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Rasa Dale

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Bank of Finland
Institute for Economies in Transition (BOFIT)

PO Box 160
FIN-00101 Helsinki
Phone: +358 9 183 2268
Fax: +358 9 183 2294
bofit@bof.fi
www.bof.fi/bofit

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Rasa Dale*

Currency Boards

Abstract

This paper discusses currency boards, beginning with their history. Included in the paper is a discussion of how a currency board works and the advantages and disadvantages of the currency board, particularly when compared to a more traditional central banking style. The Estonian and Lithuanian currency boards are described and discussed as particular cases of currency board institutions.

Keywords: currency boards, Estonia, Lithuania

* Rasa Dale of the University of California-Davis prepared this paper while visiting researcher at the Bank of Finland.

1 History behind currency boards

Currency boards are not a new phenomenon in economics. The currency board arrangement was set up in principle in the Bank Charter Act of 1844, where the Issue Department of the Bank of England acted as a currency board. For this reason, many of the British colonies in Africa, Asia and the Caribbean used currency boards at the introduction of their own currencies. However, as colonies became independent in the 1950's and 1960's, they replaced currency boards with central banks¹, which were distinct in that commercial banks were required to hold reserves as deposits at the central bank, and the government could create money and finance government deficits by borrowing from the newly created central banks.² The most well-known currency boards, which vary in degree, include

Hong Kong, Singapore, Argentina, Estonia, and most recently, Lithuania.

2 What are currency boards

Currency boards are institutions which are solely responsible for the issuance and redemption of the currency of the country. The currency boards in existence today are not pure currency boards. In the most extreme case, called an orthodox (the most pure) currency board, there is no central bank, and the supply of base money depends completely on the balance of payments and subsequent changes in foreign reserves. A balance of payments surplus would lead to an expansion of the money supply and a deficit would decrease the money supply. The more common currency board arrangement is a hybrid between a pure currency board and a more traditional central bank. In these hybrids, the central bank and currency board coexist but have very separate responsibilities.

The main characteristic of the currency board is that the board is always willing to exchange domestic currency for the foreign reserve currency at the designated fixed rate. In order to guarantee this exchange, the currency board must

¹ The New Palgrave Dictionary of Money and Finance, (1992).

² With some currency boards in existence today, reserve requirements are in effect, and reserves must be held at the central bank.

hold enough foreign reserves to at least equal the value of the domestic currency in circulation and other liabilities which are guaranteed by the currency board.

3 How currency boards work

According to Adam Bennett (1992), there are four main operating principles which must be addressed before initiating a currency board. The first decision to be made is whether to only back bank notes or whether to also back other central bank liabilities. The orthodox or pure currency board only backs bank notes with foreign assets. The next question is a decision of how much backing to provide – if there is a problem with credibility, then the amount of foreign reserves backing the domestic money supply should be at least 100 %. If the country does not have sufficient reserves to fully back the initial amount of money supply, then the country can fractionally back the outstanding stock and 100 % back any issuance of new currency.³ Most of the transition and developing countries have a problem with credibility, so 100 % backing is fairly common. Since credibility is of great importance, the decision of which anchor currency to choose is a crucial one. A country should choose a currency which is stable and the economy of the anchor country should be healthy. Another factor in choosing a currency is that the country whose currency serves as an anchor be one of the main trading partners. In addition, single currencies are usually preferred to baskets because of the transparency of the link.⁴ The final issue to be determined is who will have access to the currency board, such as individuals, banks or enterprises. The operating principles show how to set up the currency board, however, it is also important to know how the currency board works.

In a currency board, money supply is directly determined by the inflow of foreign capital and currency. As with any fixed exchange rate regime, the money supply is endogenous, and depends on the level of foreign reserves and domestic credit. Unlike most fixed exchange rate systems, currency boards do not extend domestic

credit to governments or enterprises. This lack of domestic credit leads to a one-for-one relationship between foreign reserves and domestic money supply. However, foreign reserves are not the only factor determining money supply, as Sepp (1995) points out. Domestic money demand plays a significant role in the growth of the domestic money supply.

Individuals can satisfy their money demand by holding either domestic or foreign currency. The stronger and more credible the domestic currency, the lower the demand for foreign currency. If there is an increase in the amount of foreign reserves this will lead to an increase in the domestic money supply, but only to the extent that individuals desire to hold domestic currency. In a case where there is dollarization, individuals will wish to hold the foreign currency rather than domestic currency. The increase in foreign reserves would be accompanied by an increase in foreign currency in the country – held by individuals. In this case, the domestic money supply would not increase because the individuals (if they have the option to choose) prefer to hold foreign currency rather than domestic currency. An increase in domestic money supply would occur only if individuals actually had a demand for the domestic currency. For this relationship to hold between domestic money demand and supply, the capital and current accounts must be free of any type of controls.

Consider a positive money demand shock which is exogenous, such as an increase in the foreign price level. This increase in foreign prices leads to a decrease in the relative domestic price, increasing the demand for domestic goods because they appear cheaper⁵. The result would be a current account surplus, since exports would look more attractive to foreigners, and imports would look less attractive to domestic residents. If we assume that the capital account remains the same, then there would be a balance of payments surplus. The demand for domestic goods would lead to an increase in the amount of foreign reserves, as foreigners sell their currency to buy domestic currency. The result of an increase in

³ Osband and Villaneuva, (1992).

⁴ Bennett, (1994).

⁵ This is assuming that foreign and domestic goods are substitutes, which may not be the case, since Western goods are sometimes assumed to be of better quality, and then are strictly preferred over the domestic version.

foreign reserves would be an increase in the domestic money supply, if foreign currency is not preferred to domestic currency, since the exchange rate is not allowed to appreciate. In this way, the positive domestic money demand shock drives the money supply to increase.

Most of the transitional countries have witnessed very high inflation, but the source, at least in countries with currency boards, has not been excessive money supply growth. In fact Sepp (1995) states that the inflation seen in Estonia can not be explained by the changes in money supply: "Money supply is not to blame for the surge in prices. With the currency board arrangement, supply is determined by demand".⁶ Instead, Sepp argues that inflation is usually the result of differentials in productivity growth and wage parity of tradables and nontradables. However, Sepp (1995) also continues by saying that if in the short-run there is disequilibrium between money demand and money supply, that this could result in an acceleration of inflation, but that due to the endogenous nature of the money supply there will not be long-run impacts on inflation. In the case of a money demand shock, the effect is temporary, lasting only until the money supply increases to equilibrate the money market, with the result being that the balance of payments is zero.

In terms of output, the initial money demand shock may lead to a temporary reduction along with higher interest rates, but when the money supply increases, output will be returned to the initial level⁷. On the other hand, both fixed exchange rates with sterilised intervention and floating exchange rate regimes will experience a fall in output without complete recovery following a positive money demand shock. Although the currency board system deals well with money demand shocks, the same can not be said for other shocks.

Fixed exchange rate regimes with non-

sterilised intervention, such as the currency board system, are not as flexible when the economy experiences external shocks, such as export or capital shocks. Due to the direct relationship between foreign reserves and the domestic money supply under a currency board, there is often fear that excessively large inflows of capital will cause the domestic money supply to continually increase resulting in hyperinflation. However, as stated by Sepp (1995): "The capital inflow and growth of foreign currency denominated liabilities could (but must not) be a factor increasing the demand for domestic currency. So the link between the money supply and foreign reserves is mediated by the demand for money"⁸. Money demand is of vital importance in the creation of money supply under a currency board. The currency board as stated can not increase the domestic money supply beyond the reserves of foreign assets. However, this is not to say that the currency board completely has its hands tied when it comes to the economy, just that there are some restraints.

Currency boards have the option to use both direct and indirect methods of influencing the money supply. The direct way would be to administratively set ceilings on the interest rates of commercial banks or set other limitations which must be satisfied. "The problem which is encountered is that direct intervention counteracts the market influences which would affect the interest rates. Also, as Bennett (1992) points out, any attempt by the government to control interest rates would lead to a collapse of the currency board. This leaves the monetary authorities with the only other option which is to use more indirect methods, such as reserve requirements, open market operations, and other instruments.

One instrument which is not usually used by currency boards is open market operations involving government securities. A currency board should not use government bonds to back domestic currency. If the currency board were to purchase government bonds, they would be backing the domestic money supply with assets denominated in the domestic currency, which would undermine the currency board. In this way, a currency board arrangement eliminates the possibility of financing the deficit through the

⁶ Sepp (1995), "Inflation in Estonia: the Effect of Transition", p. 26.

⁷ That is if we ignore the asymmetry argument given in Karras (1996) which showed that monetary policy effects on the economy were asymmetric. Output was significantly affected by decreases in the money supply and increases in the interest rate, but not significantly affected by the growth of money supply.

⁸ Sepp (1995), "A Note on Inflation under the Estonian Currency Board", p. 43.

printing of money. Due to a lack of central bank funding, the government must finance the deficit through commercial banks. Unfortunately, the private sector in most transitional countries already faces a shortage of funds so crowding out could be quite severe. As a result, most governments with currency boards have a balanced budget – or very close – and in some cases even have budget surpluses.

Another indirect instrument sometimes used to stimulate the economy is the discount rate, which is the rate that the central bank offers to the commercial banks. In most currency boards, this also is not a possibility, since the central bank under a currency board regime will usually only lend to commercial banks in very extreme cases, when the banking system as a whole is being threatened by a lack of liquidity. If lending does occur, the amount should not be in greater than the amount of the excess foreign reserves (assets which are not being used to back the currency). In most currency boards, the lending is done one case at a time, and there is no lender of last resort since the central bank may not want to deplete the entire amount of excess reserves to cover the liabilities in the banking sector. Most, but not all, currency boards have eliminated the lender of last resort, one exception is Lithuania.

One of the best tools for a currency board to use is the reserve requirement. This method allows the monetary policy to subtly influence the commercial banks to change their actions, while still allowing the market influences to dominate. As with other monetary arrangements, a decrease in the reserve requirement will lead to an increase in the money supply. Changes in reserve requirements lead to changes in the amount of currency in circulation. Osband and Villaneuva (1992) show a typical T-account for a currency board. Listed are the assets and liabilities of the currency board (for Estonia this would be the Issue Department), the monetary agency (equivalent to the Banking Department of Estonia) and the commercial banks:

Currency board:		
Assets		Liabilities
Foreign Reserves	=	$C^p + C^b + C^{ma}$

Monetary Agency:		
Assets		Liabilities
$C^{ma} + NFA^{ma} + BOR$	=	RES

Commercial Banks:

Assets		Liabilities
$C^b + RES + NFA^b + L\&I$	=	$D + BOR$

where C^p is currency held by the public, C^b is currency held by banks and C^{ma} is currency held by the monetary agency. NFA^{ma} is the amount of net foreign assets that the monetary agency holds, RES is the reserves deposited by commercial banks, BOR is the reserves borrowed by the banks, and D is deposits, and L&I is loans and investment. If the reserve requirement is decreased, reserves will decrease. Most likely the new excess reserves will be used to loan out to the public since that is the way commercial banks make profits. In this case the excess reserves refers to the assets in excess of the reserve requirement which applies to both foreign and domestic deposits held at the commercial bank. In the case of foreign currency deposits, the reserve requirement must also be denominated in the foreign currency. The decrease in the reserve requirement leads to a decrease in some portion of the monetary agency assets. If we assume that the net foreign assets held at the monetary agency and the borrowing of commercial banks both remain constant, then the decrease in reserves leads to a decrease in the amount of currency held by the monetary agency. If foreign reserves in the currency board department remain unchanged, then the currency will be moved from the monetary agency to either the public or to banks. The currency board can use this method to manipulate the economy and either inject or withdraw liquidity by changing the reserve requirement. However, the reserve requirement is not a foolproof way in which to influence the economy. One of the major obstacles to using this instrument would be if the commercial banks are already holding more than the required reserves, which was seen quite often in the beginning of the reforms. These banks chose to hold their excess reserves in interest-free accounts because the risk of lending to other banks was considered to be too high. In this case, a decrease in the reserve requirement would have no effect on the domestic money supply since the banks would already be satisfying more than the reserve requirement. As one author noted, the result would be like pushing on a string. Besides the reserve requirement central banks can use an agency to provide discount facilities, if banks are suffering from a liquidity crisis.

There are other indirect instruments besides the reserve requirement which can be used by currency boards to influence the economy and the liquidity of the banking system. The most well known indirect method is through the use of open market operations, which are the sales or purchases of securities by the central bank. Most often these are government securities, so that the liquidity provided allows a means of financing the deficit. As discussed earlier this is not an option for most currency boards. The central bank has two means by which it can influence the liquidity of the banking system. The first option is to buy and sell their own securities. The second option is to use secured lending which are short-term credit facilities offered against collateral. Both of these options can provide commercial banks access to temporary liquidity when it is needed.

Most currency boards hold reserves in excess of the amount required to back the domestic currency. In case there is some emergency, such as a sudden capital outflow, or an extremely large current account deficit, the central bank should have extra foreign assets to prevent a sudden contraction of the domestic money supply. Another way in which the country may be able to withstand a sudden drop in foreign assets would be to borrow internationally, particularly if the excess foreign reserves are insufficient.

In addition to borrowing internationally, allowing international banks to operate in the economy should help to increase the level of foreign reserves. Allowing international banks in the economy, who will have foreign assets should provide a sufficient amount of reserves which could be used to supply liquidity to domestic banks, in the form of interbank loans. However, sometimes in small countries there is a fear that the foreign investors will begin to control the economy, and so foreign agencies may not be allowed due to political reasons.

Excess reserves held by commercial banks can help considerably in times when there is less growth in foreign assets as was experienced in Ireland when they followed a currency board arrangement: "...the foreign exchange drain...was absorbed almost entirely by running down the external holdings of the private banks"⁹. Without the excess reserves in the system, a decrease in

the foreign assets would lead to a decrease in the domestic money supply. This decrease in the money supply will drive up interest rates which will cause a decrease in investment and eventually a drop in output and a lower rate of long term economic growth. As can be seen, currency boards may have difficulty influencing the economy when certain shocks occur. Traditional central banks are the other option which a country could choose in establishing monetary authorities.

4 Central banks

4.1 History of central banks

According to Charles Goodhart (1985), there were two main reasons why central banks were formed. One of the reasons a central bank was formed was to provide a lender for the government's borrowing. A bank, sometimes a private one, would lend money to the government and in return the government would favour that bank over others. The other main reason central banks came about was due to the issuance of currency. Before central banks, there was a lack of coordination in the issuance of currency which was not always centered at one bank. To clear up the confusion, the government would select one bank to issue currency. The banks which gave assistance to the government usually became the sole issuers of the domestic currency. Due to the relationship between the bank and the government, this bank became a "banker's bank".

4.2 Characteristics that a central bank should have

Although there are many types of central banks, there are certain characteristics which should be aimed for when creating a central bank. A group of leading central bankers from different parts of the world met to discuss their experiences with various aspects of central banking and agreed upon a number of attributes which characterize a

⁹ Honohan, (1994).

successful central bank.¹⁰

There were many characteristics, but most importantly, the central bank should be strong and independent, while still accountable for the actions taken. A central bank must be free from political pressure, and must have financial self-sufficiency. If a central bank receives money from the government, the bank may be persuaded, or forced, into activities which are not in the best interest of the economy. Another important characteristic the central bank should have is a strong sense of accountability to the public. In addition, DeBelle and Fischer (1994) discuss the distinction between goal independence and instrument independence with respect to central banks. Theoretically and empirically it was found that a central bank should have instrument independence, but should not have goal independence.¹¹ In this way banks should be free to achieve the goals at their own discretion, (instrument independence), but should be told which goals to attempt to achieve (eliminating goal independence for the central bank).

4.3 Responsibilities of a Central Bank

Central banks perform two main roles, one macroeconomic and the other microeconomic. On the microeconomic side, the central bank must act as a regulatory and supervisory agent. The central bank is usually the central source of reserves and liquidity to other banks, thus providing them with a sense of security. Due to this insurance, banks may become involved in risky projects because they know that the central bank will back them up and provide liquidity. To prevent this moral hazard, the central bank must act as an enforcer of existing regulation concerning the actions of commercial banks.

The main macroeconomic objective of the

central bank in the past, was to maintain the (internal and external) value and reputation of the national currency.¹² Currently, most central banks are choosing price stability as the main goal, achieving this either by directly targeting inflation or by using intermediate targets to attempt to control inflation. In the past, most central banks focused on intermediate targets which the authorities could easily control and which directly influenced inflation. Previously, the most common target was money supply growth, where if prices were increasing too rapidly, the authorities would slow the growth of the money supply. However, in more recent years the link between increases in the money supply and increases in prices appears to be less clear cut. Since money supply may no longer be a valid intermediate target, central banks have begun to focus on other intermediate goals such as the interest rate (nominal or real), and more often via a fixed exchange rate. In addition, some central banks are skipping the intermediate targets completely and attempting to target inflation directly such as the United Kingdom, Australia, Canada, Finland and a few other countries. The targeting of these variables is often difficult, and the desired results are hard to achieve. Along with the problems which may arise from the practicalities of stabilizing the economy due to the unreliable nature of intermediate targets in influencing the economy, the central bank must also fight off attempts by the government to control the actions of the monetary authorities.

Many central banks have been influenced at one time or another by political pressure. Often times as elections came close, long-term goals would be discarded in order to get positive short-term results. These short-term remedies could cause problems in later achieving the long-term targets. For this reason, the 1990's saw increased independence of central banks from governments, so that central banks would be free in the pursuit of the goals set out for the economy. Since economies have many options for establishing monetary authorities, the advantages and disadvantages of each choice must be considered.

¹⁰ Included in the group were Paul Volcker, former Chairman of the Board of Governors of the U.S. Federal Reserve System, Miguel Mancera, Governor of the Bank of Mexico and Jean Godeaux, former Governor of the National Bank of Belgium and former President of the Bank for International Settlements, to name a few.

¹¹ Fischer, (1995), p.277-78.

¹² The New Palgrave Dictionary of Money and Finance, (1992).

4.4 Advantages and disadvantages of central banks and currency boards

The main advantage of the currency board is that the system is relatively simple to implement and also to maintain. Policy makers under currency board arrangements do not need quite the level of expertise as those who control discretionary policies in central banks. In addition, the arrangement allows the monetary authorities freedom from political pressure from the government. In addition, the simple rules of the currency board make the policy very transparent and easy for the public to understand.

In comparing currency boards to other possibilities, there are a few advantages. A currency board provides greater price stability than a floating exchange rate regime and when compared to a conventional fixed exchange rate regime, the expectation of a depreciation of the currency is diminished, since the currency board adds credibility to the system.

The other option that can be used to stabilize the economy is to simply use the foreign currency, and in that way import price stability. However, currency boards allow the domestic currency to be used as a proxy for the foreign currency and has a few advantages. The first benefit in choosing to have a separate domestic currency, rather than using the foreign currency directly as legal tender is the ability to gain seigniorage. The second benefit is that when using a separate domestic currency there is greater freedom to change regimes, or to change the anchor currency.

One last argument that has been voiced in favour of currency boards, is that the fixed exchange rate regime may be easier to maintain, due to the limits on political pressure. There have been arguments that central banks are unable to maintain a fixed exchange rate, and usually end up switching to a floating exchange rate, mostly due to government pressure either to finance the deficit, or to maintain competitiveness of export industries.

The loss of competitiveness in international markets is one main criticism of fixed exchange rates, and can occasionally lead to the demise of the system. If inflation is very high, then the real exchange rate will appreciate very quickly, leading to a loss of competitiveness. This process

is usually amplified by the initial undervaluation of the currency. There are many advantages and some disadvantages to beginning with the exchange rate slightly undervalued.

One main advantage of intentional undervaluation of the exchange rate is the initial impact on exports. If the real exchange rate is undervalued, products look more attractive price-wise to foreign countries allowing firms to compete in Western markets which aids in the reorienting of exports. This reorientation of trade leads to increases in capital investment, which stimulates imports and development of capital as well as increasing the purchasing power of individuals making more people satisfied with the reform process. However, if the currency is undervalued by too much, there could also be problems.

In the case of transition economies, where inflation is hard to control, the appreciation of the real exchange rate could cause significant damage to the economy and the potential for long run growth: "...initial undervaluation of the currency together with a fixed exchange rate...can gradually weaken a country's competitiveness and thus, in an open economy, its foundation for growth".¹³ The problem stems from the fact that initially the low nominal exchange rate makes the currency and exports look very attractive, and helps to stimulate the economy. Over time this advantage decrease as the real exchange rate begins to appreciate to the level of the nominal rate (and perhaps even overshooting). This appreciation leads to a decrease in the competitiveness of exporters, and eventually a decline in the economy. This scenario is often seen in countries which attempt exchange rate based stabilization programs. However, as stated by Saavalainen (1995) this relationship may not hold as strongly in countries which are still in the stabilization process of the transition to a market economy. Since these countries are suffering from levels of inflation very close to hyperinflation (at least at the beginning), then choosing the appropriate initial nominal exchange rate is not as crucial as perhaps in a more developed economy. For this reason, if there is an undervaluation of the exchange rate the cost of possible loss of competitiveness is much smaller than the benefits of the undervaluation. The country seems to be better off if at first the exchange rate

¹³ Saavalainen, (1995), p. 18.

makes exports look very cheap, and then prices slowly approach the world price levels.

The other main disadvantage of currency boards is their lack of flexibility: "The most common complaint about currency boards is their inflexibility in dealing with shocks. This is what encouraged the development of such central banks as the US Federal Reserve..."¹⁴ A currency board is very susceptible to external shocks, particularly with regard to changes in foreign assets, perhaps due to a sudden capital outflow which could cause a sudden contraction in the domestic money supply. The ability to stimulate the economy by using money supply and interest rates is severely limited, and can only be done through indirect methods which are not always as reliable in steering the economy in the right direction as mentioned previously.

Both currency boards and central banks have very strong arguments in their favour. However, with the evolution of a more independent central bank, free from political pressure, as has been seen recently, the flexibility in dealing with shocks may have a distinct advantage over time. Transitional countries seem to be using currency boards as a stepping stone to more traditional central banks with more discretionary policies. Two countries of interest in terms of the currency board system and their transformation into a market economy are Estonia and Lithuania.

4.5 Estonia's currency board

Estonia has maintained a currency board since the introduction of their own currency in 1992. The arrangement has proven to be very successful, and Estonia's monetary authorities seem to have achieved the credibility needed to sustain the goals of lower inflation and higher economic growth.

When Estonia originally set up the currency board in 1992, there was only 90 % backing of the domestic currency and bank accounts. However, soon after the reform and since then, there has been over 100 % backing of the domestic currency and domestic liabilities. Estonia has adopted a more lenient currency board in the respect that both liabilities of the Bank of Estonia

and bank notes are backed by the foreign reserves.

Estonia's kroon is backed by the Deutsche-mark and the fixed exchange rate is 8 EEK = 1 DM. In terms of a guarantee, only Deutsche-marks are exchanged for kroons at the central bank. Other currencies can be exchanged, but only at commercial banks. Although Germany is not the most important trading partner of Estonia, the Deutsche-mark was chosen as the peg due to the well-known stability of the German economy, and the respect which people have for the Deutsche-mark. At this time, only commercial banks can exchange foreign and domestic currency at the central bank.

Although Estonia has a currency board, there is also a central bank. The Bank of Estonia is separated into two parts, the Issue Department and the Banking Department. In order to maintain the credibility of the currency board arrangement, there was a necessity to completely separate the currency board activities from those of the more traditional central bank.

The Issue Department is not under the power of the authorities, and responds only to the public's demand for money. This is the department which exchanges foreign and domestic currency, and always ensures that domestic liabilities are 100 % backed by foreign exchange. Any excess foreign reserves are given to the Banking Department, as well as the seigniorage that is earned.

The Banking Department performs more traditional central bank activities, with some restrictions. The Banking Department performs supervisory and regulatory functions along with providing loans to commercial banks which suffer from a liquidity crisis and threaten the banking system as a whole. However, since the Issue Department and the Banking Department are separate, in order to get the kroons to provide liquidity to the banks, the Banking Department must have foreign reserves to exchange and as a result is limited to the amount of foreign reserves in its possession. The Banking Department of the Bank of Estonia does not hold sufficient excess reserves to act as a lender of last resort.

The Bank of Estonia can not lend to the government. "The Bank is prohibited from granting credit to central or local governments, directly or indirectly, and from buying securities

¹⁴ Honohan, (1994).

issued by government executive bodies".¹⁵ Since the buying of government bonds is prohibited, there is no possibility of the standard type of open market operations. At the beginning of the currency reform, Estonia maintained that the government must try to achieve a balanced budget to prevent crowding out of the private sector.

The one area where Estonia does have central bank discretion is the reserve requirement, which is still in effect. The current requirement is 10 % of demand, savings and time deposits in both domestic and foreign currency. If the Bank of Estonia wanted to try to stimulate the economy, one possibility may be to decrease the reserves required to be held by commercial banks as already explained. However, as stated in the Eesti Pank Annual Report, "...it is important that the central bank's currency issuing policy be in concordance with the economy's demand for money and discretion is avoided".¹⁶ In this respect, the Bank of Estonia does not plan on using any central bank instruments to affect money supply.

Other factors under the control of the central bank include short-term settlement credits and certificates of deposit. Short-term settlement credits are a way of lending to the commercial banks, and is used to avoid liquidity problems from being transferred bank to bank. If a bank finds itself unable to pay another bank, then the central bank may step in to prevent a domino effect. However, this option may not be available to all banks. The Banking Department sets strict limitations as to which banks have access to the funds from the central bank so as to prevent the Bank of Estonia from providing unlimited liquidity to the banking system, and supporting banks that otherwise would go bankrupt.

The other instrument which the Bank of Estonia has is the certificates of deposit (CDs), which were issued by the Bank of Estonia with the intention of establishing an interbank market, so that banks could borrow from one another when the need arose: "These CDs offer the banks the opportunity to carry out guaranteed secondary market transactions, which helps promote trust

between the commercial banks".¹⁷ The CDs allowed a type of collateral which could be demanded in case a bank could not pay back the loan. At the beginning of the reform, there was a lack of trust between banks, which together with other factors, influenced banks not to lend to each other, instead the banks kept excess reserves in accounts which paid no interest (because the central bank does not pay interest on the required reserves). Commercial banks have started to use the interbank market much more, and the demand for CDs has decreased, due to increased trust among the banks. However, in December 1994, the excess reserve ratio held by Estonian banks was 56 %, whereas in more developed economies, the excess reserve ratio is less than one percent.¹⁸ As was mentioned earlier, since the banks already hold a considerable portion of assets over the required reserves, then changing the reserve requirement ratio would have little effect on the economy. In this way, the one real tool which currency boards have to stimulate the economy may be completely ineffective.

Although the reserve requirements could be used to try to stimulate the economy, the other tools, short-term settlements and CDs, are more for helping commercial banks develop a relationship so that the role of the central bank decreases. For the currency board, the only action to be taken is to provide currency upon demand: "In the case of the currency board, the intervention of the central bank into the monetary system is limited to foreign exchange transactions initiated by commercial banks".¹⁹ Estonia follows the currency board principles quite closely and does not try to control the economy through discretionary policies.

Although Estonia is growing faster than the other Baltic States, this success does not ensure that the economy will continue in such a manner. Estonia must still fight for lower inflation and may eventually have to switch from a fixed exchange rate to a flexible regime. The largest worry would be the possibility of an overvaluation of the exchange rate. With increasing prices, there is potential danger. Bennett (1992)

¹⁵ Bank of International Settlements, (1996).

¹⁶ Eesti Pank Annual Report 1995, p. 34.

¹⁷ Bank of International Settlements, (1996).

¹⁸ Hachey, Liikane and Koit, (1995).

¹⁹ Eesti Pank Annual Report, (1995), p. 34.

states that the rising price level in Estonia implies movement towards a lack of competitiveness, which gives some of the public reason to believe that the kroon will have to be devalued in the future. This constant questioning of credibility puts quite a strain on the monetary authorities to be very convincing, and to not end the currency board too quickly. Estonia has had the currency board since the beginning of the reform, but Lithuania has only recently begun to use a currency board.

4.6 Lithuania's Currency Board

On April 1, 1994, Lithuania began a fixed exchange rate regime with a currency board. Before this Lithuania had a floating exchange rate, beginning in 1993 and commercial banks conducted foreign exchange transactions with little influence from the central bank. However, after July 1993, due to political pressure, the central bank began to intervene in the foreign exchange market to keep the litas steady. The system was closer to a managed float, due to this foreign exchange intervention. In October of 1993, the head and management of the Bank of Lithuania were replaced, and there was discussion of pegging the litas. The decision to switch to a fixed exchange rate was supported by the IMF, and on March 17, 1994, the Law on the Credibility of the Lit was passed, with the currency board coming to effect in April 1994.

One of the reasons that Lithuania may have begun the reform with a floating exchange rate, rather than a currency board, was due to limited funds with which to back the currency: "...of the three Baltic states, the Lithuanian central bank had the smallest amount of foreign reserves relative to the size of the country".²⁰ Due to this low amount of reserves, Lithuania was at the beginning of the reform and still is unable to back the domestic currency 100 % with net reserves as Estonia's currency board does. Instead, the Bank of Lithuania is using a portion of the IMF loans to maintain sufficient reserves to back the litas.

If loans are included, the Bank of Lithuania has quite a large amount of foreign assets and

could increase the domestic money supply. Instead, the Bank of Lithuania has kept the excess reserves in the central bank so as to retain the ability to act as a lender of last resort: "...the Bank opted to maintain a capability to carry out operations as the lender of last resort, should that prove necessary".²¹ In this way, the Lithuanian currency board is very different from other currency boards in existence which do not usually offer a lender of last resort.

The Lithuanian litas is pegged to the United States dollar at the rate 4 LTL = 1 USD. Lithuania, like Estonia has a more flexible currency board in the respect that both bank notes and central bank liabilities are backed by foreign reserves. However, like most other currency boards, the Bank of Lithuania can not loan money to the government or to enterprises, including commercial banks. Even though Lithuania seems to follow the guidelines of the currency board, the public is still not completely convinced of the success of this monetary authority.

The Bank of Lithuania experienced a period of doubt soon after the currency board was established. There was some mistrust of the arrangement with regards to both the fixed exchange rate regime and the currency board. The activities which added to the public's initial lack of trust in the government was the limited support from the central bank for the currency board.

The first problem was that the currency board attempted to use some of the discretionary tools of monetary policy and failed to achieve the desired results. The reserve requirement was left unchanged, but some exemptions were allowed with regard to what could be used to satisfy the reserve requirement. One option, which was quickly discontinued, was the use of government bonds in place of the reserves. The reason for the option was that the monetary authorities hoped that demand for government bonds would increase. The result was not as expected and since demand failed to increase, this replacement of reserves was discontinued. In another case, "...the Bank of Agriculture was given, in exchange for a \$12.5 million loan to the state energy system, an offsetting exemption from reserve require-

²⁰ Saavalainen, (1995), p. 3.

²¹ Camard, (1996), p.8.

ments".²² Although these actions did not harm the currency board, there was the question of the firmness of the currency board's resolve, leading the public to question the sustainability of the fixed exchange. Using the reserve requirements in this way allows the Bank of Lithuania more discretionary influence than most currency boards would use, but at what cost.

The other main factor affecting the public's belief in the system was rumours of a currency devaluation which were not new, and should not have posed a threat. Unfortunately, the questioning of the maintenance of the fixed exchange rate was further strengthened by statements from central bank authorities: "...the rumour was accompanied by disquieting statements by central bank officials suggesting the authorities might not be committed to maintaining the existing parity".²³ The situation may not have been as detrimental if the government or currency board members had denied the rumours publicly. Unfortunately, the authorities were a little slow in making the announcement in support of the litas and the currency board.

All of these elements together led to a great scepticism regarding the exchange rate and the commitment of the currency board to maintain the current exchange rate. As a result, Lithuania saw a great outflow of foreign assets between November 1994 until April of 1995. One of the weaknesses of a currency board arrangement is that with the decrease in foreign reserves, there must be an accompanying tightening of the domestic money supply unless there are sufficient excess reserves. Although the foreign reserves managed to recover, the interest rates, especially on treasury bills, remained high, perhaps reflecting the risk involved in the instability and lack of credibility in the domestic currency. As Camard (1996) points out, the currency board arrangement in Lithuania has some discretionary power, which if used could lead to a serious drop in the credibility which the currency board is attempting to instill in the economy.

In fact, there are some people who believe that the Lithuanian currency board was established more for political reasons than for eco-

nomic reasons. According to Rudgalvis (1996), Lithuania's currency board has never officially been established, and instead, the credibility of the litas relies on the actions of the central bank. This implies that while in theory Lithuania may have a currency board, in practice the system is more like a conventional fixed exchange rate regime with a central bank, complete with discretionary policies.

The Bank of Lithuania has only one policy instrument, which is the reserve requirement. The Bank of Lithuania has set the reserve requirement ratio at 10 %. The reserve requirements are on liabilities to residents in both domestic and convertible currencies.

4.7 Differences and Similarities

One of the main differences between the two currency boards in Estonia and Lithuania is the institutional arrangement regarding which authority has the ability to change the exchange rate. Estonia set up the Law on the Security of the Estonian Kroon so that the Bank of Estonia has no power to devalue the Estonian kroon. Any change in the exchange rate of the kroon must first be approved by Parliament. In this way, the political pressure was removed, since the Bank of Estonia must only answer to Parliament and is not under the control of any other government authority. One of the main reasons for choosing a currency board is to institutionalize the credibility of the currency which has been done in Estonia. Unfortunately, the same can not be said for Lithuania.

Lithuania originally had the plans of following Estonia so that only the Parliament would have the power to change the exchange rate. However, when the Law on the Credibility of the Litas was adopted it stated that the Bank of Lithuania in coordination with the Government of the Republic of Lithuania would be responsible for changing the exchange rate. The public was a bit concerned: "The provision 'the litas exchange rate is established and altered by the Government of Lithuania' drove many to despair".²⁴ This factor among others caused most people to doubt the probability of success of

²² Camard, (1996), p. 9.

²³ Camard, (1996), p.10.

²⁴ Leontjeva, (1995).

Lithuania's currency board. Giving the government the power to change the value of the currency has undermined the independence of the currency board.

In addition to institutional differences, another dissimilarity is in the use of the reserve requirement as a tool to affect the economy. Lithuania has tried to use the discretionary tools at their disposal more often than the Bank of Estonia, which has led individuals to question the strength of the Bank of Lithuania and its commitment to a fixed exchange rate.

The Bank of Estonia which has the same possibilities to change the money supply via the reserve requirement has not done so. The emphasis in Estonia is to follow the guidelines of the currency board, and in that way maintain credibility. The Bank of Lithuania also has the power to administratively control the interest rates. Although the action has not been taken, if the Bank of Lithuania ever did decide to fix the interest rates, the action would completely destroy any credibility that the currency board may have hoped to achieve.

In terms of the development of money supply, both systems seem to follow theory in that the money supply growth is endogenous to the system and relies on money demand. However, as was just discussed, Lithuania has taken more of an active role in determining money supply. The problem with using the discretionary tools which the impure currency boards have available is that the credibility of the entire system is threatened. The public observes the currency board and the central bank. If their actions are suspect, the public may not have confidence in the sustainability of the system in the future. As many economists have shown, the expectations of the public can cause quite serious results. Although the currency board has some discretionary tools at their disposal, it may be better never to use these tools, since in doing so, the public may be led to question the entire stability of the system, which may eventually lead to its collapse. Credibility is perhaps the most difficult challenge that Lithuania faces in the near future.

This threat to the credibility of the system has become even more of a problem at this time. With the election of Vytautas Landsbergis, of the conservative Homeland Union party, there is increasing concern over the future of the currency board. The Homeland Union party has

often voiced displeasure over the currency board, and would like to see the Bank of Lithuania return to a more traditional central banking system, with greater power over monetary policy. Lithuania will not eliminate the currency board in the next twelve months as the country has an agreement with the International Monetary Fund prohibiting the removal of the currency board, which Landsbergis has decided to abide by.

4.8 Latvia's Central Bank

Although Latvia does not have a currency board, the central bank has acted in many ways as if it were a currency board. In fact, in their monetary policy description, the Bank of Latvia states, "The exchange rate policy of the Bank of Latvia is similar to that of a currency board, and monetary base is almost fully backed by gold and foreign currency reserves".²⁵ According to Helmut Ancans, Head of the Monetary Policy Department, the liabilities of the central bank are backed 96–97 % on the average by gold and foreign currency reserves. However, this number was lower during the banking crisis, when backing was only 60–70 %. The main distinction between Latvia's central bank and the currency boards of Estonia and Lithuania is that the Bank of Latvia still can grant credit to the central government, however, this credit can not be greater than 1/12 of the expected budgetary revenue. At least in 1996, the Bank of Latvia has not extended any credit to the government, leaving the commercial banks to provide funding. The government has sold the treasury bills to the commercial banks, and then has placed deposits with the central bank. The main reason behind Latvia's decision not to instigate a currency board system is political, in that the Bank of Latvia wants to retain the power of monetary policy.

4.9 Future Challenges for Estonia and Lithuania

Both Lithuania and particularly Estonia seem to

²⁵ Bank of Latvia homepage, <http://www.bank.lv/english/index.html>, Monetary Policy.

be stabilizing the economy, decreasing inflation and increasing the growth of GDP. These changes have come about partly because of the use of the currency board as a monetary authority among other factors. Although part of Estonia's success in transition can be attributed to the proximity to Finland, and the relations that have always held there, the currency board has added to the effect, by increasing the credibility of the reform. The public in Estonia seems to have strong beliefs that the system is headed in the right direction, and there seems to be little chance of a run on the currency by the public. Lithuania, although not quite as successful as Estonia in terms of inflation and GDP, has managed to slow down inflation to more reasonable levels, and is attempting to increase the credibility of the system and strengthen the public's faith. However, there is still a long road ahead for both countries.

One of the first issues that the countries will need to address in time is the question of whether to remain with the currency board, and for how long. Theory shows us that fixed exchange rate regimes (including currency boards which are being used more recently), which use the exchange rate as a nominal anchor have been popular as a means to curb inflation and provide stability. However, a certain pattern has been observed in these countries which have a fixed exchange rate regime: "...countries that use the exchange rate as the nominal anchor in inflation stabilization programs experience a boom in economic activity, a large real exchange-rate appreciation, a rise in real wage rate, and a deterioration in the external accounts. Later in the programs, these effects are often reversed, with the economy contracting sharply and the real exchange rate depreciating"²⁶. According to Sachs (1995), the way the transformation to a market economy should be done is by using a twostep approach, where the first step is to peg the exchange rate so as to "import" low inflation, and then after the low inflation has been achieved to switch to a floating exchange rate regime, to avoid the possibility of an overvalued real exchange rate. As time goes on, and the real exchange rate appreciates to the nominal exchange rate, a floating exchange rate regime may be preferable. A floating exchange regime

would help to resist external shocks, such as excess capital outflows, which in a fixed exchange rate regime could be detrimental to the economy. The problem which Estonia and eventually Lithuania will have to face is when to make the switch. If the change is done too soon, the credibility in the system is lost, without achieving the gains of being able to withstand external shocks. However if the change in exchange rate regimes is too late then future economic growth will have little chance of recovery.

If the country waits too long, then the real exchange rate will become overvalued, and even devaluation may not be sufficient to undo the effects. There are two main problems with using devaluation to counteract an overvalued exchange rate. First of all, the credibility of the system would be lost and agents may expect future devaluations in the currency. The second main problem is that even with devaluation, the economy would not necessarily become more competitive. Initially the devaluation will lead to a balance of payments surplus, and with domestic prices unchanged, the real exchange rate would be valued appropriately. However, the labor market will cause an increase in prices either through the demand of workers for higher wages to pay for more expensive imports, or through the increased demand of firms for labor in order to supply goods. Both of these actions would cause wages to increase, which would drive the domestic price level to increase, thus removing the competitive advantage given by the initial devaluation.

Estonia managed to increase real GDP in 1995, the first time since the reform began. Together with lower inflation, the increase in real GDP shows a country on the way to recovery. There are a few concerns which authorities will need to address. The first concern is the current account deficit which continues to grow. As the current account deficit increases, and if foreign investment continues to decline, Estonia could fall into the trap which many other exchange rate based stabilization countries have faced: the bust after the boom, partly due to an overvalued exchange rate as discussed in the previous paragraph. With the real exchange rate appreciating, exporting industries are facing a loss of competitiveness which will lead to a decrease in the foreign investment, which has begun to slow. Most investors are looking to

²⁶ Rebelo and Vegh, (1995), p. 126.

Estonia as a gateway to other central and eastern European markets. These investors are interested in using Estonia as a means to export their goods, rather than selling domestically to the Estonian market, which is quite small. If the real exchange rate becomes overvalued, then the exporters will lose as exports become too expensive. This means that not only will Estonian exporters be harmed, but also the foreign investors trying to use Estonia to export to other Central and Eastern European countries. If the real exchange rate decreases competitiveness, then the foreign direct investment will decrease, and Estonia may experience a contraction in the domestic money supply as the current account deficit continues to increase, without the offsetting capital account inflows. For this reason, the monetary authorities must closely monitor the market and make the change from fixed to floating exchange rates at the right moment, which will be very difficult to determine.

On a more positive note, Estonia seems to have little problem with maintaining credibility in the currency board system, and in monetary reform in general. This strength may aid in the metamorphosis from a fixed exchange rate to a floating regime.²⁷ Estonia will have to change their monetary policy if they are to join the European Union. The hope seems to be that Estonia will maintain the currency board until they join the European Monetary System. However, the question remains of what will occur if the acceptance into the EU takes considerably longer than expected, especially if the real exchange rate appreciates to the point that the kroon is overvalued. In addition, if the European Union succeeds, then the Deutschmark will be eliminated, and instead there will be the Euro. This change in currencies may or may not cause a problem with the currency board. Although the Deutschmark would disappear, the Estonian currency board could peg the kroon to the Euro, which would then become the new anchor. Lithuania will

face the same issues as Estonia, namely when and how to change the exchange rate regime. Before this decision is made, Lithuania must address other problems, the most current of which is the banking crisis. At the end of 1995, several banks in Lithuania began to have liquidity problems, and even now some banks are struggling. Lithuanian monetary authorities have decided to provide support to one of the largest banks, rather than allow bankruptcy, this may cause serious problems in the future, not to mention that this action adds to the already existing lack of credibility.

According to Sachs, Tornell and Velasco (1996), countries with overvalued exchange rates, weak banking systems and low foreign-exchange reserves relative to the overall stock of money are more likely to experience a speculative attack on the domestic currency. Lithuania has at least one of these symptoms, which is the weak banking system. In addition, Lithuania's foreign reserves are not especially strong since the domestic money supply is only backed by gross reserves, and not net reserves. Lithuania must somehow manage to increase the credibility of the reforms and establish a more independent currency authority, one which the public will trust, otherwise future problems may arise. Lithuania's recovery has been slower than Estonia's, at least in slowing inflation and boosting economic growth. Latvia also has managed to fare better than Lithuania in terms of inflation, however due to their banking crisis at the end of 1995, the same can not be said for GDP growth. In order for the reform to succeed in Lithuania, the public must believe in the system and provide support, rather than doubting and undermining the system. At this time the more crucial problem seems to lie in making the system credible to the public and in this way strengthening the stabilization process.

The future holds many possibilities for the transition countries and the process of transformation will be very interesting to observe. With any luck, these countries will be able to lower inflation to the level of industrialized countries, achieve real GDP growth and ensure that the system is stable enough to withstand potential shocks. These two countries, with their currency boards appear to be headed in the right direction.

²⁷ According to Sachs (1995), "It seems increasingly clear that the right approach is a two-step approach, of early exchange-rate pegging...followed by a move to a more flexible exchange-rate system after low inflation has been achieved, in order to avoid the problems of creeping overvaluation".

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