Review of Economies in Transition
Idäntalouksien katsauksia

1997 • No. 7 19 .11.1997

Reprint in PDF format 2002

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Bank of Finland
Institute for Economies in Transition, BOFIT

ISSN 1235-7405
Reprint in PDF format 2002

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Abstract

Since regaining independence, Estonian has carried out its economic and political reforms with dispatch and determination. Estonia has now succesfully completed primary tasks faced by most transition countries, ie. trade liberalization, macroeconomic stabilization, privatization, monetary reform, strengthening of financial sector etc. One of the main challanges presently facing Estonia is the EU membership. If Estonia intends to become a member of the EU in the years ahead, EMU will comprise the framework of development also for the Estonian economy. What then are the implications of EMU memberhip for Estonia ? Benefits include elimination of currency transaction costs, reduction of costs of hedging against exchange rate risk, increased competition due to price transparency, increased foreign trade, elimination of problems related to fluctuating exchange rates, low inflation, and benefits related to increased international role of the common European currency euro. Costs related the EMU and a common currency depend on the structure of Estonia's economy vis a vis other European economies. In general, if EMU member states have similar economic structures and economic problems, then the costs will be low, because a common EMU economic policy suit every country's individual needs. If this is not the case, then the costs of a common currency will be high.

Estonia's participation in euro area requires a fulfilment of the Maastricht convergnece criteria on interest rate, exchange rate, price stability as well as public debt. In respect of the government deficit and debt, succesfull economic reform and accompanying economic growth have created a situation wherein Estonia's debt burden is relatively small and the Estonian government can easily borrow money from international markets. Regarding to price stability, inflation rate in Estonia is still considerably above the level of Western European countries. Also, long-term interest rates still exceed the reference value of the EMU criterion. Finally, the criterion of exchange rate stability can be considered to be essentially fulfilled in Estonia because the kroon has already for five years been pegged to the Deutschemark, one of the most stable currencies in Europe.

If Estonia remains outside the official euro area after accession, the EMU will still have an enormous impact on its economic and monetary policies. For Estonia, as well as for all new member states, the pursuit of strict macroeconomic and fiscal policies is of essential importance.

Keywords: Estonia, EMU, EU, integration, enlargement, monetary policy

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1 Introduction

The 1990s have been a period of rapid transformation for the Estonian economy. Estonia has now successfully completed several primary tasks faced by most transition countries, ie liberalization and opening up of the economy, macroeconomic stabilization, privatization, monetary reform, strengthening of financial sector etc. Further developments in the economy will however depend to a greater extent on the orientation of the Estonian economy toward the goals of the advanced European economies, since joining the European Union is high on Estonia's agenda.

One of the main challenges presently facing the EU is formation of the economic and monetary union (EMU), which entails a changeover to the common currency, the euro. This process also has implications for Estonia. If Estonia intends to become a member of the EU in the years ahead, EMU will comprise the framework of development also for the Estonian economy.

The present paper can be viewed as an attempt to take a closer look at EMU prospects for Estonia. Firstly, it focuses on the development of EMU itself and the present stage of Estonia's aspiration to become a member of the EU. Secondly, it examines how well Estonia can fulfil the criteria for joining the Stage Three of EMU, and thirdly, the prospects for the Estonian currency board and monetary policy.

The author gratefully acknowledges the contribution to this paper of Tanel Ross from the Bank of Estonia.

2 Estonia: on the way to European integration

2.1 EMU and its prospects for the near future

European economic and monetary union is based on the Maastricht Treaty, which came into effect on 1 March 1993. The Treaty contains three parts, the first dealing with economic cooperation, and the other two with cooperation in foreign and defence policy etc. EMU will be achieved in three stages, gradually harmonizing economic and monetary policies of participating countries and strengthening cooperation between them.

The first stage of EMU began already in 1990 after the Madrid summit and ended in 1993. The main result of the Stage One was free movement of goods, capital, services and labour, ie the creation of common market.

Stage Two of EMU started in 1994. The main goal of this current stage is to deepen economic and monetary cooperation. The beginning of the Stage Two was marked by the reorganization of cooperation between the European central banks and establishment of the European Monetary Institute (EMI) in Frankfurt. The main task of the EMI is technical preparation for the third and final stage of EMU, which involves elaboration of monetary policy instruments, harmonization of present regulations and drafting new ones, preparation for transition to the common currency, the euro, at the beginning of the Stage Three. In December 1995 the European Council meeting in Madrid set out a detailed scenario for transition to the euro. Accordingly, in April–March 1998 a decision will be made on which member states will adopt the euro on 1 January 1999. After this decision, the European Central Bank (ECB) will be established on the basis of the EMI and the European System of Central Banks (ESCB) will be set up.

Stage Three of EMU will start on 1 January 1999. Then the EU economic and finance ministers (ECOFIN Council) will decide on irrevocably fixed conversion rates between the euro and participating currencies and the European Central Bank will start to conduct the common monetary policy for the euro area. In 1999–2002, the economies of the euro area will prepare for the changeover to the euro. During this period, the euro will exist only as a unit of account. The economies of the euro area will continue to use their national currencies as legal tender representing euro. Euro banknotes and coins will be issued on 1 January 2002 at the latest. The national currencies of the euro area will lose their status as legal tender in their respective countries on 1 July 2002 at the latest and European Monetary Union will then be completed.

The decision on which countries will be first to join EMU will be based on a progress report by the European Commission and the EMI. In order to participate in Stage Three of EMU, a country must fulfil the so-called Maastricht criteria, which reflect a high degree of sustainable economic convergence, viz low inflation, sound public finances (government budget deficit and government debt), low long-term interest rates and stable exchange rates. The report will also examine the compatibility between a member state´s national legislation (incl. national bank statuates) and the provisions of the Treaty. Crucial issues of legal convergence include central bank independence and prohibition of government financing by central banks. The decision on which countries will introduce the euro in 1999 will be made by the ECOFIN Council and the EU Heads of State or government.

Since progress toward convergence varies among EU countries, it is likely that they will join

EMU in two waves. In 1996 the EMI published a progress report on convergence, which indicated that a majority of EU member states did not fulfil the necessary conditions for the adoption of a single currency. In terms of monetary consolidation, significant progress has been made, but as regards fiscal consolidation progress has generally been too slow in spite of considerable efforts to reduce public debt and budget deficits. The decisive assessment, however, will be made in early 1998. The markets seem to expect that six countries, ie Germany, France, the Benelux countries and Austria, will form EMU in 1999; Finland and Ireland also have a good chance of joining EMU in the first wave. A second wave of countries might still enter Stage Three of EMU even before euro banknotes and coins are introduced in 2002. These countries are referred to in the Treaty as 'countries with a derogation' until they join the euro area. They may enter the euro area one by one, as they achieve the necessary degree of economic and monetary convergence.

Varying timetables for joining EMU will have implications for EMU preparations. On the one hand, the EMI is presently finalizing its work on the ESCB. On the other hand, EU countries are discussing the relationship between countries of the euro area and other EU countries. Among other things, the European Union must ensure that the two-speed approach to monetary integration does not break up the Union as such. A system of monetary cooperation between the two areas within a new European Monetary System (EMS II) is needed to replace the present EMS.

Since it is possibile that Estonia will become a member of the EU and thereafter also a member of EMU, EMS II may be an option for Estonia as well.

The organization of EMS II will follow five principles:

First, the euro will be the anchor for the exchange rate mechanism of EMS II. The mechanism would be based on central rates defined against the euro. A standard fluctuation band would be established around the central rates of these currencies, probably something like the standard band for the current ERM, ±15 per cent.

Second, the statutory requirement that the ECB maintain price stability would need to be safeguarded. This implies that the ECB must be empowered to interrupt exchange rate interventions if it determines that further interventions would jeopardize the stability of the euro.

Third, a possible realignment of central rates would need to be timely attained in order to avoid significant exchange rate misalignments between the euro and other currencies.

Fourth, the system must be sufficiently flexible to accommodate different degrees of economic convergence and monetary policy strategies among the 'pre-in' countries.

Fifth, setting up an exchange rate mechanism for EMS II will allow the EU to continue to adhere to the principle of equal treatment of all Member States with respect to fulfilment of convergence criteria, including the exchange rate criterion.

The specific setup for the EMS is presently under discussion.

2.2 Estonia's aspirations for EU membership

Since regaining independence, Estonia has carried out its economic and political reforms with dispatch and determination. From the very start of its reform effort, Estonia has tried to develop in the direction of a modern European society and to create the necessary legislation and regulatory framework to achieve this goal.

Relations between Estonia and the EU have developed rapidly since 1991. It was only a half year after the European Community extended diplomatic recognition to Estonia that formal ties were established between Estonia and the EU, with the conclusion of the Agreement on Trade and Commercial Cooperation on 11 May 1992. On 18 July these ties were strengthened with the signing of the Free Trade Agreement between the two parties. This agreement, which came into force on 1 January 1995, was unique: transition periods were not required in key economic areas. The agreement intensified economic cooperation between Estonia and the EU and served as an important stepping stone to the Europe Agreement.

The Europe Agreement, officially signed on 12 June 1995, marked the beginning of a new phase in Estonia's relations with the EU. Upon aquiring the status of an associated member, Estonia joined the circle of potential EU members. For the first time in the history of its relations with the EU, Estonia was included in the political dialogue as well as in the multilateral structured dialogue framework, which forms an important part of the Union's preaccession strategy defined by the European Council in Essen in December 1994. In keeping with the positive momentum built up over recent years, on 28 November 1995 Estonia submitted its official application for full EU membership.

The conclusions of the European Council meeting in Madrid in December 1995 reconfirmed the EU Commission's Cannes mandate to render opinions on all applicant countries, including Estonia, as soon as possible after the end of the Intergovernmental Conference. A reason for the timetable is that the initial phase of negotiations could then coincide with the start of negotiations with Cyprus and Malta six months after the end of the IGC (probably at the start of 1998) and could take these opinions into account. The Commission's opinions would include a detailed description of the political and economic situation in each applicant country; an evaluation of their capacities to adopt and implement the acquis (ie rights and obligations under EU treaties and laws) in all areas of Union activity; an indication of possible problems that may arise in accession negotiations; and a recommendation as to startup of negotiations.

In addition, the Commission was asked to evaluate the effects of enlargement on Community policies in other respects, particularly as regards agricultural and structural policies (impact studies). Second, it was to start to prepare a composite paper that would complement the opinions and impact studies by providing an overall approach to enlargement issues. Third, it was to submit a report on the future financial framework of the Union, taking into account the prospect of enlargement.

The duration of accession negotiations, which could begin in early 1998 if the IGC is concluded in mid-1997, is difficult to foresee. In the case of Austria, Sweden and Finland, they were completed in thirteen months, whereas with Spain and Portugal they lasted nearly seven years. Since the duration of negotiations depends on the complexity of the issues involved, it is natural that it would vary from country to country. At the end of negotiations an agreement will be signed, setting out the conditions for admission and adjustments to the treaties on which the Union is founded. This agreement will be submitted for ratification by all the contracting states. Taking into account the time needed for negotiations and ratification, the earliest realistic possibility for the next enlargement would be in the years immediately following 2000, most likely around 2002–2005.

This year will be decisive for countries with association agreements with the EU. Thus the Estonian government and parliament have given high priority to all work related to joining the EU. In June there will be a conference in Amsterdam at which representatives of EU member countries will decide on the plan for accession. Then we will know whether Estonia is included among the first wave of accession countries. In Estonia it is believed that it is crucial for the country to be in the first wave, because the second wave may come much later, perhaps even 10 years later.

The EU Commission holds the view that all applicant countries must be treated on an equal basis. This means that each applicant country will be considered on its own merits, in a scrupulously objective way, without prejudging the results of the assessment. At present there are ten Central and Eastern European countries that have applied for EU membership. Which countries and when they will actually become members of the EU depends on many political and economic factors reflecting a country's readiness to be admitted to that status. It should however be noted that whereas joining EMU requires fulfilment of certain fixed criteria agreed in the Maastricht Treaty, no quantifiable criteria have been officially set for joining the EU.

At the Copenhagen summit, three basic criteria were listed that associated Countries would need to satisfy. The first requirement was stability of institutions. The second was a functioning market economy, sufficiently developed to cope with the competitive environment and market forces of the Union. Third, every applicant is expected to demonstrate the ability to take on the obligations of membership as well as to support the aims of political, economic and monetary union. A fourth condition was that the EU itself should show that it has the capacity to handle new members without slowing the momentum of European integration.

Since the Copenhagen criteria are too broad, there have been attempts to put forward more specific admission criteria. We will discuss several of them here. One was proposed already at the Copenhagen summit by the French, who wanted to discuss in practical terms what would constitute a functioning market economy and how one might measure the capacity to cope with competitive pressure. According to the 'French list', the development of the market economy could be measured in terms of GDP per capita, whereas the functioning of the market economy could be measured by the extent of privatization. Other factors that should be included are the quantifiable level of social protection as well as control over public debt and inflation. In addition, it should be possible to assess the applicant's monetary and fiscal policies, including convertibility and stability of the local currency and policies on capital flows. There should be an efficient banking system. Moreover, the degree of openness of the economy should be measurable via the ratio of external trade to GDP and the implications of the applicant's economy for the Union. Finally, the capacity of national administrations to implement national and Community law as well as the existence of a modern fiscal system should be included in the assessment of economic health.

It should be noted that the list of accession criteria depends also on the accession model used; Kumar (1996) lists five such models:

1) gradual group EU membership model, by which the applicant countries are divided into two or more groups, one of which could enter the EU relatively quickly and the other of which would have to wait longer;

2) gradual partial/full membership model, by which the CEE countries could be accepted for EU membership according to the fulfilment of criteria for different constituent parts of the EU (economic, political, security). This would however demand a complete redefinition of EU membership;

3) a combination of the above two models, ie the gradual group partial membership model;

4) the non-enlargement model, possibly based on fulfilling the content of the European Association Agreement without securing full membership after the fulfilment of the Agreement's requirements; this is however not acceptable to the CEE countries;

5) the enlargement model based on criteria fulfilment, which is essentially similar to the concept used to prepare EU members for EMU membership.

For the fifth model several lists of criteria could be considered, which should include objectively measurable criteria. Without going into a discussion of which criteria should be included, we mention that Orlowski (1997) has proposed a less extensive set of admission criteria, somewhat resembling the Maastricht criteria, which could be used for the accession programmes of these countries (probably with a view to future EMU prospects). The proposal assumed that the optimal time of accession could be set at the year 2002. Therefore, it suggested that by end-2001 candidate countries ought to achieve:

1) a general government budget deficit-to-GDP ratio not exceeding 2.5 percent,

2) a targeted rate of annual inflation not exceeding 5 percent,

3) private sector generation of at least two-thirds of GDP,

4) an exchange rate system able to ensure a stable rate vs the euro and allowing the country to join EMU at a later date.

Estonia's chances for inclusion in the first wave of accession depend on the extent and depth of economic reforms, current progress of reforms, the level of GDP per capita, degree of present economic integration into EU etc. The scope of the present article does not enable us to present a complete examination of the country's economic performance. But we can glance at Estonia's present economic integration with the EU. It is obvious that the higher the integration level, the easier and less painful the accession. At present there are three clear leaders for the eastern enlargement: Poland, Czech Republic and Hungary. Slovakia and Slovenia also have fairly good chances. These five countries are refered to as the CEEC-5.

In order to get an idea of Estonia's chances of joining the EU in the first wave of enlargement, a brief comparison of transition and economic

Table 1 **Selected macroeconomic indicators in CEEC-5 and Baltic countries in 1996**

Country	GDP/capita (PPP USD) 1995	GDP growth (%)	Inflation (%)	Unempl. rate* (%)	Debt/exports ratio (%)	Budget balance (%)
CEEC-5						
Poland	5479	5.5	20	13.6	192	–2.5
Czech Rep.	9547	4.8	8.8	3.5	60	–0.1
Slovakia	7379	6.0	5.8	12.8	53	–4.4
Hungary	6604	0.5	23.6	10.5	250	–2.0
Slovenia	10521	2.5	9.7	14.4	46	na
The Baltics						
Estonia	4051	4.0	14.8	3.0	13.4	–1.4
Latvia	3228	2.5	13.1	7.1	30.8	–0.8
Lithuania	4000	3.6	13.1	6.4	30.6	–2.5

* End of period
Sources: OECD; WIIW; BIS; European Commission; Statistical Offices of the Baltic states

Table 2 **Integration of Estonian foreign trade into the EU in 1995**

Country	**EU share in foreign trade (%)**	**Country**	**Foreign trade with EU/GDP (%)**
Slovenia	67.9	Estonia	36.3
Poland	67.3	Slovenia	32.5
Hungary	62.2	Czech Rep.	24.5
Czech Rep.	61.0	Hungary	20.0
Estonia	60.0	Lithuania	18.6
Romania	51.4	Slovakia	17.6
Latvia	47.0	Latvia	16.0
Lithuania	38.9	Bulgaria	14.7
Bulgaria	37.7	Poland	13.6
Slovakia	36.1	Romania	12.2

Source: Hansson, A. (1996).

performance between the CEEC-5 and the Baltics is given in tables 1 and 2. One can infer from these tables that Estonia has done well in carrying out economic reforms and that it is in a more or less equal position with the informal accession leaders. Its weakest areas, according to the transition indicators, are in the development of securities markets and nonbank financial institutions.

The comparison of certain key macroeconomic indicators presented in table 1 shows that by the level of economic development as measured by GDP per capita (in PPP US dollars) Estonia lags somewhat behind the CEEC-5 group. However, the country has achieved moderate economic growth, low unemployment, a low budget deficit and low debt burden. Therefore, it is clear that by these indicators Estonia could well be included in the first wave. But nobody can yet foretell the importance the EU will ascribe to certain political considerations that have surfaced in the process of preparation for enlargement. Among the Baltic countries Estonia seems to be an accession leader, and it is hopeful that geopolitical considerations will play a less significant role than economic performance in the process of enlargement. If this is the case, Estonia may join the EU earlier than the other Baltic countries.

An additional factor reflecting Estonia's economic integration with the EU is its foreign trade with the EU countries. This can be measured in two ways. The first indicates the importance of trade with EU states in Estonia's overall foreign trade and is measured as the ratio of trade with EU states to Estonia's total foreign trade. The other way focuses on the importance of trade with EU countries to Estonia's economy and is measured as GDP produced for EU countries.

These two indicators enable comparison of countries aspiring to EU membership. Table 2 presents official data for ten Central and Eastern European countries. Foreign trade is measured as the average of exports and imports of goods. Since services are excluded, Estonia could be even more highly integrated into Europe than the figures show. The first measure of the importance of EU countries in foreign trade shows that Estonia, at a 60 per cent EU share in foreign trade, ranks fifth; Slovenia and Poland are the leaders, at two-thirds. Estonia's position looks even better if we take into account the fact that Slovenia, Poland and Hungary started their reforms and established contacts with Western European countries earlier. In 1991 about 95 per cent of Estonia's foreign trade was with the Soviet Union. Estonia is even more tightly connected to the EU market than EU member states themselves, for which the average is about 50 per cent.

The second indicator of the importance of foreign trade with EU countries places Estonia (36.3 percent) first among the EU candidate countries, reflecting the openness of the Estonian economy. Estonia is followed by Slovenia and the Czech Republic. For Latvia and Lithuania the share is only half as much. Estonia's progress is due mainly to its economic openness, liberal trade regime and focus on economic integration with the West.

In considering Estonia's chances for the next enlargement of the EU, one is led to consider the relationship between joining the EU and joining the EMU. The history of EMU suggests that participation in monetary union may not necessarily be required of the CEE countries. One can nonetheless expect that the EU Commission will insist on their acceptance of monetary union, since the EU would otherwise have a sizable group of members with derogations from monetary union, which would make that status seem much less exeptional than at present. CEE countries' participation in monetary union requires that they attain a sufficiently high degree of macroeconomic stability. At the same time, the policy mix required to achieve these criteria would likely slow economic growth in the transition countries and thus prolong the reform process required for accession (Von Hagen 1996).

There are however several reasons why entry into EMU simultaneously with EU accession is unlikely for Estonia and other CEE countries (see Backe and Lindner 1996).

First, in spite of its macroeconomic progress, it is unlikely that Estonia will be able to fulfil all the Maastricht criteria for joining EMU in 2002. Moreover, this would imply that the year 2000 would be the reference year for criteria fulfilment.

In addition, there is a legal problem with the convergence criterion relating to exchange rate stability, which requires two years of participation in the Exchange Rate Mechanism of the EMS. Although the Treaty is clear that this means formal membership in the ERM, some member states hold the view that exchange rate stability is sufficient to fulfil this criterion. Still, one can expect that, in accord with the Treaty, formal ERM membership will be required, so that even if Estonia pegs its currency to the euro, it will not be exempted from the formal requirement. It remains to be seen whether the EU takes a different position if the issue of early membership for the candidate countries comes up.

Finally, there may be also some practical and technical obstacles to simultaneously joining the EU and EMU. National central banks would need to execute from day one of their countries' membership in EMU all monetary and exchange rate policy decisions of the ECB. This would imply that the Estonian central bank would have to start the necessary comprehensive preparations very early in the process, in all likelihood even before the end of EU accession talks and thus presumably without a clear view as to EMU prospects. In some respects, it may also be questionable whether Estonia's administration and financial sector would be able to prepare and fully implement the introduction of euro notes and coins within a timespan of at most three years, coinciding with the initial phase of membership in the European Union and all the challenges that that would bring.

Considering the impact of EMU on Estonia's EU accession prospects, one might ask whether there is a conflict between a deepening of monetary integration within the EU and a future widening of the EU to the East. In this context, technical, financial and adjustment issues must be taken into account.

In analyzing technical-procedural aspects, one might ask whether the EMU implementation timetable will come into conflict with the enlargement timetable and thus lead to a slowing of the enlargement process. The European Union's agenda for the rest of the decade is a busy one. Nevertheless, a comparative look at the schedules for EMU and enlargement shows that there should be no conflict between these processes in terms of timing. Accession talks will presumably be started in early 1998 and will gain momentum in the second half of 1998. At that time, preparations for Stage Three of monetary union will already be at a very advanced stage. After the start of Stage Three, EMU-related activities will likely be such an absorbing concern of EU as to slow down the accession talks. Moreover, it should not be overlooked that the heaviest workload in the monetary sphere will be carried by the ESCB, while the brunt of accession negotiations will fall on the European Commission.

A second issue relates to the question of whether EMU will lead to additional community spending and thus further complicate the task of finding solutions to the EU budgetary challenges of eastern enlargement. However, the setting-up of EMU will probably not increase pressure within the EU for additional intra-community fiscal transfers and so narrow the Union's room for fiscal manoeuvring. Additional transfers within the euro area resulting from potential asymmetric shocks are as unlikely as further spending due to an (unlikely) divergence between euro zone countries and other EU member states after the start of EMU.

A third issue relates to the question of greater adjustment needs for accession candidates as a consequence of monetary union. Despite the fact that EMU is a major step toward deepening the Community, EMU does not raise any new significant hurdles for EU candidate countries. EU accession is in no way linked to fulfilment of the macroeconomic conditions for Stage Three of EMU. Indeed, as mentioned above, the candidate countries will most likely join Stage Three several years after gaining EU membership. Participation in EMU does not entail a legal obligation for additional adjustment, but fulfilment of the requirements should not cause significant problems for Estonia.

In sum, EMU does not and will not hamper the EU accession prospects of candidate countries like Estonia. In fact, by keeping up the momentum of European integration, EMU is creating a favourable climate for a future Eastern enlargement; a delay in completion of monetary union or other implementation problems would substantially worsen the basic conditions for enlargement of the Community.

2.3 Benefits and costs of EMU

What are the implications of EMU membership for Estonia? We next take a brief look at the benefits and costs of EMU based on Kotilainen and Alho (1994).

The benefits can be divided into the two broad categories of macroeconomics and microeconomics. Macroeconomic effects may belong to either category, depending on the theoretical basis applied. In addition, the effects of EMU always depend on the economic situation as well as on difficult-to-predict behaviour of economic agents. Microeconomic benefits:

1 Elimination of currency transaction costs

- 1.1 reduction of direct costs, ie operational costs and costs due to differences in exchange rates;
- 1.2 simpler bookkeeping.

2 Reduction of costs of hedging against exchange rate risk (inside the EMU area).

3 Integration of financial markets facilitates efficient allocation of capital within the EU area (this is mainly related to elimination of exchange rate risk and levelling of long-term interest rates, which expands the area of the common currency and provides economies of scale in financial intermediation).

4 Increased competition, because of price transparency.

5 Increased foreign trade.

Macroeconomic benefits:

6 Elimination of problems related to fluctuating exchange rates

- 6.1 higher interest rates in weak currency countries will disappear;
- 6.2 levelling of interest rates has a positive effect on the economies;
- 6.3 elimination of wage effects of exchange rate instability.

7 Low inflation due to independence of ECB (depends on central bank policy).

8 Benefits related to increased international role of the euro:

- 8.1 euro will have a stronger position in foreign exchange markets than any existing European currency.
- 8.2 EMU needs less currency reserves than the sum of the currency reserves of EMU member states.
- 8.3 increased role of the euro in foreign trade and as a world currency.

It is relatively easy to comprehend and calculate the benefits related to elimination of currency transaction costs. The EU Commission has estimated that these costs amount 0.4 per cent of GDP and will vary across countries, depending on the size and efficiency of the local foreign exchange market. In bigger countries it will be 0.1–0.2 per cent of GDP, but in smaller countries it could be as much as 1 per cent.

Costs related to exchange rate risk have been relatively small in the EMS, estimated at 0.1 percent of GDP. This again varies across countries, depending among other things on exchange rate fluctuations and the structure of foreign trade. Smaller firms will benefit more from a common currency, since they do not have efficient systems for protection against exchange rate fluctuations.

The benefits of financial market integration have been calculated by Price Waterhouse and are in the range of 0.042–0.048 per cent of GDP. According to these calculations the microeconomic benefits of EMU (1–3 above) will reach some 0.55 percent of GDP.

The improvement in economic efficiency and lessening of exchange rate fluctuations will also influence investment and hence economic growth. Baldwin (1991) has estimated the effects of EMU on economic growth. His traditional economic growth model predicts a total effect of 0.8–1.3 per cent of GDP. An 'endogenous growth' model predicts a total effect of 2.35 per cent of GDP. Baldwin's calculations are however highly approximative.

Despite much effort, empirical studies have not confirmed the relationship between changes in exchange rates and foreign trade. Because foreign trade and direct investment are related to real exchange rates, this relationship involves the effects of changes in both prices and exchange rates. In the short run, a floating exchange rate regime is associated with greater volatility of the real exchange rate than is a fixed rate regime. In the long run, this difference disappears.

Greater changes in nominal exchange rates have some effect on foreign trade, although there are no empirical data to support this observation. This effect is however not large, since the EMS keeps exchange rates fairly stable.

Higher long-term interest rates include risk premia (see benefit 6.1). Short- and medium-term real interest rates can have wide differentials across countries. Long-term interest rates are however less divergent, because differences in exchange rates tend to reflect differences in inflation rates.

The positive effect (6.2) resulting from the elimination of differences in exchange rates is realized in the case that the currency market cannot take precisely into account the effects of the main economic growth factors or where the market expects currency revaluation due to growth prospects or devaluation due to economic decline. With a fixed exchange rate, the interest rate may be too low when the the economy is growing or too high when it is in recession.

In a floating rate regime, the exchange rate reacts quickly only if the market is efficient and economic policy is credible and is aimed at stabilizing the exchange rate. If the economy is growing, the currency will appreciate; in recession it will depreciate. Interest rates (especially short-term rates) help to stabilize economy. Economic growth leads to higher interest rates, since devaluation is expected; recession has the opposite effect.

The positive effect on the labour market of a fixed exchange rate and common currency (6.3) is especially important in countries where economic policy (especially monetary and exchange rate policy) is unstable. This effect is greater when economic instability is greater.

The benefit (7) is greater in countries that have suffered from the conduct of inflationary monetary policy by the central bank. In Germany, however, there is widespread fear that the European Central Bank may not follow as strict and coherent a monetary policy as the Bundesbank.

The costs of a common currency depend on the structure of a country's economy, ie whether it is similar or differs from that of its partners, and also on the nature of the country's economic problems. If EMU member states have similar economic structures and economic problems, then the cost will be low, because a common EMU economic policy will suit every country's individual needs; if this is not the case, then the costs of a common currency will be high.

Fixing the exchange rate eliminates both exchange rate policy and monetary policy as tools of general economic policy, but free movement of capital is not restricted. Those countries that have allowed their currencies to fluctuate have achieved some success in monetary policy. In the short run, this success depends on the long-run confidence that other countries have in the economic policy of the country n question. If confidence is strong, then monetary policy aimed at fostering economic expansion will not cause high inflation expectations and raise long-term interest rates. If a country has a large budget deficit and inflation expectations are high, then there is less room for manoeuvring.

If the level of interest rates in EMU countries becomes more uniform, the interest rate will lose its role as a stabilizer. The interest rate is a stabilizing factor when foreign exchange markets accurately and timely reflect economic equilibrium and economic conditions. In this case economic expansion leads to rising interest rates and vice versa. This relationship presumes that financial markets accurately anticipate economic performance and economic policy credibility. The interest rate is a useful tool when a country's economic performance differs from the average of other member states.

But if financial markets systematically lag behind in assessing economic conditions, the interest rate will fluctuate in a way that does not help stabilize the economy. In this case, a fixed exchange rate would be appropriate. Short-term interest rates may have stabilizing effects if the markets are conditioned to anticipate revaluation of the currency when the economy is expanding and devaluation when it is contracting. Long-term interest rates would help to stabilize the economy if in periods of expansion these rates took into account the devaluation expected to occur in periods of recession and vice versa. The behaviour of interest rates depends also on exchange rate policy.A timely and sufficiently large revaluation might also push up short-term interest rates during an expansionary phase.

If a country with a fixed exchange rate is experiencing a recession due to domestic (rather than international) causes and the effects vary across different parts of the country, factors other than the exchange rate become crucial. If wages and prices adjust flexibly, thus helping to stabilize the economy over the business cycle and enhance the competitiveness of the open sector over the long run, then the detrimental effects of recession will be muted. Labour force mobility is therefore a means of both reducing unemployment and ensuring wage flexibility. Wage flexibility can also be increased by conducting wage negotiations at the enterprise level. Price flexibility can be increased via both competition from imports and efficient competition policy.

If national exchange rate policy and monetary policy are excluded from the tools of economic policy, then fiscal policy will be the main tool of economic policy. The EU requirement of financial balance in the public sector placed limitations on extensive use of fiscal policy. Short-run fiscal policy can be used only if the budget deficit prevailing in a recession can be eliminated by a surplus generated during the recovery. In this situation, it is crucial that fiscal policy be made to have a quicker impact on the economy and that economic policy effects be more accurately predicted. Many economists have said that on the basis of the US experience the EU would need to increase the size of its budget so as to increase the magnitude of built-in stabilizers. Hence some analysts feel that the EU must conduct an active fiscal policy.

The net benefit of EMU thus depends also on the extent to which costs related to the common currency are avoided. EU competition policy and the pressure of international competition add to the pressure on member states to increase the flexibility of their economies. However, economic structure and economic agents' behaviour change only slowly; it is also not clear whether economic integration and EMU will make the structure of member states' economies more uniform. Even in the US the structures of individual states' economies are not homogeneous. Therefore, the elimination of monetary and exchange rate policy from the tools of economic policy presumes active efforts to enhance the effectiveness of fiscal policy.

3 Fulfilment of the Maastricht criteria

In the second stage of EMU special attention must be paid to enhancement of economic performance and closer cooperation among member states in economic policy matters. At the Maastricht summit specific, measurable goals for economic convergence were established. These are referred to as convergence criteria. The agreement states that these goals are to be achieved by the start of Stage Three of EMU; at the same time they are preconditions for participation in Stage Three. The criteria, by category, are as follows:

1) Government deficit:less than 3 per cent of GDP.

2) Government debt: less than 60 per cent of GDP.

3) Inflation rate: not more than 1.5 percentage points above the average inflation rate for the three countries with the lowest inflation rates.

4) Long-term interest rate: an average rate not more than 2 percentage points above that of, at most, the three best performing Member States in terms of price stability.

5) Exchange rate: remaining within in the fluctuation margins of the EMS for at least two years before the examination (current margins: ±15 per cent; for a more precise statement of the Maastricht criteria see the Annex).

Next we will briefly examine the current situation in Estonia with respect to fulfilment of the Maastricht criteria.

The government deficit criterian pertains to financing of the public sector. Public sector financing includes all financial operations carried out by central and local governments as well as non-budgetary funds (in Estonia, the latter include Social Insurance Fund, Medical Insurance Fund, Forest Capital Fund and Environmental Fund). These operations include all those that cause government expenditures and are related to borrowing and lending based on domestic or foreign financing. In 1995 the government deficit was EEK 484.8 million (less than 1.2 per cent of GDP) and in 1996 EEK 791.1 million (less than 1.4 per cent of GDP), ie well below the Maastricht criterion. The Estonian government has planned that in

1997 the government deficit should not exceed EK 320 million (0.5 per cent of GDP). If this is achieved, the actual deficit will be one-sixth of what the convergence criterion would allow.

This does not however mean that there are no problems here. Successful economic reforms and accompanying economic growth have created a situation wherein the Estonian government can fairly easily borrow money from internation markets. Local governments are also able to easily finance their operations and costs by borrowing. There are certain rules governing local government borrowing, but the restrictions are not clearly defined.

As a result, there has been a significant propensity among local governments to rely on outside financing. As an example, one can cite the issue of bonds by the government of Tallinn, in which the buyer was the Japanese investment firm Nomura. Several experts have expressed the opinion that the terms of the issue were not especially favourable for the taxpayers of Tallinn and that the loan was too large. If problems arise, the loan will have to be financed by the central government, because without a law regulating borrowing by local governments the central government carries the ultimate financial responsibility. Meanwhile there have been projects under consideration to borrow money for financing construction of the Estonian Music Academy, Art Museum and Estonian National Museum, which would have cost taxpayers some EEK 700 million. Fortunately, these projects were stopped because they threatened to undermine the entire Estonian monetary system. This weakness of the Estonian financial system has been also been noted by the IMF, which advised the central goverment to distance itself by law from the responsibility to cover loans left unpaid by local governments.

The **second Maastricht criterion sets a limit on government debt**, ie that it should be less than 60 per cent of GDP. As at the end of 1996, according to ratified loan agreements, the total amount of foreign loans taken and guaranteed by the state was USD 434.2 million, of which 296.5 million was actually disbursed. The difference between the two figures reflects the fact that in signing the agreements insufficient attention was paid to conditions on the use of the money. Only after the signing of the agreements did it became evident that there were not so many projects as presumed that complied with the loan conditions.

Compared to many other transition economies, Estonia's debt burden is relatively small, about 7 per cent of GDP. The light debt burden is a result of the fact that the loans involved have been arranged in the course of the last 4 years and more than 30 per cent of the available funds have not been drawn. The small loan burden also testifies to the vitality of the Estonian economy. Repayment of the bulk of the loans starts in 1998. Data on the size and purpose of loans drawn and guaranteed by the state as of 1 January 1997 are given in Table 3.

In order to increase the loan resources of commercial banks, 15 per cent of the state's drawings of foreign loans have been on-lent to banks. The loan received from the IMF has gone via the larger commercial banks into development of entrepreneurial activities, trade, services, and other sectors.

The aim of the **inflation criterion** is to ensure more homogeneous competitiveness among EMU member states and to avoid pressures to change fixed exchange rate. Price stability is viewed as one of the main targets of monetary policy aimed at ensuring macroeconomic stability in the EMU area as a whole.

In Estonia, after the introduction of the currency board in June 1992, the inflation rate, as measured by the rate of increase in the consumer price index (CPI) decreased sharply (see Table 4). In spite of the success in reducing inflation and stabilizing the economy, the inflation rate is still considerably above the level of Western European countries, where annual inflation was 1.8–4.3 per cent (with the exception of Greece) in 1995. During the period October 1995 – September 1996 the EMU reference value for inflation in EU countries was 2.6 per cent. Therefore, to qualify for EMU, inflation in Estonia must fall to about one-sixth of the current rate.

In order to discuss the prospects for reducing inflation, it should be noted that inflation in Estonia, a transition country, differs in many respects from inflation in advanced Western European economies, where factors pushing the inflation rate up are often related to excessive money supply or public sector deficit. There are at least three factors that, since the currency reform, have caused inflation to be higher in Estonia than in advanced economies but which nonetheless do not hinder

Table 3 **Foreign loans raised by the Government of the Republic of Estonia as of 1 January 1997** (mill. USD)

	Total commitment	Drawings
Commodity Credit Corp. (grain imports)	10.00	10.00
World Bank (critical imports)	28.63	28.63
EBRD (energy sector investments)	31.00	31.01
EU (multi-use)	24.97	24.97
Swedish Export Credit Agency (multi-use)	10.50	10.50
JEXIM (critical imports)	16.47	16.47
IMF (STF) (on-lending to banks)	33.46	33.46
World Bank (energy programme)	38.40	22.53
Swedish Export Credit Agency (energy programme)	10.00	3.92
World Bank (road maintenance)	12.00	10.82
EIB (energy programme)	8.74	6.24
World Bank (healthcare)	18.00	0.22
World Bank (on-lending to banks)	10.00	1.97
EIB (air traffic control system)	24.97	7.49
Exportfinans (Norway, communication network)	3.15	3.15
World Bank (environmental protection)	2.00	–
Marubeni U.K.B.L.C. (border protection)	2.55	1.38
Banque Baribas (border protection)	6.48	0.38
EIB (railway)	19.98	–
Finnish ECA (on-lending to banks)	10.13	9.13
EBRD (+ JEXIM) (Tallinn Airport)	14.20	11.19
IMF (stand-by)	56.89	56.89
EBRD (environmental protection and water supply)	28.71	5.45
EBRD (local budgets environmental protection programme)	12.92	0.62
Total	**434.20**	**296.50**

Source: Bank of Estonia.

Table 4 **Annual inflation in Estonia as measured by change in CPI, per cent**

Year	**CPI change**
1992	1069
1993	89
1994	48
1995	29
1996	15

Source: Estonian Statistical Office.

Table 5 **Consumer prices in Estonia compared to price levels of its foreign trade partners (%)**

	Average	Against developed industrial countries	Against transition economies
June 1992 (monetary reform)	27	8	92
1993	53	20	118
1994	59	28	85
1995	69	35	90
September 1996	76	41	84

Source: Bank of Estonia.

attainment of the country's overall economic goals.

First, although there has been relatively rapid liberalization and price adjustments, this does not automatically remove all distortions in the structure of prices. For example, unlike price adjustment in the open sector, price-level rises in the sheltered sector (including public infrastructural utilities like housing, public transport, electricity production, etc) are limited by consumer demand, which is determined by income level. Over the longer horizon, it is evident that in the sheltered sector the role of subsidies will diminish and prices will gradually approach international levels.

Second, higher inflation in Estonia is caused by the fact that productivity is increasing faster in the open sector (because of competition) than in the sheltered sector.

Third, the competitiveness of Estonian goods and services in international markets is improving gradually. This means that there is a natural tendency for the prices to approach international levels. It is difficult to measure this tendency quantitatively since it is not possible to extract the quality component of price increases.

As can be inferred, there are two sides to the inflation process in Estonia:

1) External adjustment: adjustment of prices to international levels;

2) Internal adjustment: adjustment of relative prices.

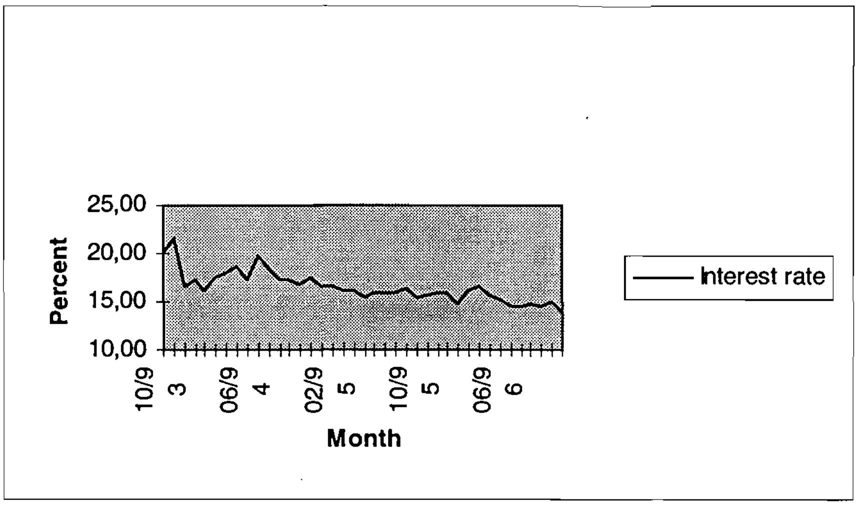
The external adjustment is mainly due to the fact that the price level in the Soviet Union was far below the equilibrium level and, with the liberalization and opening of the economy, a price adjustment shock was inevitable. In different sectors of economy and for different components of the CPI, the speed and extent of adjustment have differed. For example, in 1996 the level of housing costs was some 33 per cent of the Austrian level while food prices were almost 50 per cent of the Austrian level. Table 5 illustrates the process of external price adjustment over time.

According to an estimate by the Bank of Estonia, in September 1996 the level of consumer prices in Estonia was about 40 per cent of the level in developed industrial countries. This implies that there is some underlying inflationary pressure left in the economy, which is likely to keep Estonian inflation rates above western European levels for some time.

Along with the external adjustments, there have also been internal price adjustments, ie changes in the structure of prices. In 1992–1996 the level of prices in the sheltered sector rose more than in the open sector (about ninefold compared to threefold). At the same time, some administratively regulated prices rose less, remaining below market prices. Secondly, the structural changes in prices can be characterized by the fact that the rise in prices of traded goods was even greater than the rise in prices of services. The process of structural adjustment of prices is still ongoing and it is natural that both processes will be gradual ones.

It should be noted that there has been little cost-push inflation in Estonia. First, labour markets are flexible, unions have little if any bargaining power and wage indexation is not common (as it is eg in Hungary); hence the institutional framework is not condusive to strong wage pressures. Second, real wages increased only modestly in the period

Figure 1 **Weighted average annual long-term interest rates for kroon loans in Estonia Oct. 1993 – Dec. 1996**



1992 to early 1996. Considering the magnitude of the real wage increase, one might well attribute it to productivity growth.

Although it is clear that Estonia will not be able to meet the EMU inflation criterion by the turn of the century, it should be possible for it to switch the currency peg from the Deutschemark to the euro.

The reference value for the EMU **long-term interest rate criterion**, calculated for the period October 1995 – September 1996, was 8.7 per cent (the basis for the calculation is ten-year government bond yields in EU countries, which are not available for Estonia). The dynamics of long-term interest rates in Estonia are shown in the Chart.

The fall of long-term interest rates reflects several positive developments over the period: stabilization of the economy, strengthening of the currency and banking sector, reduced risk on loans etc. Nonetheless, long-term interest rates in Estonia still exceed the reference value of the EMU criterion (weighted average annual interest rates on long-term kroon loans was 13.88 per cent in December 1996 and for loans of over five years 11.12 percent). Since interest rates are influenced by the inflation rate, it is evident that Estonia's relatively high level of interest rates will come down gradually as the inflation rate declines.

The criterion of exchange rate stability can be considered to be essentially fulfilled in Estonia because the kroon has already for five years been pegged to the Deutschemark, one of the most stable currencies in Europe. The Deutschemark will also be one of the main pillars of the common currency.

4 Prospects for the Estonian monetary system

4.1 The currency board and monetary policy instruments

The rationale for the currency board agreement that has been in effect in Estonia since June 1992 derives from the goals of monetary policy. According to the Law on the Bank of Estonia, the main goal of monetary policy is to maintain the stability of the national currency. In that regard, the Estonian monetary policy framework is essentially in line with the general international trend. However, Estonia does not define the central bank's target rarrowly as the achievement of low inflation, ie the **internal** stability of the currency. The latter principle is also part of the very essence of EMU. The Maastricht Treaty states unequivocally that the main aim of the European Central Bank is low inflation and all other policy objectives are to be pursued only so far as they do not conflict with price stability. However, during Estonia's economic stabilization phase, short-run monetary policy goals could not be set out so specificaly. It was necessary to take into account the short-run tradeoff between internal and external stability of the national currency.

After the start of economic transformation, formerly centrally planned economies faced huge shocks affecting both the demand and supply sides of their economies. It is reasonable to assume that these shocks were much more severe in the Baltic states than in the other CEECs. To cope with these enormous shocks, the local currencies had to undergo huge depreciations in real terms in order to regain national competitiveness. What makes Estonia and the other Baltic countries different from other CEECs is that the initial stages of transformation took place in the Baltics while they still belonged to the Soviet Union and later to the rouble area. In those circumstances, there was no room for independent monetary policies, and the real depreciation of the currencies was effected via a combination of near-hyper inflation rates and a decline in the nominal exchange value of the Russian rouble. After deciding on the commencement of their stabilization programmes, the main and most urgent task was of course to establish confidence and public trust in the ability of the monetary authority to pursue stabilization policies.

An enormous amount of literature is available on the choice of stabilization policies. In general, authorities faced the dilemma whether to use the exchange rate as a policy instrument and to import the stability of an anchor-currency country or to let the exchange rate to be determined by market forces and to try to fix domestic interest rates at a sufficiently high level to regain confidence in their commitment to restore monetary stability. There is also a widespread belief that exchange rate-based stabilization is superior for re-establishing public confidence in the central bank's ability to curb money supply growth and bring down inflation. The main reason for this is probably the transparency of an exchange rate target as compared to less easily understood money-based policies. The upshot of all this is that exchange rate-based stabilization programmes tend to be less recessionary than money-based programmes. The interest rate level, adjusted for country risk premium, is imported directly from the base-currency country and the cost of funds to the real economy is not excessively high, assuming there is simultaneous reform in the real economy, including privatization and imposition of hard budget constraints on enterprises. On the contrary, with money-based programmes the authorities must raise interest rates enough to curb money supply growth and to convince the general public of their determination to achieve monetary stabilization. One consequence could be a sudden nominal appreciation of the currency, if foreign investors are convinced of the authorities' determination at least in the short run and foreign investment funds flow into the money market. On the other hand, interest rates could be kept excessively high for a considerable period if the authorities' commitment is doubted. In either case, economic recovery could be hindered and credibility of the stabilization programme could be undermined in the medium term.

The main question regarding choice of the exchange rate as the stabilization instrument is the ability of the central bank to maintain the exchange rate peg in the face of speculative attack. This of course is a function of several variables, mainly the amount of international reserve assets available, the specific policy instruments available and, last but not least, the commitment of both the central bank and the government to defend the external value of the currency. The most credible instrument available for implementing a fixed exchange rate policy is the currency board arrangement, whereby the authorities' role in the daily conduct of monetary policy is relegated to automatic unsterilized interventions in the foreign exchange market. By completely tying the hands of the central bank and the government, the currency board arrangement, at least in theory, exposes the financial and real sectors to the most severe restructuring needs. Therefore, the success of a currency board arrangement depends not only on the arrangement itself but even more so on the structural reform that takes place in various sectors of the economy. However, as mentioned above, the costs of stabilization could be effectively lowered if the currency board is set up credibly, eg via specific legislation, in which case the interest rate level will fall and converge to that of the base-currency country.

These simple considerations essentially comprise the overall framework for current Estonian monetary policy. In re-introducing the Estonian kroon in 1992, the authorities' primary concern was the need to convince the public of the long-run stability of the currency. In light of the fact that there was a sufficient amount of international reserve assets inherited from the pre-war period, the currency board arrangement was probably the most natural choice. Decisive steps in the monetary policy area were supported by restrictive fiscal policy – the general government financial balance recorded small surpluses until 1995 – and structural reforms, notably the large-scale privatization programme. As will be discussed below, due to these decisive measures the stabilization programme achieved credibility almost immediately after the monetary reform and it has been maintained since then.

An orthodox currency board is a simple arrangement whereby the sole task of the monetary authority is to issue or redeem notes and coins in exchange for foreign currency. The money supply is thus automatically linked to changes in the international reserve assets of the monetary authority. However, the currency board arrangement as such does not preclude the use of all the monetary policy instruments at the disposal of a full-fledged central bank. Of course, the full backing of base money by foreign assets strictly limits the scope of traditional monetary policy measures. Nevertheless, as long as there is a sufficient amount of free reserves, ie reserves over and above the cover needed by the currency board, there is some room for manoeuvre and pursuance of short-run monetary policy goals. Besides reserve requirements, the other obviously available monetary policy instrument is the foreign exchange swap. This, by definition, does not violate the integrity of the currency board, once sufficient infrastructure, especially a settlement system enabling swap operations, is in place. Also, a central bank can provide a marginal lending facility or carry out open market operations if sufficient free reserves are available or additional reserves can be obtained eg from the government or other central banks.

The essential question here is why should the monetary authority be engaged in day-to-day monetary policy operations that in principle contradict the essence of the currency board arrangement and, under certain conditions, could undermine the proper functioning of automatic stabilizers that are built into the currency board arrangement. There are two quite obvious reasons for introducing some flexibility into the orthodox framework. First is the need for the central bank to act as a kind of lender of last resort (LLR) in the very short-term money market. The other is the possibility of smoothing the effects of sudden short-term capital inflows or outflows so as to avoid major disruptions in the money market.

If a central bank is willing to provide some kind of LLR service for commercial banks, then the most obvious instrument available is the reserve requirement. Another possibility is either to operate a marginal lending facility or to grant loans of excess reserves to commercial banks on a discretionary basis. However, it should be noted that under a currency board arrangement, the health of the banking system is even more important than under full-fledged central banking, as the possibilities for the central bank to provide the banks with emergency liquidity are limited. Therefore, the LLR function should be strictly defined so as to avoid delay of necessary structural measures in the banking system and make clear that the main responsibility for ensuring the soundness of the banking system lies not with the monetary authority but rather with a supervisory agency and, ultimately, the banks themselves.

The other justification for a more active policy stance under the currency board arrangement relates to the objective of a central bank or monetary authority to avoid large swings in money markket interest rates. If the domestic and foreign markets are fairly well integrated, interest rate fluctuations can provoke large-scale inflows or outflows of short-term speculative capital, with consequent adverse effects on the banking system and the domestic economy. Foreign exchange swaps or, to a lesser extent, open market operations could be used but only to a limited extent. Therefore, here again the main focus should be put on fundamentals in order to avoid excessive interest rate differentials between domestic and anchor currencies. It is widely agreed that open market operations, if used to counter capital inflows, entail substantial costs to the central bank and, in the case of a currency board, those costs could seriously undermine the integrity of the arrangement. On the other hand, sterilization of capital outflows may delay the necessary changes in financial policies. Overall, the automatic nature of a currency board arrangement and its virtue of fomenting convergence of interest rates to those of the base currency country should minimize the need for day-to-day open market operations.

In fact, the Estonian currency board arrangement has functioned very much like the orthodox model. Indeed, the Bank of Estonia has not engaged in large-scale open market operations either to accumulate foreign reserves or to sterilize capital inflows. The main policy instrument is accommodative purchases and sales of foreign exchange, ie de facto unsterilized interventions in the foreign exchange market that increase or decrease the monetary base in accord with changes in the demand for money.

Since monetary reform was carried out, the Bank of Estonia has maintained a reserve requirement for commercial banks. Although initially intended as a means of controlling the money supply, it has never played that role. The reserve requirement, which had to be met on a daily basis up until 1 July 1996, has been used as an additional stabilizer within the monetary policy framework and as a source of emergency funds for the Bank of Estonia in connection with its lender-of-last-resort function. Commercial banks were able to borrow their required reserve holdings at a penalty interest rate. On a couple of occasions, the Bank of Estonia has used the excess reserves to provide emergency assistance to commercial banks.

As from 1 July 1997, the reserve requirement is met on a monthly average basis, and subsequently it has served as an additional liquidity buffer for commercial banks in smoothing their intra-monthly liquidity positions. There is also a floor on daily balances, currently one-fifth of the reserve requirement[1]. Commercial banks can use that portion of their reserves below the floor at a penalty interest rate.

The Bank of Estonia has not been engaged in day-to-day open market operations in the Estonian money market, although since 1994 it has issued a small amount of certificates of deposit[2]. Initially introduced as a means of developing the interbank market, these issues have in fact provided an additional outlet for commercial banks' excess liquidity and have never been used to influence market interest rates, either directly or indirectly.

There is an additional policy instrument that is especially relevant in currency board framework: the free movement of the capital and foreign reserves of the banking system. This has a twofold importance. On the one hand, the foreign assets of commercial banks are of vital importance as regards the liquidity needs of the banking system in the local money market and thus constitute an essential element of the monetary policy framework. On the other hand, sufficient foreign reserves act as a financial stabilizer, especially in the early years of transition when the banking situation is volatile and domestic investments are often associated with high risks. In such an environment, foreign assets provide a counter-weight on banks' balance sheets to domestic high-risk assets (or even to the lack of viable lending projects) and reduce the risk of bank failure.

And finally, although the Estonian legal framework forbids devaluation of the national currency, nominal appreciation is not formally prohibited. Therefore, one might argue that the Bank of Estonia is in a position to revalue, should monetary conditions change substantially. Indeed, the option of letting the nominal exchange rate appreciate is one possible means of offsetting capital inflows and curbing inflation. Still, the extreme asymmetry of the instrument within the Estonian monetary framework makes its usage very risky and politically sensitive.

The Estonian currency board arrangement has so far functioned in a fairly orthodox manner. Other than the buying and selling of foreign currency and use of the reserve requirement, there has been virtually no resort to monetary policy instruments. Probably the simplest way to describe the performance of the Estonian currency board so far is to say that the exchange rate has remained stable without any particular problems. Moreover, because of its fixed exchange rate vs the Deutschemark, the kroon's movements against other currencies have in fact been largely self-correcting during the post-currency reform period.

Considering the openness of the economy, it is natural that the containment of inflation has been notable as well. The annual rise in the CPI had fallen from over 1000 per cent in 1992 to 14 per cent by the end of last year, which is comparable to that in the more advanced Eastern European countries.

[1] The required reserve ratio is currently 10 per cent of all domestic liabilities of commercial banks.

[2] Currently, CDs are auctioned once a month in the amount of EEK 0.30 million (*ca* USD 2.5 millioin).

From a technical standpoint, money supply growth has at least not yet been excessively volatile and shorter-term interest rates have declined nearly to German levels.

As regards the real economy, Estonia has experienced three consecutive years of economic growth. Industrial restructuring has been quite extensive and the role of services in the economy has increased notably. Both of these developments have been crucially supported by strong inflows of foreign direct investment. Not surprisingly, this has led to a sizable current account deficit.

There are some important arguments in favour of maintaining the currency board arrangement over the near future.

First, the currency board has proved to be a very effective means of achieving price stability and reducing inflation. The importance of these concerns for macroeconomic and currency stability cannot be overestimated.

Second, since Estonia has a very open economy, foreign trade and economic relations with other countries are important for its economic development. As a result, Estonia needs a stable environment for its foreign economic relations, and in particular a stable exchange rate. A clear-cut fixed foreign exchange regime is thus preferable to a floating rate regime.

Third, the stability and clarity of the currency board arrangement is also important for the credibility of the monetary system as a whole. The present system is more easily understandable by the public than a monetary policy based on complex targeting of the interest rate or money supply. The public is continuously kept informed about the achievement of intermediate targets of monetary policy (ie the fixed exchange rate and reserves backing of money issues) and economic agents can make better-informed decisions.

Fourth, an important factor determining the course of the Estonian economy is the international financial markets. Due to technological developments and growth of financial resources available, the majority of smaller countries have lost much of their monetary independence. The possibility of using monetary policy to create differencies between domestic and foreign interest rates has diminished considerably. Such efforts have succeeded only in the short run and with the negative side-effect of reduced capital mobility. The long-run monetary policy independence of these countries has diminished.

In addition, the markets have an increased capacity to 'punish' countries that do not have a consistent monetary policy. Inconsistent and dubious monetary policies lead to higher interest rates and have a negative impact on economic performance. Therefore, Estonian monetary policy is well advised to remain conservative and cautious.

If the exchange rate is fixed, the development of financial markets and resulting capital mobility means that the country must ensure the credibility of its monetary policy with the reserves of the central bank. This is in line with general trends in the world economy toward increased openness and less freedom to pursue national monetary policies.

The fifth argument for maintaining the currency board arrangement is related to European integration and EU enlargement. Specificaly, Estonia has made membership a strategic goal and it is aiming at full EU membership as soon as possible. Other monetary system options would require major economic adjustments and would likely disturb investment and the whole process of transition.

4.2 Estonian monetary policy and EMU

At present, monetary cooperation between Estonia and the EU is carried out within the framework of the European Agreement, signed in June 1995. The European Agreement stipulates that Estonian and EU-area credit institutions have the right to operate in each other's territory on equal terms with domestic credit institutions. One of the basic stipulations is free flow of payments, investments and other capital as well as the obligation of Estonia and EU countries not to impose restrictions on these flows now or in the future. The aim of the economic cooperation is to create a framework that promotes the development of the sectors providing banking, insurance and financial services. Within the framework of general cooperation, the European Union gives technical assistance in support of Estonia's aspiration to shape its monetary policy in conformity with the European Monetary System (EMS). Efforts are also being made to prevent the use of financial systems to channel funds derived from criminal activities into legal business and investment. As regards Estonia's integration into the EU, it is important that Estonian legislation be consistent with that of the European Union.

For the time being, Estonian prospects for further integration into the European Union are still unclear. Accession negotiations, once they start, might turn out to be lengthy and may depend on circumstances beyond the control of Estonian authorities.Therefore, all forecasts concerning Estonian relations with the EMU can be only of the most general nature, because the actual functioning and monetary policy technicalities are yet to be proven adequate in a practical sense. However, a preliminary sketch can be drawn under the assumption that Estonia will eventually join EMU.

Under present circumstances, it is likely that Estonia, like other new member states from Central and Eastern Europe, will participate in Stage Three of EMU as a member state with a derogation. Given the present medium-term economic forecasts as regards both the EU and CEECs, it is probable that new member states will not formally fulfil both the inflation and exchange rate stability criterions for full EMU participation. Although the reasons for real exchange rate instability in transition economies in the medium term go far beyond the scope of this paper, we might mention here that productivity growth in those economies is likely to be substantially higher than in more mature economies of the present member states. This productivity differential together with the continuing price adjustments should facilitate the gradual convergence of nominal incomes and that in turn should keep the inflation rate above the Maastricht criterion or, alternatively, generate considerable instability in the nominal exchange rate.

However, even if Estonia remains outside the official euro area for some time after accession, the EMU will still have an enormous impact on its economic and monetary policies. The two main pillars of macroeconomic cooperation – multilateral surveillance and excessive deficit procedures – will be applied to member states with a derogation on grounds similiar to those applied to full member states, save only for sanctions within the framework of the 'stability pact'. Therefore, the first main conclusion for Estonia, and for all new member states, is that the pursuit of strict macroeconomic and fiscal policies is of essential importance after accession. Although the Maastricht fiscal criteria are currently being met quite well in a formal sense, the most important tasks over the medium term – namely reform of social safety nets, especially pension systems, and improving the efficiency of health care system – are yet to be completed. Contingent government liabilities, related to future social outlays, pose the most serious threat to fiscal consolidation, and the gradual implementation of fully funded, employee-contribution-based pension schemes must be started in the coming years in order to avoid sharp deterioration of fiscal balances.

From the monetary policy viewpoint, having low inflation as the main policy goal is crucial to both full member states and member states with a derogation. However, as stated above, it is most likely that the definition of price stability will differ as between new and present member states for some time. As far as Estonia is concerned, an inflation rate below 10 per cent could be regarded as price stability over the medium term if price rises reflect rising productivity and are not fuelled eg by expansionary fiscal policy. If we assume that the present fixed exchange rate policy will facilitate the gradual decrease of CPI inflation and prevent the central and local governments from running excessive budget deficits, then there is no need to change the present policy before the accession. Nonetheless, a lot of discussion is taking place on the optimal monetary policy stance for transition economies. It has been suggested that more flexibility would be beneficial in the coming years and namely prior to accession, since it is far more difficult to pursue flexible monetary policy after accession. Interestingly enough, opinions have been expressed favouring both appreciation and depreciation of the exchange rate. While the appreciation argument stems from the idea that the currencies of CEE transition economies are still undervalued in real terms and that nominal appreciation could thus reduce inflation, the depreciation argument assumes that the CEECs' present inflation rates have already eliminated their comparative advantage, especially if compared to East Asian economies and even to certain other transition countries in the FSU area. As far as Estonia is concerned, it is likely that the kroon is still undervalued in real terms and hence that Estonia can with justification have higher inflation than in Western Europe for some time yet, probably for the medium term, without eroding its export competitiveness. Therefore, there should be no need for fundamental changes in Estonia's monetary policy.

The Maastricht Treaty states that member states should regard their exchange rate policies as a matter for common concern, and indeed exchange rate stability is one of the criteria to be examined in order to assess the preparedness of member states with a derogation to become a full members of EMU. However, the new mechanism for monetary cooperation between the euro area and other member states, EMS II, will remain relatively lax in terms of the fluctuation range for exchange rates. In principle, the present fluctuation margins of ±15 per cent should be maintained together with other essential instruments of the European Monetary System, eg the automatic intervention mechanism and very short-term financing facility. Still, the nature of the system will change fundamentally as the European System of Central Banks can not jeopardize the price stability goal in order to maintain exchange rate stability between the euro and the currency of a member state with a derogation. Therefore, the flexibility of the monetary system will most likely be greater and the exchange rate stability should be of greater concern to an individual member state. In this respect, the currency board arrangement should be considered a fully suitable solution for Estonia also after accession and indeed it has been argued that the principles of the currency board arrangement could be used more commonly by member states with a derogation as a way of afirming their commitment to becoming full members of the EMU and to discard use of the exchange rate as an instrument of domestic demand management. However, it is still premature to say whether those economic and monetary considerations fall into the *acquis communitaire* as regards economic and monetary policy.

An additional argument for the currency board arrangement is a widespread belief that it is a suitable interim arrangement to join the larger currency area, as it forces the authorities to modify their macroeconomic policies accordingly. Nonetheless, if Estonia continues to adhere to its currency board arrangement for years to come, possibly until accession to the Union and as a member state with a derogation, it is likely that the permitted use of monetary policy instruments will expand as the Estonian money and other financial markets become more trightly integrated with the European financial system.

Annex

The Convergence Criteria
Extracts from the Treaty on European Union:

Article 109 j paragraph 1 of the Treaty on the European Union
The Commission and the EMI shall report to the Council on the progress made in the fulfilment by the Member States of their obligations regarding the achievement of economic and monetary union...

The reports shall also examine the achievement of a high degree of sustainable convergence by reference to the fulfilment by each Member State of the following criteria:

- the achievement of a high degree of price stability; this will be apparent from a rate of inflation which is close to that of, at most, the three best performing Member States in terms of price stability;
- the sustainability of the government financial position; this will be apparent from having achieved a government budgetary position without a deficit that is excessive as determined in accordance with Article 104c (6);
- the observance of the normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System, for at least two years, without devaluing against the currency of any other Member State;
- the durability of convergence achieved by the Member State and of its participation in the exchange rate mechanism of the European Monetary System being reflected in the long-term interest rate levels. The four criteria mentioned in this paragraph and the relevant periods over which they are to be respected are developed further in a Protocol annexed to this Treaty...

Protocol on the convergence criteria referred to in Article 109 j of the Treaty establishing the European Community

Article 1
The criterion on price stability referred to in the first indent of Article 109 j (1) of this Treaty shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1.5 percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by means of the consumer price index on a comparable basis, taking into account differences in national definitions.

Article 2
The criterion on the government budgetary position referred to in the second indent of Article 109 j (1) of this Treaty shall mean that at the time of the examination the Member State is not the subject of a Council decision under Article 104 c (6) of this Treaty that an excessive deficit exists.

Article 104 c, paragraph 2, 3 and 6 of the Treaty on European Union

2. The Commission shall monitor the development of the budgetary situation and of the stock of government debt in the Member States with a view to identifying gross errors. In particular it shall examine compliance with budgetary discipline on the basis of the following two criteria:

a) whether the ratio of the planned or actual government deficit to gross domestic product exceeds a reference value, unless

- either the ratio has declined substantially and continuously and reaches a level that comes close to the reference value;
- or, alternatively, the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value;

b) whether the ratio of government debt to gross domestic product exceeds a reference value, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace.

The reference values are specified in the Protocol on the excessive deficit procedure annexed to this Treaty.
Protocol on the excessive deficit procedure

Article 1
The reference values referred to in Article 104 c (2) of this Treaty are:

- 3 % for the ratio of the planned or actual government deficit to gross domestic product at market prices;
- 60 % for the ratio of government debt to gross domestic product at market prices.

Article 2
In Article 104 c of this Treaty and this Protocol:
- government means general government, that is central government, regional or local government and social security funds, to the exclusion of commercial operations, as defined in the European System of Integrated Economic Accounts;
- investment means gross fixed capital formation as defined in the European System of Integrated Economic Accounts;
- debt means total gross debt at nominal value outstanding at the end of the year and consolidated between and within the sectors of general government as defined in the first indent.

3. If a Member State does not fulfil the requirements under one or both of these criteria, the Commission shall also take into account whether the government deficit exceeds government investment expenditure and take into account all other relevant factors, including the medium-term economic and budgetary position of the Member State ...

6. The Council shall, acting by a qualified majority on a recommendation from the Commission, and having considered any observations which the Member State concerned may wish to make, decide after an overall assessment whether an excessive deficit exists.

Protocol on the convergence criteria referred to in Article 109 j of the Treaty establishing the European Community (continued)

Article 3
The criterion on participation in the exchange-rate mechanism of the European Monetary System referred to in the third indent of Article 109 j (19) of this Treaty shall mean that a Member State has respected normal fluctuation margins provided for by the exchange-rate mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency's bilateral central rate against any other Member State's currency on its own initiative for the same period.

Article 4
The criterion on the convergence of interest rates referred to in the fourth indent of Article 109 j (1) of this Treaty shall mean that, observed over a period of one year before the examination, a Member State has had an average nominal long-term interest rate that does not exceed by more than two percentage points that of, at most, the three best performing Member States in terms of price stability. Interest rates shall be measured on the basis of long-term government bonds or comparable securities, taking into account differences in national definitions.

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