THE WORKING EFFICIENCY OF ESTONIAN COMPANIES BEFORE AND AFTER THE ECONOMIC CRISIS, ON THE EXAMPLE OF TRANSPORT

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Abstract
The objective of this article is to analyse the efficiency of companies, working efficiency, or the labour productivity of Estonian transport and storage companies; and to compare them on the European Union (EU) countries levels.
How did Estonian transport companies survive the economic crisis?
What are the lessons learned?

Keywords: transport companies, working efficiency, economic crisis, Estonia.

1. Introduction

Working efficiency in the Baltic countries has been analysed. The analysis focuses on the main branches of the Estonian national economy in connection to the economic crisis. Four major sectors of the economy with the greatest gross domestic product and the largest number of employees will be observed, these are: industry, construction, trade and transportation. [1,2] The situations before, during and after the crisis will be viewed.

How has the economic crisis affected business and specific sectors of the economy, and what are the lessons learned? This is discussed in the following analysis on the basis of Estonian companies. [3,4,5,6,7,8]

Out of these four sectors of the economy, transportation was best at exiting the crisis. The decline was greatest in industry and construction and thus getting out of the slump also took longer for these sectors. Trade did not experience such a significant decline. It must be emphasized that all of the sectors are interrelated. Freight transport depends mainly on the success of industry and construction. This analysis will focus on transport along with warehousing.

The efficiency of the work performed by companies in Estonia, but also in Latvia, Lithuania and Eastern Europe in connection to the crisis period, has been discussed in other articles, which provide the according

methodological and theoretical foundations. [3,5,8] The techniques and labour market survey definitions used by the authors have been specified in Eurostat [9].

Estonia can be viewed as a small economic model that not only allows making generalizations about the new EU Member States in Eastern European, but also for other states. [3,4,5,6,7,8]

Analysis concentrates mainly on the primary sectors of the Estonian national economy and professions (workforce) in relation to the economic crisis. The analysis will focus on the professions that have experienced the greatest changes and have affected the process of overcoming the economic crisis the most. The situation before, during and after the crisis will be viewed. We will analyse the dynamics from the time when Estonia regained its independence, until 2012, but generally from 2004 onward, when Estonia joined the EU. The analysis of the labour market, i.e. workforce, focuses primarily on occupational engagements, as the authors feel that this should be the most objective indicator of changes in the labour market.

2. Estonian economy growth

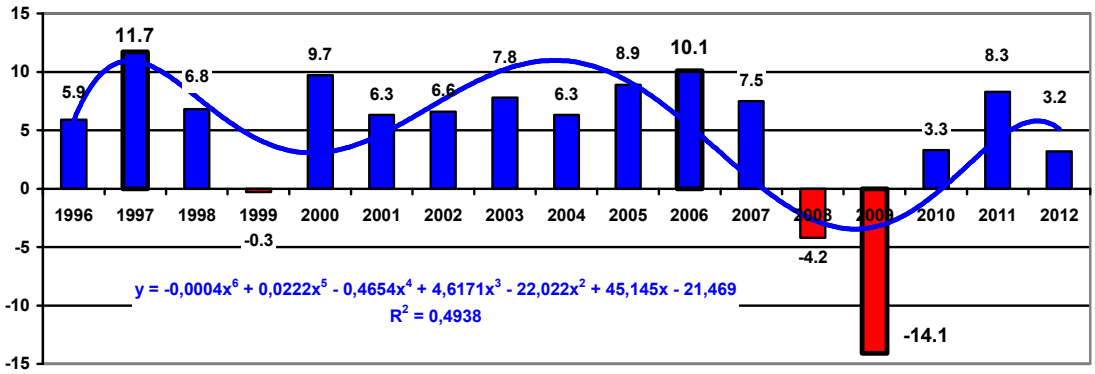


Figure 1. Real GDP growth rate in Estonia. Percentage change during the previous year, 1996 – 2012 [10]

Source: the authors' illustration

The trend line shows the cyclical development of the Estonian economy (GDP). In addition to the economic decline during the years 2008 – 2009, there was also a decline in 1999. If annual real GDP increments of more than 10% can be considered excellent, then the result in 2009 (-14.1%) was one of the largest recessions in the world.

The development of the Estonian economy before and after the crisis was one of the fastest in the EU. Yet, the crisis led to a very deep recession, which was one of the greatest in the world, as well as in the EC, and lasted for nine quarters. Thus, the country covered two extremes. On the other hand, it also shows that the reforms carried out in the past were successful and established a base that enabled exiting the crisis successfully. In particular, this meant creating favourable conditions for business. Again, GDP growths in 2011 and also 2012 are among the highest in the EU.

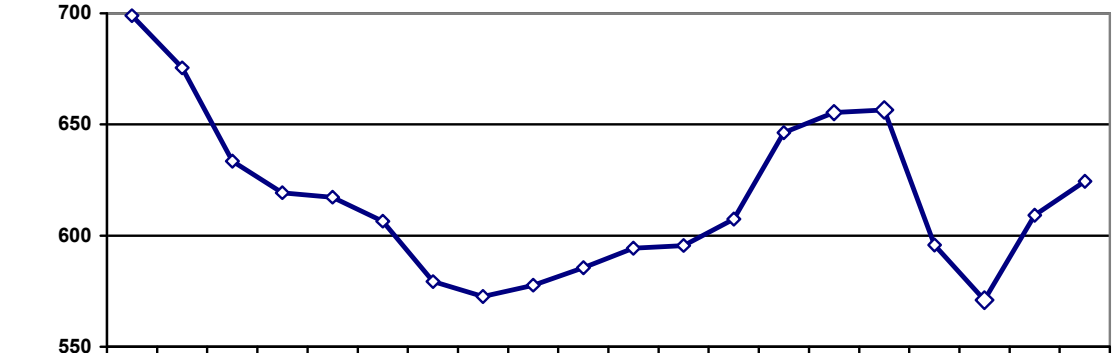
If an annual real GDP increment of more than 10% can be considered excellent, then the result of the GDP growth rate in 2003 – 2007 was among the largest in the world.

The development of the economy of the Baltic countries before and after the crisis was one of the fastest in the EU. Yet, the crisis led to a very deep recession, which was one of the greatest in the world, as well as in the EU. A larger or smaller recession took place in 2009, which is called the crisis year. In the following years economy grew.

Thus, the country covered two extremes. On the other hand, it also shows that the reforms carried out in the past were successful and established a base that enabled a successful exit from the crisis. In particular, this meant creating favourable conditions for business. Again, GDP growths in 2011 and also in 2012 are among the highest in the EC. [10]

3. Employment in Estonia

While the size of the population of Estonia in 1989 was 837,900, in 2011, it was only 609,100. This means a decrease of 228,800, which constitutes more than one quarter (27.3%). The number of employed persons decreased by about the same ratio. [11]



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Employment	698,9	675,4	633,4	619,3	617,2	606,5	579,3	572,5	577,7	585,5	594,3	595,5	607,4	646,3	655,3	656,5	595,8	570,9	609,1	624,4

Figure 2. Employment in Estonia, 1993 – 2012 [11]
Source: the authors' illustration

For several reasons, a large number of immigrants entered Estonia during the Soviet times. After the Soviet Union collapsed and the Russian army left, the majority of the migrants went back to their historical homeland. This process lasted for years, and it is characterized by the employment curve.

We get a better picture, if we analyse it by the key sectors of the economy. Let us see how employment, the number of companies and their main characteristics have changed. According to the number of employees, the largest sectors of the economy were industry, trade, construction and transport. [11]

Analysis concentrates mainly on the primary sectors of the Estonian national economy and professions (workforce) in relation to the economic crisis. Let us look at the four major sectors of the economy with the largest gross domestic product and the greatest number of employees: industry, construction, trade and transportation. The analysis will focus on the professions that have experienced the greatest changes and have affected the process of overcoming the economic crisis the most. The situation before, during and after the crisis will be viewed. We will analyse the dynamics from the time when Estonia regained its independence, until 2012, but generally from 2004 onward, when Estonia joined the EU, but at times also from 1989, when Estonia was still part of the decaying Soviet Union.

Table 1. Employed persons, thousands. Economic activity (EMTAK 2008) [11]

	1989	1992	1995	2000	2006	2007	2008	2009	2010	2011	2012
Economic activities total	837.9	761.4	633.4	572.5	646.3	655.3	656.5	595.8	570.9	609.1	624.4
Manufacturing	213.9	183.9	157.4	127.5	132.9	131.2	135.0	113.8	108.4	121.0	117.5
Construction	68.7	62.8	35.3	40.7	63.6	82.1	81.0	58.3	47.9	59.0	58.7

Wholesale and retail trade	61.2	70.5	79.2	77.5	88.1	86.9	92.5	83.2	80.0	81.3	80.7
Transportation and storage	61.3	58.6	57.8	51.5	56.5	52.9	49.9	49.7	43.6	48.3	50.5
Accommodation and food service	20.2	19.0	16.8	20.1	22.0	22.3	23.6	20.1	19.4	19.2	19.3

Table 2. Employed persons, Proportion of the employed (economic activities total=100), % (EMTAK 2008) [11]

	1989	**1992**	**1995**	**2000**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Manufacturing	25.5	24.2	24.9	22.3	20.6	20.0	20.6	19.1	19.0	19.9	18.8
Construction	8.2	8.3	5.6	7.1	9.8	12.5	12.3	9.8	8.4	9.7	9.4
Wholesale and retail trade	7.3	9.3	12.5	13.5	13.6	13.3	14.1	14.0	14.0	13.4	12.9
Transportation and storage	7.3	7.7	9.1	9.0	8.7	8.1	7.6	8.3	7.6	7.9	8.1
Accommodation and food service	2.4	2.5	2.6	3.5	3.4	3.4	3.6	3.4	3.4	3.1	3.1

Footnote: annual average; 1989-1996 - employed persons aged 15-69; from 1997 - employed persons aged 15-74.

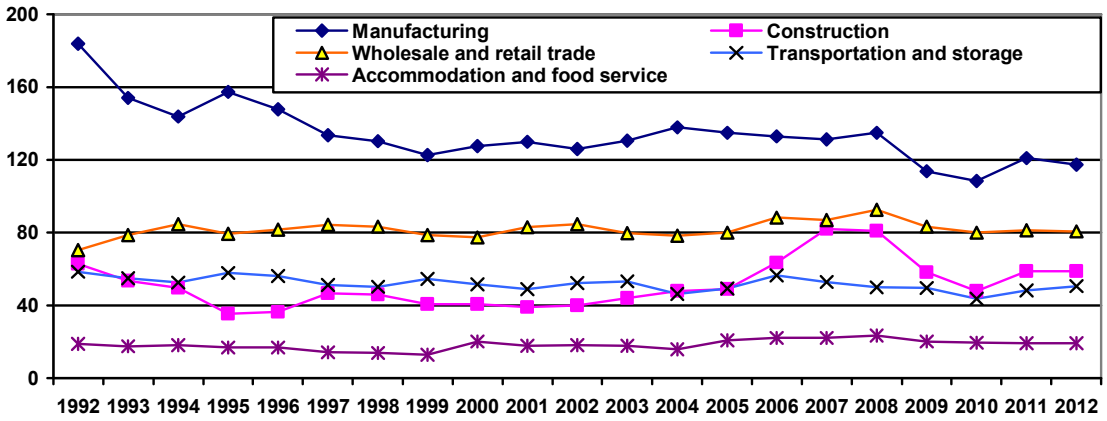
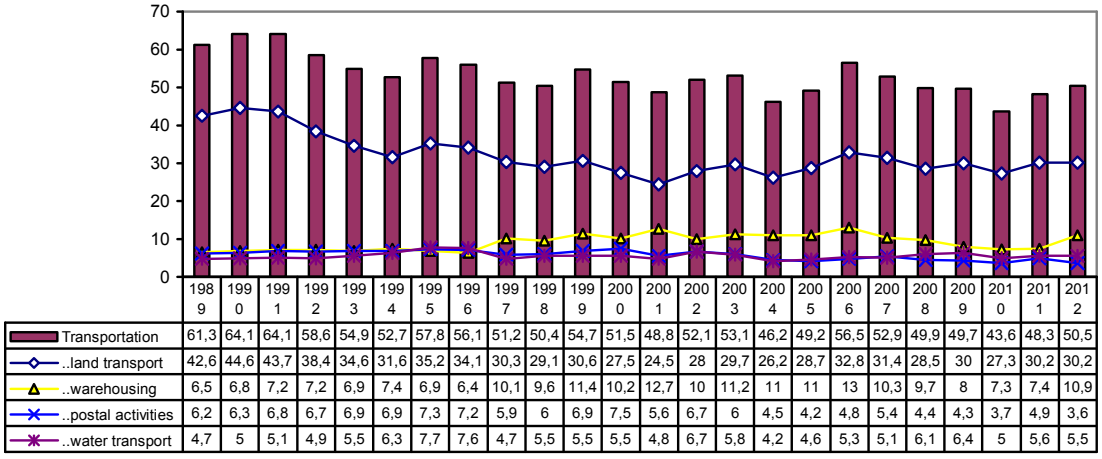


Figure 3. Employed persons of Estonia, thousands, branches, 1992 – 2012 [11]
Source: the authors' illustration

Table 3. Transportation and storage. Employed persons in Estonia, by indicator and economic activity (EMTAK 2008) [11]

	1992	**1995**	**2000**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Transportation and storage, thousands	58,6	57,8	51,5	56,5	52,9	49,9	49,7	43,6	48,3	50.5
..land transport …	38,4	35,2	27,5	32,8	31,4	28,5	30,0	27,3	30,2	30.2
..water transport	4,9	7,7	5,5	5,3	5,1	6,1	6,4	5,0	5,6	5.5
..warehousing and support activities for transportation	7,2	6,9	10,2	13,0	10,3	9,7	8,0	7,3	7,4	10.9

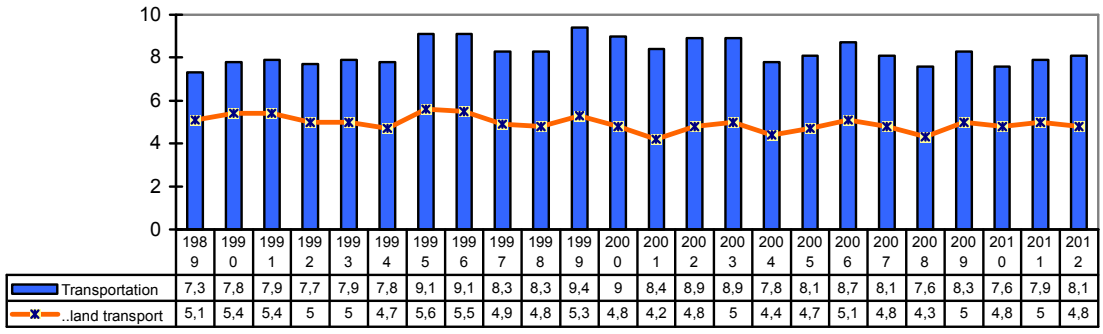
..postal and courier activities	6,7	7,3	7,5	4,8	5,4	4,4	4,3	3,7	4,9	3.6
Transportation and storage, %	7,7	9,1	9,0	8,7	8,1	7,6	8,3	7,6	7,9	8.1
..land transport… %	5,0	5,6	4,8	5,1	4,8	4,3	5,0	4,8	5,0	4.8
..water transport	0.6	1.2	1.0	0.8	0.8	0.9	1.1	0.9	0.9	0.9
..warehousing and support activities for transportation, %	0.9	1.1	1.8	2.0	1.6	1.5	1.3	1.3	1.2	1.7
..postal and courier activities, %	0.9	1.1	1.3	0.7	0.8	0.7	0.7	0.7	0.8	0.6



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Transportation	61,3	64,1	64,1	58,6	54,9	52,7	57,8	56,1	51,2	50,4	54,7	51,5	48,8	52,1	53,1	46,2	49,2	56,5	52,9	49,9	49,7	43,6	48,3	50,5
..land transport	42,6	44,6	43,7	38,4	34,6	31,6	35,2	34,1	30,3	29,1	30,6	27,5	24,5	28	29,7	26,2	28,7	32,8	31,4	28,5	30	27,3	30,2	30,2
..warehousing	6,5	6,8	7,2	7,2	6,9	7,4	6,9	6,4	10,1	9,6	11,4	10,2	12,7	10	11,2	11	11	13	10,3	9,7	8	7,3	7,4	10,9
..postal activities	6,2	6,3	6,8	6,7	6,9	6,9	7,3	7,2	5,9	6	6,9	7,5	5,6	6,7	6	4,5	4,2	4,8	5,4	4,4	4,3	3,7	4,9	3,6
..water transport	4,7	5	5,1	4,9	5,5	6,3	7,7	7,6	4,7	5,5	5,5	5,5	4,8	6,7	5,8	4,2	4,6	5,3	5,1	6,1	6,4	5	5,6	5,5

Figure 4. Employed persons in Estonia - transportation (thousand), 1992 – 2012 [11]
Source: the authors' illustration

Land transport (trend line) forms the main part of the transport total (bars). Therefore, their changes also run almost parallel. The number of employees in the land transport sector and thus also other transport sectors was relatively large at the end of the Soviet period. The economy of the newly independent Estonia underwent fundamental changes, which meant that the economy shifted from the east to the north or west. This was also reflected in transport. Warehousing, postal services and water transport all had a similar number of employed workers, but from the mid-1990s, the importance of warehousing grew.



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Transportation	7,3	7,8	7,9	7,7	7,9	7,8	9,1	9,1	8,3	8,3	9,4	9	8,4	8,9	8,9	7,8	8,1	8,7	8,1	7,6	8,3	7,6	7,9	8,1
..land transport	5,1	5,4	5,4	5	5	4,7	5,6	5,5	4,9	4,8	5,3	4,8	4,2	4,8	5	4,4	4,7	5,1	4,8	4,3	5	4,8	5	4,8

Figure 5. Employed persons, share in %. Transportation and storage, incl. land transport [11]
Source: the authors' illustration

Although the number of employed persons in Estonia decreased after leaving the economic system of the Soviet Union, the share of workers in transport and storage actually grew and, if taken separately, the share of transport workers remained practically unchanged. [11]

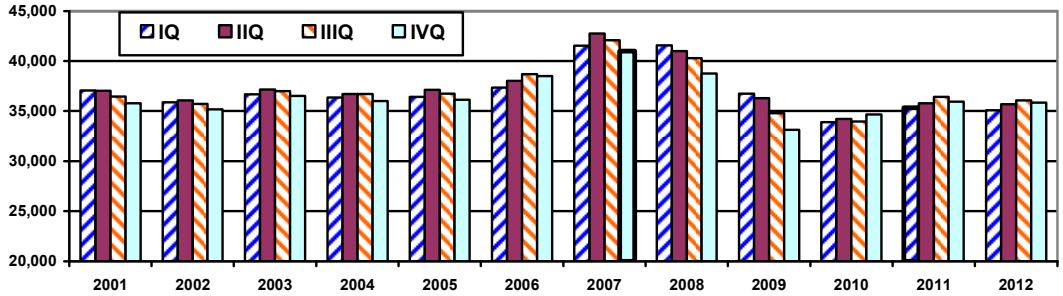


Figure 6. The average number of employed persons in transport [12]
Source: the authors' illustration

The number of employed persons in transport and storage was relatively stable before the economic crisis, slightly more so during summer months and less at the end of the year. In connection to the growth of the economy as a whole, there was an increase in both the demand for freight and passenger transport. This caused an increase in work volumes and the number of employees of transport companies. If the increase in 2006 was still relatively small, then in 2007 and 2008 it was very high. In the summer of 2007, the sector already employed more than 42,000 people. The number of employed persons decreased significantly from the last quarter of 2008, although in part due to the season. From 2010, when unemployment was greatest in Estonia as a whole, the number of employed persons slowly began to grow again. 2011 and 2012 had a stable number of employees by quarters, but significantly smaller compared to the time before the crisis.

Since the economy of the state had significantly grown during those years, and the number, total profit and added value of transport companies had greatly increased, it may be concluded that transport companies began to organize themselves better after the crisis and reached normal (good) economic results with a smaller number of employees. However, an analysis of the dynamics of labour productivity will provide a clearer answer to this claim.

Table 4. Transportation and storage. The number of companies according to the number of employed persons [13]

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Total 1-9	7 546	8 087	9 107	9 413	8 539	8 965	9 135
Land transport 1-9	5 525	5 931	6 418	6 847	6 242	6 618	6 662
Total 10-19	4 071	4 427	4 065	4 246	3 795	3 915	4 054
Land transport 10-49	2 992	3 163	3 062	3 159	2 857	2 954	3 160
Total 20-49	5 071	4 991	5 614	5 268	5 199	4 977	5 114
Land transport 20-49	3 352	3 291	4 046	3 840	3 381	3 092	3 331
Total 50-99	4 055	4 233	4 278	4 176	4 013	3 944	3 901
Land transport 50-99	2 437	2 417	1 908	2 244	2 463	2 199	2 164
Total 100-249	6 231	5 926	6 418	6 070	5 217	4 826	4 733
Land transport 100-249	2 958	2 482	2 786	2 339	1 925	1 737	1 641
Total 250 and more	11 905	12 569	12 665	11 808	10 485	10 299	10 186
Land transport 250 and more	5 620	6 126	5 935	5 456	4 161	4 182	3 939

In 2009, smaller companies with up to 49 employees had an even smaller number of employed persons in 2011. The number did increase in the subsequent years, but it still remained below the pre-crisis record numbers of 2008. As a rule, the number of persons employed in companies with 50 or more employees was greatest in 2007, and it has been constantly decreasing ever since.

Is this a good or a bad trend? An analysis of financial indicators will provide the answer.

4. Key indicators of Estonian transport companies

Table 5. Detailed annual statistics for services companies (NACE Rev. 2 H-N and S95). INDIC_SB: Number of companies. NACE_R2: Transportation and storage [14]

	2005	2006	2007	2008	2009	2010
Total	2,840	3,146	3,695	3,861	3,873	4,027
Land transport and transport via pipelines	2,007	2,224	2,669	2,845	2,877	2,926
Passenger rail transport, interurban	:	:	:	3	3	3
Freight rail transport	:	:	:	6	6	5
Water transport	19	19	19	29	36	35
Air transport	7	7	9	9	7	7
Cargo handling	:	:	:	32	29	27

Table 6. Number of employed persons (NACE Rev. 2, H-N, S95).
INDIC_SB: Number of companies. NACE_R2: Transportation and storage. SIZE_EMP: 1 to 250 or more employed persons [15]

	2005	2006	2007	2008	2009	2010
- 1	801	900	1124	1302	1407	1765
2 - 9	1435	1622	1933	1914	1862	1691
10 - 19	307	331	319	342	304	300
20 - 49	175	172	196	184	189	169
50 - 249	110	108	111	106	99	90
250 -	12	13	12	13	12	12
Total	2840	3146	3695	3861	3873	4027

Despite the economic crisis, the number of SMEs (companies with 1-9 employees) grew, incl. in 2010, when employment was lowest and unemployment greatest. The following groups (with 10-19, 20-49 and 100-249 employees) reached the highest numbers in 2007, in fact, they did experience a slight drop in the following year, but already in 2009-2010 a great decrease occurred in their numbers. By 2010, their numbers had decreased respectively by 24.2% (1030), 23.4% (632) and 28.4% (145) compared to 2007, i.e. by a quarter.

The share of companies

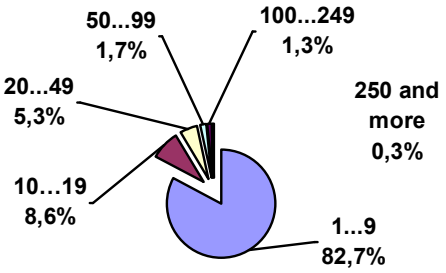


Figure 7. Companies, 2007 [13]

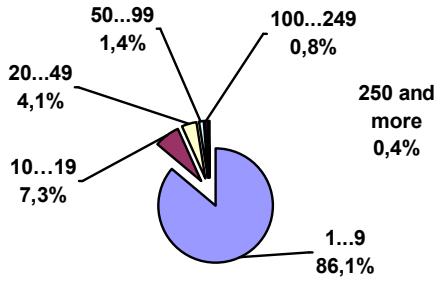


Figure 8. Companies, 2011 [13]

Source: the authors' illustration

In 2007, the number of transport and storage companies combined was 3,695; 2,669 of those were land transport and pipeline transport (72.2%) and 954 transport companies and companies active in areas that assist transport (25.8%). Their shares had changed little in 2011, 71.6% and 25.5% respectively.

5. The financial indicators of transport companies

Table 7. Companies' added value and productivity indicators (EMTAK 2008), transport and storage. [16]

	2005	**2007**	**2008**	**2009**	**2010**	**2011**
Number of companies	2 840	3 695	3 861	3 873	4 027	4 232
Number of employed persons	38 879	42 147	40 981	37 248	36 926	37 123
Production value (thousand Euros)	2 935 997	4 037 889	4 004 836	3 404 779	3 965 546	4 497 223
Added value (thousand Euros)	683 456	818 011	867 363	844 661	926 724	1 047 492
Labour productivity per employed person on the basis of sales revenue (thousand Euros)	84.1	102.1	103.0	96.5	112.9	130.1
Hourly productivity on the basis of sales revenue (Euros)	47.36	57.97	58.42	57.78	67.55	75.90
Productivity of personnel costs on the basis of sales revenue	10.15	8.99	8.15	8.12	9.71	10.53
Total productivity on the basis of sales revenue	1.05	1.02	1.01	1.04	1.06	1.07
Labour productivity per employed person on the basis of added value (thousand Euros)	17.6	19.4	21.2	22.7	25.1	28.2
Hourly productivity on the basis of added value (Euros)	9.91	10.99	12.02	13.55	15.02	16.50
Productivity of personnel costs on the basis of added value	2.12	1.71	1.67	1.91	2.16	2.28
Total productivity on the basis of added value	0.22	0.19	0.21	0.24	0.23	0.23

The number of transport and storage companies has been continuously increasing, even during the crisis. At the same time, the number of employed persons has been sharply decreasing since 2009. If 42,147 people worked in transport before the crisis in 2007, then the number was 12.4% less in 2010, the year with the greatest unemployment levels.

Production value was at its highest in 2007, remaining almost the same during the following year, but dropping by 15.7% in 2009 compared to two years earlier. At the same time, added value was continuously growing; there was only a small decline (-2.6%) in 2009. The fact that transport and storage companies managed to reach former levels during the crisis and significantly increase them in 2010, was one of the main factors contributing to why this sector of the economy survived the crisis better than other sectors of the Estonian economy.

Although labour productivity per employed person on the basis of sales revenue dropped in 2009, it already reached record levels during the following year, when Estonia experienced record levels of unemployment, and in 2011 it experienced growth. In 2011, labour productivity was 34.8% (!) higher than two years ago. On the one hand, this shows that the managers of the companies were able to make the employees work better, and on the other, that record levels of unemployment made people work better and more effectively. As an objective factor, it may be added that as the economy as a whole recovered, transport companies also received better orders (?).

The above is also confirmed by hourly productivity based on sales revenue. Hourly productivity in 2011 was 31.4% (!) higher than two year earlier.

Productivity of labour costs on the basis of sales revenue decreased until 2009 and its increase was only achieved after the crisis. This indicates that prior to the crisis the accounting of transport companies was generally poor and it was the crisis that forced them to deal with it in more detail. Total productivity based on sales revenue followed the same trend, with the difference that both the recession and increase arrived one year earlier. This shows a lack of in-depth analysis or also the inability to take action.

Labour productivity per employed person and hourly productivity based on added value were in a slump already in 2007, thus already before the crisis. However, a continuous increase in these parameters has followed. This is proof of the skilful analysis of the main indicators and the effectiveness of the measures implemented based on that analysis. They managed to make people work better and people were also motivated to work better, even if only out of a fear of losing their jobs.

Productivity of labour costs and total productivity based on added value reached their lowest levels a year earlier than based on sales revenue. This was followed by an increase, although in 2011, total productivity based on added value is still short of the 2006 level.

This analysis with seemingly contradictory conclusions indicates that the managers of transport and storage companies were generally successful in dealing with the crisis, while they lacked a complete analysis or possibilities to affect the situation. The largest decline during the economic crisis was caused by industrial and construction companies, which for objective reasons in turn affected transport companies, as well as their financial indicators.

The following detailed analysis by both the branches of activity and company size helps clarify these reasons better.

Table 8. Income statement of transport companies, by indicator and economic activity (EMTAK 2008), thousand Euros [17]

	2005	2007	2008	2009	2010	2011
Total costs	3 107 729.2	4 221 139.2	4 181 743.6	3 472 436.8	3 946 164.0	4 534 564.4
Merchandise	337 761.4	264 922.5	225 210.7	165 667.1	185 783.0	303 405.4
Materials, supplies and intermediate goods	132 739.8	143 874.5	150 773.5	129 230.8	198 573.0	216 777.9
Purchased fuel and power	300 923.8	427 328.6	475 983.0	323 518.3	426 574.6	533 630.2
Payments for agency workers	..	37 404.7	45 039.5	45 736.5	45 628.9	49 366.2
Other laid-out work	1 639 661.4	2 572 291.4	2 447 348.2	2 065 755.6	2 276 061.4	2 405 351.8
Personnel expenses	321 929.7	478 790.0	518 062.2	442 916.2	429 652.8	458 801.0
Wages and salaries	240 743.6	358 397.0	387 782.3	329 777.6	320 153.6	341 907.0
Social security costs	81 186.1	120 393.0	130 279.9	113 138.6	109 499.2	116 894.0
Depreciation	161 963.7	214 465.3	250 466.5	247 042.0	231 934.9	248 902.4
Taxes	7 055.5	6 152.3	6 219.8	5 619.9	5 454.1	5 328.9
Doubtful accounts	6 569.6	22 528.8	12 768.1	8 517.3	4 307.7	5 682.9
Travel costs	41 805.3	48 875.0	42 121.7	34 344.5	44 949.3	52 910.2
Other costs	3 131.5	4 506.3	7 750.2	4 088.6	5 364.2	4 562.4

Table 9. Operating profit (loss) of transport companies, thousand Euros [17]

	2005	2007	2008	2009	2010	2011
Operating profit (loss)	221 069.0	153 189.4	112 344.3	161 893.6	287 017.8	343 219.2
Financial income and costs	-16 413.1	24 036.1	87 948.2	-78 346.3	-24 968.7	-4 288.2
Interest income	13 675.7	28 880.6	28 249.3	23 606.6	46 613.9	17 080.0
Interest expenses	45 626.0	73 726.8	89 453.6	94 682.9	70 650.9	58 637.3
Provision for taxes	21 221.2	21 439.9	8 955.2	14 978.5	13 398.4	17 307.6
Net profit (loss)	183 434.7	155 785.7	191 337.2	68 568.8	248 650.7	321 623.4
Net profit	240 094.3	240 185.0	369 812.1	225 304.0	340 165.1	432 602.5
Net loss	-56 659.6	-84 399.3	- 178474.8	- 156735.2	-91 514.4	- 110979.1
Dividends	71 280.1	80 550.4	35 645.4	58 067.4	55 690.1	67 478.2

Table 10. Income statement of transport companies, thousand Euros [17]

	2005	2007	2008	2009	2010	2011
Net sales	3 215 939.7	4 234 798.8	4 142 958.0	3 505 630.4	4 084 849.8	4 727 793.3
Sale to non-residents	1 547 228.2	2 025 446.4	2 017 917.3	1 824 445.9	2 108 417.7	2 442 155.5
Other revenue	136 766.2	169406.8	183293.4	166365.0	180160.2	185 854.9
Profit from the sale of tangible assets	27 119.5	32 956.5	18 438.1	12 079.6	26 174.5	10 626.6
Profit from revaluation	121.4	672.0	409.4	2 807.1	566.1	0.0
Subsidies	53 189.9	69 022.4	80 077.0	89 754.3	87 365.0	103 371.0
Change in the stocks of finished products and manufactured work in progress	-113.6	-229.8	20.3	-101.3	-225.9	533.2
Capitalized self-constructed assets	1 597.7	1 487.4	2 700.3	3 193.9	629.7	180.6

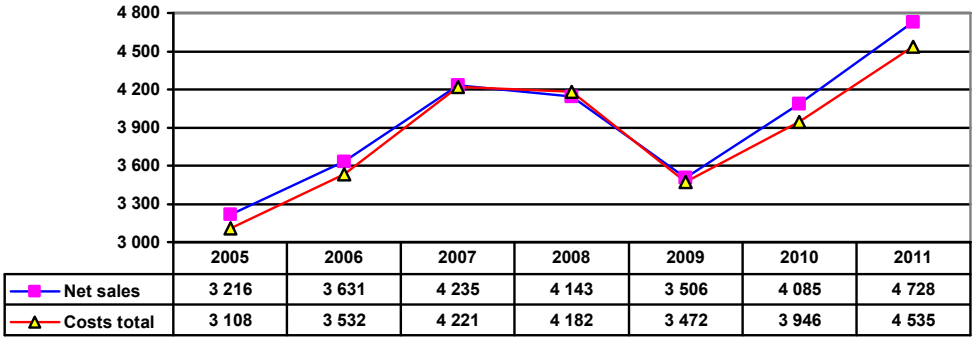


Figure 9. Sales revenue and total costs (million Euros) [17]
Source: the authors' illustration

More than half of the sales revenue (2011) was composed of sales to non-residents (51.7%); followed by other revenue (3.9%); subsidiaries (2.2%), etc.

Total costs (2011) were composed of other purchased services (53.0%), purchased fuel and power (11.8%), labour costs (10.1%) (incl. wages 7.5%), payments to agency workers (10.8%), depreciation (5.5%), materials, purchased products and semi-finished products (4.8%), etc.

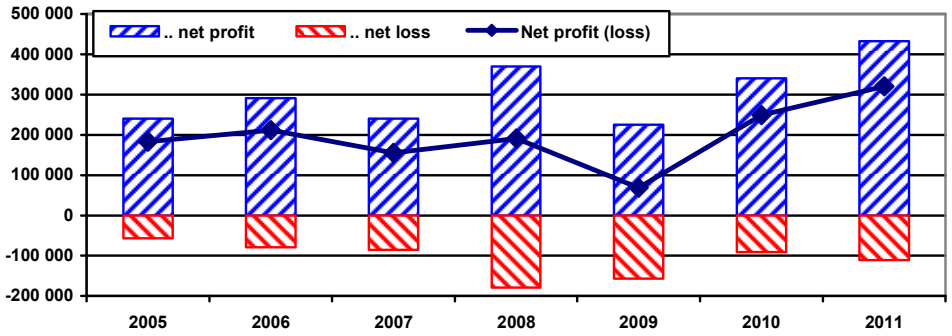


Figure 10. Net profit in Estonia (thousand euros) [17]
Source: the authors' illustration

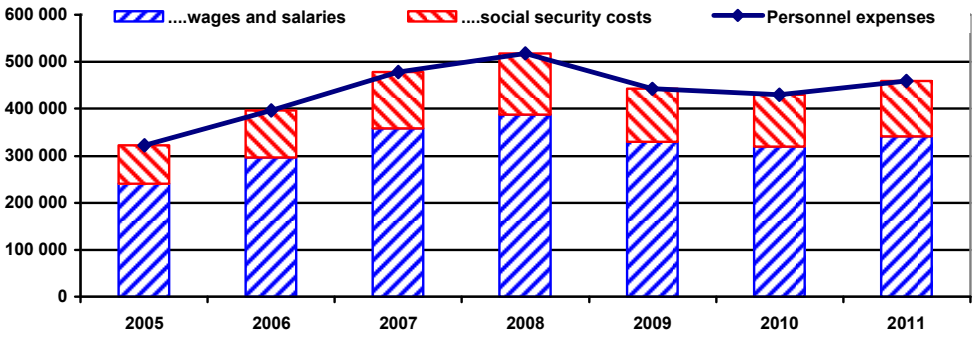


Figure 11. Personnel expenses in **Estonia (thousand euros) [17]**
Source: the authors' illustration

Personnel costs accounted for 12.4% of the total costs in 2008 and 10.9% in 2010. These costs, including wages, continued to increase until 2008. The economic crisis also forced companies to cut back on these costs. Thus, the wages of transport workers were 17.4% smaller in 2010 than two years earlier. It should be taken into account that the decrease in salaries was primarily influenced by the decrease in the number of employed persons.

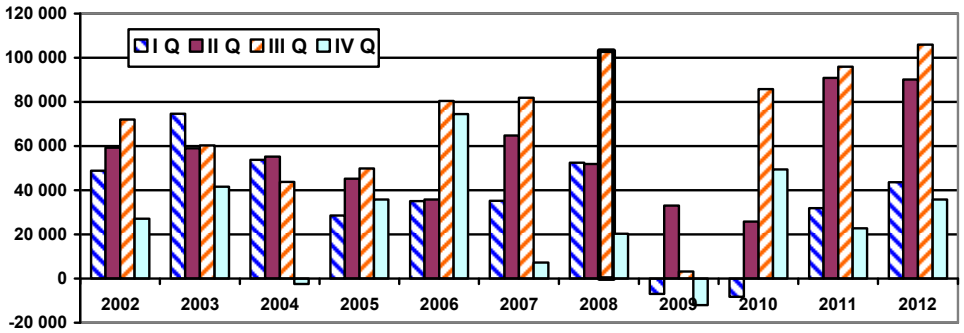


Figure 12. The net profit (loss) of transport enterprises in Estonia, thousand Euros [18]
Source: the authors' illustration

As a rule, transport companies have the largest profit in the third quarter and the lowest in the fourth. The quarter with the record profit in 2008 was QIII, when it rose to 103 million euros, but for the next year and a half, the following 3 quarters resulted in a loss, the greatest of them in QIV in 2009, -12 million euros. But already QIII of 2010, QII and QIII of 2011 and QII of 2012 had extremely high profits, the latter having

only been surpassed by QIII of 2008. Thus, the economic crisis had already been overcome by the seconds half of 2010.

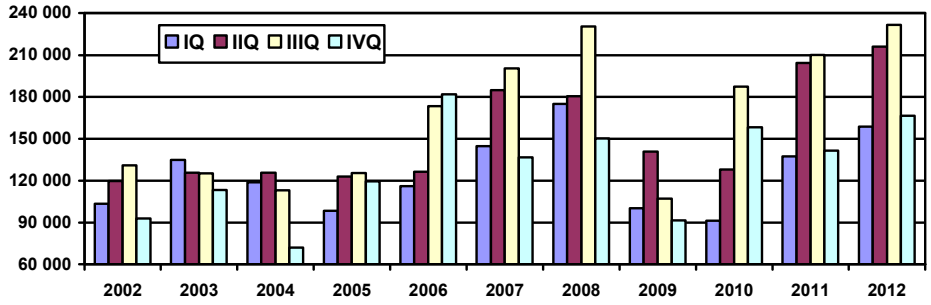
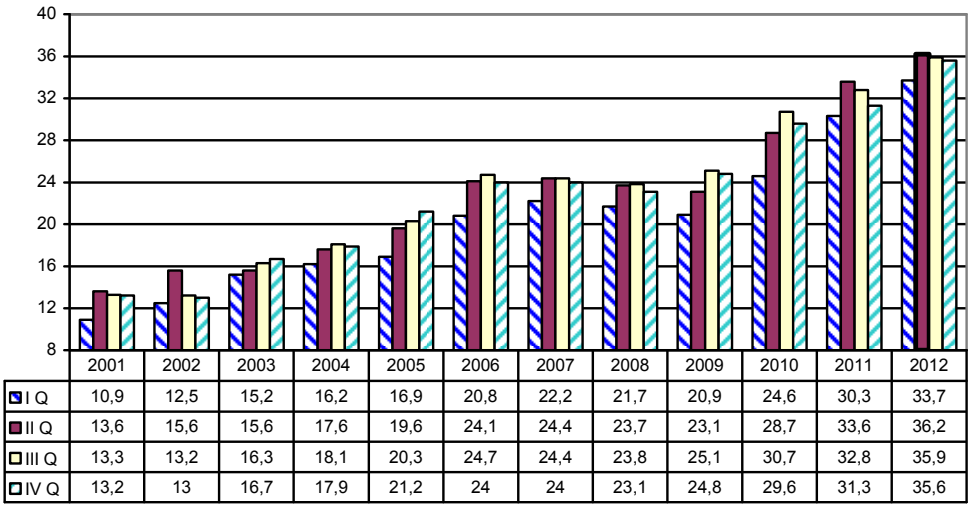


Figure 13. Net added value for transport companies in Estonia (thousand euros) [18]
Source: the authors' illustration

Until the first half of 2006, added value was stable, though, as a rule, it was smaller in QIV. There was a significant increase in 2006-2008; record added value was achieved in QIII of 2008, which was followed by one and a half years of great decline. From the second half of 2010, the times of the crisis were already greatly exceeded, reaching even better results than four years earlier.

Transportation and storage. Labour productivity per employed person on the basis of sales revenue (thousand Euros)



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
I Q	10,9	12,5	15,2	16,2	16,9	20,8	22,2	21,7	20,9	24,6	30,3	33,7
II Q	13,6	15,6	15,6	17,6	19,6	24,1	24,4	23,7	23,1	28,7	33,6	36,2
III Q	13,3	13,2	16,3	18,1	20,3	24,7	24,4	23,8	25,1	30,7	32,8	35,9
IV Q	13,2	13	16,7	17,9	21,2	24	24	23,1	24,8	29,6	31,3	35,6

Figure 14. Productivity of the transportation sales revenue per the Estonian employee basis (thousand euros) [18]
Source: the authors' illustration

There have been two periods of significant increase in labour productivity - the first until 2006, when it increased by up to 2.5 times. This was followed by stagnation and even a small regression. From 2009 however, there has been a great, nearly 1.5 time increase in labour productivity. If we compare QI of 2011 and QI of 2012, labour productivity has increased by 2.7 times. A similar comment also holds for hourly productivity on the basis of sales revenue, which also increased 2.7 times during the period between QII 2001 and QII 2012, rising to 81.62 euros during the latter quarter.

Basically, the same applies to labour productivity per employed person and hourly productivity based on added value, but with smaller increments. During the period from QII of 2002 to QII of 2012, labour

productivity per employed person increased by 1.8 times, rising to 6,000 euros in QII of 2012. At the same time, hourly productivity based on added value increased by 1.8 times, rising to 13,440 euros in QII of 2012.

Labour productivity per employed person based on sales revenue grew to 130.1 thousand euros for transport and storage companies in 2011. It was largest for SMEs (1-9), reaching 193.0 thousand euros, and smaller (80.7 euros) for companies with 50-99 employees. The latter was the only group that fell significantly short of the 2008 level.
Hourly productivity based on sales revenue grew for these companies to 75.90 euros in 2011. The largest and smallest results for the same company groups were respectively 123.50 and 44.70 euros – a 2.76 time difference (!).

Labour productivity per employed person on the basis of added value also increased until 2011, reaching 28.2 thousand euros. They were the largest for the company groups 100-249 and 250 or more, 41.6 and 36.7 thousand euros respectively. However, it was smallest for the 1- 9 group - 15.9 thousand euros. The level of the 50-99 group remained below the values of the previous three years. The 100-249 group also experienced a small decrease, despite the fact that the pre-crisis level was exceeded by nearly one and a half times. In 2009 and 2010, labour productivity per employed person based on added value for the 100-249 group was 42.8 and 54.3 thousand euros respectively.

Hourly productivity based on added value rose to 16.50 euros in 2011. All groups, except the 50-99 group that remained below the levels of the previous three years, experienced increases. Thus, the decrease in the number of employees was compensated by an increase in labour productivity and productivity. The 50-99 group was an exception, as it experienced both a significant drop in the number of employees, as well as labour productivity.

To conclude, we will look at the changes based on added value. A record value was achieved in 2011 – 1,047.5 million euros. The only decline was in 2009 (-2.6%). The biggest added value was provided by the 250 or more group that had an added value of 373.8 million euros. Compared to 2005, the added value of all transport and storage companies was 1.53 times higher in 2011. The 50-99 group, whose level remained below the values of the three previous years, was an exception.

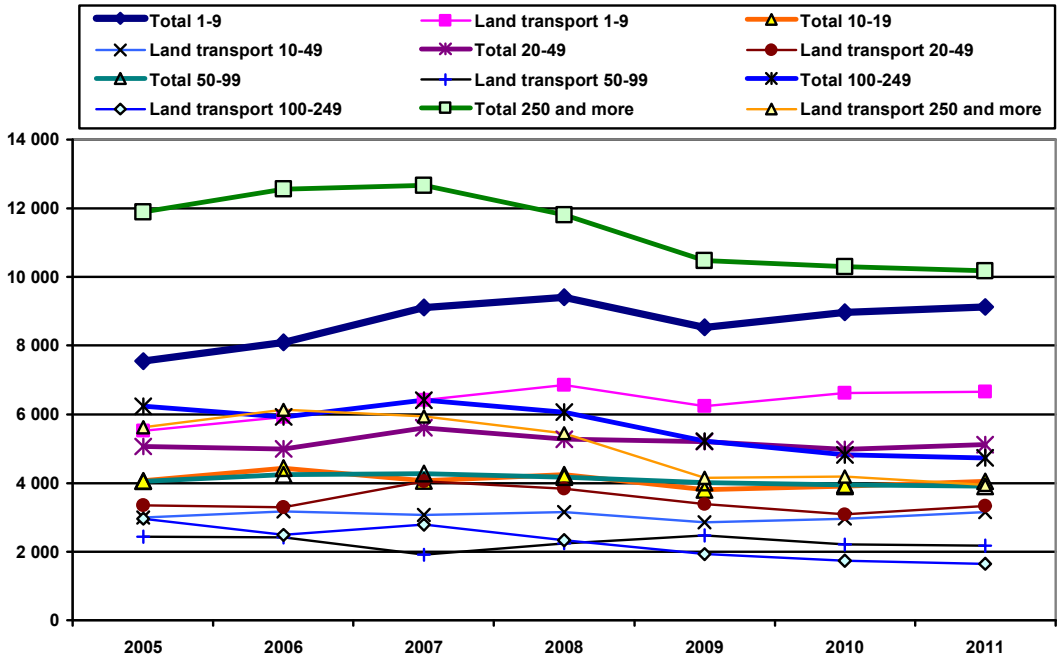
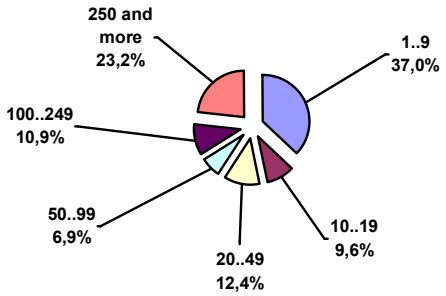


Figure 15. Transportation and storage. Number of employed persons [18]
Source: the authors' illustration

According to sales revenue, smaller companies had better economic indicators, while based on added value, the position was held by larger companies.



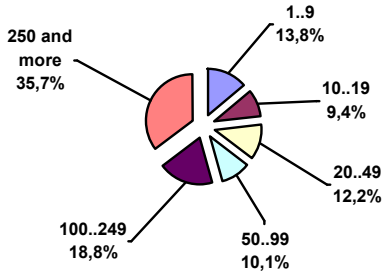


Figure 15. The production value, %, 2011 [18] **Figure 16. Value added, %, 2011** [18]
Source: the authors' illustration

SMEs with 1-9 employees (37.0%) and large companies with 250 and more employees (23.25) provided the highest production value. However, the highest added value was provided by larger companies. [18]

6. Transport of goods, by type of transport

The majority of goods were transported by railways (57.2% in 2012) (railway transport) and road transport (40.6% in 2012). International transport (transport of goods in international traffic) accounted for the 42.9% in 2012. Both the increase in quantity in 2011, as well as the decrease in 2012 occurred mainly at the expense of international shipments. Compared to 2010, transport was slightly higher in 2011, and somewhat smaller in 2012. By quarters, larger quantities occurred in the second half of 2010, and in QI of 2011 and QIV of 2012. The two quarters with the smallest quantities in the previous three years were QI of 2010 and QIII of 2012. However, the quantity of goods carried by road transport increased. If the volume of railway freight in 2011 increased compared to the previous year, there was a significant regression (-7.5%) in 2012. Sea transport was much lower in 2012, than in the previous two years. The share of air transport was very small. [19]

Table 11. Transport of goods by type of transport, indicator, thousand tons [19]

	2001	2003	2005	2007	2008	2009	2010	2011	2012
Total									
TG	80 265	93 998	96 301	10828 6	89 619	67 681	79 127	81 057	78 142
TGI	38 394	44 006	47 333	40 549	31 081	30 998	34 752	35 913	33 548
Road transport									
TG	14 105	27 133	27 358	38 523	35 788	27 928	30 276	31 007	31 733
TGI	3 421	3 935	5 383	7 025	7 586	6 839	6 893	8 717	9 292
Railway transport									
TG	64 657	65 588	68 187	68 538	52 752	38 392	46 705	48 378	44 731
TGI	33 483	38 798	41 194	32 299	22 416	22 798	25 712	25 524	22 578
Sea transport									
TG	1 495	1 273	751	1 221	1 077	1 361	2 146	1 672	1 678

TGI	1 483	1 269	751	1 221	1 077	1 361	2 146	1 672	1 678
Air transport									
TG	8	4	5	4	.	.	.	.	1
TGI	7	4	5	4	.	.	.	.	1

TG - Transport of goods

TGI - Transport of goods in international traffic

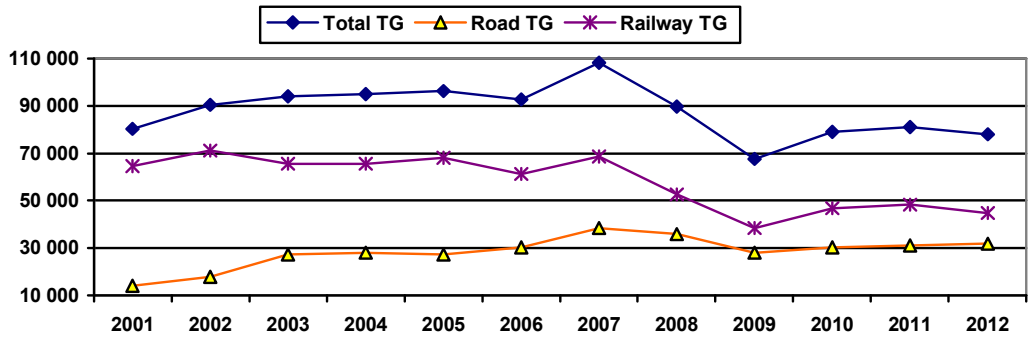


Figure 17. Transport of goods [19]

Source: the authors' illustration

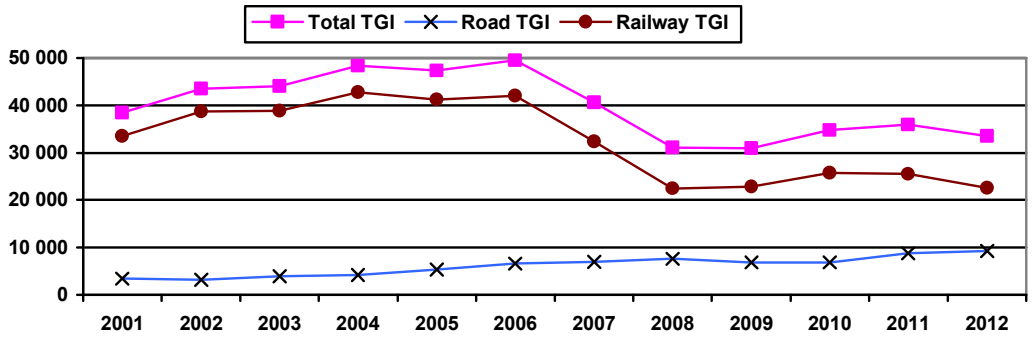


Figure 18. Transport of goods in international traffic [19]

Source: the authors' illustration

From 2001 to 2006, total turnover grew steadily; it remained almost the same in the following year, but was then followed by two years of sharp decrease. The increase in turnover in 2010 and 2011 was small, while in 2012, turnover again fell sharply. Thus, total turnover in 2009 and 2012 formed 2/3 of the results in 2006 and 2007.

An analysis of freight transport turnover by quarters provides a more accurate overview of the previous three years. Since the majority consists of international transport (85%), we will conduct the analysis based on that. In the first quarter of 2010, this indicator was 2.9 million tonne-km. There was a more substantial growth in the second half of the same year and QI of 2011. The following three quarters, on the other hand, experienced a decline; in fact, QIV of 2011 had even lower results than QI of 2010. This was followed by two quarters of growth, while the second half of 2012 was even lower than the quarter with the smallest turnover in recent years (QI of 2010). Thus – a regression took place.

Although the volumes of road transport actually increased, the decrease was caused by the railway. While in QI of 2010 and 2011, the turnovers were still 1.5 billion tonne-km, in the second half of 2012, they remained below one billion. Thus, QIII of 2012 formed 61% of the QIII of 2010 and QIV of 2012 formed 63% of the QIV of 2010.

At the same time, road transport volumes have increased by almost 1.4 times, while sea transport volumes have decreased. The largest volumes were reached in QII-QIV of 2010. While turnover in QIII of 2010 was 634 million, it was only 357 million tonne-km in QIII of 2012, i.e. 56.3%.

Table 12. Freight transport, by type of transport and indicator [20]

	2001	2005	2007	2008	2009	2010	2011	2012
Total								
FT	16 180 286	19 502 518	20 347 017	15 351 793	13 423 116	14 690 214	14 299 099	13 801 527
FTI	14 905 761	16 960 689	16 978 055	12 229 228	11 315 371	12 548 436	12 187 756	11 855 481
Road transport								
FT	4 676 878	7 641 259	10 659 826	8 279 305	6 290 345	6 026 876	6 567 771	7 097 990
FTI	4 128 898	5 846 021	8 152 907	5 913 472	4 766 290	4 605 120	5 227 462	5 809 085
Railway transport								
FT	8 557 365	10 639 122	8 429 956	5 942 896	5 933 569	6 637 879	6 270 817	5 129 421
FTI	7 831 019	9 892 552	7 567 914	5 186 164	5 349 884	5 917 860	5 499 807	4 472 280
Sea transport								
FT	2 942 588	1 218 436	1 254 833	1 127 947	1 198 628	2 024 862	1 459 902	1 573 490
FTI	2 942 425	1 218 436	1 254 833	1 127 947	1 198 628	2 024 862	1 459 878	1 573 490
Air transport								
FT	3 455	3 701	2 402	.	.	.	.	625
FTI	3 419	3 680	2 401	.	.	.	.	625

FT – Freight turnover

FTI - Freight turnover in international traffic units: thousand tonne-kilometres

Interstate transport constitutes the majority of passenger transport. On the other hand, international lines were dominant in sea and air transport. In 2012, passenger transport on international lines constituted only 4.4% of the total. The main mode of transport was land transport and within that, urban lines were dominant. Thus, in 2012, railway transport constituted 2.0%, sea transport 4.3% and air transport 0.5% of all passenger transport. The number of passenger grew in all quarters of 2012 compared to the previous year, except in railway transport. The largest increase took place in air transport – 229 thousand or 29.0%.

Despite the growth in 2012, passenger transport remained at a lower level than during pre-crisis years, except in sea transport. [21]

Table 13. Passenger transport by type of transport, indicator [21]

	2001	2005	2007	2008	2009	2010	2011	2012
Total								
P	249 231.6	209 708.7	212 939.0	193 378.8	188 159.1	173 695.7	171 364.9	200 746.5
PI	4 416.0	6 059.9	6 414.0	6 761.5	7 037.7	7 382.9	8 130.4	8 791.3
Land transport								
P	244 330.0	202 651.3	205 440.9	185 617.5	180 058.6	165 294.7	162 324.8	191 114.4
PI	864.0	784.5	1 070.6	1 125.8	915.1	908.5	1 038.4	1 240.0
..railway transport								
P	5 480.0	5 154.7	5 442.3	5 285.4	4 894.0	4 799.4	4 757.6	4 409.2
PI	117.0	138.0	150.4	161.4	96.0	98.4	83.6	97.2
..other land transport (passenger transport include bus, trolley bus and tram transport)								
P	238 850.0	197 496.6	199 998.6	180 332.1	175 164.6	160 495.3	157 567.2	186 705.2
PI	747.0	646.5	920.2	964.4	819.1	810.1	954.8	1 142.8
....urban transport (urban lines include passenger buses, trams and trolley buses)								
P	205 490.0	162 842.1	165 898.0	148 965.5	149 483.8	133 823.4	129 086.3	158 494.0
Sea transport								
P	4 530.0	5 536.1	6 352.6	6 952.2	7 432.1	7 722.8	8 233.0	8 596.8
PI	3 200.0	3 785.5	4 222.5	4 852.3	5 485.3	5 837.6	6 330.8	6 555.0
Inland waterways transport								
P	9.6	5.1	3.9	3.5	7.9	14.7	16.0	15.0
Air transport								
P	362.0	1 516.2	1 141.6	805.6	660.5	663.5	791.1	1 020.3
PI	352.0	1 489.9	1 120.9	783.4	637.3	636.8	761.2	996.3

P – Passengers, thousand

PI - Passengers in international traffic, thousand

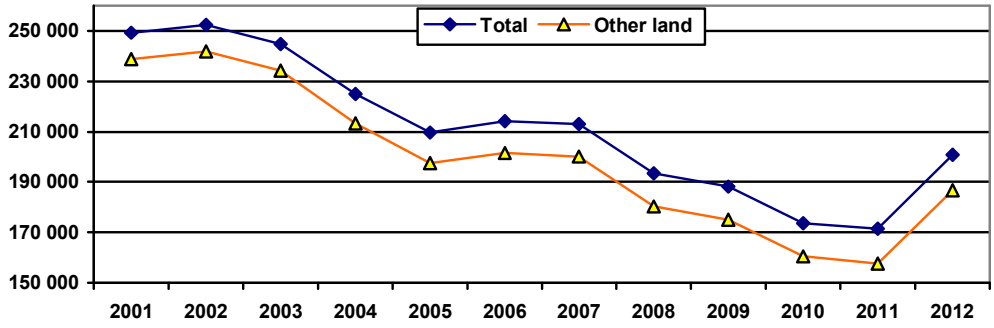


Figure 19. Passenger transport, by type of transport: total transport, and other passenger land transport types (bus, trolley bus and tram) [21]

Source: the authors' illustration

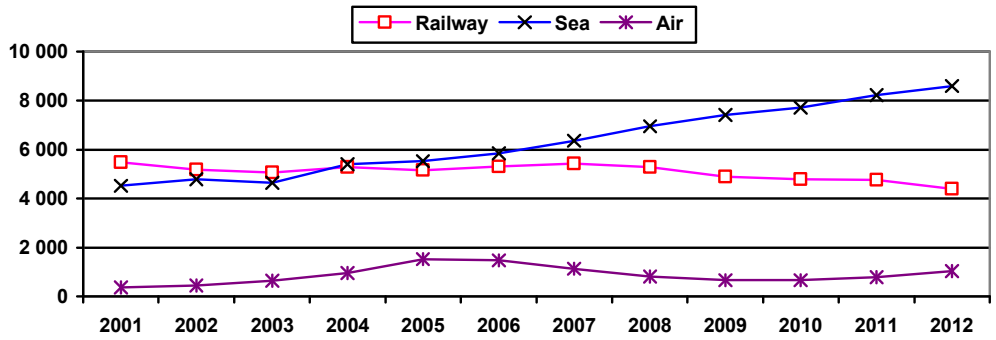


Figure 20. Passenger transport, by type of transport: railway, sea and air transport [21]
Source: the authors' illustration

The trend for turnover is the same as that for the number of passengers. This indicates that no significant changes have taken place in 2012 regarding the travel distance, which means that no new international lines have been opened.

Passenger transport grew steadily from 2001 to 2006. Over the next three years, the number of passengers decreased slightly; this was followed by a new growth. The level for 2012 remains just slightly (21,384 or 0.4%) below the record level of 2006. The share of international trips has also been growing continuously. [22]

Table 14. Passenger traffic volume, by type of transport, thousand passenger-kilometres [22]

	2001	2005	2007	2008	2009	2010	2011	2012
Total								
P	3589 144	4832 648	5011 902	4772 700	4409 862	4501 618	4771 146	5117 472
PI	1294 715	2122 235	2336 796	2300 935	2186 926	2431 951	2723 983	2896 437
Land transport								
P	2902 662	3185 701	3182 919	2949 267	2585 121	2513 591	2503 277	2725 241
PI	622 003	503 457	537 695	506 948	388 786	470 573	483 702	533 040
..railway transport								
P	182 649	247 899	273 554	273 730	249 111	247 430	242 884	235 524
PI	22 317	24 485	27 418	28 354	17 051	17 808	15 072	17 075
..other land transport (transport include bus, trolley bus and tram transport)								
P	2720 013	2937 802	2909 365	2675 537	2336 010	2266 161	2260 393	2489 717
PI	599 686	478 972	510 277	478 594	371 735	452 765	468 630	515 965
....urban transport (urban lines include passenger buses, trams and trolley buses)								
P	866 252	696 366	746 154	681 436	661 514	605 485	592 027	706 723
Sea transport								
P	376 193	540 819	722 303	843 706	969 756	1113 732	1216 250	1248 565
PI	363 999	520 308	697 874	819 549	947 074	1092	1194	1225

						027	373	061
Inland waterways transport								
P	300	216	176	36	82	184	155	149
Air transport								
P	309 989	1105 912	1106 504	979 692	854 903	874 112	1051 465	1143 516
PI	308 713	1098 470	1101 227	974 438	851 066	869 350	1045 908	1138 337

P – Passengers

PI - Passengers in international traffic

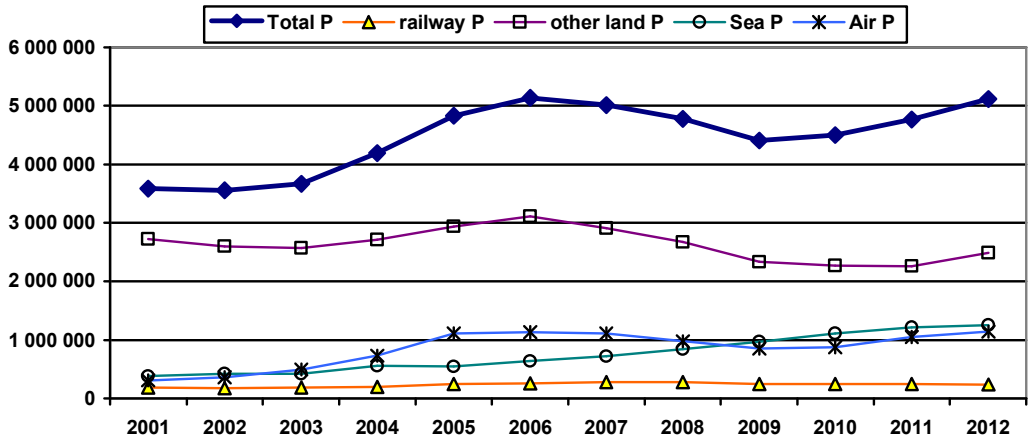


Figure 21. Passengers traffic, thousand passenger-kilometres [22]

Source: the authors' illustration

Conclusions

1. This analysis proves once again that transport companies were better at organising their work skilfully during the crisis and thus also at exiting the crisis better than other branches of the economy.
2. Companies, whose management was unable to perform an economic analysis (little knowledge of the economy and experience), that lacked in communication skills with customers, had partner companies that fell into financial difficulty, had an outdated car park and related problems, were unable to pay the lease of machinery, etc. fell into difficulty or were forced to cease their activities.
3. Companies exited the economic crisis by hiring professionals, engineers and customer service clerks in surges.
4. Companies exited the economic crisis through an increase in labour productivity, while paying competitive wages.
5. The share of large companies, especially those with 250 and more employees, was decisive – their work was more effective.
6. The new (supplemented) Employment Contracts Act of Estonia that enabled companies to operate more flexibly and effectively in the labour market also had a positive effect.

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