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AUTHORS OF THIS ISSUE

REET KIRT
Deputy Head of the Balance of Payments and Economic Statistics Department of Eesti Pank
reet.kirt@epbe.ee

ULVI SAKS
Economist of the Balance of Payments and Economic Statistics Department of Eesti Pank
ulvi.saks@epbe.ee

ANDRES KERGE
Economist-Modeller of the Balance of Payments and Economic Statistics Department of Eesti Pank
andres.kerge@epbe.ee

PIRET ANTON
Methodologist of the Financial Stability Department of Eesti Pank
piret.anton@epbe.ee

TIINA NÕMME
Analyst-Data Manager of the Balance of Payments and Economic Statistics Department of Eesti Pank
tiina.nomme@epbe.ee

ANDRES LAUBA
Financial Analyst of the Balance of Payments and Economic Statistics Department of Eesti Pank
andres.lauba@epbe.ee

JAANUS KROON
Head of the Balance of Payments and Economic Statistics Department of Eesti Pank
jaanus.kroon@epbe.ee

FOREWORD

Estonia is a small country with an open economy. Therefore, every event in our economic environment also has an international dimension. The monitoring and interpretation of international economic relations is facilitated by the Estonian balance of payments, compiled by Eesti Pank. During the history of the newly independent Republic of Estonia, the country's balance of payments has been published already for fifteen years. Thus, the present issue of the Kroon and Economy is also dedicated to issues related to the balance of payments.

Our goal is not to provide an overview of the status of the external sector. This is a collection of articles that discuss the balance of payments statistics from a theoretical as well as practical viewpoint, in a simpler or more complex form. Moreover, as statistics is the first source of evidence of the economic changes resulting from our accession to the European Union, the public's interest in the balance of payments statistics is only expected to grow.

First, we give an overview of the general development of Estonia's balance of payments in 1992–2006 and point out the three key stages. Then, we analyse trends in Estonia's foreign trade over the past thirteen years, as the development has been extraordinary.

In addition, the present issue introduces some of the problems related to direct investment statistics. In recent years, this area has become increasingly topical in the whole world, as international groups play a crucial role in economic globalisation. We also look into the Centralised Securities Database of the European System of Central Banks and observe the relations between the balance of payments, investment position and external debt.

Another topic related to the balance of payments that always attracts great attention is travel services. We disclose the back-office of calculating travel service indicators and reveal recent survey results on the travelling preferences of Estonian residents and ways of financing their trips.

Statistical data must be sufficiently reliable to serve as a basis for the economic policy or everyday decisions of experts and policy makers. Therefore, we conclude with the various techniques of assessing and analysing the quality of the balance of payments.

GENERAL DEVELOPMENT OF ESTONIA'S BALANCE OF PAYMENTS IN 1992–2006

Reet Kirt

During the history of the balance of payments of the newly independent Estonia – that is starting from 1992 – the **current account** has been in surplus only in the first couple of years, and even then to a limited extent (see Figure 1 and Tables 1–2). Later on, the current account has been in deficit, which has been constantly growing. In 2007, it reached nearly 8 billion kroons (11.4% of GDP). After the stock exchange crash in 1997 and the Russian crisis in 1998, the deficit narrowed slightly and stabilised. However, it soared again in 2002, reaching almost 13 billion kroons. Strong investment activity and domestic demand boosted the current account deficit to a record 32 billion kroons in 2006; that is 15.5% of GDP and twice as much as in the previous year.

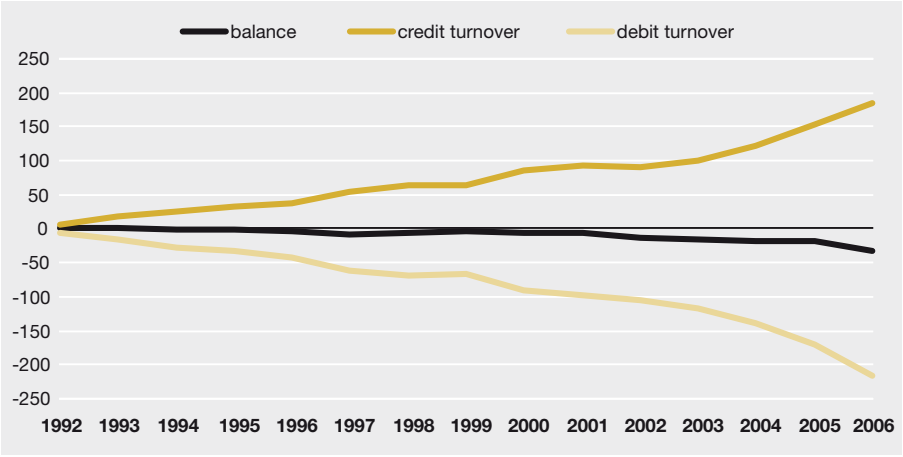

Figure 1. Current account turnover and balance (EEK bn)

As a ratio to gross domestic product, Estonia's current account deficit is one of the largest among the new EU members. In the years from 1992 to 2006, the credit turnover on the current account increased by 33 and the debit turnover by 41 times. Estonia has been a very open economy during the entire period of newly regained independence. In 1993, the current account turnover exceeded GDP by 1.5 times. The openness of the economy was further facilitated by Estonia's accession to the European Union: in 2006, the current account turnover was already twice the volume of GDP.

Thus, Estonia's foreign economic relations are primarily related to the European Union. In 2006, EU member states accounted for 69% of the credit turnover and 77% of the debit turnover.[1] The current account recorded a deficit with the EU as well as the CIS and a surplus

[1] Estonia's balance of payments items are available by countries and fields of activity since 2003. Regarding earlier periods, data on goods are available by countries and data on direct investment by countries and fields of activity.

Table 1. Annual growth of current account (%)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Current account	-11.5	-869.0	-15.6	165.5	62.5	-13.4	-46.6	43.5	9.0	128.7	19.4	19.4	-5.0	83.6
credit	202.8	44.4	29.3	19.6	41.5	17.1	0.4	35.1	7.7	-0.5	10.4	20.3	25.4	20.8
debit	215.6	59.6	25.7	27.5	43.8	13.3	-4.1	35.6	7.8	7.0	11.5	20.2	21.4	27.2
Goods	346.3	139.8	65.0	61.4	27.4	0.5	-23.1	10.5	1.3	36.3	16.6	18.5	-5.7	52.7
credit	190.9	47.1	22.7	12.4	45.9	18.7	-2.1	51.7	4.8	-1.4	9.5	18.5	30.3	22.7
debit	207.1	61.1	32.3	26.2	39.2	12.7	-8.3	41.5	4.1	5.6	11.2	18.5	21.2	28.6
Services	190.2	36.7	217.8	44.2	31.8	-2.2	3.6	22.3	10.7	-12.4	16.0	18.2	-4.4	-2.1
credit	213.4	50.1	50.6	33.2	37.5	13.3	5.5	15.1	11.4	0.1	8.9	16.4	12.6	7.9
debit	220.8	54.0	7.5	24.9	42.6	25.9	6.7	10.6	11.8	8.5	5.1	15.3	23.0	12.7
Income	121.5	103.9	-107.5	-7.1	-7,773.7	-42.1	29.4	129.7	41.6	10.1	34.3	9.5	-9.1	30.7
credit	7,306.3	35.7	50.8	85.9	17.9	17.4	4.9	3.5	48.7	11.6	6.3	53.4	54.1	59.2
debit	511.2	59.1	-18.7	89.6	171.8	-15.8	14.3	58.2	44.2	10.6	23.5	24.0	16.7	46.1
Current transfers	186.2	6.7	-2.6	-16.3	33.9	28.4	-20.5	-12.4	3.7	-30.3	78.4	-22.1	-45.0	69.3
credit	193.1	8.6	-1.1	-8.7	33.5	29.1	-6.9	-13.9	3.7	2.4	63.7	55.3	12.2	21.6
debit	1,274.2	71.6	29.1	108.2	30.9	33.8	75.5	-17.9	3.6	98.1	48.5	151.1	34.1	14.0

Table 2. Estonia's balance of payments (EEK m)

	1992	1993	1994	1995	1996	1997
Current account	**315.1**	**279.0**	**-2,145.6**	**-1,810.6**	**-4,806.9**	**-7,810.2**
Goods and services	-87.7	-927.9	-3,253.2	-3,285.2	-6,043.2	-7,420.1
Goods	-431.3	-1,925	-4,615.9	-7,615.5	-12,288.2	-15,652.8
credit (f.o.b.)	3,700.3	10,762.7	15,828.5	19,428.2	21,833.4	31,846.5
debit (f.o.b.)	-4,131.6	-12,687.7	-20,444.4	-27,043.7	-34,121.6	-47,499.3
Services	343.6	997.1	1,362.7	4,330.3	6,245.0	8,232.7
credit	1,414.9	4,434.3	6,657.0	10,022.9	13,352.8	18,366.7
debit	-1,071.3	-3,437.2	-5,294.3	-5,692.6	-7,107.8	-10,134.0
Income	-83.7	-185.4	-378.0	28.2	26.2	-2,010.5
credit	4.8	355.5	482.5	727.7	1,352.5	1,594.1
debit	-88.5	-540.9	-860.5	-699.5	-1,326.3	-3,604.6
Transfers	486.5	1,392.3	1,485.6	1,446.4	1,210.1	1,620.4
credit	489.6	1,434.9	1,558.7	1,540.8	1,406.6	1,877.7
debit	-3.1	-42.6	-73.1	-94.4	-196.5	-257.3
Capital and financial account (reserve assets excluded)	**406.5**	**2,908.5**	**2,221.4**	**2,836.1**	**6,396.4**	**10,953.3**
Capital account	213.4	0	-8.1	-9.1	-7.8	-2.0
Financial account	193.1	2,908.5	2,229.5	2,845.2	6,404.2	10,955.3
Direct investment	660.7	2,070.8	2,789.4	2,283.8	1,329.9	1,781.2
Abroad	-23.2	-82.1	-29.8	-29.1	-484.5	-1,912.9
In Estonia	683.9	2,152.9	2,819.2	2,312.9	1,814.4	3,694.1
Portfolio investment	0	-3	-183.4	-255.1	1,784.4	3,655.1
Assets	0	-5.4	-288.2	-382.3	-628.4	-2,319.3
Equity securities	0	-5.2	-187.7	58.0	-181.0	-1,238.5
Debt securities	0	-0.2	-100.5	-440.3	-447.4	-1,080.8
Liabilities	0	2.4	104.8	127.2	2,412.8	5,974.4
Equity securities	0	1.3	104.6	113.7	2,093.8	1,763.6
Debt securities	0	1.1	0.2	13.5	319	4,210.8
Financial derivatives	0	0	0	0	0	0
Assets	0	0	0	0	0	0
Liabilities	0	0	0	0	0	0
Other investment	-467.6	840.7	-376.5	816.5	3,289.9	5,519.0
Assets	-380.8	-1,909.7	-1,860.9	-1,118.8	-107.6	-4,635.5
Long-term	0	-9.8	-37	-221.9	-17.5	-1063
Short-term	-380.8	-1,899.9	-1,823.9	-896.9	-90.1	-3,572.5
Liabilities	-86.8	2,750.4	1,484.4	1,935.3	3,397.5	10,154.5
Long-term	320.4	1,687.5	113	1,046	1,783	4,604.9
Short-term	-407.2	1,062.9	1,371.4	889.3	1,614.5	5,549.6
Errors and omissions	1,088.6	-611.8	319.8	174.9	-361.1	-371.8
Overall balance	**1,810.2**	**2,575.7**	**395.6**	**1,200.4**	**1,228.4**	**2,771.3**
Reserve assets	**-1,810.2**	**-2,575.7**	**-395.6**	**-1,200.4**	**-1,228.4**	**-2,771.3**

1998	1999	2000	2001	2002	2003	2004	2005	2006
-6,760.2	**-3,607.7**	**-5,178.1**	**-5,643.6**	**-12,908.0**	**-15,418.2**	**-18,412.6**	**-17,485.5**	**-32,095.0**
-7,676.2	-3,755.4	-3,167.6	-2,247.6	-8,564.6	-10,046.8	-11,937.6	-11,077.0	-24,025.4
-15,725.5	-12,096.9	-13,371.4	-13,542.4	-18,455.3	-21,522.3	-25,499.0	-24,044.8	-36,723.3
37,786.3	36,995.2	56,118.1	58,798.5	57,948.7	63,443.7	75,199.5	97,971.4	120,166.4
-53,511.8	-49,092.1	-69,489.5	-72,340.9	-76,404.0	-84,966.0	-100,698.5	-122,016.2	-156,889.8
8,049.3	8,341.5	10,203.8	11,294.8	9,890.7	11,475.5	13,561.4	12,967.7	12,697.9
20,804.0	21,951.9	25,263.4	28,135.4	28,164.3	30,674.0	35,703.4	40,200.7	43,391.7
-12,754.7	-13,610.4	-15,059.6	-16,840.6	-18,273.6	-19,198.5	-22,142.0	-27,233.0	-30,693.8
-1,164.0	-1,505.8	-3,458.9	-4,898.6	-5,391.1	-7,240.7	-7,931.4	-7,209.1	-9,424.8
1,871.8	1,964.3	2,032.5	3,022.2	3,371.3	3,584.1	5,496.5	8,467.8	13,483.4
-3,035.8	-3,470.1	-5,491.4	-7,920.8	-8,762.4	-10,824.8	-13,427.8	-15,676.9	-22,908.3
2,080.0	1,653.5	1,448.4	1,502.6	1,047.7	1,869.4	1,456.3	800.6	1,355.2
2,424.2	2,257.5	1,944.2	2,016.4	2,065.6	3,380.8	5,252.0	5,892.2	7,162.2
-344.2	-604.0	-495.8	-513.8	-1,017.9	-1,511.5	-3,795.6	-5,091.6	-5,806.9
6,869.8	**5,916.6**	**7,433.8**	**5,026.3**	**13,055.3**	**18,552.9**	**21,454.4**	**21,457.9**	**39,235.7**
25.2	17.8	439.1	253.2	636.4	977.8	1,149.8	1,240.3	4,682.6
6,844.6	5,898.8	6,994.7	4,773.1	12,418.9	17,575.1	20,304.6	20,217.6	34,553.1
7,989.7	3,208.2	5,601.4	5,901.3	2,611.8	10,716.0	8,739.4	27,335.5	7,274.7
-81.7	-1,239.8	-1,043.1	-3,528.3	-2,188.4	-2,149.2	-3,388.6	-7,939.6	-13,707.1
8,071.4	4,448.0	6,644.5	9,429.6	4,800.2	12,865.2	12,128.1	35,275.1	20,981.8
-23.4	156.0	1,417.5	-665.0	2,442.4	2,431.6	9,027.1	-27,559.2	-16,829.7
-127.9	-1,894.9	153.1	-2,100.2	-3,182.9	-5,351.6	-4,851.0	-10,675.0	-15,569.9
500.8	187.0	53.3	236.5	9.1	-1,028.9	-2,893.5	-4,848.9	-4,583.9
-628.7	-2,081.9	99.8	-2,336.7	-3,192.0	-4,322.7	-1,957.5	-5,826.1	-10,986.0
104.5	2,050.9	1,264.4	1,435.2	5,625.3	7,783.2	13,878.1	-16,884.3	-1,259.8
401.1	3,292.3	-538.8	568.4	912.2	1,526.9	2,205.2	-16,352.2	3,738.1
-296.6	-1,241.4	1,803.2	866.8	4,713.1	6,256.2	11,673.0	-532.0	-4,997.9
0	0	17.5	-34.7	-63.7	-19.2	-8.3	-97.6	78.5
0	0	-77.8	-0.3	-43.2	-139.2	-35.1	13.5	-180.9
0	0	95.3	-34.4	-20.5	120.0	26.8	-111.0	259.3
-1,121.7	2,534.6	-41.7	-428.5	7,428.4	4,446.8	2,546.4	20,538.9	44,029.7
-2,480.2	-1,651.2	-2,638.3	-3,716.7	695.1	-2,284.6	-11,168.8	-10,373.4	334.6
-786.5	421.8	-1108.7	-322.7	-1083.0	-565.7	-6052.6	5636.5	-3054.0
-1,693.7	-2,073.0	-1,529.6	-3,394.0	1,778.1	-1,718.9	-5,116.1	-16,009.9	3,388.6
1,358.5	4,185.8	2,596.6	3,288.2	6,733.3	6,731.4	13,715.1	30,912.4	43,695.1
1,258.4	1,691.5	-549.9	1,814.4	1,829.0	4,309.0	3,740.5	15,396.8	17,991.5
100.1	2,494.3	3,146.5	1,473.8	4,904.3	2,422.3	9,974.6	15,515.6	25,703.6
16.8	-511.3	14.8	-112.9	779.5	-822.7	383.6	911.6	383.2
126.4	**1,797.6**	**2,270.5**	**-730.2**	**926.8**	**2,312.1**	**3,425.4**	**4,883.9**	**7,523.9**
-126.4	**-1,797.6**	**-2,270.5**	**730.2**	**-926.8**	**-2,312.1**	**-3,425.4**	**-4,883.9**	**-7,523.9**

with other countries. Estonia's current account deficit was the biggest with Germany, whereas the highest surplus was registered with the United States.

Foreign trade constitutes the largest share in the **structure of the current account turnover**. During the period under review, it has been close to 60% of the credit turnover and 75% of the debit turnover. Neither of the two indicators has shown a clear upward or downward trend. Services form the second largest component in the structure: their credit turnover has been around a third and the debit turnover about a fifth of the current account turnover.

However, recent years have witnessed a slight decrease in the share of services. In 2006, services exports accounted for 24% of the total credit turnover and imports for 14% of the total debit turnover. The share of income, on the other hand, has been gradually growing. This particularly applies to the outflow but in the last three years also the inflow of income. In 1992, income inflow composed only 0.1% of the credit turnover, whereas in 2006 it comprised as much as 7.3%. The respective outflow figures were 1.7% and 10.6%.

Regarding current transfers, incoming transfers (mainly external aid) formed a rather large share in the current account turnover at the beginning of the period of newly regained independence, but declined gradually later on. During the period of EU accession, however, this ratio has gone up again. Until the accession, the percentage of outgoing transfers was low, whereas in the last three years their share has been increasing. The rising share of current transfers can be primarily attributed to transfers from EU structural funds, refunds of VAT and other such things. When analysing the transfers, also capital transfers recorded on the capital and financial account should be taken into account. These include, among other things, EU subsidies to Estonia for the development of infrastructure. Such subsidies have been rather substantial in recent years.

The main component of the **current account deficit** during the entire period under review has been the goods account (see Table 3 and Figure 2). The income account has contributed as well, since the outflow of income has been constantly bigger than the inflow. The services account, on the other hand, has always been in surplus: Estonia has sold far more services to non-residents than purchased from them. Moreover, also current transfers have recorded surpluses, but in recent years their surplus has been decreasing as a ratio of GDP. The same also applies to the surplus on services. The total deficit on goods and services, which are the direct components of GDP, accounted for 3–8% of GDP in the period from 2000 to 2005 and almost 12% in 2006. In absolute terms, the turnover of the current account components has generally increased.

Table 3. Components of current account as a percentage of GDP

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Current account	1.2	-6.8	-4.2	-8.6	-11.4	-8.7	-4.4	-5.4	-5.2	-10.6	-11.3	-12.3	-10.0	-15.5
Goods	-8.4	-14.7	-17.7	-22.0	-22.8	-20.2	-14.8	-14.0	-12.5	-15.2	-15.8	-17.0	-13.7	-17.7
Services	4.4	4.3	10.1	11.2	12.0	10.3	10.2	10.7	10.4	8.1	8.4	9.0	7.4	6.1
Income	-0.8	-1.2	0.1	0.0	-2.9	-1.5	-1.8	-3.6	-4.5	-4.4	-5.3	-5.3	-4.1	-4.6
Current transfers	6.1	4.7	3.4	2.2	2.4	2.7	2.0	1.5	1.4	0.9	1.4	1.0	0.5	0.7
Goods and services	-4.1	-10.4	-7.6	-10.8	-10.8	-9.8	-4.6	-3.3	-2.1	-7.1	-7.4	-8.0	-6.3	-11.6
Current account without reinvested earnings	2.8	-5.1	-3.8	-8.5	-9.6	-8.2	-3.7	-3.6	-1.9	-8.4	-7.2	-7.6	-6.4	-10.9

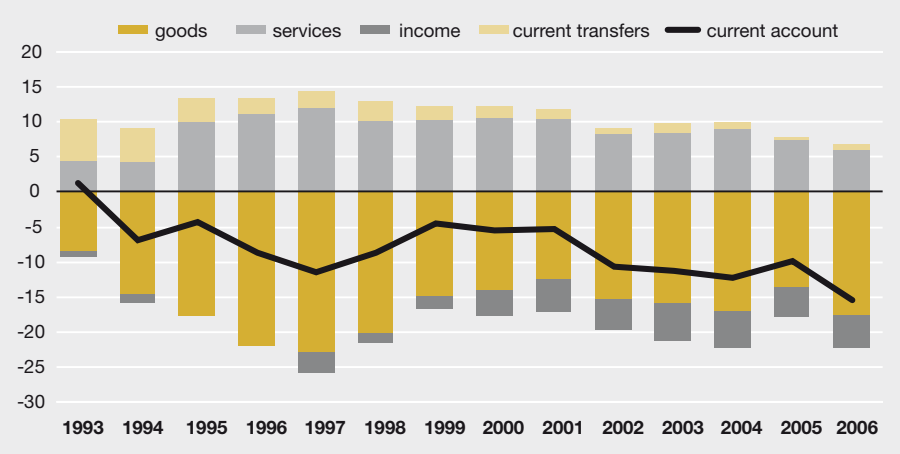

Figure 2. Components of current account as a percentage of GDP

The exports of **goods** grew by 33 and imports by 38 times during 1992–2006. The robust growth of foreign trade turnover lasted from 1992 to 1997 (see Figure 3). The double customs duties imposed by Russia on Estonia in 1997 and the Russian crisis in 1998 had a significant impact on Estonia's foreign trade development. Namely, both exports and imports decreased in Estonia 1999. The new period of rapid economic expansion took off in 2004 when Estonia joined the European Union. The so-called Rotterdam effect[2] has also a role to play: part of the EU exports going through Estonia and imports channelled from third countries to the EU is reflected in Estonia's exports and imports. Foreign trade deficit increased until 1996 and re-

[2] Called so after Rotterdam, which is well known as a transit port.

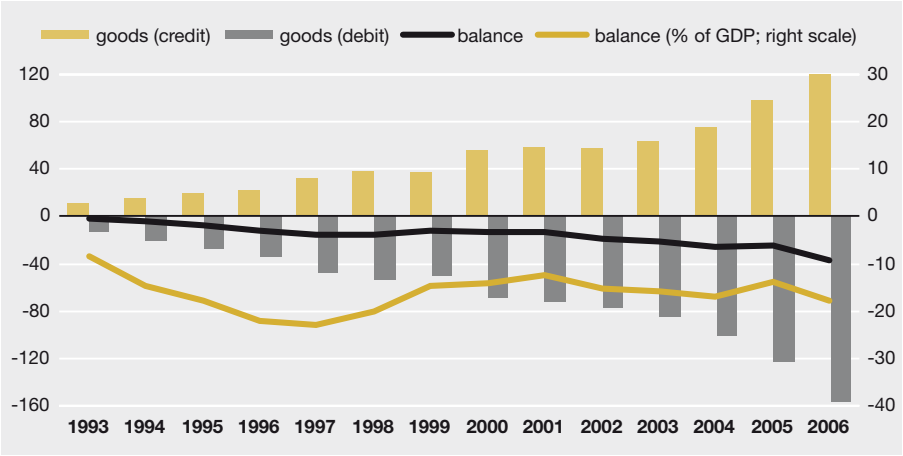

Figure 3. Foreign trade in Estonia's balance of payments (EEK bn)

mained stable at 12–15 billion kroons until 2002. After that, the deficit surged further. In 2006, Estonia's goods exports totalled 120 billion kroons (3.7 bn in 1992) and imports 157 billion kroons (4.1 bn in 1992). Imports exceeded exports by 37 billion kroons.

While in 1994 food[3] was the largest export article, then in 2006 machinery and equipment prevailed. Machinery and equipment has also been the largest goods group in imports – during the entire period under review. The share of processing machinery and equipment is quite significant in Estonia's case. In 1994, approximately 25% of Estonia's exports went to Russia, whereas in 2006 only 8% was channelled there (even less in the interim years). Finland has been Estonia's main trade partner, but its share has decreased by two times: from 36% in 1994 to 18% in 2006. It is noteworthy that the current 27 EU member states accounted for 65% of Estonia's exports and for 74% of imports in 1994 as well as in 2006.

The exports of **services** grew by 31 and imports by 29 times during 1992–2006 (see Figure 4). The growth was particularly strong from 1992 to 1997 and again from 2004. The majority of the services turnover is made up of three types of services: transport, travel and other business services. Their share in the exports of services has been rather stable, comprising around 90%. Regarding imports, however, their share has fluctuated from 60% to 90%, standing at 84% for the last five years.

Finland has also been Estonia's major partner in terms of services: during 2003–2006 a third of services was exported to Finland and a fourth was imported from there. EU-27 captures

[3] Foreign trade data are available by goods and countries since 1994.

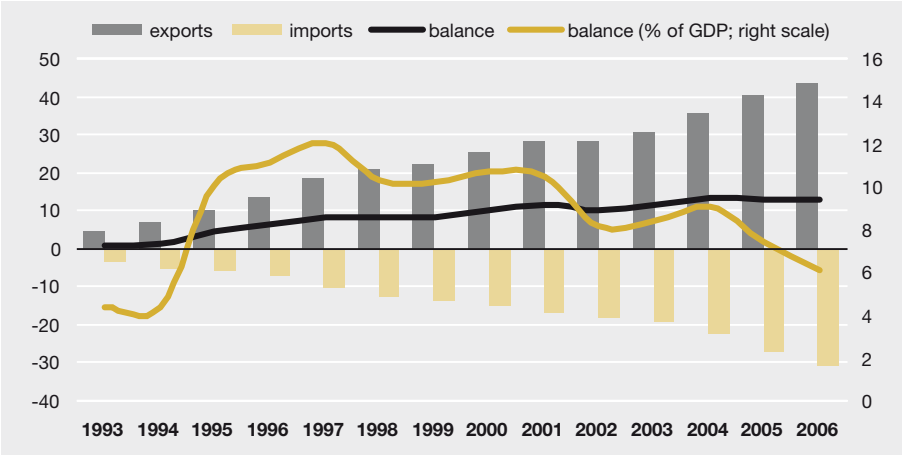

Figure 4. Services account (EEK bn)

the majority of the services trade: Estonia exported 72% of services to the EU and imported 75% from there.

The **income account** on Estonia's balance of payments has almost always recorded considerably bigger outflow compared to inflow, except in the first couple of years (see Figure 5). This can largely be attributed to non-residents' profitable direct investment in Estonia. The income account posted a modest turnover at the beginning of the period analysed, but surged in 1996 and 1997 when the Tallinn Stock Exchange posted record highs.

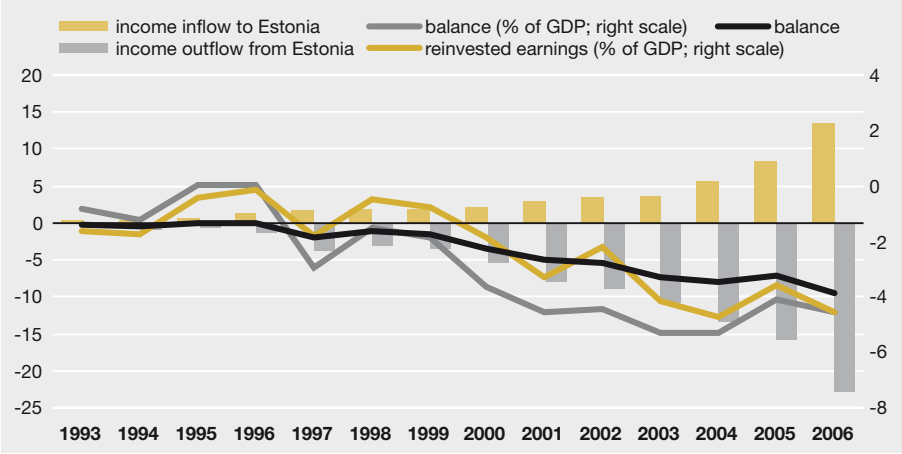

Figure 5. Income account (EEK bn)

This was followed by a crash in the stock exchange and the Russian crisis and a few years of moderate growth. Since 2001, the turnover of the income account – inflow in particular – has been rapidly growing. This indicates also higher returns of Estonian investors' investment abroad. The turnover of the income account has been largely affected by an Act that entered into force in 2001 and that provides for income tax exemption for reinvested earnings of companies operating in Estonia. Since then, the percentage of reinvested earnings in the income account structure has been considerably higher – a distinctive characteristic of Estonia's balance of payments.

As can be seen from Table 4, reinvested earnings do not play such a great role in the current accounts of the other new Member States who joined the EU together with Estonia. The percentage of reinvested earnings is especially high in income outflow: from 2003 to 2006 it formed 60% of the debit turnover of income. Excluding reinvested earnings from the current account calculation, as these do not involve any actual movement of funds, Estonia's current account deficit has been 4–5 percentage points and in the first two quarters of 2007 as much as 7–8 percentage points lower. Nearly 90% of both the inflow and outflow of income is related to EU-27, with financial intermediation being the primary field of activity.

The **capital and financial account** (excl. reserves) has posted surpluses during the entire period of regained independence, whereas these surpluses have been higher than current ac-

Table 4. Selected balance of payments indicators by selected countries (USD m)

Country	Year	Current account as % of GDP	Reinvested earnings as % of GDP	Direct investment per capita (USD)	
				In home country	Abroad
Czech Republic	2000	-4.7	-1.7	2,118	72
	2001	-5.3	-2.4	2,653	111
	2002	-5.7	-2.7	3,791	144
	2003	-6.3	-2.2	4,440	224
	2004	-6.0	-2.4	5,619	369
	2005	-2.0	-2.5	5,835	416
Estonia	2000	-5.3	-1.8	1,930	189
	2001	-5.2	-3.3	2,323	325
	2002	-10.7	-2.2	3,108	497
	2003	-11.4	-4.2	5,187	762
	2004	-12.2	-4.8	7,455	1,051
	2005	-10.4	-4.5	9,493	1,474
Hungary	2000	-8.4	-2.0	2,240	125
	2001	-6.0	-2.6	2,690	153
	2002	-7.0	-2.7	3,565	213
	2003	-8.6	-2.3	4,767	346
	2004	-8.5	-2.2	6,200	596
	2005	-7.3	-1.9	6,050	648

Country	Year	Current account as % of GDP	Reinvested earnings as % of GDP	Direct investment per capita (USD)	
				In home country	Abroad
Latvia	2000	-4.7	-0.8	876	10
	2001	-7.5	-0.4	986	17
	2002	-6.7	-0.3	1,171	25
	2003	-7.4	-0.7	1,406	49
	2004	-12.9	-2.3	1,947	101
	2005	-12.5	-2.1	2,171	123
Lithuania	2000	-5.9	-0.8	667	8
	2001	-4.7	-0.7	766	14
	2002	-5.1	-0.5	1,147	17
	2003	-6.9	-1.2	1,438	35
	2004	-7.7	-1.8	1,857	123
	2005	-6.9	-1.1	1,884	207
Poland	2000	-5.8	0.2	891	26
	2001	-2.8	0.6	1,075	30
	2002	-2.5	0.6	1,260	38
	2003	-2.1	0.0	1,512	56
	2004	-4.2	-2.5	2,258	84
	2005	-1.7	-1.2	2,348	169
Slovakia	2000			836	68
	2001			1,036	83
	2002			1,583	90
	2003			2,205	117
	2004				
	2005				
Sloveenia	2000	-2.8	-0.2	1,461	388
	2001	0.2	0.1	1,304	497
	2002	1.1	-0.6	2,066	756
	2003	-0.8	-0.7	3,170	1,181
	2004	-2.7	-1.0	3,795	1,513
	2005	-1.9	-0.7	3,539	1,757
Bulgaria	2000	-5.6	-0.5	282	11
	2001	-5.9	-0.0	347	12
	2002	-2.0	-0.5	464	16
	2003	-5.1	-1.2	797	13
	2004	-5.9	-2.2	1,184	-15
	2005	-11.5	-1.0	1,475	23
Romania	2000	-3.7		314	6
	2001	-5.5		379	5
	2002	-3.3		356	7
	2003	-5.6		558	10
	2004	-8.5		944	14
	2005	-8.3		1,100	11

Sources: balances of payments and international investment positions – IMF Balance of Payments Statistics Yearbook (2006); exchange rate (annual average) and GDP – IMF International Financial Statistics (Oct. 2007)

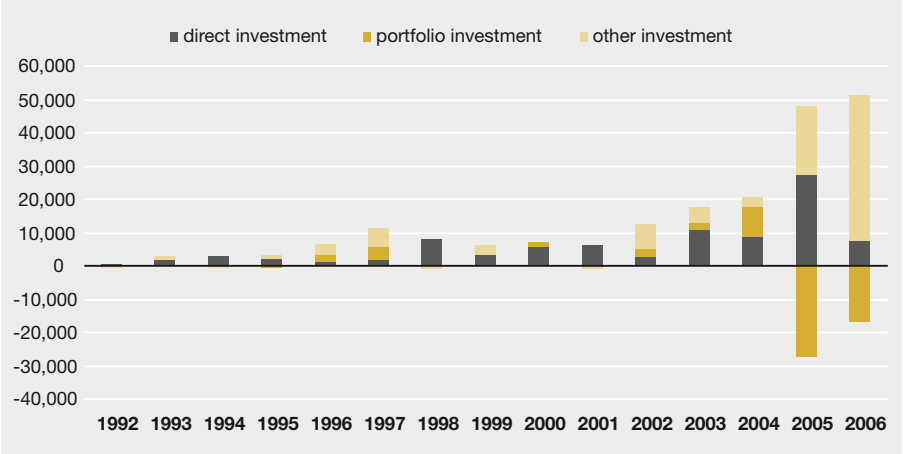

Figure 6. Sub-accounts of the capital and financial accounts in 1992–2006 (EEK bn)

count deficits every year except 2001 (see Table 1 and Figure 6). Moreover, also the balance of payments reserves have been constantly growing, amounting to 33 billion kroons at the end of 2006.

Direct investment has played an important role in the formation capital and financial account surpluses. Estonia's investment climate has attracted many foreign investors who have supplied more and more direct investment in Estonia every year (see Figure 7). The last couple of years under consideration witnessed especially large direct investment: in 2005 in relation to

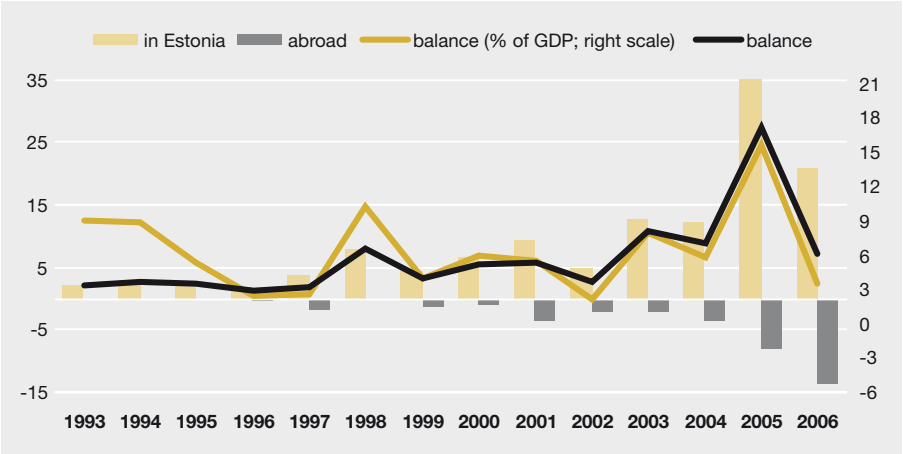

Figure 7. Direct investment (EEK bn)

the takeover of Hansapank and in 2006, as a result of a robust increase in reinvested earnings.

Estonia's direct investment abroad was quite modest in the first years but started to increase in 1999, and even doubled every year in the last three years under analysis. In terms of direct investment per capita, Estonia ranked first among the ten Eastern European countries and second after Slovenia for foreign direct investment abroad (see Table 4 and Figures 8–9).

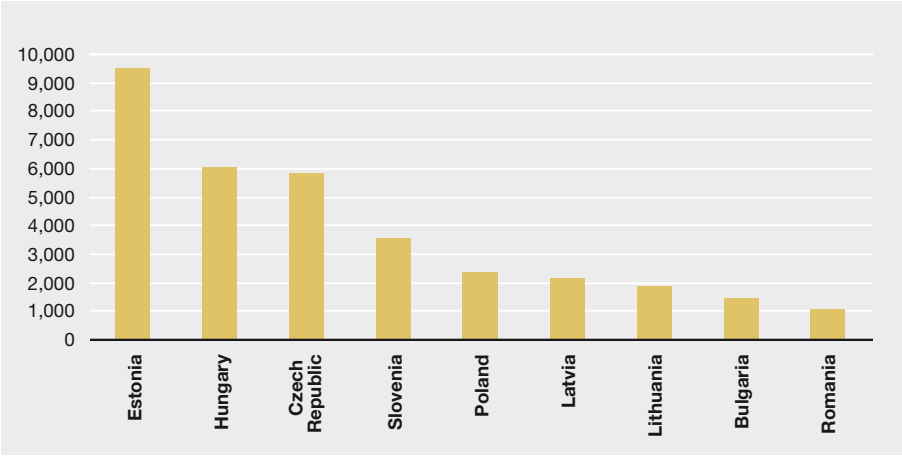

Figure 8. Direct investment per capita in selected countries as at 31 December 2005 (inflow; USD)

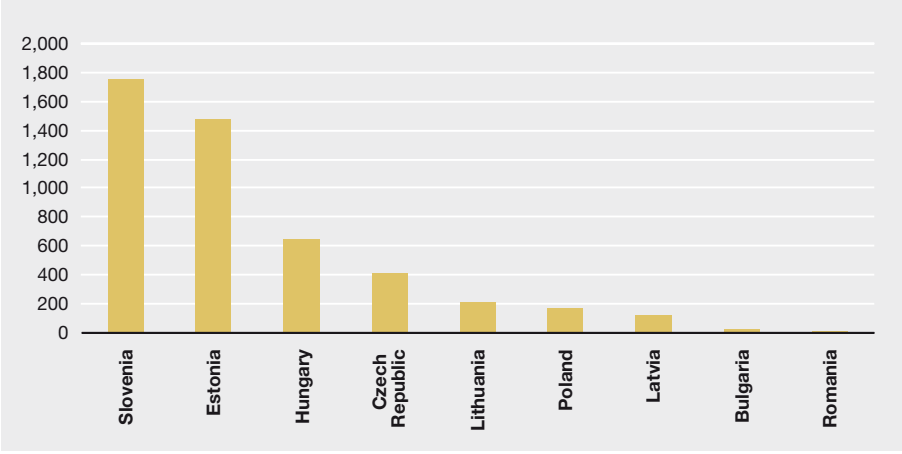

Figure 9. Direct investment per capita in selected countries as at 31 December 2005 (outflow; USD)

In the first half of the period under review, the majority of direct investment in Estonia consisted of equity investment. Since 2001, the share of reinvested earnings has grown considerably owing to the above-mentioned tax exemption, and has reached 70% of the total direct investment in Estonia in several years. Estonia's direct investment abroad, on the other hand, has mainly comprised direct equity investment. However, the percentage of reinvested earnings in residents' foreign direct investment has risen and has comprised a third during the past five years.

Foreign direct investment in Estonia has primarily come from the north: from Sweden (40%) and Finland (26%). The most preferred fields of activity have been real estate, renting and business activities, financial intermediation and manufacturing. Estonia has channelled its investment mainly to the south: to Latvia (34%) and Lithuania (32%). The most active foreign direct investors have been engaged in financial intermediation and real estate, renting and business activities.

The turnover of **portfolio investment** was low in early-1990s but picked up in 1996–1997 as a result of the robust growth of the securities market, when residents assumed considerable debt and equity security liabilities from credit institutions and other sectors (see Figure 10). The turnover decreased significantly after the stock exchange crash but picked up later again. In the years 2004 to 2006, it reached considerable levels: in 2005, the net outflow of portfolio investment was over 27 billion and in 2006 nearly 17 billion kroons. The strong outflow in 2005 was largely related to the takeover of Hansapank (which brought along a decrease in the equity security liabilities of credit institutions). In 2005 and 2006, also other sectors and the general government increased their equity and debt security assets.

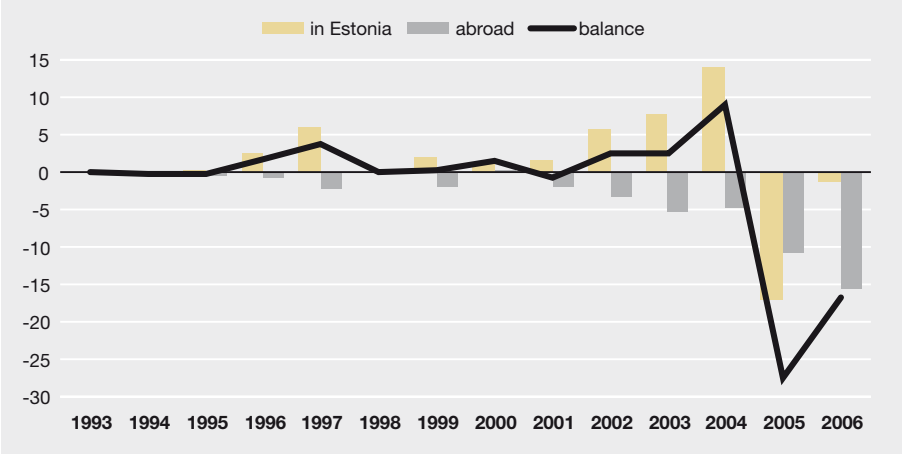

Figure 10. Portfolio investment (EEK bn)

The majority of portfolio investment turnover is related to EU-27. At the end of 2006, 82% of the assets and 90% of the liabilities of portfolio investment were related to this group of countries.

The dynamics of **other investment**, that is trade credit, loans and deposits, have been rather similar to portfolio investment, except for the higher turnover of the former (see Figure 11). At the start of the analysed period, the turnover of other investment was modest, recording net inflows in some years and net outflows in others. During 1996–1997, there was substantial inflow of other capital, which could be mostly attributed to credit institutions. Further developments were slightly more moderate, posting net inflows in some years and net outflows in others.

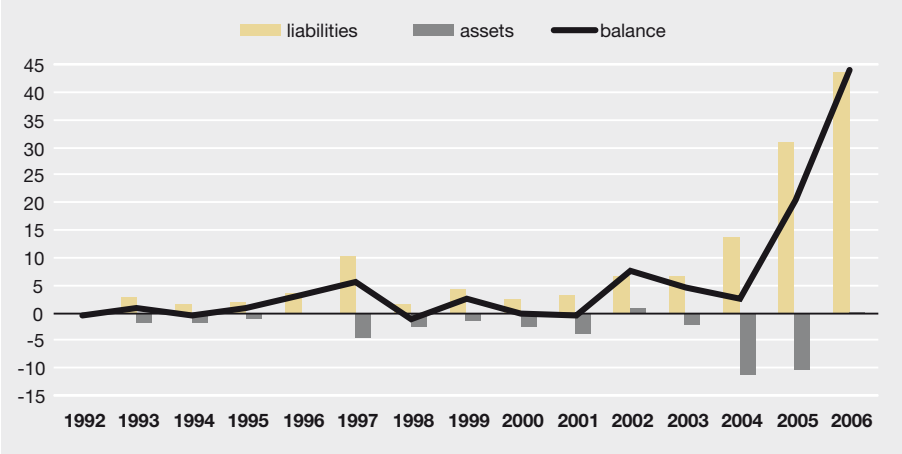

Figure 11. Other investment (EEK bn)

Since 2002, the inflow of other investment capital has constantly exceeded the outflow, especially in the last couple of years. In 2005, the inflow stood at 21 and in 2006, at 44 billion kroons, being thus the primary source of capital inflow in 2006. Estonia's rapid economic expansion, strong domestic demand and favourable real estate market created high demand for loan capital. Credit institutions then brought cheap loan money from foreign parent banks to meet that demand.

At the end of 2006, 62% of the assets and 80% of the liabilities of other investment were related to EU-27.

Estonia's gross **external debt** as at 31 December 2006 totalled approximately 200 billion kroons (96% of GDP). The debt of general government accounted for only 2% of the gross debt, whereas 51% belonged to credit institutions, 28% to other sectors and the rest was intercompany lending of direct investment companies. Excluding these from the calculation of gross external debt,[4] long-term debt formed 56% of the gross debt. Estonia's net external debt (assets less liabilities) was 56 billion kroons (27% of GDP).

CONCLUSION

Three stages can be distinguished in the history of Estonia's balance of payments during 1992–2006:

- rapid expansion until 1997;
- a setback during 1998–1999 and a relatively slower development until accession to the EU;
- strong growth during the EU membership.

Estonia has been a very open economy (current account turnover is double the volume of GDP) with favourable investment climate. This has boosted the turnover of the current account: from 1992 to 2006, the credit turnover increased by 33 and the debit turnover by 41 times.

The current account has recorded deficits practically throughout the entire period under review (in 2006 as much as 15% of GDP) owing to strong domestic demand and investment activity.

Estonia's investment environment has attracted numerous foreign direct investors. Estonia ranks first among the ten new EU Member States in terms of direct investment per capita and second in terms of foreign direct investment abroad.

Profitable foreign direct investment and income tax exemption for reinvested earnings in the second half of the period have substantially contributed to the growth of reinvested earnings.

Cheap loan money and the construction boom brought along strong inflow of loan capital during 2005–2006. Consequently, Estonia's external debt increased rapidly and was almost equal to GDP at the end of 2006. The general government debt was marginal, as over half of the external debt consisted of the liabilities of credit institutions.

[4] The statistics on the intercompany lending of direct investment companies does not include information on its distribution into short-term and long-term liabilities.

ESTONIA'S FOREIGN TRADE DURING THIRTEEN YEARS

Ulvi Saks

Estonia's foreign trade has witnessed robust growth during 1994–2006: both the exports and imports of goods have increased by nearly eight times since 1994. The annual growth rates of exports and imports have also been remarkable, reaching double-digit numbers in most years (see Table 1 and Figure 1).

Table 1. Exports and imports in 1994–2006 (EEK m)

	Exports	Export growth (%)	Imports	Import growth (%)	Balance
1994	15,622.9		20,100.4		-4,477.5
1995	19,008.9	21.7	27,425.0	36.4	-8,416.2
1996	21,246.9	11.8	34,666.5	26.4	-13,419.6
1997	31,607.4	48.8	48,868.9	41.0	-17,261.5
1998	37,545.0	18.8	55,215.4	13.0	-17,670.4
1999	36,774.3	-2.1	50,494.7	-8.5	-13,720.4
2000	55,836.8	51.8	72,217.1	43.0	-16,380.3
2001	57,857.1	3.6	75,076.3	4.0	-17,219.1
2002	56,990.6	-1.5	79,471.7	5.9	-22,481.0
2003	62,627.2	9.9	89,426.7	12.5	-26,799.5
2004	74,614.3	19.1	104,877.0	17.3	-30,262.7
2005	96,747.3	29.7	128,365.3	22.4	-31,618.0
2006	119,519.7	23.5	165,298.5	28.8	-45,778.8

Both exports and imports peaked in 2000, when the former increased by over 50% and the latter by over 40%, probably owing to the poor results of the preceding year. Year 1999 was exceptional in trade, since the imports and exports of goods decreased by 8.5% and 2.1%, respectively. Moreover, also GDP growth slowed considerably in 1999. Most probably, the

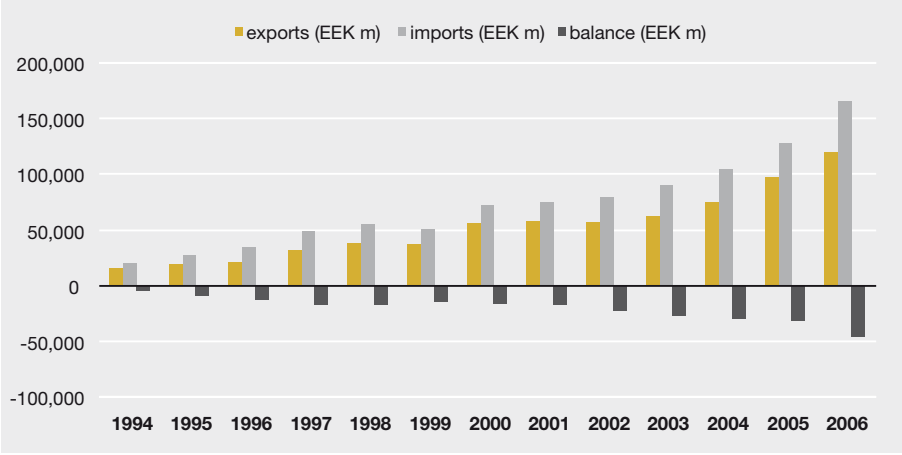

Figure 1. Exports and imports in 1994–2006 (EEK m)

decline in goods turnover partly stemmed from the Russian crisis that started off in the second half of 1998 and that caused a 42% fall in Estonia's exports to Russia. Besides 1999 exports decreased also in 2002, though only 1.5%.

Accession to the European Union gave a new impetus to the imports as well as exports of goods: annual growth rates have reached 20% and more since then. In 2004, part of the import and export growth could be attributed to the changes in data sources and methodology[1], which affected also 2005 figures (as we know, the EU enlargement took place in mid-2004, more precisely May, 1). The year-on-year comparison of 2006/2005 data, however, draws from the same sources and methods. That gives us 29% annual growth rate for imports and 24% for exports. Currently, the overheated economy is showing signs of cooling: in the first nine months of 2007, exports grew only 4.4% and imports 5.2%, year-on-year.

Estonia's foreign trade balance has been in deficit since 1994, whereas within thirteen years the deficit has grown ten times: from 4.5 billion in 1994 to 45.8 billion in 2006. The deficit has been boosted by the large volume and rapid growth of imports, which has been driven by strong domestic demand.

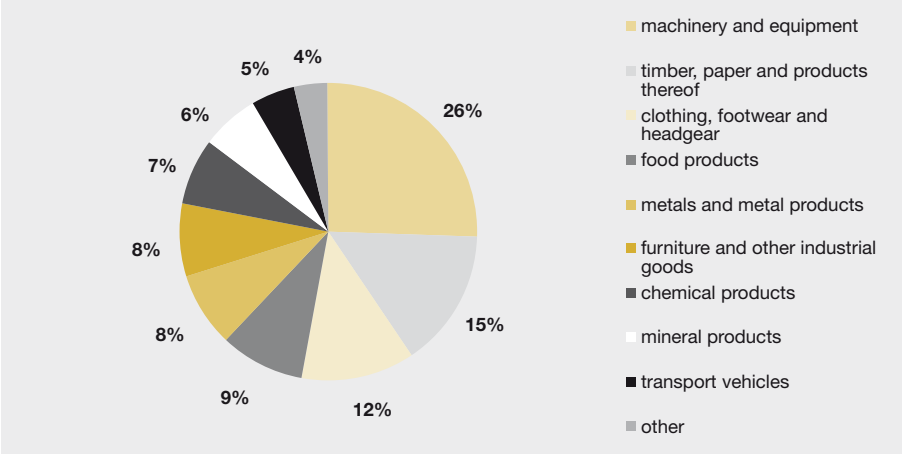

Figure 2. Structure of exports in 1994–2006

[1] Since May 1, 2004, foreign trade statistics is based on the combination of two reporting systems. Trade with non-EU countries is still calculated on the basis of customs declarations submitted to the Tax and Customs Board (the so-called Extrastat), whereas trade with other EU countries is registered through the so-called Intrastat survey organised by Statistics Estonia. While Extrastat still enables the use of the special trade system, which excludes trade through customs warehouses, then Intrastat provides no way of excluding goods moving through intermediate warehouses that actually do not reach the Estonian domestic market, thus rather reflecting the principles of the general trade system. Therefore, the general level of both imports and exports of goods is higher than in previous periods and this peculiarity has to be taken into account when comparing different years.

Considering Estonia's trade by major goods groups, we can see that the majority of import and export transactions made during the thirteen years under review involve machinery and electrical equipment. This group accounted for 30% of imports and 26% of exports (see Figures 2 and 3). Timber and timber products ranked second in exports with 15%; clothing (textile products, footwear, fur etc.) placed third with 12%. Regarding imports, machinery and equipment were followed by chemical products (12%), and transport vehicles and food products (both 10%).

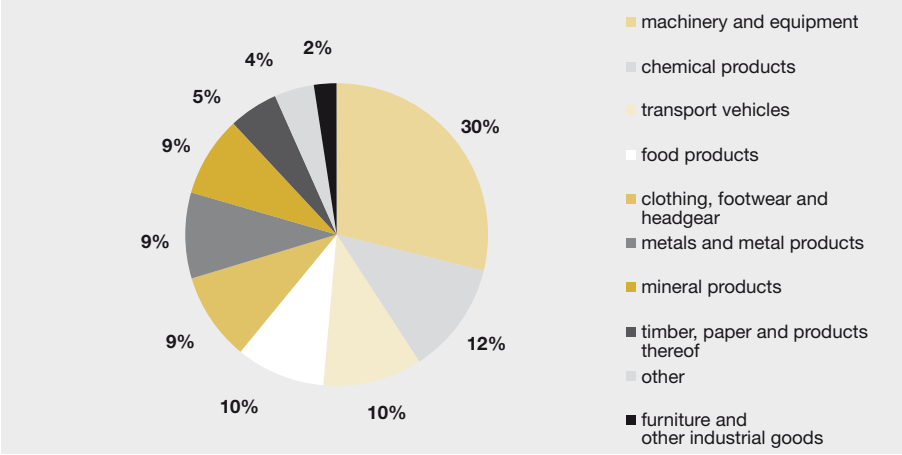

Figure 3. Structure of imports in 1994–2006

Two out of the three largest groups of export goods (machinery and equipment; clothing) are primarily related to goods processing. The third group (timber and timber products) is based on Estonian natural resources. Analysing the so-called normal exports, that is exports excluding processed goods[2], gives a somewhat different picture. Timber and timber products rank first then, followed by machinery and equipment, food products, and furniture and other industrial goods. The high share of machinery and equipment in normal exports is slightly illusive, though. Namely, EU accession brought along various legislative amendments (incl. amendments to the Value Added Tax Act). Consequently, it is more cost-effective to bring in goods, which were previously registered under processed goods, as ordinary imports to be processed in the importing country and then re-exported as normal exports. The annual volume of normal exports of machinery and equipment confirms that. Before the EU accession it reached maximum 4.5 billion kroons, whereas post-accession figures climbed robustly: to 14.6 billion kroons in 2004; 25.8 billion in 2005 and 28.4 billion in 2006. The volume of machinery and equipment re-exported after processing naturally declined, respectively.

[2] Goods imported to Estonia for processing and then re-exported.

Considering the imports and exports of goods by the categories of final consumption, we can see that industrial raw materials formed the largest share in imports as well as exports. Capital and consumer goods followed (see Figure 4 and 5). The share of imported transport vehicles was also quite considerable. The imports and exports of fuels and lubricants, which all in all ranked fifth, have gained momentum in the past few years under consideration.

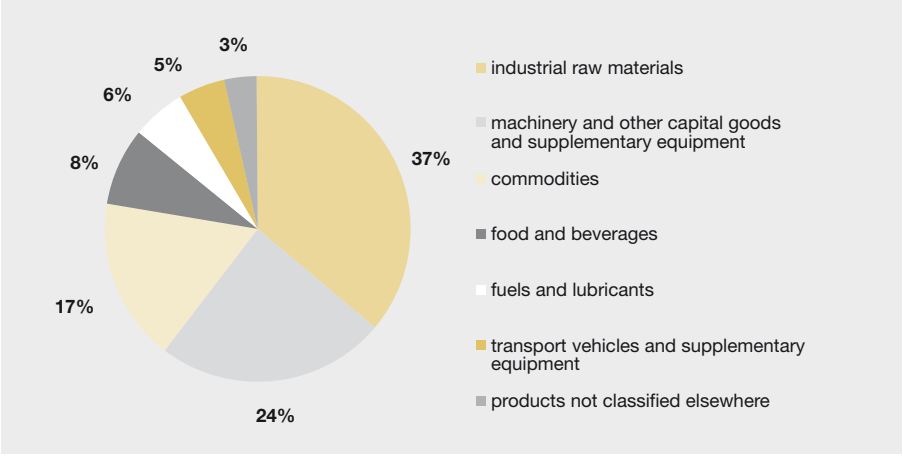

Figure 4. Exports by final consumption in 1994–2006

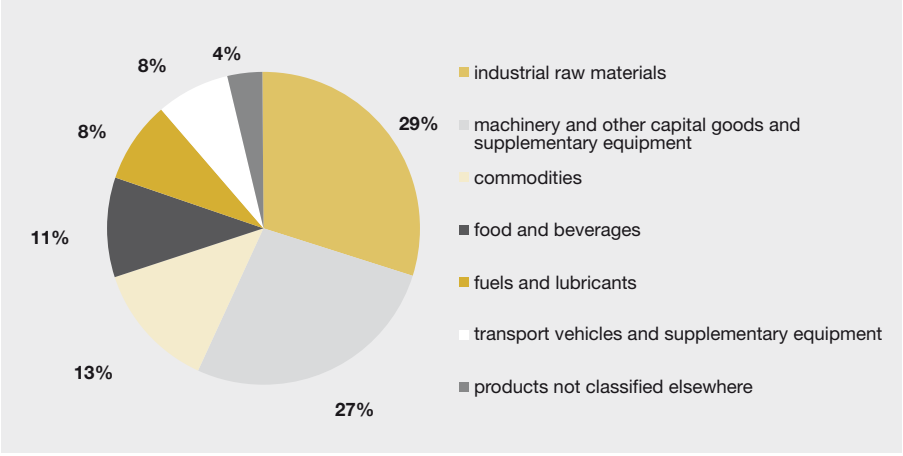

Figure 5. Imports by final consumption in 1994–2006

In 1994, the imports of this group of goods was only 2.6 billion kroons; in 2006 – as much as 25.8 billion kroons. Export figures stood at 0.7 and 19.1 billion kroons (see Figures 6 and 7). Fuel deliveries have increased mostly owing to motor fuels imported from Russia, then processed in Estonia and re-exported.

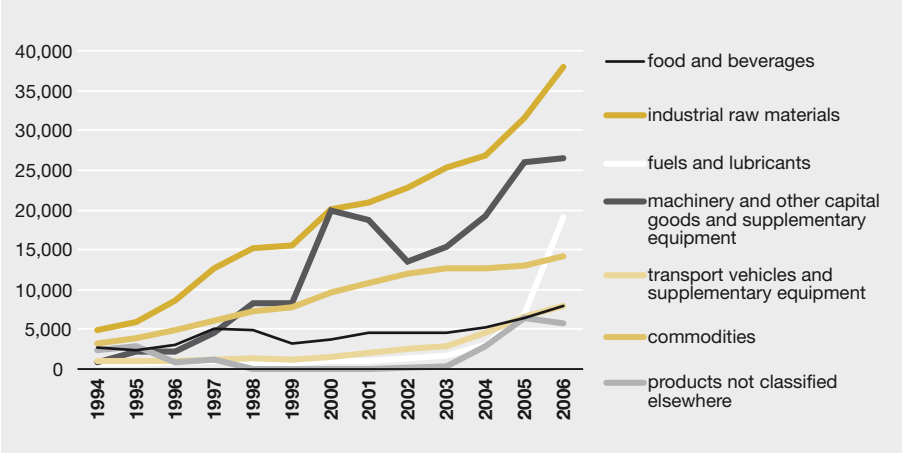

Figure 6. Exports by final consumption (EEK m)

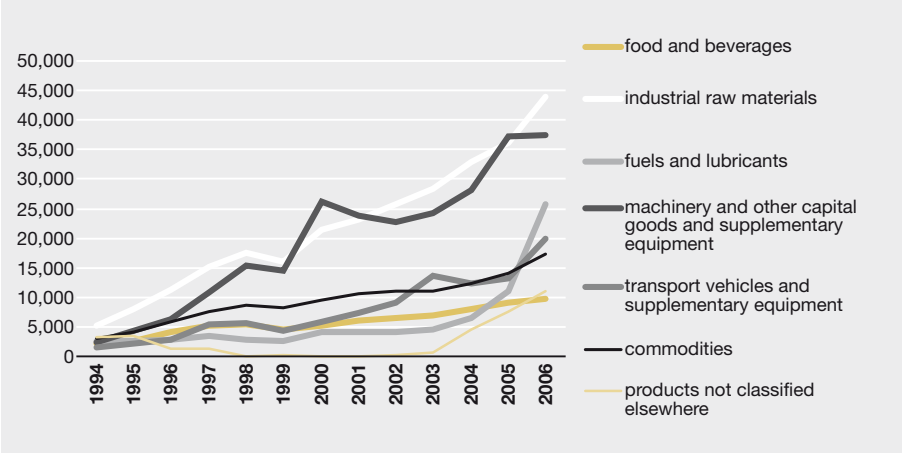

Figure 7. Imports by final consumption (EEK m)

The imports and exports of goods were rather concentrated across countries during 1994–2006. The top five of export partners was similar to that of import partners: Finland, Sweden, Latvia, Germany and Russia; only in a slightly different ranking in imports (see Table 2). Trade with the five major partners accounted for 66% and for 77% as regards the ten largest partners (both in terms of imports and exports).

Table 2. Exports and imports by major trade partners (EEK m)

Target country	Exports (1994–2006)	Share (%)	Trading country	Exports (1994–2006)	Share (%)
Finland	166,064.7	24.2	Finland	250,512.9	26.3
Sweden	103,805.4	15.1	Germany	109,832.7	11.5
Latvia	54,397.7	7.9	Sweden	91,119.7	9.6
Germany	49,907.4	7.3	Russia	89,156.6	9.4
Russia	41,324.1	6.0	Latvia	41,807.0	4.4
Lithuania	27,885.0	4.1	Lithuania	39,236.1	4.1
United Kingdom	26,142.5	3.8	Netherlands	35,251.8	3.7
Denmark	23,687.2	3.5	Denmark	25,925.6	2.7
United States	21,226.7	3.1	Poland	25,608.7	2.7
Norway	18,824.8	2.7	Italy	25,235.9	2.7
Other	152,732.8	22.3	Other	217,816.6	22.9
Total	685,998.3	100.0	Total	951,503.5	100.0

Estonia's closest neighbour Finland has been holding the first place in goods imports and exports during the entire period under review. Nearly half of Estonia's total exports to Finland has comprised machinery and equipment (primarily mobile communication devices and their components). The next largest groups have been textile products (ready-made clothes, sweat suits, bed linen etc.) and timber and timber products. Imports from Finland to Estonia also consisted of electronic equipment and components as well as transport vehicles (mostly motor cars), iron and steel constructions and clothing. The imports of motor cars from Finland have increased over ten times within these thirteen years, whereas in 2006 the year-on-year growth rate was 52%. However, the imports of transport vehicles from Finland appears to be slowing, as in the first nine months of 2007 it reached only 47% of the total of 2006.

The other major partner country, Sweden, ranked second in exports and third in imports. Exports to Sweden has primarily consisted of electronic, timber and textile products. Imports have comprised electronic equipment, chemical products (plastic products, paints and varnishes), clothing (textile in particular), motor vehicles and their components as well as metal products. The imports of transport vehicles from Sweden have also increased ten times with years. The figures for 2007 show an upward trend as well: in the first nine months alone, the imports of motor vehicles have increased by 97% year-on-year (from 1.9 to 3.7 billion kroons).

The main export items sent to Latvia included chemical products (inorganic compounds and medicines) and food products (table water, pork and fish products); the main import items were textile products (cotton and ready-made clothes) and chemical products (medicines and plastic products).

Germany has been importing mostly timber and timber products (prefabricated wooden buildings, construction components and furniture), but also electronic equipment and textile products (cotton, bed linen and ready-made clothes). Imports from Germany has consisted of machinery and equipment (besides electronic equipment also computers and computer components), transport vehicles (motor cars, trucks and trailers) and various chemical products.

As far as trade with Russia is concerned, there have been ups and downs. In 1994, Russia imposed double customs duties on Estonia, which curbed exports to Russia and forced businesses to apply various interesting trading schemes. For instance, goods coming from Estonia were stored in customs warehouses with their actual prices, whereas considerably lower prices were indicated on the declarations when importing them to Russia. Another scheme was to export goods to Russia via neighbouring countries. Consequently, exports to Russia amounted to 3–4 billion kroons per year during 1994–2004, and even below 2 billion kroons during 2000–2002.

Imports have posted somewhat better results, increasing from 3.2 billion kroons in 1994 to 9.7 billion in 2004. After Estonia's accession to the EU, Russia had to abolish the double customs duties on Estonia's goods, which boosted both exports and imports: the former increased by 50% in 2005 as well as 2006 and the latter by 22% and 84%, respectively. The robust growth in imports in 2006 stemmed from the large volume of fuels imported for processing, as mentioned above.

The April riots that took place in Tallinn in 2007 have affected primarily imports: in the first nine months of 2007, goods imports from Russia constituted 67% and exports 83% of the previous year's total. Comparing the first three quarters of 2007 to the same period in 2006, it appears that exports to Russia have grown by 13%, whereas imports have declined by 14%.

During the thirteen years under review, mostly food products have been exported to Russia: fish and dairy products, alcoholic beverages and chocolate. The second most common export item has been transport vehicles (motor cars and also safety belts), followed by machinery and equipment, and chemical products. Mineral products are the biggest import item, largely owing to the recent increased volumes of motor fuels imported for internal supply

and processing. Natural gas has formed nearly 25% of the imports of mineral products. The second largest goods group after mineral products has been timber and timber products (primarily unprocessed or little processed) and metal products (steel and scrap metal).

With regard to major trade partners, in the thirteen years under consideration Estonia has had a surplus of goods with Sweden, Latvia, Norway and the United States. Estonia has recorded the largest trade deficits with Finland, Germany and Russia.

CONCLUSION

In conclusion, we may say that although the foreign trade deficit has been gradually increasing every year, the surpluses on services and transfers accounts have helped to reduce the deficit. Given the cooling of the economy, the stronger growth of imports compared to exports is expected to slow, and thus reduce the foreign trade deficit.

THE BACK-OFFICE OF CALCULATING TRAVEL SERVICE INDICATORS

Andres Kerge

According to the balance of payments methodology, travel services are defined as the purchase of goods and services in the country of visit with the length of up to 12 months. Travel services do not include the costs of international transport to the country of destination; these are shown in the balance of payments under transportation services (passenger transport). Students and patients requiring long-term treatment make an exception in the methodology. They are always considered as those staying temporarily in a foreign country irrespective of the duration of their stay.

A key concept in the balance of payments is **residency**. In the balance of payments, a resident is a person whose economic interests are related to the economy of a respective country for a longer term. Conventionally, "longer term" stands for at least 12 months and economic interests are regarded as possession of immovable property and family ties in this country.

Estonia's balance of payments has now been compiled for fifteen years. The volume of travel services has significantly increased over this period: exports of travel services (credit) by 39 times and imports (debit) by 32 times. Travel services occupy a central position in Estonia's balance of payments because their constant surplus helps to offset the foreign trade deficit: in 1995–2001, the surplus on travel services accounted for 40% of the foreign trade deficit (see Figure 1). On a year-on-year basis, the share of travel services surplus in the balance of services was the largest in 1996 (74%) but has been declining since to 42% in 2006 because the share of exports has been shrinking and that of imports growing.

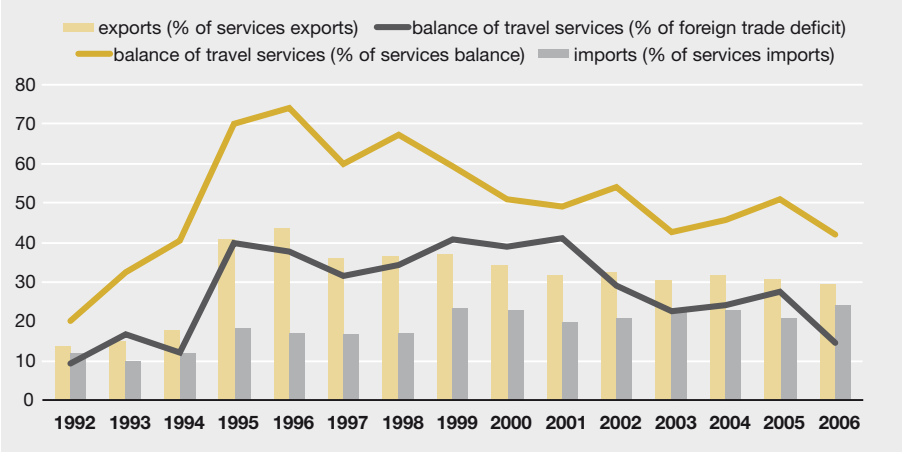

Figure 1. Share of travel services in Estonia's balance of payments (%)

CHOICE OF METHODOLOGY

Travel services differ from other services included in the balance of payments in that they are not necessarily purchased from one single seller and the consumer contacts the provider to get the desired goods and services. Thus, travel services contain different types of services and purchases of goods, which creates difficulties in the compilation of respective statistical data.

Travel services can be paid for before the trip through travel agencies; during the trip to the country of destination (transport costs or expenses during transportation), or in the country of destination by paying for goods and services.

A large share of travel expenses are paid to travel agencies that arrange travellers' transport to the destination and their accommodation. These expenses can be traced using tourism companies' reports. This allows distinguishing the costs related to the international transport of the passenger to the country of destination. Apart from the above costs, travellers bear most of their expenses at their destination.

There are two methods (and a combination thereof) for calculating travel services:

- estimates based on domestic currency sold to private customers and statistics of the use of credit cards (data from banks and currency exchange offices), and
- sample surveys.

When Estonia was to choose the method, the Estonian kroons were not only exchanged for other currencies to pay for travel costs but also to take business revenue out of the country. For example, large currency transactions were made in relation to purchasing real estate and vehicles as well as in the black economy. Common Estonian people rarely had credit cards. Therefore, Estonia opted for the sample survey method for the calculation of travel services. This method lies in identifying the average expenses per traveller using questionnaires and establishing the cost of travel services on the basis of these expenses and the actual number of visitors.

As later developments in Estonia and the world proved, that choice was correct because after the changeover to the euro several EU countries had to change their method. However, every method has its drawbacks: although we can use detailed data from the Border Guard Administration on crossing of border of people from nearly 200 countries, in terms of the balance of payments complications arise regarding the difference between citizens and residents. For instance, in Estonia, a large number of residents do not have Estonian citizenship (incl. about 10% of Russian citizens) and long-term migrant workers become non-residents

in respect to their country of nationality. As of 2004, the Border Guard Administration does not register crossing of border by citizens of the European Union and other countries that have acceded to the Schengen agreement. Their numbers are estimated on the basis of the number of passengers at Tallinn Port and Tallinn Airport along with sample surveys of border crossing on the basis of statistical models.

From 1995 questionnaire surveys are carried out once or twice a year in Estonia in order to establish travel expenses. Such surveys are conducted in major border crossing points in proportion to the passenger flows. Questions are asked from non-residents leaving Estonia about their travel expenses born in Estonia, and from Estonian residents upon arrival about their expenses abroad. The survey is carried out in July and August, the peak season in tourism, and in the low season, either in February or November. The size of the sample is 1,200 to 2,000 persons. In general, expenses per person in the high season are lower compared to those in the low season because the number of business travellers is higher in winter.

TRAVEL SERVICES IN THE BALANCE OF PAYMENTS

Estonia's first balance of payments was compiled in 1993 for the preceding year. As the compilation of the balance of payments using the sample survey method is fairly expensive, it was done jointly with the Tourism Board who submitted the initial estimates regarding Estonian tourists to foreign countries and foreign tourists visiting Estonia. While people's expenses abroad are different, the travellers are grouped according to their consumption patterns. Travel services are calculated separately in each group by multiplying the number of people in the group with their expenses.

Until 1995, only the total number of foreign tourists and same day visitors to Estonia and their average expenses incurred in Estonia were used, along with the total number of Estonian tourists going abroad and their average expenses there. As of 1996, the data from the Border Guard Administration regarding the citizenship of border-crossers are available. These data were used to distribute travellers into groups (strata) according to the specifics of their consumption.

Two characteristics are used for grouping: length of the trip and country of origin.
Travellers to Estonia are grouped by the length and nature of trip:

- same day visitors (relatively high numbers from neighbouring countries, that is Finland, Russia and Latvia);
- tourists on a package tour (pay most of their transport and accommodation costs before the trip);
- tourists without packages (tourists who stay for more than one night either at friends' or family's place or book their own accommodation in accommodation establishments).

The surveys establish the length of stay in Estonia and average expenses depending on the country of origin. Countries of origin are divided into seven groups according to the consumption patterns. Major tourism partners are shown separately as countries; other countries are grouped on the basis of similar consumption behaviour. Over the recent years, non-residents have been grouped geographically as follows:

- Finland;
- Scandinavia;
- Latvia and Lithuania;
- other EU countries;
- CIS (mostly Russia);
- USA and Canada, and
- other countries.

The number of Estonians surveyed after their return from abroad is much smaller. In order to obtain more reliable data, travellers are grouped as follows:

- Finland;
- Sweden;
- other EU countries;
- Latvia and Lithuania;
- CIS (mostly Russia), and
- other countries.

Expenses made on a day trip do not depend much on the country of destination.

Closer ties with the rest of the world brought about improvements in methods. From 2000 onwards, a need arose to break down travel services geographically across major trade partners; in the case of the European Union, that means a breakdown of all member states. In relation to people that work abroad, it is necessary to make a distinction in business travellers' expenses between seasonal and cross-border workers' living costs during the working period.

In order to improve the reliability of travel services data in the EU, the Eurostat working group Travel was set up, consisting of representatives of the EU countries. Its main task is to carry out bilateral comparisons (exports of travel services of one country should be approximately equal to the imports of travel services of another country from the former) and to adjust methods, should there be any differences.

EXPENSES OF NON-RESIDENTS IN ESTONIA

The chosen methodology shows that the credit of travel services depends on the number of non-resident visitors to Estonia and their expenditure in Estonia. Considering the dynamics of the number of non-residents who visit Estonia (see Figure 2), it is striking how important seasonality is and also, the low number of tourists who have used services of Estonian travel agencies. The number of tourists on package tours and same day visitors has changed little over the past eleven years, whereas the number of overnight tourists without a package has risen substantially. Estonia has become more and more attractive over these years. Estonian real estate prices have encouraged foreigners to purchase apartments and summer houses

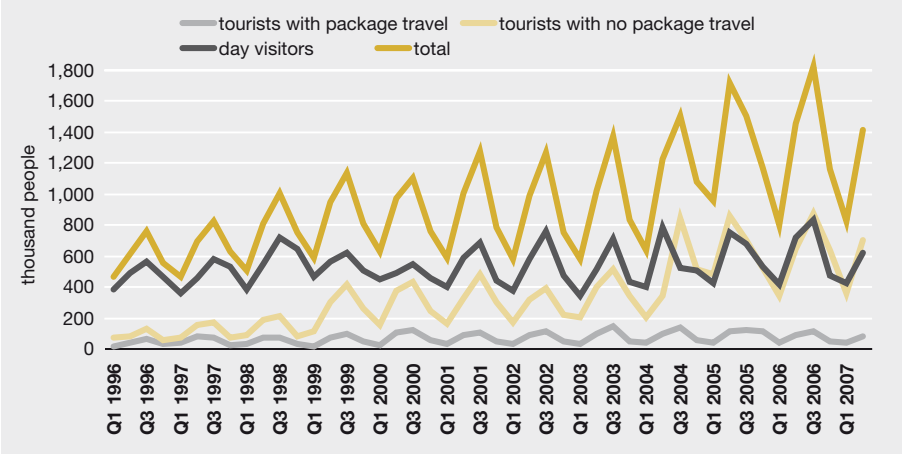

Figure 2. Number of non-resident visitors in Estonia in 1996–2007

whereas the use of these does not reflect in the sales of tour packages.
The number of non-resident visitors grew robustly after Estonia joined the European Union, as people from the old member states came to see the newcomer. The number of same day visitors has been slightly increasing from 2004 onward, and so has providing services to a whole host of visitors who arrive on cruise ships.

Finns form a majority among visitors to Estonia, although their share has fallen from 70% in 1996 to 47% in 2007. Russians rank second and are very important in terms of balancing the impacts of seasonality. In other words, their share is relatively high in the winter months (the first and fourth quarters) when our accommodation establishments are under-occupied.

From 2007, Estonia's attractiveness as a good place for shopping has been declining owing to the price growth. Whether it has also caused a decrease in the number of visitors is not obvious yet.

Average expenses per person increased along with the rise in Estonia's consumer prices until 1999 (see Figure 3). During the period of a relatively stable price growth, the expenses across all three visitor groups also remained stable until 2004.

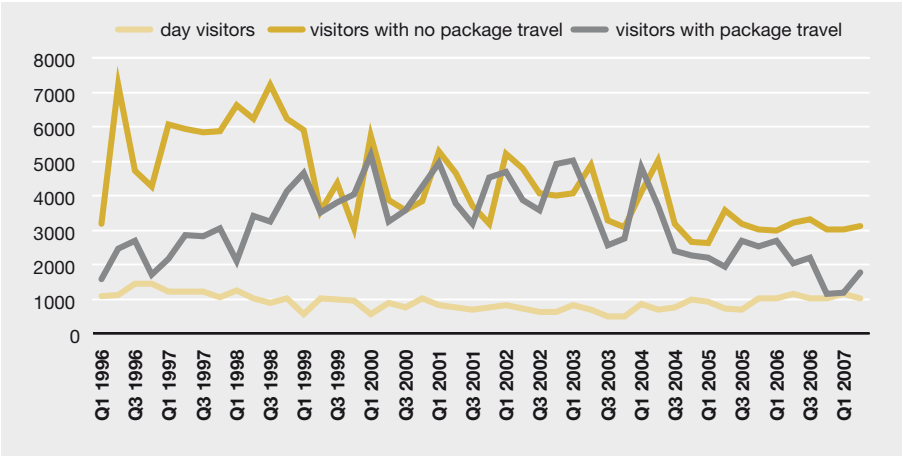

Figure 3. Average expenditure per visitor in Estonia

Expenses per person among same day visitors have been increasing since 2005 because the share of wealthier cruise tourists has risen. On the other hand, expenses made by overnight visitors have fallen because prices in Estonia have risen to the level where shopping tourism is losing its importance. Moreover, tourists without packages do not need to stay in registered places of accommodation; they rather "stay in the private sector" (use their own real estate, visit friends or relatives, and so on).

EXPENSES MADE BY ESTONIANS ABROAD

Gathering data on Estonian travellers abroad is even more complicated than that on foreigners in Estonia. Up to 2004, statistical data on border crossing for Estonian citizens and persons without citizenship were available in the report of the Border Guard Administration, which, by conducting an additional survey could be translated into residence-based format, reflecting numbers of persons without citizenship and Estonian people with Russian citizenship. As the registration of EU citizens on the border was abolished after Estonia joined the EU, the trips of Estonian residents to foreign countries could only be estimated by using statistical models, even though the accession may have considerably influenced people's travel

behaviour. The situation was further aggravated by an increasing number of people seeking employment abroad, which increased the number of seasonal and cross-border workers crossing the border. The living costs of short-term employees are assessed by using a different model; thus, the number of border crossings by Estonians needs to be adjusted in this regard, in order to avoid the double registration of such people.

The number of trips made by Estonians displays seasonality as well (see Figure 4), but differences between the high and low seasons are still lower than in the case of foreigners' trips to Estonia. The number of Estonian tourists travelling through travel agencies has risen two or threefold. This is especially notable in winter and spring but only about 20% of the Estonians have used the services of travel agencies. The total number of trips made by Estonians remained relatively stable until 2001. As of 2002, the number of trips has been constantly growing. Furthermore, we can also observe a rise in the number of tourists who buy package holidays. This is because trips have become longer and that, in turn, requires some assistance from travel agencies.

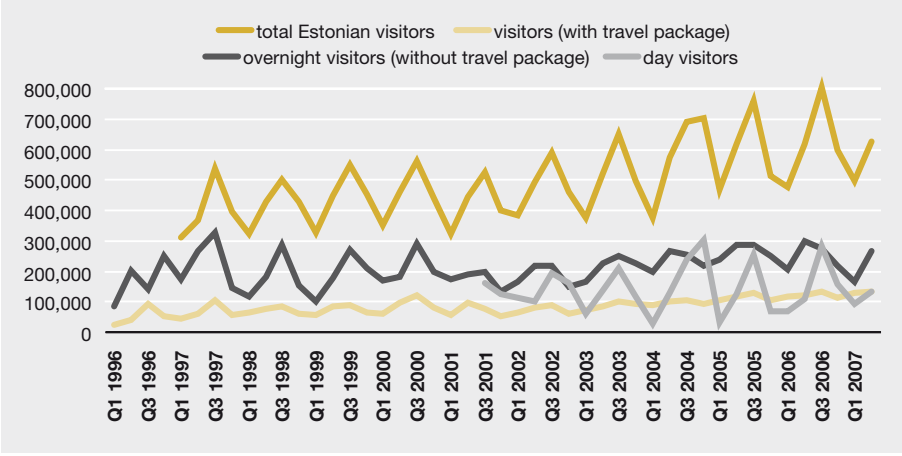

Figure 4. Estonian residents' trips abroad by length and type

While in the late 1990s trips were predominantly made to Finland, Russia and Sweden, then more recently visits to Finland are still popular in winter. At other times, the EU and other countries, and Finland and Russia are equally attractive. Average expenditure per person remained fairly stable in 2000–2005. As of 2006, expenses have increased for trips to far-away EU countries and non-EU countries (see Figure 5).

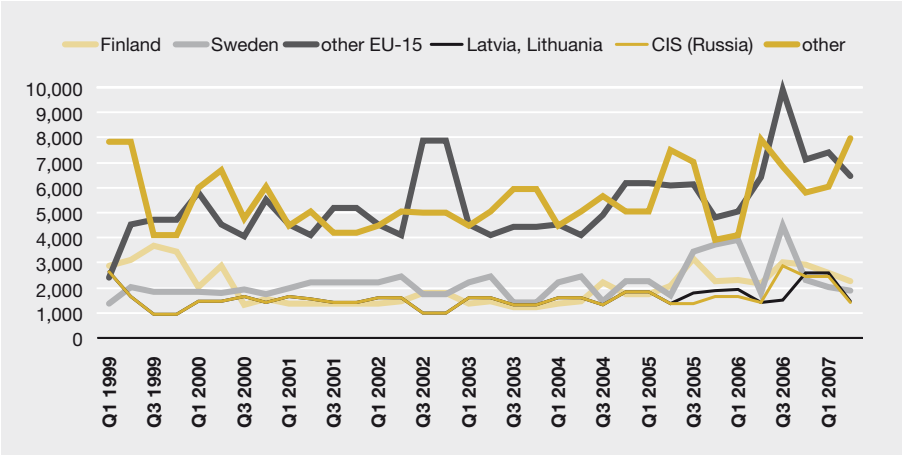

Figure 5. Estonian tourists' spending abroad per capita

WHAT TO EXPECT IN THE NEAR FUTURE?

Estonians' expenditure has increased rapidly along with strong economic growth, which also reflects in higher travel expenses. The latest trend is the rise in winter holiday trips. As a result, the travel services account of the balance of payments is nearly balanced at the beginning and end of the year. This is because Estonians are more and more seeking for hot weather in the winter time as well as skiing pleasure in Northern and Central Europe. At the same time, trips of foreign visitors to Estonia are decreasing in number owing to the rising prices and the waning novelty of sights in Estonia.

As our tourism season is short, we should be looking for new reasons to attract tourists to Estonia also in off-season. Possible solutions include conference tourism, high-quality (and reasonably priced) services in our health care centres, farming and nature related niche tourism, etc. Hopefully, also our eastern neighbours will resume interest in celebrating the New Year's Eve in Estonian hotels, which are usually under-occupied at that time of the year. If Estonians' interest in far-away countries is growing, which is only natural, it is quite clear that we should make serious efforts to maintain the flow of tourists to Estonia.

HOLIDAY TRAVEL PREFERENCES OF ESTONIAN RESIDENTS

Survey by TNS Emor

At the request of Eesti Pank, TNS Emor conducted a survey of 500 Estonian residents aged 15 to 74 years on holiday travel and holiday travel services. The survey was based on the categories used to calculate travel services statistics for Estonia's balance of payments.

Below is a summary of more significant results.

As expected, Estonians' most favourable holiday destinations are the neighbouring countries. 22% of all respondents visited Finland in 2007, followed by Latvia, Lithuania and Sweden.

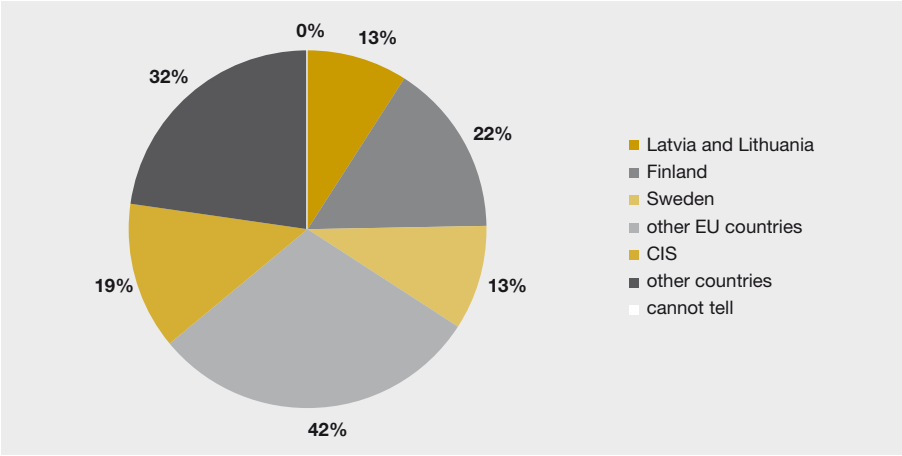

Figure 1. What were your holiday destinations in 2007?

Only 44% of respondents sought the assistance of travel agencies or bought a package tour, whereas as much as 61% preferred independent travel. This is only logical, considering that many people visited neighbouring countries. Older age groups and those with higher education tended to prefer package tours.

As for the length of the trips, most ranged from 6 to 10 days, but there were also longer holidays of 11 to 20 days. Entrepreneurs or self-employed people (46%) were able to take the latter more frequently than other categories of employees.

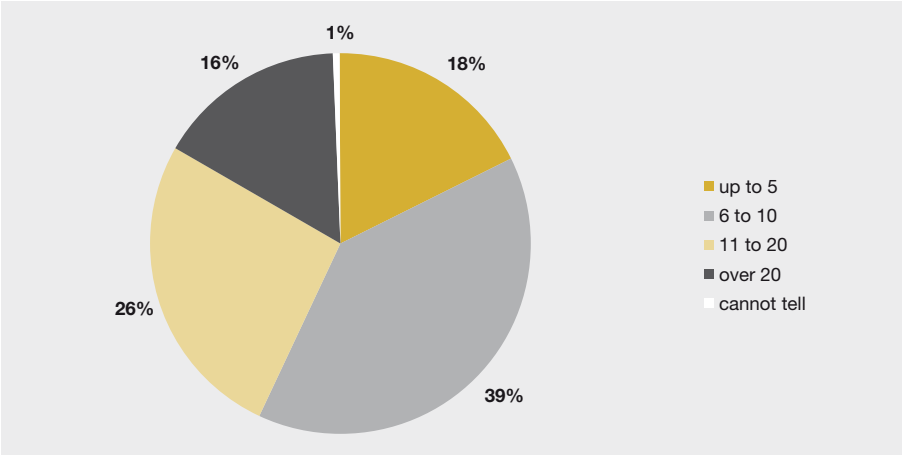

Figure 2. How many days did your holiday trip last?

The survey also aimed to establish how people paid for their holidays. It appeared that the number of people who saved up or who paid from current income was almost equal. Paying for holidays through credit was rarely used.

It is interesting, though, that credit was more frequently used by groups with lower levels of income compared to higher income groups. Even though the press may have created an impression that employers often cover costs of holiday trips, the proportion of the trips actually paid for by employers was fairly low. Also, people with lower educational levels travelled relatively more frequently at the expense of their employers.

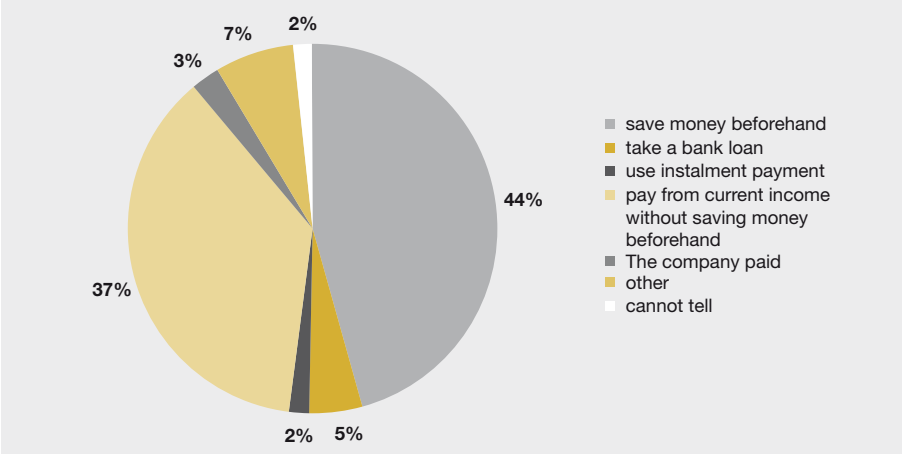

Figure 3. How did you pay for the trip? Did you…

WHO IS AFFECTING ESTONIA'S BUSINESS CLIMATE?

Piret Anton

This article aims to introduce a new field in statistics related to direct investment, which has gained more and more popularity in the world in recent years. In order to understand the scope of globalisation and the impact of one economy on another and to support foreign trade relations, economists have started to pay more attention to the economic activities of foreign-owned companies.

International groups play an important role in economic globalisation. To understand the scope of globalisation, it is necessary to analyse direct investment statistics as well as the impact of foreign groups on single countries. The latter depends on the activities of international groups in a particular country that affect the turnover, the number of the employed and labour costs. It also influences the value added, which may (but need not) be financed by direct investors, the value of the output, expenditure on innovations etc.

The impact of a particular country can be measured by placing all the above indicators under the residency of the so-called controlling entity; that is the country holding the ultimate control over the group in question. The type of statistics that measures the impact of international groups on a single country is called **Foreign AffiliaTes Statistics** (FATS). FATS is divided into two groups. The first is inward FATS, comprising companies registered in Estonia but controlled from abroad. The second is outward FATS, consisting of foreign subsidiaries controlled from Estonia. Inward FATS has been compiled in Estonia since 2003 within the framework of a project coordinated by the European Commission (Eurostat) and Statistics Estonia. Information about outward FATS is not gathered yet.

On June 20, 2007, the European Parliament and Council Regulation (EC) No 716/2007 entered into force. According to this Regulation, Estonia is obliged to submit outward FATS to Eurostat as of 2009, indicating the data of 2007. The compulsory indicators to be submitted include the turnover of companies controlled from Estonia, the number of the employed and the number of entities controlled. According to agreement, data is collected also about non-EU companies. Information about companies registered in the European Union is drawn from the "mirror image" of the inward FATS submitted by EU Member States and summed up by Eurostat. This image enables to distinguish the aggregate indicators of the companies controlled from Estonia. The integral picture is obtained by summing the two different sources.

Foreign direct investment reflects cash flows and their balance between companies belonging to one group and located in different countries. The origin of capital is defined by the direct investor or the foreign company belonging to the same group[1]. Foreign direct investment is characterised by 10–100 per cent direct or indirect holding in the equity capital. The

[1] Parent company together with its subsidiaries and associated companies.

direct investor need not have full control over the investment object – some other investors might have that control, even if the company in question is a subsidiary of a foreign enterprise. The geographical distribution of investment is determined by either the direct investor holding direct control or the creditor or debtor belonging to the same group. If there are no direct cash flows regarding the company holding full control, the impact of the respective country is not recorded in direct investment statistics. As foreign direct investment statistics reflect the movement of capital between the companies of a group and the related incomes, then co-financiers are reflected under other investment in the balance of payments statistics. Therefore, it is not possible to establish a direct connection to the creation of value added solely through the analysis of direct investment.

The status of a company having full control over the investment object is determined either by its holding in equity capital (50% or more of the voting shares or equity) or other influence on the company's financial and business operations. Control means, above all, dominant influence on a company's activities, whereas no other institution exercises dominant influence over the financial and business operations of the controlling entity. It is not easy to determine the controlling entity, as there are different kinds of dominant influence, such as indirect control[2], multiple minority ownership[3] and joint ventures with two foreign owners[4]. There is no geographical distribution in the case of the latter form; such companies are recorded in a separate category. Regarding multiple minority stake, the indicators are shown for the investor with the largest holding.

The present article analyses the activities of companies registered in Estonia and having at least 20 employees, as these companies are the largest also in terms of turnover. Based on the 2003 data of a survey conducted by Statistics Estonia,[5] these companies contribute 72% to the total value added. The survey did not include companies engaged in agriculture, forestry, fishing and financial intermediation.

At the end of 2004, there were 3,537 companies with at least 20 employees registered in Estonia and primarily owned by domestic entities (81%). Five per cent of the owners had included also foreign investors, without losing their power of decision. 19% of the companies were foreign-owned and 26% of them were exercising indirect control (see Table 1).

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[2] Indirect control – the parent company has no direct holding. It exercises dominant influence, for instance, through a subsidiary with a more than 50% holding in the equity capital of the investment object.

[3] Multiple minority ownership – a company has, for instance, three investors from different countries, whereas none of them has a larger holding than 50%. In that case, the country of the controlling entity is determined by the largest holding.

[4] Joint ventures with two foreign owners – a company has two investors with equal holdings. The indicators of such companies are recorded separately under the code of an agreed country.

[5] Source: *Financial Statistics of Enterprises 2004*, Statistics Estonia.

Table 1. Number of enterprises (20 or more employees) registered in Estonia by the country of origin of the controlling entity (as at 31/12/2004)

	All companies*	Companies with foreign ownership	
Country		Number	Share (%)
Finland	220	171	6.2
Sweden	124	93	3.5
United States	48	30	1.4
Germany	45	42	1.3
United Kingdom	34	23	1.0
Netherlands	31	26	0.9
Denmark	29	27	0.8
Norway	27	12	0.8
British Virgin Islands	14	7	0.4
Austria	12	6	0.3
France	12	11	0.3
Switzerland	10	8	0.3
Rest of the world	78	49	2.2
Controlled by non-residents (total)	684	505	19.3
incl. EU (except Estonia)	547	421	15.5
incl. euro area	331	265	9.4
Controlled by residents (total)	2,853	140	80.7
Total	**3,537**	**645**	**100**

* Excluding agricultural, hunting, forestry and fishing companies and financial intermediaries.
Sources: Statistics Estonia and Eesti Pank

By fields of activity, residents' control is most dominant in the construction sector (95%) and the least present in the industrial sector (75%). EU Member States are controlling an average of 16% of the enterprises. Finland and Sweden prevail in terms of countries: they control half of the foreign-owned companies. The control of foreign countries is the largest in the industrial and trade sector and the smallest in the sectors of health care, education and other community, social and personal services (see Figure 1).

The analysis points directly to the higher efficiency of Estonian companies under foreign ownership (19%). These companies create 40% of the value added, which in 2004 totalled as much as 285,000 kroons per employee. The respective figure for domestically owned companies is 100,000 kroons less, that is 185,000 kroons. Foreign-owned companies also accounted for 40% of the net sales. Investment in fixed assets enables to expand business operations, enhance efficiency and increase turnover. Compared to domestically owned companies, the fixed investment of foreign-owned companies is considerably higher. All in all, this enables to reduce the number of employees needed in the production process and pay nearly 25% higher wages. In 2004, the average labour cost per employee was 112,000 kroons in Estonian capital based companies and 139,000 kroons in enterprises based on foreign capital (see Figure 2).

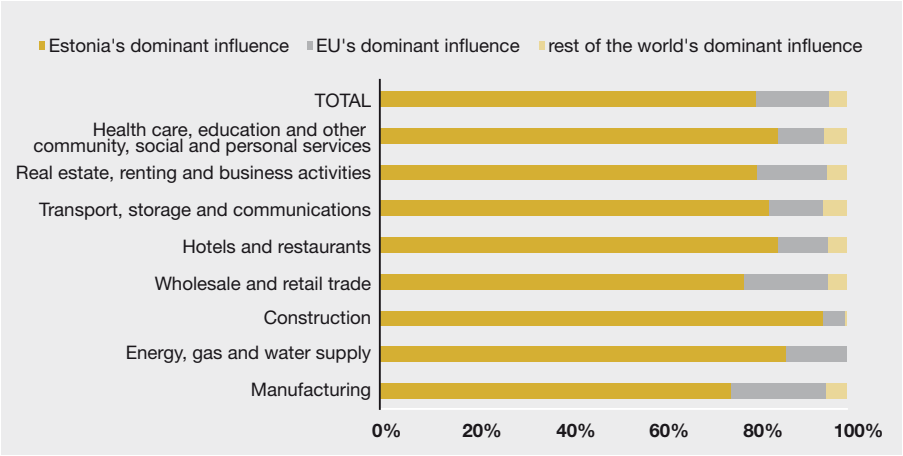

Figure 1. Dominant influence in companies registered in Estonia (20 and more employees) by residence and fields of activity (as at 31/12/2004)

The analysis of foreign capital[6] shows that companies controlled by the rest of the world include much more foreign capital compared to companies owned by Estonian residents. Two thirds of foreign external funds and foreign equity capital obtained by the companies ana-

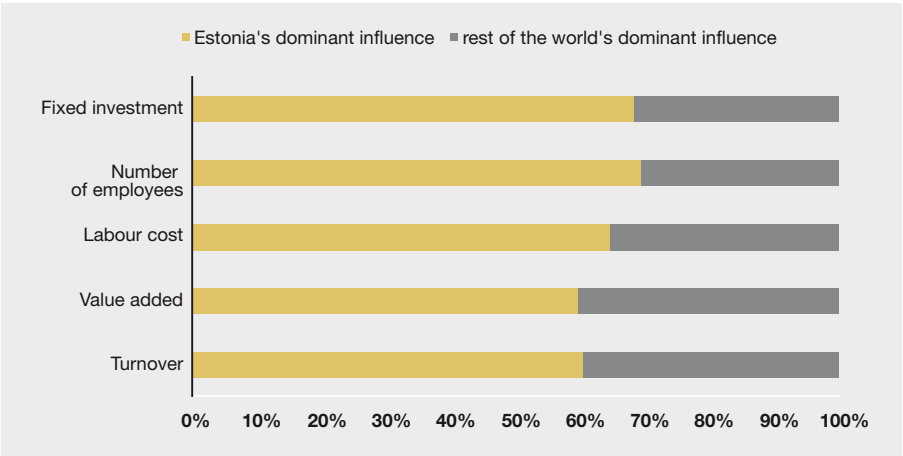

Figure 2. Distribution of key economic indicators for 2004 by dominant influence in companies

[6] Foreign capital analysis involves contractual obligations, such as short- and long-term loans, capital lease and debt securities, and equity capital. The analysis does not include trade credit, other liabilities or financial derivatives.

lysed are recorded in their balance sheets; the rest is considered liabilities to be repaid by companies controlled from Estonia. The analysis of direct investment data comprises only intra-group external liabilities and assets, excluding other credit sources, whereas the analysis of the total external funds shows that 29% of obtained loan instruments and equity capital investment have been invested by foreign banks or other creditors not related to the group in question (see Figure 3). The percentage of equity security investment is relatively high (37%). The companies controlled by domestic investors have been divided into two: companies with either direct or indirect foreign shareholding and companies that are hundred per cent based on domestic capital. Compared to the former, the latter also accounts for a higher share in the balance of external funds, with debt securities comprising 43% of them. The volume of external liabilities of domestically and foreign-owned companies is rather small. Over half (54%) of the external funds raised have been invested in equity capital.

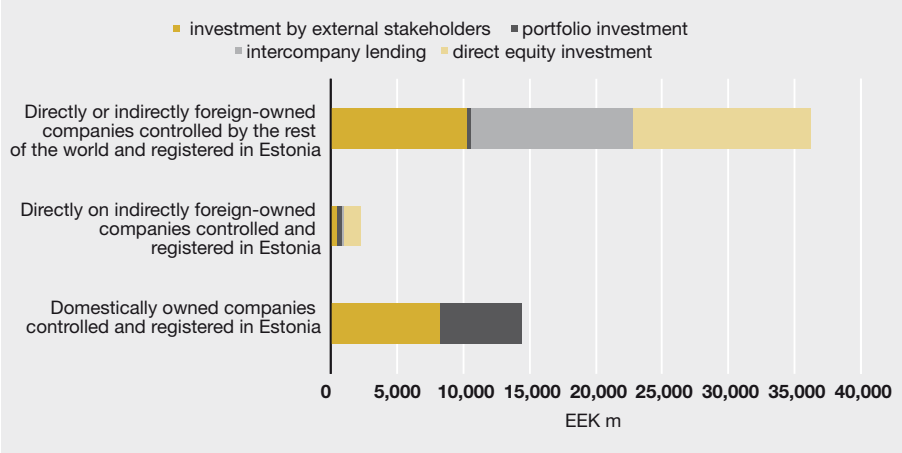

Figure 3. Types of foreign capital included by companies registered in Estonia (20 and more employees) by dominant influence (as at 31/12/2004)

To conclude, it can be said that based on available data, the Estonian economy is still largely domestically owned. However, foreign-owned companies appear to be more effective. They invest more in innovation and have easier access to foreign capital. 60% of the fully foreign-owned companies are under the dominant influence of Finland, Sweden, Denmark, Norway and Iceland. As the Estonian financial sector is also predominantly controlled by the Swedish and Finnish banking sectors, we can conclude that the Nordic business culture and economic developments affect Estonia's economy a whole lot more than implied by the limited database used for the present analysis.

CENTRALISED SECURITIES DATABASE OF THE EUROPEAN SYSTEM OF CENTRAL BANKS

Tiina Nõmme

INTRODUCTION

In today's world where the financial situation can change very fast, the development of securities market is extremely important from the aspect of monetary policy, financial stability and market operations. As a result of the changes in the area of financial instruments in the last decades, securities have gained an increasingly important role in the economy and have thus merited closer attention. Investing spare money in securities has been a popular investment product in the world. For borrowers, securities have become, in addition to the financing by banks, an alternative for raising funds. As portfolio investment is of a very volatile nature, the movements in securities markets can bring about serious consequences for economies. Therefore, the statistics of portfolio investment, too, has to reflect these movements adequately in order to get an overview of the situation in the securities markets.

PORTFOLIO INVESTMENT STATISTICS

A global survey on the portfolio investment assets conducted by the IMF in recent years[1] has disclosed that there are great asymmetries between countries. This means that the claims of one country on another do not correspond to the liabilities of the latter country to the former. This is due to the use of different methodologies, different accounting principles and the availability of data, since access to information about securities trading is very limited in some countries.

In order to guarantee compliance to the internationally introduced requirements and ensure a common approach in reflecting the portfolio investment of euro area residents by economic sectors, the European Central Bank has decided to establish a Centralised Securities Database (CSDB) for the European System of Central Banks (ESCB). This database would enable to reduce the asymmetries of portfolio investment between the euro area countries and compile a single euro area balance of payments, international investment position and financial accounts.

Eesti Pank has compiled the statistics on portfolio investment liabilities of the balance of payments primarily on the basis of the electronic central register of securities managed by the Estonian Central Register of Securities. Thanks to this register, the data on portfolio investment liabilities in the Estonian balance of payments have been covered quite well. Only the data on customer accounts need to be improved to identify the residency of the ultimate owner of securities.

[1] Coordinated Portfolio Investment Survey.

Since many countries are lacking such an electronic central register of securities, the development of a single securities database is very important for the ESCB.

CSDB PROJECT

In 2001, the European Central Bank launched the CSDB project for the purpose of establishing a securities database. It involves the national central banks of the Member States, and starting from 2004 also Eesti Pank. The aim of the project is to create a database for the securities traded by the resident economic entities of the members of the ESCB, including the data on issuers and owners. In the light of the increasing demands on statistics, the existence of a single database would enable to decrease the work load of the balance of payments statistics providers. It would also help to save on countries' expenditure.

The CSDB project consists of three stages. In the first stage, the European Central Bank introduced the database as a functioning system and began to submit monthly statements from the database to the national central banks. By now, preparations for the second stage of the project have started. The implementation of this stage in 2008–2009 has to ensure a network connection between the database and national central banks for the purpose of automated data exchange. Although there were some quality checks in 2007, central banks can contribute to the improvement of quality to a greater extent only after the network connection with the CSDB system has been established. The project ends with the third stage, the aim of which is to include the data on the owners of securities. This is possible only after 2009.

CSDB SYSTEM

The data on securities are submitted to the CSDB by various sources: the internal sources of the European Central Bank, the national central banks of the Member States, the Bank for International Settlements (BIS), the Association of National Numbering Agencies (ANNA) and several commercial data providers who possess information on securities. Data has been loaded to the CSDB since 2005. Currently, the database includes information about 2.4 million debt securities and 1.3 million equity securities.

The CSDB system compounds the data received on every security from various sources. In addition, logical checks are performed, improvements based on intra-system applications are made (e.g. the calculation of the interest on debt securities is based on debt security's attributes and conditions defined at the time of the issue) and compound records for every security are created. The classification of securities is based on the unique ISIN-code (International Securities Identification Number) given to each security or some other international identification number.

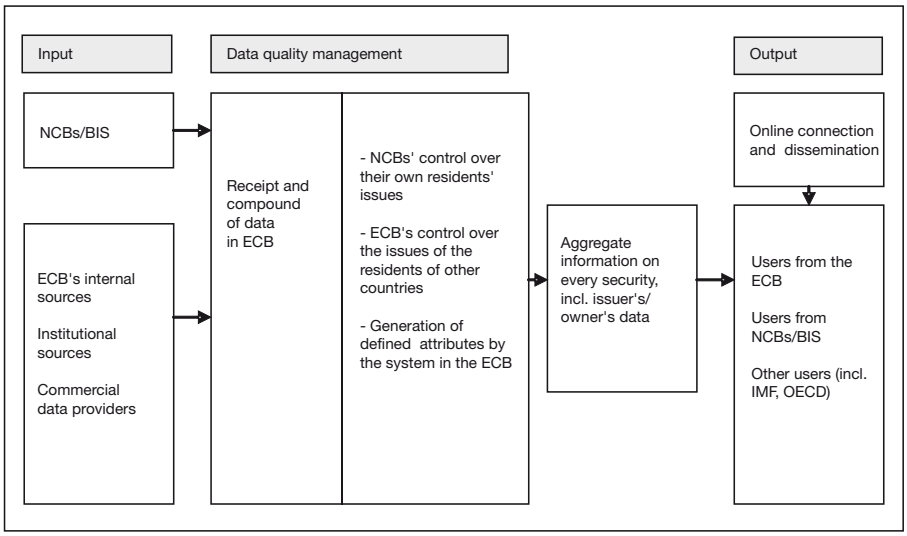

Figure 1. CSDB system

The principles of the CSDB system are described in Figure 1.

Currently, there is bilateral exchange of data between the European Central Bank and the national central banks. Hopefully, the technical developments of the project will enable to establish the network connection at the beginning of 2008. The network connection creates prerequisites for effective quality checks in central banks and for data exchange. Each Member State's central bank is responsible for the quality of the data on the securities issued by the residents of this state; the European Central Bank is responsible for the issues by the residents of other states. The price information on securities, which is difficult for the balance of payments compilers to obtain in the secondary market, is submitted to the CSDB from various commercial data providers.

SECURITY BY SECURITY REPORTING

According to the instructions of the European Central Bank, the presentation of portfolio investment in the euro area balance of payments and investment position must be based on the security by security reporting by the end of 2008. For the compilers of the balance of payments (for Eesti Pank in the case of Estonia) this means that after joining the euro area, portfolio investment data are no longer collected by countries but by securities. Information has to be collected also about the institutional sector of the non-resident parties of the assets and liabilities. In that case, the balance of payments statistics provider submits data on

every specific security and transaction. The price and income information, which is often difficult for the statistics providers to obtain, can be accessed by the balance of payments compiler from the CSDB. When the European Central Bank has ensured smooth operation of the database and the members of the ESCB have guaranteed the quality of the data, it is possible to proceed with the security by security reporting for the presentation of portfolio investment.

The goal of the CSDB is to improve the statistics on portfolio investment and on the income calculated on the basis of these investments, and to harmonise the compilation of the euro area balance of payments and international investment position as well as financial accounts. In addition, the CSDB can be a source for the statistics of the investment funds and the general government.

It needs to be underlined again that the use of the CSDB is possible only after very high quality of data has been achieved. This is the common challenge and goal of the European Central Bank and the national central banks in the following years.

CONCLUSION

The European Central Bank has been developing the Centralised Securities Database for several years now. This proves the ambitiousness and complexity of the project. Once the CSDB system is launched in full in the upcoming years and there is a high-quality database that meets the requirements, the European Central Bank and national central banks will have an important and trustworthy source, which enables to further improve the quality of the statistics on portfolio investment in the balance of payments and international investment position.

RELATIONS BETWEEN THE BALANCE OF PAYMENTS, INVESTMENT POSITION AND EXTERNAL DEBT

Andres Lauba

Estonia's economic growth is often associated with the inflow of loan money from foreign countries; that is, with the activities of local banks' parent banks. Figuratively speaking, the funds received from abroad in the form of debt liabilities become the debt claims of local banks on Estonian households. In other words, the use of loan money for house purchase manifests in the gross domestic product (GDP) in investments and in the form of imputed rental value in private consumption expenditure.

Figure 1 shows that compared to year 2000, the ratio of gross external debt to GDP has increased from 53% to 96%. The gross external debt of credit institutions alone had grown by 83 billion kroons by 2006 compared to 2000, whereas the GDP in current prices grew by 112 billion kroons.

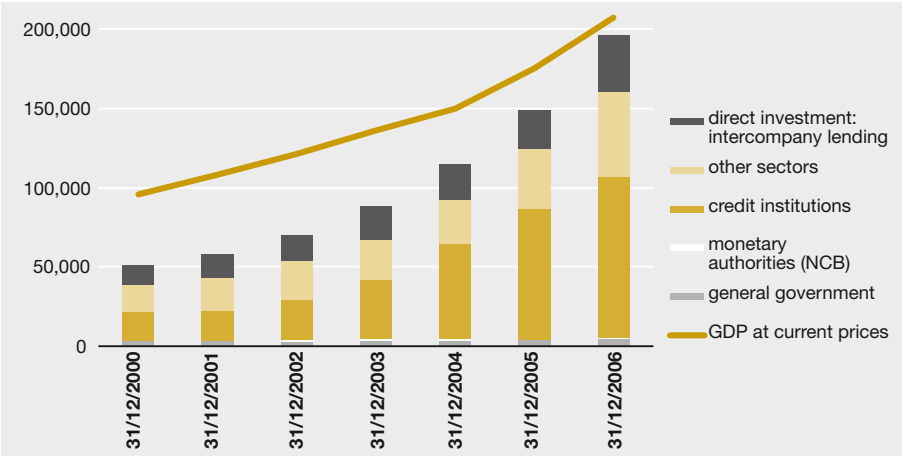

Figure 1. Gross external debt and GDP (EEK m)

The inflow of cheap loan money has enabled banks to easily grant credit to customers and the demand for housing has activated the local real estate and construction market. In the light of all this, a question arises as to which source can give a quick overview of the movement of foreign capital to Estonia and what kind of relations are provided for that purpose by the financial account of the balance of payments, investment position and external debt.

While the balance of payments reflects economic transactions with the rest of the world in a certain period, the investment position indicates financial assets and liabilities at a certain date. In the balance of payments, the sources of external financing are shown structurally not only in the capital and reserve assets accounts but also in the financial account. The latter is divided into four categories: direct investment, portfolio investment, financial derivatives and other investment. These four categories together with reserve assets form the invest-

ment position at a certain date. In addition, the debt instruments reflected in the investment position are the basis for compiling external debt statistics. Figure 2 presents the relations between the investment position and external debt.

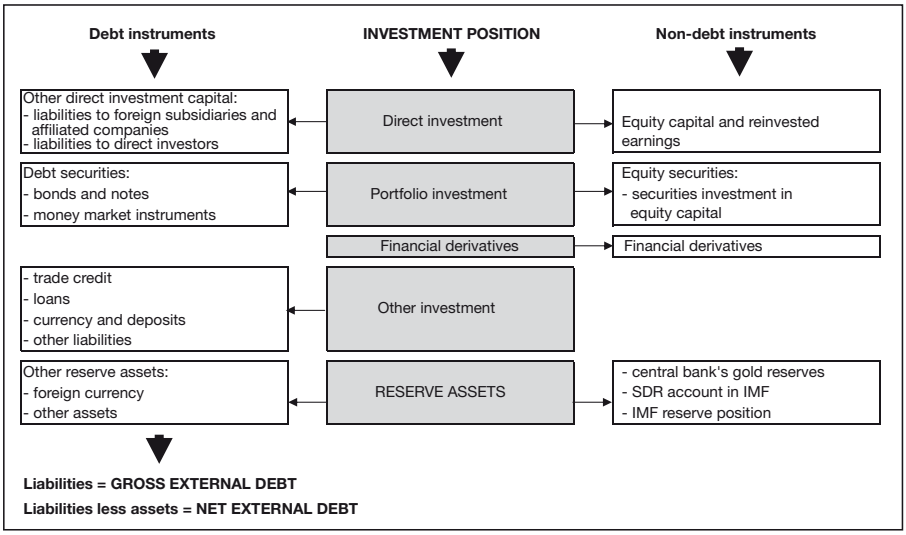

Figure 2. Relationships between the investment position and external debt

The figure reveals that not all foreign investment sources are a part of the external debt – provided that they are not subject to repayment. These instruments include:

- shares;
- financial derivatives;
- central bank's gold reserves, reserve position and SDR account in the IMF.

External debt liabilities are totalled to gross external debt. After subtracting assets from debt liabilities, we see how much of the external debt capital is held by Estonian residents. This includes the debt liabilities of the general government, the central bank, credit institutions and other sectors, and in the case of direct investment also intra-group lending. Taking a closer look at the items of the investment position, we see, inter alia, that other investment includes short-term and long-term lending between residents and non-residents. However, loans are not reflected in this item only; for example, the assets and liabilities related to lending between direct investors and companies are reflected in the direct investment account.

The share of debt assets in total external assets decreased from 96% in 2000 to 78% in 2006 due to the increased direct investment made by other sectors abroad and portfolio investment in equity securities. The share of debt liabilities in total external liabilities began

to change in 2004. By the end of 2006, it had increased from 50% to 59%, mainly due to the growth in the loan liabilities of credit institutions. Because of the bigger share in loan liabilities, the net external debt of credit institutions together with intra-group debts was in 2006 altogether 75 billion kroons, whereas the net external debt of all sectors amounted to 55 billion kroons.

A large share of credit institutions' debt liabilities is comprised of long-term loans as well as currency and short-term deposits (see Figure 3). Compared to 2000, these amounts had increased by 2006 by 27 and 41 billion kroons respectively. In 2000, liabilities to parent banks in the form of other investment together with intra-group debts formed 5%, whereas at the end of 2006 they accounted for as much as 34% of the gross external debt. In the case of subsidiaries, the inflow of money has not occurred in the form of loans but deposits. This raises the question of how clearly loans and deposits can really be distinguished.

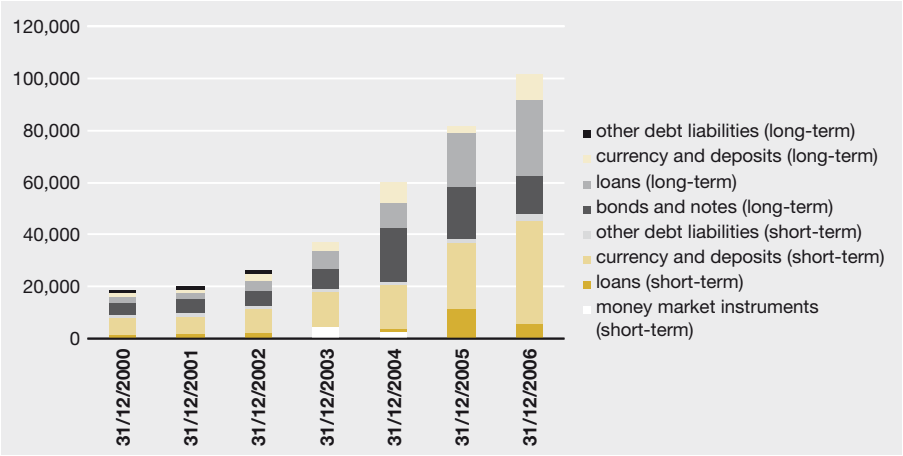

Figure 3. Debt liabilities of credit institutions (EEK m)

But what happened at the same time to debt claims? Compared to 2000, credit institutions had increased their debt claims to non-residents by 22 billion kroons by 2006. As Figure 4 demonstrates, claims in the form of deposits decreased by 10 billion kroons, compared to 2005. The underlying cause was the reorganisation of intra-group financing schemes that reduced the financing of subsidiaries through the Estonian banking sector. Including the rest of the loans, those granted by a bank to other intra-group financial institutions, the resources that were granted to non-resident subsidiaries and later redirected reached 20 billion kroons. Although this weakened the balance sheet link between those subsidiaries and the local banking sector, the continuous growth in debt liabilities indicates a stronger relation between the local banks and parent banks.

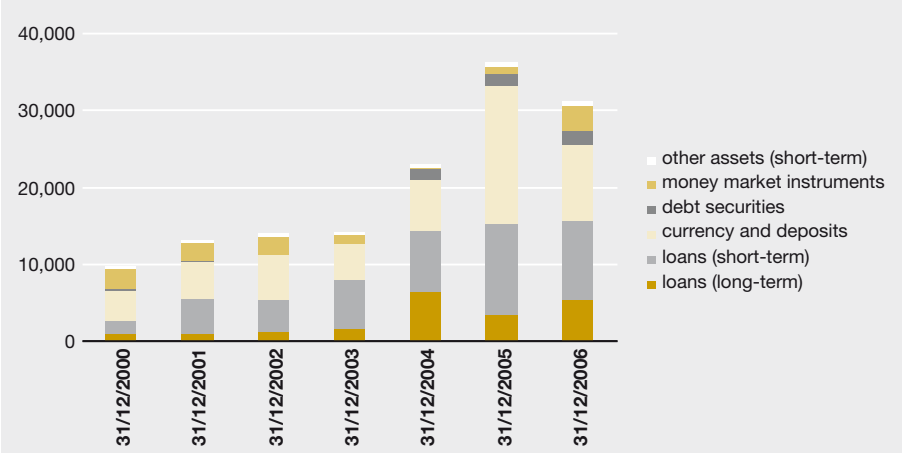

Figure 4. Debt assets of credit institutions (EEK m)

Altogether, the net external debt (i.e. debt liabilities less debt claims) of credit institutions increased by 24 billion kroons in 2006 (see Figure 5). This means that the transfer of funds from Estonian company's balance sheet to the balance sheet of a company located in another country did not decrease Estonia's external debt at all.

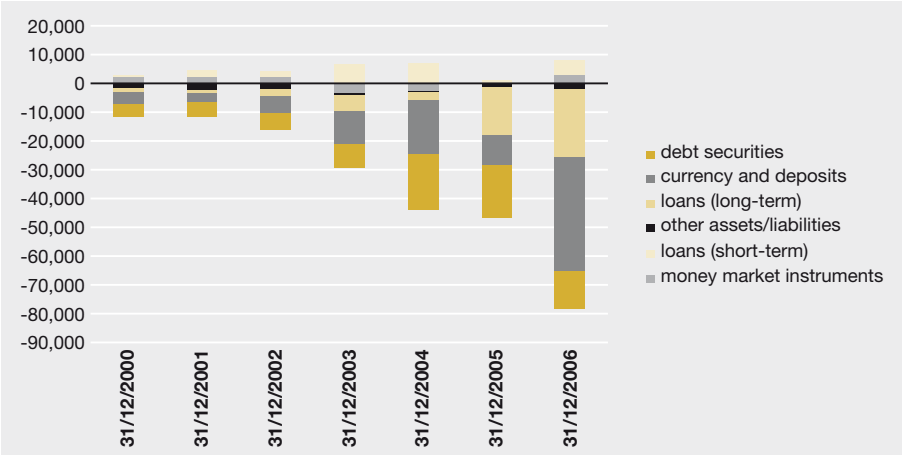

Figure 5. Net external debt of credit institutions (EEK m)

CONCLUSION

During the credit boom it was often argued whether the excessive dependence of economic growth on credit growth should be diminished by limiting foreign capital inflow through raising the reserve requirement ratio of commercial banks. Eesti Pank has raised the reserve requirement ratio from 10% in 1996 to 13% in 2003 and to 15% in 2007. Yet, this has not decreased the amount of money lent by commercial banks, since the foreign ownership of the majority of credit institutions provides easy access to parent banks' funds. Neither has foreign asset based lending been limited by the fact that in Estonia the reserve requirement base consists of, in addition to deposits and issued bonds, debt liabilities to foreign credit institutions (net debt since 1997; gross debt since 2003). After joining the euro area, the liabilities between the euro area credit institutions are no longer included in the reserve requirement base. Thus, the purpose of the higher reserve requirement ratio is rather to hedge liquidity risks, not to limit the credit supply.

ASSESSING THE QUALITY OF THE BALANCE OF PAYMENTS

Jaanus Kroon

Using statistical data often raises the question of the quality of the analysed data and whether they are credible enough to draw economic or daily policy conclusions from them. Accounting precision is generally not the primary goal of statistics compilation. The quality of statistics as public goods is determined by inevitable compromises between the quality of initial data and the capacities of their providers, the general statistics load, the collection of data, the statistics compilation methods, the accuracy of the data and their publication dates.

Assessing the quality of the balance of payments and other macroeconomic statistics became internationally topical only in 2000. It then became necessary to assess the credibility of the data of countries that had joined the International Monetary Fund's (IMF) Special Data Dissemination Standard (SDDS) also from the perspective of data users[1]. The institutions of the European Union, especially Eurostat and the European Central Bank, are also paying increasing attention to the quality of statistics. These institutions harmonise and publish, at the EU or monetary union level, the indicators that have been calculated with very diverse methods by different countries. At the beginning of 2007, the European Commission conducted a pilot project concerning the quality assessment of the balance of payments statistics that encompassed the EU Member States[2]. From 2008, this project will be implemented every year. The Commission will compile a consolidated report based on the quality reports of the Member States and submit it to the European Parliament.

QUALITY DIMENSIONS OF STATISTICS

The IMF has elaborated a framework for the assessment of the quality of statistical data. This framework requires a strong legal basis, plenty resources and the recognition of the value of quality in an organisation to ensure sufficient quality for statistics.[3] The framework itself comprises the following principles.

The principle of **methodological soundness** – statistics must fully comply with the methodological framework (IMF Balance of Payments Manual 5th Edition) and will be compiled pursuant to internationally accepted standards, guidelines and best practices.

The principle of **accuracy and reliability** – statistical statements must portray the economic reality accurately enough. This requires the right choice of methods and consistency among

[1] In 1995, IMF started to implement the Special Data Dissemination Standard (SDDS) in order to improve the availability of operative and comparable data concerning the countries active in international money and financial markets. This was primarily motivated by the crisis of Mexico in 1994–1995, which referred to an ineffective monitoring of macroeconomic data and the low quality of necessary statistics. Estonia joined the SDDS in 1998.

[2] The project is based on Regulation (EC) No 184/2005 of the European Parliament and of the Council as of January 12, 2005 on the balance of payments statistics.

[3] http://www.imf.org/external/np/rosc/index.htm

source data, consolidated data and statements. In the process of assessment monitor the data sources, the statistical system and their relevance and correspondence to needs are monitored. In addition, the scope and frequency of data adjustments is analysed.

Integrity – the objectivity and security of the balance of payments statistics is ensured by the statistical and institutional environment where it is compiled. This requires professional statisticians, adherence to ethical standards and transparency of operations, but it also means that other institutions may not access the data before publication by compilers.

Serviceability of data – the published balance of payments statistics include all fields or details (items) relevant for the economy under analysis. Statistical data are published with sufficient periodicity and timeliness and are adjusted pursuant to valid revision policies. From the perspective of serviceability, it is also essential that the balance of payments statistics remains consistent with the datasets of other related areas. In view of that, the serviceability criteria are divided into three: relevance, timeliness and consistency.

Accessibility – the published data and their metadata must be easily accessible at all times. The metadata must be up-to-date and the compiler's contact information available so that users could receive additional information, if necessary.

The above-described qualitative quality framework is complete but unfortunately assessments given to statistics based on that framework depend on several subjective factors. Thus, cross-country results cannot always be measured similarly. The temporal comparison of assessments is also complicated.

The following section introduces a few simpler quantitative indicators used by Eurostat, which help to regularly analyse the quality of countries' balance of payments. These indicators provide additional information for analysing external sector data and for forecasting.

TECHNIQUES FOR THE QUANTITATIVE ASSESSMENT OF QUALITY

Accuracy and reliability

Accuracy primarily means how well the statistics portray the reality. By international standards, the sufficient accuracy level of statistical data is 85–90%, which in the context of the balance of payments statistics requires the inclusion of at least 85–90% of the balance of payments transactions in a given period. As a rule, there is no overview of all economic entities performing external transactions, which is why it is difficult to determine the level of accuracy of balance of payments statistics. However, this logic is valid for the assessment of the level of reliability of the data.

Statistical **reliability** is often assessed based on the results of data adjustments. The initially published results are adjusted so as to reflect reality as precisely as possible. In other words, knowing the potential (average) amount of adjustments in the long term and manipulating with initial data, it is possible to draw conclusions about the probable adjustments to the indicator during following periods. Being aware of the items that have been adjusted more extensively (and the range of these adjustments) allows to assess the reliability of the initial or already adjusted indicator and its future changes.

The easiest way to assess the adjustments is using the mean absolute percentage error (MAPE), which is often used to assess the quality of econometric forecast models.
When MAPE has been adjusted to the analysis of the initial and final adjustment results, it may be presented as a formula:

$$MAPE = \frac{1}{N}\sum_{t=1}^{N}\left|\frac{X_t(l_j) - X_t(l_i)}{X_t(l_i)}\right| * 100, \text{ where}$$

N – number of periods in the time series;
$X_t(l_j)$ – most recent value;
$X_t(l_i)$ – initial value.

This formula may be used for all the (debit and credit) items with absolute values in the current account and investment position (external debt statement). The formula shows how much the initial indicator has changed on average.

BACKGROUND INFORMATION BALANCE OF PAYMENTS REVISION POLICY

Upon collection of additional information and changes in methodology, the data of previous periods is adjusted as follows:

Regular adjustment – the data released according to the publication calendar is preliminary and revised upon the release of preliminary statistics of the next periods.

- The revised monthly data is published along with the publication of quarterly statistical data.
- As a rule, adjusted annual data (incl. quarters) is published upon the release of the statistics of the first quarter of the following year and is considered final.

Extraordinary adjustment – in exceptional cases, when significant errors have occurred or changes in the methodology render results incomparably, data can be adjusted retrospectively for more than a year, of which the public will be notified by a respective reference.

When it comes to assessing reliability, it is important to follow the data revision policy (see background information) and the recommended level of reliability. As mentioned above, according to various sources and experts this level in economic statistics is usually 85–90%. Thus, greater attention must be paid to cases where adjustments exceed 10–15%.

Figure 1 demonstrates that since 1995 items of income and current transfers have experienced relatively more adjustments, but the critical level has seldom been substantially exceeded. In such cases, but also in the services debit account for 1999–2002, data have been revised primarily because preliminary indicators have been revised later on. The data quality of the services account largely depends on the availability of travellers' border-crossing survey data necessary for the compilation of the travel services account. The income account is influenced by the retrospective revision of reinvested earnings, which in turn are influenced by the auditing of companies' annual reports and their later revisions. The accuracy of transfers depends on how well the initial assessments of foreign aid received and distributed comply with the later actual data. However, considering the adjustment of the consolidated current account turnover that encompassed all the mentioned items, there is no reason to worry. In 1995–1998 the level of adjustment of the current account turnover reached an average of 8%, whereas in 1999–2002 and 2003–2006 the extent of adjustments remained below 3%.

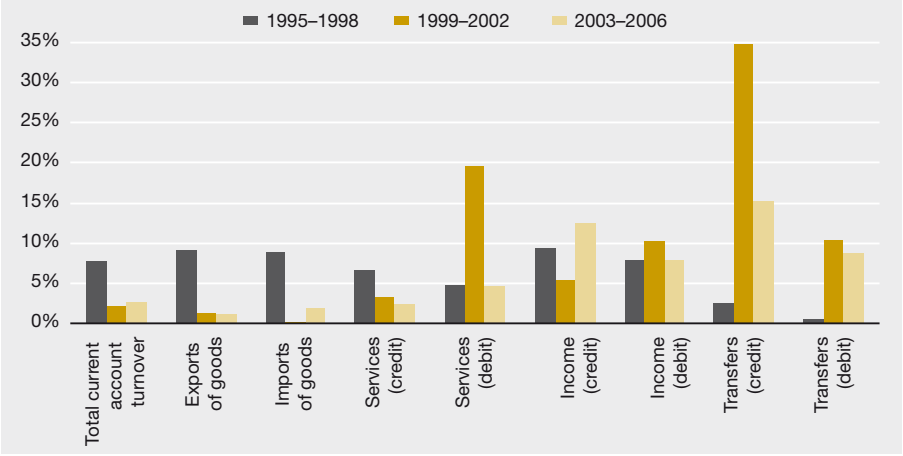

Figure 1. Scope of adjustments in current account items in 1995–2006 (% of initial value)

MAPE is not suitable for the assessment of net items, comprising the majority of financial account items (also the current account's "total" items), because the values may have opposite signs. If one prefers to use a percentage indicator similar to MAPE that would nevertheless take the drawbacks of a mean absolute percentage error into account, dispersion and standard deviation should be applied.

One way is to compare the average deviation of adjustments with an average standard deviation. The acquired root mean square relative error (RMSRE) is calculated according to this formula:

$$RMSRE = \sqrt{\frac{\sum_{t=1}^{N}\left[X_t(l_j) - X_t(l_i)\right]^2}{\sum_{t=1}^{N}\left[\Theta - X_t(l_j)\right]^2}} * 100, \text{ where}$$

Θ – reference value of X.

When using a similar indicator in assessing the accuracy of forecasts, the long-term average of the indicator under estimation is usually chosen as the reference value Θ. In the context of assessing adjustments to the balance of payments statistics, the deviation between the reference value Θ and the later value of the item $X_t(l_j)$ should be similar to the comparison basis stated in the denominator of the MAPE indicator. Analyses have proven that for financial account items the distance of an indicator's later value from the item's mean value in the monitored period is most suitable for this (Θ is the arithmetic mean).

The RMSRE calculated as described above shows the average difference between preliminary published financial account data and revised indicators in ratio to the mean value of a given time series. Although in the case of net items it is not possible to take into account the critical limit of reliability, the indicator nevertheless reflects changes in the quality of preliminary data. In the case of a small country, such as Estonia, there is always the risk that the omission of a single large-scale transaction from statistics may change the later picture significantly.

The credibility of the financial account of the Estonian balance of payments has gradually improved (see Figure 2). Adjustments in 1995–1998, 1999–2002 and 2003–2006 reached 33%, 23% and 20%, respectively. Adjustments were mostly made to direct and other investment items. The most accurate item has been the central bank's gold and foreign exchange reserves. Later adjustments to direct investment items are mostly affected by the above-mentioned indeterminacy of reinvested earnings and the later revision of transactions data (financial schemes). The most volatile components of other investment are trade credit assets and liabilities.

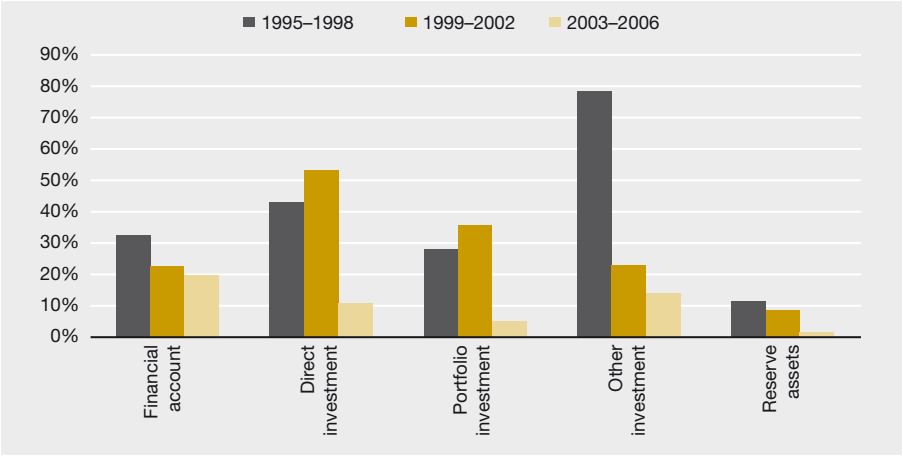

Figure 2. Scope of adjustments in financial account items in 1995–2006 (% of the average value of time series)

Besides the scope of adjustments, the reliability of data can also be assessed by the **reliability of trends** of the preliminary indicator (*Q*). This can be measured by instances per period when changes in an adjusted indicator and a preliminary indicator move in the same direction as the indicator of the previous period:

$$Q = \frac{n_{11} + n_{22}}{N} * 100 \text{ , where}$$

n_{11} – number of periods when the trend of the initial and the adjusted value in relation to the previous period's value is positive;
n_{12} – number of periods when the trend of the initial and the adjusted value in relation to the previous period's value is negative;
N – timeframe, i.e. the number of periods monitored.

The closer the indicator is to 100%, the more trend-reliable the respective balance of payments indicator is. The quality of data may be questioned when after adjustments the trend is reversed in more than a half of the cases, which clearly refers to the possibility of drawing erroneous conclusions based on the data. Nevertheless, data serve an informative purpose only for current account items, as there is generally no trend in the financial account net changes.

Table 1 shows that the reliability of trends of the current account items in the Estonian balance of payments has been good enough. As for the quarterly data of 2003–2006, the same trend has continued at least in case of 80% after the adjustments. Years ago (in 1995–1998) the quality of data was slightly weaker according to this criterion.

Table 1. Reliability of trends of current account items in 1995–2006 (%)

	1995–1998	1999–2002	2003–2006
Current account	100.0	100.0	93.3
Goods	93.3	80.0	93.3
Exports	46.7	100.0	93.3
Imports	73.3	100.0	86.7
Services	93.3	100.0	100.0
Credit	93.3	93.3	100.0
Debit	93.3	80.0	100.0
Income	93.3	93.3	86.7
Credit	86.7	100.0	86.7
Debit	100.0	66.7	86.7
Current transfers	73.3	93.3	80.0
Credit	93.3	60.0	80.0
Debit	100.0	86.7	86.7

Serviceability of data

The criteria of serviceability may be quantitatively assessed based on the timeliness and consistency of the data.

Timeliness is the adherence of the statistics compiler to publication calendars. This can be measured in the hours and days the data was delayed. Estonia has published its balance of payments data according to the publication calendar and without failures throughout the entire history of using the SDDS.

Consistency is best described by the item "errors and omissions". This shows the net volume of transactions not recorded in the balance of payments during the period under analysis. Given the relations between the balance of payments and the investment position, this indicator also characterises the investment position.

Based on errors and omissions, the balance of payments statistics is considered to be consistent if the value of an item is not large in the long run and the respective time series do not reveal extensive fluctuations.[4] According to international practices, the significance of errors is assessed by comparing the respective item with a half of the total current account turnover.

$$\varepsilon = \frac{EO}{\frac{1}{2}\left(|DB_{CA}| + CR_{CA}\right)} * 100 \text{ , where}$$

[4] The ideal value of errors and omissions is zero.

ε – proportion of error;
EO – errors and omissions;
DB_{CA} – current account debit turnover;
CR_{CA} – current account credit turnover.

Errors and omissions may be analysed using the abovementioned method across different period lengths.

The faster the item's total sum decreases by extending the period, the more consistent the balance of payments is, because the opposite values of items equal each other out. Frequently similar values, however, point to a systematic error in initial data or the compilation system. Table 2 gives an overview of the interpretation of the natural values of errors and omissions.

Table 2. Interpretation of the item "errors and omissions" in the balance of payments

Sign	Debit items	Credit items
"+"	Overestimated	Underestimated
"-"	Underestimated	Overestimated

The values of errors and omissions in Estonia's balance of payments have remained relatively stable at all times and have not exceeded the critical 10% limit. In light of the constantly growing current account turnover, the error's quarterly indicator ε has not exceeded 5% in the past few years. Across years, this indicator has remained within 0.1–1.0%, which may be considered an excellent result also in international comparison (see Figure 3 and Table 3). Furthermore, the size of errors compared to the balance of the current account (capital and financial

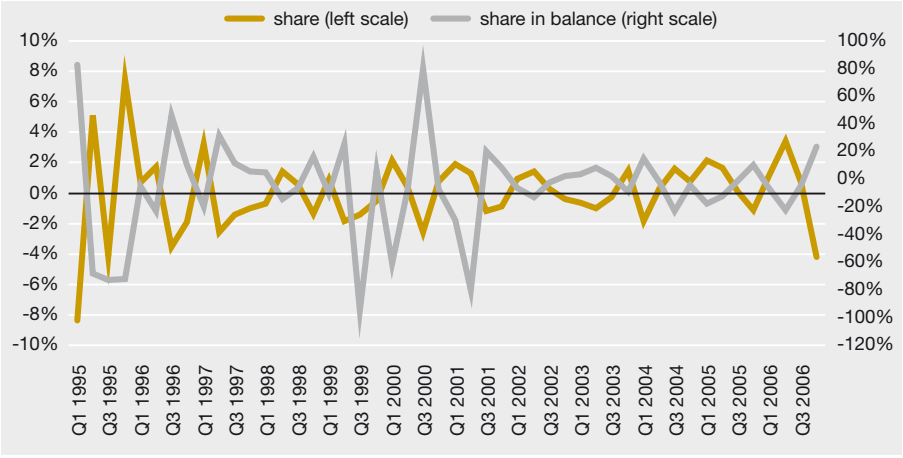

Figure 3. Changes in the share of the item "errors and omissions" in 1995–2006

Table 3. Share of the item "errors and omissions" in different countries in 2006 (%)

Country	Share	Country	Share	Country	Share
Italy	0.1	Romania	0.8	Germany	2.0
Belgium	0.1	Slovenia	0.8	United Kingdom	2.2
Netherlands	0.2	Latvia	0.9	Denmark	2.4
Estonia	0.2	Cyprus	1.1	Sweden	3.5
Finland	0.3	Austria	1.2	Japan	3.8
Poland	0.4	Lithuania	1.3	Hungary	4.3
Luxembourg	0.4	Slovakia	1.5	United States	5.7
Czech Republic	0.5	Bulgaria	1.6	France	6.3
Ireland	0.7	Turkey	1.7	Croatia	11.8
Spain	0.8	Portugal	1.8	Iceland	20.7

Source: Eurostat

accounts) does not give reason to presume that in the event of a potential accumulation of errors among current account (capital and financial account) transactions the direction of the external balance (surplus or deficit) would change. At the backdrop of the increased current account deficit the volume of errors has remained below 25% of the deficit since 2002.

By observing changes in unrecorded transactions through time, no long-term accumulation of errors on the debit or credit side can be noted. On the other hand, two periods can be clearly distinguished: in 1997–1998 the errors systematically accumulated to the minus side, whereas in 2004–2006 they accumulated to the plus side. However, the latter trend changed by the end of 2006 (see Figure 4). As the four-quarter moving value of "errors and omissions" has

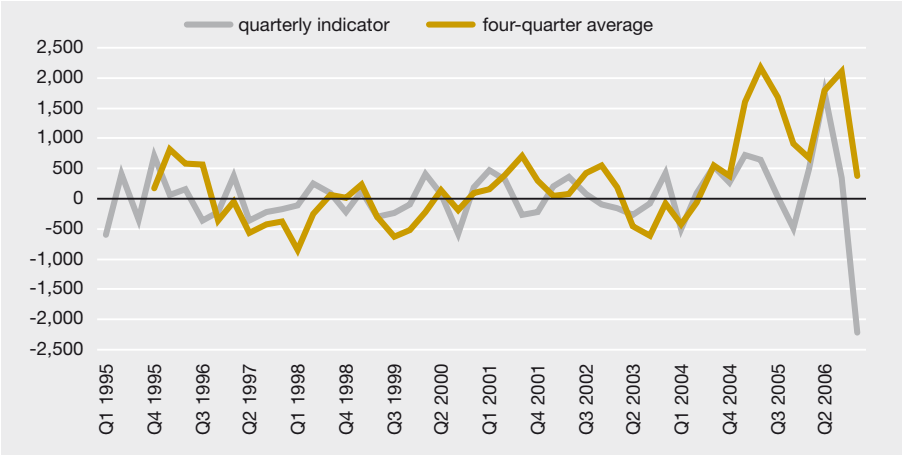

Figure 4. Changes in the item "errors and omissions" in 1995–2006 (EEK m)

generally remained in the same range with the quarterly indicator, no significant systematic deviations have been identified.

Based on the above, we can claim that the share of net items not reflected in the balance of payments statistics is statistically insignificant and according to this quality criterion the time series remain within the required level of reliability (85–90%).

CONCLUSION

Regular monitoring of the described quantitative quality indicator allows to observe changes in the more important quality criteria and detect less reliable components of statistical statements. A short analysis based on the time series of Estonia's balance of payments statistics showed that the quality of these data is sufficient and has improved with years. The article discussed quality indicators separately, but in practice it is should be borne in mind that these indicators are related to each other. Thus, it is necessary to strive for compliance between the desired values, as the improvement of one indicator often entails the deterioration of another indicator, and vice versa.

EASIER TECHNIQUES OF BALANCE OF PAYMENTS ANALYSIS

Jaanus Kroon

The trends reflected in Estonia's balance of payments statistics exert a significant impact on a small open economy like Estonia, which is exposed to changes in the external environment. Therefore, the techniques used for analysing the balance of payments, investment position and external debt have a prominent place in the instrumentarium of economists and economic policy makers.

Balance of payments statistics are widely used in different fields of policy formulation (see Table1). This should be taken into account also in the presentation and analysis of balance of payments statistics.

Table 1. Application of balance of payments statistics in policy-making

Purpose	Relation with balance of payments	Measures
Monetary policy	- Analysis of the external sector of monetary policy development - Monitoring economic and price developments - International transmission of economic shocks	Change of monetary policy to obtain price stability in the case of external shocks
Financial sector policy	- Identification of risks to financial stability (incl. current account sustainability, excessive risks related to the financial sector)	Amendment of the financial sector regulatory framework and/or improvement of supervision to ensure financial stability
Fiscal policy	- Impact of fiscal policy developments on external sector balance	Budget adjustment
Structural policy	- Changes in the international competitiveness of economic sectors and relative advantages	Change of structural policy and trade negotiations
International financial structure	- Identification of the general vulnerability of and risks to the financial and non-financial sectors in the case of international financial crises by means of trade and financial flows - Identification and spread of primary global disturbances in the external balance - Determination of the factors causing instabilities in the international monetary system and elaboration of necessary measures	Elaboration and improvement of supervision and transparency policies Development and implementation of the stability programmes of the IMF

The purpose of this article is to introduce a few easier and less-known analysis techniques that might prove useful for economists: namely, methods for determining the balance between the balance of payments accounts and the ratio analysis.

EQUILIBRIUM CONCEPTS OF THE BALANCE OF PAYMENTS

Balance of payments as a whole is always balanced in terms of statistics. True, errors and omissions are inevitable but this does not change the fact. In order to evaluate external balance and determine the surplus or deficit on the balance of payments, the accounts of the balance of payments are usually divided into two groups and then the resulting value of balance is compared. The following is an overview of the more interesting concepts. The majority of them are widely used in the world; some of them have been developed by the author of this article.

Standard presentation of the balance of payments or the net-worth balance

According to the **standard presentation or the net-worth balance** of the International Monetary Fund (IMF), every country that has joined the Special Data Dissemination Standard (SDDS) of the IMF has to publish its balance of payments on the basis of the following equation:

$$\underbrace{X - M + \Delta Y_F + \Delta TR}_{\Delta CA} = 0 = \underbrace{-(\Delta KA + \underbrace{\Delta FDI + \Delta PI + \Delta D + \Delta OI + \Delta IR}_{\Delta FA})}_{\Delta KFA}, \text{ where}$$

ΔCA – current account balance;
ΔKFA – capital and financial accounts balance;
X – exports of goods and services;
M – imports of goods and services;
ΔY_f – income account balance;
ΔTR – transfers account balance;
ΔKA – capital account balance;
ΔFA – financial account balance;
ΔFDI – direct investment balance;
ΔPI – portfolio investment balance;
ΔD – derivatives balance;
ΔOI – other investment balance;
ΔIR – change in gold and foreign exchange reserves.

The standard presentation expresses a restriction in financing, which foresees that the current account deficit may not exceed the capital inflow on the capital and financial accounts and vice versa.[1] The current account shows the extent to which a country's economy uses the income created there. In terms of savings, this means using foreign savings or investing domestic savings in a foreign country.

Analytical presentations of the balance of payments

Depending on the purpose of balance of payments analysis, one alternative to the standard presentation is the analytical mode of presentation, which draws from a different structuring of the accounts or their components.

The **concept of overall equilibrium** opposes all balance of payments transactions with changes in the central bank's gold and foreign exchange reserves:

[1] According to economists David Hume and Adam Smith, $X - M = 0 = -\Delta IR$.

$$\underbrace{\Delta CA + \Delta KA + \Delta FDI + \Delta PI + \Delta D + \Delta OI}_{\Delta OB} = 0 = -\Delta IR$$

ΔOB – overall equilibrium;
$\Delta FDI + \Delta PI + \Delta D + \Delta OI$ – financial account (excl. reserves).

The overall equilibrium explains the causes of changes in central bank reserves; the interpretation of these causes depends on the exchange rate mechanism in use. If a floating exchange rate is used, then the reserves do not change without central bank's intervention, i.e. $\Delta IR = 0 \longrightarrow \Delta OB = 0$. With the currency board arrangement, the balance of reserves results from the transactions of the overall equilibrium. Therefore, the concept of overall equilibrium is most suitable for describing Estonia's economy.[2] The overall equilibrium reflects the base money (M_0) of the balance of real cash flows from the aspect of supply and demand, indicating the theoretical direction of the exchange rate dynamics (*ex post)* if a floating interest rate arrangement were applied.

The **concept of basic equilibrium** provides for the separation of volatile and/or potentially "returning" short-term capital accounts from the rest of the accounts:

$$\underbrace{\Delta CA + \Delta KA + \Delta FDI + \Delta OI_L}_{\Delta BP} = 0 = -(\Delta PI + \Delta D + \Delta OI_S + \Delta IR),$$ where

ΔOI_L – other investment: long-term capital;
ΔOI_L – other investment: short-term capital;
ΔBP – basic equilibrium.

The basic equilibrium shows the general vulnerability of the external balance and the financing of a negative current account through long-term capital flows, and serves as an indicator of sustainability.

Developing the concept of basic equilibrium further, we can draw the debt instruments and reserves under the line in order to evaluate the sustainability of the external balance and thus monitor the extent of financing from net assets repayable.

$\Delta CA + \Delta KA + \Delta FDI_{ND} + \Delta PI_{ND} + \Delta D = 0 = -(\Delta FDI_D + \Delta PI_D + \Delta OI + \Delta IR)$, where

ΔFDI_{ND}; ΔPI_{ND} – non-debt instruments;
ΔFDI_D; ΔPI_D – debt instruments.

The **concept of monetary equilibrium** sets a monetary system's (central bank and credit institutions) net foreign assets that are liquid in international money and financial markets in compliance with the other components of the balance of payments:

[2] Eesti Pank publishes Estonia's balance of payments by the concept of overall equilibrium since 1994.

$$\underbrace{\Delta CA + \Delta KA + \Delta FDI + \Delta D_N + \Delta PI_N + \Delta OI_N}_{\Delta MB} = 0 = -(\Delta D_M + \Delta PI_M + \Delta OI_M + \Delta IR),$$ where

ΔFD_N, ΔPI_N, ΔOI_N – instruments of general government and other sectors;
ΔMB – monetary balance sheet;
$\Delta FD_{M,}$ $\Delta PI_{M,}$ ΔOI_M – financial sector (instruments of credit institutions).

The monetary equilibrium describes indirectly the development of monetary supply and interest rates within the floating interest rate system. Although these items are not that wide-spread, in 2000 the European Central Bank took the monetary equilibrium as the basis for elaborating the monetary presentation of the balance of payments of the European monetary system. This is used for the formulation of the euro area monetary policy, as the change in the net foreign assets of the monetary financial institutions (MFI)[3] is one of the key components of the Eurosystem's broad monetary aggregate (M3):

$$\underbrace{\Delta CA_{nonMFI} + \Delta KFA_{nonMFI}}_{\Delta BOP_{nonMFI}} - \underbrace{(\Delta CA_{MFI} + \Delta KA_{MFI} + \Delta FDI_{MFI})}_{\Delta BOP_{MFI}} = 0 = \underbrace{\Delta PI_{MFI} + \Delta D_{MFI} + \Delta OI_{MFI}}_{\Delta NFA},$$

where

ΔBOP_{nonMFI} – balance of payments of non-MFIs;
ΔBOP_{MFIs} – balance of payments on the basis of the current, capital and direct investment accounts of MFIs;
ΔNFA – change in the net foreign assets of MFIs.

The **concept of liquidity** was put to use in post-war Europe, when the foreign exchange reserves of the national central bank and the commercial banks performing settlements were drawn under the line. This enabled to show the use of economy's liquidity in external markets, where local currency was not convertible. The presentation of the liquidity concept on the basis of the modern balance of payments structure would look like this:

$$\underbrace{\Delta CA + \Delta KA + \Delta FDI + \Delta PI + \Delta D + \Delta OI_{NC}}_{\Delta L} = 0 = -(\Delta OI_C + \Delta IR),$$ where

ΔL – liquidity balance;
ΔOI_{NC} – other investment (excl. foreign currency and deposits of credit institutions);
ΔOI_C – foreign currency and deposits of credit institutions.

[3] ECB statistics uses the concept of credit institutions in the broader sense. Monetary financial institutions (MFI) comprise all institutions that are engaged in money creating and participate in the development of the money supply (M3). In general, this item includes credit institutions, money market funds and the financial institutions of the Eurosystem (national central banks).

By slightly changing the liquidity concept, it is possible to include also the foreign exchange reserves of the non-financial sector and general government in the total foreign exchange reserve.

A further improvement of the liquidity concept enables to use also the **concept of cash flows**, which gives an overview of the payment sources used in international economic transactions. In that case, the presentation of the balance of payments should separate the economic transaction (debit or credit) from the side of financing:

$$\underbrace{\Delta CA + \Delta KA + \Delta FDI + \Delta PI + \Delta D + \Delta L + \Delta OC}_{\Delta CFB} = 0 = -(\Delta TC + \Delta Dep + \Delta IR)\text{ , where}$$

ΔCFB – cash flow balance;
ΔL – loans;
ΔOC – other capital;
ΔTC – trade credit (accounts receivable or payable);
ΔDep – currency and deposits;
$\Delta OI = \Delta TC + \Delta Dep + \Delta L + \Delta OC$.

The result shows the extent of financing of current transactions or investments with the currency on the accounts of companies, banks or households or with central bank's foreign exchange reserves, or the amounts due (trade credit).

At present, the publication and statistical analysis of Estonia's balance of payments proceeds from the standard presentation and the concept of overall equilibrium. However, the above list can be extended if necessary, depending on the purpose of analysis.

RATIO ANALYSIS

In addition to the analytical indicators found by applying equilibrium concepts, various ratios are often used in balance of payments analyses. These ratios are calculated by comparing the items of balance of payments, investment position and external debt reports between each other or with other overall economic indicators. The ratios may serve as early warning indicators of the deterioration or improvement of the external sector.

External sector analyses usually draw from the ratios of different balance of payments components and gross domestic product (e.g. ΔCA/GDP, FDI/GDP), which indicate the value of a specific aggregate ratio in comparison with the value created in the economy. Various other indicators are used as well, depending on the specifics of an economy and the principle of optimality so as to avoid burdening the analysis with unnecessary information.

Current account

The analysis of **trade account** components is focused on the structure of exports and imports by goods groups and trade partners. The goods side of the import and export structure allows to evaluate economy's export potential by industries and monitor the structure of import demand. In the latter case, the distribution of goods by the purpose of final consumption is important.[4] Provided that investment goods are used effectively, their larger share among imported goods refers to higher economic growth potential – and usually also greater production of exportable goods.

As regards the structure of exports and imports, attention should be paid also to the distribution of items by "normal" exports and imports[5] and processing. According to the methodology, goods imported to Estonia and later re-exported by the outsourcing sector are shown in implicit prices on trade account of the balance of payments, although they involve no actual change of ownership or settling of accounts.

If the import-export structure of goods groups and trade partners is too one-sided or narrow, it exposes the trade balance to the volatility of domestic prices and prices of trade partners. This may entail rapid changes in the external trade structure, especially when the share of substitute goods is considerable.

The analysis of foreign trade balance is supported by several additional indicators. The most widespread indicators used in external environment analyses are as follows.

1) Economy's **degree of openness**, *O*, which reflects GDP's dependence on the foreign trade turnover of goods and services:

$$O = \frac{X + |M|}{GDP}$$

High degree of openness depends on the external environment and exposure to the changes there. This indicator can be successfully used in international comparison too.

The degree of openness can also be found on the basis of exports only. This indicator points to the economy's ability to create foreign exchange income, which in turn enables to service large (external) debt:

$$O_X = \frac{X}{GDP}$$

[4] Foreign trade statistics distinguishes between capital goods, intermediate consumption goods, consumer goods and other goods.

[5] "Normal" exports comprises goods produced in Estonia and belonging to Estonian legal persons, excluding processed goods. "Normal" imports comprises goods imported to Estonia's internal market, excluding goods imported for processing.

2) **Export price index** $\overline{P}_X$ and **import price index** $\overline{P}_M$, which reflect changes in the prices of a country's export or import goods (indicators of competitiveness).

3) **Terms of trade index** *TOT*, which is calculated as a ratio of export and import price indices of the same base year:

$$TOT = \frac{\overline{P}_X}{\overline{P}_M}$$

This index shows the purchasing power of exports relative to imports. When import prices decline and export prices rise, the value of the index increases (and vice versa), pointing to improving (deteriorating) terms of trade.

4) The **index of the real effective exchange rate** (*REER*) of the national currency describes exchange rate changes (*E*) against the currencies of the main trading partners and changes in domestic consumer prices ($\overline{P}$) against those of these trading partners ($\overline{P}_W$). The weights (*W*) of the index are calculated on the basis of the structure of the foreign trade turnover[6]:

$$REER = \frac{E \cdot \overline{P}_W}{\overline{P}} = \left(\frac{E_1 \cdot \overline{P}_1}{\overline{P}}\right)^{W_1} \left(\frac{E_2 \cdot \overline{P}_2}{\overline{P}}\right)^{W_2} \cdots \left(\frac{E_n \cdot \overline{P}_n}{\overline{P}}\right)^{W_n}$$

When REER appreciates, then domestic goods lose in competitiveness in external markets and import goods become more affordable (and vice versa).

The analysis of the **services** account generally relies on the same principles as described above in the context of external trade, as external trade is indirectly related to services (transportation services). The volume of services exports/imports has witnessed strong growth over the last decade owing to the general globalisation. Therefore, the structure of items in the standard presentation of the balance of payments was expanded substantially in 2003.

The analysis of both goods and services accounts is also illustrated by the ratio of exports to imports (*X/M*).

The balance of the **income account** shows the net flow of factor income (labour and capital), which is largely determined by the international investment position. Incomes are calculated on an accrual basis; the claims or liabilities that arise from the current accounting of incomes are added to the balance of debt instruments on the financial account.

The deficit on income is not considered as critical from the aspect of current account sustainability as the balance of goods and services, because the capability of an economy to service future exter-

[6] The calculation of the REER of the Estonian kroon, published by Eesti Pank, draws from the indicators of Estonia's nine main trading partners.

nal debts primarily depends on the exports of goods and services at the current moment.

Besides the traditional ways of describing the income structure, various ratios are used by types of financial instruments and compared to GDP and investment position balances:

1) The **ratio of reinvested (net) earnings to GDP** ($\Delta Y_{RI}/GDP$) shows how much the current account balance ($\Delta CA/GDP$) would differ from the real indicator if reinvested earnings were excluded from the balance of payments.[7]

2) The **ratio of income on equity to GDP** ($\Delta Y_{OE}/SKP$) shows how much the current account balance ($\Delta CA/GDP$) would differ if dividends on direct and portfolio investment were not paid (this is necessary in the case of large current account deficits to indicate the share of the "low-risk" deficit in the current account balance).

3) **Profitability of foreign investment** (i). This indicator can be determined on the basis of any interest-bearing debt instrument, which is calculated based on the balance of that instrument in the investment position:

$$i = \frac{\sum_{i=t-4}^{t} \Delta Y_{K_i}}{K_t} * 100, \text{ where}$$

ΔY_{K_i} – credit (debit) value of the income on the debt instrument in the quarterly balance of payments;
t – reporting quarter;
K_t – balance of the debt instrument on the asset (liability) side of the investment position at the end of the reporting quarter t.

4) **Burden of interest expenses related to servicing external debt** (K_d):

$$K_d = \frac{\Delta Y_{DL}}{X}, \text{ where}$$

ΔY_{DL} – interests paid on loans (debit);
X – exports.

The only politically regulated income account items concern the general government. That is why these items usually deserve special attention in the case of great indebtedness.

[7] Reinvested earnings were included in the balance of payments methodology with the introduction of the 5th version of the methodology. This indicator is especially useful in analysing and comparing the time series calculated on the basis of the previous version of the methodology.

Current and capital transfers accounts are not that important from analytical perspective because their percentages in the total turnover of the balance of payments are usually not that high and do not depend on external factors.

Countries, where the balance of payments depends on international transitional support, foreign aid and state donations, also use the **ratio of government transfers to GDP** ($\Delta TR_G/GDP$) as an additional indicator. This shows how much the real gap of domestic demand and incomes differs from the "official" current account balance. The proportion of foreign aid in Estonia's balance of payments has been modest, and has now been replaced by transfers from EU structural funds. Therefore, this indicator is quite revealing.

Financial account, investment position and external debt

The statistical analysis of financial transactions and the investment position proceeds from their role in funding the current account of the balance of payments and is usually limited to pointing out the general developments in the structure of capital flows. The most important aspects of funding are related to the extent, share and nature of the inflow and outflow of short- and long-term capital from the perspective of debt creation. These are the factors to be related to the main overall indicators that can be calculated through the balance of payments flows or investment position stock variables:

1) **Share of short-term capital in financing**:

$FA_{SR}/\Delta FA$, where ΔFA_{SR} is the short-term financial flow on the financial account;

EA_{SR}/EA, where EA_{SR} is the balance of short-term external assets and EA is the total balance of external assets;

EL_{SR}/EL, where EL_{SR} is the balance of short-term external liabilities and EL is the total balance of external liabilities;

$NIIP_{SR}/NIIP$, where $NIIP_{SR}$ is the short-term net investment position.

2) **Share of debt capital in financing:**

$\Delta FA_D/\Delta FA$, where FA_D is the short-term debt capital flow on the financial account;

EA_D/EA, where EA_D is the balance of short-term debt assets and EA is the total balance of external assets;

EL_D/EL, where EL_D is the balance of short-term liabilities and EL is the total balance of external liabilities;

$NIIP_D/NIIP$, where $NIIP_D$ is the net investment position repayable.

If necessary, debt indicators may be indicated also by economic sectors (e.g. the general government separately in the case of large general government deficit) and as a ratio of GDP.

Direct investment is one of the main forms of international capital movement owing to global economic growth, technological developments, international competition and liberalisation.

The specifics of direct investment lies in the fact that capital flows are accompanied by full or partial control over the subsidiary or affiliated company through which indirect influence is exerted on the total output and employment of the destination country. The determinants accompanying direct investment include, among other things, the transfer of technologies and know-how as well as growth in foreign trade and competition.

Consequently, the analysis of direct investment should cover the countries of origin and destination of investment as well as the primary fields of activity receiving the investment. With the necessary data available, a more in-depth analysis can be carried out in order to monitor the impact of direct investment companies on import and export indicators.

The analysis of direct investment relies on the following ratios:

1) **Share of debt capital in direct investment** (FDI_d/FDI), which shows the foreign investor's preferences as to the form of capital and can be calculated on the basis of both flow and stock variables. The main components of direct investment (equity capital and reinvested earnings) are non-debt creating, since no contractual liabilities occur. Then again, direct investors might also prefer loan capital. Changes in the structure of the direct investment capital refer to changes in the investor's risk sensitivity as well as to the company's over- or undercapitalisation.

2) **Direct investment per capita** (*FDI/population*) is widely used in international comparisons. Therefore, the analysis of Estonia's balance of payments should take that into account as well.

As mentioned above, the importance of **reserves** in balance of payments financing depends on the exchange rate regime used. Moreover, the internationally recognised economic indicators that are related to reserves need to be interpreted accordingly.

The adequacy of reserves demonstrates whether a central bank has sufficient external assets for the indirect financing of potential future balance of payments transactions:

1) **Coverage of imports by reserves** ($A_{IR(M)}$) measures the volume of reserves necessary for the full financing of goods and services imports from the foreign exchange reserves (the exchange rate is maintained):

$$A_{IR(M)} = \frac{IR}{M/3}, \text{ where}$$

IR – balance of reserves as at end of period;
M – imports of goods and services in a quarter;

Since processing is not financed, the respective item must first be excluded from imports.

2) Similar to the previous indicator, the **coverage of short-term capital outflow by reserves** ($A_{IR(STC)}$) measures the sufficiency of reserves necessary for meeting the foreign currency demand related to the possible outflow of short-term capital (in the case of the currency board arrangement) or for the interventions carried out in order to maintain the exchange rate (in the case of the floating interest rate system):

$$A_{IR(STC)} = \frac{IR}{PI + D + OI_S}, \text{ where}$$

PI – balance of portfolio investment liabilities;
D – balance of derivatives liabilities;
OI_S – other investment liabilities: balance of short-term capital.

One of the possible criteria suggested for forecasting reserves related currency crises is the ratio of reserves to the supply of monetary base (IR/M_0). Since the automatic functioning of the currency board system guarantees full coverage of the monetary base, there is no need to monitor this indicator in Estonia.

EVALUATING THE SUSTAINABILITY OF THE CURRENT ACCOUNT AND EXTERNAL DEBT

The key issue for countries with large current account deficits is the long-term sustainability of the deficit and the timely introduction of offsetting economic policy measures.

There is no general rule for determining the sustainability of the current account deficit. The intertemporal budget constraint, as known from economic theory, sets only theoretical constraints to the growth of current account deficit and debt. If a country's net external debt at the time under review is equal to the sum of discounted current account balances of the future periods at that time, then the current account deficit is sustainable. Thus, the current account deficit may be rather large at some point if it will turn into a surplus in later periods.

Statistically, it is not possible to determine the discounted value of future current accounts. Therefore, it is necessary to identify more exact indicators that describe the nature of debt and capability of repayment. Several such indicators have been suggested in different studies on financial crises, though they have not always proved successful in the prevention of problems.

Sustainability ratios

The following ratios proceed from the level of detail of Estonia's balance of payments. They serve as a basis for the evaluation of the risks associated with the current account deficit.

The latest developments of current account sustainability are reflected in changes in the **share of non-debt capital** (CA_S) in the financing of current transfers:

$$CA_S = \frac{\Delta CA}{\Delta FDI_{ND} + \Delta PI_{ND}}, \text{ where}$$

ΔCA – current account balance;
ΔFDI_{ND} – direct investment: equity capital, (net) reinvested earnings;
ΔPI_{ND} – portfolio investment: (net) equity securities.

A similar ratio, $NIIP_S$, which is calculated on the basis of stock variables shows the current situation in general:

$$NIIP_S = \frac{NIIP}{FDI_{ND} + PI_{ND}}, \text{ where}$$

$NIIP$ – net investment position (cumulative current account);
FDI_{ND} – direct investment: equity capital, (net) reinvested earnings in (net) investment position;
ΔPI_{ND} – portfolio investment: equity securities in (net) investment position.

In the long run, economic growth is considered to be the most efficient resource for the repayment of debt resulting from the current account deficit. Thus, the most general debt indicator would be the **ratio of debt to GDP** (the direct resource base) and the related changes (D/GDP).

As economic growth depends on investment, also the **ratio of imports of investment goods to current account** ($M/\Delta CA$) provides useful information.

If the debt-to-GDP ratio is low but the debt needs to be repaid during the following period, problems of liquidity might occur. This is illustrated by the increase in the **ratio of short-term debt to total debt**, which performs as a risk indicator (D_S/D).

Yet another possibility to determine the sustainability of debt (i.e. also the current account) is to compare the **balance of debt** with the (currency) income on goods and services exports (D/X).

CONCLUSION

The above list of analysis techniques is far from being complete. Nevertheless, the techniques described help to discover new aspects in the analysis and interpretation of balance of payments statistics. Most of these indicators provide more and more useful information over time and in comparison with the balance of payments statistics of other countries.

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APPENDIX

MAIN QUARTELY INDICATORS OF THE ESTONIAN ECONOMY as at 31 January 2008

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
Gross domestic product						
Current prices	EEK m	Q3 07	61,675.7			ESA
Constant prices	EEK m	Q3 07	42,632.2	-1.4	6.4	ESA
Production						
Volume index of industrial production (at constant prices (2000 = 100)	%	Q4 07		-6.5	3.8	ESA
Investments in fixed assets (at current prices)	EEK m	Q3 07	10,592.1	5.1	15.3	ESA
Construction						
Construction activities of construction enterprises (at current prices)	EEK m	Q3 07	16,654	10.7	15.9	ESA
Usable floor area of completed dwellings	thousand m^2	Q4 07	179	51.7	36.7	ESA
Usable floor area of non-residential buildings	thousand m^2	Q4 07	302.8	73.1	21.4	ESA
Consumption						
Retail sales volume index (at constant prices, 2000 = 100)	%	Q4 07		1	6	ESA
New registration of passenger cars	pieces	Q4 07	14,325	-21.4	-20.5	ARK
Prices						
Consumer price index	%	Q4 07		3	9	ESA
Producer price index	%	Q4 07		1.9	8.8	ESA
Export price index	%	Q4 07		0.5	7.8	ESA
Import price index	%	Q4 07		1.3	4.3	ESA
Construction price index	%	Q4 07		1.1	8.6	ESA
Real effective exchange rate (REER) of the Estonian kroon	%	Q4 07		1.6	4.6	EP
Labour market and wages						
Employment rate (based on the Labour Force Survey)*	%	Q3 07	63.3	62.9	61.9	ESA
Unemployment rate (based on the Labour Force Survey)*	%	Q3 07	4.2	5.0	5.4	ESA
Registered unemployed (according to the Labour Market Board)	persons per month	Q4 07	13,802	6.9	14.3	TTA
% of population between 16 years old and pension age*	%	Q4 07	2.2	2	1.4	TTA
Average monthly gross wages and salaries (health insurance benefits excluded)	EEK	Q3 07	10,899	-5.6	20.2	ESA

* Indicators of the period, not changes

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
General government budget (net borrowing not included here)						
Revenue	EEK m	Q1 07	19,336.5	-8.7	24.6	RM
Expenditure	EEK m	Q1 07	18,610.8	-19	20.6	RM
Balance (+/-)*	EEK m	Q1 07	725.7	-1,804.7	87	RM
Period's revenue to the planned annual revenue*	%	Q1 07	27	29.5	21.6	RM
Transport						
Carriage of passengers	thousand	Q3 07	52,536.7	3.3	-0.1	ESA
Carriage of goods	thousand tons	Q3 07	23,727	-14.2	0.7	ESA
Tourism, accommodation						
Visitors from foreign countries received by Estonian travel agencies	thousand	Q3 07	645.5	31.4	1.9	ESA
Visitors sent to foreign tours by Estonian travel agencies	thousand	Q3 07	142.7	5.4	6.1	ESA
Accommodated visitors	thousand	Q3 07	828.8	32.2	2.2	ESA
o/w foreign visitors	thousand	Q3 07	507.4	27.4	-5.2	ESA
Foreign trade (special trade system)						
Exports	EEK m	Q3 07	29,842.3	-9.2	0.8	ESA
Imports	EEK m	Q3 07	42,076.3	-7.8	0.6	ESA
Balance*	EEK m	Q3 07	-12,234.1	-12,205.4	-12,205.5	ESA
Foreign trade balance/exports*	%	Q3 07	-41	-38.9	-41.2	ESA
Balance of payments*						
Current account balance	EEK m	Q3 07	-8,595.6	-7,922.4	-7,429	EP
Current account balance to GDP	%	Q3 07	-13.9	-13	-14	EP
Foreign direct investment inflow	EEK m	Q3 07	4,645.5	7,180.5	5,834.4	EP
Foreign direct investment outflow	EEK m	Q3 07	-4,363.8	-6,849.5	-5,323.5	EP
International investment position						
Net international investment position	EEK m	30/09/07	-177,363.9	4.7	23	EP
Direct investment in Estonia	EEK m	30/09/07	168,837.3	3.1	13.7	EP
Net external debt	EEK m	30/09/07	253,655.5	7.8	38.6	EP
o/w government	EEK m	30/09/07	3,103.6	-1.1	-26.1	EP
EEK/USD average quarterly exchange rate	**EEK**	**Q4 07**	**10.8**	**-5.1**	**-11**	**EP**

ESA – Statistical Office of Estonia
ARK – Motor Vehicle Registration Centre
EP – Eesti Pank /Bank of Estonia
TTA – Labour Market Board
RM – Ministry of Finance