Currency Boards

Ulrik Bie, Secretariat and Niels Peter Hahnemann, International Relations

WHAT IS A CURRENCY BOARD?

In countries with currency boards a fundamental element of monetary policy is that domestic base money[1] must be fully covered by foreign-exchange reserves and gold. Strict interpretation of the rule entails that the responsible authority cannot acquire domestic financial assets, so that the base money is matched to the foreign-exchange reserve. At the same time, it must be possible to exchange currency freely without limitations to and from an anchor currency at a fixed exchange rate. This principle is laid down by law and can therefore only be changed by amendment of legislation. This also applies to the fixed exchange rate.

Currency boards originated in the British colonies[2], where they were established primarily with a view to creating stable monetary conditions while retaining seignorage in the local area. The sole function of the colonial currency boards was to issue banknotes and coins against sterling deposits in London and vice versa: to exchange local currency for sterling. Most currency boards were based in the local area, but some had their headquarters in London. In the period after World War II until the colonies gained independence in the 1950s and 1960s by far the majority of the British colonies had currency boards. The former colonies usually established normal central banks upon independence.

The currency board countries were required to observe a number of rules, as was the case under the gold standard system.[3] Firstly, the exchange rate against the anchor currency had to be fixed. Secondly, a currency board could not influence the formation of interest rates in the money market. The colonial currency boards thus did not include monetary-policy instruments such as official interest rates. However, in most cases this did not present any major problems. Due to the economic structures in many colonies the banks often had restricted opportunities for investment in the local economies and the volume of bank deposits was limited compared to banknotes and coins in circulation. Many banks

1 Base money consists of banknotes and coins in circulation and any mandatory deposits by private banks to the central bank, here called M0.
2 See Shannon (1952) for a detailed description of the British currency boards.
3 Reference is made to Bie and Henneberg Pedersen (1999) for a review of the gold standard system.

were direct branches of British banks and the colonial banks generally held a major part of their assets in London. The banks functioned to a great extent as exchange bureaus. The individual currency boards had no discretionary powers and fluctuations in the foreign-exchange reserves had a direct impact on domestic liquidity, which consisted primarily of banknotes and coins.[1] For this reason the assets of a currency board had to be held in safe, readily negotiable government securities within the British Empire, rather than in domestic financial assets, even when the latter existed.

The currency board in its pure form described here may have procyclical effects. For example, if a major trading partner faces considerable economic difficulties, besides the initial shock to the economy this will also shake the confidence of external investors, leading in turn to a strong outflow of capital, and thereby a reduction of the foreign-exchange reserve. This would aggravate the domestic crisis. Similarly, a strong upswing would attract investment and thereby contribute to overheating the economy. This relationship also shows the extent to which currency board countries are affected by capital flows.

The introduction of a currency board in its pure form is the most extensive unilateral pegging of its currency which a country can undertake without introducing the currency of another country as its own. The sole function of a currency board is to issue local currency against that of the anchor country, and the primary difference between a currency board and using the currency of another country is the issue of the seignorage entitlement.

PRESENT CURRENCY BOARD SYSTEMS

In recent years a number of countries have applied the principles of a currency board as the basis for their monetary systems, within the framework of a traditional central bank. A key difference between the currency boards of the colonies and the present currency board arrangements is that the cover of base money with the foreign-exchange reserve is not determined exactly (e.g. 110 per cent cover), but is subject to a minimum limit, typically at least 100 per cent. This creates the opportunity to accumulate foreign-exchange reserves and thereby establish a liquidity reserve for the central bank. The accumulation of surplus liquidity makes it possible to smooth the capital flows which always exist in open economies, and thereby establish a countercyclical instrument on a certain scale.

[1] As a general rule the surplus liquidity of the British currency boards was 10 per cent.

COUNTRIES WHICH HAVE USED A CURRRENCY BOARD REGIM IN A STABILISATION PROCESS Box 1

Hong Kong reintroduced a currency board regime in 1983 after pressure against the Hong Kong dollar. The parity between the Hong Kong dollar and the US dollar is 7.8:1. In the years after 1988 Hong Kong had introduced a number of monetary-policy instruments which led to doubts as to whether the regime was a currency board or a traditional central bank. After a reform in 1998 the trend was towards a purer currency board regime.

Argentina opted for a currency board regime in 1991. The US dollar was the natural choice of anchor currency, as it was then and still is widely used for both savings and transactions. The parity between the Argentine peso and the US dollar is 1:1.

Estonia introduced a currency board in 1992. The original parity between the Estonian kroon and the D-mark was 8:1, giving a parity to the euro of 15.6466:1, cf. p. xx.

Lithuania introduced a currency board regime in 1994. This regime has been discussed on several occasions since its introduction due to such factors as the chosen dollar peg. This was in accordance with the pattern of trade at the time of introduction, but is in conflict with Lithuania's long-term objective of EU membership. The parity between the Lithuanian lat and the US dollar is 4:1.

Bulgaria introduced a currency board in 1997. The D-mark was chosen as the anchor currency on the basis of trade as well as strategic considerations. The original parity between the Bulgarian lev and the D-mark was 1,000:1, but after a monetary reform it became 1:1, giving a parity to the euro of 1.95583:1.

In contrast to the former British colonies the present currency board countries have an independent banking system in which bank deposits play a far greater role than e.g. during the gold standard period. The monetary-policy authority must therefore not only safeguard seignorage but also undertake a number of central-bank tasks in relation to the financial sector. Tasks involving lending to the banks can only be undertaken if the central banks in question hold surplus liquidity, cf. above.

Introduction of the currency board regime during the 1980s and 1990s was related to a stabilisation process, cf. Box 1.[1] Hong Kong re-established its currency board regime in connection with a currency crisis. For Argentina and the transition economies Estonia, Lithuania and Bulgaria the primary purpose of introducing currency boards was to reduce the very high inflation rates.

The background to introducing a currency board regime in economies with hyperinflation or very high inflation was first and foremost to quickly achieve economic-policy credibility.

[1] In Bosnia-Hercegovina a currency board was introduced in 1997 in connection with the implementation of the Dayton agreement. This currency board is very similar to that of the former British colonies due to the limited financial sector.

The problems regarding lack of credibility can be reduced by introducing rules[1] to prevent the authorities from reacting to events in a way which conflicts with their original promises. However, for some countries these limitations are not sufficient to achieve credibility, reduce inflation expectations and thereby support stable monetary conditions. If a country is already economically or politically vulnerable, it can be tempting to devalue the currency in the event of negative shocks to the economy,[2] rather than having to undergo a possibly tight period of adjustment – despite promises to the contrary. Both citizens and investors know this, so decision-makers have to convince citizens and investors of their willingness to embark on the long steady pull to restore the economy, rather than taking the easy way out in the short term.

In order to convince market participants of their commitment to a certain policy, the decision-makers have to send a signal of credibility to the market. This is where the currency board principles have a role to play. A currency board regime is a stronger peg than a traditional fixed-exchange-rate regime and is therefore also more difficult to exit. The signalling effect from introducing a currency board is thus that the cost of exiting a currency board system, i.e. loss of credibility, is so high that only credible decision-makers who do not wish to abandon the regime under any circumstances are willing to introduce such a regime.[3]

This argument is particularly important in countries which over a long period have proved unable to pursue a credible policy, or in transition economies which have not had the opportunity to prove their commitment to a chosen economic strategy based on a market economy. In these cases the need to demonstrate commitment and focus on a long-term strategy carries greater weight than the disadvantage of not being able to react to a negative shock.[4]

There are strong variations in the structure of the present regimes based on currency board principles. This applies to the legal basis as well as the scale of monetary-policy instruments. However, a recurring principle is that the rule of cover, and thereby the size of the foreign-exchange reserve, imposes certain limits on central banks' scope to extend liquidity to the financial sector, as well as on how they may extend credit (as lender of last resort) in connection with financial crises.

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1 The introduction of rules is a significant conclusion in time inconsistency literature. See e.g. Kydland and Prescott (1977) and Barro and Gordon (1983) for a theoretical review.
2 See e.g. Lohmann (1992) for a description of the consequences of negative shocks.
3 A theoretical modelling is found in e.g. Cukierman, Kiguel and Liviatan (1992).
4 A discussion hereof in relation to Estonia is found in Kraft (1999).

THE FINANCIAL SECTOR

Most currency board countries have been able to adapt to the limitations on financing of government deficits, but at one time or other they have all experienced considerable problems in relation to the financial sector.

A well-functioning interest-rate mechanism under a currency board regime requires that the central bank does not determine the money market interest rates and that the country in question is willing to accept a considerable tightening of liquidity and the possibility of a recession in connection with capital outflows and exogenous shocks. This also means that the short-term interest rates may be subject to considerable fluctuation in step with the financial sector's current liquidity requirement. This is one of the reasons that the financial sector is more vulnerable under a pure currency board than under other exchange-rate regimes. The vulnerability of the financial sector is the principal reason for modifications to the pure currency board.

As the financial sector develops, banknotes and coins in circulation will decline in importance compared to bank deposits in domestic currency. A currency board regime is thus more vulnerable to systemic crises[1], since a general depositor demand for the conversion of bank deposits to the anchor currency will require increasingly larger foreign-exchange reserves.

In periods without any foreign-exchange unrest the currency board regimes will typically have foreign-exchange reserves which exceed the base money. The resulting surplus liquidity can be used to stabilise the financial sector, e.g. in the short-term via overnight transactions, or in connection with any financial crises arising. In view of the limited access to domestic liquidity the access to foreign capital in the event of a liquidity crisis plays an important role in the establishment of a robust financial sector. Minimum reserve and liquidity requirements imposed on the banking sector have proved to be appropriate instruments to equalise short-term fluctuations in the liquidity requirement and in relation to systemic crises.

Minimum reserve requirements entail that a proportion of the banks' deposits are placed on an account with the central bank. Minimum reserve requirements ensure a certain liquidity volume in the financial sector, which can be appropriate in countries whose financial supervisory systems are not firmly established. On the other hand, unless the reserves accrue interest, minimum reserve requirements will impede the

[1] A systemic crisis in the financial sector arises when a large part of the sector cannot meet depositors' requirement to withdraw their deposits (liquidity crisis), which can e.g. be the case in the event of strong currency market turmoil and/or a general lack of confidence in the sector. A solvency crisis arises if a large proportion of the banking sector is insolvent in terms of market prices, which can be the case in the event of plummeting prices for financial assets.

development of the banking sector and thereby also of the economy in general. The distorting consequences can be reduced by introducing remuneration of mandatory deposits with the central bank. The level of minimum reserves can be used to manage the free liquidity in the financial sector. Raising the minimum reserve requirement reduces the immediate liquidity of the sector, while lowering the minimum requirement increases liquidity.

Argentina made active use of adjustments to the minimum reserve requirement during the crisis in Latin America in 1994-95, when Argentine banks were particularly severely affected due to their substantial exposure in Mexican securities. The crisis developed into a systemic crisis during which the central bank lowered the minimum reserve requirement for deposits in both dollars and pesos from 43 per cent to 30 per cent for on-demand deposits and from 3 per cent to 1 per cent for time deposits. This measure prevented a general liquidity crisis in the financial sector whereby the sector would not have been able to both fulfil the minimum reserve requirements and accommodate customers' withdrawal requests.

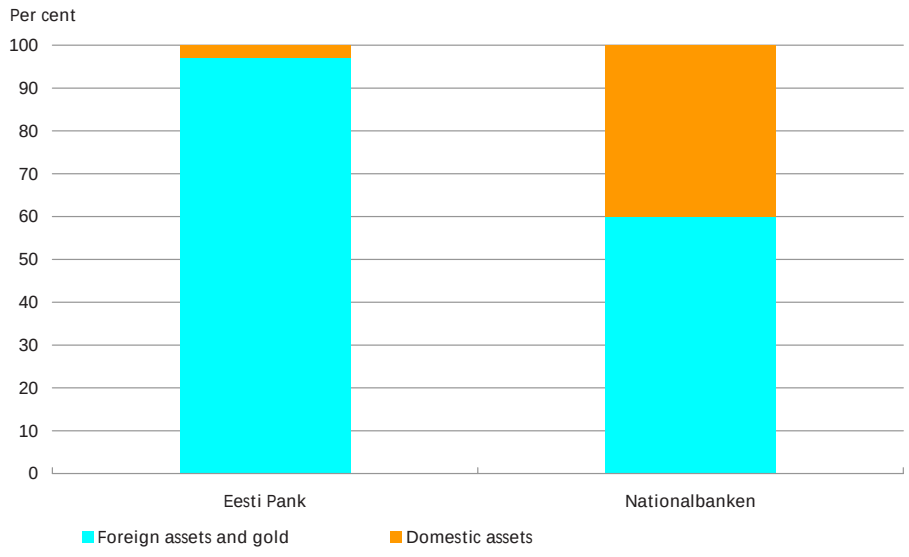
ESTONIA'S CURRENCY BOARD REGIME

The following description of the Estonian system is meant to give an impression of how a currency board functions. Estonia's regime is interesting because it is relatively uncomplicated, and Estonia's economic achievements since independence are impressive. Moreover, Estonia was the first European country to use such a regime in connection with a process of stabilisation and has thereby served as a model for Lithuania and Bulgaria.

Estonia's currency board regime was established concurrently with the introduction of its national currency, the kroon, in June 1992. The regime is described in the "Law on the Security for the Estonian Kroon". The regime is based on three fundamental pillars, of which the most important is a fixed exchange rate vis-à-vis the D-mark of 8 kroon per D-mark, and therefore now 15.6466 kroon per euro. This exchange rate was originally fixed by Estonia's central bank, Eesti Pank, which has the competence to revalue, but not devalue, the kroon. Furthermore, the central bank's obligations, primarily the circulation of banknotes, may not exceed the bank's foreign-exchange reserves and gold. There are no restrictions of any kind to payments vis-à-vis non-residents with regard to current payments, capital flows or financial transactions.

Monetary financing of the government deficit is prohibited, and the central bank may not use the interest-rate instrument or other monetary-policy instruments to manage the money-market interest rate.

ASSETS OF EESTI PANK AND DANMARKS NATIONALBANK, END-1999 Chart 1



Sources: Eesti Pank and Danmarks Nationalbank.

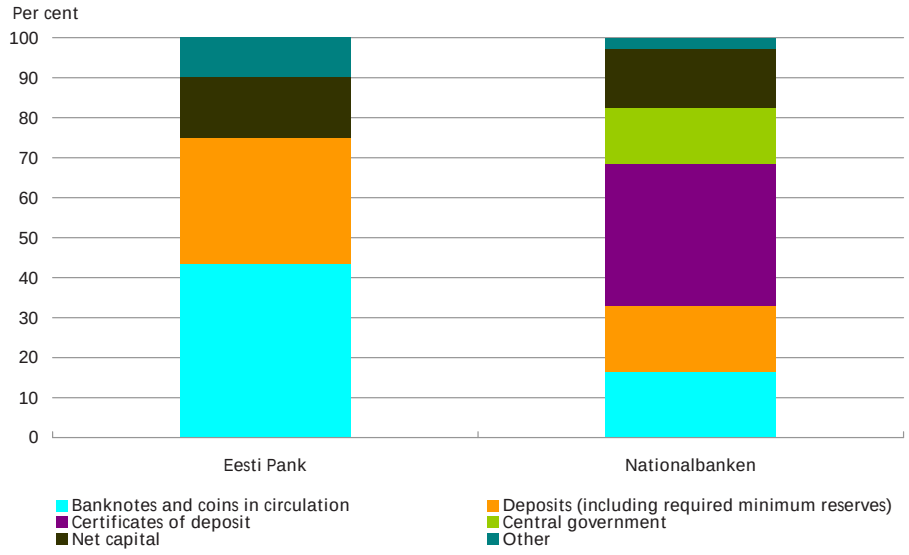
The difference between a traditional central bank, such as Danmarks Nationalbank, and Eesti Pank is reflected in the individual balance-sheet items. Of Eesti Pank's total assets 97 per cent consisted of foreign exchange and gold at end-1999, compared to 60 per cent for Danmarks Nationalbank, cf. Chart 1.

The composition of the liabilities reflects that Eesti Pank has fewer deposit facilities. For Eesti Pank banknotes and coins in circulation, together with deposits, primarily minimum reserves, account for 75 per cent of total liabilities, cf. Chart 2. The remainder were equity capital and commitments denominated in foreign exchange, including to the IMF. For the Nationalbank banknotes and coins in circulation and on-demand deposits amounted to 33 per cent, while certificates of deposit accounted for a further 36 per cent.

The Estonian currency board regime is relatively pure compared to those of other countries. Eesti Pank's most important monetary-policy facility is a standing, unlimited facility on the Estonian foreign-exchange market whereby the bank is obliged to trade D-marks for kroon with banks licensed in Estonia. These transactions are concluded at a fixed price, and since 1996 there has been no spread between the bid and offer rates. As from 1999 this facility covers the euro and its component currencies.

Under a currency board regime the central bank's opportunities for lending to the financial sector depend on whether the central bank has

LIABILITIES OF EESTI PANK AND DANMARKS NATIONALBANK, END-1999 Chart 2

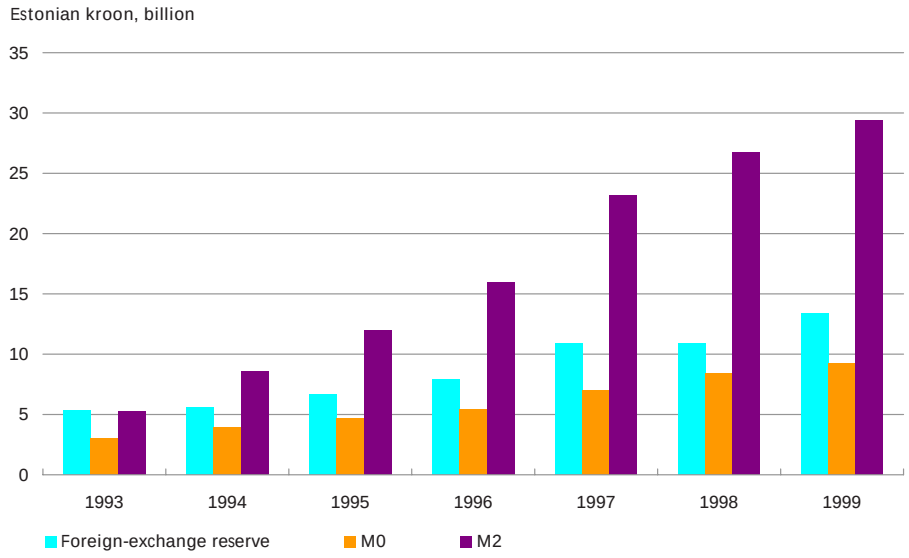


Sources: Eesti Pank and Danmarks Nationalbank.

surplus foreign-exchange reserves. This has been the case in Estonia since the establishment of the currency board in 1992, cf. Chart 3, although the scale of lending to the banks has been very moderate.

At the end of 1999 the foreign-exchange reserve was 30 per cent higher than the base money, M0, for which Eesti Pank is obliged to pro-

FOREIGN-EXCHANGE RESERVE, M0 AND M2, IN ESTONIA, END-YEAR Chart 3



Source: International Financial Statistics, IMF.

vide cover in foreign exchange. The foreign-exchange reserve covers half of the monetary aggregate, M2, which e.g. comprises time deposits with commercial banks.

In practice, Eesti Pank has only made use of the intervention option on a few occasions in 1992-95 in connection with the dismantling of the former Soviet banking system and the transition to the currency board regime. The principle part of the reconstruction of the financial sector took place at this early stage of the reform process. In 1998, in view of the risk of financial instability Eesti Pank acquired 58 per cent of the shares in the private Optiva Pank.[1]

In 1993 Eesti Pank began to issue certificates of deposit to Estonian banks on a monthly basis. The foreign-exchange surplus makes this facility possible. Certificates of deposit were introduced in order to create an interbank market in which they could be used as collateral. However, the amounts involved have been very limited and the instrument lost its significance in 1996 when a more flexible method of calculating the minimum reserve requirements was introduced. In a future reform of the monetary-policy instruments the certificates of deposit will be eliminated.

Under the minimum reserve requirement a bank is required to deposit an amount with Eesti Pank corresponding to a percentage of the bank's domestic and external liabilities. Originally this was 10 per cent, but it was raised to 13 per cent in 1997 in view of the international currency market turmoil and the strong domestic credit expansion. Since 1996 the banks have been obliged to fulfil this requirement over a monthly average, subject to a daily minimum of 4 per cent. Failure to comply with the reserve requirement is subject to a penalty interest rate of 20 per cent of the shortfall.

In order to reduce the distorting consequences of the fact that only the banks are subject to minimum reserve requirements, since July 1999 the required reserves have accrued interest at the ECB's deposit rate. The money market thus operates within an interest-rate tunnel, of which the floor is the ECB's deposit rate and the ceiling is the penalty rate. The ECB's deposit rate also applies to deposits with the central bank which exceed the minimum reserve requirements. However, only moderate use has been made of this "deposit facility".

Since all bank deposits with Eesti Pank accrue interest, the banks are not subject to any particular incentive to offset inter-bank liquidity fluctuations. Estonia's money market is therefore relatively limited. The

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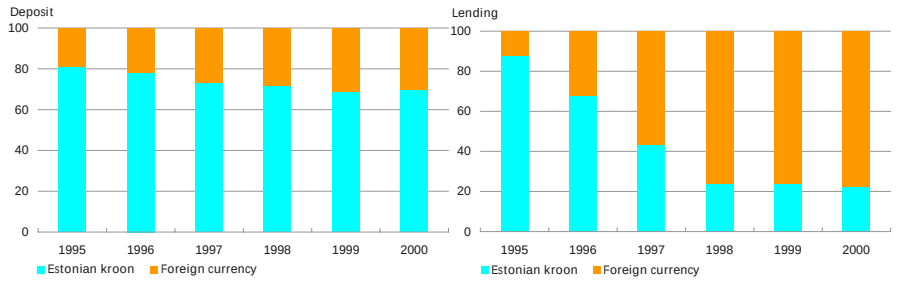
[1] Finnish investors have submitted a purchase offer for Eesti Pank's portfolio of equity securities. The sale is expected to be completed by the end of June 2000.

BREAKDOWN OF DEPOSITS AND LENDING BY ESTONIAN KROON AND FOREIGN CURRENCY Chart 4



Note: Figures at year-end, but end-March 2000.
Source: Eesti Pank.

same applies to the bond market. The modest volume of bonds is primarily caused by the fiscal policy pursued that has made it unnecessary for the general government to issue debt securities on any significant scale. The stock market is the most important financial market. Its total value was approximately 38 per cent of GDP at end-1999.

Foreign currencies account for an increasing proportion of the Estonian economy. In 1995-96 deposits denominated in foreign currencies with Estonian banks accounted for approximately 20 per cent, but after the Russian crisis the proportion increased to just under 30 per cent. At the end of March 2000, 76 per cent of all lending by Estonian banks was denominated in foreign currencies, cf. Chart 4. This reflects general confidence in the fixed exchange rate, but also exposes the banking sector to a significant credit risk in the event of the currency's devaluation.

Since 1992 the Estonian banking sector has been subject to widescale consolidation. The number of banks fell from 19 in 1993 to 7 at end-1999. The two largest banks play a dominant role and accounted for 84 per cent of the sector's total balance sheet at end-1999. These two banks are controlled by Swedish banks. A high degree of foreign ownership facilitates access to liquidity from abroad should the Estonian banking sector encounter difficulties. It also means that the credit risk to the sector as a whole is generally regarded as an intra-group risk for the individual owners. If Optiva Bank is acquired by Finnish investors the Estonian banking sector will be almost entirely subject to foreign ownership.

The road ahead

As from 1992 Estonia had a clear strategy concerning EU membership and participation in EMU. Estonia thus chose the D-mark as its anchor currency, so that an exit strategy for Estonia would entail its adoption of the

euro. In connection with the negotiations for EU membership the issue of whether a currency board regime can replace participation in ERM II as a criterion for convergence on the examination of the country prior to participation in the third stage of EMU has become more urgent.

Eesti Pank finds that the Estonian currency board regime is fully equivalent to ERM II participation.[1] Eesti Pank emphasises that the current regime has made Estonians accustomed to the fact that monetary and foreign-exchange policy cannot be used to solve ad hoc problems. This has created the framework for a stability-oriented policy.

The European Central Bank, ECB, and the European Commission will consider the issue in due course.

A current topic of debate in Estonia is whether to introduce the euro prior to EU membership, i.e. whether Estonia should substitute its currency. This viewpoint is supported by several politicians and economists, but is endorsed by neither Eesti Pank nor the ECB, since it would entail loss of seignorage. Estonia's unilateral introduction of the euro would lead to a situation where Estonia uses the euro without having access to the ECB's monetary-policy facilities and without participating in the monetary-policy decisions either.

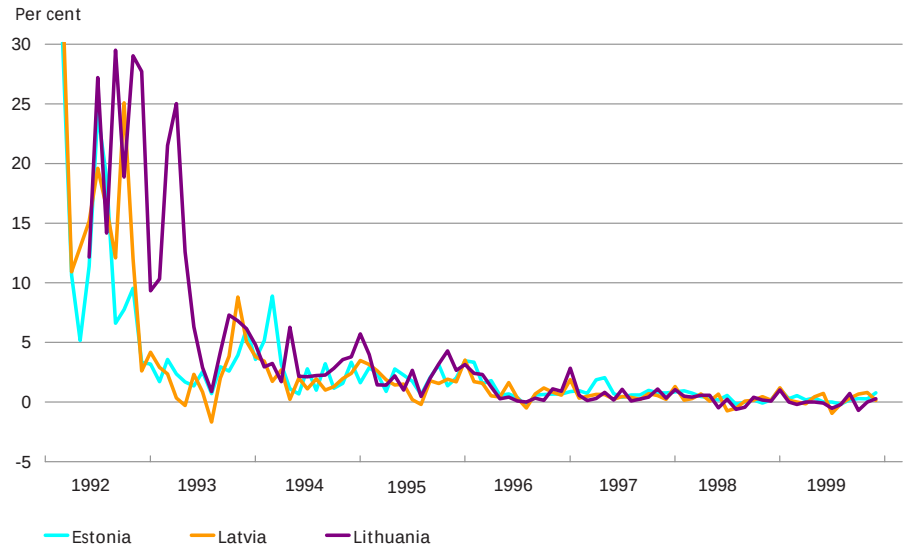
EMPIRICAL EXPERIENCE

It is difficult to make an actual empirical assessment of the comparative performance of countries which have used currency boards in their stabilisation processes and countries which have not. This is due to the relatively small amount of data available, as well as the difficulties in isolating the effect of the chosen exchange-rate regime from other elements of an often extensive stabilisation programme. Most empirical assessments include a number of developing countries which continued to use currency boards after independence.

Subject to this reservation the surveys show in general that currency boards or the use of a currency board regime result in higher growth and lower (and more stable) inflation.[2] Ghosh, Gulde and Wolf (1998) extend a survey to include the factors underlying the lower inflation. Traditional economic theory tends to explain the effect on the basis of the establishment of rules to curb monetary growth. According to the survey the predominant explanation is a lower velocity of money arising from increased confidence in the policy pursued. This emphasises the signal value of a currency board. Although the survey, as previously mentioned, is based on a wide range of countries, the result is

[1] Cf. e.g. Eesti Pank (1999) for a review of Estonia's strategy for adoption of the euro.
[2] See e.g. Schuler (1996), Ghosh, Gulde and Wolf (1998) and Gulde, Kähkönen and Keller (1999).

DEVELOPMENT IN CONSUMER PRICES IN THE BALTIC COUNTRIES Chart 5



Source: International Financial Statistics, IMF.

supported by a survey by Korhonen (1999) concerning eastern and central Europe. This survey indicates that the growth in the velocity of money has been lower in the Baltic countries than in e.g. Russia, Hungary and the Czech Republic.

The results in the Baltic countries

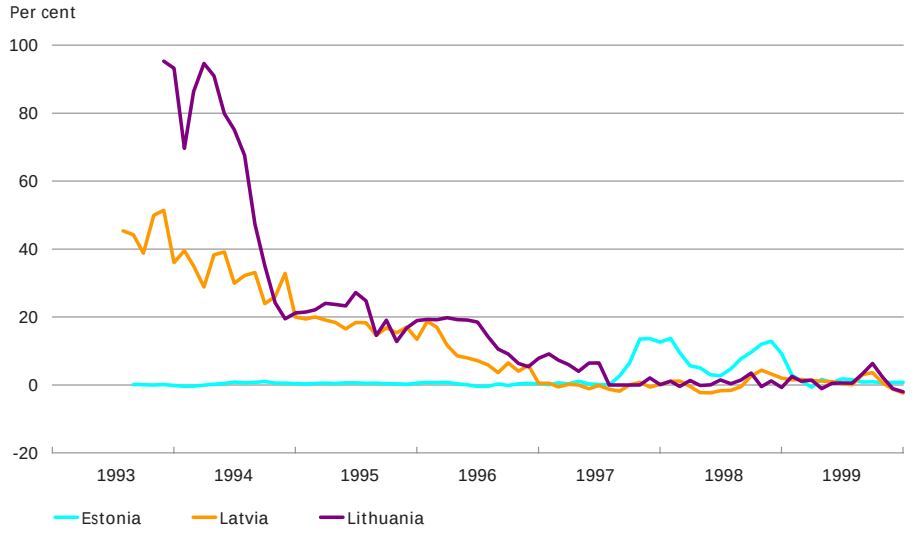
Despite differences in a number of areas the situation in all three Baltic countries is very similar. All three have re-emerged from the ruins of the former Soviet Union and are in the process of negotiating EU membership. Latvia differs from the other two countries in that it formally applies a traditional fixed-exchange-rate system, although the central bank de facto functions as if a currency board regime applied.

Inflation

The primary objective of establishing a currency board regime has been to reduce inflation and thereby create a stable framework for economic activity.

Each of the Baltic countries has succeeded in reducing inflation considerably. However, there is nothing to indicate that Estonia and Lithuania have reduced their inflation faster than Latvia, cf. Chart 5. On the contrary, during the period the rate of inflation was higher in Estonia than in the other two countries. However, this may be due to underestimation of the chosen exchange rate in 1992, and to considerable productivity improvements in the sector which is exposed to competi-

INTEREST-RATE DIFFERENTIALS TO THE ANCHOR CURRENCY'S INTEREST RATE (OVERNIGHT INTEREST RATE) Chart 6



Note: Data is calculated as monthly averages. Estonia vis-à-vis the German interest rate, Lithuania vis-à-vis the US interest rate and Latvia vis-à-vis the SDR interest rate.
Source: International Financial Statistics, IMF.

tion.[1] In March 2000 the annual increase in consumer prices was 3.2 per cent in Estonia and Latvia and 0.8 per cent in Lithuania.

Interest-rate convergence

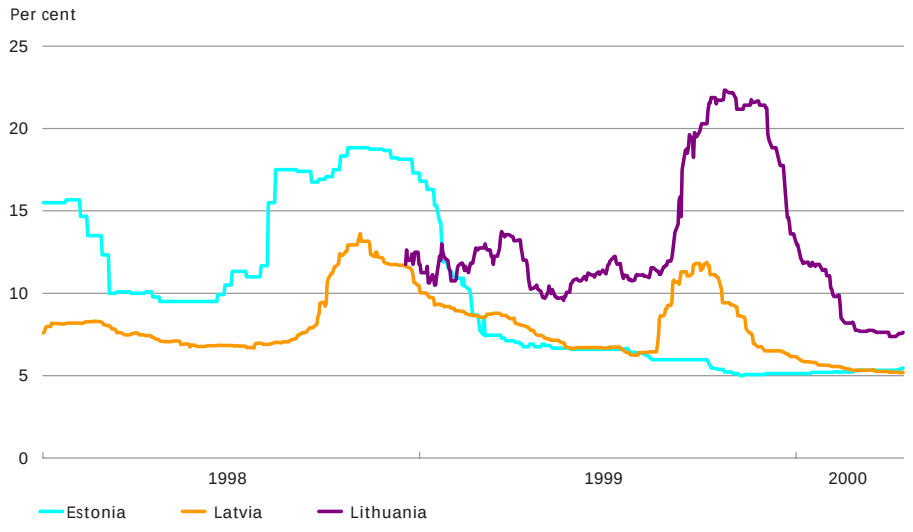
Greater confidence in a fixed exchange rate will result in a lower risk premium and thereby a narrowing of the interest-rate differential to the anchor currency. Countries using currency boards should therefore show a greater degree of interest-rate convergence than countries with traditional fixed-exchange-rate regimes.

A comparison of the overnight interest rates[2] of the three Baltic countries makes the long period with a high degree of interest-rate convergence in Estonia particularly apparent, cf. Chart 6. The interest-rate convergence indicates that Estonia achieved widespread internal and external credibility for its fixed-exchange-rate policy at an early stage, so that its devaluation premium was very modest. In connection with the crises in Asia in 1997 and Russia in 1998 Estonia was exposed to stronger pressure than the other Baltic countries. Money-market interest rates rose significantly, but have since receded.

1 Higher productivity increases than abroad in the sector exposed to competition lead to wage increases which will be transmitted to the protected sector. If productivity increases are lower in the protected sector than in the sector exposed to competition, this will entail rising prices for goods from the protected sector, which will intensify the pressure on costs in the sector exposed to competition. The overall result is a higher inflation rate. This is called the Balassa-Samuelson effect.

2 For data-related reasons the overnight interest rate is used here.

3-MONTH MONEY-MARKET INTEST RATES IN THE BALTIC COUNTRIES Chart 7



Note: End-of-day quotations. Updated up to and including 1 May 2000.
Source: EcoWin.

Lithuania's introduction of a currency board in 1994 also had a clear positive effect on its level of interest rates. In general, however, Lithuania has shown the lowest degree of interest-rate convergence. The background is such factors as the recurring discussion in Lithuania of when and how the currency board regime could be abandoned.[1] Under the original strategy from 1997 to phase out the regime Lithuania's currency, the litas, from 1999 would be pegged to the euro under a traditional regime. The time schedule has been revised on numerous occasions and the current plan entails a transition to pegging to the euro during the 2nd half of 2001, while maintaining foreign-exchange cover of 100 per cent.[2]

The discussion in Lithuania reflects the difficulty in assessing when a country has "sufficient credibility" to exit a currency board regime. The chances of abandoning the regime without this leading to unrest will improve if the trends for key economic indicators, e.g. government deficit and current-account deficit, are stable.[3] Without sufficiently convincing key economic indicators uncertainty regarding the choice of future regime can lead to a higher risk premium, cf. Chart 7.

Latvia's interest-rate differential has generally narrowed, which is related partly to the fact that the central bank de facto has functioned as

1 Originally, the central bank was not in favour of introducing the currency board regime, cf. Camard (1996).
2 See Kregžde (1999) for a review of Lithuania's strategy.
3 See e.g. OECD (2000) for a discussion of this issue.

if a currency board regime with full cover of the base money applied. Furthermore, Latvia's central bank de facto applied pure currency board principles when it in the 2nd half of 1999, during strong pressure against the Latvian currency, the lat, allowed a substantial decrease in the foreign-exchange reserve to have an impact on domestic liquidity whereby the money market re-adjusted directly via higher interest rates.

Besides the opportunity to devalue the risk premium also entails a country-specific risk which e.g. covers the country's ability (or inability) to service external loans. Estonia has pursued a tight economic policy to support its currency board regime. Estonia's crisis management in 1998 thus included measures to further tighten economic policy. The choice of exchange-rate regime has therefore contributed to promoting a stability-oriented fiscal policy.

Latvia has sought to pursue an economic policy similar to Estonia's, while Lithuania has faced problems regarding large government finance deficits. In recent years this is due primarily to a scheme to cover the losses suffered by the population during the hyperinflation in 1992-93. This scheme has imposed a considerable burden on government finances. As a consequence the guarantee was suspended in November 1999.

CONCLUSION AND PERSPECTIVES

A high inflation rate in a country has substantial adverse impacts and necessitates a stabilisation process to normalise the economy and create a stable framework for economic activity. The use of a currency board regime in a stabilisation process of this type by no means guarantees that a country can quickly stabilise its economy. In principle the use of such a regime means that the country in question is obliged to implement reforms such as a restructuring of general government finances and reorganisation of the financial sector and the state-owned sector.

For countries where it is difficult to convince market participants of the level of commitment to the economic and monetary policy pursued a currency board regime entails the advantage that the political costs of abandoning the regime are greater than under a fixed-exchange-rate regime with unilateral pegging of the currency. The potential loss of credibility will thus be aggravated and, *ceteris paribus*, market participants will be more confident that politicians will allow the central bank to maintain the regime, even if the cost to the economy in the short term may seem high. Argentina and Estonia, and most recently Bulgaria, have succeeded in maintaining a tight economic policy and permitting major crises in the financial sectors by referring to the currency board regime. On the other hand, until recently the various governments in

Lithuania found it difficult to maintain tight budgetary discipline. This has contributed to weakening the Lithuanian currency board regime.

In conclusion, a currency board regime creates a framework for economic policy which the politicians then have to fill out.

A currency board regime must be compared with the other opportunities[1] open to a country to pursue a fixed-exchange-rate policy, i.e. a unilateral fixed-exchange-rate regime and currency substitution.

A unilateral fixed-exchange-rate policy provides greater scope for a response to major exogenous shocks. This e.g. concerns the opportunity to pursue a discretionary policy if the currency comes under pressure (the interest-rate instrument) as well as enhanced institutional access to adjustment of the exchange rate. Latvia's example shows that it is possible to maintain a unilateral fixed-exchange-rate policy if a tight economic policy is pursued and the confidence of the markets has been gained. The Bank of Latvia has nevertheless pursued a policy which to a great extent is based on the currency board regime.

In a number of respects currency substitution, i.e. unilateral abandonment of a national currency in favour of the currency of the anchor country, is in theory superior to currency boards. It entails several advantages, in particular a lower level of interest rates, since the foreign-exchange premium is eliminated, although an exit premium continues to exist. The key economic drawback is the loss of seignorage. Compared to the situation only a few years ago, currency substitution as a possible exchange-rate regime cannot be ruled out in advance. To some extent the successful use of the currency board regime has contributed to stimulating consideration of the currency substitution option.

The use of a currency board regime in a stabilisation process cannot be isolated from the other elements of reform. The question is whether Estonia's significantly better performance than most other transition economies since the mid-1990s is due to its choice of monetary system, or its general economic policy and not least its structural policy?

In general, the countries which have used currency boards in their stabilisation processes have experienced sound economic development and the currency board regime has contributed to creating stable framework conditions. Furthermore, the regime has remained intact. The currency board countries have succeeded in maintaining a fixed exchange rate vis-à-vis their anchor currencies during a period of high turbulence on the financial markets. Argentina is the only country in South America which did not devalue its currency against the dollar during the 1990s, while the Baltic countries are the only countries in eastern and central Europe not to devalue against their respective anchor currencies since 1994.

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[1] ERM II is not considered here, as it is an option only available to a limited group of European countries, including Denmark.

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