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Sustainability of the Estonian Macroeconomic Performance in the Light of the EU Membership

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INTRODUCTION

The choice of the macroeconomic policy framework has been one of the crucial economic policy decisions in the initial stages of the transition. The divergent experiences of transition countries are evidence to the importance of stable macroeconomic environment and consistency of government priorities with the needs of restructuring.

For the accession countries, the question of choosing an optimal macroeconomic policy mix is even more complicated as these countries are all in the dynamic movement towards joining the European Union and gradually also Economic and Monetary Union (EMU). The latter implies a considerable change in macroeconomic policy environment as well as in the institutional structure of the policy making. Many of the countries have to change their macroeconomic framework in order to meet the strict criteria set in the Maastricht Treaty and accompanying legislative acts, especially the Stability and Growth Pact. At the same time the real convergence process of income levels assumes more flexibility and divergences among the policy measures in order to choose the optimal path towards convergence in each specific country. Questions like what could be the optimal exchange rate regime for the country that would allow fulfilling the Maastricht criteria, withstanding the structural changes needed for adjusting to the European Union requirements as well as ensuring the further convergence towards the EU average level of income are serving attention among the academics as well as politicians. This question is raised in most of the accession countries within the context of the ongoing structural reforms, as well as continued price convergence and productivity growth.

Estonia is often considered as one of the textbook examples of a small open transition economy, being able to cope with transition problems with the help of liberal and rather

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passive macroeconomic policy. However, as currency board arrangement and sound government finances have helped to stabilise the economy during the transition, there are still some challenges to be faced when joining the EU and further the EMU. The aim of the current paper is to evaluate the sustainability of the Estonian macroeconomic policy in the light of these future developments, especially participation in the European Economic and Monetary Union.

For this first an overview of the current macroeconomic policy setup will be given with the emphasis on the currency board framework as well as fiscal policy design.

The second part of the paper will be devoted to exploring how Estonia is fulfilling the criteria for macroeconomic cooperation in the EU taking into account nominal as well as real conditions. It will provide an overview of the nominal convergence according to the rules laid down by the EC Treaty on EMU convergence criteria. However, convergence criteria are not able to guarantee a sufficient level of convergence in economic development and structures. In this context theory of Optimum Currency Areas provides a set of criteria, which are expected to be fulfilled in order to guarantee sustainability and success of the region participating in the monetary union.

The third part of the paper highlights shortly the dilemmas to be faced between the nominal criteria and real expected performance under the fixed exchange rate regime using the example of Estonia.

1. GENERAL MACROECONOMIC FRAMEWORK IN ESTONIA

1.1. Currency Board arrangement as a cornerstone of Estonian economy

Like other transition countries the choice of the optimal policy mix for coping with the transition was one of the major challenges for Estonia after regaining the independence in 1991.

The essential step in restructuring the economy was to untie the country's financial system from the devastated Ruble based system. The necessity for rapid monetary reform was also connected with the cash deficit caused by the central bank of Russia and to the continually intensifying hyperinflation. Thus the monetary reform and introduction of the national currency became a grounding pillar of Estonian restructuring.

Various scenarios were suggested for the introduction of the currency, but by the end the dominating desire to introduce a stable and credible national currency brought the idea of introducing the currency board arrangement (see also Kukk, 1997). IMF experts were initially sceptical about the introduction of national currencies in the Baltic States, especially in Estonia. IMF concerns were related to the emergence of large fiscal deficits and a lack of a more general and consistent macroeconomic framework (Knöbl et al, 2002). Despite that the Bank of Estonia and Monetary Committee, consisting of high level governmental representatives as well as outstanding experts decided to pursue the Currency Board arrangement. As the result of monetary reform on June 20, 1992, Estonian monetary and exchange rate policies have been determined by the Currency Board arrangement.

The Currency Board arrangement belongs to the hardest forms of currency pegs. In this case the exchange rate to a foreign currency with the regime and parity enshrined in law. The change in parity or exit from the regime is extremely difficult and costly. The principal

features of the Estonian CBA are 100% backing of base money, fixed exchange rate regime (German mark as an anchor currency replaced by euro in 1999) and complete convertibility of Estonian kroon. Under the terms of the Act on the Security of the Estonian Kroon, the currency issue is fully backed by the gold and convertible foreign exchange reserves of the Bank of Estonia (Eesti Pank). The Bank may change the amount of Estonian kroons in circulation only in accordance with changes in its gold and foreign exchange reserves (Clauses 1 and 4 of the above Act) (Sepp, Randveer 2002).

According to the legislation, the Bank of Estonia has no power to devalue the Estonian kroon. Any change in the exchange rate of the kroon leading to devaluation against the German mark must first be approved by the Parliament.

Considering the convertibility, there are no restrictions on current account transactions of balance of payments. The only valid restriction for capital account transactions is connected with the purchase of land by non-residents (permission of the Government or local authority is needed). There are no further restrictions on capital account transactions (Sepp, Randveer, 2002) .

Although Eesti Pank cannot conduct a discretionary monetary policy and has very limited control over the money supply, it has implemented several measures aimed at improving the monetary policy operational framework to enhance the sustainability of the financial system.

1.2. Fiscal policy framework

The IMF concerns associated with the lack of credible macroeconomic environment for introducing the Currency Board arrangement initiated the designing of a rather restrictive fiscal policy framework, aiming for yearly balanced budget.

The main goal of the government's fiscal policy is not committed to the discretionary policy

initiatives but to create conditions for stabile economic development of the country via efficient government. The main targets of fiscal policy are (PEP 2003):

- keeping the general government budget in balance (exceptions can be made only in the case of financing pension reform);
- reducing the tax burden by cutting tax on labour;
- stabilizing the current expenditures of the government with respect to GDP.

The government has set a goal of keeping the general government sector's budget in balance. Conservative budgetary policy allows avoiding accumulation of public debt and also provides for the sustainability of public finances in the long run, including not raising taxes for financing public deficits in the future.

The firm financial statement of the government provides conditions for price stability and strong and sustainable economic growth. Estonia's small and open economy is highly dependent on imported goods (both in terms of consumption and investment), which in some cases (e.g. considerable real appreciation of the currency) can worsen the external balance. Excessive government expenditures can only enforce these processes through increased local demand.

Regarding the budgetary revenues the government preserves the simplicity of Estonian tax policy. The underlying goal is to decrease the tax burden and thus direct more resources into economic development. For this reason, existing tax rates are not increased, except for changes coming with EU accession, mostly affecting taxation of consumption. In order to improve opportunities for economic growth, the government intends to decrease taxes on labour. Excessive taxation of labour – the effective tax rate on labour exceeds the OECD average – decreases motivation to work. For this reason income tax rate will be reduced from 26% to 20% and the amount of monthly tax free income will rise from 1000 to 2000 kroons over the next three years. The decrease in income tax rate will bring lower growth of

government resources during the first few years, but as the private sector will direct additional resources given to them by the government into investment to increase productivity, in the long run the income tax cut will be beneficial for economic development and, thus, for national income (PEP 2003).

A tax cut under balanced budget conditions demands saving on expenditures. The goal of the governments saving program is to decrease administrative expenses in ministries, increase control over the budgets of government agencies and create a unified policy for management costs. (PEP 2003)

The government sets up such a limit that its current expenditures should not increase with respect to GDP. The government conducts a deep analysis of social assistance distribution to ensure that benefits are received by the people who really need them. In case of an increase in demand for investment, more private capital is used to finance these projects, e.g. investment in research and development (PEP 2003).

Estonian macroeconomic policy is rather passive, aiming primarily to provide a liberal market determined business environment rather than intervening with discretional policy measures in order to stabilise the economy. At the same time the country is open to external developments and passive policy does not promote any government interference in providing more stability, which might expose Estonia to the serious drawbacks in economic development.

2. EU REQUIREMENTS AND CONDITIONS FOR ESTONIAN MACROECONOMIC POLICY

2.1. Formal requirements on the entry to EMU

2.1.1. Institutional criteria for EMU membership

Based on the EC Treaty, three distinct phases for the macroeconomic policy cooperation are identified relating to the accession countries. Each of these phases includes specific requirements on the country's macroeconomic policy (European Commission, 2000, p.3):

1) the pre-accession phase;
2) the accession phase, covering the period from the state of accession to adoption of the single currency;
3) the final phase of the adoption of the euro.

During the pre-accession phase, candidate countries carry out the economic reforms and policies needed to fulfil the Copenhagen economic criteria. As the Treaty does not put any requirement on the choice of macroeconomic policy instruments such as exchange rate regime or fiscal policy rules, the accession countries are free to run their macroeconomic polices purely based on national economic policy considerations (European Commission, 2000: 2). Thus, the EU requirements are general enough for not causing any changes in Estonia's current macroeconomic policy priorities.

However, a more strict set of formal rules is to be applied in the accession phase, when the participation in EMU will be decided. Macroeconomic policy cooperation will be intensified when the country is willing to join the euro-area and became a member of the monetary union. The process of monetary integration for the current as well as future Member States in the EU is defined in the EC Treaty and associated lower level legislative acts. The Treaty foresees any opt-out status for the new Member States like it has been stressed also during the accession negotiation (European Commission, 2000: 2). Thus, new member states are

expected to join the monetary union gradually depending on their own preferences and timetable.

Upon accession, the new Member States will have to show adherence to the aim of economic and monetary union. They will have a status of country with derogation and will participate in the EU policies, but will not adopt the euro and participate in the common monetary policy. During the accession phase the new Member States have to fulfil several provisions of the acquis. From the side of the exchange rate policy they are obliged to treat the exchange rate policy as a matter of common interest (art. 124). This applies that the country is expected to join the ERM2, although not necessarily in the immediate post-accession phase (Backe 1999: 59). The requirement means also that the competitive devaluations are ruled out, but the choice of the exchange rate remains free (United Nations, 2001:3). At the same time ERM2 is providing accession countries with a degree of flexibility by its broad fluctuation band of +/- 15%. This flexibility provided should contribute also to the process of real convergence. The length of required participation in the ERM2 will depend upon the country's progress in the field of nominal and real convergence combined with the possible need to use the exchange rate as an adjustment tool (Solans, 2002).

Estonia's position has been that joining the ERM2 is a logical consequence to the CBA and should be carried out as soon as possible after the enlargement (PEP of Estonia, 2003: 15) in order to move towards full membership in the EMU. However, Estonia is not willing to allow more flexibility to the currency and will continue with the currency board arrangement also in ERM2 framework (PEP of Estonia, 2003: 15) meaning that the fluctuation bands for Estonian kroon towards the Euro will be 0%.

Related to the economic policy framework, countries are expected to follow broad economic policy guidelines (TEC, art 99) stipulating the macroeconomic policy priorities in the EU.

Economic developments in each of the Member States as well as the consistency of economic policies with the broad policy guidelines are a subject of monitoring by the Commission. Any deviation may result with the recommendations from the Council of Ministers.

However, in the phase of member state with the derogation the macroeconomic policy cooperation is characterised with the lack of enforcement instruments such as fines or fees and peer pressure remains the only effective enforcement measure.

The fiscal policy requirements are characterised by the set of rules.

- Art. 101 prohibits money financing. Overdraft facilities or any other type of credit facility with the ECB or with the central banks of the Member States in favour of Community institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments.
- Art 102 prohibits privileged access of Member States to the financial institutions.
- No bailing out of the Member State in financial difficulties is allowed according to art. 103 neither by Community institutions nor by other Member States.

Based on the evaluation of the European Commission (European Commission, 2003), none of these rules causes problems for Estonia as these requirements have been an essential part of Estonia's macroeconomic policy framework.

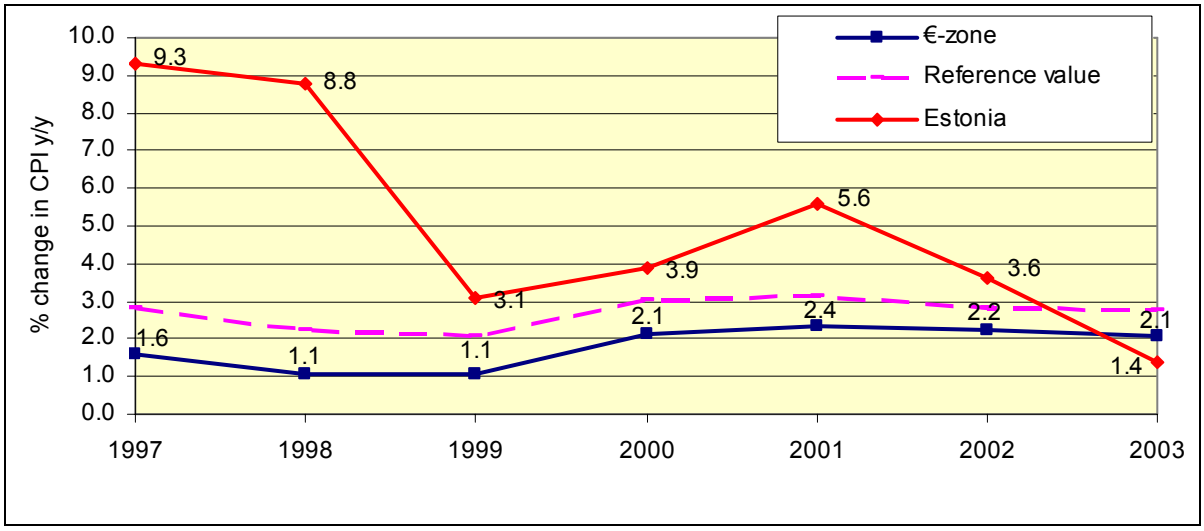
2.1.2. Convergence criteria as a condition for membership in EMU

Membership in the monetary union will be decided based upon the following convergence criteria set by the Treaty (TEC § 109, Protocol on the Convergence Criteria, protocol on the Excessive Deficit Procedure):

1. Price stability. Member States should have an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than one and half 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 harmonized consumer price index.
2. Government budgetary position is considered on the basis of two sub-criteria:
   (a) whether the ratio of the planned or actual general government deficit to GDP exceeds 3% , unless either the ratio has declined substantially and continuously and reached 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 general government debt to gross domestic product exceeds 60% of GDP, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace.
3. Exchange rate stability expects countries to participate in the ERM2. This applies that a Member State has to respect the normal fluctuation margins provided for by the ERM2 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.
4. Convergence of interest rates means 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 2 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.

Evaluating Estonian performance in fulfilling requirements of the convergence criteria, Estonia seems to have rather a positive outlook to fulfil the convergence criteria in a short period.

Figure 1: Estonian inflation performance compared with the price stability criterion in EMU

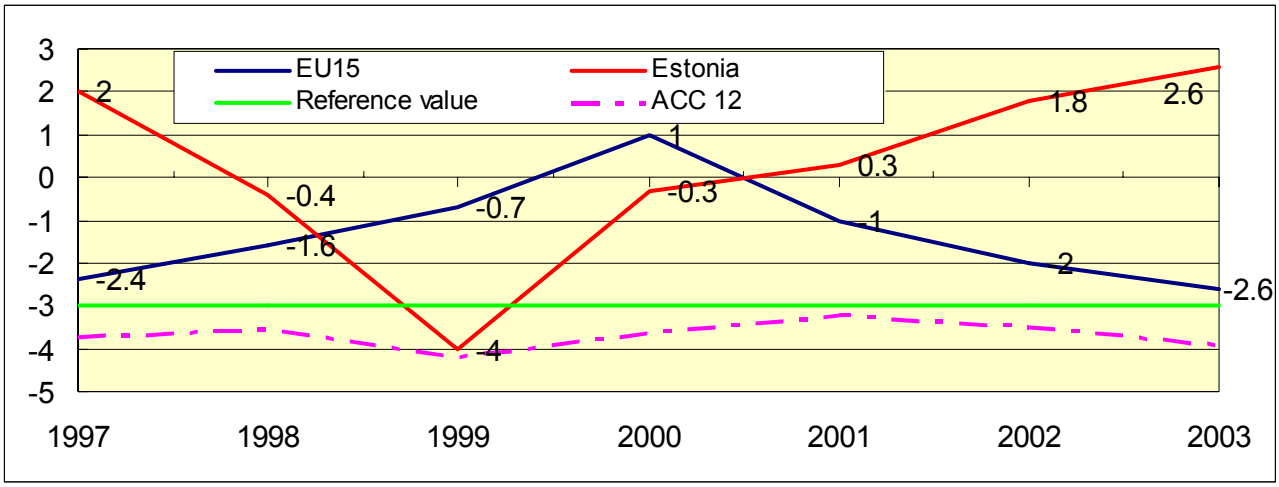


Source: Eurostat, own calculations

Price stability criterion is one of the most problematic for Estonia (see figure 1). Until 2003 the inflation rate measured in CPI lay above the reference value, in 2003 it dropped even below the EU average, but in the coming years it is expected to rise again. Although the liberalisation of administrated prices and the adjustment of relative prices has reached the final stages in almost all of the transition countries, it is not completed yet. There might be considerable adjustment in energy prices for private households, which again might have an upward pressure on wage claims and might result in upward pressure on tradable prices. Joining the EU brings along higher price dynamics due to the increase in agricultural and food products due to the introduction of common agricultural policy measures. Bringing the tax regulations, especially fuel taxes in line with EU requirements, may also lead to price rises in

certain categories of goods and services. Another source of the inflation pressure might arise from productivity growth differentials, the so-called Balassa-Samuelson effect (Backe, et al 2003: 54 -57).

Figure 2: General government net lending ratio to the GDP



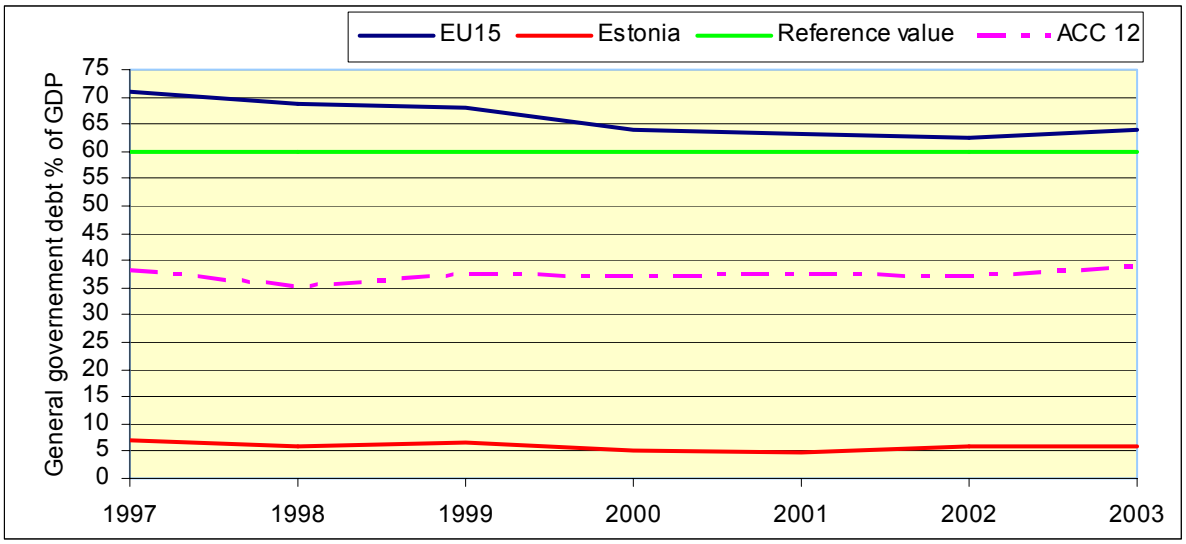
Source: Eurostat

Following the objective of keeping the budget balanced Estonia's budgetary positions fit into the rules defined by the convergence criteria. Compared to the EU average as well as average of the twelve accession countries (see figure 2) Estonia is performing rather well being able to keep the budget nearly balanced or even in surplus, except for the year 1999 when the budget deficit reached 4% of the GDP. However, taking into account the global developments, especially Russian crises in 1998, the year could be considered exceptional.

According to the Pre-Accession Programme, Estonia is committed to keeping the conservative fiscal policy and aims to maintain the balanced budget for the coming years as well (PEP, 2003). However, joining the EU will have a significant impact also on the budgetary stance as well. The increasing pressure of an ageing population will rise fiscal burdens related to pensions and health care. Also, as the accession countries are relying more on consumption taxes and less on progressive income and corporate taxes, the effects of automatic stabilisers in case of economic shocks might be limited (Eichengreen, 2002). Thus,

joining the EU might expose some additional risks or at least some fiscal burden which will endanger the budgetary criterion.

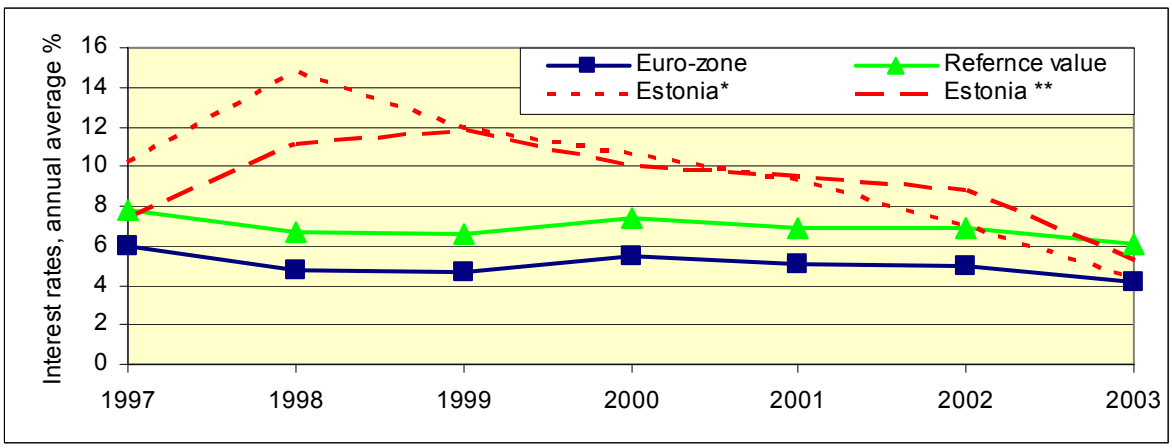
Figure 3: General government debt to GDP ratio



Source: Eurostat

Related to the general government debt (figure 3), the conservative budget policy has helped Estonia to keep the debt to GDP ratio below 10%, which is one of the lowest in European countries. Therefore, fulfilling the criterion is ensured even in the long run as far as no considerable changes in basic principles of the fiscal policy framework in Estonia are foreseen.

Figure 4: Long term interest rate criterion in Euro-zone and Estonia



* Commercial Banks long term lending rate for loans in EEK for public sector

** - Commercial Banks lending rate for loans in EEK with the maturity over 10 years

Source: Eurostat, Bank of Estonia

For measuring long-term government bond interest rates Estonia lacks a proper indicator as there have been no such instruments introduced for Estonia. However, in order to estimate the assumed level of long term interest rates for long term government treasury bills, if such would exist, commercial bank long term lending rates are used as proxies.

As followed from figure 4, during the past years interest rates have been decreasing considerably. The interest rates for EU member states have been converging during the EMS and the 2% buffer for the reference value is providing enough flexibility to fulfil the criterion. During the last five years none of the current Member States have exceeded the reference value. Taking into account the enlargement, current situation and former experience of Member Countries, the interest rate criterion is likely to be fulfilled in time.

Related to the exchange rate requirement Estonia has even proposed to join without the two years requirement, as the kroon has been de facto connected to the euro since 1999. Estonia has stated that the CBA will be continued until the third phase of the monetary integration. The European Council of Ministers has assured that the CBA system with its peg to the euro is compatible with the ERM2 requirement. Thus, Estonia has already proven to be able to live with the monetary policy set by the European Central Bank and two year participation in the ERM2 will not create any difficulties for Estonia (European Commission, 2003).

2.2. Real economic conditions based on OCA

2.2.1. Vulnerability to asymmetric shocks

Formal requirements in the form of convergence criteria have been largely questioned by economists (Gross and Thygessen, 1992; Buiter et al, 1993, De Grauwe 1994, McKay, J.E., 1997) as not having sufficient theoretical background as well as not being able to provide sufficient convergence of the economies before adoption of the common monetary policy.

Even the European Central Bank has expressed some concerns related to the real convergence and further process of disinflation in candidate countries (Duisenberg, 2001)

One option for defining the criteria on convergence of real economic conditions could be application of the Theory of Optimum Currency Areas, founded by Mundell in 1961. Although the theory deals with the theoretical implications of forming common currency areas, it also provides a set of requirements which would in practice foster the implementation of the monetary union.

According to OCA theory the major argument against forming a monetary union is the loss of monetary independence, which limits the ability of the government to stabilise the economy in the case of asymmetric shocks in the economy. When countries are different in economic structures and have different development patterns they are likely to face asymmetric shocks. In the monetary union the exchange rate instrument as well as monetary policy instruments can not be used as an adjustment tool for a single country.

Thus, in order to evaluate a country's readiness to participate in the monetary union, the first question to be asked would be whether the country is likely to face asymmetric shocks compared to the other members of the club. Recent study by Lättemäe (Lättemäe, 2003) shows that Estonia is likely to be a benefiting member of the common currency area. Existing symmetries in structural shocks are smaller in candidate countries than in current EMU members. The asymmetric shocks are dominant in Poland, Lithuania and Cyprus. At the same time, the real shocks' symmetries in Latvia, Estonia, Slovakia and Hungary are comparable to the EMU "periphery". In the existing EMU members, only the shocks in Greece are asymmetric compared to other EMU members. It seems, however, that monetary shocks in candidate countries are similar to EMU countries. It shows that the existing differences in monetary policies compared to the Euro-area may be relatively small. If this is the case, then

joining the euro-area does not necessary mean giving up monetary independence, as the latter is already given up.

However, an ex-post evaluation does not give enough guarantees that the shocks are not likely to occur in the future and the real convergence of the economies in the broader sense are necessary. In order to evaluate the possible danger of asymmetric development, the similarity in economic structures of the countries might serve as one indicator.

According to OCA theory a common currency is more feasible the more similar the structures of production are. In this case variations in output tend to be similar as well. In order to analyse similarities in the production structure the composition of Estonian economic structure is measured with respect to that of the EU countries. In the comparison the index presented below is used:

$$S = \Sigma i \mid si - si^* \mid ,$$

where S refers to the share of each branch of industry in the value added of the overall production. Without an asterisk the symbol refers to the "home country" and with the asterisk the "foreign country". By summing up the absolute values of differences in branch shares, an index is obtained which describes the differences in production structures. If countries' production structures are fully identical, the index value is zero. If instead they are totally different, the index value is two (Kotilainen, 1996 pp. 117 – 118)). However, both of these are extreme cases and in reality the index lies in between these two values. Thus the value of index is a relative measure – the smaller the value of index, the more similar are the production structures.

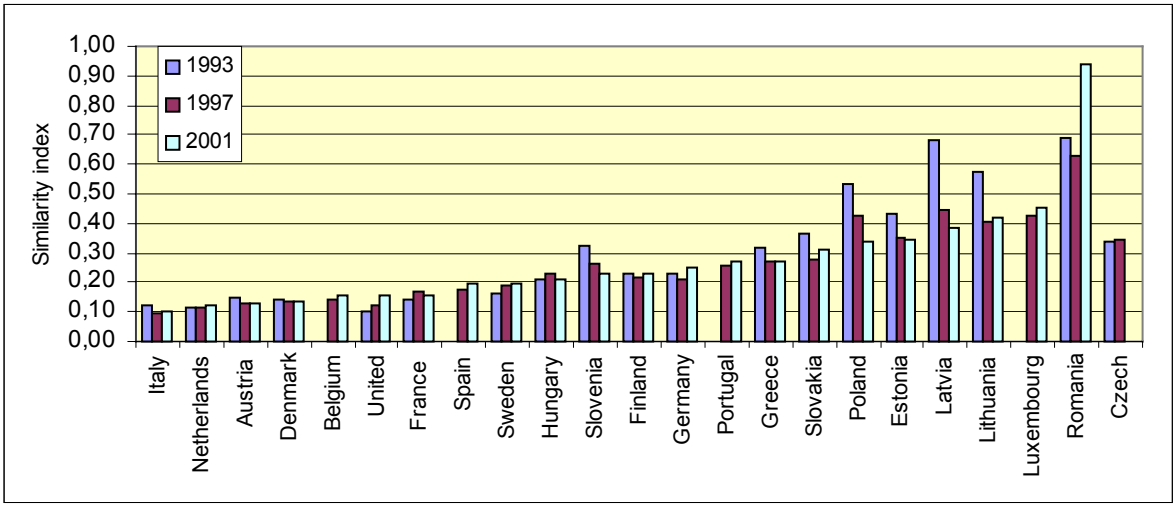
The index was first used by Krugman (1991) in order to compare the production structures of the USA and those of the EU countries. However, he used labour shares of different branches

of industry as weigh. In the current work the shares in value added are used in order to also take into account the factor share of capital.

In the analysis the economic structures of 14 EU member states (there was no data available for Ireland) and nine accession countries (except for Malta, Cyprus and Bulgaria, where no data was available) were measured. This was based on the Eurostat classification, including agriculture, hunting and forestry; fishing; mining; manufacturing; electricity, gas and water supply; construction; wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods; hotels and restaurants; transport, storage and communication, real estate, renting and business activities; financial intermediation; public administration and defence; compulsory social security; education; health; other community, social and personal services and private households with employed persons.

The period for analysis included 1993, where the first reliable data on Baltic countries was available, until 2001. As a break point the year 1997 was included, in order to capture any changes induced by the Russian economic crises, which had a significant effect especially on Baltic countries.

Figure 5: Comparison of economic structures of countries with EU 14 average



Source: Eurostat, own calculations

In order to establish a comparative base all 23 countries were compared to the economic structure of the EU 14. According to this (see figure 5) the structures of the EU member states are rather similar and there is no significant difference, exempt for Luxemburg, where financial intermediation by large dominates the local economy. Results show that Estonia differs from the EU average more than EU member states. Estonia has a significantly dominating agriculture sector, twice as high as the EU average. The economy is very concentrated on transportation and communication services, which again are twice as high as the EU average (see table 1 on next page), reaching 16% of value added generated in the economy. At the same time, the real estate, renting and business activities are underdeveloped compared to the EU average, reaching a little over half the EU average. The same is true for healthcare. However, as a positive trend the economic structures of the accession countries, including Estonia show a converging trend towards EU average.

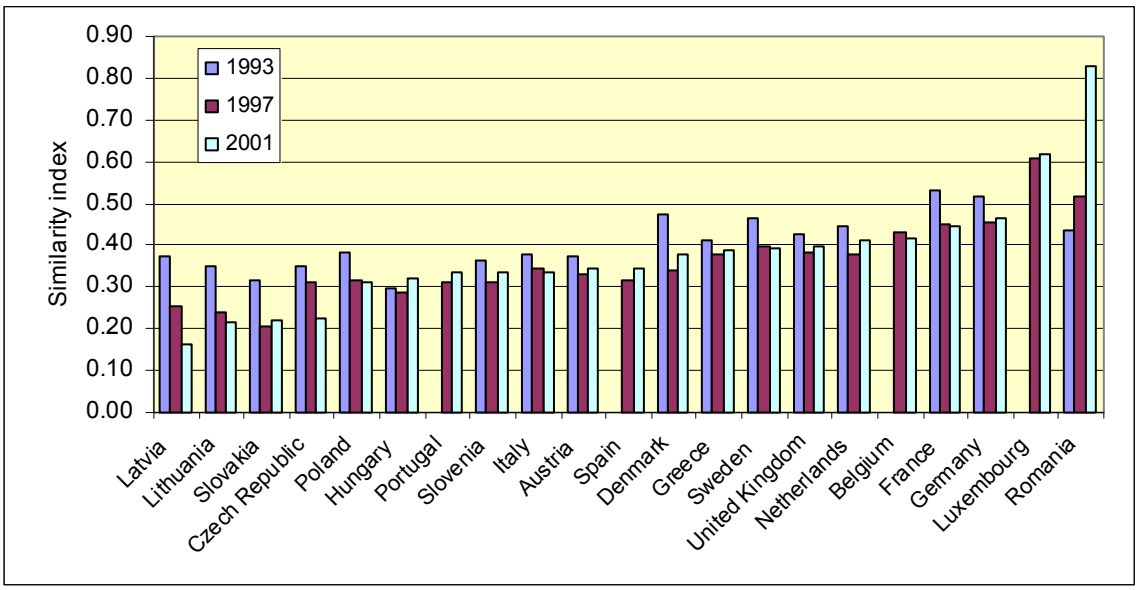
Table 1: Composition of countries* value added, 2001 (%)

	Belgium	Denmark	Germany	Greece	Spain	France	Italy	Luxembourg	Netherlands	Austria	Portugal	Finland	Sweden	United Kingdom	EU average	Czech Republic	Estonia	Latvia	Lithuania	Hungary	Poland	Slovenia	Slovakia	Romania
Agriculture, hunting and forestry	1.3	2.7	1.2	6.4	3.2	2.7	2.6	0.6	2.6	2.3	3.4	3.4	1.9	0.9	**2.5**	4.3	5.4	4.5	7.1	4.3	3.7	3.25	4.49	14.22
Fishing	0.0	0.2	0.0	0.6	0.2	0.1	0.1	0.0	0.1	0.0	0.4	0.1	0.0	0.1	**0.1**	0.0	0.2	0.3	0.1	0.0	0.0	0.01	0.46	0.45
Mining	0.1	2.6	0.2	0.6	0.4	0.2	0.4	0.1	3.0	0.3	0.4	0.3	0.2	2.9	**0.8**	1.4	1.0	0.1	0.7	0.2	2.4	0.59	0.76	31.2
Manufacturing	18.7	15.7	22.4	11.9	17.4	17.9	20.1	10.3	15.3	20.6	18.2	24.4	20.6	17.5	**17.9**	27.4	18.4	14.9	20.5	22.7	17.9	26.63	23.3	0
Electricity, gas and water supply	2.6	2.1	1.9	1.8	2.1	1.9	2.3	1.1	1.5	2.2	2.7	1.8	2.7	1.8	**2.0**	4.0	3.1	3.7	4.2	3.2	3.7	3.05	2.64	0
Construction	4.9	5.0	4.8	8.3	8.7	4.8	4.9	5.8	5.9	7.5	8.2	5.6	4.4	5.4	**6.0**	6.7	6.2	6.1	6.1	5.1	2.8	7.21	5.76	4.57
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	11.7	12.0	10.7	13.3	11.0	10.1	13.0	9.9	13.0	12.5	15.3	10.1	10.5	12.2	**11.8**	14.8	13.9	18.5	17.5	11.4	20.6	11.49	15.15	13.5
Hotels and restaurants	1.7	1.7	1.3	7.4	8.0	2.8	3.6	2.2	1.9	4.2	3.0	1.5	1.6	3.4	**3.1**	2.2	1.5	1.3	1.6	1.8	1.3	2.5	1.51	0
Transport, storage and communication	6.9	8.0	6.2	8.4	8.7	6.5	7.4	9.9	7.2	7.1	6.9	10.6	8.2	8.0	**7.8**	8.5	16.4	15.5	12.6	8.4	7.3	7.11	12.27	10.5
Real estate, renting and business activities	22.7	19.0	26.1	15.5	14.2	25.0	20.1	17.7	20.0	16.8	13.2	17.2	21.4	24.0	**19.5**	12.0	11.6	11.2	8.3	17.7	13.1	14.69	15.28	13.03
Financial intermediation	5.3	5.1	3.8	5.7	5.8	4.6	5.9	26.7	6.3	6.6	1.4	3.8	3.6	5.3	**6.4**	3.7	4.1	4.8	2.3	3.5	2.2	4.34	4.6	1.64
Public administration and defence; compulsory social security	8.0	6.6	6.1	7.1	6.0	8.4	5.4	5.3	7.5	5.9	9.6	4.9	5.4	4.8	**6.5**	:	4.4	6.5	5.8	8.6	7.1	6.4	5.19	4.75
Education	6.4	5.4	4.1	4.5	4.7	5.0	5.0	3.6	4.2	5.2	7.3	4.8	5.4	6.0	**5.1**	:	5.4	5.2	6.4	4.9	5.1	5.67	3.31	3.17
Health	6.8	10.0	6.3	5.2	5.3	6.4	4.8	3.9	7.7	5.2	6.1	7.9	10.1	7.0	**6.6**	:	3.4	3.0	3.4	4.6	4.1	5.06	3.7	2.11
Other community, social and personal services, private households with employed persons	2.3	4.1	4.9	3.0	3.1	3.1	3.5	2.3	3.3	3.5	3.3	3.5	4.0	4.7	**3.5**	:	4.8	4.2	3.3	3.4	4.3	3.39	2.73	0

Source: Eurostat

In order to find countries with similar economic structures, the economic structures of EU Member States and accession countries were compared with those of Estonia (figure 6).

Figure 6: Comparison of economic structures of countries with Estonia



Source: Eurostat, own calculations

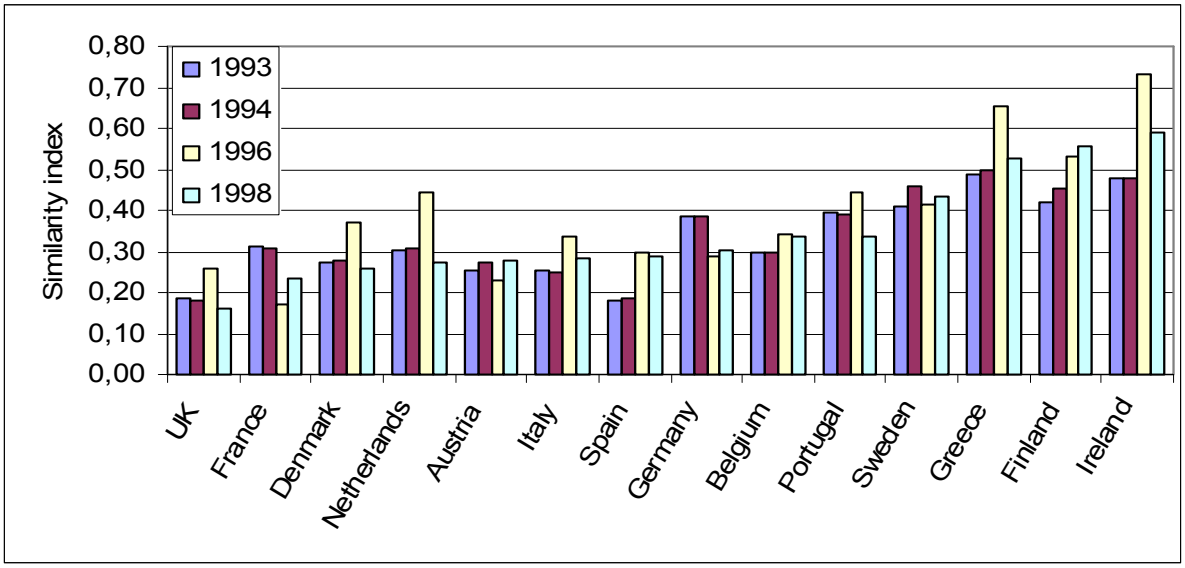
In most cases, the differences have been decreasing since 1993. The most similar are the economic structures of the two Baltic States revealing the common historic background as well as possible similarities in comparative advantages in those countries.

The most divergent economies in relation with the Estonia are Romania and Luxembourg. The latter is due to the very specific economic structure, based on the financial intermediation (26% compared to the EU average of 6.4% in 2001). The Romanian economic structure is again based on primary sector development – agriculture and mining provide almost half of the value added in production.

However, a large part of the branches providing value added in the economy, belong to the closed sector and are thus exposed to the external shocks in the limited scope. In order to

evaluate a country's risks, it might be worth analysing the structure of the open sector, mainly manufacturing. Krugman's production structure index is also applicable in this case. The analyses were based on 11 branches of manufacturing. Due to the limited data on value added in the manufacturing structure, the importance of the sector was measured based on the value of production in current prices, which might somewhat distort the relative importance of the branch in the production sector of the economy.

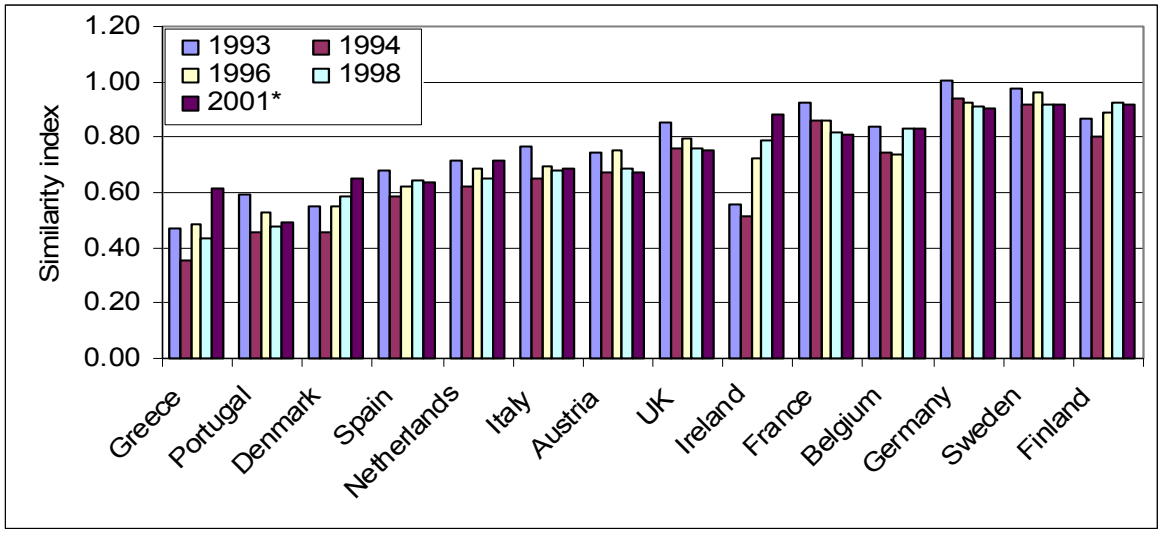
Figure 7: Comparison of the manufacturing structures of the EU Member States with the EU average



Source: OECD, own calculations

Comparing Estonia's manufacturing structure with those of the EU Member States (Figure 8), the differences are larger than in the Members States compared to EU average (Figure 7).

Figure 8: Comparison of the manufacturing structures of the EU member states with the Estonian manufacturing structure



* - 2001 for Estonia, 1998 for EU countries
Source: OECD, own calculations

In the case of the manufacturing industry differences are due to relatively higher importance of labour and raw materials intensive industries (food, textile, wood industry) and relatively less important capital and technology intensive industries (machinery, chemical industry etc.). Also, there is no significant evidence on convergence towards the EU average levels.

Thus, despite Estonia's development towards a market economy the country's production structures are still different from that of the EU average. Therefore, early entry to EMU seems a high-risk strategy as the country might be exposed to the asymmetric economic shocks although the ex-post evaluation provides evidence on the correlation of Estonia's economic shocks with the EU countries.

2.2.2. Availability of adjustment mechanisms

Nevertheless, according to OCA theory fulfilment of OCA criteria could considerably reduce the risk of loosing monetary independence even in the case of divergent economic developments.

OCA theory formulates the criteria which would make participation in the monetary union beneficial despite the loss of monetary autonomy. On one side there are the characteristics such as labour and capital mobility, the fiscal transfer system, and price and wage flexibility which act as automatic stabilisers in case of economic shocks. In the presence of factor mobility, labour and capital move freely responding to shocks ensuring production efficiency. When prices and wages are flexible between or among regions, adjustment is less likely to be associated with unemployment in one region and inflation in another. Hence, the need for exchange rate changes diminishes. Exchange rate adjustments could also be replaced by fiscal transfers between regions which would stimulate falling demand in one region and restrict growing demand in the other region.

On the other side there are the conditions which reduce the effectiveness of the exchange rate as a stabiliser. According to McKinnon (McKinnon, 1963: 717 – 718) for very open (and typically small) countries the exchange rate movements are set in price and wage movements, so the exchange rate loses its effectiveness to affect output and employment and therefore to correct asymmetric shocks. The net gains of a monetary union also increase with the degree of trade integration (Mundell, 1961).

An automatic adjustment mechanism to asymmetric shocks is ensured through flexibility of the labour markets. The less mobile labour is, the less willing it is to leave the regions in contraction and move to the regions with higher growth rates (Mundell 1961, p 661). The low mobility could be compensated by the wage flexibility, where the wage claims in the region with recession will be lowered, and wages in the booming regions will be increased. This would balance the labour costs competitiveness (De Grauwe 1994: 6 -13).

However, labour mobility in Europe is low and is not growing significantly due to cultural and linguistic differences. Wage flexibility is restricted by centralised labour markets (Eichengreen 1991: 10).

Another way for stabilising the asymmetric development would be the use of a central financial transfer system, where booming regions have to pay more taxes and these additional incomes are transferred into the regions with recession in order to support the demand there (Sachs, Sala i Martin 1991, p.4). This kind of fiscal transfer system is missing in the EU. To some extent structural funds could substitute fiscal transfers, but it must be kept in mind that the aim of these funds is to support the convergence of levels of development in different regions, not to adjust economic cycles of Member States.

Concerning the trade integration, the EU is by large the most important trading block for Estonia and its importance has been increasing for the last ten years. However, being geographically located on the border of the EU, intra-EU trade in Estonia will probably remain lower than in most of the other small Member States like Luxembourg, Netherlands, Belgium or Portugal (see table 2), and Estonia will remain somewhat more open to the economic disturbances in the neighbouring countries, especially in Russia.

Table 2: Trade integration with the EU

	Percentage of imports from EU on total imports			Percentage ofexports to EU on total imports		
	1993	**1997**	**2001**	**1993**	**1997**	**2001**
EU 15	62.4	62.32	59.45	63.18	61.8	61.81
Belgium	72.58	71.27	68.67	76.81	74.57	74.76
Denmark	69.27	70.23	68.36	66	66.38	65.71
Germany	59.02	59.18	55.87	58.52	55.55	55.08
Greece	63	65.01	53.96	58.91	50.85	40.95
Spain	65.04	65.96	66.98	64.34	68.34	71.38
France	66.87	65.92	65.19	62.17	62.03	60.81
Ireland	67.12	64.03	65.55	72.39	68.9	62.99
Italy	59.55	61.04	56.51	57.13	54.97	53.76
Luxembourg	:	:	78.81	:	:	86.87
Netherlands	64.3	58.58	51.66	77.7	79.05	78.71
Austria	69.31	73.42	68.16	65.53	62.01	61.53
Portugal	74.51	76.29	75.07	79.92	80.81	80.13
Finland	56.93	64.35	63.49	57.28	53.21	53.7
Sweden	62.48	67.74	65.47	58.95	55.57	54.62
United Kingdom	53.3	53.73	49.97	56.73	55.5	57.48
Estonia	53.4	59.2	51.8	50.2	48.5	59.9

Source: Eurostat, Statistical Office of Estonia, own calculations

From the point of view of trade openness, Estonia is one of the most open economies in the Europe (see table 3), measured in trade to GDP ratio. It has been a result of very liberal trade policy. As countries openness reduces the effectiveness of exchange rate policy instrument, while the competitive effects are expected to be transferred into the price developments, it increases the benefits arising from monetary integration and limits the use of exchange rate as a stabilization instrument for Estonia.

Table 3: Countries' trade to GDP ratio

	1994	**1998**	**2002**
Denmark	99%	90%	112%
Germany	57%	68%	82%
Greece	48%	44%	63%
Spain	51%	65%	70%
France	64%	62%	67%
Ireland	158%	193%	243%
Italy	54%	61%	64%
Netherlands	120%	151%	158%

	1994	1998	2002
Austria	..	102%	122%
Portugal	..	87%	86%
Finland	34%	42%	47%
Sweden	..	98%	100%
United Kingdom	74%	81%	80%
Czech Republic	..	..	139%
Estonia	170%	180%	193%
Cyprus	..	106%	125%
Latvia	98%	125%	117%
Lithuania	120%	109%	117%
Hungary	79%	125%	142%
Malta	..	..	213%
Poland	..	62%	68%
Slovenia	124%	114%	122%
Slovakia	115%	137%	157%
Bulgaria	116%	103%	123%
Romania	..	..	84%

Source: Eurostat, own calculations

The risks for all national economy-wide asymmetric shocks can be reduced by diversification of the production structures. In this case the shocks hitting the country are more likely to have only sector-specific effects and the use of monetary policy instruments would be excluded in these cases (Masson, Taylor 1992).

In order to measure diversification of the economic structures, Jonung and Sjöholm (1998) have proposed to use Herfindahl's index in the following form:

$$M_i = 100 * \sum_{j=1}^{n} s_j^2 ,$$

where M is the measure for diversification, s_j is the share of the j branch in the total production and n is the number of branches. The higher the value of M is, the more concentrated the economy is.

Table 4: Diversification of the production structures, based on the Herfindahl index.

	1993	1994	1996	1998	2001
Austria	11.48	11.37	10.29	..	..
Italy	11.53	..	11.50	..	..
Sweden	12.35	12.34	12.05	..	..

	1993	1994	1996	1998	2001
Portugal	13.79	13.83	12.11	..	..
France	..	..	12.41	11.86	..
Spain	13.55	..	12.67	12.58	..
Germany	13.80	13.74	12.71	..	..
UK	13.00	..	13.45	..	..
Finland	13.94	13.61	13.60	13.97	..
Belgium	..	..	14.37	13.65	..
Denmark	16.47	..	14.57	13.50	..
Netherlands	17.79	..	16.16	15.26	..
Greece	..	18.09	17.83	18.63	..
Ireland	20.00	..	20.49	19.79	..
Estonia	24.87	21.36	17.31	15.52	13.76

Source: OECD industrial structure database, 2003, ESO, own calculations

Comparing the index value in the case of Estonia and current EU member states, Estonia has a trend line of constant increase in diversification and in some cases is even more diversified than some of the EU countries like Ireland or Greece.

Thus, Estonia's openness towards asymmetric economic shocks is balanced by a relatively high fulfilment of OCA criteria. It indicates that although Estonian economic structures differ from EU Member States and joining monetary union could cause additional adjustment problems for the country, sufficient adjustment mechanisms and inapplicability and ineffectiveness of monetary policy instruments reduce the costs of the monetary union. At the same time the convergence process could mean that after a few years Estonia's participation in the EMU could certainly be beneficial for the country. The speed of the convergence process depends on the economic reforms and priorities of the economic policy. At the same time the position of the small open country limits the use of exchange rate as an adjustment tool and integration with EU markets increases the benefits. Therefore joining the EMU could be beneficial even when asymmetric disturbances occur.

Estonia should pay more attention to the economic policy which lessens the asymmetries. These are, for example, avoiding specialisation by developing intra-industry trade with the

EU, or diversification of export countries in the direction of Central and Western European countries not only to Scandinavia, or the improvement of manufacturing industry developments.

3. ECONOMIC CONVERGENCE UNDER THE EMU

3.1. Economic convergence in accession countries

The Preceding analysis indicated that the feasibility of the monetary union relies on the convergence of economic trends in the participating countries. However, one of the major hopes of the accession countries is the accelerating path towards EU average living standards. This expectation gives rise to a crucial factor for discussion of sustainability of the membership in the monetary union for the accession countries, namely the issue of real convergence in the monetary union.

Economic convergence could be understood as a similarity of economic performances such as growth rates of different economic indicators, e.g. evolution of gross domestic product (GDP) per capita or unemployment rates. As a process it would mean the gradual elimination of differences in economic development across the EU countries. From one side it would be desirable as this will result in the increase in total welfare, but it might also destabilise the macroeconomic policy in the EMU, because the larger the developmental differences across countries the greater the structural divergences in trend inflation rates will also be (Björksten, 2000:1).

A driving force in real convergence is found in the Heckscher-Ohlin-Samuelson model for international trade, in which functioning markets and reasonably similar relative factor endowments will result in goods price equalisation as well as factor price equalisation (Björksten, 2000: 5).

From the other viewpoint, the standard neoclassical economic theory suggests that under certain assumptions the income levels of different countries or regions within an economic area would converge over time with the help of technological change (Barro, Sala-i-Martin, 1995).

The relative convergence is also one of the main aims of the accession countries to becoming members of the EU and thereby ensuring convergence of their income levels to the EU average. As a result of real convergence process, the accession countries are expected to grow faster than current Member States until the average labour productivity and price levels are no longer substantially different. In the case of competitive markets this implies when the GDP per capita are roughly the same throughout the euro area (Björksten, 2000, p. 6). However, participation in EMU is sometimes viewed with the concern that this might hamper the catching up process and lead to the need for permanent fiscal redistribution from more to less advanced economies.

There are doubts that an early application of the currency peg to the euro will lead to a considerable real appreciation of the pegged currencies, which will result with chronic current account deficit and with an unfavourable risk structure of capital inflows and would endanger the countries competitive situation. As small open economy Estonia depends largely on the export performance, and the decrease in competitiveness would endanger the growth potential of the country and thus have a negative impact on the real convergence.

The experiences with the convergence progress have been divergent in accession countries. However, there are some basic facts about the catching up process that can be identified. Income levels in candidate countries are far below the EU average (in 2002 47% of the average). According to analyses made by the European Commission, there has been only a slight catching up accounting for approximately 0.7% during the five years (1995-2000)

(European Commission, 2000: 4). In this light Estonia has proceeded rather well being among the countries where the convergence effects have been strongest (see table 5), although the Estonian GDP in PPS is still among the lowest of accession countries.

Table 5: GDP of the accession countries in Purchasing Power Parities (% of EU average)

Country	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002 ***
Bulgaria	29	26	24	24	24	24	26	26
Czech Republic	..	..	..	..	..	..	..	..
Estonia	31	32	35	36	35	37	39	40
Hungary	45	45	46	47	48	49	51	53
Latvia	26	27	29	30	30	31	33	35
Lithuania	31	32	34	35	34	35	37	39
Poland	..	..	..	..	41	41	41	41
Romania	..	..	..	24	23	24	24	27
Slovakia	40	42	43	43	43	44	45	47
Slovenia	61	62	64	64	67	66	68	69
Malta	..	..	..	..	71	71	70	69
Cyprus	75	74	73	73	74	76	78	76

P – preliminary results
Source: Eurostat

In terms of exchange rate developments the catching up process is usually associated with considerable real appreciation of the countries real exchange rate. This might negatively influence the countries competitive situation and worsen the current account positions.

Table 6: Developments of the real exchange rate indices (1995=100)

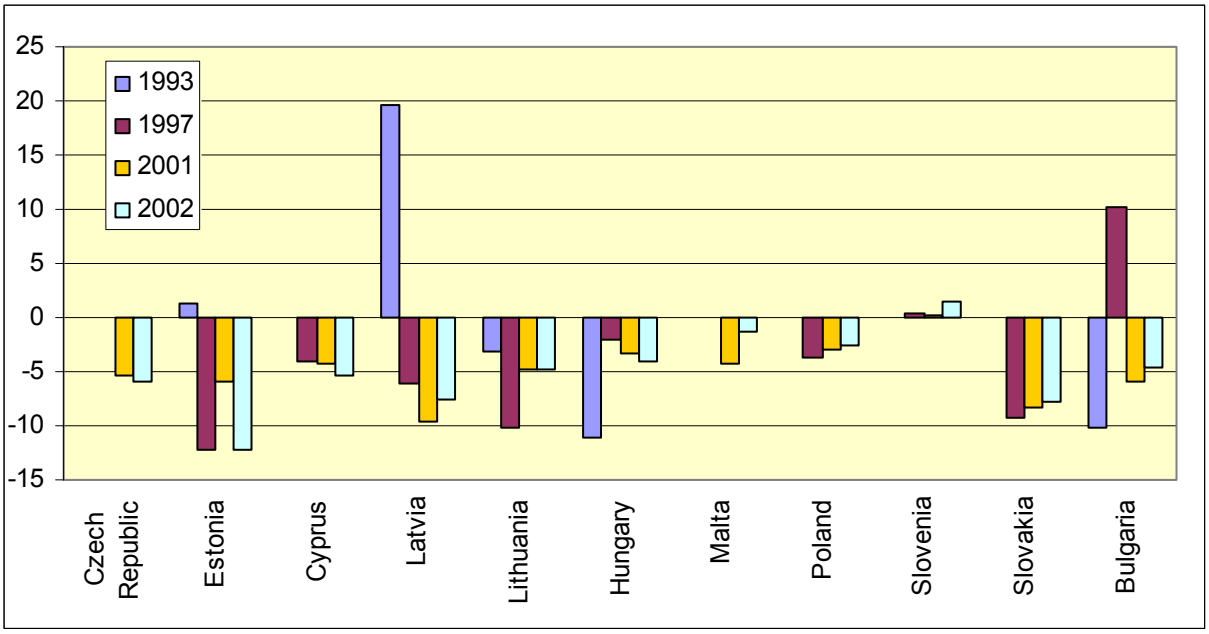
Country	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Bulgaria	89.0	100	85.8	102.6	116.4	118.8	120.7
Czech Republic	96.7	100	106.7	107.6	116.3	114.8	114.5
Hungary	104.2	100	102.8	108.1	107.3	109.0	109.6
Poland	92.4	100	108.8	111.4	117.0	112.3	121.6
Romania	102.3	100	90.4	105.3	137.0	116.6	127.7
Slovakia	97.2	100	99.7	104.6	102.3	100	109.1
Cyprus	99.0	100	100.3	100.1	103.3	99.7	96.5
Malta	97.9	100	98.8	101.4	103.1	104.0	105.8
Estonia	82.0	100	109.7	113.0	124.8	133.9	128.8
Lithuania	94.4	100	106.3	120.7	139.5	160.0	169.6
Slovenia	90.2	100	96.7	97	100.7	100	97.5

Source: IMF 2001, National Central Banks, own calculations

According to Table 6, appreciation of the real exchange rate has indeed taken place in all accession countries with the exception of Cyprus and Slovenia. Following the expectation the appreciation has been highest in the countries with hard currency pegs like in Estonia by 28,8%, in Lithuania by 69.6% and in Bulgaria by 20.7% and lowest in the countries with floating rates like in Slovenia were even 2.5% depreciation has taken place. However, in some of the countries with floating regimes the significant real appreciation has taken place despite to floating regime like in Poland by 21.6%.

The above-mentioned processes have also influenced current account positions in the accession countries. Although the current account is in deficit in all of the accession countries, the worst situations are again related to the currency peg systems like in Estonia (in 2002 12.3% from GDP).

Figure 9: Balance of the current account as % of the GDP



Source: Eurostat

Evidently, concerns related to the real appreciation in the accession countries and their possible impact on the current account balance could be justifiable.

2.3.2. The Balassa – Samuelson Effect

Among the factors constraining the process of economic convergence in the monetary union, the Balassa-Samuelson effect (Balassa, 1964; Samuleson, 1994) could be considered as one of the most important aspects in the future determination of the suitable exchange rate policies

for the accession countries before joining the EMU. The presence of a sizeable Balassa-Samuelson effect will affect both – the choice of the exchange rate path as well as the inflation performance of the new member states (United Nations, 2001: 2).

In a developing economy, one which is catching up with the income levels in the more economically advanced countries, productivity in the sectors producing tradable goods will tend to rise faster than in those producing non-tradables (United Nations, 2001: 1). Since wage increases tend to be more or less the same in all sectors, a relatively faster productivity growth in the traded sector of the accession countries will convert into a higher inflation rate if the exchange rate is kept constant (Buiter, 2002).

The empirical results, however, show that the effect could be quite moderate. Egert (Egert, 2002) has studied the Balassa-Samuelson effect in five accession countries – Czech Republic, Hungary, Poland, Slovakia, and Slovenia during the transition process. The findings show that in the Czech Republic and Slovakia, the impact of the productivity growth on the inflation differential relative to Germany was close to zero. For Slovenia, the inflation differential due to the productivity gains ranged from 0.9 to 1.3%. In Poland and Hungary the impact of Balassa-Samuelson effect are higher than in other countries ranging from 2.6-3.5% for Hungary and from 1.5 to about 3.3% in Poland. Evaluating the Balassa – Samuelson effect in Estonia, Egert (Egert 2003) found it to be around 0.5 to 2% per year, showing a decreasing trend during the last five years. Doyle et al estimate the size of the Balassa-Samuelson effect to be in average 1 to 3% per year (Doyle *et al*., 2001: 10).

The average Balassa-Samuelson effect would mean that in case of fixing the exchange rate, the Balassa-Samuelson effect will bring along a higher inflation by 1% to 3% compared to the EU average. As the Maastricht criteria set very strict requirements on the inflation criteria, this might impose problems for accession countries to fulfil the convergence criteria.

Thus, for countries in the catch-up process, the Balassa-Samuelson effect might give rise to inflation levels somewhat higher than the EMU average. To avoid the inflationary pressures from Balassa-Samuelson process, the only possibility would be to reduce the productivity growth gap between the tradable and non-tradable sector, by increasing either the productivity growth in the non-traded sector or decreasing it in the traded sector of the accession country. While the first expectation seems to be unrealistic, the latter would have its negative implications on the convergence of income levels to the EU average. However, the artificial slowdown of growth rates in order to satisfy the Maastricht inflation criterion is certainly neither politically nor economically acceptable for the accession countries.

The fixed exchange rates might help to bring down the inflation rate in traded goods, but it might not turn out to be sufficient to ensure the convergence of the CPI inflation and long term interest rate. There is even the risk that a pegged exchange rate could help mask inflationary pressures that would otherwise spill out more openly.

However, it should be kept in mind that all of these estimates are affected by short data series, inappropriate proxies for tradable and non-tradable prices, so cyclical effects are often not eliminated. Thus, the empirical evidence leaves a wide range of uncertainty about the size of the Balassa-Samuelson effect in the accession countries.

Beside the Balassa-Samuelson effect there are also other sources of negative impacts of participation in the monetary union on the real convergence mentioned in the literature. For example, the effects on the labour market are less straightforward to identify. The introduction of the single currency would allow easier comparison of wages between participating countries. However, hardly anybody expects any induced increase in migration towards high-age countries due to this, as language and culture are far more important barriers to the mobility than the different currencies. But it still might affect the actions of the labour unions

in the low-wage countries towards adjustment of wages to the levels of high wage countries in the wage bargaining process. If this upward adjustment of wages is not in line with the increases in productivity, this will result in the loss of competitiveness and increasing unemployment in those countries (Buti, Sapir, 1998: 203).

CONCLUSION

Estonia differs from the other transition countries due to the considerably stable and non-interventionist macroeconomic policy framework. The currency board arrangement and balanced budget requirement together with the liberal trade policy have are the cornerstones of this policy. The persistency of the macroeconomic policy goals has created credibility and helped to stabilise the economy, turning Estonia into one of the most successful transition countries. Estonia has managed to reduce the yearly inflation to below 5% in a rather short period, the average growth rates 4.4% per year during the last ten years have been above the average of the accession countries.

The Currency Board Arrangement supported by the consistent conservative fiscal policy created a favourable business climate and built up investors' confidence. Nevertheless, joining the EU and gradually also EMU will challenge the country's macroeconomic policy once again. In light of EMU membership Estonia has already demonstrated its ability to live with a fixed exchange rate and lack of monetary policy instruments, but until now there have been any strict formal requirements on the policy objectives.

Joining the EU will change the economic environment of Estonia as nominal and real convergence is expected. Taking into account the nominal convergence requirements Estonia is able to fulfil all of them without any problems except the most important, price stability criterion. Although the changes in price level in Estonia have considerably converged to the EU level, there are several processes imposing pressure on accelerating the inflation such as

increase in agriculture and food prices, fuel prices, energy and other administrated prices. Also, the balanced budget requirement may be challenged in the EU, as there are continued increases in social standards, ageing of the population, environmental investment needs etc.

The real convergence of the Estonian economy towards the EU might even be more complicated. Although the recent studies show that Estonian business cycles and shocks are rather converged to the EU average, the remaining differences in economic structures expose the country to the possible asymmetric development in the future. In this case, Estonia would need some macroeconomic policy instruments to stabilise the effects of the shock. The current macroeconomic framework is hardly providing any such discretionary measures.

At the same time EMU membership will not be more costly for Estonia than the current CBA. As a very open and small economy with a rather diversified manufacturing structure the national monetary policy measures could only have very limited effects.

One of the major hopes of the accession countries is the accelerating path towards the EU average living standards. This expectation gives rise for a crucial factor for discussion of the sustainability of membership in the monetary union for the accession countries, namely the issue of real convergence in the monetary union. In candidate countries the growth rates are expected to be higher than EU average in order to allow sufficient convergence in income levels and living standards. This might put additional pressure on macroeconomic policy making as the accompanying developments such as higher inflation pressure due to the productivity developments would not fit into the strict and inflexible macroeconomic policy coordination mechanisms in EU. Appreciation of the real exchange rate accompanied by the higher inflation rates and high current account deficit financed by the capital inflow expose risks on sustainability of Estonia's convergence towards the EU average level.

Thus, Estonia has proven itself as a successful transition country, but the challenges in designing the proper macroeconomic policy mix remain open and need further analysis.

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