



Management Division, Le Moyne College  
Working Paper Series

**The System of Currency Board: The Experience of  
Argentina**

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July 2003

Working Paper WP2003-006

[http://www.lemoyne.edu/library/mgmt\\_wp/wp2003-006.pdf](http://www.lemoyne.edu/library/mgmt_wp/wp2003-006.pdf)

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## The System of Currency Board: The Experience of Argentina

### **Abstract**

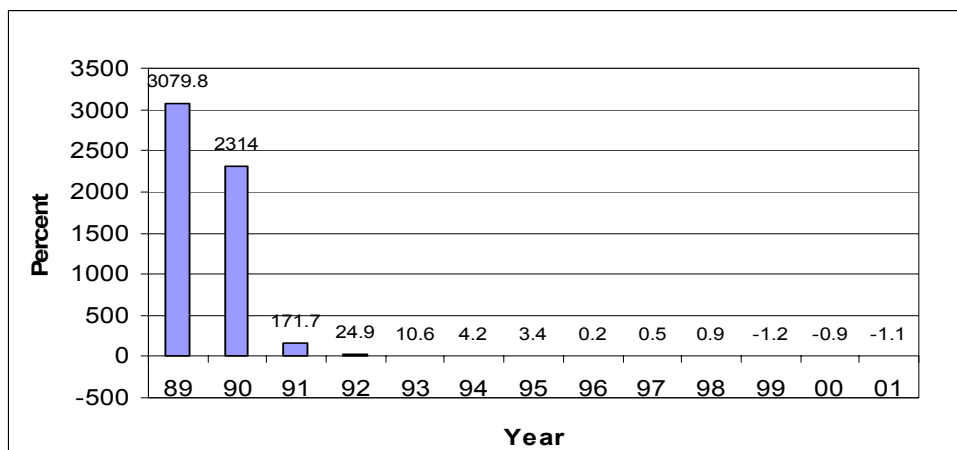
The currency board adopted in 1991 by Argentina was mainly to stabilize inflation which was peaked in 1989 at more than 3000%. Throughout the experimental decade, real GDP increased 3.4% on average compared with declines in the previous 10-year period. However, the success of the experiment did not last long. As the external conditions deteriorated toward the end of the 1990s with the stagnant and recessionary world economy, Argentina's financial system built on the currency board began showing soft spots and cracks while neighboring countries suffered only minor blows. The deteriorating balance of payments, lack of fiscal discipline, and rigid labor laws expedited the debacle of the system in 2001.

**Key Words:** Currency Board, Foreign Exchange Rate System, International Finance

### 1. Introduction

In January 2002, Argentina abandoned its 11-year old exchange rate system to devalue the peso and reset it to \$.71. Although structural changes have been recommended and the policy makers were expected to take actions for the past few years, the announcement was hard to accept for foreign investors and local residents alike since the Argentine economy had shown its resilience when faced with various difficulties including the 1995 tequila crisis.

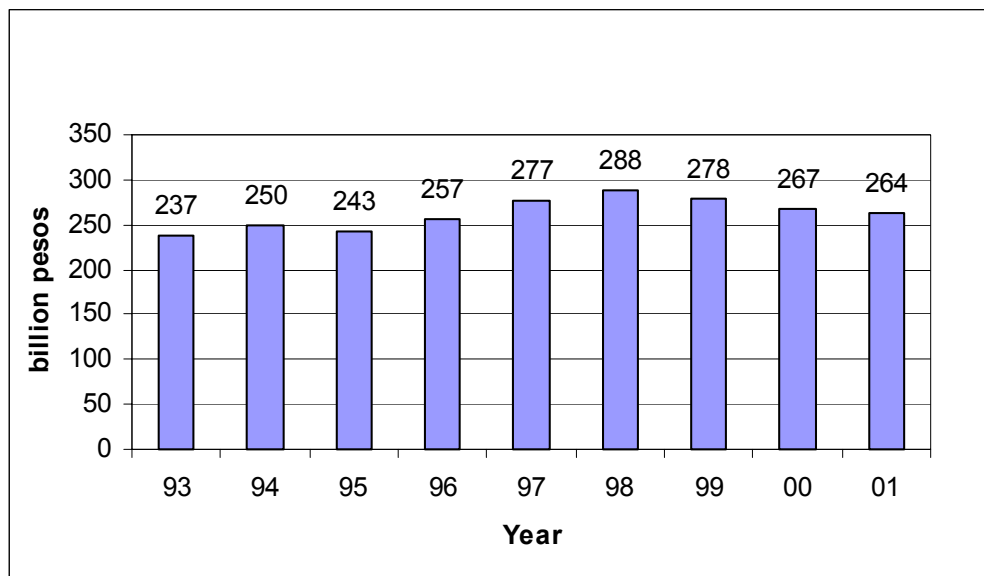
Figure 1. Inflation Rates of Argentina; (1989-2001)



*Source: The graph is based on data collected from “IMF, 2002 International Financial Statistics Yearbook”*

The currency board adopted in 1991 effectively reined in the chronic hyperinflation which peaked in 1989 at more than 3,000% (See Figure 1). Throughout the experimental decade, real GDP increased 3.4% on average compared with declines in the previous 10-year period. However, as the external conditions deteriorated toward the end of the 1990s with the stagnant and recessionary world economy, Argentina’s financial system built on the currency board began showing soft spots and cracks while neighboring countries suffered only minor blows. For instance, real GDP of Argentina declined by 3% in the second half of 2001, while Latin America as a whole experienced a decline of only 1.3%. Unemployment of 15.7% in Argentina in 2001 is compared with 6.7% of Latin America (See Figure 2).

Figure 2. Argentine GDP Growth in 1993 Prices (1993-2001)



*Source: The graph is based on data collected from “IMF, 2002 International Financial Statistics Yearbook”*

It is very unfortunate that the system that worked relatively well for Argentina during the 1990s could not maintain itself when it encountered external and internal

difficulties at the end of the 1990s. Are there any defects in the system? Hong Kong that has enjoyed the similar system survived the 1997 financial crisis.

A currency board is an exchange rate regime for fixing the value of local currency to another currency or a basket of currencies. To be successful at keeping the value of its currency with respect to the specified currency, the currency board must establish monetary credibility. It provides this credibility by fully backing the local currency with a foreign reserve currency supported by legislation if necessary. The currency board, in exchange for reduced monetary sovereignty, could establish credibility in its promise to maintain the value of local currency, since it is deprived of creating money, hence eliminating inflation risk. However, since the local currency value is pegged to a reserve currency, the local economy is at the mercy of the reserve country. That is, if the reserve currency value rises vis-à-vis the rest of the world, then the local currency value automatically rises. This rise may change its international terms of trade unfavorably. Another criticism suggests that currency boards in general do not act as the lender of last resort. This function could inject necessary liquidity in the economy in the face of, say, high interest rates. Was Argentina a victim of a currency board?

This paper will 1) survey foreign exchange rate systems practiced since World War II, 2) introduce currency boards, particularly of Argentina, 3) examine and analyze economic and financial activities of Argentina for the last 11 years under its currency board, 4) try to identify primary factors which brought the debacle of the currency board in Argentina, and 5) conclude with summaries and recommendation for further research.

## 2. A brief history of exchange rate system after World War II

In 1944, right before the end of World War two, representatives from forty some allied countries established a foreign exchange rate system at a conference held in Bretton Woods, NH. The exchange rate system that pegged nations' currencies within a

narrow band lasted until 1971. Under the system each currency was pegged in terms of the U.S. dollar and the dollar, in turn, was guaranteed to be converted into gold for official institutions (1/35 ounce of gold for a dollar).

Since all currencies were fixed with the value of gold through the dollar, their values with respect to each other were also fixed. The International Monetary Fund (IMF) created at the conference became the coordinator and overseer for the new system which allowed each currency to fluctuate within one percent above or below the parity. The parity, the rate initially set, can be adjusted under certain circumstances ( if identified as fundamental disequilibrium of the BOPs) by its government with the approval of the IMF. In most cases, however, governments would intervene in the foreign exchange markets before their currencies drift away beyond the +/-1 percent band.

The primary goals of the pegged exchange rates were to reduce the risks of international transactions, to promote the growth of world trade and foreign investment, and to discourage destabilizing biddings that may be attempted by currency speculators. Although the system provided nations with fixed exchange rates which successfully reduced international transactions risks for nearly 30 years, the experience by currencies, especially of emerging nations, was not as hoped for, as these transactions were often constrained by international liquidity shortage causing the system to be unstable. As a reserve-providing country, the United States had also experienced persistent balance of payments deficits. In the 1960s, as a result of increased spending on social programs at home and an escalating war in Vietnam, the U.S. economy encountered rising inflation rates and widened deficits.

Concerned about rapidly deteriorating payments balance and rising protectionism, the U.S. suspended the convertibility of the dollar into gold in 1971 causing temporary disarray in the system and let the dollar find its own level in currency markets. The last

attempt to rescue the system at the Smithsonian Conference in December 1971 by calling for a devaluation of the U.S. dollar by about 8 percent against other currencies and by expanding the boundaries for the currency values to within +/-2.25 percent from 1 percent was futile. By early 1973, most currencies of major industrial countries began to freely float against each other. The Bretton Woods system became the victim of the foreign exchange rate turmoil it was designed to avoid<sup>1</sup>.

### 3. Currency Board

In a freely floating exchange rate system, exchange rate values will be determined by market forces, that is, by the interaction of currency supplies and demands. Initially this clean float was well accepted as it was predicted to make countries immune to international transmission of economic problems from other countries through the adjustment of exchange rates. However, the experience during the early post-Bretton Woods era was not encouraging. A sudden appreciation of a currency tended to hurt its export industry while a sudden depreciation caused a higher rate of inflation. As a compromise, some central banks began to adopt the managed floating exchange rate system which allowed them to intervene in currency markets while a majority of developing countries stayed with some sort of pegging exchange rate system.

As Table 1 shows, as of December 31, 2001, 103 countries adopted fixed exchange rate system of one type or another, while 83 countries still kept a floating system. Eight of those with fixed exchange rates have chosen a special system called Currency Board. The IMF defined the currency board as a system for pegging the value of the local currency to a specified currency “based on an explicit legislative commitment” to guarantee the fixed exchange rate and a system that imposes “restrictions on the issuing authority to ensure the fulfillment of its legal obligation<sup>2</sup>.”

Table 1. Exchange Rate Regimes and Anchors of Monetary Policy)<sup>3</sup>  
(in parenthesis, # of countries)

Exchange Rate Regime	Anchors	Policy	Frame	Work	Other
		Monetary Aggregate Target	Inflation Target	Fund-supported Program	
a. Exchange arrangement with no separate legal tender (40)	. ACLT (8) . ECCU (6) . WAEMU (8) . CAEMC (6)				Euro Area (12)
<b>b. Currency Board (8)</b>					
c. Conventional Peg Arrangement (40)	. Against a single currency (30) . Against a composite (10)	(1)			
d. Pegged within horizontal bands (5)	. ERM II (1) . Other band (4)		(1)		
e. Crawling Pegs(4)	(4)				
f. Exchange within crawling bands (6)			(1)		
g. Managed floating (42)		(11)	(1)	(19)	(12)
h. Independent floating (40)		(7)	(15)	(10)	(8)

ACLT: another currency as legal tender, ECCU: Eastern Caribbean Currency Union  
 WAEMU: West African Economic and Monetary Union,  
 CAEMC: African Economic and Monetary Community

Source: IMF, "2002 International Financial Statistics Yearbook"

The *legislative commitment* and *legal restrictions on the monetary authority* are two of the most important factors which demonstrate its government's determination to credibility. For a currency board to be successful at keeping the value of the local currency fixed at a specified level in terms of the reserve currency, it must maintain monetary credibility in its promise for the preannounced exchange rate. The *credibility* perceived by investors and the public has been proved the essential element in formulating sound monetary policies, especially when a country has experienced chronic hyperinflations.

Currencies of the countries like the U.S. and EU that have maintained well-functioning financial markets and reputations for relatively low inflation rates are often selected as a reserve currency by emerging nations. To better understand the system and functions of the currency board, we will contrast the basic structure of the board to that of the central bank below with the help of the balance sheet T account.

Figure 3. Simplified Balance Sheet of Central Bank and Currency Board

<u>a. Central Bank</u>	
Assets	Liabilities
Reserve-currency assets (R)	Notes (Cash) (C)
Securities (S)	Deposit of commercial banks (D)
	Net worth (N)

The right-hand side of the balance sheet in Figure 3-a and 3-b are identical. The difference comes from the left hand side, where the currency board does not hold securities. The absence of securities, mainly domestic government securities, is very



b. Currency Board

Assets	Liabilities
Reserve- currency assets (R)	Notes (Cash) (C)
	Deposits by commercial banks (D)
	Net Worth (N)

significant, because without them it can not exercise open market operations. Two major differences between a central bank and a currency board are seigniorage<sup>4</sup> and change in money supply. Since a typical currency board is not allowed to hold domestic securities on their balance sheet, no monetizing of securities can be made, hence no seigniorage. Although it loses seigniorage, some currency board will enjoy interest income from holding interest-bearing securities of reserve country. In 2001, Argentine foreign reserves amounted to \$11.5 billion. If one third of them were held in U.S. securities paying 3 percent interest, it would have generated interest income of \$115 million per year that could partially offset seigniorage benefits lost.

A typical currency board is instructed to issue base money solely in exchange for foreign reserve assets, and base money may take the form of notes and coin.

Under a currency board system, a commercial bank may be required to hold reserve currency for required reserves putting downward pressure on money supply. The effect of this requirement on money supply will be similar to that of the central bank system. Commercial banks under the central bank system normally hold their deposits in a reserve account with the central bank to meet the required reserves. Thus, the money supply under both systems will be expressed as<sup>5</sup>:

$$M = [(1+c)/(r+c)] (C + D) \text{ -----(1)}$$

where M = money supply,

C = notes held by the public,

D = central bank's reserve accounts held by commercial banks.

c = cash ratio, r = required reserve,

The money supply in a currency board country represents a multiple of the base money which in turn reflects the holdings of reserve-currency assets by the currency board. Assume reserve-currency country experiences a temporary increase in interest rates. If investors in the currency-board country decide to move their capital out of country to invest in the reserve-currency country for higher returns, they would first convert the local currency or deposits into reserve currency. As a result of capital movement abroad domestic money supply will fall and the overall balance of payments will decrease. Interest rates may rise as the money supply declines. Downward pressure on reserve-currency interest rates and upward pressure on currency-board interest rates will converge to an equilibrium rate. If the economy of reserve-currency country is far larger than the size of currency-board economy, changes in interest rates will be limited to the latter economy.

Thus, equation (1) becomes equation (2), where money supply is determined by the amount of the reserve currency on a one for one basis.

$$M = [(1+c)/(r+c)] (R) \text{ -----(2)}$$

R = reserve-currency assets.

What are the benefits promised by the currency board? The currency board country is supposed to be rewarded with credibility and price stability that are acquired at

the expense of losing monetary sovereignty to the reserve-currency country. However, the process described earlier is not always. If, for instance, rising deficits on current account are not covered by a rise in capital account surplus for some reasons, the process will be short changed unless the board has kept some excess reserves, undermining the board's credibility. Maintaining convertibility of local currency to reserve currency at a fixed rate is normally viewed as an evidence of board's credibility. However, this convertibility does not necessarily guarantee sound economic activities in the board's country, since economic activities in the reserve-currency country will influence those in the board's country, that is, they are contagious as described earlier.

A distinct difference in the central bank system is domestic securities. Under a managed floating or fixed exchange rate system, a central bank would face similar adjustments, but unlike a currency board, the central bank can counteract to influence the contractionary effects of capital flight. Money supply now takes equation (3):

$$M = [(1+c)/(r+c)] (R+S) \text{ -----(3)}$$

S = domestic securities.

When the amount of reserves change, a central bank can sterilize the effects on its domestic money supply through open market operations. If the change is a short term and temporary one, the above offsetting operations will stabilize prices and interest rates. However, if the change in reserves is a fundamental and permanent one, the offsetting actions can worsen the capital flight, as speculators and hot money managers try to bet on an imminent devaluation. We have witnessed such crises in 1994 (Mexican crisis), and in 1997 (Asian currency crisis).

Although the currency board does not hold domestic government securities which prevent it from conducting monetary policy, some board retains limited power to

influence money supply. For instance, Argentine currency board was allowed to hold one third of their foreign reserves in interest-bearing securities which can be sold for extra reserve currency that, in turn, will back the issuing of local notes. In the following section, we will examine the experience of Argentine currency board.

#### 4. The experience of Argentine currency board

In January 2002, Argentina abandoned its 11-year old exchange rate system to devalue the peso and reset it to \$.71. During the 11-year period, the most important goal, stabilizing inflation rates, was fully achieved (see Figure 1). For Argentina this experience of currency board was the 2<sup>nd</sup> one. From 1902 to 1914, it joined the system along with other countries and regions many of which were colonies of the British Empire that invented the currency board system in the 19<sup>th</sup> century <sup>6</sup>.

In March 1991, the Argentine Congress passed the “convertibility law” and established the currency board system. Initially the exchange rate was 10,000 australes for US \$1.00 and in the following year 10,000 australes was replaced by 1.00 peso, setting a parity of \$1.00 = P1.00. Under the law, the central bank (de facto, currency board) was required to keep reserves in the form of gold and reserve currency, or bonds denominated in the reserve currency or gold enough to cover 100 percent or more of base money. The board was allowed to hold up to 1/3 of reserves in bonds of Argentine government, but was prohibited from monetizing these bonds. Thus, the system can not sustain itself in the long run without sound balance of payments and fiscal policies.

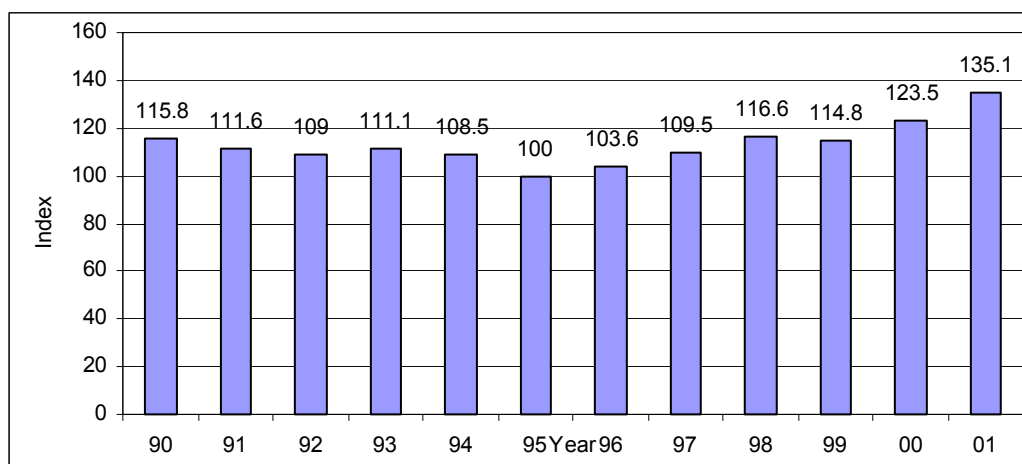
Under the currency board system the chronic hyperinflation began to show an immediate slowdown (see Figure 1), and the annual growth of production reached about 4 percent in 1993-98. The economy also bounced back from the interruption in 1995 when Mexico suffered a balance of payments crisis, but it could not overcome the wild

disturbances caused by a series of the international financial crises which began in Asia in late 1997. (see Figure 2)

Although the currency board was ready to buy the peso for \$1.00, frequent currency crises in different areas of the world have prompted speculation on a possible devaluation of the peso causing strains on the system. Such strains was reflected in the performance of the economy which crossed the point of no return in 1998, and since then the growth rate fell into negative level 3 years in a row through 2001. According to a WSJ article, “Not only is there no inflation, but consumers have so little money that prices across the economy are actually falling.”<sup>7</sup> The contagion rule worked both ways as economic and financial conditions in the reserve-currency country have been transmitted to the currency board country without much delay. For instance, during the latter half of the 1990s, exchange rate movements of the US dollar was not encouraging for Argentina whose balance of payments could not endure serious deficits.

Figure 5 indicates a steady appreciation of the US effective exchange rate beginning 1996. The annual rate of appreciation in the 1996-2001 averaged 6 percent.

**Figure 5. Effective Exchange Rate Indices of the US Dollar**



Source: IMF, “2002 International Financial Statistics Yearbook

This immediately pushed up the Argentine peso in the global markets. As the peso was appreciating, Brazil, a major trading partner of Argentina devalued their real in 1999 to help their international balance. An increase in balance of payments deficits added difficulties to Argentine economy which was already faltering. Section 5 concludes with a summary and discussion of policy implications.

## 5. Conclusion

The 1991 Convertibility Law after effectively connecting Argentina to the US monetary system reined in the chronic hyperinflation rates which peaked at over 3,000 percent in 1989. By 1997 the inflation rate stayed at 0.5 percent, among the lowest in the world. It stimulated the economy which grew steadily through the mid 1990s. The success story of Argentina made Mr. Domingo Cavallo (Minister of Economy) and Mr. Carlos Menem (President) heroes of the country for a while. The currency board was perceived by the public and investors as a credible institute as the government took actions to reinforce its commitment to price stability and economic growth. The government began deregulation, sold state-owned money-losing businesses, cut taxes and red tape, and opened its capital markets.

However, Argentina was not immune to external shocks of falling prices for its agricultural products, and various financial crises experienced in other part of the world. Particularly the 1994-5 Mexican peso crisis has prompted speculation on a possible devaluation of the Argentine peso causing short term interest rates to rise. Even stronger attacks on the peso and the system followed the 1997 Asian currency crisis and 1998-99 Russian and Brazilian financial crises. The financial shocks led investors to reassess the risk of emerging markets and to withdraw their capital from those markets as a precaution. The 1999 devaluation of real by the Brazilian government delivered a serious

blow to Argentina as it has raised the prices of Argentine goods vis-à-vis Brazilian goods. Brazil is Argentina's main trading partner.

Moreover, internal problems were not less serious. First the government's fiscal policy pursued excessive spending and secondly rigid labor laws made it costly to lay off workers. The result was a large fiscal deficit, high unemployment, and a restive population. On June 14, 2001 Domingo Cavallo, now treasury secretary, announced a dramatic change in policy to stimulate its crawling economy. The peso exchange rate for international trades were adjusted to a new formula which include US\$ and Euro, which de facto devalued the peso by about 8 percent. As feared by exchange rate watchers, the currency board's credibility began to erode. For the next 6 months, Argentina's disarrayed policy experiment could not rein in spending, nor reform the labor laws. During the last two weeks in 2001, Argentina had 5 different presidents and suspended payments on its \$132 billion debt. On January 6, 2002, President Eduardo Duhalde announced the termination of the currency board and the peso was devalued to \$0.71. The government failed to maintain the credibility after easy starting early in the 1990s. What went wrong?

1. external shocks – 1995, 1997, 1998, 1999
2. deteriorating balance of payments – caused by appreciating reserve currency
3. weak fiscal discipline
4. rigid labor laws
5. monetizing ability of the currency board
6. built-in stabilization devices were not tested

The economy of the currency board country, with the absence of its own monetary policy, can be as stable as that of the reserve currency country. Track records on price stability of reserve currency countries have been recognized and that is the

main incentive of choosing the currency in the first place. However, lack of fiscal discipline, legal and structural defects found in the currency board country should be resolved internally through political processes. Also deteriorating balance of payment, particularly balance of current account may not be able to provide ammunitions to stand against external shocks like attacks on the currency. The usual prescription of raising interest rates to fend off these attacks can not last long unless the house is kept in order. We should have learned lessons from the successful defense of the Hong Kong dollar (1997), and the collapse of the Thai baht (1997) and Mexican peso (1995) ( Although Thailand and Mexico did not adopted a currency board system, their currencies were pegged to the US dollar.). Now we have one more country to learn from: Argentina.

### References

1. For a detailed account of Bretton Woods system, see “Articles of Agreement of the International Monetary Fund” @ <http://www.imf.org/external/pubs/ft/aa/index.htm>, and Cohen, Benjamin, “Bretton Woods System,” @ [polsci.ucsb.edu/faculty/cohen/inpress/bretton.html](http://polsci.ucsb.edu/faculty/cohen/inpress/bretton.html).
2. See row “b”. of Table 1.
3. a. Exchange arrangement with no separate legal tender. The currency of another country or of a union is used as the sole legal tender.
  - b. **Currency Board:** A monetary regime based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority.
  - c. Conventional Peg Arrangement: The country pegs its currency at a fixed rate to a major currency or a basket of currencies where the exchange rate fluctuates within a narrow margin of less than +/-1 percent around a central rate.
  - d. Pegged within horizontal bands: The value of the currency is maintained within margins of fluctuation around a fixed peg that are wider than at least +/-1 percent around a central rate.



e. Crawling Pegs: The currency is adjusted periodically in small amounts at a fixed, preannounced rate or in response to changes in selective quantitative indicators.

f. Exchange within crawling bands: The currency is maintained within certain fluctuation margins around a central rate that is adjusted periodically at a fixed preannounced rate or in response to changes in selective quantitative indicators.

g. Managed floating: The monetary authority influences the movements of the exchange rate through active intervention in the foreign exchange market without specifying, or precommitting to, a preannounced path for the exchange rate.

h. Independent floating: The exchange rate is market determined, with any foreign exchange intervention aimed at moderating the rate of change and preventing undue fluctuations in the exchange rate, rather than at establishing a level for it.

4. seigniorage: The profit a central bank receives by printing the currency. The profit is the difference between the nominal value of the bill and the cost of printing and delivering the bill.

5. For a derivation of money multiplier, see Jansen, Delorme, and Ekelund, Jr, *Intermediate Macroeconomics*, (West Publishing: 1994), (471)

6. Walters, Alan A and Henke, Steve, "Currency Boards," In Peter Newman, Murray Milgate, and John Eatwell, *The New Palgrave Dictionary of Money and Finance*, (London: McMillan, 1992)

7. Wall Street Journal, "Cavallo, Once Hailed as Argentine Hero, Sees His Dreams of Recovery Turn Sour," December 4, 2001.