

## THE ELUSIVENESS OF AN OPTIMAL EXCHANGE RATE

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*The purpose of this paper is to investigate the proper exchange rate system that serves main macroeconomic goals within increasing integrated global financial markets. The major findings of this paper are that (1) It is unrealistic to assume that one exchange rate regime is the best for all circumstances and for all countries; (2) The choice of pegging the currency to another currency or a basket of currencies depends on the degree of trade concentration with another country (country B) and the currency in which the country's (country A) foreign debt is mostly denominated; and (3) The managed float or free float system is more realistic for a country highly integrated into global financial markets.*

Key words: Fixed Exchange Rate; Currency Board; and Dollarization.

### **Historical Background:**

The speed of financial capital mobility and the consequences of many financial crises during the last two decades led many countries to adopt one of two opposite extreme exchange rate systems, either the floating exchange rate or the hard peg including a currency board. The collapse of the Bretton Woods System of fixed exchange rates in 1971 led to the float of the exchange rate system. Developing countries continue to peg their currency to one of the major currencies or to a basket of currencies or to the IMF's special drawing right (SDR). By the early 1980s, developing countries started to shift their pegs to flexible exchange rate regimes. By 1996, most developing countries described their exchange rates as somewhat flexible, but in reality most of their exchange rates have unofficial set points. According to the World Economic Outlook of October 1997, the number of developing countries that have reported pegged exchange rate declined from 86 in 1976 to 45 in 1996, while the number of developing countries that have reported flexible exchange rates increased from 11 to 52 between 1976 and 1996. The depreciation of the pound during 1976-80 and the appreciation of the dollar during 1980-85 led many countries to switch from single currency pegs to a basket of currencies peg. The inflationary pressure of the 1980s, the external burden of higher international interest rate, the slow down of economic growth in advanced industrialized countries, which impacted negatively on the exports of developing countries led to the balance of payment problems and debt crises. These problems led many developing countries to abandon their fixed exchange rate regime and move toward flexible exchange rate regime as an instrument of stabilization. Financial capital mobility increased the risk of a fixed exchange rate regime for developing countries which lack the ability to implement a sterilization policy.

According to the World Economic Outlook Report (1997) 14 countries in Africa continue to peg their currencies to the French franc, with a one time devaluation of 50% in 1994. The shift to a flexible exchange rate regime to preserve their competitive advantage was the result of the dollar appreciation in the early 1980s because of the monetary contraction and fiscal deficit spending of the U.S. as well as the inflation rates of the developing economies that were higher than the inflation rate of their major trading partners. The increase of interest rates in the U.S. during the early 1980s led to worldwide decline in the growth rate and the rise of debt crises. These developments led many countries to adopt flexible exchange rates. Some countries adopted crawling pegs, where the exchange rate is adjusted based on the pre-set criteria of the relative change in inflation rates. The hyperinflation for some countries led them to adopt the fixed exchange rate regime, which did not last very long for most of them. Also, the financial capital liberalization increased the potential damage of adopting fixed exchange regimes relative to flexible exchange rate regimes. Developing countries lack the depth in their financial market, where a small number of large transactions would lead to large volatility. They need an active man-

agement of their exchange rate. The problem is not intervention, but the time of intervention that will be helpful to reduce the market disequilibria.

Unfortunately, according to a study done by Caramazza and Aziz (April 1998), there was no difference in the performance of the economies that followed the fixed rate and those economies that followed flexible rate regimes. They used inflation, growth, and currency crises as a measuring rod for comparison.

### **Choosing a Regime:**

A small, open economy with exports and imports that represent a large percentage of its GDP and trade that is highly concentrated within a given country, in which the economy is not well diversified, used to be advised to implement a fixed exchange rate regime. This is no longer the only viable advice available to that economy. The appropriate regime at any given time for a given economy is based on the structural characteristics and flexibility of that economy. These characteristics are the size of the economy, the relative importance of the foreign sector, sources of disturbances, adaptability of the economy and the credibility of policy makers.

When inflation is the problem facing a country, then the fixed exchange rate gives the authorities an anchor and credibility of its determination in fighting inflation. The credibility of the fixed exchange rate is essential for impacting expected inflation by market participants. The fixed exchange rate regime subordinates the monetary policy to maintain the fixed exchange rate system. It may reduce government deficit spending to maintain interest rates within a range that will not impact the fixed exchange rate. Still, the authorities can reduce their foreign reserves or accumulate foreign debt, as was the case for Jordan during the second half of the 1980s, until the fixed exchange rate was no longer sustainable.

The flexible exchange rate gives the authorities room to increase revenue by allowing an increase in inflation. This flexibility may undermine credibility especially when movement of prices and exchange rates are widely observed by market participants. The market participants' examination of the inflation rate and exchange rate movements may pressure decision makers to be disciplined in their decisions that have consequences on prices and exchange rate.

After the authorities (country A) decide to pick a fixed exchange rate regime, then the choice of pegging the currency to another currency or a basket of currencies depends on the degree of trade concentration with another country (country B) and the currency in which the country's (country A) foreign debt is mostly denominated. When trade is concentrated with a particular country and most of its debt is denominated in that particular country's currency, then pegging the local currency to their trading partner currency will be appropriate. But when the country's major trading partner's currency is the Euro while its foreign debt is denominated in the dollar, then a basket of the two currencies is more appropriate than pegging to a single currency. The weight of each foreign currency has to be examined thoroughly.

### **Fixed Exchange Rate**

Many countries, especially pegged rate countries, with free mobility of financial capital experienced financial capital market crisis. Many argued that the intermediate exchange rate or what are called soft peg regimes (conventional fixed pegs, crawling pegs, horizontal bands, crawling bands, etc.) are not sustainable. Therefore many countries have chosen one of the two extreme exchange rate regimes, that are free floating, which includes managed floating and the hard peg (fixed) exchange rate regime. Fischer (2001) argued that hard pegs can be sustainable under currency boards. It is possible that Fischer may have changed his view after Argentina's financial crisis of 2001/2002. During the last 15 years, the number of countries that follow the intermediate exchange rate system declined while the number of countries following one of the two corners increased. Most of this increase was on the hard peg side as a result of the creation of the Euro.

When a country pegs the exchange rate, it gains credibility. The domestic private financial and corporate sector will borrow loans from foreigners in foreign denominated currencies. This borrowing will create havoc for financial, corporate, and government finance when there is a financial crisis. The destructive power of financial crisis can be moderated with proper and effective regulations (see El-Mefleh 2003a). Fischer (2001) argued that if the currency is overvalued, then higher interest rates and contractionary fiscal policy are needed to reduce the current account deficit. The contractionary monetary and fiscal policies are viable options when the currency exchange rate disequilibria is small. But if the disequilibria are large because of economic shock, then these monetary and fiscal policy contractions need to be large. The large contractionary policies would be costly to banking, output, and employment. Also, the larger the overvaluation of the currency, the more successful the attack on the exchange rate would be.

Many countries are moving toward liberalization of their financial capital accounts because the perceived potential benefits exceed the expected costs. The two ways to control financial capital are the outflows and the inflows. The control of financial capital outflows may not be effective and may introduce distortion. In order for financial capital controls to be successful, viable and efficient domestic financial institutions, an efficient foreign exchange market, a well-developed bond market, and availability of necessary information are needed before removing financial control. Fischer (2001) argued that the IMF supported financial capital inflows control. One could argue that the IMF may support financial capital inflows control in some cases, but mostly IMF supported free financial mobility of capital. Chile imposed taxes on short-term financial capital inflow more than on long-term financial capital inflows. This inflow control gives the country an ability to have an independent monetary policy and shift the composition of financial capital inflows toward long term investment. However, the tendency of financial control is to become less effective over time, because of the ability of the private sector to exploit any hole in the system.

### **Currency Board Arrangements (Hard Pegs)**

According to Fischer (2001), there were 43 members of the IMF; most of them were small economies except Hong Kong and Argentina. These 43 members had hard peg exchange rate regimes by the end of 1999. Currency boards are usually adopted after a period of hyperinflation and are a way for the monetary authority to regain credibility. The absence of the central bank to act as a last lender may create a real problem if there is a run on banks as did happen in Argentina in 2001/2002. Therefore, fiscal authority has to come up with the resources needed if a run on the banks occurs. Fischer (2001) argued that authors who advocate hard pegs focus on capital accounts and on asset markets. Hard pegs may be particularly interesting to a small economy that is dependent on its current and capital account transaction on a given country. This argument may not hold true for a large economy as was the case for Canada, where Canada benefited from the float of exchange rate.

Djibouti has had a currency board since 1949; Brunei, since 1967; Hong Kong, since 1983; Estonia, since 1992; Lithuania, since 1994; and Bosnia, since 1997. Argentina adopted a currency board in 1991 but abandoned it in 2002. Other islands with a small population and small GDP--such as Cayman Island since 1972, Falkland Islands since 1899, and Faroe Islands since 1940--have had currency boards. Singapore has a central bank and floating rate but has foreign reserve equal to 100% of the monetary base since 1973. Currency boards follow an extreme fixed exchange rate regime where the board in its extreme theoretical form cannot expand credit to the government or the banking system. The interest rate will be determined by the market. The currency board needs to have sufficient foreign reserves to honor its commitment to exchange its monetary liabilities at a fixed rate. The currency board can act as a lender of last resort in a limited manner if it has excess reserve, which requires the viability of the banking system and flexibility of prices and wages. Developing countries have pegged their currency during the last 30 years because of their experience in high inflation rates, fiscal deficits, deterioration of balance of payments, relatively large foreign debt, and lack of confidence by investors. Depreciation of the currency at a lower rate than the difference of the inflation rate between the domestic economy and the inflation rate of the economy of foreign currency that the exchange rate was pegged lead to real appreciation of the local currency. The appreciation of the local currency leads to the increase of the prices of

nontradable goods relative to tradable goods, which causes the local producers to expand production in nontradable goods and worsen the current account balance. The worsening of the current account deficit that is financed by financial capital inflows will lead speculators and investors to expect depreciation and consequently financial capital outflow and a balance of payment crisis. Therefore, peg has to be abandoned in favor of devaluation. This devaluation may lead to dollarization, which is common in developing countries that force economic instability, inflation and the desire of local investors to diversify their portfolios. The weakness of any currency board lies in the lack of foreign reserves to cover all money supply (M3) to deal effectively with potential demand in the case of capital flight. The currency board requirement is that domestic currency liability has to be fully backed by foreign reserves, which will eliminate potential crisis. Currency boards allow interest rates to increase when there is speculative attack in order to stabilize and discourage withdrawal. The interest rate mechanism will work as long as confidence in the stability of the exchange rate exists. But if the confidence in the stability of the exchange rate vanishes, then the currency board will be abandoned like any pegged exchange rate, as was the case for Argentina in 2001/02.

### **Dollarization**

Globalization has produced new challenges for finding an appropriate exchange rate regime, one that is compatible with the macroeconomic objectives of a developing country. Some argue for full dollarizations, or euroization, where the country adopts a currency of another country as legal tender. Financial contracts by many developing countries with the rest of the world are frequently denominated in a foreign currency. Also, some residents hold foreign currency in cash, and some hold foreign currency in their deposit/saving accounts inside or outside their country. The benefit of full dollarization comes in the form of reduced risk premium by lowering the risk of a substantial devaluation and consequently reduces the cost of borrowing by the government and private investors; unfortunately, no empirical evidence exists to support this view. Others argue that dollarization may attract foreign investment and produce better economic growth, but no empirical evidence substantiates this assertion either.

The demand for foreign currency comes in the form of currency and asset substitution. The currency substitution as a means of payment comes as a result of hyperinflation. According to Berg and Borensztein (December 2000), the use of foreign currency continues to persist even after hyperinflation no longer exists. Asset substitution, where assets are denominated in foreign currency, provides diversification and insurance against risk in the form of long term recession/depression or inflation that may face a developing country, which is a common phenomenon.

The high financial capital mobility makes a fixed exchange rate vulnerable to speculative attacks, even under currency board arrangements, as was the case for Hong Kong 1998 and Argentina 1995 and 2001/2002. In January 2000, Ecuador adopted the U.S. dollar as its legal tender. Getting rid of dollarization will not be as easy as getting rid of currency boards. The loss of seigniorage revenue is equal to the increase of the money base and the gross profit of the central bank's foreign currency reserves, government securities, and loans to private banks. The monetary base is equal to the sum of currency in circulation and bank reserves. Full dollarization may reduce the interest rate on government bonds, but the difference in the quality of the bonds will continue to create different interest rates paid on U.S. bonds, for example, and the developing country's bond. Even though Panama has full dollarization that eliminated currency risk, this did not lead to a convergence of the interest rate on Panama's bonds to the interest rate of the U.S. bonds. Sovereign risk may come in the form of government default, imposing financial capital controls and stopping private sector accesses to foreign currency.

Full dollarization will lead not only to seigniorage loss in the form of buying back all domestic currency but also to the loss of issuing new currency every year after that. If the economy lacks the reserves of foreign currency, then full dollarization implies another cost where the country will be forced to accumulate that foreign reserve through current account surpluses. This is not a viable option for most developing countries that suffer a chronic current account deficit. Full dollarization is neither a protection from financial and banking crisis nor is it a guar-

antee for economic stability if there are weaknesses in the financial institutions or a weakness in the fiscal position (deficit and debt problems) as was the case for Panama. Large inflows and outflows of funds create boom-bust cycles.

Full dollarization will contribute to a greater economic and financial integration with the country whose currency is adopted. Dollarization should not prevent the central bank from providing short term loans or assisting a bank in distress by providing liquidity from its excess funds or from having access to credit from abroad. But a sudden run on the entire banking system that is fully dollarized will render the central bank unable to handle that kind of crisis because of its inability to be the lender of last resort. Dollarization eliminates a balance of payment crisis or currency crisis because of lack of possible depreciation. But dollarization may not be politically viable because of loss of seigniorage revenues, lack of independent monetary policy, lack of exchange rate policy and the inability of the central bank to be the lender of last resort.

### **Fear of Floating:**

Many countries who claim that they follow a free floating exchange rate regime are in fact intervening in the market by changing interest rates or the amount of foreign reserves to affect the exchange rate. Calvo and Reinhart (2000) claim that countries are not moving toward free floating as is claimed by other researchers because of the impact of the exchange rate on inflation, allocation of resources, wealth of local residents, and policy impact. According to Fischer (2001), countries with a floating exchange rate, even advanced industrialized countries (except the U.S.), use the exchange rate and interest rate to guide their monetary policy. Countries that use inflation targeting for monetary policy will have to take exchange rate movement into consideration because of its impact on expected inflation. The contractionary monetary policy is pursued to reduce the inflationary impact of exchange rate depreciation.

### **Intermediate Exchange Rate**

Williamson (2000) rejected the current prevailing wisdom of emerging economies following one of the two extreme regimes of exchange rates while ignoring the benefits of the intermediate exchange rate regimes. The intermediate exchange rate regimes are crawling pegs, target zones, crawling bands, adjustable peg of Bretton Woods, and heavily managed floating. The target zone is often called crawling bands or band, basket and crawl (BBC). The prevailing advice--to refrain from intermediate regimes because of mobility of financial capital--may not be appropriate for every underdeveloped country. Corner solutions to exchange rates are not an optimal solution for sustainable economic growth. It is unrealistic to assume that any exchange rate regime is the best for all times and for all countries because no regime is immune from currency crisis. The intermediate exchange rate regime is vulnerable to speculative attacks, but also the fixed exchange rate regime is not immune to devaluation. The problem with the fixed rate regime is that it reduces the incentives of the private sector to insure (hedge) their borrowing from abroad. This under-insurance of foreign debt denominated in foreign currency will lead to mass bankruptcies of financial and nonfinancial firms after the currency devaluation.

The band, basket and crawl (BBC), is where the band would be established within 5 - 20%. This band will give central banks the ability to adjust the center of the band according to the fundamentals of the economy, practice viable counter-cyclical monetary policy, and deal efficiently with temporary financial capital inflow. The basket is where the currency would be pegged to a basket of currencies rather than a single currency when foreign trade of the country is diverse. The weighted average of the exchange rate, adjusted for inflation, should be based on trade elasticity. The use of trade elasticity is based on the recognition that trading partners are competitors, too. The crawl is used to reduce inflation over time or to neutralize differential inflation. The crawl can accommodate productivity changes vis-a-vis other trading partners by accomplishing real appreciation or depreciation over time. Even a well-managed BBC will not prevent currency crisis as a result of contagion. Also, financial crisis can be the result of a balance of payments crisis or short-term denominated debt with the failure to hedge or self-fulfilling expectations or pre-existing weakness in the banking sector or weakness in the fundamentals such

as high unemployment rates. Even though a well-managed BBC is not immune to contagion, still some countries are not integrated into the international financial capital market and therefore can benefit from the intermediate exchange rate regime.

Williamson (2000) argued that no economy has abandoned its currency board when faced with speculative attack similar to South East Asian economies of 1997/98. Unfortunately, Williamson's argument is no longer held to be true. Even though Argentina did not abandon its currency board during a 1995 speculative attack, it did abandon its currency board under a speculative attack in 2001/02. However, Hong Kong's currency board was not abandoned under speculative attack because of the government reaction to the attack and defeated a double play of speculators in 1998. Speculators sold Hong Seng index short, and they sold Hong Kong currency to force interest rates up and consequently stock prices down. The double-play strategy would guarantee speculators profit even if exchange rates stayed the same. Speculators were surprised and upset when the Hong Kong government bought close to 10% of the index. The government then sold most of it by the year 2000 when the index value increased substantially making profit for taxpayers.

India, after liberalization in 1991, achieved higher economic growth relative to the period before liberalization, while New Zealand experienced the opposite for seven years after its liberalization in 1984. Some of the difference in the results of liberalization for India and New Zealand is due to the catch-up growth factor in India, but most of the difference is due to India's management of its exchange rate, monetary policy, and fiscal policy. This intervention by India was intended to maintain its competitive advantage and control of capital inflows. From 1997, India followed the monitoring bands approach for its exchange rate. The central bank is allowed but not required to intervene in the exchange market if the exchange rate goes outside the announced band of plus/minus five percent of the estimated aligned exchange rate. Not requiring intervention reduces the probability of speculative attack. Southeast Asian economies had fantastic growth rates before 1997/98 because of their central banks' intervention in the exchange market in order to maintain competitiveness.

Under a liberalized financial capital account and free floating exchange rate, any country with a potential high growth rate would attract financial capital inflow and domestic currency appreciation. The increase in the value of domestic currency would undermine that country's competitive advantage in tradable goods and redirect funds toward consumption and nontradable goods, which would lead to a balance of payments crisis (El-Mefleh 2003b).

Misalignment of the exchange rate will bring profit to speculators when there is a successful currency attack. But currency that is aligned correctly will not bring profit to speculators as a group. Speculative attack on currency aligned correctly will make the currency undervalued. Then, if speculators tried to buy the currency back to collect their gain, it would push the currency value up and eliminate their gain, which would make it a zero sum game for the speculators as a group.

### **Final Remarks**

A sound exchange rate regime is a necessary but not a sufficient condition for sustainable economic growth and stability. Experience tells us that the market does not provide an optimal solution for the exchange rate all the time. The overvaluing and undervaluing of a currency are common since the beginning of the floating exchange rate regime in 1971. The dollar was overvalued during most of the 1980s. Also, undervalues and overvalues for the dollar, yen and euro were observed over the years.

The fixed exchange rate is not immune to misalignment (overvalued or undervalued). Under a fixed exchange rate, the undervaluing of currency leads to an increase in the value of the debt denominated by foreign currency and increases inflation when imports represent a significant portion of GDP. On the other hand, overvalued currency leads to an accumulation of foreign debt and reduces the incentives to invest in the domestic economy, especially in tradable goods. Consequently, this either creates a balance of payments crisis or slows the growth

of the economy.

Neither a free floating nor a currency board will be able to deal with all the problems of globalization. There is always a trade off between exchange rate stability and the benefit of flexibility. The monetary authority has the ability to pick the system from a range between dollarization on one extreme to free floating on the other extreme. Frankel (1999) discussed nine regimes. These regimes are currency union (European economic and monetary union), currency board (Hong Kong), truly fixed (some countries in Africa), adjustable peg (Brettonwoods system), crawling peg (fixing exchange rate to the inflation rate), basket peg (for countries that have highly geographically diversified trade), target zone (exchange rate of the European monetary system during 1979-1999), managed float, and true float. Most countries that classify their exchange rate as floating frequently intervene in the exchange market, except the U.S. where intervention seldom occurs. Also, countries that classify their exchange rate as fixed frequently devalue their currency for realignments. The decline of countries in the intermediate regime is explained by some as the impossibility of having exchange rate stability, independent monetary policy, and free financial capital mobility at the same time. If we accept the idea that free financial capital mobility is irreversible, then the choice for the country is between an independent monetary policy or an exchange rate stability. One could argue that a country could have a combination of some degree of exchange rate flexibility and limited monetary independence. Others might argue that having control over financial capital mobility is possible, too.

The advantages of a fixed exchange rate are that the cost of transactions and risk goes down; it prevents competitive depreciation and appreciation; it provides the monetary policy with a credible nominal anchor and signals that future expected prices will be lower. This is especially true in the case of a country with a history of high inflation. While the main advantage of a flexible exchange rate is the ability to pursue an active, independent monetary policy in order to achieve macroeconomic objectives, the disadvantage of flexible exchange rate regime is the exchange rate risk; this can be hedged for a cost when trade presents a large share of GDP (high marginal propensity to imports and exports). Therefore, the exchange rate uncertainty is an important issue for that economy.

If labor can move freely to work in other economies, then recession will lead to labor migration to other countries for job opportunities and no need for a flexible exchange rate system. But if these other countries are in a recession also, then expansion of money supply by all of them will not impact the exchange rate. A fixed exchange rate between these countries' currencies will be a viable option. The proper exchange rate system, which reduces the probability of speculative attacks, varies with the level of a country's economic integration into global financial markets. For example, a fixed exchange rate regime is more appropriate for a country not integrated into global financial markets, while the intermediate exchange rate regime is more suited for the moderately integrated country. The managed float or free float system is more realistic for a country highly integrated into global financial markets. Unfortunately, the appropriate exchange rate--still an elusive goal--needs thorough and careful consideration before the authority decide to adopt it because of its impact on inflation, allocation of resources, wealth of local residents, and potential risk of financial crisis.

## Conclusion

If the market behaves in an efficient and rational manner, then free floating is the proper policy to follow. If the market occasionally produces irrational and inefficient outcomes (market failure), then managed floating will be an appropriate policy. The actual exchange rate regime chosen by the authority will have consequences in the economy. Most countries will not follow a prescribed exchange rate regime due to different circumstances facing the economy for every external shock. Under developed economies are subject to external shock of investor sentiment and market participants' perception of risk. Also, business cycle, monetary policy, and fiscal policy of developed countries impact the economies of developing countries and their exchange rates. The choice between floating and hard peg depends on the inflationary history of the economy and its own characteristics. Finding the optimal exchange rate that serves many economic objectives is not an easy task. The appropriate

regime at any given time for a given economy should be based on the structural characteristics and the flexibility of that economy.

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