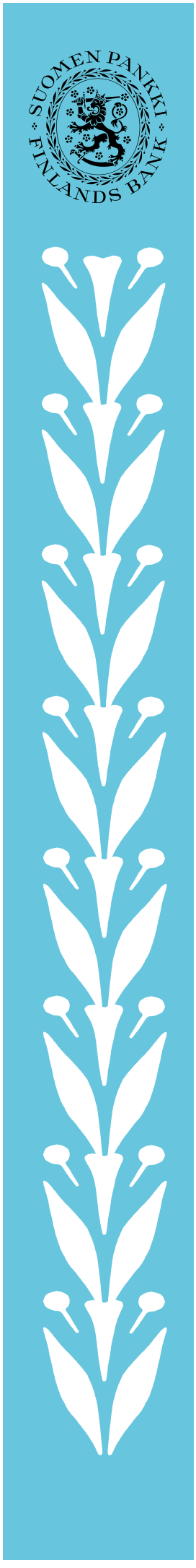

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The Impact of EMU's Third Stage on Estonian Economic Development, 1999-2000

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Contents

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Abstract

The study looks at the effects of the introduction of the euro on the Estonian economy. A priori, introduction of the euro may affect the Estonian economy through several different channels. The study focuses mainly on Estonia's foreign trade, banking system and capital flows. In short, it is not possible to discern any clear and definite effects of the euro at this point in time, although some emerging trends may be attributable to the introduction of the single currency and Estonia's EU accession process. Estonia has become quite integrated with the EU, and this trend is expected to continue also in the future.

Keywords: Estonia, Economic and Monetary Union, foreign trade, capital flows

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Introduction

Identifying the impact of policy reforms has always been a difficult task for analysts. Also, the move to the third stage of EMU, for example, is not generally acknowledged as a policy reform. Nevertheless, its impact on exchange rate regimes, monetary policy, banking and payment arrangements, fiscal policy, many aspects of government and business activity, and international importance essentially constitute a giant international policy reform with consequences that extend far beyond the euro zone.

One way of analysing the impact of policy reforms is to compare actual developments with counterfactual development scenarios, either as simulated counterfactual development (anti-monde), or comparing developments in affected countries and in a control group of unaffected economies. Counterfactual scenarios are difficult to establish, however, as the move to the monetary union has become more or less unavoidable (see Wyplosz, 1997) following the widespread liberalisation of capital flows in the EU in the 1980s and the 1990s (e.g. in the framework of the Single European Act). Moreover, there have been many critics of the EMU, but few theories and propositions offering alternatives that solve the "impossible trilogy" conundrum facing policymakers: the inconsistency of fixed exchange rates, full capital mobility and independent monetary policy.

There are several possible approaches to studying the impact of the third stage of EMU on euro-zone members. One could choose a control group, e.g. the opt-outs or the Europe's developed countries remaining outside the EU (Switzerland and Norway). The performance of these countries, however, has been inevitably influenced by the introduction of the euro. In fact, there are no control groups on which to base analysis of the impact of the euro on candidate countries. One can only analyse the development of the candidate countries on their own, compare them with each other, and try to isolate the impact of various factors on their development since January 1999, when the third stage of EMU was launched.

This report is especially directed at Estonia's policymakers: it summarises the impact of the EMU system and attempts to distinguish short- and long-term tendencies that may be attributed to the impact of the third stage of EMU. It is also aims to explore whether it is better for Estonian policymakers to implement changes in short-term policies or adjust the institutional framework of the Estonian economy to better utilise the benefits and contain the drawbacks that may accompany of the third stage of EMU.

The impact of EMU on Estonia is to a large extent determined by the state of the Estonian economy in early 1999. We examine Estonia's trade and financial relations with the euro zone, banking system and financial markets in general, access to international capital markets, exchange rate regime and policy, and its position the business cycle.

Estonia's highly open economy has intense trade relations with the members of the EU, particularly the Nordic countries. During the privatisation process, due to the country's commitment to free capital movements and benevolent attitude to foreign capital foreign investors penetrated strongly the Estonian economy. As a result, Western (and particularly Scandinavian) investors achieved dominant positions in many sectors of the economy, notably banking. In other words, Estonia's economic integration with the EU is driven not only by international trade and subcontracting relations, but also common ownership structures in production and banking.

A joint official document of the Estonian government and the European Commission states that by 1999-2000 the Estonian economy had "achieved a high degree of flexibility and a high level of commercial and financial integration with the global economy" and with the EU in particular (Joint Assessment, 2000. pp. 30-31). This positive conclusion is justified,

particularly after the hard test the Estonian economy passed following the financial crises in Asia and in Russia. These external shocks pushed the booming economy (10.6% GDP growth in 1997) into recession (-1.1% GDP growth in 1999), but thanks in part to massive restructuring of production and the banking system, and in part to highly favourable external conditions the slump was overcome rather quickly.

Nevertheless, it is understandable that Estonian policymakers are wary of external developments that may expose the economy's vulnerability. After the turbulence from Russian crisis, it was still far from apparent in early 1999 that the Estonian economy would be able to partake of economic developments in the EU.

Notably, central bank experts in the larger Central European countries show less concern over the possible impact of the third stage of EMU on their economies. During the preparation of this report, we asked senior researchers in the central banks of the Czech Republic, Hungary and Poland about their work on the impact of the euro on their economy. With the exceptions of certain distinct issues, they had found little to investigate. In the National Bank of Poland day-to-day analytical duties in connection with the euro have been addressed, which occasionally have had some trace in the bank's regular Reports of Inflation, but no comprehensive analysis was even planned. National Bank of Hungary experts said they had investigated how the euro/dollar exchange rate had contributed to higher-than-expected inflation in Hungary in 1999-2000 (see e.g. NBH, 2000a or NBP 2000). Finally, both the Czech and Hungarian central banks reported intense work on strategies for transforming the current exchange rate regime to something compatible with the run-up to EU membership and joining the euro zone (see Cincibuch and Vávra, 2000 and Derviz, 2000; the National Bank of Hungary has yet to release a publication on this).

This report covers several aspects of the impact of the euro on the Estonian economy by focusing on the areas of international trade, prices, financial markets (with special emphasis on banking) and cross-border financial inflows.

1 The impact of the euro though the trade channel

As many works about the possible effects of the third stage of EMU state, the main impact for developing and transition economies is likely to come through trade and financial linkages (see Bekx, 1998, IMF, 1998, Köhler and Wes, 1999, Korhonen and Randveer, 2000). Here, we deal with the trade linkages.

Many analysts assume that trade creation should occur both among euro-zone countries and with trading partners, including the transition economies due to factors such as robust economic activity, cyclical recovery, beneficial effects like lower exchange rate risk resulting from ongoing market integration and lower cross-border transaction costs. The IMF (1998) calculates that a one per cent output growth in the euro zone should lead to a 0.7-1.6 per cent increase in total exports in transition economies. The higher the share of exports in GDP and the higher the share of exports going to the euro zone from the given transition economy, the higher this elasticity would be.

Most also assume that "leakage" may emerge in the transition economies through higher import penetration from the more-competitive euro zone to candidate country markets, as well as possible trade diversion from third countries. However, Green and Swagel (1998) note that the positive effects of trade creation will probably dominate the negative ones. This means that higher demand for imports in the euro zone combined with better market access for exporters would open ample export opportunities which eventually, net leakage, could boost growth in Central and Eastern European candidate countries (CEECs).

It has been such a short time since the launching of the third stage of EMU that it is still not possible to distinguish factors related to the introduction of the euro by looking at growth in the euro zone (most obviously the recovery phase of the normal economic cycle). What is clear is that, following the slowdown induced by the 1997-1998 global economic financial crisis (and to some extent Europe-wide financial convergence), GDP growth in the euro zone picked up from the middle of 1999 and reached an annualised 3.5% growth by mid-2000 (see The EU Economy, 2000). This has been the best growth performance in this area in a decade, although growth forecasts for 2001 and 2002 have been revised downwards recently.

In the following we will investigate whether the prophecies about the trade implications of a higher growth in the EU and the euro zone (whether or not induced by the implementation of the euro) have been realised for the EU in general, and the transition economies and Estonia, in particular. Many developments that were predicted in connection with the effects of the third stage of EMU will uncover (if any) only in the long run, or even if they appear early, the identification of the causal linkages are almost impossible in the short run. This is why in the following analysis concentrates on long-term trends. We will also make cross-country comparisons to identify new developments that may be related to the emergence of the euro, noting those that may be specific to the case of Estonia.

1.1 Opportunities for increased trade with the euro zone

Table 1.1 Export growth rates to the EU 15 and elasticities of export to the EU 15 to EU total imports

Export growth rates to the EU 15, percent

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total	EU total import	Import elasticity of GDP	EU 15 nominal GDP
1996	22.3	1.7	15.3	-0.1	8.6	10.7	16.2	5.9	-6.7	0.6	6.3	6.6	1.02	4.2
1997	38.4	11.9	17.4	16.1	20.4	16.5	32.1	23.3	22.1	9.3	20.6	15.7	1.11	4.4
1998	17.2	9.0	7.6	13.6	24.8	34.9	25.0	15.9	7.1	12.0	19.4	5.9	1.01	4.7
1999	7.1	0.5	14.3	8.6	14.7	10.9	19.2	12.5	0.4	1.3	11.8	8.9	1.05	3.9
2000/1-3, pred.*	72.3	45.5	37.7	24.5	28.9	19.1	22.2	29.4	37.1	19.5	26.8	30.7	1.25	4.8

Elasticities of exports to the EU 15 to EU total imports

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total
1996	1.15	0.95	1.08	0.94	1.02	1.04	1.09	0.99	0.88	0.94	1.00
1997	1.20	0.97	1.01	1.00	1.04	1.01	1.14	1.07	1.05	0.94	1.04
1998	1.11	1.03	1.02	1.07	1.18	1.27	1.18	1.09	1.01	1.06	1.13
1999	0.98	0.92	1.05	1.00	1.05	1.02	1.09	1.03	0.92	0.93	1.03
2000/1-3, pred.*	1.32	1.11	1.05	0.95	0.99	0.91	0.93	0.99	1.05	0.91	0.97

Source: COMEXT database and own calculations
Note: * predicted based on data in January-March 2000 compared to data in the same period in 1999.

CEECs faced the impact of the favourable change of growth prospects in the euro zone in different phases of their development. While Hungary, Poland and Slovenia were enjoying relatively high growth in a sustained manner in 1997-1999 (GDP growth rates varied between 3.8% and 6.9%), the Baltic states experienced a steady decline in their growth (reaching zero or even negative rates). Accordingly, for the latter group it was even more crucial how they responded to the growth of demand for their exports in the EU.

Table 1.1 shows the development of total Estonian exports to the EU in 1996-2000 in comparative perspective.[1] As the table shows, the value (in ECUs and subsequently euros) of Estonian exports in the period under investigation showed a steady growth to the EU 15. If one scans the table from the last column (i.e. starting from EU's GDP growth based on nominal ECU data, to make it compatible with the trade data) and moves to the left through the import elasticity of GDP, then total imports to the EU and exports from the candidate countries, it is simple to see not only the characteristic features of the recent recovery of GDP in the EU, but also the candidate countries' responses in the form of exports. The lower part of the table shows the implied elasticities. One can see that the acceleration of growth in the EU in the second half of 1999 and 2000 was accompanied by a relatively high elasticity of total imports. The candidate countries (combined) show an elasticity of their response slightly above unity (as might be expected with the ongoing fulfilment of association agreements). For two countries, Estonia and Hungary, this elasticity is, for most of the period of 1996-2000, considerably higher than unity. Estonia's export elasticity for 1999, however, was substantially below unity, despite the fact that other demand conditions pushed products toward to the direction of the EU: domestic demand declined by 5.1%, and demand from transition economies declined by 8.8% (see UN ECE, 2000). The subsequent spectacular growth of exports to the EU in 2000 shows that adjustment and reorientation occurred, albeit slowly.

The diversity among the candidate countries is even more obvious if one looks at cumulative developments of exports from a comparative perspective, as given in Figure 1.1. It shows that only some of the candidate countries managed to surpass substantially the cumulative development of total imports in the EU. The countries in order were Estonia, Hungary, the Czech Republic, Slovakia and Lithuania. It is interesting to see that Poland's export growth regularly develops around the rate of EU imports (represented by a horizontal line in the figure). This coincides with the general understanding that since its output started to recover in 1992, Poland's spectacular growth has been based mainly on domestic demand (see Gács, 1999).

Will, however, the candidate countries whose export development has regularly outperformed the general import demand of the EU continue to do so? One of the analytical tools to answer this question is the gravity model calculation of bilateral trade flows. This model calculates parameters for normal (or potential) trade flows between pairs of countries based on their GDP, population, distance, adjacency and affiliation to regional economic integration. It is often used to evaluate the development of trade levels in transition economies. One of the latest such calculations was made by Dieter Schumacher and was presented in Boeri and Brücker (2000)[2]. It found that in 1997 most candidate countries were performing under their trade potential with the EU. Poland, for instance, exported at the level of 50%, and imported 70% of its trade potential. Estonia, and to some extent Latvia and Hungary, are different. Latvia and Hungary exported beyond their potential (by 80% and 20%, respectively), while Estonia was already much beyond its trade potential in both exports and imports: it exported 90% above "normal," and imported 20% beyond the potential level. These levels must be considered, however, dynamically. The potential nominal levels will grow as the economies of EU countries and Estonia grow, and, more importantly, when Estonia becomes a member of the EU.

Table 1.2 replicates the calculations of Table 1.1 for the initial eleven countries in the euro zone. The tendencies in the two tables are almost identical. Compared to total import demand, exports from the candidate countries seem to have expanded faster to non-euro-zone countries than to the countries in the euro zone.

Table 1.2 Export growth rates to the euro-zone and elasticities of exports to the euro-zone to total imports of the euro-zone

Export growth rates to the euro-zone, percent

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total	Euro-zone total import	Import elasticity of GDP	Euro-zone nominal GDP
1996	17.7	5.8	17.3	0.0	8.0	11.4	15.7	5.4	-3.6	0.9	6.4	5.1	1.02	3.4
1997	34.2	-0.8	14.2	15.7	18.9	16.7	32.5	21.8	22.5	9.1	19.7	14.9	1.11	3.8
1998	18.7	4.8	6.5	14.1	24.3	36.4	25.9	16.9	12.2	11.9	20.3	6.1	1.01	4.5
1999	-1.2	-9.1	7.2	9.3	15.9	10.6	19.5	12.2	1.0	1.0	12.0	9.7	1.06	3.7
2000/1-3, pred.*	86.2	54.9	28.8	23.5	27.8	17.0	21.2	24.2	43.7	18.9	25.1	29.9	1.24	4.7

Elasticities of exports to the euro-zoneto total imports of the euro-zone

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total
1996	1.12	1.01	1.12	0.95	1.03	1.06	1.10	1.00	0.92	0.96	1.01
1997	1.17	0.86	0.99	1.01	1.03	1.02	1.15	1.06	1.07	0.95	1.04
1998	1.12	0.99	1.00	1.08	1.17	1.29	1.19	1.10	1.06	1.06	1.13
1999	0.90	0.83	0.98	1.00	1.06	1.01	1.09	1.02	0.92	0.92	1.02
2000/1-3, pred.*	1.43	1.19	0.99	0.95	0.98	0.90	0.93	0.96	1.11	0.92	0.96

Source: COMEXT database and own calculations
Note: * predicted based on data in January-March 2000 compared to data in the same period in 1999.

It would be a mechanical adaptation of the assumptions about the effect of the third stage of EMU to expect that starting with 1999 and the euro's introduction that the export elasticities of CEECs to the EU or to the EU-11 would immediately increase. Only after a longer period and with the help of a sophisticated model would one be able to identify the impact of various factors, including a series of impacts related to the emergence of the euro (lower transaction costs, lower exchange rate risk, etc.).

Figure 1.2 shows the monthly development of total Estonian exports since the beginning of 1999 until March 2000[3] contrasted with total EU imports, and the distribution of exports by country. Clearly, as mentioned above at the analysis of annual data in Table 1.1, the strong response of the Estonian exports to the new opportunities in the EU appeared only around September-October 1999. Thereafter, a spectacular performance followed. The recent shoot-up in Estonian exports can not be solely linked to the emergence of the euro, of course. This is obvious from the figure which shows that the two largest and fastest growing flows in Estonian exports went to Finland (euro-zone member) and Sweden (yet to join the euro zone).

Figures 1.3 and 1.4 show the distribution of Estonia's trade by main country groups, again with the aim of seeing if any break can be detected starting with 1999. The main long-term tendencies here are the decline in the share of imports from, but particularly exports to the CIS countries on one hand, and the increase in the share of trade with the economies of the EU on the other, particularly since 1996-1997. This development was likely fuelled by the association agreement, the growing intensity of economic relations with certain EU countries (due to cross-country ownership and subcontractor relations), and the Russian crisis of 1998, rather than the implications of the introduction of the euro (see Estonian Economy 1999 and Purju, 2000).

To put Estonia's integration pattern into perspective, Tables 1.3 and 1.4 show the share of EU 15 and EU 11 in the trade of selected CEECs. As the tables evidence, by 2000 Estonia, as almost all other CEECs, shipped about two-thirds of its exports to the European Union. All three Baltic countries, however, maintained a relatively low share of trade with the euro zone due to their traditional close trade (and ownership) relations with non-euro-zone Nordic EU member countries, Sweden and Denmark. It is worth noting that this orientation has not

changed since early 1999, when advantages of trading with the euro zone should have emerged. In 2000, Estonia still directed 29% of its exports to EU members outside the euro zone. The relevant shares for Latvia and Lithuania were 35% and 21%, respectively.

Table 1.3 The share of EU in CEEC exports in 1993-2000 and the share of EU in CEEC imports in 1993-2000

The share of EU in CEEC exports in 1993-2000 (%)

	1993	1994	1995	1996	1997	1998	1999	2000. IQ
Czech R.	43.9	46.2	42.8	58.2	59.5	64.0	68.7	68.1
Slovakia	29.6	35.0	37.4	41.3	46.8	55.4	59.5	60.4
Hungary	55.9	63.5	64.4	64.9	71.2	72.9	76.2	73.2
Poland	69.2	70.0	70.1	66.5	64.2	68.3	70.6	71.7
Slovenia	63.2	66.5	67.9	64.6	63.6	65.5	66.1	67.4
Latvia	34.7	40.4	44.3	44.1	49.1	56.7	62.5	66.7
Lithuania	38.3	30.1	36.4	32.9	36.7	37.9	50.1	61.2
Estonia	**48.3**	**48.2**	**54.8**	**51.0**	**58.3**	**55.1**	**62.7**	**66.0**

The share of EU in CEEC imports in 1993-2000 (%)

	1993	1994	1995	1996	1997	1998	1999	2000. IQ
Czech R.	48.3	50.6	50.9	64.3	56.7	63.6	64.6	66.7
Slovakia	30.7	36.8	38.2	39.9	58.0	50.1	51.7	48.4
Hungary	53.7	61.6	63.1	60.9	62.4	64.1	64.5	68.0
Poland	64.8	65.9	64.7	63.9	63.8	65.9	65.0	65.9
Slovenia	65.6	70.4	70.4	67.6	67.4	69.5	68.8	67.2
Latvia	35.9	48.9	52.0	51.2	55.7	55.2	53.7	53.5
Lithuania	30.5	32.3	37.2	42.0	46.8	47.2	46.5	38.2
Estonia	**60.4**	**63.7**	**66.2**	**64.1**	**65.0**	**60.1**	**57.8**	**59.5**

Source: IMF Directions of Trade Statistics and own calculations

Table 1.4 EU 11 share of CEEC exports in 1993-2000 and EU 11 share of CEEC imports in 1993-2000

EU 11 share of CEEC exports in 1993-2000 (%)

	1993	1994	1995	1996	1997	1998	1999	2000. IQ
Czech R.	38.2	41.4	38.5	53.9	54.4	58.3	63.2	61.6
Slovakia	27.7	32.5	34.7	38.6	44.1	52.6	56.1	57.1
Hungary	51.3	57.1	59.6	60.1	66.3	67.7	70.0	67.4
Poland	60.9	60.8	61.6	58.1	56.4	58.8	60.6	61.1
Slovenia	59.5	62.2	63.6	61.2	60.2	61.9	62.3	63.4
Latvia	23.0	22.3	23.7	22.6	22.6	27.7	29.3	31.3
Lithuania	13.6	22.8	28.0	25.2	28.1	27.8	34.6	40.4
Estonia	**35.0**	**31.1**	**37.4**	**32.4**	**37.9**	**30.4**	**35.5**	**37.1**

EU 11 share of CEEC imports in 1993-2000 (%)

	1993	1994	1995	1996	1997	1998	1999	2000. IQ
Czech R.	43.3	44.9	45.0	58.4	51.3	57.6	58.6	60.3
Slovakia	28.3	33.8	34.7	36.5	54.0	46.4	48.0	45.7
Hungary	48.7	54.5	56.9	54.9	57.1	58.7	59.5	63.1
Poland	54.1	55.1	53.9	53.0	53.2	56.0	55.2	57.0
Slovenia	62.8	67.2	66.8	63.6	63.0	69.5	68.8	67.2
Latvia	27.1	37.7	38.2	36.8	41.1	41.0	39.1	39.3
Lithuania	23.2	25.8	27.7	31.0	35.8	35.9	34.9	28.4
Estonia	**47.3**	**50.0**	**52.7**	**49.8**	**50.2**	**45.2**	**43.5**	**46.1**

Source: IMF Directions of Trade Statistics and own calculations

Table 1.5 shows the commodity distribution of Estonian exports and imports (according to the Harmonized System) to and from the EU in recent years. Here again one can see no major break following the establishment of the third stage of the EMU. There is a steady growth in the share of exports of machinery since 1996, while the other heavyweight export sector, wood and articles thereof, seems to sustain its share. (In early 2000, the share of this sector, however, showed a decline, as well as the share of the group of textile products, while the share of machinery jumped. It remains to be seen if this restructuring will be characteristic for the year, or if it was only a seasonal phenomenon.) The time series on Table 1.5 ends at March 2000, so it does not show the development several of our interview partners in Estonia reported, i.e. that the food industry, particularly producers of milk products, managed to increase their exports to the EU substantially during 2000 due to more favourable quota allocations from the EU.

Table 1.5 Distribution of Estonian exports to the EU and Distribution of Estonian imports from the EU

Distribution of Estonian exports to the EU, %

		1995	1996	1997	1998	1999	2000/1-3, pred.*
1-24	Agricultural and food products	3.1	3.5	4.1	3.7	3.1	1.8
27	Mineral fuels	10.5	15.3	19.4	14.8	7.2	11.6
28-38	Chemical products	5.7	4.6	2.2	2.3	2.0	1.8
39	Plastics and articles thereof	0.8	0.7	0.9	0.9	0.9	0.7
40	Rubber and articles thereof	0.3	0.2	0.1	0.2	0.3	0.3
44	Wood and articles thereof	17.2	18.1	19.4	18.3	21.2	14.9
48	Paper and articles thereof	0.6	0.7	0.7	0.7	0.9	0.7
50-63	Textile products	16.9	17.6	15.4	14.3	13.4	8.4
72-83	Metals and articles thereof	14.3	9.3	8.0	7.7	7.8	8.9
84-85	Machinery and appliences	14.4	14.4	16.2	21.3	25.5	37.1
86-89	Transport equipment	0.9	1.5	1.0	1.2	1.3	1.7
94	Furniture and other manuf. articles	5.0	5.9	5.9	7.0	8.0	5.8
	Other	10.2	8.3	6.8	7.6	8.3	6.3

Distribution of Estonian imports from the EU, %

		1995	1996	1997	1998	1999	2000/1-3, pred.*
1-24	Agricultural and food products	13.7	13.5	11.8	10.5	9.2	8.9
27	Mineral fuels	5.6	6.8	6.1	3.3	2.9	2.4
28-38	Chemical products	5.7	6.3	6.3	6.5	7.1	5.4
39	Plastics and articles thereof	3.8	3.9	4.0	3.8	4.1	6.1
40	Rubber and articles thereof	1.2	1.0	1.0	0.7	0.8	0.8
44	Wood and articles thereof	1.1	1.0	1.0	1.2	1.1	0.6
48	Paper and articles thereof	3.2	3.2	3.3	3.0	2.6	2.1
50-63	Textile products	10.0	9.1	7.8	7.8	8.2	6.7
72-83	Metals and articles thereof	6.6	7.5	7.8	7.8	7.0	7.9
84-85	Machinery and appliences	25.9	25.4	28.5	34.8	38.3	43.8
86-89	Transport equipment	9.0	9.2	11.3	9.3	7.2	6.7
94	Furniture and other manuf. articles	2.9	2.6	2.3	2.2	1.9	1.3
	Other	11.5	10.5	8.8	9.0	9.5	7.2

Source: COMEXT database and own calculations

Note: * predicted based on data in January-March 2000 compared to data in the same period in 1999.

From among the various possible qualitative indicators of Estonia's trade pattern, we made calculations for the indices of intra-industry trade for our analysis. This indicator shows the depth of integration of an economy with its trade partners, as well as the similarity of the economy with its trade partners (here the partner is the EU). It also reveals how much the country can realise beyond its comparative advantages, particularly through specialisation on

certain product varieties and utilising economics of scale. Table 1.6 shows the results of our calculations for Estonia, and for comparison, the same indicators for selected CEECs for the starting and end years of the period 1995-1999. The indicators show a gradual, if not continuous, increase of the share of intra-industry trade in Estonia from 43% to 51%, a level still below the average of the group presented in the table. While the pattern of intra-industry trade is generally not predictable, for a small country like Estonia, one would expect further and faster increases in this indicator in the future, even if some natural endowments (such as its forests, and wood products) would support inter-industry, rather than intra-industry trade.[4] It is again worth mentioning here that it would be an exaggeration to attribute the substantial increase in the intra-industry indicator in 1999 to one factor (in our case the opportunities offered by the emergence of the euro).

Table 1.6 Intra-industry trade indices in trade with the EU*

	1995	1996	1997	1998	1999
Czech R.	0.630				0.730
Slovakia	0.532				0.630
Hungary	0.672				0.756
Poland	0.462				0.525
Slovenia	0.691				0.724
Latvia	0.254				0.250
Lithuania	0.289				0.358
Estonia	0.433	0.446	0.443	0.462	0.508

Source: COMEXT database and own calculations on 100 sectors of the two-digit sectoral data of the Harmonized System

Most foreign trade analysts tend to focus on exports and imports of goods. One reason perhaps is that well-defined, detailed and reliable data are available for this category.[5] In the case of Estonia, however, it would be a mistake to limit our interest to trade in goods. As Table 1.7 shows, Estonia has done an unusually high share of its trade, 35-38%, in the form of services in the last four years. These activities were mostly transport and travel services, while an overwhelming part of its transport was carried out as transit services.[6] Given that data, as a rule, are scanty and opaque for trade in services (for instance, no country distribution is available), very little can be said at the aggregate level about the relation of services trade in Estonia with the third stage of EMU. It is worth mentioning, however, that since 1993 there has been a strict relationship between balances in Estonia's merchandise trade and services trade. Services produce a surplus that covers exactly half of the deficit in merchandise trade. Neither the shock of the Russian crisis nor the emergence of the euro influenced this relationship.

Table 1.7 Commercial service exports / total exports of goods and services

	1992	1993	1994	1995	1996	1997	1998	1999*
Austria	37	39	37	35	37	33		
Belgium	20	22	23	18	19	19		
Bulgaria	22	28	29	24	22	21	22	
Croatia		40	43	34	41	49	46	
Czech R.		24	25	24	26	23	22	26
Denmark	26	25	25	24	25	23		
Estonia	8	12	16	24	38	35	36	38
Finland	16	16	15	16	15	14		
France	25	27	25	23	22	22		
Germany	13	13	13	13	14	14		
Greece	52	56	57	52	47	49		
Hungary	27	27	25	25	28	23	20	26
Ireland	12	11	11	10	10	10		
Italy	24	23	21	20	20	21		
Latvia	6	14	26	31	43	36	34	42
Lithuania		4	10	13	19	20	22	26
Netherlands	23	24	24	22	23	25		
Norway	26	27	25	24	22	23		
Poland	24	21	28	33	28	24		
Portugal	20	30	26	25	23	24		
Romania	9	13	15	16	18	14	12	
Slovakia		26	25	22	19	20	18	16
Slovenia	15	19	21	19	20	20	18	18
Spain	33	33	31	30	30	29		
Sweden	23	20	19	16	17	18		
Switzerland	23	24	24	23	24	24		
United Kingdom	24	24	24	24	24	25		

Source: World Development Indicators 2000, World Bank

* The share of services in the exports of goods and sevices in the current account.
Source: IMF International Financial Statistics and national central bank statistics

1.2 Leakage

We now turn to the possible "leakage" from candidate countries' trade benefits that arises from the third stage of EMU. We state firmly here that neither increasing import penetration from the euro zone nor the diversion of trade away from third countries would be welfare decreasing for customers in candidate countries. The reason is that the customers would benefit from the more competitive (lower cost) imports from the euro zone. True, certain producers in the candidate countries could be worse off, at least in the short run, and the trade balance might deteriorate. The theoretical evaluation of these developments would lead us too far. It is enough to state that neither the challenge of increasing international competition nor deteriorating trade balances are considered unusual or necessarily detrimental for market economies in their emerging phase.

Table 1.8 helps evaluate whether the leakage appeared during the past two years in the candidate countries. Without going into complicated calculations, we simply seek to establish whether import growth from the EU (which we assume, based on Tables 1.1 and 1.2, will show similar tendencies as imports from the euro zone) was excessive compared to normal patterns in the candidate countries. The first block of the table shows that imports from the

EU in 1999 developed at a moderate pace. They even decreased in the Baltic states and Slovakia (due to the recessionary breaks in these countries). The first months of 2000, however, showed a strong revival of imports, and as the second block of Table 1.8 shows, this revival was relatively strong even in terms of the elasticity imports to the output. The year-to-year growth of import from the EU was the strongest in Estonia. If one considers these imports in its relation to export to the EU, i.e. in terms of the implied relative trade balances (see the third block in the table), they do not seem to be excessive historically for either of the candidate countries. Naturally, seasonal specificities could have played a substantial role in the first three months of the year, and the prediction from this tendency for the entire year is probably unjustified. Nevertheless, the data shows that, for 1999 and the first quarter of 2000, exports kept pace with imports from the EU (and possibly from the euro zone), and there was no strong sign of excessive leakage.

Table 1.8 Growth rate of imports from the EU 15, elasticities of imports from the EU to own GDP growth and balance in trade with the EU 15, percent of exports to the EU 15

Growth rate of imports from the EU 15, percent

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total
1996	25.4	18.3	43.0	30.4	20.2	25.3	14.8	17.9	-17.4	4.0	19.9
1997	41.0	37.7	47.6	25.6	13.6	20.4	35.6	12.1	8.9	17.6	23.3
1998	12.9	18.3	10.9	12.2	7.9	18.5	23.8	25.2	31.9	6.6	14.7
1999	-10.6	-8.6	-12.4	3.0	7.2	-3.2	10.3	1.0	10.4	2.4	3.7
2000/1-3, pred.*	37.8	19.1	13.3	19.6	27.8	13.9	22.0	26.7	17.5	19.6	22.1

Elasticities of imports from the EU to own GDP growth

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total
1996	1.21	1.14	1.37	1.23	1.15	1.18	1.13	1.13	0.93	1.01	1.15
1997	1.28	1.27	1.38	1.17	1.15	1.13	1.30	1.19	1.17	1.12	1.20
1998	1.08	1.14	1.06	1.07	1.10	1.14	1.18	1.32	1.27	1.03	1.12
1999	0.90	0.91	0.91	0.99	1.07	0.95	1.06	1.04	1.08	0.98	1.02
2000/1-3, pred.*	1.31	1.14	1.11	1.14	1.25	1.12	1.15	1.25	1.13	1.14	1.18

Balance in trade with the EU 15, percent of exports to the EU 15

	Estonia	Latvia	Lithuania	Poland	Czech R.	Slovakia	Hungary	Romania	Bulgaria	Slovenia	Candidates total
1995	-52	16	-5	-25	-30	-3	-15	-12	-12	-22	-20
1996	-56	3	-30	-63	-43	-17	-13	-25	1	-26	-35
1997	-59	-20	-64	-76	-35	-21	-16	-13	12	-36	-38
1998	-53	-30	-69	-74	-17	-6	-15	-22	-9	-29	-33
1999	-28	-18	-30	-65	-9	7	-7	-10	-20	-31	-23
2000/1-3, pred.*	-2	3	-7	-59	-8	11	-6	-8	-3	-31	-19

Source: COMEXT database, EBRD transition Report 2000 and own calculations
Note: * predicted based on data in January-March 2000 compared to data in the same period in 1999.

In summing up the investigations of the foreign trade channel, we can state that no clear effects attributable to the launch of the monetary union could be detected in Estonia's foreign trade. Estonia's exports to the EU and to the euro zone have grown continuously. If the growth showed some sluggishness in 1999, it was due to the impact of the Russian crisis. This was

more than compensated later by the spectacular export expansion of 2000. Distinct patterns of export behaviour towards EU members belonging to the euro zone and those remaining outside of it could not be identified. Many indicators show an unbroken, favourable development for Estonia's foreign trade, but without the detectable impact of the euro.

2 The impact of the depreciation of the euro on the Estonian economy

Contrary to widespread expectations before the adoption of the euro, the exchange rate of the euro weakened continuously during the first two years of its existence. The protracted weakness of the euro became a major factor for the Estonian economy as well. The following section will describe the dynamics of the exchange rate of the euro over the past two years as well as the reasons for the currency's weakness. Also the impact of the weakening of the euro on the Estonian competitiveness is assessed.

2.1 The dynamics of the euro exchange rate and factors behind it

Starting from early 1999, the weakening of the euro vis-à-vis the main currencies has been a main characteristic of the euro-area economy. As shown on Figure 2.1, the weakening trend was continuous. According to the calculations of the ECB (2000a), the nominal effective exchange rate of the euro vis-à-vis 13 main trade partners fell 17.3% in the period from the first quarter of 1999 to September 2000. During the first nine months of 2000, the nominal effective exchange rate depreciated 7.9%.

The depreciation of the euro is most evident vis-à-vis the US dollar and the Japanese yen. From the start of 1999 to September 2000, the euro depreciated 23% against the US dollar and 27% against the Japanese yen. Against currencies of other important trade partners, the trend of depreciation has been somewhat slower. For instance, during the same period, the euro declined 14% against the British pound and 12% against the Swedish krona.

The euro's weakening against the US dollar attracted much attention. The most commonly cited reason for this tendency was better long-term growth outlook in the US. Short-term factors leading to the decline in the value of the euro against the US dollar include stronger-than-expected output growth in the US and the difference in economic cycles (in other words, higher interest rates in the US). However, the ECB (2000a) contends that the weakening of the euro cannot be explained in the usual framework. It is evident that the foreign exchange markets react asymmetrically to the news in the euro area and at its trade partners (in particular, the US). Positive news from the trading partners of the euro area led to further weakening of the euro, while similar news from the euro area failed to have a significant impact on the exchange rates. The ECB stressed that studies on the equilibrium exchange rate of the euro against the US dollar conclude that the euro was 20-30% below its equilibrium value.

The fall in the value of the euro against the Japanese yen has been even greater. When in early 1999 one euro cost 134 Japanese yen, then in September 2000, a euro was worth only 95 Japanese yen. This tendency has been explained with improved growth outlook in Japan and its high current account surplus.

2.2 The impact on export and import prices, the domestic price level and the international competitiveness of Estonian producers

Since the Estonian kroon is pegged to the euro, the weakening of the euro has a significant impact on Estonian competitiveness. The following paragraphs analyse the potential impact of the euro on Estonian exports, imports and the price level.

Similarly to the euro area, the weakening of the euro exchange rate has led to a depreciation of the nominal effective exchange rate of the Estonian kroon. The NEER of the kroon declined by 2.5% in 1999 and 3.5% in the first three quarters of 2000, which means that since the introduction of the euro, the NEER of the Estonian kroon has depreciated 6% (see Figure 2.2). Since trade with euro-area member states accounts for approximately two-thirds of Estonian exports and imports, the Estonian kroon has depreciated only 2.5% against the currencies of the main industrial trade partners. However, against the currencies of transition economies, the Estonian kroon has depreciated by nearly 15%. This decline arises mostly from the fact that the kroon has depreciated 25% against the Lithuanian litas, which is pegged to the US dollar, and 20% against the Latvian lat, which is pegged to the SDR.

However, the distribution of trade and the relevant inflation differential indicates that Estonian competitiveness vis-à-vis industrial trade partners is basically the same. The real exchange rate of the kroon has remained on the same level during the past two years. At the same time, Estonian goods and services have probably become more competitive in Latvia and Lithuania (the rate of inflation in these countries has been similar to the Estonian inflation rate during the past two years).

Notwithstanding these considerations, statistics on trade between Estonia and Latvia, as well as Estonia and Lithuania, point out that over the years 1999-2000, Estonian exports to the other Baltic countries declined, and Estonian imports from other Baltic countries increased. In 1998, the share of exports to Latvia and Lithuania amounted to 12.3% of the total goods exports. In the first three-quarters of 2000, this share declined to 9.5%. Estonian imports from these countries, on the other hand, increased. Whereas in 1998 imports from the other Baltic countries amounted to 5.8% of total imports, in the nine months of 2000, the figure was somewhat higher at 6%. These developments can be partially explained by the fact that before the Russian crisis, a part of Estonian exports to Russia were exported via Latvia and Lithuania. This strategy allowed Estonian exporters to avoid the double customs duties that Russia had established against Estonia. Since Estonian exports to Russia have declined significantly, fewer goods are exported to Russia through Latvia and Lithuania.

The approximate impact of the euro's depreciation on Estonian external trade can also be evaluated differently. A small country such as Estonia is primarily a price-taker in foreign markets. Also, a significant part of export and import contracts are longer-term contracts, where the prices and currencies of goods bought and sold are fixed. Therefore, for evaluation of the short-term impact of exchange rate dynamics it is useful to analyse the trade contract currencies. For example, it could be that the euro's depreciation against the US dollar brings extra profits for exporters who sell their goods in dollars, and importers, who buy their goods for dollars, suffer some losses. As Estonian exporters and importers often do not hedge against exchange rate risks, this impact channel can be important.

In external trade, Estonian exporters prefer to use currencies with which the exchange rate of the Estonian kroon is fixed. During the first three-quarters of 2000, 67% of import transactions' volume and 72% of export transactions' volume was denominated in euros, euro-area currencies and the Estonian kroon. As approximately one-third of import transac-

tions and one-fourth of export transactions were denominated in currencies with exchange rate risk, the weakening of the euro should have had a smaller impact on the revenue of exporters than on the revenue of importers.

In addition to export and import volumes, exchange rate dynamics have an impact on the Estonian export and import price indices. The following analysis assumes that (1) Estonian enterprises do not hedge against exchange rate risks, and (2) export and import transactions are based on contracts, where in short-term, both prices (expressed in foreign currency) and currencies used to buy and sell goods are fixed. Based on these two assumptions, we calculated the direct impact of nominal exchange rate dynamics on export and import prices (in Estonian kroons) on both quarterly and yearly basis (as a four-quarter chain index).

According to these calculations, the depreciating exchange rate of the euro against other major currencies led to an increase of both export and import price indices in Estonia. However, the impact was greater on import prices. This is primarily due to the above-mentioned wider use of currencies with no exchange rate risk in export transactions. In import transactions, on the other hand, currencies such as the US dollar and the Swedish krona play a greater role.

Due to the constant decline in the exchange rate of the euro from the start of 1999 to the third quarter of 2000, changes in the exchange rate of the currencies used in import transactions boosted the prices of goods imported to Estonia. This is especially evident in quarterly comparison (see Figure 2.3). Exchange rate dynamics have led to increases in Estonian import prices by 0.3-1.8% in quarterly comparison. It is also noteworthy that the dynamics of the impact of changes in the nominal exchange rate on the prices of imported goods is relatively similar to the dynamics of the import price index.

On a yearly basis, the exchange rate dynamics of currencies used in Estonian import transactions have lifted import prices as of the third quarter of 1999. Starting from the fourth quarter of 1999, the decline in the external value of the euro led to increases in Estonian import prices by 3.3-4.2% year-on-year (see Figure 2.4). This figure shows that the impact of the depreciation of the euro on Estonian import prices has been one of the most important determinants of import prices.

Although smaller when compared to import prices, the impact of euro depreciation on export prices in Estonia has been quite significant. Quarter-on-quarter, the exchange rate dynamics of the currencies used in export transactions have led to a 0.3-1.5% increase in export prices (see Figure 2.5). However, it needs to be pointed out that quarter-on-quarter, the dynamics of the actual Estonian export price index differed from the dynamics of the direct impact of euro's depreciation on export prices.

Similar to the effect on import prices on a yearly basis, the exchange rate dynamics of currencies used in export transactions have had a significant impact on export prices starting from the third quarter of 1999. Starting from the fourth quarter of 1999, the depreciation of the euro against other currencies led to a 2.8-3.6% increase in export prices (see Figure 2.6).

When considering the above calculations, it needs to be stressed that they show the maximum effect nominal exchange rate dynamics can have on export and import prices. Moreover, the assumptions behind these calculations are only partly realistic. Some Estonian exporters and importers do hedge against the exchange rate risks. Also, some trade contracts allow for short-term price adjustments. Third, Estonian entrepreneurs pricing their goods in dollars would become less competitive, and thus be forced to cede market share in foreign markets.

In addition to the direct impact on Estonian export and import prices, the trend of depreciation of the euro has an effect on the Estonian domestic price level. As Estonia is a small, open economy, the share of imports in Estonian economy is huge. In 1999 and the first half of 2000, imports reached 99% and 116% of GDP, respectively. As a result, import prices have a significant impact on domestic prices. Sepp, Vesilind and Kaasik (2000) found that a one per cent increase in import prices will lead to a 0.3-0.5 per cent increase in open sector prices. The impact on the consumer price index as a whole should be somewhat smaller, as open sector prices form approximately three-quarters of the consumer basket. Based on the above-mentioned estimate, the depreciation of the euro could have increased the consumer prices by approximately 1.5% in 2000.

Thus, contrary to expectations, the introduction of the euro was followed by the currency's significant depreciation against other major currencies. Consequently, the depreciation of the nominal effective exchange rate has been one of the major effects of the introduction of the euro for Estonia. As a result, Estonian import, export and consumer prices have increased. According to the approximate and preliminary estimates in this report, the depreciation of the euro has contributed by 4% to the increase in import prices, by 3% to the increase in export prices and by 1.5% to the increase in consumer prices during the first three-quarters of 2000. The trend depreciation of the euro has not had a significant impact on Estonian competitiveness, however.

2.3 Terms of trade losses: the combined impact of the euro rate and energy prices

Early analyses of the potential impact of the euro often assumed the euro would emerge as a strong currency. Because most energy imports are, as a rule, denominated in dollars, Eastern European exporters could gain price competitiveness in euro-denominated export markets (see Köhler and Wes, 1999). As it turned out, the euro more or less continuously depreciated against the dollar (and the yen) in its year-and-a-half, while 2000 energy prices (in US dollars) increased several fold.

In candidate countries with extensive reliance on energy imports and energy import prices that closely follow the world market prices, the primary impact of these developments was a risk of importing inflation and suffering terms of trade losses. The secondary potential impact was higher-than-expected inflation in the euro zone (a consequence of higher energy prices and depreciation of the euro) spilling over into candidate countries. The NBH (2000a, 2000b) reported that in Hungary these risks were quite real. In the second quarter of 2000, the import unit price index rose 13.9% compared with 10.9% in the previous quarter. This was 8.7% higher than the pre-announced devaluation rate. Energy import prices pushed up the import unit price index, but unlike in previous years, the prices of machinery imported from developed market economies as well. This indicated a link between imported inflation and inflation experienced by Hungary's main trading partners in the euro zone. As a result of the discrepancy of its export and import prices in merchandise trade, Hungary suffered a terms of trade loss of 1.6% in 1999, and 2.5% in the first half of 2000. This terms of trade losses translated into a deterioration of the current account and a loss of Gross Domestic Income (the terms of trade adjusted index of GDP) that Hungarian experts estimated to be 0.25 % of GDP in the first half of 2000 (see KOPINT-DATORG, 2000).

The National Bank of Poland reported less definitively on similar tendencies at the beginning of 2000. In the first two months of 2000, export transaction prices rose 4.2% (year-on-year), while import prices were 9.6% higher – a 4.9% deterioration in the terms of trade.

Data from the Czech Statistical Office also indicate similar deterioration in the terms of trade due to jump in the world oil prices and the differentiated development of the exchange rates of the euro and the dollar. It is interesting that in this case Estonia shows distinct features. Figures 2.7-2.9 show the development of export and import prices for the Czech Republic, Hungary and Estonia. The data reveals that Estonia's variation in the terms of trade was much smaller than in the other two countries. Moreover, for the first eight months of 2000, Estonia saw a minimal improvement, rather than the substantial deterioration experienced in the Czech Republic and Hungary. Export and import prices are usually unit value indices expressed in local currency. They are influenced by both export and import prices expressed in foreign currencies (which could reflect e.g. the shift in the structure and quality of exports, contract rules, the timing of purchases and sales during the period) and changes in exchange rates. Unfortunately, the available data does not make it possible to analyse in detail the reasons for these diverse developments between the Czech Republic and Hungary on one hand, and Estonia on the other.

2.4 The impact on the Estonian banking sector

The depreciation of the euro has also affected Estonian banking sector. For instance, during the past year, the share of dollar-denominated assets and liabilities in the balance sheets of the banks has increased. Whereas at end-1998, the share of assets and liabilities denominated in US dollars was 8% and 13% of all assets and liabilities, respectively, at the end of October 2000, these figures were 13% and 16%. Among liabilities, US dollar deposits have shown the fastest growth. Among assets, external assets denominated in the US dollar have shown the fastest growth.

These developments lead to the following questions. Has the appreciation of the US dollar affected the profitability of the banking sector? To what extent does the increase in the share of dollar-denominated assets and liabilities reflect a direct exchange rate effect, and to what extent a change in the investors' preference for different currencies? To answer these questions, one needs to analyse the foreign exchange positions of the banking sector as well as the currency structure of the banks' assets and liabilities.

In principle, changes in the exchange rate of the euro can have a significant impact on the banking sector. The depreciation of the euro against other currencies can increase the profitability of banks, if assets in other currencies are larger than liabilities in these currencies and vice versa. Table 2.1 shows, however, that the banks have tried to minimise the risks connected with foreign exchange assets and liabilities. The banks have actively used derivatives to achieve a close to zero net position in currencies not fixed to the Estonian kroon. This is especially evident in Table 2.2 with net position in the US dollar. This table shows that during recent months, US dollar liabilities have grown faster than dollar assets. Whereas at the end of June 2000, the banks' liabilities in US dollars exceeded dollar assets by EEK 812 million, by end-October the respective figure was already EEK 1,863 million. The net position in US dollars was mostly covered with swap contracts. Although the more active use of derivatives to balance positions in the US dollar and other currencies is not without costs for the banking sector, its effect on profitability is modest. Therefore, it can be argued that because of active use of derivatives to hedge against foreign exchange risks, the depreciation of the euro has not had a significantly negative impact on the profitability of Estonian banks.

Table 2.1 Open foreign exchange position by cyrrency

million kroons

Currency	31/12/95	31/12/96	31/12/97	31/12/98	31/12/99	30/06/00	31/10/00
EUR *	650,7	1 019,2	-2 236,5	3 761,3	7 461,9	9 139,5	9 070,3
AUD	1,8	2,9	0,9	0,6	2,8	0,0	-0,2
CAD	5,2	3,8	7,1	2,4	0,0	1,0	5,9
CHF	5,1	1,7	4,7	-3,6	5,7	2,0	6,0
DKK	6,6	2,1	8,1	2,6	-3,9	-2,2	-4,0
GBP	19,2	1,7	62,9	-6,3	9,2	-8,8	-1,0
JPY	9,3	2,3	-1,3	1,6	-4,2	-2,0	3,5
LTL	-6,9	42,7	225,1	2,8	-14,3	-197,1	-105,5
LVL	5,0	24,8	141,8	15,6	11,5	4,9	51,0
NOK	5,0	7,5	4,5	3,5	3,3	0,1	6,8
PLN	–	–	0,0	–	-1,0	0,0	0,6
RUB	19,2	19,4	69,2	13,8	13,8	7,0	-7,7
SEK	9,8	8,5	10,4	-7,2	1,1	-4,9	9,4
UAH	5,6	20,2	27,5	0,3	1,0	0,8	1,4
USD	4,3	-46,1	-256,2	-225,8	-152,9	-12,3	80,3
Other	5,1	0,8	1,8	0,5	0,7	0,8	1,4

* Net EUR/ECU and the national currencies of the euro-zone countries position of credit institutions
Source: Bank of Estonia

Table 2.2 Net USD position of credit institutions (EEK million)

	31/12/98	31/12/99	30/06/00	31/07/00	31/08/00	30/09/00	31/10/00
Foreign currency assets	3,160.3	4,346.8	6,564.7	6,809.0	6,793.4	7,031.0	7,503.9
Foreign currency liabilities	5,530.4	5,838.9	7,376.3	7,796.1	8,333.9	8,720.6	9,367.0
Open net foreign exchange position	**-2,370.0**	**-1,492.1**	**-811.6**	**-987.1**	**-1,540.5**	**-1,689.6**	**-1,863.1**
Purchased forward contracts	1,966.2	165.1	454.9	295.4	293.6	816.7	815.9
Sold forward contracts	1,540.9	191.7	324.6	145.0	113.4	664.7	612.6
Open net forward contracts position	**425.3**	**-26.6**	**130.3**	**150.4**	**180.2**	**152.0**	**203.3**
Purchased swap contracts	–	2,609.2	1,793.6	2,077.5	2,388.4	4,139.2	4,300.3
Sold swap contracts	–	1,318.0	1,200.8	1,162.7	1,024.7	2,722.9	2,629.5
Open net swap-position		**1,291.1**	**592.8**	**914.8**	**1,363.7**	**1,416.3**	**1,670.8**
Open net position of futures and other off-balance-sheet commitments	**1,719.0**	**74.7**	**76.2**	**122.2**	**142.8**	**112.9**	**69.4**
Open net USD position	**-225.8**	**-152.9**	**-12.3**	**200.3**	**146.2**	**-8.3**	**80.3**

Source: Bank of Estonia

As mentioned, the share of assets and liabilities denominated in currencies other than the euro and its national currency units has increased during the past two years. This development is especially evident with dollar-denominated assets and liabilities. The following paragraphs attempt to evaluate the extent to which this trend reflects the appreciation of the dollar and the extent to which it reflects a change in preferences of economic agents for different currencies.

In the liability structure of the banks, the increase in dollar-denominated liabilities is most evident in deposits. Whereas in end-1998, US dollar deposits were approximately 13% of demand and time deposits, in September 2000, the share of demand deposits in dollars had increased to 18% and the share of time deposits in dollars to 25% (see Figures 2.10 and 2.11).

The increase in the share of dollar deposits can be partly explained with the appreciation of the exchange rate. During the period from end-1998 to September 2000, the exchange rate of the euro depreciated 25 percent vis-à-vis the US dollar. Ceteris paribus, this implies that the share of dollar deposits in total deposits increased by approximately 25%.

The growth in the share of demand deposits denominated in dollars (from 13% at end-1998 to 18% in September 2000) somewhat exceeded the appreciation of the dollar exchange rate. At the same time, one has to take into account the fact that the growth in dollar deposits in the structure of demand deposits mostly came from the fast growth in dollar deposits of non-residents. Whereas at end-1998, the share of dollar deposits in total non-resident deposits was 58%, by end-September 2000 the share had increased to 72% (see Figure 2.12). The share of the US dollar in the structure of demand deposits of Estonian enterprises and private individuals has been relatively stable (see Figures 2.13 and 2.14). The growth in demand deposits of non-residents can be related to the appreciation of the dollar on the one hand and growing dollar-based transit trade through Estonia on the other hand.

The growth in dollar deposits has been especially remarkable in time deposits. As a result of this development, dollar-denominated time deposits of Estonian private individuals grew from 13% at end-1998 to 25% of all time deposits in September 2000. At the same time, total US dollar deposits of Estonian enterprises and private individuals increased 1.9 and 2.8 times, respectively. In comparison, total time deposits increased 55% during the same period. Thus, the increase in the share of dollar deposits in total deposits of private individuals has been largely proportional to the appreciation of the US dollar. However, the growth in dollar deposits of enterprises exceeds significantly the depreciation of the euro exchange rate. Figure 2.13 illustrates the fact that the share of US dollar time deposits in the total deposits of enterprises has been relatively stable up to the second quarter of 2000. Starting from the second quarter, however, there has been a rapid growth in the share of these deposits. Considering that the share of dollar deposits remained relatively constant during the period from 1999 to the first quarter of 2000 when the dollar also appreciated, it is unlikely that the growth in US dollar deposits reflects a change in foreign exchange preferences of Estonian enterprises. It is more likely that this change of trend is due to some large transactions.

Increase in dollar time deposits has been the fastest among non-residents. Compared to end-1998, dollar time deposits of non-residents had increased nearly five times by September 2000 (from EEK 0.2 billion to EEK 1.2 billion). Although a few large-volume transactions partly explain this development, it is also likely that non-resident customers prefer dollars to euros.

In loans extended by Estonian commercial banks, the share of dollar-denominated loans increased relatively little. Whereas at end-1998, the share of dollar loans was 6.4% of total loans, in September 2000, the figure was 8.4% (see Figure 2.15). Also the turnover of dollar loans has been relatively stable (see Figure 2.16). Thus, it can be said that the growth in dollar loans is caused solely by the appreciation of the exchange rate of the US dollar.

Similarly to domestic assets, the share of the US dollar has increased in external assets. Dollar deposits of Estonian banks in foreign banks increased in the period under consideration from 51% to 63% of total deposits abroad (see Figure 2.17) and dollar-denominated securities of Estonian banks increased from 7% to 18% (see Figure 2.18). Nevertheless, it would be premature to conclude that Estonian banks have started to prefer dollar-denominated external assets to assets denominated in euros or euro-area national currency units. A desire to balance net positions in the dollar is a more likely reason for these developments.

The share of dollar-denominated liabilities in the structure of external liabilities of the banks has also increased. This development is especially discernible in funds deposited in Estonian banks by foreign credit institutions. Whereas at end-1998, the share of dollar deposits of foreign credit institutions was less than 13.5%, by September 2000, the figure had increased to 40% (see Figure 2.19). At the same time, the growth in dollar deposits of foreign credit institutions was relatively stable. Again, one might conclude that a factor behind the rapid growth in dollar deposits of foreign banks was the preference for dollar-denominated assets over assets denominated in euros or euro-area national currency units.

In conclusion, it can be said that unlike the clear-cut impact the euro's depreciation had on Estonian export and import prices and the price level, the impact on the banking sector has been relatively modest. Regardless of the noticeably higher share of dollar-denominated assets and liabilities in total assets and liabilities, the hedging activities of Estonian banks have not allowed the depreciation of the euro to cut into the profitability of banks. The higher share of the US dollar in the asset and liability structure mainly reflects the direct impact of appreciation of the dollar. As of end-2000, it appears that the depreciation of the euro has not altered significantly the preferences of Estonian economic agents for investing in assets denominated in euros or euro-area national currency units and the US dollar.

3 Effects of the euro on the position of banks in the EU and implications for the structure of Estonia's financial sector

Before the launch of the third stage of EMU, the ECB (1999a, 1999b) predicted that EMU was likely to act in the medium and long term as a catalyst to reinforce already prevailing trends in the euro zone's banking sector. EMU was expected to reinforce the pressure for reducing excess capacity, put profitability under pressure and to lead to increased internationalisation and geographical diversification, and increase merger and acquisition activity. The ECB estimated that competition in banking within the euro area was going to increase considerably. In retail banking, however, the introduction of the euro was expected to lead to a gradual change, as the forces maintaining national segmentation remained for the most part intact. In wholesale banking, the change was expected to be swifter. It was also thought that the EMU would increase disintermediation.

The developments in the banking sector in 1999-2000 show that, to some extent, several of the ECB's predictions materialised. During that period there was significant consolidation of the financial services industry in the euro area (ECB 2000b). The most notable changes have taken place in wholesale banking, with the creation of a large and integrated interbank market in the euro area. Changes in retail banking activities have been more gradual. The emergence of large domestic players was one of the main developments in this field. It is noteworthy that the trend of consolidation has occurred predominantly within borders, without the inclusion of foreign banks.

IMF (2000) has noted that in spite of the fact that the financial sector in the euro area remains bank-dominated, disintermediation and capital market developments are changing the balance sheet structure of euro-area universal banks. The banking sector profitability in the euro zone has been maintained as a result of a diversification of revenue sources into non-interest-based revenues. At the same time, the composition of liabilities has shifted from uninsured deposits to uninsured market-based funding. Euro-zone banks have also recently tried to boost their capitalisation to expand their activities and reduce the cost of funds raised in the financial markets.

As expected the introduction of the common currency and monetary policy has quickened the pace of capital market developments, to which banks must respond. The first year of monetary union has been characterised by a sharp increase in the volume of publicly traded debt instruments issued by the private sector (a substitute for intermediated finance). For example, private sector issues surpassed all expectations, despite the remaining cross-border limitations imposed on some markets. At the short end of the maturity spectrum, the stock of certificates of deposit (CDs) issued by monetary financial institutions rose by 50%, while the stock of commercial paper rose by more than 40%. Also there were significant developments in the bond market – the boom in new corporate bond issues rose 70% in 1999, which revealed the already significant depth of primary bond markets and the existing ability to market new issuance across countries. Based on these developments, the IMF (2000) concluded that the expansion of these market instruments shows a dramatic change in the euro zone's financial landscape. While the role of bank loans have remained important and they are still increasing, the emergence of this new environment presents banks with the challenge to adapt to a financial system strongly based on capital markets.

In light of recent developments in the EU's financial sector, the IMF (2000) has brought forth analysis of several potential problems partly caused and certainly reinforced by the implementation of the euro. They also apply to the Estonian context.

A major trend in the EU's financial sector is financial disintermediation. Therefore, it is important to determine whether financial disintermediation endangers the profitability of euro-area universal banks in the short-term (and Estonian banks in the medium-term) or whether the banks have the flexibility to respond to a decrease in traditional bank business.

The ECB (2000c) has argued that, although the trend towards disintermediation is expected to continue as institutional investors will probably continue to grow, a progressive reduction of the banking sector is not anticipated. This is mainly due to the fact that banks have reacted to the new environment with a proactive strategy. For example, on the liabilities side, in several EU countries most of the institutional investors are included in banking groups and operate with the same corporate strategy. Therefore, banking groups can offer their clients traditional deposits, investment funds and pension funds as alternatives, depending on the specific market, legal or fiscal situations. Thus, the income structure of the banks could be modified within the banking group without changes in its overall market position. On the assets side, EU banks complement their natural advantage in the financing of households and small and medium-sized enterprises, by offering services such as credit lines, underwriting facilities and treasury management to large corporations, or by developing trading activities and securitisation operations. These responses are reflected in changes in the structure of bank income and in the increasing share of non-interest income, as well as the increasing size of off-balance-sheet items in banks' financial accounts.

During the past five or six years, the profitability of Estonian banks has fluctuated widely. As could be expected, the profitability of the banks followed the growth rate of the economy. Profitability rate peaked in 1997, when the rate of output growth reached 10% and bottomed in early 1999, when the economy contracted (see Figures 3.1 and 3.2). Throughout these years, the level of non-interest rate income has been the main determinant of profitability. The most volatile component of non-interest income has been income on financial operations, which in turn has been largely determined by developments in the securities markets in Estonia and the neighbouring countries.

Net interest income of the banks has continuously declined during the past five or six years. In the past year, however, net interest income comprised approximately 3.5% of total assets of the banks, a figure that is two times higher than the euro area average. In the euro area, the profitability of the banking sector was the highest in Ireland, where net interest income formed approximately 2-3% of the banks' assets.

Looking to the future, one could expect lower profitability levels for Estonian banks. This expectation is first and foremost grounded on expected higher economic stability in the medium term, where net interest margin of the banks should decline. However, disintermediation will not have a large effect on the banking sector in Estonia, as Estonian banks have adopted a proactive strategy similar to banks in the euro area. Most Estonian non-banking financial intermediaries belong to banking groups that operate with the same corporate strategy as their bank. Therefore, in addition to traditional deposits, banking groups can offer their clients investment funds and pension funds as alternatives.

The IMF (2000) also concluded that while financial disintermediation may not translate into a major loss of business for the banking sector, the recent growth in income fees from certain market segments may flatten in the near future. Thus, with the potential for fee income to flatten and the variance in revenues earned from the issuance of debt and equity, banks will either need to focus on cost management to maintain profitability, or, if they fail to cut costs, resort to higher-risk activities.

Another question that should be analysed is the increasing concentration in EU's banking sector. As it was said, one of the reasons for strong consolidation trends has been the introduction of the euro. The developments of the last two years point to the fact that the consolidation has occurred predominantly within borders and thus raised national concentration levels. Therefore, the question should be raised whether the prevalence of consolidation at the national level rather than across borders, particularly at the retail level, will hurt competition.

The IMF (2000) has noted that although it is widely accepted that some degree of market power is desirable in the banking business, monopolistic practices are detrimental to bank customers and unfair to competitors. Within-border consolidation tends to exacerbate the risk of excessive concentration that might lead to monopolistic practices, which in turn will cause excessively high prices and quantity rationing for customers. It should be kept in mind that small countries like Estonia offer markets that can only support a few domestic banks. The banking sector might benefit from consolidation because extreme competition among too many banks precludes adequate profitability and weakens the quality of bank portfolios. To minimise the oligopolistic behaviour among the few remaining banks, free entry of foreign banks needs to be assured.

Finally, it can be said that the introduction of the euro should have a strong influence on the Estonian banking sector in the medium term. EMU is expected to reinforce the trend of financial disintermediation, put profitability under pressure and lead to high level of concentration in the banking sector. A progressive reduction of the banking sector, however, is not anticipated since the Estonian banks have reacted to the new environment in a proactive way. As the euro will reinforce the trend for concentration, assuring free entry of foreign banks needs to be assured.

Here, we must acknowledge that the unexpected depreciation of the euro against other major currencies led to the depreciation of the nominal effective exchange rate in Estonia and this development has had a major impact on the introduction of the euro. Estonian imports and exports, as well as consumer prices have increased. Yet the depreciation of the euro has not had a significant impact on Estonian competitiveness, and the country has not suffered a substantial terms of trade loss.

The impact of the depreciation of the euro on the Estonian banking sector has been relatively modest. Regardless of the noticeably higher share of dollar-denominated assets and liabilities in total assets and liabilities, the hedging activities of Estonian banks have not allowed the depreciation of the euro to cut into the profitability of the banks. The higher share of the US dollar in the asset and liability structure reflected mainly the direct impact of appreciation of the dollar. At end-2000, the depreciation of the euro had yet to significantly alter the preferences of Estonian economic agents for investing in assets denominated in euros and euro-area national currency units or the US dollar.

We expect the euro to have a strong influence on the activity of the Estonian banking sector in the medium term. The EMU is expected to reinforce the trend of financial disintermediation, put profitability under pressure and lead to high level of concentration in the banking sector. The threat of the oligopolistic behaviour among the few remaining banks should be minimised by assuring free entry of foreign banks.

4 The euro and the financial and capital account

When the third phase of Economic and Monetary Union (EMU) was launched, two possible effects on international capital flows were identified (IMF, 1998). The EMU would help in creating a large unified capital market within the euro area, and these liquid markets would pull in investments from the rest of the world. However, creating a more unified market would presumably also increase correlation between the national markets. This would create a need to diversify portfolio holdings away from the euro area. The accession countries of Central and Eastern Europe (CEECs) were explicitly mentioned as a potential target for the funds diversified away from the euro area, with special emphasis on those countries most advanced in transition, i.e. the Czech Republic, Hungary and Poland (IMF, 1998). These two effects are felt mainly in the medium- and long-term, but in short-run e.g. cyclical factors will have a definite influence on the size and direction of capital flows.

After two years of the euro area's existence, we can offer some initial assessments of effects on capital flows. In 1999, the euro area had a nearly balanced current account after a surplus of EUR 31.1 billion in 1998. During the first eight months of 2000, the euro area had current account deficit of EUR18.8 billion. The euro area has a clear surplus on the trade account (partly because of the recent weakness of the euro), but the income and current transfer accounts push the current account into deficit. Nevertheless, the deficit is extremely small compared to the size of the euro area. The OECD (2000) forecasts the current account will be in balance in 2000. In fact, errors and omissions in the balance of payments data have usually been larger in absolute value than the surpluses or deficits of current account during the period under review.

Table 4.1 Euro area balance of payments (EUR billion)

	Current account	Financial account	Direct investments, net	Portfolio investments, net
1998	31.1	-61.2	-83.2	-99.7
1999	-5.8	19.1	-120.6	-41.7
1-8/2000	-17.8	48	72.8	-131.3

Source: ECB (2000d)

The small current account surpluses and deficits imply that the net capital flows have been fairly small. However, there are clear differences among investment classes. Broadly speaking, there have been outflows of portfolio and direct investments from the euro area since the euro's introduction. At the same time, the euro area has imported capital in other types of investments, mainly bank loans. At first glance, it appears that euro-area investors have diversified their debt and equity portfolios away from the euro area as capital markets inside the euro area have become more integrated. This does not necessarily mean, however, that the CEECs have been recipients of large inflows of foreign direct investment (FDI) or portfolio investment. In fact, later analysis will reveal that no increase has occurred in the capital flows into the accession countries.

Bevan and Estrin (2000) look into the determinants of FDI into the CEECs, and they found that a large role has been played by different announcements from the EU concerning the membership prospects of different countries. For example, the former first-wave accession countries (Czech Republic, Hungary, Estonia, Poland and Slovenia) benefited somewhat from their inclusion among the forerunners. In addition, the FDI flows have been significantly influenced by a variety of host-country factors. Unit labour costs, the host market size and risk all have affected the FDI flows. While Bevan and Estrin do not explicitly consider exchange rate risk,[7] it is not far-reached to think that a currency peg to the euro would decrease the perceived exchange rate risk from the point of view of the European investors. This reasoning naturally presupposes that the exchange peg is deemed credible and sustainable.[8] Buch and Piazolo (2000) argue that the capital flows into the accession countries still have potential to grow even before the EU membership. Once the accession countries become members, the potential for capital inflows grows. In the future, therefore, we should observe clear growth in investments into the accession countries, although it may have little to with the introduction of the euro.

In the following subsections we look at the balance of payments data from the accession countries, especially Estonia.

4.1 Investment flows in Central and Eastern European candidate countries

The structure and geographical pattern of capital inflows into the ten CEECs is uneven. As a general rule, the more advanced transition countries have attracted more capital inflows, both as direct investment and portfolio investment. Figure 4.1 plots the level of per capita FDI against the level of structural reforms achieved by 2000.[9] The positive correlation is clear. The more advanced transition countries are also the forerunners in the EU accession process.[10] The more advanced countries have generally been more liberal towards foreign investment and quicker to privatise state-owned companies (although there are exceptions, e.g. Slovenia). These approaches, as well as the promise of EU membership, have attracted foreign investment. When Buch et al. (1998) compared the accession experiences of Spain, Portugal and Greece with the present applicant countries, they found that investments into the Mediterranean membership candidates did not respond to the EU membership so much as capital account liberalisation. Current accession countries are required to remove capital account restrictions as part of their accession process, which should increase inward investment. Poland, Hungary, the Czech Republic and Slovakia liberalised their capital accounts when they joined the OECD, while the Baltic countries removed most restrictions on capital movements by 1994 (EBRD 1994).

It is another matter to try to discern the effects of the introduction of the euro on capital flows into CEECs. The task is complicated by the Russian financial crisis in August 1998. This crisis had effects on almost all so-called emerging markets, and certainly the EU candidate countries were not immune. In the following subsections, we present the development of time series relating to capital inflows into CEECs. We focus on inward flows of portfolio investment and direct investment. At the beginning of transition, CEECs had minute outflows of portfolio or direct investment, but as economic growth picked up, many transition countries have started to export capital. Outward direct investments from the present accession countries often go to neighbouring transition countries. For example, Estonia ranks as the number six in Latvia in terms of the stock of foreign direct investment. Estonian companies have been active in e.g. banking. At the same time, Scandinavian investors own the overwhelming majority in Estonian banks. Another example is Hungary, a major recipient of inward FDI, which itself has invested actively in Romania, Slovakia and Ukraine.

4.1.1 Portfolio investment

Portfolio flows into an economy can be a mixed blessing (see Gács 1999), and they can reverse within a short time – possibly with grave consequences for the host economy. Transition countries have received portfolio investment in very different amounts, reflecting e.g. the liberalisation of the capital account, development of the domestic financial sector and quality of financial sector supervision. Further, the borrowing requirements of government can affect the development of markets, especially the debt market.

Figures 4.2a and 4.2b depict the quarterly flows[11] of inward portfolio investments into CEECs. Figure 4.2a shows the three Baltic countries and Slovenia, while Figure 4.2b gives figures for all other accession countries (the countries are separated according to size). It is hard to discern definite trends in the portfolio flows. For most countries, the portfolio flows have been positive, albeit small, throughout the period under review. Hungary has received the largest inflows, but the outflows of portfolio investments have also been high. Hungary has occasionally run fairly large public deficits, which has prompted the development of local debt market. In addition, Hungary has had a liberal attitude towards foreign acquisitions of Hungarian companies, which has prompted portfolio investments into equities. However, portfolio capital flows into Hungary have also been relatively volatile, turning negative between mid-1996 and end-1997, when Hungary went through a recession. The Czech Republic has consistently received large inflows of portfolio investment. The currency crisis of spring 1997 decreased inflows, but even then they remained positive. Of the large accession countries, Bulgaria and Romania are the opposite end of the spectrum. Portfolio inflows into Bulgaria suffered first from serious macroeconomic mismanagement that culminated in hyperinflation and banking crisis in late-1996 and early-1997. With the introduction of a currency board in July 1997, Bulgaria regained macroeconomic stability, but slowness in restructuring the economy, and especially privatisation, stunted portfolio inflows. In Romania, serious macroeconomic imbalances continue, and consequently portfolio flows have been minuscule or even negative.

In the earlier stages of transition, portfolio flows into the smaller CEECs were fairly small. The Baltic countries and Slovenia started their transitions later than e.g. Poland and Hungary. Moreover, Slovenia was among the slowest EU accession countries to liberalise its capital account, which has naturally acted as a brake on portfolio investments. Nevertheless, stable macroeconomic policies in all of the small accession countries have provided benevo-

lent environments for portfolio investments. In the Baltic countries, and especially Estonia, structural reforms have been rapid and comprehensive in comparison with the other candidate countries. During the economic boom of 1995-1997, Estonia received a considerable amount of portfolio investments. Latvia and Lithuania took off only later, and in Lithuania's case portfolio flows have been associated with financing the central government.

The size of the inflow of portfolio investment as percentage of GDP varies from among accession candidates. Using IFS data, inflows were highest on average in Hungary 1993-1998, reaching 3.7% of GDP. In the Czech Republic and Estonia, the average inflow during that period was 2.5%. In the other countries it was lower, and in Bulgaria negative on average. The generally low level of inward portfolio investment can be explained by macroeconomic imbalances, outright crises in some countries and slowness in developing market infrastructure for trading financial instruments. In some countries legislation has prevented foreign investors from participating in the markets, an important step towards building liquidity in the markets. Also, long-term domestic investors such as pension funds are still altogether absent. In some smaller countries like Estonia, a single large privatisation deal can have a disproportionate effect on national statistics.

Although the third stage of EMU has existed for just over two years, we try to use the data to see if it has had any effects on the portfolio inflows into the accession countries. First, table 4.2 gives the mean and standard deviation of portfolio inflows for periods before and after the introduction of the euro.[12] As the period of observation is still so short, there is little point in formal testing of differences between the two sub-periods. For some countries the changes apparent in the table had started already earlier, e.g. the downward trend in Romania's portfolio inflows.

Table 4.2 Quarterly portfolio inflows (USD million), Q1/1994-Q2/2000

		Bulgaria	Czech R.	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Before EMU	Mean	-10.2	282.9	32.3	264.3	1.5	12.9	349.1	83.3	66.0	71.7
	St.dev.	58.3	345.2	64.8	538.4	10.4	39.7	665.9	85.7	180.2	157.3
After EMU	Mean	5.1	161.1	40.2	435.4	41.6	146.8	660.3	-181.8	183.8	143.9
	St.dev.	16.8	244.5	108.3	925.7	65.0	108.3	1125.1	352.8	211.5	203.6

Source: International Financial Statistics CD-ROM

Another way to assess the effects of the introduction of the euro on the portfolio flows would be to regress the flows on, say, a constant, a time trend and a step dummy for the EMU period. If the coefficient of the step dummy is significantly different from zero, we could say that the introduction of the EMU has possibly had some effect on the flows. While the small number of observations for the EMU period makes this exercise rather imprecise, we went ahead and ran regressions for the countries under review. Generally the fit of these regressions was fairly poor. With conventional confidence levels, the only significant variables in these regressions were the constant for Hungary, the EMU dummy for Lithuania, and the constant for Slovenia. In case of Lithuania, the estimated coefficient for the EMU dummy was positive. These results remain inconclusive at best,[13] and force us to admit that so far EMU seems to have had no discernible effects on portfolio inflows to the ten accession countries. We do not try to explain portfolio flows in any meaningful economic sense, the purpose is just to check whether the post-EMU period is different from the earlier period.

4.1.2 Direct investment

In this subsection, we look at the inflows of foreign direct investment into the ten accession countries. It has often been argued that FDI flows bring with them general technical and managerial know-how, and therefore are instrumental in transforming economies. The transition countries have received a substantial amount of FDI in the recent years, and Bevan and Estrin (2000) argue that the prospect of EU membership has further increased these flows. Generally, inflows of FDI have been larger (as a percentage of GDP) than portfolio inflows. In Estonia, the average FDI inflows have been over 7% of GDP in 1993-1999. In Hungary and Latvia, FDI has been over 5% of GDP. Slovenia has had the lowest level of FDI as a share of GDP, only 1.2%.

Figures 4.3a and 4.3b show the FDI inflows into the ten accession countries.[14] Again, there are wide differences between the different countries, but in general the variation of the FDI flows over time is smaller than that of portfolio flows. This has to do with the nature of FDI. As a rule, a direct investment is made for a longer period, whereas portfolio flows can be reversed almost instantly. Furthermore, we can observe that for most countries the FDI inflows have a positive trend. As the transition towards a fully functioning market economy has progressed and as the EU accession process has gathered speed, the political and macroeconomic risks in CEECs have diminished.

Nevertheless, there are still clear differences among accession candidates. Of the larger countries, Bulgaria and Slovakia have attracted very little FDI. In Bulgaria, inward investment was constrained for years by slow privatisation and extremely unstable macroeconomic conditions. After Bulgaria achieved macroeconomic stabilisation with the help of currency board in 1997, privatisation also gathered steam, which in turn has boosted FDI. Privatisation to outside investors remains difficult in Slovakia, and correspondingly FDI flows are small. In the Czech Republic, the macroeconomic crisis of 1997 prompted a reorientation in privatisation, which resulted in a clear upward trend in the inward FDI. In Hungary, the privatisation of the financial and telecommunications sectors were geared towards foreign owners, and this, coupled with few restrictions on the capital and financial account, has boosted FDI into Hungary. Hungary has also benefited from its history of early reforms and geographically advantageous position.

All three Baltic countries have basically seen an upward trend in their inward FDI. Because the countries are so small, e.g. large privatisation deals can exert a large influence on the quarter-to-quarter fluctuations of the FDI.[15] On per capita basis, Estonia has been the most successful in attracting FDI. All Baltic countries have maintained reasonably good macroeconomic balance. Moreover, especially in Estonia the whole privatisation process was designed to attract strong outside investors. In Latvia, the privatisation process has been somewhat slower. Lithuania tried to initially use voucher method (á la Czech Republic and Russia) to privatise even large enterprises, but the apparent failure of this method to produce strong owners and further investment prompted Lithuanian authorities to focus more on cash tenders. Slovenia appears to be the outlier in this group, as its FDI has consistently lagged behind that of the Baltic countries, which are clearly poorer than Slovenia.[16] Slovenia has been slower in liberalising its capital movements than almost all the other accession countries. Furthermore, privatization has been fairly slow, and – partly due to the inheritance of Yugoslav social ownership – many companies continue to be owned by their workers. As the EU accession process will require Slovenia to remove barriers to capital movements, one could expect higher FDI into Slovenia in the future.

There is more variation in the size of FDI flows as percentage of GDP than was the case with the portfolio investments. In Estonia and Latvia the ratio was approximately 7% between 1995 and 1999, but in Slovakia clearly less than 2%. This reveals clearly the different approaches the accession countries have had towards privatisation, foreign investment in general and towards the FDI in particular. As the EU accession process proceeds, the individual countries will have less and less room to deviate from free capital movements, and therefore the amount of direct investment received could be expected to converge to some extent. Naturally many differences in national legislation, labour market conditions, etc., persist, as do differences in the level of FDI.

Table 4.3 Quarterly foreign direct investment inflows (USD million), Q1/1994-Q2/2000

		Bulgaria	Czech R.	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Before EMU	Mean	67.3	445.3	70.6	607.0	82.7	76.8	1025.8	213.5	79.6	48.8
	St.dev.	71.5	330.7	52.1	724.0	47.5	124.4	347.6	275.5	62.1	31.2
After EMU	Mean	170.0	1190.4	74.9	440.8	87.7	104.2	1534.7	240.3	80.8	17.1
	St.dev.	72.7	602.1	28.1	229.3	45.7	41.8	545.5	148.7	57.8	16.8

Source: International Financial Statistics CD-ROM

Table 4.3 shows the quarterly amount of FDI the accession countries have received before and after the launch of EMU. In most countries, the average amount of quarterly FDI is somewhat higher in the second period (and the standard deviation smaller), but as was observed in the Figures 4.3a and 4.3b, the upward trend in the FDI was clearly apparent well before the third phase of EMU. Therefore, it would be hard to credit the introduction of the euro with higher FDI into accession countries. Bekx (1998) argued that the common currency would probably stimulate FDI flows into the region, but admitted that the effect of the euro would be small.

We check the effects of the introduction of the euro on the FDI flows by also regressing the flows on a constant, a time trend, a squared time trend (where necessary) and a step dummy for the period from 1999 onwards.[17] The results differ slightly from those obtained when a similar exercise was run for portfolio investment. The step dummy for EMU period was negative and significant (at the 10% confidence level) for Estonia, Latvia, Lithuania, Romania and Slovenia. Introducing a squared time trend to better explain the time series does not change the results. The squared time trend is significant for Estonia and Romania, and in both cases the coefficient of the step dummy remains negative and significant. However, for the Czech Republic the dummy is positive.

Naturally, these results must treated with extreme caution. The FDI is explained only by trend and a dummy – no consideration is given to economic factors. Further, EMU and the euro have been in existence for a short time, so other factors may be at play. For example, the Russian crisis in August 1998 could have depressed FDI into the Baltic countries, which were more dependent on Russian export markets than the other accession countries. Nevertheless, the data allows us to conclude that at least so far the introduction of the euro has not increased FDI into the accession countries.

Table 4.4 Regression results, explaining quarterly FDI, Q1/94-Q2/00

	Bulgaria	Czech R.	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Constant			56.0 [0.056]	540.6 [0.106]	36.6 [0.077]					35.6 [0.017]
Trend	7.6 [0.004]				4.4 [0.014]	12.5 [0.002]	585.5 [0.08]		4.4 [0.064]	
$Trend^2$			0.4 [0.091]				-13.2 [0.08]	2.7 [0.087]		
EMU dummy		482.3 [0.092]	-113.5 [0.013]		-52.0 [0.089]	-135.0 [0.050]		-602.0 [0.015]		-47.3 [0.032]
R^2	0.70	0.66	0.60	0.11	0.49	0.58	0.70	0.65	0.38	0.45

p-value in parentheses, only significant coefficients reported

4.2 Investment flows in Estonia

We now turn our attention to the Estonian balance of payments data. The purpose is to assess whether the introduction of the euro changed the way foreign investors view Estonia. We start by looking at some broad trends in the Estonian capital and financial account, and then check whether the importance of e.g. retained earnings has increased.

We can see that both inflows and outflows of direct investment have increased in Estonia. The net flows of direct investment have overall remained positive. Estonia has received FDI because it has maintained macroeconomic stability and because of its privatisation policies. As companies in Estonia (often owned at least partly by foreign investors) have grown, they have started to look at other markets, most notably the other two Baltic countries. Between 1994 and mid-2000, the share of retained earnings in direct investment into Estonia was some 20% on average. There appears to be no clear trend in the share of retained earnings for all direct investment, nor anything noticeably different after EMU.

The effect of the euro on portfolio investments appears to be negligible as well. The most significant inflows of capital into equity and debt markets happened during the economic boom of 1996 and 1997. Estonian investors have not purchased foreign equities in significant quantities, but investments into foreign bonds and other debt instruments have grown steadily. Estonian banks use foreign debt instruments extensively. Still, the introduction of the euro is again essentially a non-event from this point of view. The same applies to other investments, which consists of trade credits, bank loans, etc. The volume of such credits has continuously increased as the Estonian economy and foreign trade has grown. Estonia was a net recipient of such loans during the boom, but in the recession that followed the direction of these flows turned. They are again positive since the Estonian economy recovered.

In conclusion, we possibly find a small downward effect in the level of FDI into Estonia after the introduction of the euro. However, we can not distinguish this effect from other possible causes of such slowdown, e.g. the Russian crisis. Portfolio investments show no influence from the introduction of the euro, and their size seems to depend very much on the domestic economic environment. The same applies to trade credits.

Broadly speaking, the euro has not greatly affected capital movements into Estonia (or other accession countries) to date. Other factors have had significantly more influence on capital flows. However, this does not mean that the euro and continuing integration of financial markets in the euro area could not affect capital flows in the future. Recognizing such effects remains an important challenge for research in the future.

Conclusions

In this research report, we investigated the effects the introduction of the euro on the Estonian economy against a background of experiences in other EU accession candidates. We assessed several possible channels through which the system that emerged in the third stage of EMU may have influenced various spheres of the Estonian economy.

First, we looked at the effects of the euro through the foreign trade channel. We conclude that no clear effects attributable to the launch of the monetary union could be detected in Estonian foreign trade. Estonia's exports to the EU and to the euro zone have grown continuously. Even the sluggishness in 1999 caused by the Russian crisis was more than compensated for by a spectacular export expansion of 2000. Distinct patterns of export behaviour toward EU members which belong to the euro zone and those which remained out of it can not be identified, either in the case of Estonia or any other candidate countries. Many other indicators show an unbroken, favourable development for Estonia's foreign trade, but without any detectable euro impact.

Next, we analyzed how the depreciation of the euro against other major currencies affected Estonia's foreign trade. Because the Estonian kroon is pegged to the euro, a depreciation of the nominal effective exchange rate was inevitable. However, since much of Estonia's foreign trade is conducted with the euro zone countries, this depreciation was not substantial and reached only 6% since the introduction of the euro. The depreciation contributed the lion's share to the experienced increases in both export and import prices, which in turn have been reflected in domestic consumer prices. Nevertheless, the effects of the euro on Estonian prices have so far been modest.

High oil prices mean worsening terms of trade for most EU accession countries. The effects of high import prices have been exacerbated by the weak euro in the countries that have pegged to the euro. Interestingly, Estonia's terms of trade loss has been more moderate than the losses of other candidate countries.

The effects of the euro on the Estonian banking sector have also been fairly small. So far the profitability of banks has not changed, although the share of the US dollars in Estonian banks' balance sheets increased during 1999 and 2000 (which in part simply reflects dollar appreciation). Although the introduction of the single currency seems to have sped up the integration of capital markets inside the euro area, so far very little has changed in Estonia in this regard. Even if securisation and move away from bank lending gain importance in Estonia, Estonian banks will remain important because they are active in the capital markets.

In the last section, we looked at capital flows to Estonia and other EU accession countries in Central and Eastern Europe. In portfolio flows, we found no significant effects from the introduction of the euro. There are considerable differences in the portfolio inflows reflecting the differing characteristics of the countries. Moreover, portfolio flows remain volatile, although the volatility of flows may have decreased over time. For direct investments we find weak evidence for smaller inflows in some countries after the launch of the euro, Estonia

among them. However, we can not separate this effect from e.g. the effects of Russian crisis. A closer look at the Estonian balance of payments data reveals no significant changes in the composition of portfolio or direct investments.

The effects of the euro on the Estonian economy remain small at best. Because the euro has been in existence for such a short period, it is extremely difficult to detect any significant changes. Even if some changes are detected (such as in inward direct investment) in the post-EMU period, we can not distinguish between changes caused by the euro and those caused by some other factor, e.g. the Russian crisis. Therefore, there seems to be no reason for Estonian authorities to change economic policies, which have served Estonia well. As time passes and blurs the effects of developments that coincided with the launch of the third stage of EMU (such as the after-effects of the Russian crisis, the explosion of the price of oil and the depreciation of the euro), the potential and long-lasting impact of the euro may finally become visible. Here, we merely highlighted the potential channels through which the effects of the euro might be transmitted to the Estonian economy. It will take time for the effects to be fully felt.

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Notes

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[1] Our raw data series starts with 1995, the latest enlargement of the EU, because our source, the COMEXT data base, gives consistent data only from that year onward. However, since trade developments in the candidate countries, particularly in the Baltic states, have been more or less stable only since the mid-1990s, this limitation is not very restrictive on our analysis.

[2] Schumacher's calculation was carried out on 85 countries, rather than only on the OECD members, as many previous analyses. It also used GNP data at purchasing power parities, rather than at current exchange rates, as all previous calculations did.

[3] Complete data through to March 2000 was available from the COMEXT data base at the time of writing this paper.

[4] Estonia provides a good transport route between the CIS countries and the Baltic Sea (and on to the EU). This is also a condition that reduces the level of the intra-industry trade indicator with the EU.

[5] The data analysed until this stage covered merchandise trade only.

[6] In addition, the Estonian economy in general has an unusually large part of services (67%) and a relatively small share of manufacturing in the production of the GDP (15%) (both data are for 1998, World Development Indicators, 2000). See also Ardy (2000), p. 30.

[7] Except perhaps through the inclusion of foreign currency reserves.

[8] Only Estonia and Bulgaria currently have fixed pegs to the euro. Both countries have implemented their pegs through a currency board, which probably is the most credible form of currency peg. For details on Estonian currency board, see Korhonen (2000). The Bulgarian currency board is explored in Miller (1999).

[9] The progress in structural reforms is calculated as a simple average of the EBRD's transition indices for a given country. Of course, there are inherent difficulties in measuring structural reforms this way, but the concept must be quantified in some way.

[10] In 1997, the EU invited the Czech Republic, Estonia, Hungary, Poland and Slovenia to start membership negotiations. At the Helsinki summit in December, Bulgaria, Latvia, Lithuania, Romania and Slovakia were invited to start membership talks. Of the former first-wave countries, Estonia and the Czech Republic have made the most rapid progress in the talks, measured by the number of chapters of the *acquis communautaire* (the body of EU law) the negotiating partners have provisionally closed. Of the former second-wave countries, Slovakia and Latvia have made the most progress in this respect.

[11] The series is smoothed by applying a four-quarter moving average.

[12] For most countries the data starts from the beginning of 1994. However, for Bulgaria, Latvia, Romania and Slovenia the series is shorter.

[13] The results are not reported to save space, but they are available upon request from the authors.

[14] Based on balance of payments statistics.

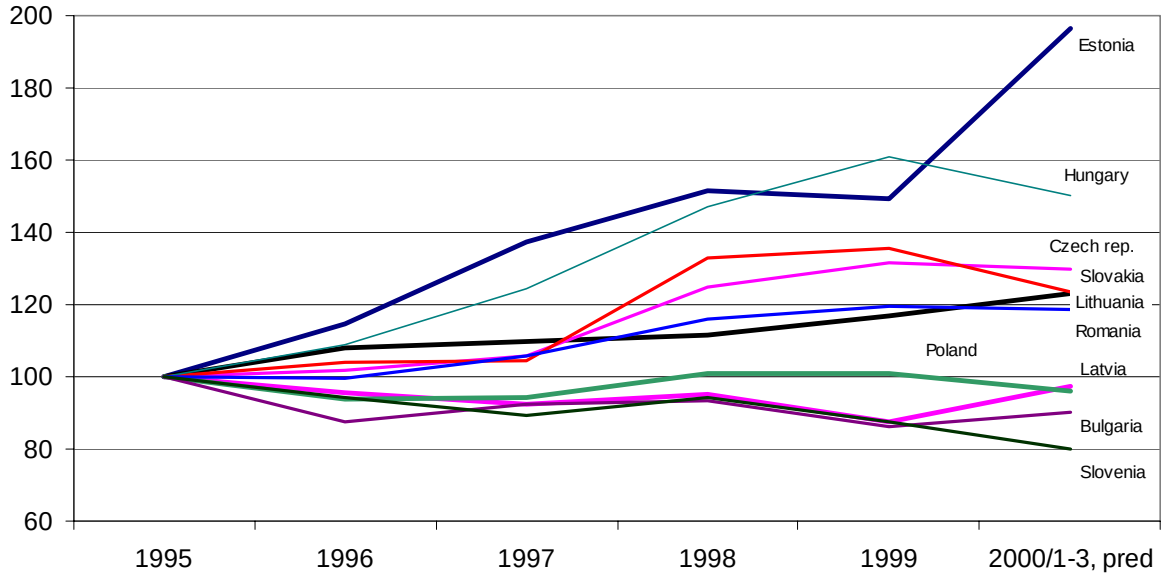
[15] For example, the large upward jump in Lithuanian FDI is connected to the partial privatisation of Lithuanian Telecom. In Estonia, a somewhat smaller jump occurred when Swedish banks acquired the two largest commercial banks.

[16] Bevan and Estrin (2000) found that the level of FDI is positively correlated with the size of the host country in terms of GDP.

[17] We do not claim to explain FDI flows. The purpose here is merely to identify if the time series properties are different in the post-EMU period.

APPENDIX 1

Figure 1.1 Exports to EU 15 in current euro, 1995=100 and development of EU 15 imports =100



Source: Comext data base and own calculations

Figure 1.2 Monthly Estonian exports to the EU and by countries (left hand scale), and total extra-EU imports to EU (right hand scale), thousand ECU/euro

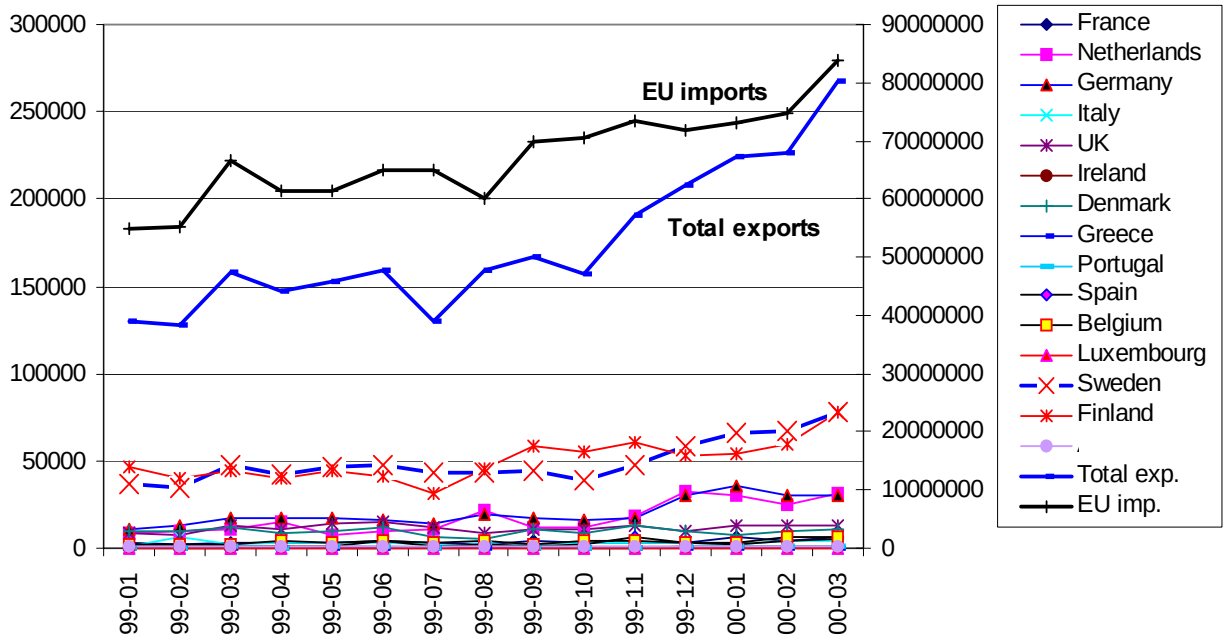
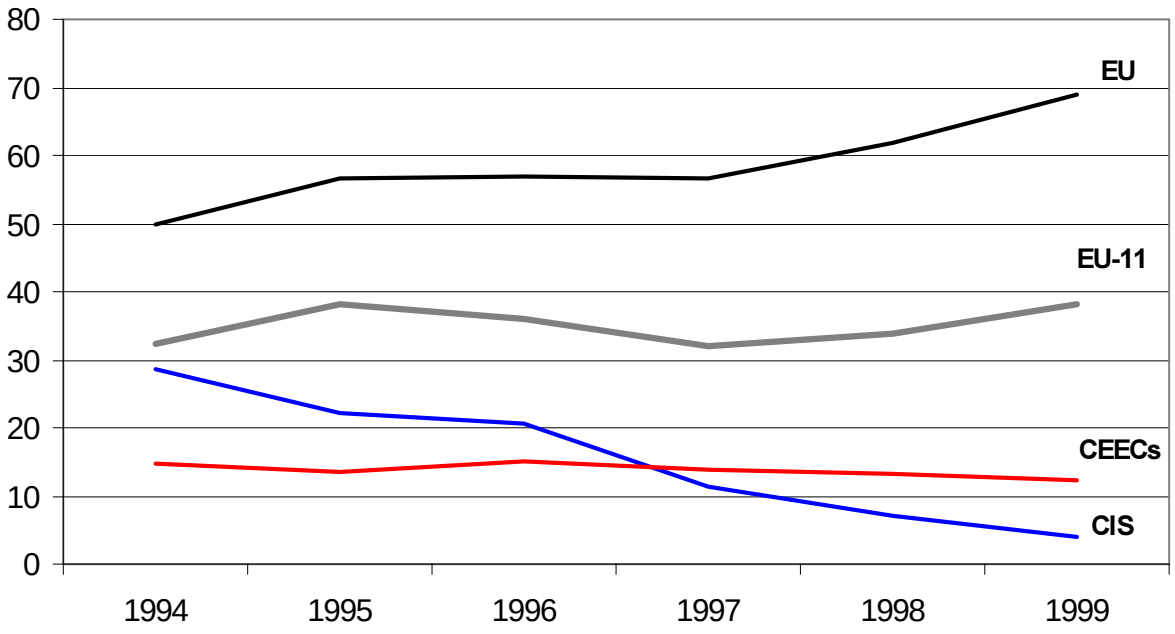
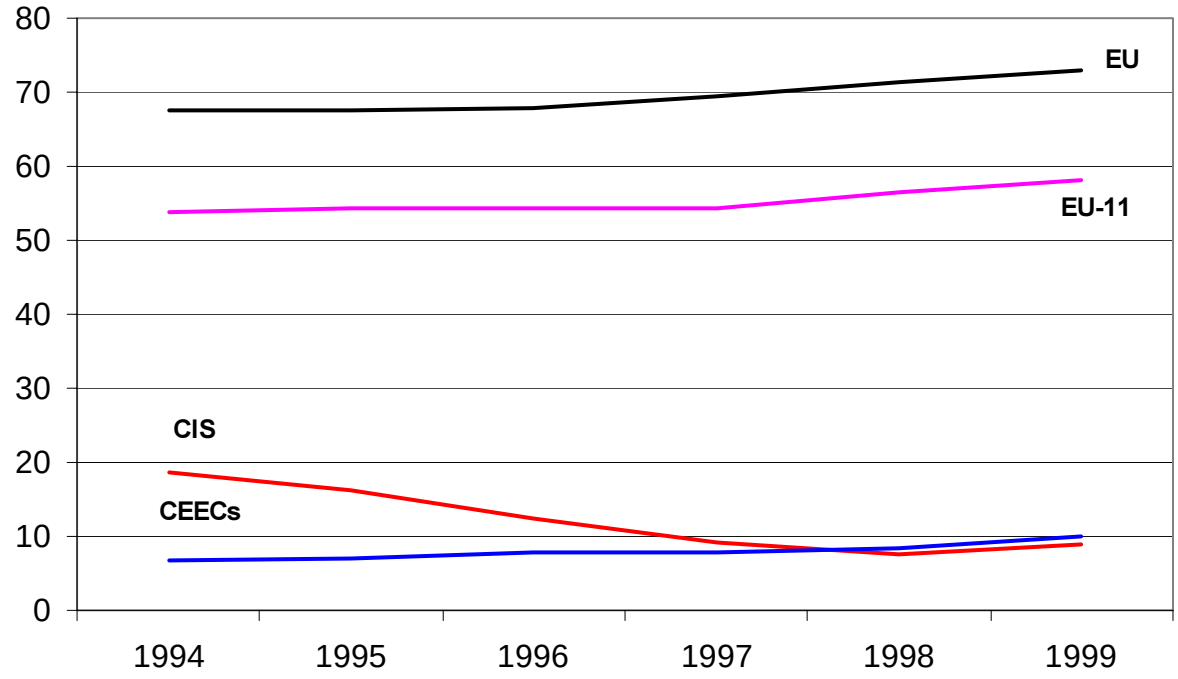


Figure 1.3 Estonian exports to main groups of countries in 1994-1999, % of total exports



Source: Bank of Estonia

Figure 1.4 Estonian imports from main groups of countries in 1994-1999, % of total imports



Source: Bank of Estonia

Figure 2.1 The exchange rate of euro/ECU against other currencies in 1998-2000 IIIQ (1999 jan=1)

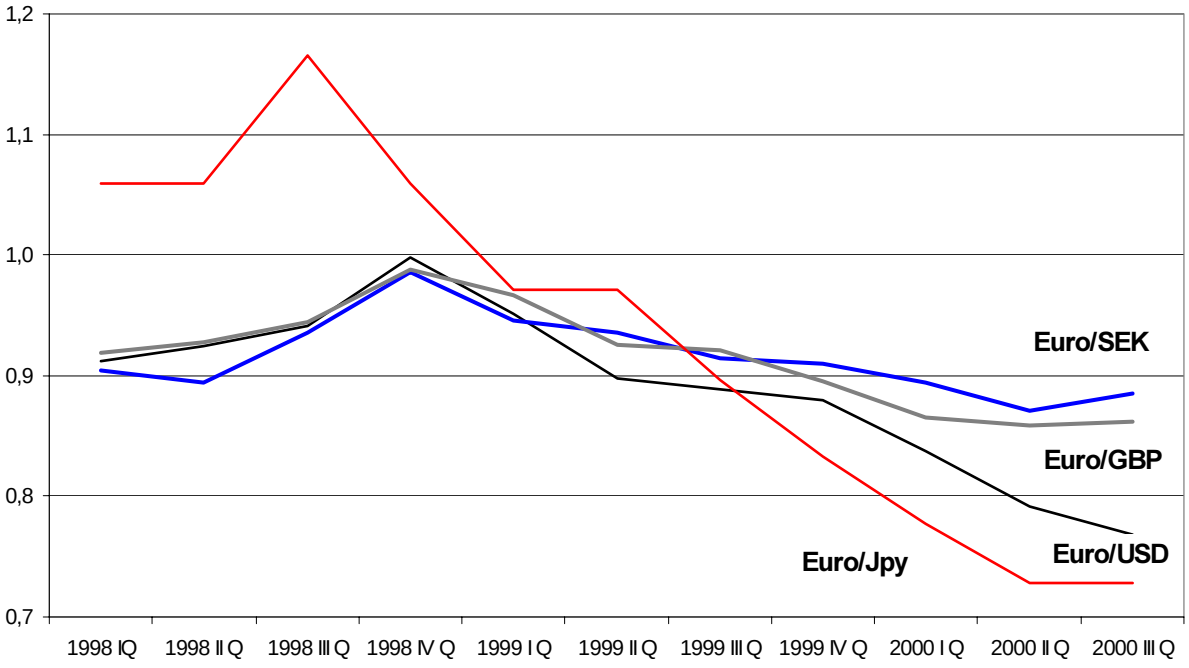


Figure 2.2 The nominal effective exchange rate of EEK in 1999-2000 sept (1999 Jan =1)

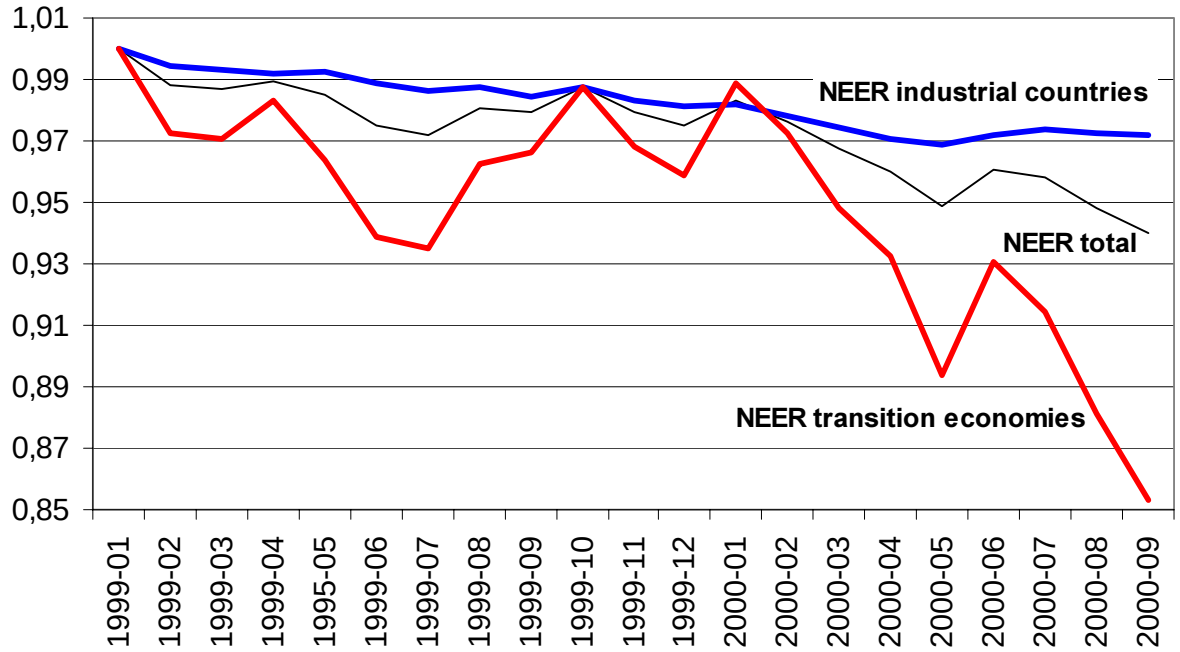


Figure 2.3 The influence of nominal exchange rate changes on Estonian import prices 1999-2000 IIIQ (1-quarter chain index, percent)

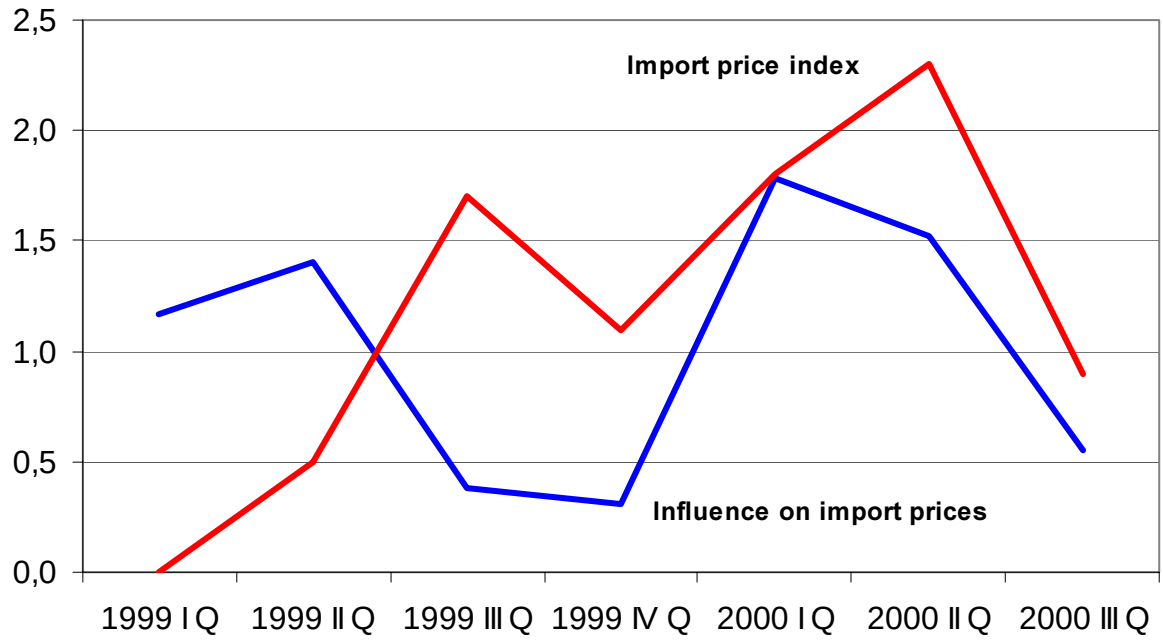


Figure 2.4 The influence of nominal exchange rate changes on Estonian import prices 1999-2000 III Q (4-quarter chain index, percent)

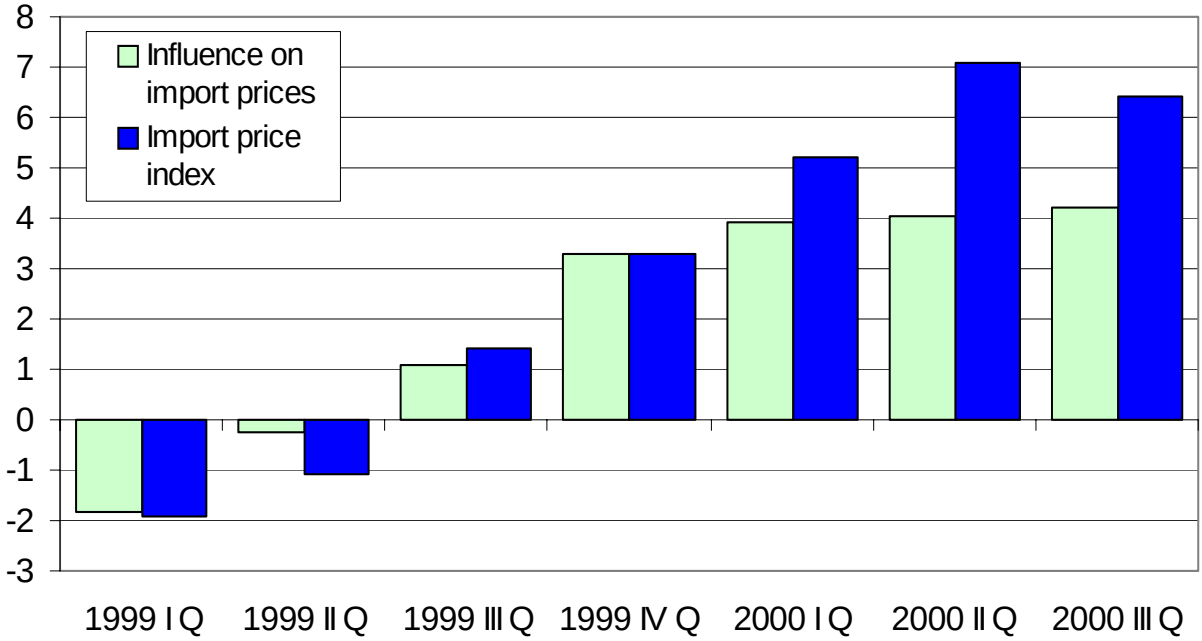


Figure 2.5 The influence of nominal exchange rate changes on Estonian export prices 1999-2000 III Q (1 quarter chain index, percent)

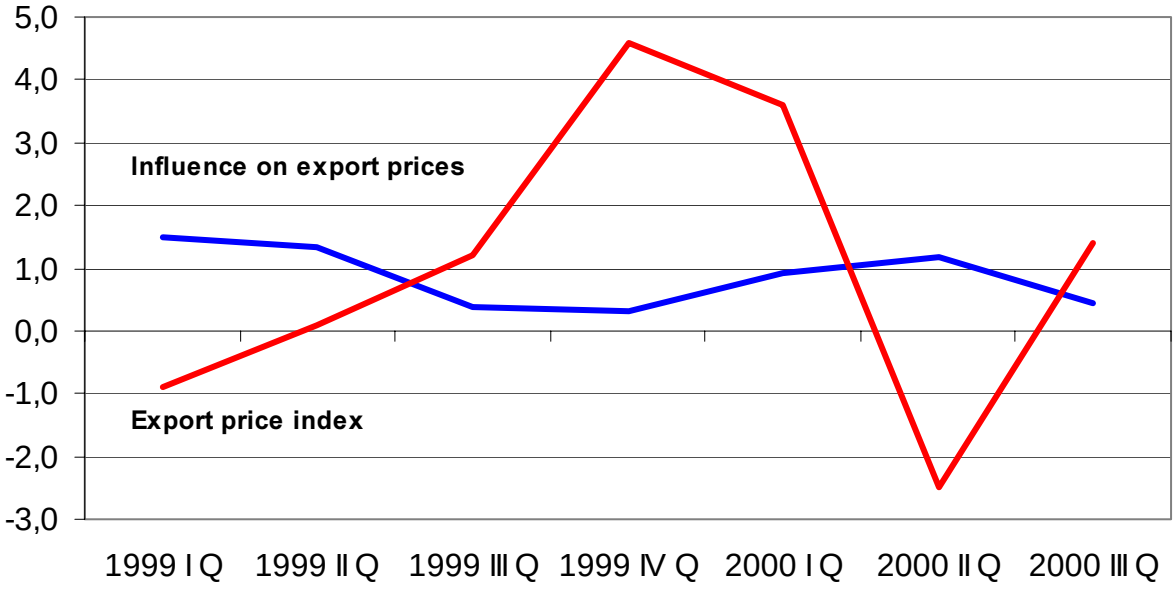


Figure 2.6 The influence of nominal exchange rate changes on Estonian export prices 1999-2000 III Q (4-quarter chain index, percent)

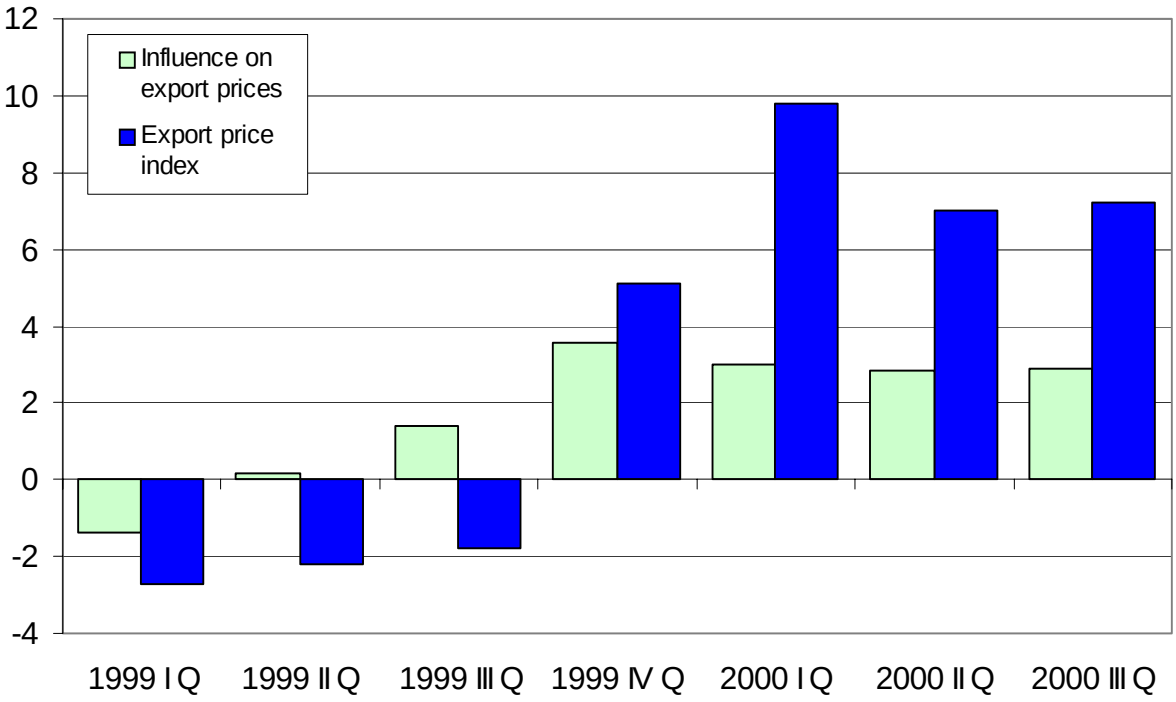
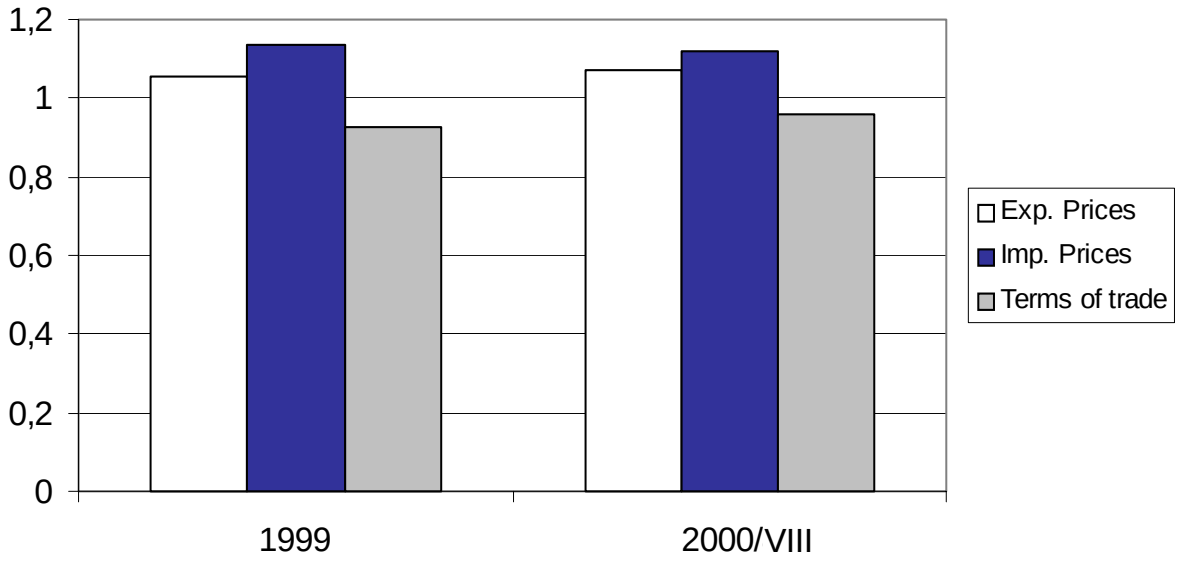
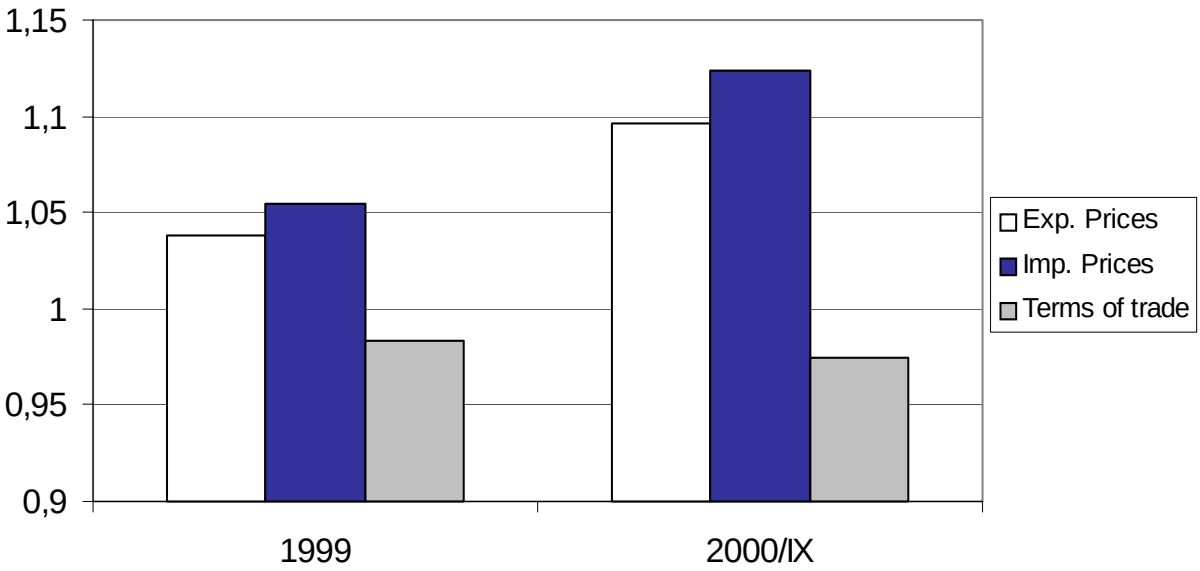


Figure 2.7 Czech Republic: Year-on-year changes in export and import prices and in the terms of trade



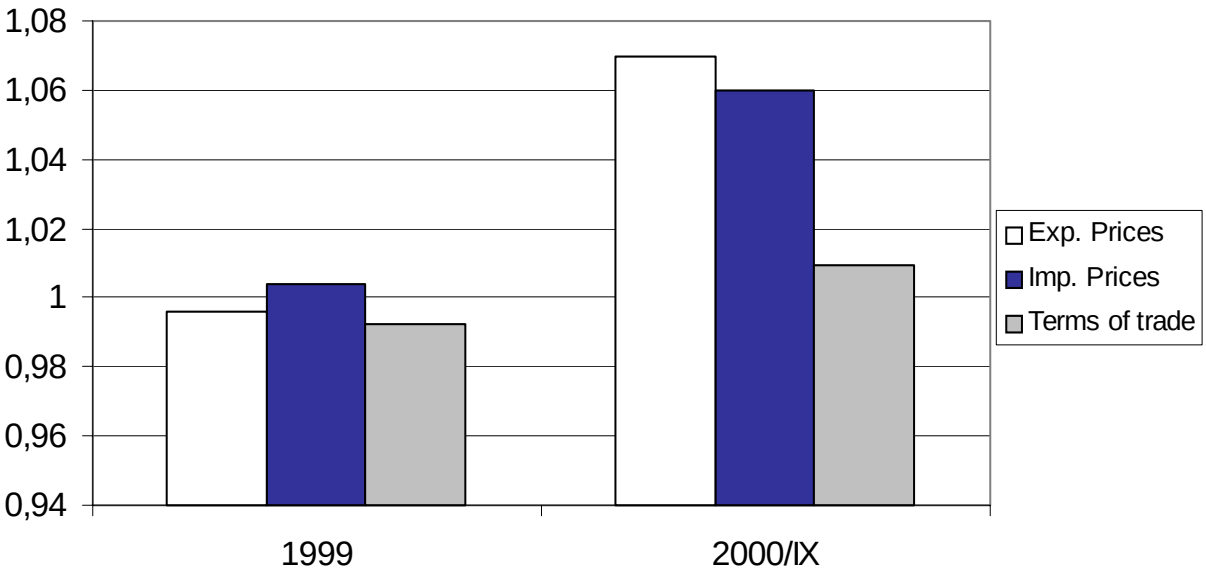
Source: Czech Statistical Office web site

Figure 2.8 Hungary: Year-on-year changes in export and import prices and in the terms of trade



Source: National Bank of Hungary Monthly Report, 2000 No. 10

Figure 2.9 Estonia: Year-on-year changes in export and import prices and in the terms of trade



Source: Estonian Statistics 2000, No. 9, Statistical Office of Estonia

Figure 2.10 Demand deposits by currencies in 1999-2000 (million kroons)

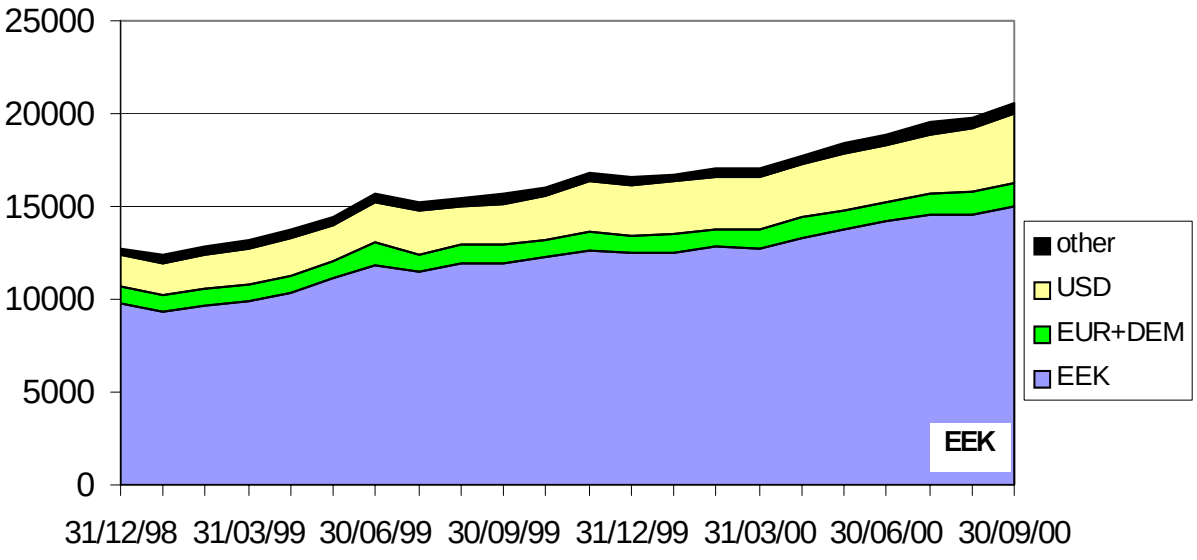


Figure 2.11 Time deposits by currencies in 1999-2000 (million kroons)

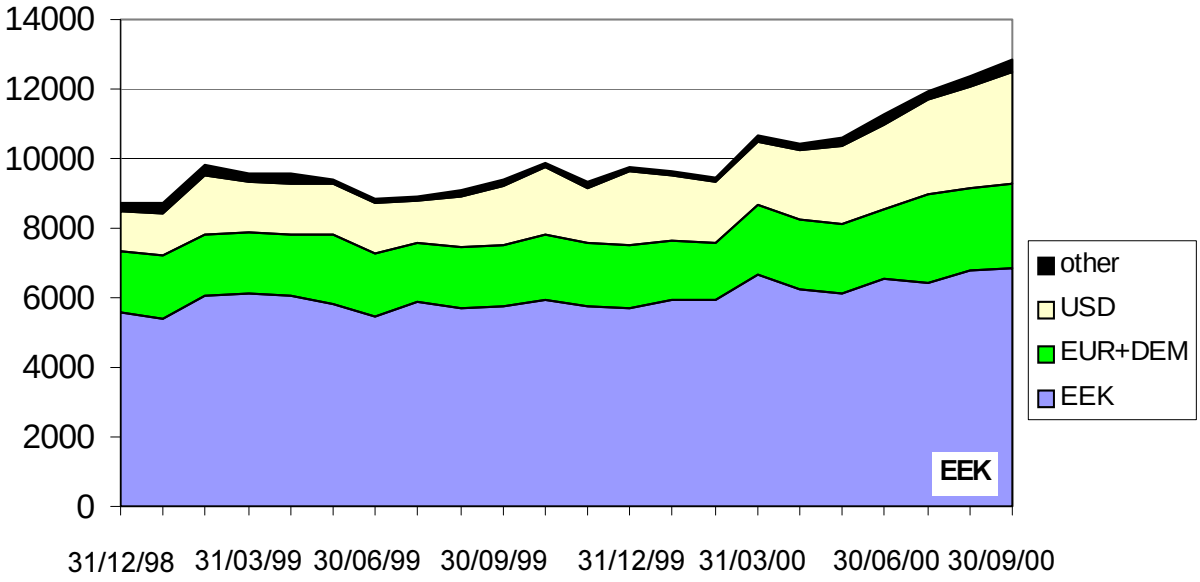


Figure 2.12 The share of USD denominated deposits of nonresidents in 1999-2000 (percent)

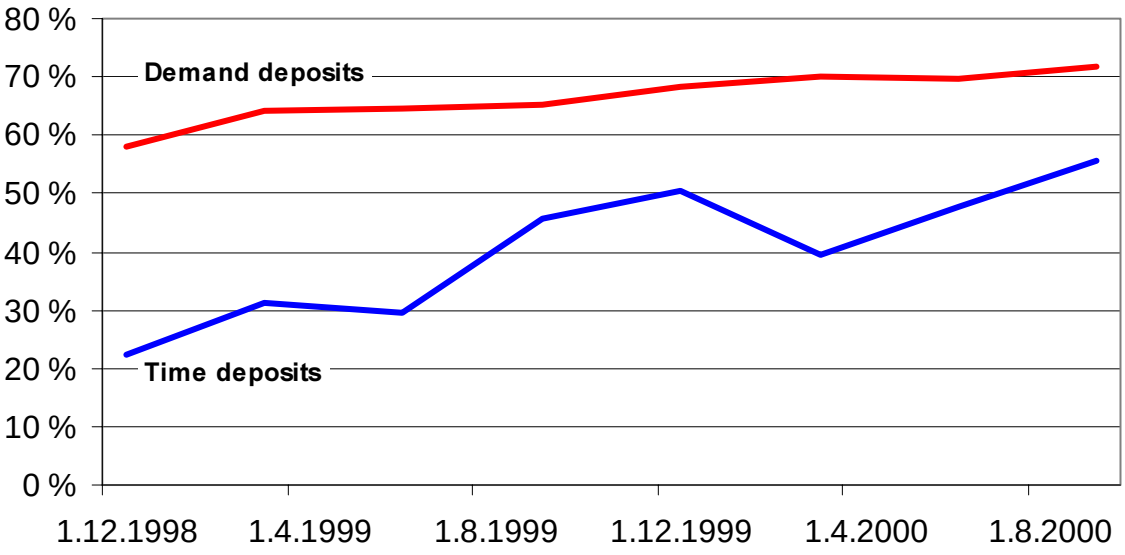


Figure 2.13 The share of USD denominated corporate sector deposits in 1999-2000 (percent)

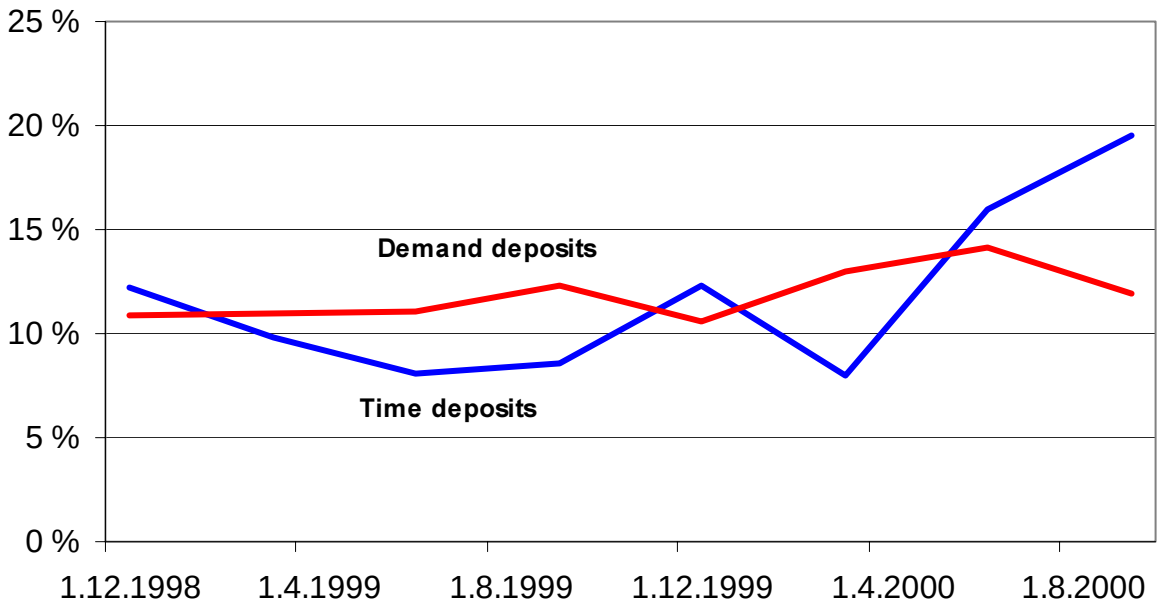


Figure 2.14 The share of USD denominated private individuals deposits (percent)

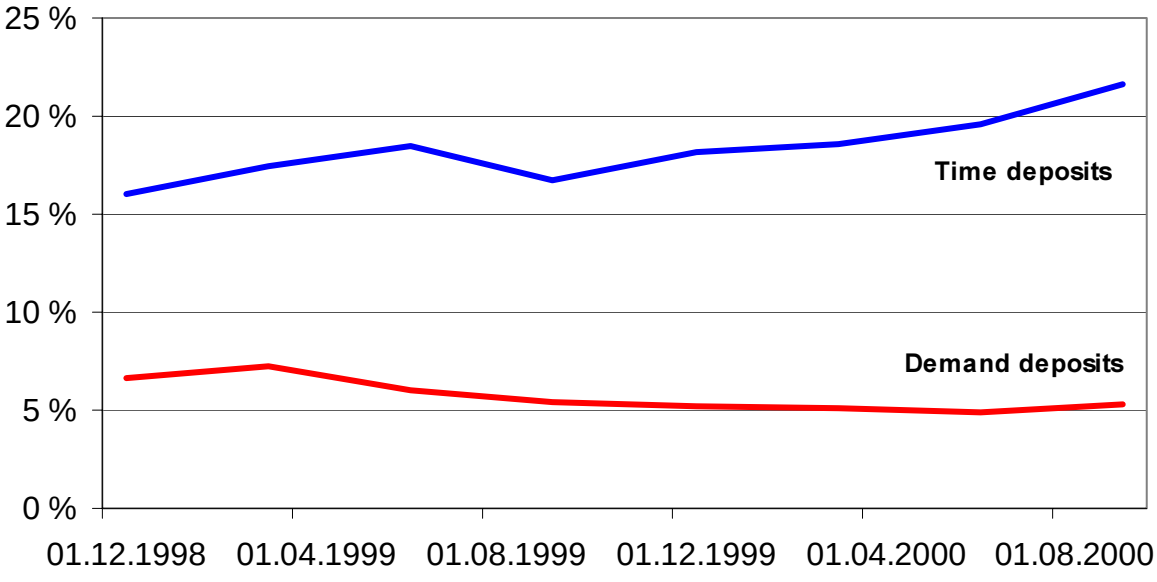


Figure 2.15 Loans by currency 1999-2000 (million kroons)

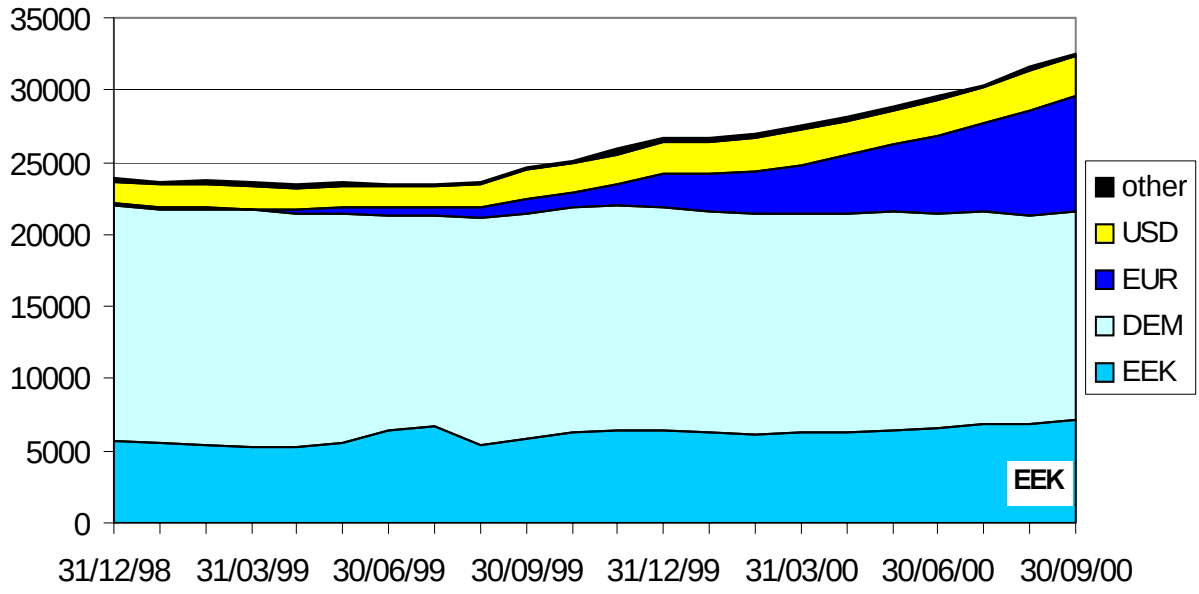


Figure 2.16 Monthly turnover of loans by currency in 1999-2000 (million kroons)

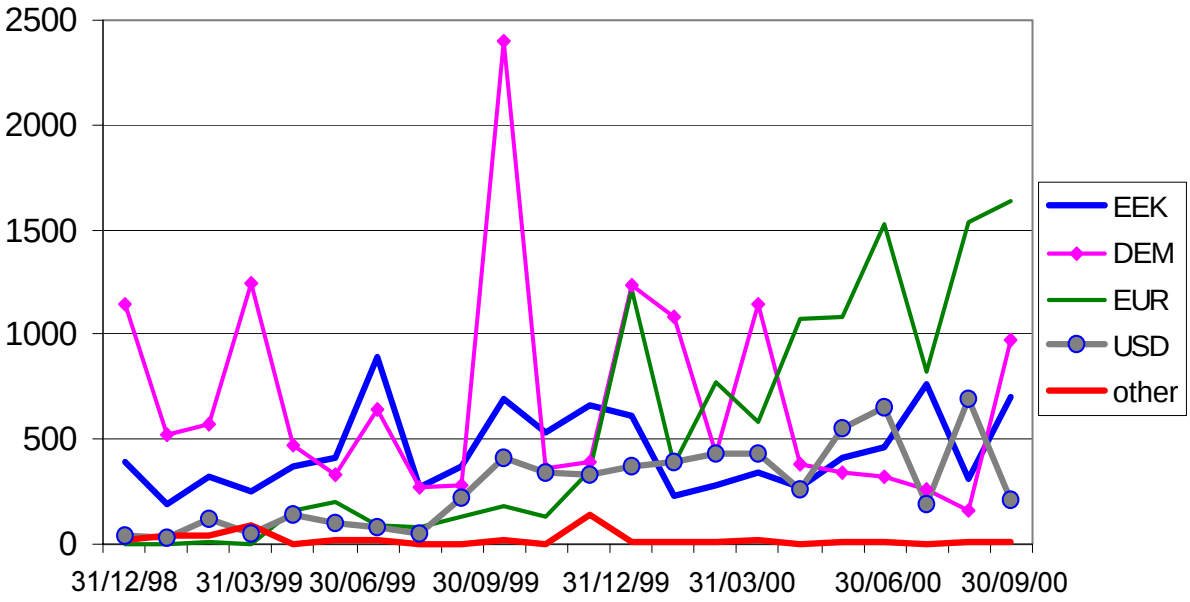


Figure 2.17 Estonian banks deposits in other banks 1999-2000 (kroons)

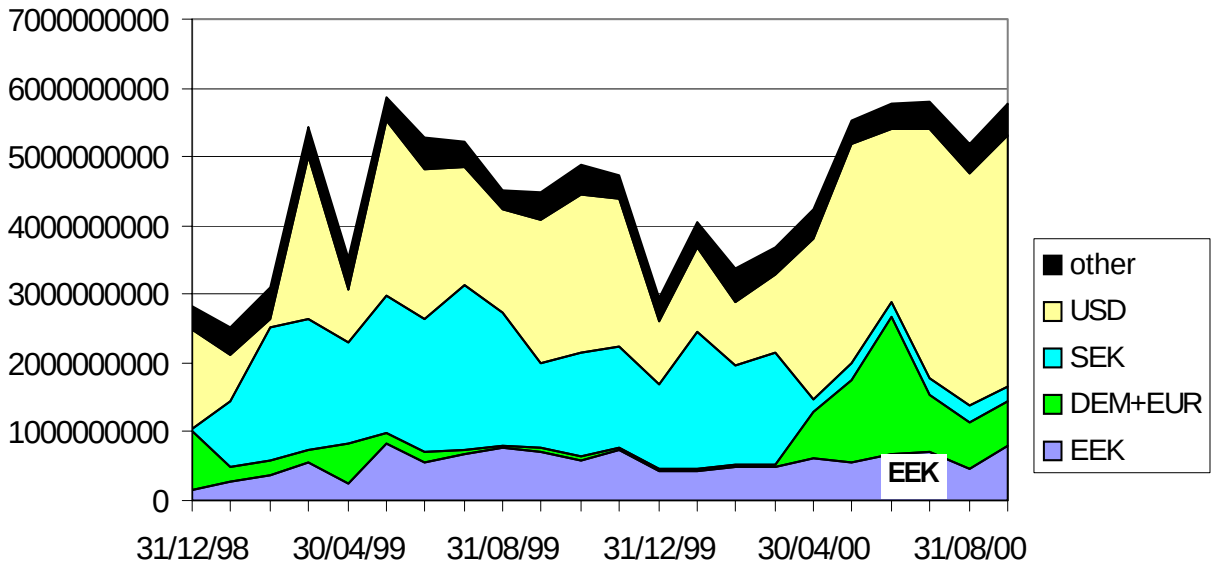


Figure 2.18 The structure of fixed-income foreign securities in the portfolios of Estonian banks by currencies 1999-2000 (million kroons)

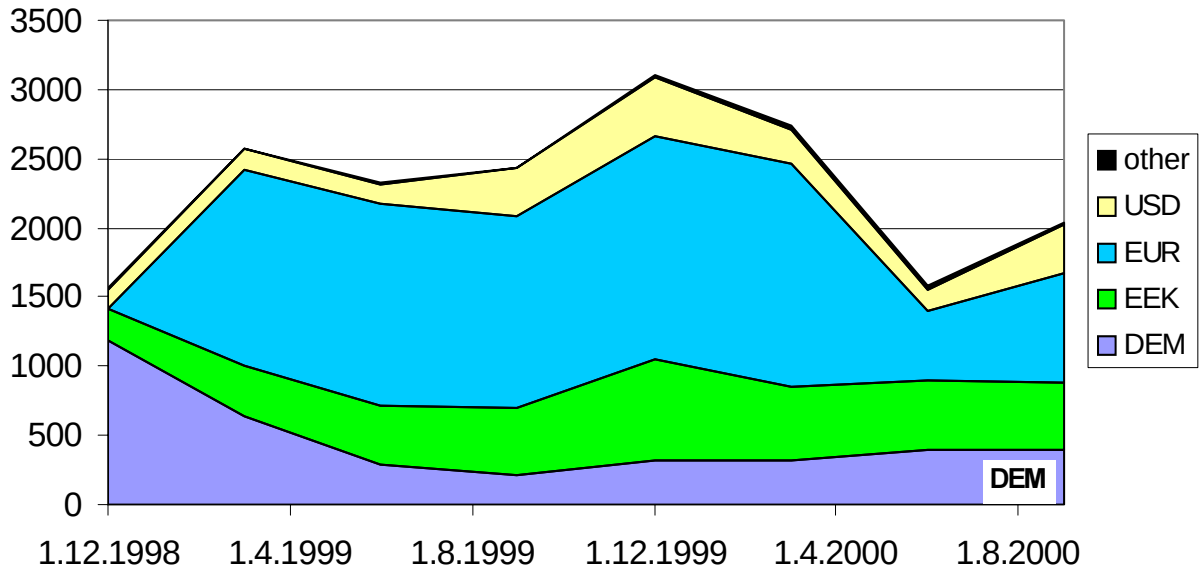


Figure 2.19 Banks deposits in Estonian banks in 1999-2000 (kroons)

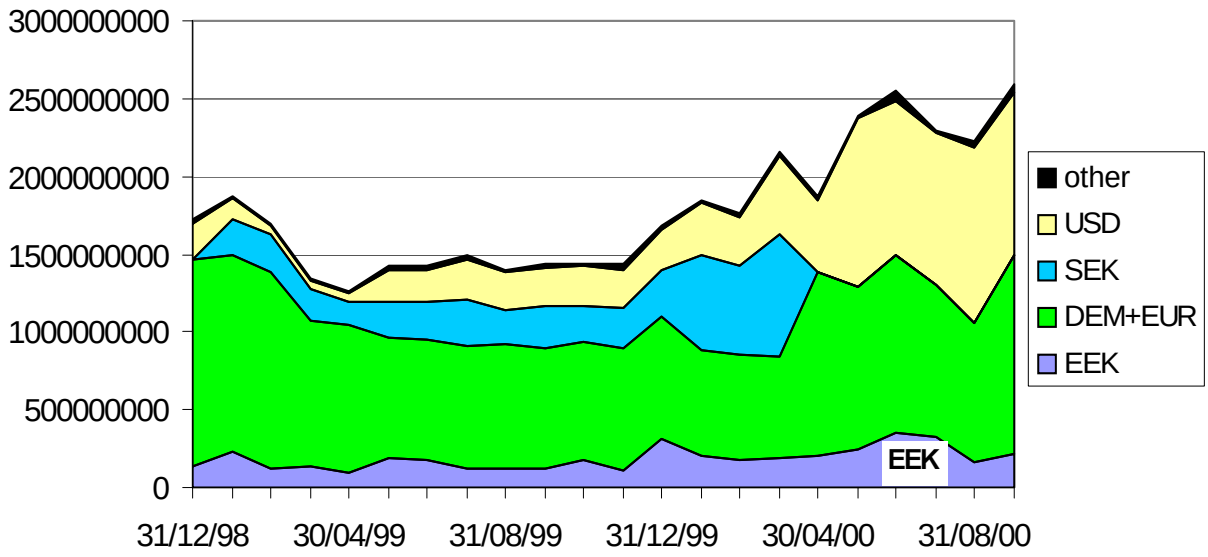
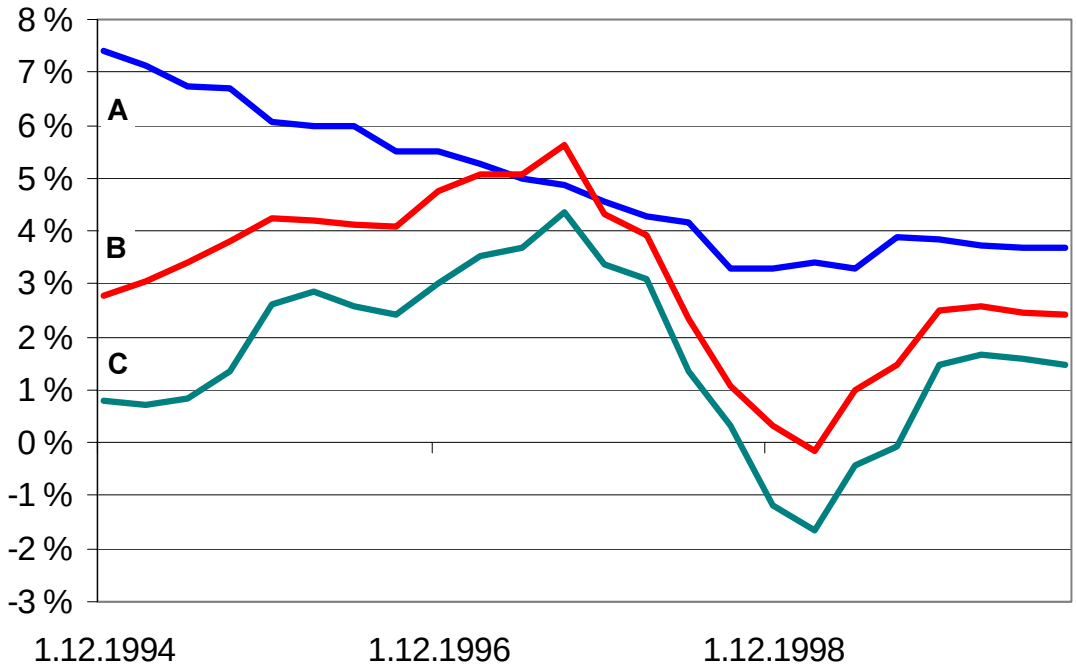


Figure 3.1 The profitability of the Estonian banking sector 1994-2000 (percent)



A Net interest income/assets (4q. mov. average)
B Net non-interest income/assets (4q. mov. average)
C Return on assets (4q. mov. average)

Figure 3.2 ROE of Estonian banks 1994-2000 (percent)
Return on enquity (4q. mov. average)

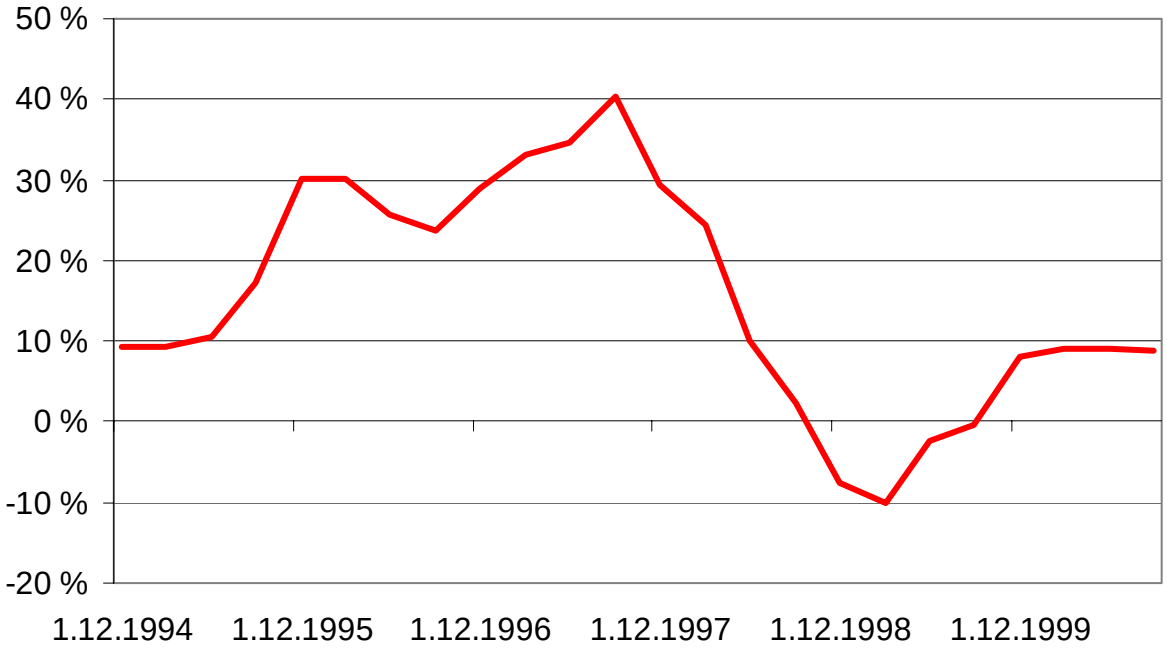
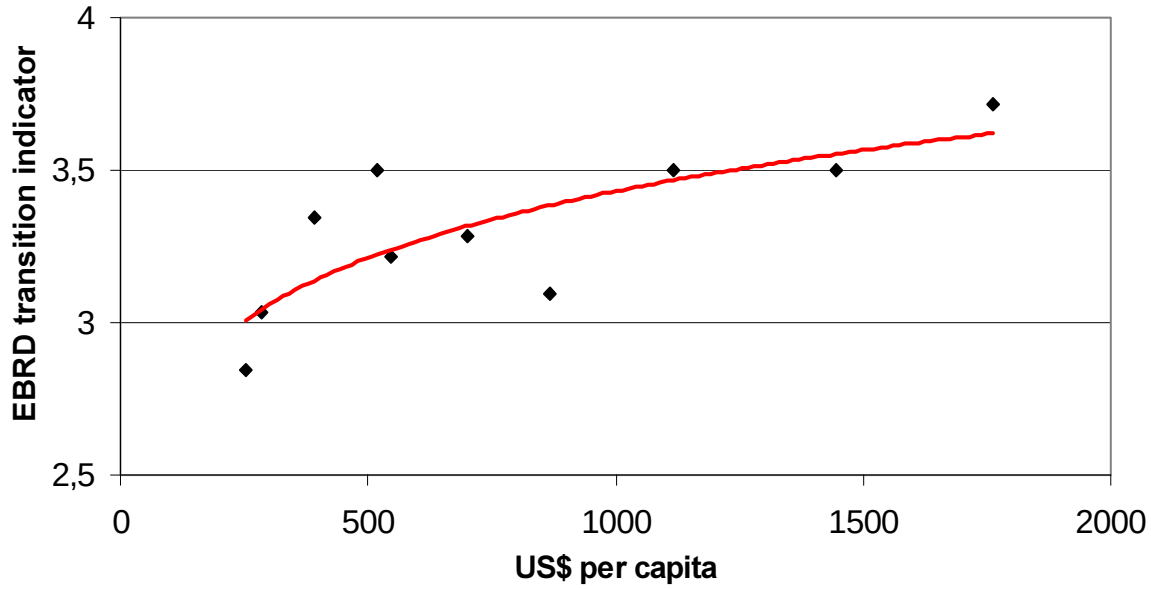
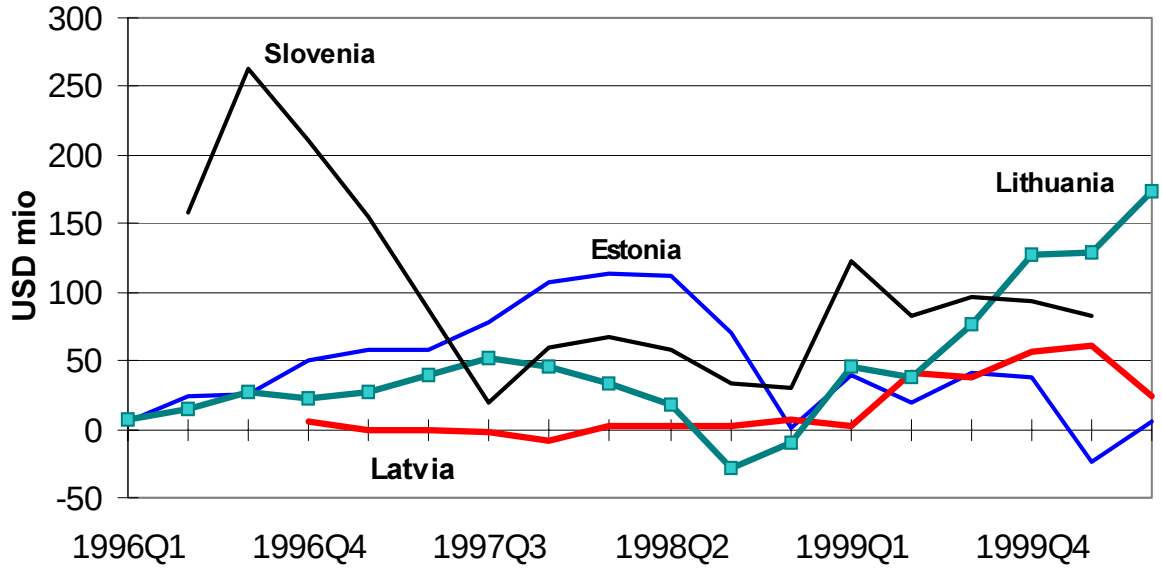


Figure 4.1 Progress in transition and cumulative FDI stock per capita 1989-1999



Source: EBRD (2000)

Figure 4.2a Inward portfolio investment in small transition economies, 4 qtr moving av., USD million



Source: International Financial Statistics CD-ROM

Figure 4.2b Inward portfolio investment (4 qtr ma)

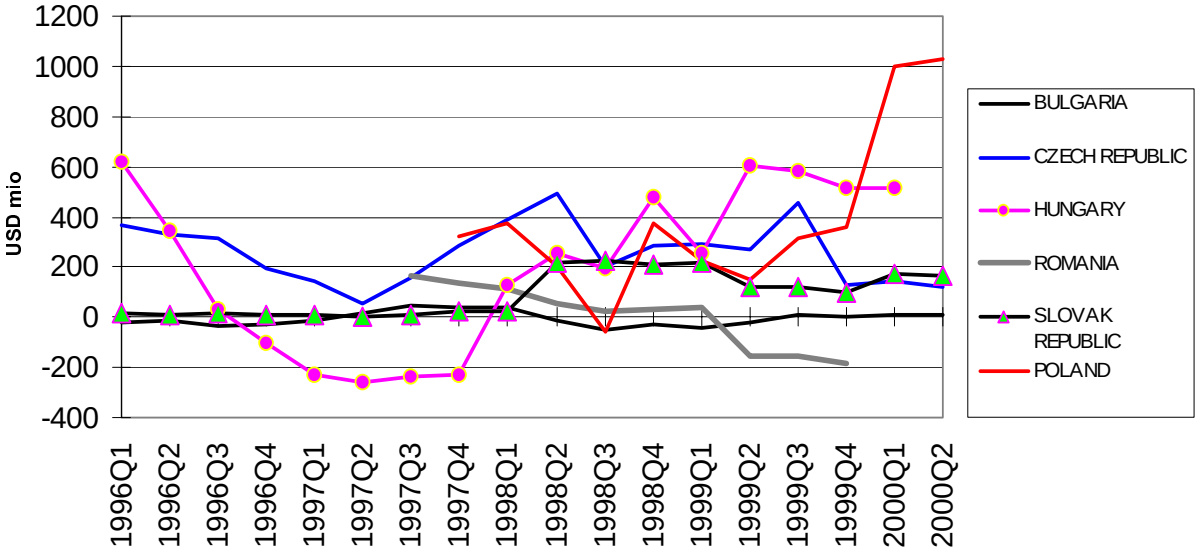
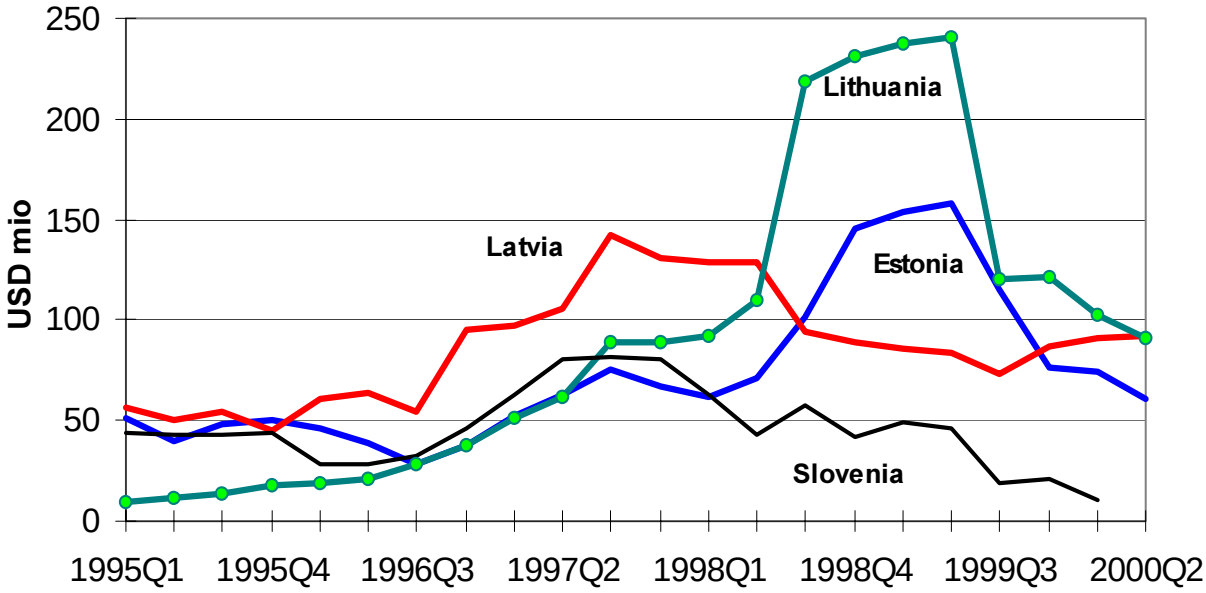
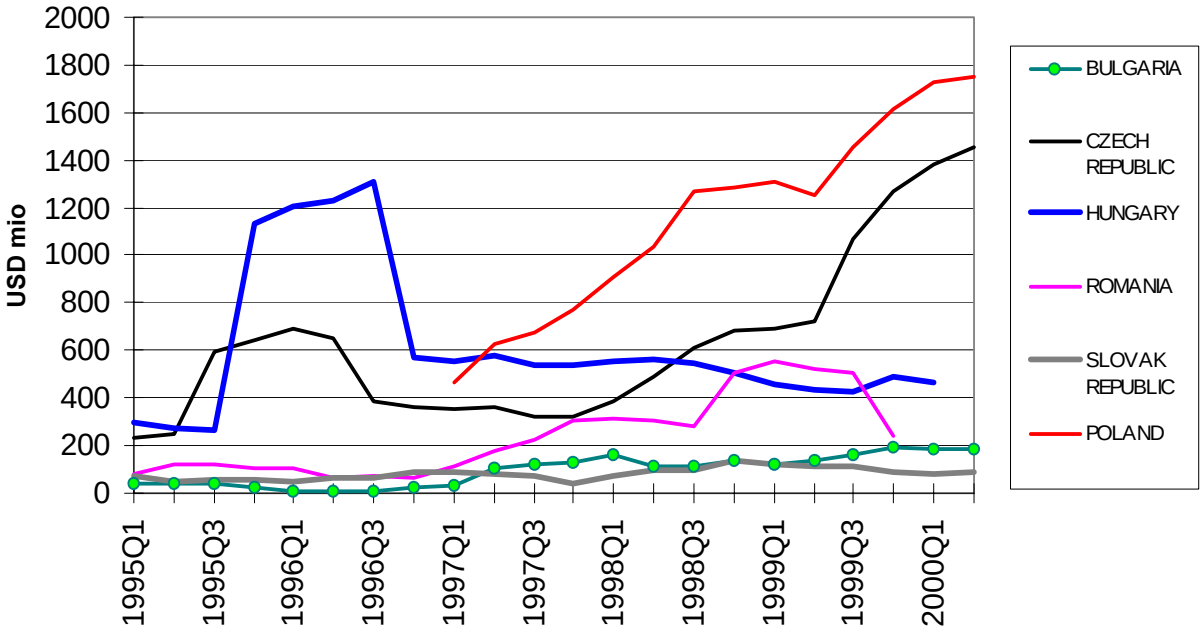


Figure 4.3a Inward direct investment in small transition economies, 4 qtr moving av., USD million



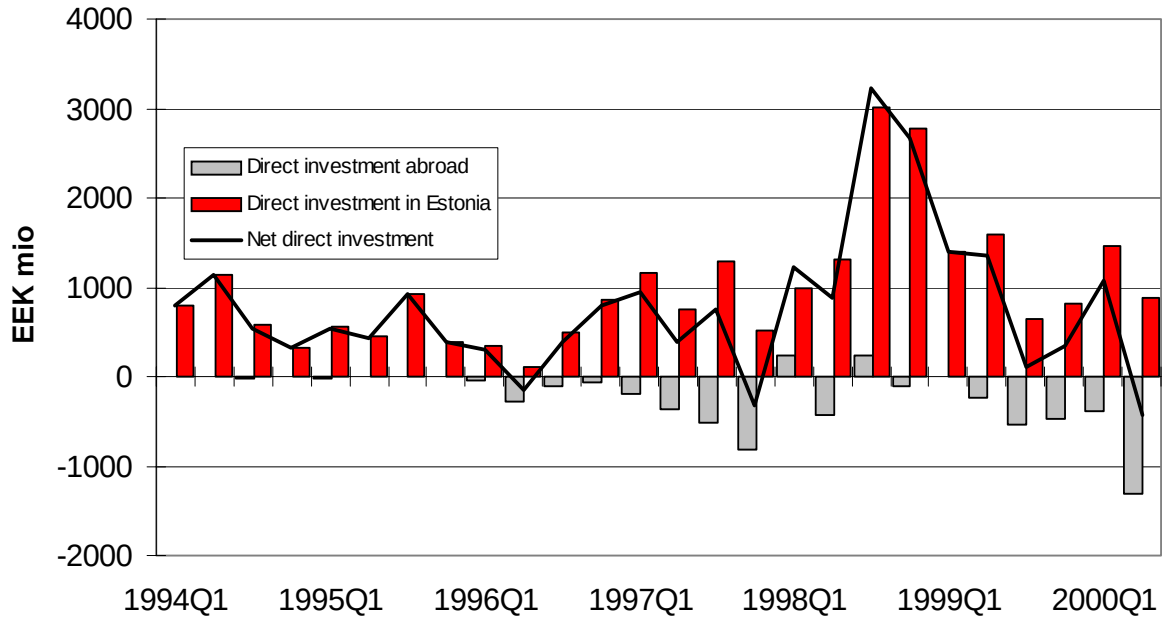
Source: International Financial Statistics CD-ROM

Figure 4.3b Inward direct investment in small transition economies, USD million



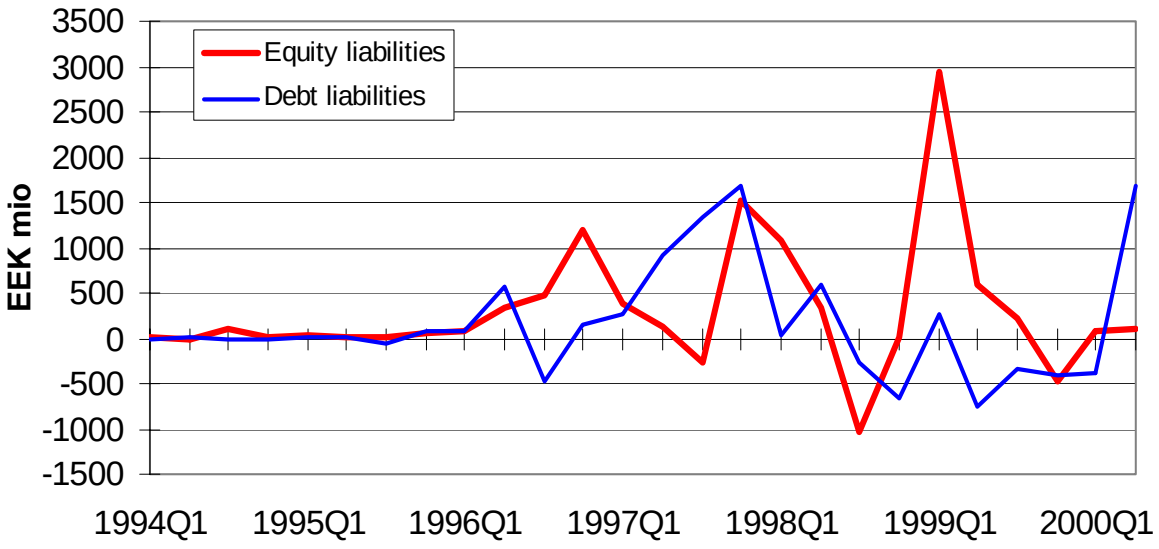
Source: International Financial Statistics CD-ROM

Figure 4.4 Direct investment inflows and outflows, EEK mio



Source: Bank of Estonia

Figure 4.5 Equity and debt instrument inflows, EEK mio



Source: Bank of Estonia

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