
March 1990	The HKMA introduced "Exchange Fund Bills", which is similar to short term US Treasury bills.
End of 1990	The HKMA introduced LAF to provide short-term liquidity to commercial banks
October 1997	The first serious speculative attack on Hong Kong dollar during the Asian financial crisis
August 1998	The HKMA bought massive amount of Hong Kong shares on the stock market in order to maintain the stock market prices and the exchange rate
5th November 1998	The HKMA decided to revert to more orthodox CBA

Source: summarized from Nugee (1995), Kwan and Lui (1999), Lui, Cheng, and Kwan (2002), and Schuler (2002).

"Accounting Arrangements" to conduct open market operations. In March 1990, the HKMA introduced "Exchange Fund Bills", which have similar functions to short-term US Treasury bills. Then, at the end of 1990 the HKMA introduced a Liquidity Adjustment Facility (LAF) to provide short-term liquidity to commercial banks.

Hong Kong's currency board experienced the first serious speculative attack in October 1997 during the Asian financial crisis. A huge capital outflow happened during that period. In order to

stop more capital outflow from Hong Kong, the HKMA increased the interest rate.[12] As a result the interest rate become very sensitive to capital outflows. The Hong Kong inter-bank interest rate (HIBOR) reached a peak of 300 percent on October 1997 when there was a rumor that the HKMA would charge penalty interest rate to commercial banks that used LAF repeatedly (Lui, Cheng, and Kwan, 2000).

The effort of the HKMA to counter speculative attacks with interest rate arbitrage did not work well. On the contrary, this action caused a credit crunch in the banking system (Lui, Cheng, and Kwan, 2000). The fact that the HKMA had deviated from the fixed rule of the currency board made its commitment to peg much less credible. Huge capital outflows continuously happened because speculators expected the HK$ would be depreciated further against the US$. As a result, the economic and political costs of speculative attacks during the period were significant.

On 5th November 1998, the HKMA decided to revert to a more orthodox currency board with the introduction of structured notes. This decision effectively put the HKMA back onto the rule-bound track. Interest rate arbitrage appeared to be effective again. The commitment of the HKMA to maintain the exchange rate seems to have re-gained respect from economic agents.

The important point we can draw from Hong Kong's experiences is the success of a currency board requires a sustainable fixed exchange rate. Once the exchange rate is not sustainably fixed, there will be an incentive for speculators to attack the currency board.

b. Argentina

During the 1980s, Argentina's macroeconomy was unstable. The public sector deficit was huge, the nation was in default on its foreign debt, hyperinflation reigned, and there was massive capital flight. In 1989, the Menem government began a series of economic reforms. One of the most significant was the April 1991 Law on Convertibility, which established a CBA in Argentina. The Argentinean currency was fixed at an exchange rate of 10,000 australes (later = 1 peso) per US dollar and to be backed 100% by foreign currency reserves.

The Argentinean economic reforms have been aimed at liberalizing and privatizing the economy, reducing the public sector deficit, and lowering inflation. Together, they have brought very positive results. The inflation has declined steadily from a 39% monthly rate in 1989 to less than 4% for all of 1994. The growth rate has climbed by 6% in 1994. Meanwhile, foreign

[12] For detailed explanation about the discretionary measures that used by the HKMA to magnify interest rate volatility, see in particular Lui, Cheng, and Kwan (2000).

investment has flowed into the country in ever increasing amounts. Foreign currency reserves have tripled since 1991.

The success in economic reform also helped Argentina avoid the effect from Mexico's Tequila Crisis of 1995. Argentina's GDP grew by 5.5 percent in 1996 and 8.1 percent in 1997. However, the economy ran into trouble in 1999, after Brazil's devaluation and before its own presidential elections. The elected president in December 1999, Fernando de la Rua, did not succeed in reforming the supply side of the economy. On the contrary, he brought the economy into fiscal deficit problems and a crisis of confidence.

In June 2001, in order to overcome the crisis effect from Brazil's devaluation, the economic ministry, under Domingo Cavallo, introduced a dual-currency regime. Cavallo was famous because of his success in reducing the country's hyperinflation. However this time, he made mistakes that worsened Argentina's economy.

Under a dual-currency regime, all Argentina's exports (including oil) take place using a devalued peso, all imports with a revalued peso, and all other transactions take place at a peso-dollar rate of one-to-one. This regime was considered by the markets as showing an inability of the Argentinean government to sustain a fixed rate. Markets expected the peso to depreciate. As a result, a huge amount of capital flowed out from Argentinean economy.

The important point that can be drawn from Argentina's experience is a changing of monetary regimes from a hard regime to a soft regime during a financial crisis would cause the exchange rate decrease further. Hence, the exchange rate problem would become worse. Very high costs would be paid because of inconsistency in maintaining one exchange rate regime.

3. Studies About The Economic Performance of CBAs

Some studies have been done in order to measure the performance of countries with CBAs. Table 4 shows the summary of those studies. The studies in Table 4 are generally self-explanatory. However, two points can be drawn from them. First, these studies showed that the economic performance in countries under CBAs is more stable compared to countries with other pegged exchange rate regimes or even to countries with floating exchange rate regimes. The inflation is lower, the growth rate is higher, the interest rate is lower, and the fiscal deficit is lower. Second, the relation between currency board operations and credibility is still unclear. Theoretical argument about the high credibility of currency boards seems not happen in reality.

Table 4. Studies About The Economic Performance of CBAs

Author	Countries	Objective of study	Finding
McCarthy and Zanalda (1996)	Caribbean countries	Compare the inflation and growth performances of Caribbean countries under CBAs with other Caribbean countries	The subgroup of countries operating under a CBA had lower inflation and higher growth than other comparable Caribbean economies
Kwan and Lui (1996)	Hong Kong (China)	Compare the performance of Hong Kong under its CBA (october 1983 onwards) to its previous float exchange rate regime (1973-1983)	Based on a counter factual simulation, they conclude that inflation would have been lower during the floating period had Hong Kong operated under a CBA
Ghosh, Gulde, and Wolf (1998)	Countries under CBAs and countries under other pegged exchange rate regimes	Compare the performance of countries under CBAs and countries under other pegged exchange rate regimes	On average, inflation under CBAs was about 4 percent points lower than under other pegged exchange rate regimes. Countries with CBAs actually grew faster than the average of all countries with other pegged exchange rate regimes
Hanke (2000)	Argentina, Estonia, Lithuania, Bulgaria, and Bosnia and Herzegovina	Compare the stability of the five countries before and after the installation of CBAs	All five countries were more stable after the adoption of CBAs. The annual inflation was lower, the growth rate was higher, the interest rate was lower, foreign reserve increased, and fiscal deficit decreased
Hanke (2002)	Ninety-eight developing countries	Compare the economic performance of currency boards and central banks in developing countries	Currency board systems have higher growth, lower inflation, and lower fiscal deficit compare to central bank systems
Camillery Gilson (2002)	Argentina (1991-2001), Bosnia and Herzegovina, Bulgaria, Estonia, Hong Kong, and Lithuania	Evaluate the policy pre-commitment and institutional design in CBAs	The currency boards can only be viewed as part of a wider policy framework encompassing fiscal sustainability and flexibility in the real economy. However, the link between currency board operations and credibility is far from obvious.

Source: Author's survey

D. Indonesia and A CBA

This section explains the reason why Indonesia considered adopting a currency board and why it then decided not to establish one. This section is divided into two parts. First is the motivation of Indonesia to consider a currency board. The second part is arguments for and against a currency board in Indonesia.

1. The Motivation For Indonesia to Consider Adopting A CBA

The Indonesian government considered adopting a CBA during

economic crisis. The main reason behind this consideration was to find a quick solution to the crisis. A currency board was considered to be a remedial action to counter speculative attack an exchange rates (Hanke, Jonung, and Schuler, 1993; Hanke and Schuler, 1994; Schuler, 1998). Since President Suharto thought that the crisis was only an exchange rate problem, he considered establishing a currency board in order to stabilize the exchange rate. With a stable exchange rate, the inflation rate might be lowered into single digits and the economy then might start to grow. This belief seems to ignore the fact that the economic crisis in Indonesia was not only a problem of the exchange rate. The crisis involved more complex economic problems, both in financial and real sectors. At the beginning of the recession, the only problem was indeed the instability of the rupiah because of speculative action. There was only the financial sector in crisis. However, because of the weak fundamentals of the Indonesian economy, the financial crisis then affected the real sectors. The huge capital flight resulted from the extreme loss of confidence from investors about Indonesian economy, causing the real sector to collapse.[13]

During the financial crisis, the exchange rate was indeed falling very quickly. On 1 July 1997, just before Thailand devalued the baht, the rupiah was 2431 per dollar. The rupiah then began to depreciate, first at a moderate rate, then in January 1998, it fell rapidly and reached a bottom of 17,000 per dollar. By the end of January 1998, the exchange rate was more than 12,000 per dollar. The proponents of fixed exchange regimes argues that the fall of the rupiah was because the central bank of Indonesia (Bank Indonesia) no longer kept the exchange rate stable in terms of US dollar. Under the floating exchange rate, nothing would prevent the rupiah from falling to 15,000 or 20,000 per dollar as the loss of confidence in the rupiah became outright panic. The opponents of fixed exchange rate regimes, however, argued that pegging the rupiah at a certain value per dollar at that time was also not a good solution. Bank Indonesia ran out of foreign reserves in order to maintain a fixed rate. To obtain more foreign reserves, Bank Indonesia borrowed from the IMF and other countries that give bilateral loans. As a result, foreign debt increased sharply. Solving the exchange rate problem using a pegged exchange rate resulted in a new problem, government foreign debt.

Pegging the rupiah at a certain value to the US dollar while there was a huge capital outflow was impossible. Indonesia was not an exception to the impossible

[13] For a detailed explanation about Indonesia's economic crisis, see in particular World Bank (1998).

trinity (Leung, 1996).[14] By allowing capital to flow freely, Bank Indonesia could not have independence in monetary policies. The huge capital flow affected the monetary policies and hence caused problems for macroeconomic management.

Historically, the depreciation of the rupiah was a familiar story. In terms of the US dollar, the rupiah was worth less than a millionth of its original 1949 value. In November 1949, the exchange rate was 3.80 old rupiah per dollar or 0.00380 current rupiah per dollar (see Table 5). Bank Indonesia replaced the old rupiah with the current rupiah in December 1965 at one current rupiah equal to a thousand old rupiah. The replacement's purpose was to finance the large deficit in the government budget and to pay foreign debts. In 1970, the value of the current rupiah was dropped to 378 per dollar. Printing money to finance government budgets was the main reason for depreciation of the rupiah until the late 1980s. After that time, the depreciation continued but only at a low rate until 1997. When Bank Indonesia floated the rupiah at the end of 1997, its value felt dramatically to more than 12,000 per dollar. To prevent the rupiah falling further, Bank Indonesia intervened in the money market, and tried to maintain the value of the rupiah at not more than 10,000 per dollar.[15]

Schuler (1998) argued that the problem of persistent depreciation in rupiah reflects lack of credibility of the central bank. To solve this, he suggested a fundamental reform by making changes to the central bank. He argued that Bank Indonesia should be replaced by a currency board. A CBA *a la* Hongkong might be helpful to undo the damage that the depreciation of the rupiah had created. This suggestion was considered by Presiden Suharto in early 1998. Therefore, he instructed a small group of officials from Bank Indonesia and the Ministry of Finance to draft a new bill for a CBA's implementation. The action then attracted a huge debate about the advantages and disadvantages of adopting a CBA for Indonesia.

2. Arguments For and Against Adoption of CBA in Indonesia

A CBA failed to be established in Indonesia after the government and the directors of Bank Indonesia decided that the costs of adopting a CBA would outweigh the benefits. The following for and against arguments capture the benefits and the costs (respectively) of a currency board for Indonesia during the economic crisis.

[14] Fischer and Reisen (1993) argue that the East Asian countries, including Indonesia, achieved the impossible trinity challenges. This argument seems not to have worked for Indonesia during the economic crisis.

[15] Although Bank Indonesia said the rupiah was free to float after August 1997, Bank Indonesia keeps intervening in the money market through open market operations.

Table 5. Rupiah per US dollar, 1949-2002

Year	Rupiah per US dollar
Nopember 1949	3.08 old rupiah = 0.00380 current rupiah
1960	90 old rupiah = 0.0900 current rupiah
1970	378 current rupiah
1980	626.75
1990	1901
1 July 1997	2431
January 1998	More than 12,000; low of 17,000
December 2002	8940

Note: the current rupiah replaced the old rupiah in December 1965 at 1 current rupiah = 1000 old rupiah.
Source: Bank Indonesia, Schuler (1998).

a. Arguments for (or the benefits of) a currency board in Indonesia

1) Stable currency

After Indonesia floated the rupiah against the US$ in August 1997, the rupiah began a depreciation. The rupiah fell from 2431 per dollar on 1 July 1997 to about 17,000 per dollar in January 1998 (see Table 5 above). During that period, the rupiah became a second-class currency within Indonesia. Some merchants, especially those who sold imported content products, quoted prices in US$. People preferred to hold US$ instead of rupiah. The sharp increase in prices of goods caused panic buying of rice, vegetable oil, and other staples. In the business sector, many Indonesian companies could not pay dollar-denominated debts. As a result, real sectors could not work well. This indicated a chain of bankruptcies. Bankrupt businesses could not repay their bank loans, so the banking system could collapse.

The proponent for currency boards argued that the depreciation of the rupiah could be stopped by adopting a currency board. A currency board would undo much of the damage that the depreciation of the rupiah had created. By fixing the rupiah at a certain rate against the US$ there would be no incentive for speculators to attack the rupiah. The rupiah would be a stable currency and the loss of confidence about the rupiah would then be eliminated. With fixed rupiah at a certain rate against the US$, inflation in Indonesia would be lower and the economy would start to growth

again. Even though a currency board would not solve all Indonesia's economic problems, it would make many of them less severe (Schuler, 1998).

The experiences of Hong Kong which stabilized its currency during the speculative attack by reverting back to a more orthodox currency board can be a reference for Indonesia. By announcing that the exchange rate would be fixed at HK7.80 dollar per US dollar and by committing to maintain the exchange rate, the HKMA succeeded to end its currency crisis. The loss of confidence about Hong Kong's economy was eliminated. A stable currency provided the basis for Hong Kong to continue its rapid economic growth.

2) A better financial condition for commercial banks

Many problems of Indonesian banks resulted from the currency crisis. The banks had lent to companies that also had foreign debt. The companies borrowed foreign debt at 2500 rupiah per dollar but had to pay back at 12,000 rupiah per dollar during the currency crisis. This caused companies to go bankrupt and the loans that commercial banks had made to them could not be repaid. As a result, the banking system was also in trouble. The very high interest rate that resulted from the effort to stop capital outflow from Indonesia was another reason the banking system in Indonesia was in trouble. Saving interest rates were much higher than credit interest rates. This caused huge losses in commercial banks. Many banks then lost liquidity.

The effort of the IMF to help the banking system made the problem even worse. By proposing that it would give deposit insurance only to government-owned banks, the IMF created panic among Indonesian depositors. Suddenly, the depositors started withdrawing money from some private-owned banks, causing liquidation of several private banks. To maintain the confidence from depositors to the banking system, Bank Indonesia then promised to back up all deposits in all commercial banks. This action made the problem even more complicated. Commercial banks became dependent on lending from Bank Indonesia.

According to Schuler (1998) and Culp, Hanke, and Miller (1999), by adopting a currency board that fixed the rupiah at 4,000 or 5,000 per dollar, companies that were almost bankrupt might be able to repay the foreign debt and start to operate again. They argued that as long as the government strongly committed to maintain the exchange rate at the fixed value, the rupiah would regain

its confidence and the domestic purchasing power would then be close to the fixed rate. There would be no need of high interest rates to prevent capital outflow. With lower interest rates and the ability of companies to pay back their loans to commercial banks, the banks would then be in a better financial condition.

3) Eliminate dependency of commercial banks on Bank Indonesia

Theoretically, a central bank is a lender of last resort. It lends only to commercial banks (or sometimes to other financial firms) and only in emergencies. Unfortunately, the central bank of Indonesia (Bank Indonesia) is not so self-disciplined. It becomes entangled with financing the government, state-owned enterprises, and commercial banks in situation that are not emergencies. Rather than being a lender of last resort, Bank Indonesia becomes a lender of first resort, creating a dangerous dependency on it among those it lends to. Every time commercial banks have a problem with liquidity, they borrow from Bank Indonesia. This fact shows that Bank Indonesia is incompetent in its function as the lender of last resort.

By adopting a CBA, there would no longer discrepancy in monetary policies. A central bank would be replaced by a currency board, which would only function as a warehouse of foreign reserve to back up currency in circulation. There would be no lender of first resort anymore. Commercial banks would have to find other sources of cash, especially from customers. In this case, the commercial banks would become more efficient because they compete freely in order to attract customers.

4) Lower inflation and higher growth

Experiences from countries adopting a CBA show that they have lower inflation and higher economic growth after adopting the CBA. Schuler (1998) argued that this performance could be a good reference for Indonesia to establish a currency board. With a currency board, the exchange rate of Indonesia would be stable and inflation would be lower. These would then provide a condition for the economy to grow again.

b. Arguments against (or the costs of) a currency board in Indonesia.

1) Fully backed foreign reserves

A fully backed currency board would be very costly for Indonesia to maintain. Since Indonesia has already committed to guarantee deposits in its banking system, a currency board would have to cover a much broader measure of money than only the monetary base. It might even be necessary to use the broad M2 money supply, which

would cost US$66 billion at an exchange rate of Rp 5,000.

At the time president Suharto considered a currency board, Indonesia had only US$8 billion foreign reserves, which was not even enough to back up the monetary base. In fact, Indonesia needed bailout loans from the IMF to finance its recovery programs. So, it was impossible to launch a fully backed currency board. The advocates of currency boards then came to the idea that the Indonesian currency board could be launched with partial backing.

The problem is if a currency board is launched with only partial backing, the board would not have enough resources to fight off a speculative attack, and such an attack could bring the currency board down. The loss of confidence in the rupiah would continue. Hence, the currency board would not solve the exchange rate problem.

2) The "correct" value of the exchange rate.

Another cost in creating a currency board in Indonesia at that time was the degree of uncertainty over the "correct" value of the rupiah. Advocates of currency boards suggested that the exchange rate be fixed at 4,000 or 5,000 per US dollar, or about twice of its market value of 12,000 rupiah per dollar. If the fixed value were "correct", there would be no incentive for speculators to attack the board. In contrast, if the fixed value were overvalued, the speculators would expect the rupiah to depreciate again. Further capital outflow would bring down the partially backed currency board.

3) Further panic and huge liquidation of commercial banks

At the time President Suharto considered adopting a currency board, the banking system was in trouble. There was loss of confidence about the banking system in Indonesia. Many commercial banks almost went bankrupt because of negative spreads in interest rates and bad debts. Bank Indonesia guaranteed to back up all deposits in all commercial banks in order to avoid huge liquidation of commercial banks. Adopting a currency board at that time would create further panic because there would be no more guarantee for deposits (since under CBAs, a central bank can not engage in discretionary monetary policies). People would madly withdraw their deposits in commercial banks. Analysts (for example Montagnon, 1998) predicted that about 200 of 220 Indonesian commercial banks would be closed if Indonesia adopted a currency board.

4) IMF would stop the bailout money

The IMF opposed a currency board in Indonesia during the crisis. According to the head of the IMF, Michel Camdessus, the time had not yet come for Indonesia to adopt a CBA. Some necessary conditions should be satisfied before Indonesia adopted this arrangement. Among those was the need for Indonesia to obtain substantial reserves of dollars and strengthen the country's banking system. Without the capability to sustain a fixed exchange rate, adopting a CBA would not result in exchange rate stability. On the contrary, it would result in further loss of confidence in the rupiah.

The strong disagreement from the IMF about Indonesia's currency board could be seen clearly when Camdessus wrote a private letter to President Suharto threatening to cut off bailout money if Indonesia established a currency board. The IMF wanted Indonesia to stick to the economic programs that had been agreed. Camdessus wrote that if Jakarta implemented the move anytime soon, he would urge the board of the IMF to suspend the US$43 billion bailout money.

5) Economic crisis, not merely currency crisis

The crisis in Indonesia was not merely a currency crisis. It was already at the stage of economic and political crises. Adopting a currency board would not have solved the economic crisis. A currency board with partially back up would cost further speculative attacks and further panic in the banking system as mentioned in points 1) and 3) above.

The benefits above could be obtained if the currency board was fully backed and the monetary authority committed to maintain a sustainable fixed rate. A partial backing currency board has little difference with a standard pegged exchange rate. With a partial backing currency board, Indonesia would not be able to maintain the fixed rate. Therefore, there was no need to establish a currency board in Indonesia.

E. Conclusion

Currency board arrangements regained their popularity when several countries decided adopting these arrangements in 1990s. The Southeast Asian countries, especially Indonesia, also considered these arrangements during the financial crisis. The consideration attracted a huge debate about the advantages and the disadvantages of adopting a currency board.

From the experiences of countries that had already established a currency board, the economic performance of these countries has been more stable than countries under other pegged

exchange rate, or even than countries under floating exchange rates. The countries under CBAs have lower inflation, higher economic growth, and lower fiscal deficits compare to other pegged exchange rate regimes and floating exchange rate regimes. From the experiences of Hong Kong and Argentina, it can be see that countries would achieve stable economic performance if they consistently maintained currency boards. One they started to be inconsistent, the markets would respond, and result in deterioration in the exchange rate and economic performances.

In the case of Indonesia, adopting a currency board during crisis would result in larger costs than benefits. The benefits would be obtained if Indonesia adopted a fully backed currency board. However, the necessary conditions to operate a fully backed currency board were not satisfied during the crisis. Indonesia did not have enough reserves to back up its monetary base and the banking systems was not yet ready to receive the fact of no lender of last resort.

The benefits of currency board for Indonesia were: a stable currency, a better financial condition for commercial banks, elimination of dependency from the commercial banks on Bank Indonesia, and lower inflation and a higher growth. The costs were: the difficulty to maintain a fully backed currency board, the degree of uncertainty of the "correct" value for the exchange rate, further panic and the huge liquidation of commercial banks, and postponement of bailout money from the IMF.

The fully backed currency board was impossible to establish because Indonesia did not have enough reserves to back up the monetary base. The idea to launch a partially backed currency board would cause Indonesia to not be able to obtain the benefits of a currency board. Beside that, a partially backed currency board would not be successful to counter speculative attacks.

The decision not to establish a currency board after long consideration was the best decision for the Indonesia government at that time. The dispute about the monetary regime, whether to adopt a currency board or not, had already caused bad impacts on the Indonesian economy. The IMF even thought that the dispute would drag other countries in the Southeast Asian region to deeper economic crisis.

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