

## A Quick Primer on Foreign Currency Crises

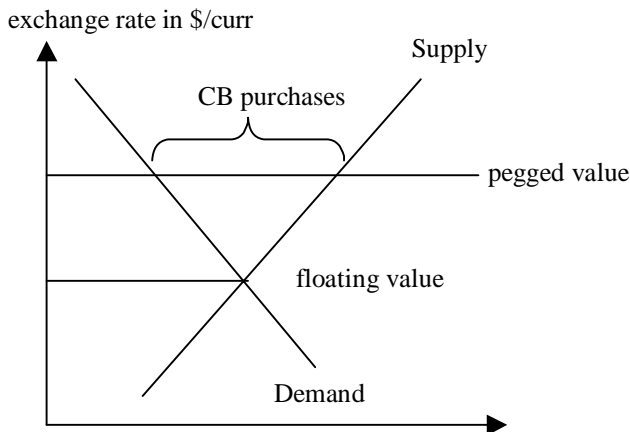
### What exactly is a currency crisis?

Foreign currency crises are almost always speculative attacks and involve massive movements of capital in anticipation of a huge and sudden future movement in the value of a foreign currency. This almost always involves a currency which has been pegged to the value of another currency. Under floating exchange rates the value of a currency changes continually and movements are usually comparatively gradual. When a country pegs its currency, however, the value stays constant for long periods of time. When a change in price does occur it tends to be a major move where the currency is devalued by a large percent.

Central Banks tend to hold two major types of assets: foreign reserves and domestic assets. Foreign reserves are assets which are not denominated in the country's own currency, usually they are denominated in some "hard currency", such as dollars, euros, yen, or SDRs (a basket of currencies defined by the IMF). Domestic assets are usually government bonds. Most central banks hold a much greater proportion of domestic assets than foreign reserves. The liabilities that central banks owe are mostly of two types: banknotes and reserve deposits. For our purposes these two types of liabilities are pretty much the same, they are promises to pay something on demand. If a central bank is pegging its exchange rate to the dollar, it guarantees to be the buyer or seller of last resort, and hence has agreed to trade domestic banknotes and reserve deposits for dollars, on demand.

The supply and demand for the currency will fluctuate from day to day, and if the pegged value for the exchange rate is "right", then some days the central bank will be a net buyer of its own currency and other days a net seller. Hence, the stock of foreign reserves it holds will fluctuate from day to day also. If, however, the pegged value is "wrong", the central bank will be forced to buy continually or sell continually for several days in a row. If the pegged value is too low for example there will be an excess demand for the currency and the bank's foreign currency reserves will rise. At the same time the bank will be creating new money to exchange for dollars. If this continues for a long period of time, it will lead to inflation, but not a currency crisis.

If the value of the peg is too high, however, there will be an excess supply of currency and the central bank will be the one buying up the excess. This will lead to an decrease in foreign currency reserves and a drop in the money supply. Recall now that foreign currency reserves are only a part of assets a central bank holds. What happens if the bank continually sells off its foreign currency reserves while maintaining a pegged value? If the excess demand continues for long enough the bank will run out of foreign currency reserves. At this point the bank will be unable to maintain the peg and the currency will "float", that is it will jump down to the market clearing level, resulting in a sudden and large drop in the value of the currency.



Now imagine you are a US resident who owns assets denominated in the domestic currency. What do you do if you think that the central bank's holdings of foreign currency are about to run out? Would it not be prudent to exchange these assets now for dollar denominated ones, before they suddenly drop in value when the exchange rate falls? Would you be the only one thinking this? As a result of this type of thinking, the supply of domestic currency will rise dramatically as investors rush to liquidate domestic currency assets and exchange the money from the sale for dollars. Home resident would be thinking similarly. If they can exchange their domestic currency assets for dollars then they will make a sudden profit when the devaluation occurs. Both these phenomena will drastically increase the supply. Hence there could be a sudden flood of domestic currency into the central bank and the foreign reserves will fall all the more rapidly. This sudden stampede of funds is called a speculative attack, and it can be self-fulfilling. That is, an otherwise stable currency might be forced to devalue simply because investors believe it is in danger of devaluation.

Note that expectations play a very important role in crises like these. Whenever a bank has low levels of foreign currency reserves, it will be especially vulnerable to attack. Anything that might set off a drop of reserves could ignite an attack – political unrest, bad economic news, corruption in the banking sector, or poor banking practices, attacks on other currencies, etc. can all lead to a speculative attack.

Speculators are often accused of causing or exacerbating a foreign currency crisis. How could this be so? For example, how could a speculator with no holdings of domestic currency be an important player in this market when he has nothing to sell? Speculators do so by trading in forward markets. That is they make agreements today to buy or sell a currency in the future. A trader who owns no domestic assets, but agrees to sell a domestic asset in the future is said to have taken a “short position”. If the trader believes that a devaluation is imminent he will sell the currency short. If he has guessed correctly, then after the devaluation occurs he will be able to buy domestic currency cheaply in the future and sell it at the high forward price he has agreed on today, making a nice profit. If he is wrong, and the devaluation does not occur, then he will have to buy at the pegged value and will most likely make a loss.

If enough people behave as the speculator above the forward price of domestic currency will fall with the increase in supply from these speculators. People considering buying domestic currency today will look at this and may decide to wait and buy later when the price is lower. This will reduce the demand for domestic currency today and strengthen the attack. In fact if the difference is large enough, demand for a currency could easily drop to zero, in which case the central bank must buy all the currency offered for sale at the pegged price.

What steps can a central bank take when faced with an attack? Here are a few options:

- 1) Devalue immediately – this lessens the outflow of foreign reserves as the attack does not have time to drain them away. It is important however to devalue sufficiently, so that the attack does not continue.
- 2) Float immediately – this is similar to a devaluation, but allows the bank to observe a market clearing price before choosing a new pegged value. Due to continued speculation and uncertainty, it may take a while for the market to settle down sufficiently to observe the real stable market clearing price.
- 3) Obtain additional funds and defend the existing peg. The IMF is the traditional source of these funds, but they may not be sufficient to stave off the attack. The resources of the IMF are small compared to the volume of funds that flow through the foreign currency market and hence a persistent attack will overwhelm even the IMF. Remember, also that the longer you unsuccessfully delay a devaluation the more foreign currency reserves you will lose and the harder it will be to maintain any subsequent peg. Still a successful defense of a peg avoids lots of problems down the road that other policies will force you to confront.
- 4) Get help from the country that issues the currency you have pegged to. The US Federal Reserve, for example, can print an unlimited supply of dollars. Hence they could loan you any amount needed to stave off the attack. The foreign central bank may not wish to do this, however, as it can lead to inflation in their country if they print too many dollars.

- 5) Defend the peg by decreasing your own money supply. Central banks also hold domestic assets. You could sell some of these and then use the funds to buy the foreign currency you need. This amounts to swapping domestic currency for domestic bonds. However, since people don't want domestic assets in general you may need to drastically lower the price of these bonds in order to sell them at all and that means a big loss for the bank. If you are willing to do this, you will also drastically lower your own money supply and that could cause a recession. However, if you do reduce the money supply, your currency will become scarcer and hence more valuable and that may help you maintain your peg. Since it takes time to sell bonds, especially during a crisis like a speculative attack, it may often be too late to do this if you wait too long.
- 6) Impose restrictions on the flow of capital or "capital controls" you can maintain the official exchange rate but ration the foreign exchange. Investors will still try to sell domestic currency and buy foreign exchange, but they will be unable to do so and the flow of funds out will stop very quickly. This will lead sooner or later, to a black market for your currency, however, as resourceful people find ways around the restrictions by avoiding official and legal means of buying and selling currencies. The costs of enforcing the restrictions can quickly escalate. In addition, this tactic may scare off future investment.

What are the long-run effects of a devaluation?

Devaluations make your country's goods look cheaper. This will lead to increased exports and may boost the economy. They also make foreign goods look more expensive and that hurts firms that import materials. These effects probably do not last very long, because a devaluation will also result in more money being created as the remaining foreign reserves are now worth more and can back up a larger amount of domestic money. This will ultimately lead to inflation and that will erase the temporary competitive edge the devaluation gave.

In addition, there can be effects on investment, especially for small economies. A devaluation makes investors more wary as they now know that the supposedly fixed exchange rate can suddenly fall. They may view investment in your country as being riskier and that means higher costs of capital. This lack of investment can be even more devastating as the drop in money supply that comes with a successful defense of a peg.

What about a currency board; what does that do?

A currency board (such as in Hong Kong) surrenders control of the money supply to the goal of a fixed exchange rate. Unlike a central bank, which holds domestic assets, a currency board holds only foreign reserves. This makes it impossible for a speculative attack to succeed since the only way to run out of foreign reserves is to call in every last unit of domestic currency. In other words, every single unit of domestic currency is backed 100% by the appropriate amount of foreign currency.

Currency boards are not impervious to attack, however, as speculators may be speculating on the politics backing the board. Maintaining a currency board effectively surrenders control of the money supply to the central bank issuing the currency you peg to. Sometimes this means that the currency board will be lowering the money supply because the foreign money supply has dropped, even though this is not good for the domestic economy. In these cases there is inevitably increased pressure on the government to dissolve the currency board and conduct monetary policy independent of the foreign country. A speculator could gain if he sells short and the currency board is dissolved. Hence there can be attacks even on currency boards. Note, however, that only a lack of political will can lead to a devaluation in this case. A truly committed government need never devalue if it has a currency board, though there can be economic costs to maintaining the peg.