

# **Labour Productivity of Transportation Enterprises by Turnover per Person Employed Before and After the Economic Crisis: Economic Crisis Lessons from Europe**

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## **Abstract**

*The objective of this article is to analyse labour productivity by turnover per person employed of transportation and storage companies in total and by enterprise size class in the EU-15 and EFTA countries and continue with the new EU Member States from Central and Eastern Europe (CEE-8) and the Baltic States (Estonia, Latvia and Lithuania) or new European Union (EU) states before and after the economic crisis, and to compare them on the EU level. We will look at how the economic crisis has affected transportation companies of various sizes and the number of persons employed. We will analyse the changes in the size classes of companies. The emphasis is on the work efficiency of small and medium sized enterprises (SME) during the economic crisis. We will attempt to answer the following question: what size class did the companies that worked most efficiently belong to, especially in the conditions of the economic crisis, and what is the optimal size for transportation companies? What are the lessons learned from the economic crisis? Based on this and previous publications, we will offer a number of generalized recommendations.*

**Key Words:** labour productivity, turnover per person employed, transportation and storage companies, enterprise size class, European Union, economic crisis

## ***1. Introduction***

Four major sectors of the economy (non-financial companies) with the greatest gross domestic product and the largest number of employees will be observed, these are: industry, construction, trade and transportation. The situations before, during and after the crisis will be viewed.

We look at the apparent labour productivity of transportation and storage enterprises in total and by regions, countries and enterprise size classes.

Here, we analyze the labour productivity of the transport companies of the European Union and EFTA by turnover per person employed.

The CEE-8 and Baltic States were a half-century of Soviet-bloc countries. This will help to understand better the economic backwardness of the Western European countries. [1-2]

Let's start with the economically strong Western Europe, the EU-15 and EFTA countries and continue with the new EU Member States from Central and Eastern Europe (CEE-8: Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) and the Baltic (Estonia, Latvia and Lithuania) countries. Our analysis does not separate Greece, Cyprus and Malta.

Total working efficiency or labour productivity [3-10] and turnover [11-13] of transportation companies in the European countries we have previously analysed in 2013.

**The theoretical bases** have been brought in more detail in the authors' earlier works [3-14] and in the works of other authors [15-17].

## 2. Methodology and Definitions

*Structural business statistics* (SBS) can provide answers to questions on the wealth creation (value added), investment and labour input of different economic activities. The data can be used to analyse structural shifts, country specialisations, sectoral productivity and profitability, as well as a range of other topics. Because they are available broken down by enterprise size class, structural business statistics also permit a detailed analysis of *small and medium-sized enterprises (SMEs)*, which is of particular use to EU policymakers and analysts wishing to focus on entrepreneurship and the role of SMEs. Structural business statistics provide useful background information on which to base an interpretation of short-term statistics and the business cycle. [18, 19]

The Statistical classification of economic activities in the European Community, abbreviated as NACE, is the nomenclature of economic activities in the EU.

NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics and in other statistical domains developed within the European statistical system.

The first reference year for NACE Rev. 2 compatible statistics is 2008, after which NACE Rev. 2 will be consistently applied to all relevant statistical domains. [20]

*The techniques and labour market survey definitions* used by the authors have been specified in Eurostat (Methodological Notes. EU-LFS) [21].

The main baseline data and methodology used in the analysis are those of Eurostat. [22, 23]

## 3. Analyses of Turnover per Person Employed Of European Union and EFTA Transportation and Storage Companies

In the beginning we look at the total turnover per employed, then by size class and the end consolidated analysis of transportation and storage companies of EU and EFTA countries.

### 3.1 Analyses of Turnover Per Person Employed. Total

**Table 1. Turnover per person employed. Total. Transportation and storage of EU-15 and EFTA countries.**  
[22]

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	242.0	213.5	215.6	216.0
Denmark	:	:	:	148.1	276.6	340.0	:
Germany	:	:	:	130.7	117.5	125.8	129.1
Ireland	:	:	:	171.5	158.1	171.9	199.9
Spain	:	:	:	108.6	101.1	108.1	113.8
Italy	:	:	:	126.3	112.0	130.1	:
Luxembourg	:	:	:	210.8	180.9	210.8	219.7
Netherlands	:	:	:	172.4	159.9	166.3	175.6
Austria	149.6	161.0	170.6	174.7	162.4	174.2	184.9
Portugal	:	:	:	106.0	98.2	104.4	111.4
Finland	:	134.1	135.7	142.2	129.0	139.7	153.6
Sweden	:	:	:	161.8	136.6	160.3	172.2
United Kingdom	:	:	:	136.2	117.3	129.1	134.3
Norway	237.3	247.3	242.4	247.5	218.8	255.6	273.0
Switzerland	:	:	:	:	186.0	229.3	

Greece was in 2009 70.6 thousands, France in 2010 139.2 thousands and Cyprus in 2011 85.8 thousands euro turnover per person employed.

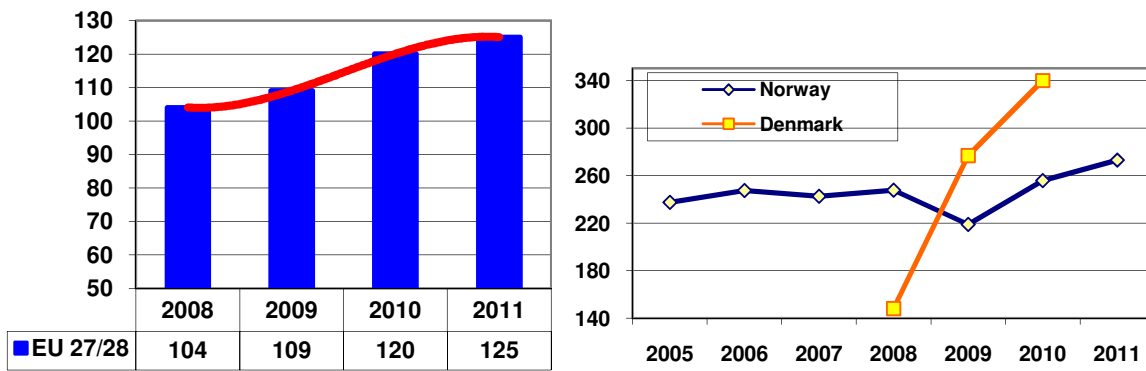


Figure 1. Turnover Per Person Employed. Transportation and Storage. Total. [22]

Source: the authors' illustration

The total turnover per person employed grew in 2009 and 2010 in the EU-27 in comparison to 2008. Two-year growth was 15.4%. According to this indicator, transportation and storage enterprises of EU successfully got through the crisis year 2009. 2011th grew EU-28 apparent labour productivity 4.2%. 2011th average labour productivity in the EU-28 grew by 4.2%.

On the other hand, if we view turnover per person employed in transportation and storage by countries and by the size of companies, this trend is no longer valid for the majority.

Thus, the EU average is not enough to draw definite conclusions on the whole EU.

In Norway, the total turnover per person employed has been relatively stable, with minor fluctuations. In 2009, compared with the previous year, it decreased by 11.6%, but in the following years there was record high turnover per person employed, which was the second best productivity for Denmark. The productivity growth in Denmark in 2009 was 1.9 and, in the following year, even 22.9%. The reasons for such a sharp rise in Denmark and throughout Europe during the economic crisis require a separate investigation on the basis of modal size class.

In Denmark, the number of persons employed decreased 2.3 times in 2009, and by further 4.6% in the following year. The turnover of Denmark decreased 1.25 times in 2009 compared to the previous year. This answers the question of why there was such a steep increase in labour productivity.

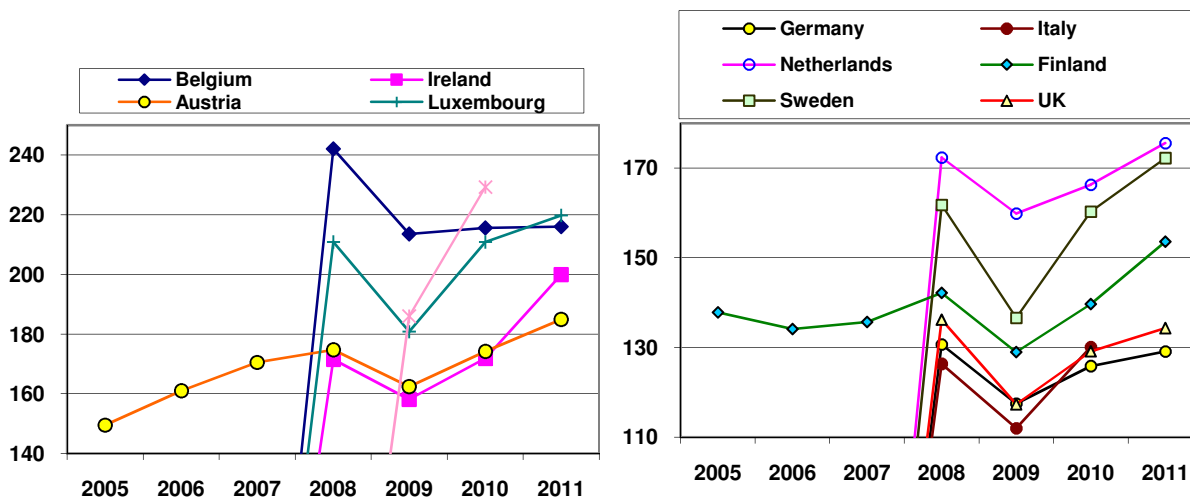


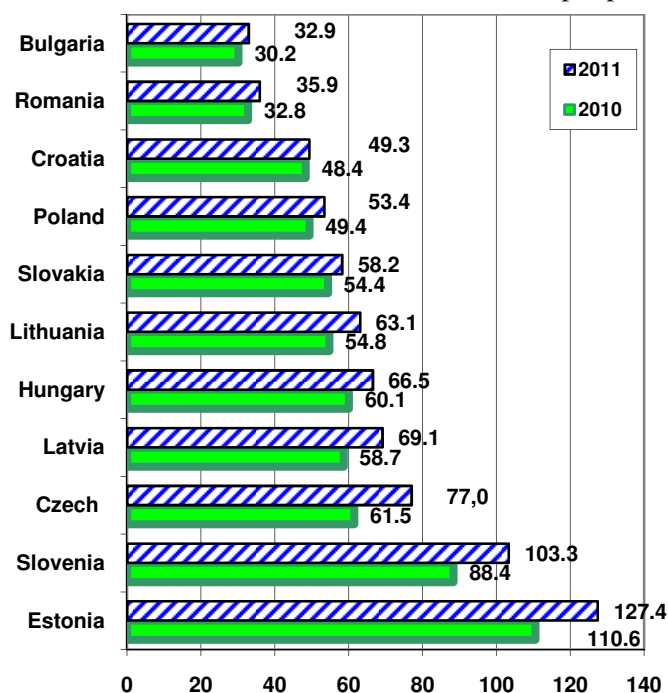
Figure 2. Turnover Per Person Employed of Transportation of Major EU And EFTA Countries. Total [22]

Source: the authors' illustration

14 countries had turnover per person employed of transportation and storage above the EU 27 average. As a rule, the labour productivity fell in 2009 in comparison with the previous year. Of these six countries remained the 2010th the lower level of the 2008th year level. Derogation from Denmark was a great turnover per employee growth from the 2008th year.

Thus, according to the average, it can not yet make definitive conclusions.

The following is a comparison of the CEE-8 and Baltic States total turnover per person employed.



**Figure 3. Total Turnover per Person Employed in Transportation in CEE and the Baltic Countries of the EU in 2010 and 2011. [22]**

*Source:* the authors' illustration

They were very large differences between countries. Estonian transport enterprises, labour productivity in the 2010th was 3.7 times higher than in Bulgaria (in 2011, was 3.9 times), but 3.1 times less than in Denmark. Thus, the Danish transport companies, in turn, productivity was 11.3 times higher than in Bulgaria (!).

This leads the standard of living (salary) and part of the whole economy of difference. This difference is due to both objective (modes of transportation, etc.) and subjective, the overall look.

Next, analyze the labour productivity dynamics during the crisis in Eastern Europe and the Baltic countries has been brought here.

**Table 2. Turnover per Person Employed In CEE and the Baltic Countries. Total Transportation and Storage. [22, 23]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	32.2	26.9	30.2	32.9
Czech Republic	:	:	:	71.5	61.5	:	77.0
Estonia	82.7	90.3	100.5	101.1	94.1	110.6	127.4
Croatia	:	:	:	55.7	45.3	48.4	49.3
Latvia	:	:	:	57.6	52.5	58.7	69.1
Lithuania	34.7	41.5	48.2	52.4	43.0	54.8	63.1
Hungary	43.3	51.2	55.9	64.0	55.4	60.1	66.5
Poland	35.1	40.2	45.7	51.5	41.1	49.4	53.4
Romania	22.1	26.3	31.7	34.5	28.3	32.8	35.9
Slovenia	68.4	74.9	81.1	87.8	77.3	88.4	104.3
Slovakia	:	:	:	57.7	50.8	54.4	58.2

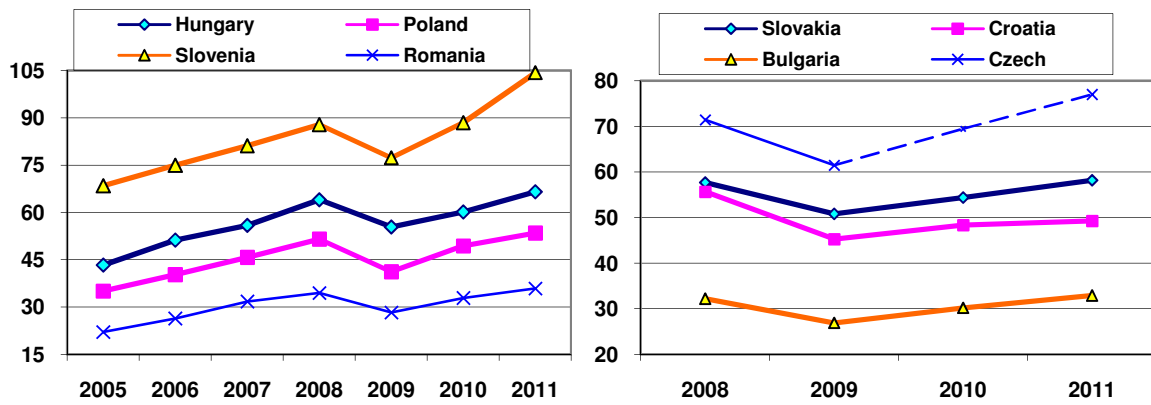


Figure 4. Turnover Per Person Employed of Transportation of the CEE Countries. [22]

Source: The Authors' Illustration

Only Slovenia surpassed the level of 2008 in 2010, but in other CEE-8 countries the pre-crisis levels were not reached. In 2011, all CEE and Baltic countries with the exception of Croatia exceeded this level.

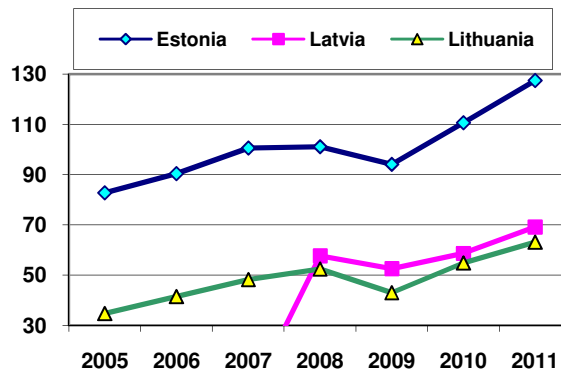


Figure 5. Turnover per Person Employed of Transportation of the Baltic Countries. [22]

Source: The authors' illustration

These countries also experienced a decline in labour productivity in 2009, compared with the previous year; while in 2010 the 2008 level was once again exceeded. In 2011, increase their productivity even more.

Regardless in 2009, decline, labour productivity growth in Lithuania from 2005 to 2011 81.8%, at the same time in Estonia 54.0% and in Latvia from 2008 to 2011 20.0%.

Thus, the transportation companies of the Baltic States and Slovenia successfully exited the economic crisis, as did some Northern and Western European countries.

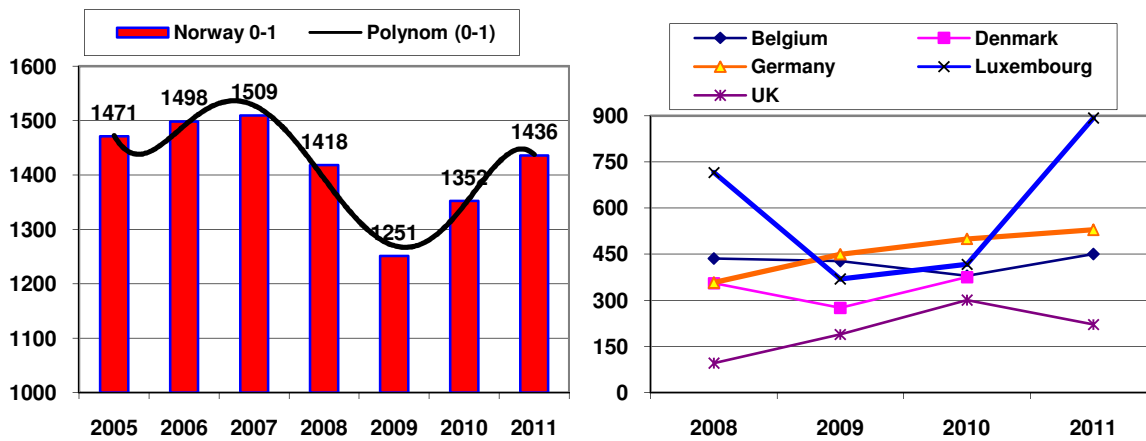
Estonia and Slovenia had the largest turnover per person employed in transportation and storage of the post-socialist states among new EU member states.

### 3. 2 Analyses of Enterprise Size Class of Transportation and Storage Companies

**Table 3. Turnover Per Person Employed. From 0 To 1 Person Employed. [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	436.3	427.8	379.9	450.5
Denmark	:	:	:	356.3	276.5	376.3	:
Germany	:	:	:	358.0	449.7	499.6	529.6
Ireland	:	:	:	78.3	75.1	89.1	86.9
Spain	:	:	:	57.1	53.0	59.6	61.8
Italy	:	:	:	68.4	41.7	67.4	:
Luxembourg	:	:	:	716.6	369.3	417.4	892.7
Netherlands	:	:	:	93.0	120.9	155.5	154.9
Austria	187.4	159.7	185.4	157.9	156.6	148.0	194.2
Portugal	:	:	:	36.7	36.9	38.7	41.3
Finland	:	114.8	160.7	148.0	140.3	149.0	181.7
Sweden	:	:	:	166.7	157.6	186.0	192.5
United Kingdom	:	:	:	95.5	189.9	300.8	221.9
Norway	1,471.1	1,498.4	1,509.0	1,418.6	1,251.7	1,352.1	1,436.0

France was in 2010 145.9 thousand euro.



**Figure 6. Turnover Per Person Employed of Transportation of Norway And of EU-15 Countries. From 0 to 1 Person Employed. [22]**

Source: The authors' illustration

Norwegian trend line of turnover per person employed of transportation is a of 5-degree polynomial:  $y = -3,0875x^5 + 61,898x^4 - 450,09x^3 + 1440,5x^2 - 1985,2x + 2408,3; R^2 = 0,9713$

During the boom, i.e. before the economic crisis, labour productivity was continuously rising. In 2008, when the first indicators of the crisis were already appearing, there was a significant drop, followed by a great decline in 2009. The situation improved in the following years, but did not yet reach the pre-crisis level in 2011. As a rule, this generalisation made on the basis of Norway fits well with other countries as well.

The turnover per person employed of Norway was 10 to 12 times higher than the average of the EU, in spite of dropping somewhat in the year of the crisis.

The labour productivities of France, the Netherlands, Austria and Finland also exceeded the average of the EU by one quarter. Sweden was, however, one and a half times higher than the average of the EU in 2010 (186.0).

The labour productivities of five countries were, however, 3 to 4 times higher than the EU average. In spite of the fact that that the labour productivities of Belgium, Denmark and Luxembourg decreased compared to the year before, the high absolute levels of those countries enables them to compete successfully even during difficult times.

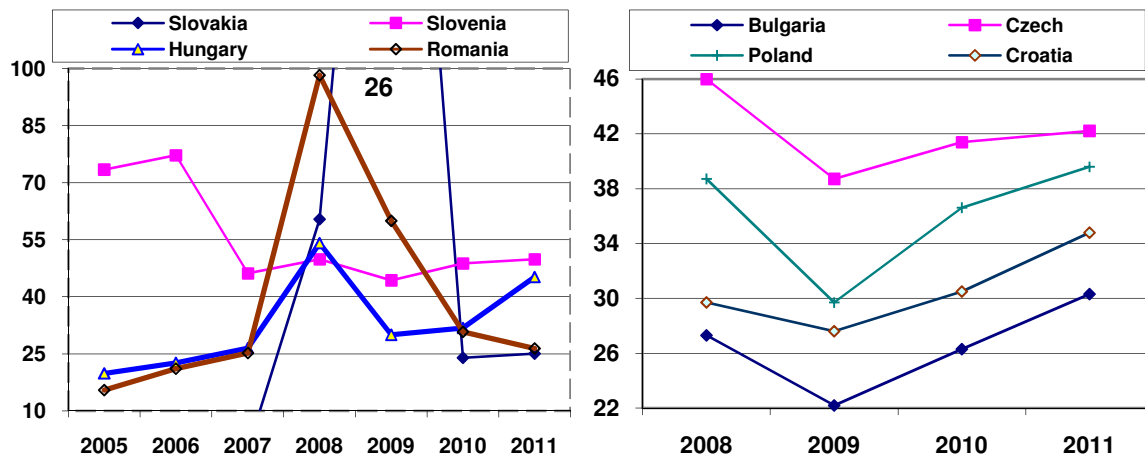
The growths of Germany and the UK were strong.

Ireland, Greece, Spain, Italy and Portugal of the old EU-15 countries were, however, two to three times lower than the EU average. Their indicators were also lower than those of most Eastern European countries.

We will look one-man businesses at the turnover of transportation and storage companies per person employed of CEE-8 and Baltic countries.

**Table 4. Turnover Per Person Employed. From 0 To 1 Person Employed. [22]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	27.3	22.2	26.3	30.3
Czech Republic	:	:	:	46.0	38.7	41.4	42.2
Estonia	74.9	59.0	143.1	140.3	77.3	84.4	:
Croatia	:	:	:	29.7	27.6	30.5	34.8
Latvia	:	:	:	71.2	43.5	82.4	83.4
Lithuania	12.7	15.9	17.5	18.6	:	44.4	65.4
Hungary	19.9	22.6	26.5	54.1	30.0	31.8	45.2
Poland	:	:	:	38.7	29.7	36.6	39.6
Romania	15.5	21.1	25.2	98.2	:	30.8	26.4
Slovenia	73.4	77.2	46.2	49.9	44.3	48.8	49.9
Slovakia	:	:	:	60.4	266.1	24.0	25.1

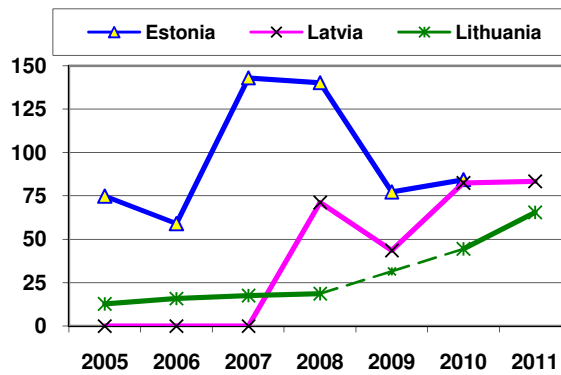


**Figure 7. Turnover Per Person Employed of Transportation of CEE Countries Of EU. From 0 to 1 Person Employed. [22]**

Source: The authors' illustration

In the labour productivity of one-man transport enterprises, there were abrupt changes in some countries. The labour productivity of Romania in 2008, for example, was 98.2 of turnover per person employed, it was four-five times lower in the previous years and more than three times lower in 2010. The turnover per person employed of Estonia in 2008 was also 2.4 times higher than in the two previous years and 1.7 times higher than in 2010. In Lithuania, labour productivity was 2.4 times higher in 2010 compared to 2008.

One of the problems here appears to be how much information can be obtained from these companies. For example, most taxis in Estonia are self-employed persons and this poses the question of how accurate their accounting is? The same applies to the companies with one truck. Is all the income received by them reflected in their reports?



**Figure 8. Turnover Per Person Employed Of Transportation Of The Baltic Countries. From 0 To 1 Person Employed. [22]**

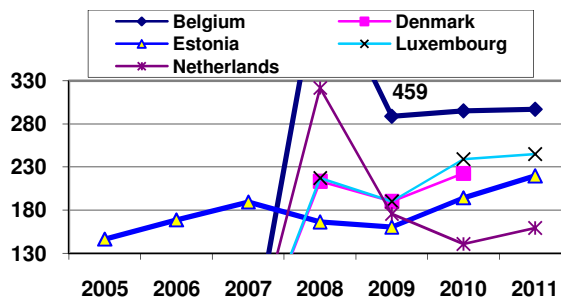
Source: The authors’ illustration

The labour productivity of Estonia is several times higher than that of other new EU member states and exceeds many EU-15 countries as well. It doubled before the crisis, 2009 lowered it again, but it remained slightly above the level of 2005 and 2006. There was a small increase in 2010, but it still remained a lot lower than the level of pre-crisis years.

**Table 5. Turnover Per Person Employed. From 2 to 9 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	459.3	288.8	295.1	296.9
Denmark	:	:	:	213.3	189.8	222.7	:
Germany	:	:	:	109.6	93.0	96.2	102.2
Ireland	:	:	:	106.2	101.7	93.4	102.4
Spain	:	:	:	84.8	80.3	82.1	86.8
Italy	:	:	:	122.0	98.1	126.1	:
Luxembourg	:	:	:	216.9	189.8	239.0	244.8
Netherlands	:	:	:	321.8	175.4	140.5	159.0
Austria	91.5	98.4	102.0	111.8	98.1	101.2	106.8
Portugal	:	:	:	74.7	68.9	79.9	84.4
Finland	:	130.9	108.3	115.0	103.7	115.2	119.5
Sweden	:	:	:	135.4	121.3	139.0	145.5
United Kingdom	:	:	:	193.3	104.4	149.5	131.4
Norway	145.9	158.1	141.2	149.7	130.4	161.2	171.7
Switzerland	:	:	:	:	213.3	164.2	

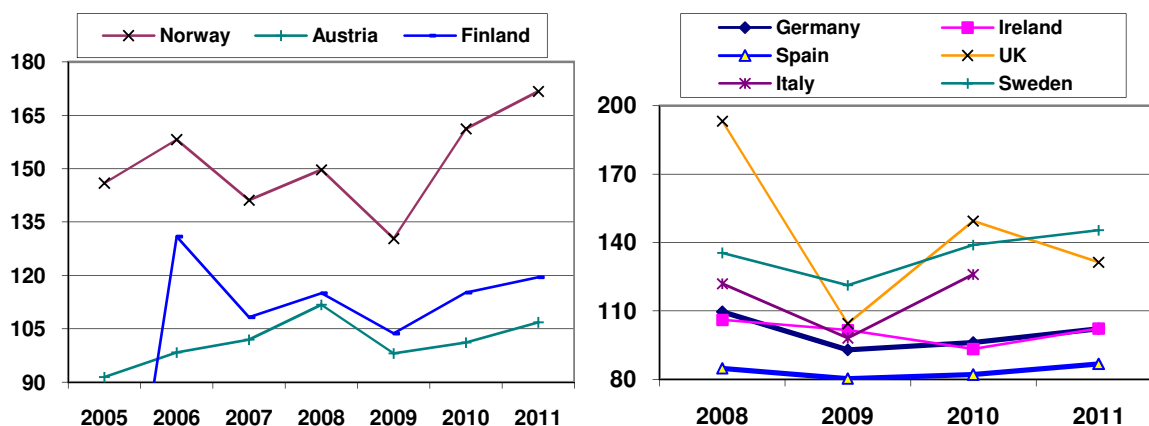
France was in 2010 118.4 thousand euro.



**Figure 9. Turnover Per Person Employed of Transportation of Countries of EU. From 2 to 9 Person Employed [22]**

Source: The Authors’ Illustration





**Figure 10. Turnover Per Person Employed of Transportation of Countries of EU And Norway. From 2 to 9 Person Employed [22]**

Source: The Authors' Illustration

Norway, Italy, Portugal and Sweden exceeded the record levels of the labour productivity of their microenterprises in 2010, but Germany, the UK and Spain of major countries and Ireland, Austria, Cyprus, Switzerland and Finland of smaller countries failed to do so. There was a very big decline in the United Kingdom and the Netherlands.

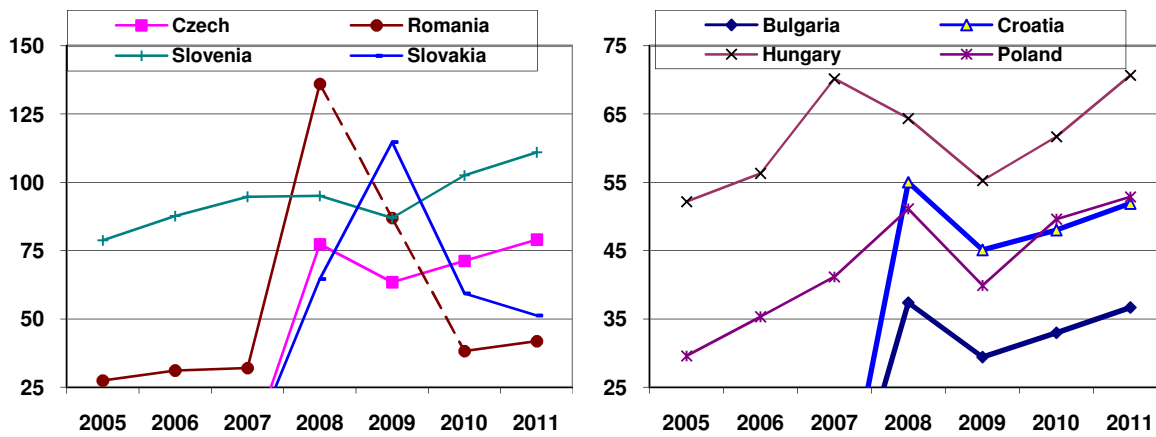
The labour productivity of the microenterprises of four countries including Estonia (from 2 to 9 person employed) is considerably higher than in the case of other countries.

It is the first time for a post-socialist country to compete successfully with strong old EU countries on the basis of labour productivity. However, the differences between the highest and lowest in this group of enterprises exceed 10 times and are close to 5 times among post-socialist countries.

Since the indicators of the microenterprises (up to 10 employees) of countries of similar economic level are very different and the consequences and reasons of the economic crisis differed greatly, the indicators must be analysed together with other indicators in order to draw final conclusions.

**Table 6. Turnover per Person Employed Of CEE-8 and Baltic Countries. From 2 to 9 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	37.4	29.4	33.0	36.7
Czech Republic	:	:	:	77.4	63.4	71.3	79.0
Estonia	146.3	168.6	189.3	166.1	160.3	194.2	219.5
Croatia	:	:	:	55.0	45.1	48.0	51.9
Latvia	:	:	:	70.8	61.3	70.9	92.7
Lithuania	40.2	48.3	57.5	62.8	:	67.9	71.1
Hungary	52.2	56.3	70.2	64.4	55.3	61.7	70.7
Poland	29.6	35.3	41.2	51.1	39.9	49.6	52.9
Romania	27.5	31.1	32.1	136.1	:	38.3	41.9
Slovenia	78.8	87.7	94.7	95.1	87.0	102.6	111.0
Slovakia	:	:	:	64.6	114.8	59.4	51.3



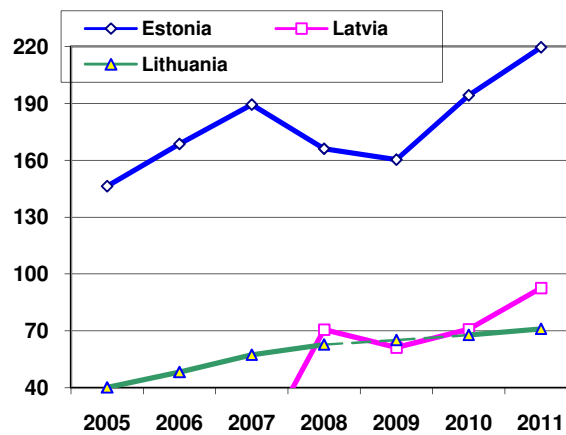
**Figure 11. Turnover Per Person Employed of Transportation of CEE Countries of EU. From 2 to 9 Person Employed [22]**

Source: The Authors' Illustration

Labour productivity for micro companies with 2 to 9 persons employed was significantly higher in four countries of EU, incl. Estonia, than in other states.

This is the first time an old post-socialist country is successfully competing at labour productivity with older and stronger EU states. At the same time, there are more than 10 time differences in this group of enterprises, and nearly 5 time differences among post-socialist states.

Since the indicators of micro companies (up to 10 employees) in states with similar economic levels are extremely varying and the consequences and reasons of the economic crisis differed greatly, a set of other indicators need to be analysed in order to provide definite conclusions.



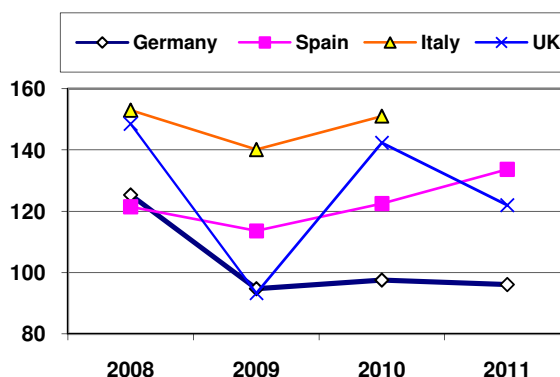
**Figure 12. Turnover Per Person Employed of Transportation of The Baltic Countries. From 2 to 9 Person Employed [22]**

Source: The Authors' Illustration

**Table 7. Turnover Per Person Employed. From 10 to 19 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	314.3	281.6	230.8	233.0
Denmark	:	:	:	134.8	177.9	181.6	:
Germany	:	:	:	125.4	94.8	97.6	96.1
Ireland	:	:	:	153.7	129.2	134.9	204.6
Spain	:	:	:	121.5	113.7	122.5	133.7
Italy	:	:	:	153.0	140.2	151.1	:
Luxembourg	:	:	:	146.3	155.5	182.5	252.1
Netherlands	:	:	:	184.1	166.7	170.2	203.4
Austria	154.4	158.2	155.7	147.1	144.8	158.5	164.0
Portugal	:	:	:	164.1	133.4	155.7	183.0
Finland	:	148.7	134.8	134.6	134.8	128.7	127.5
Sweden	:	:	:	158.3	137.3	142.6	158.3
United Kingdom	:	:	:	148.5	93.3	142.4	122.0
Norway	194.9	210.7	195.5	186.2	170.5	200.9	208.5
Switzerland	:	:	:	:	160.3	229.5	:

France was in 2010 115.8 thousand euro.



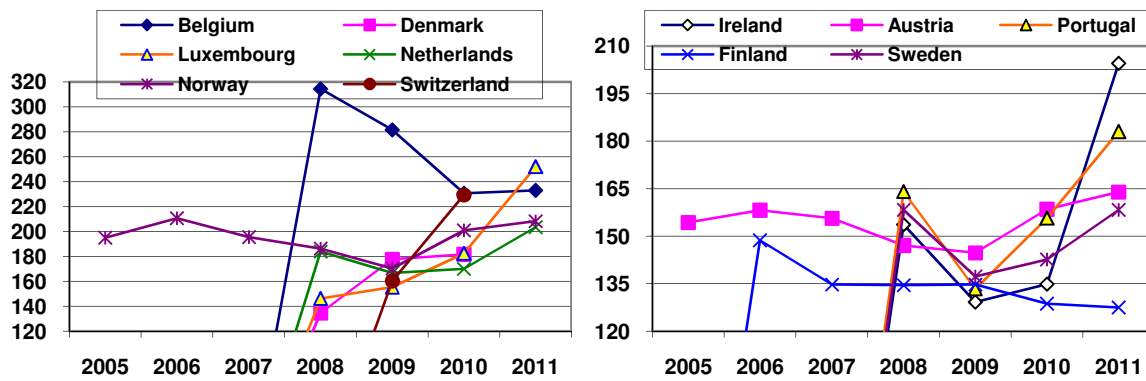
**Figure 13. Turnover Per Person Employed of Transportation of Countries of EU-15. From 10 to 19 Person Employed [22]**

**Source:** The Authors' Illustration

The level of major countries is lower than that of the abovementioned top countries, but is close to the average of the EU, as a rule, even a bit higher.

In the crisis year of 2009, the labour productivities of all of these countries dropped compared to the year before. This was followed by a growth.

The only major country that slightly exceeded the level of 2008 was Spain. Germany remained behind most. Italy and the United Kingdom were just a little below the levels of 2008.



**Figure 14. Turnover Per Person Employed of Transportation of Countries Of EU And EFTA. From 10 to 19 Person Employed [22]**

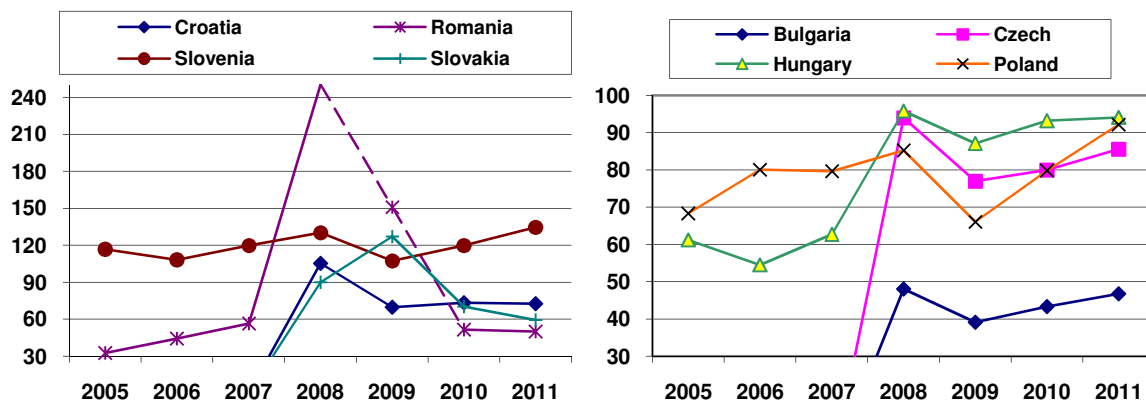
Source: The Authors' Illustration

The labour productivity of this group (10 to 19 persons employed) of six countries is at least one and a half times higher than the EU average. In 2009, the labour productivities of Belgium, the Netherlands and Norway were lower than in the year before, in 2008.

Belgium and the Netherlands could not reach the levels of 2008 in 2010. There was also a significant decrease in Belgium. Yet, the labour productivities of all of the six countries were very high and thus highly competitive. The general trend: decline in 2009, increase in 2010. Only Austria exceeded the level of 2008 and the decline continued in Finland. However, the level of these countries exceeded the average level of the EU.

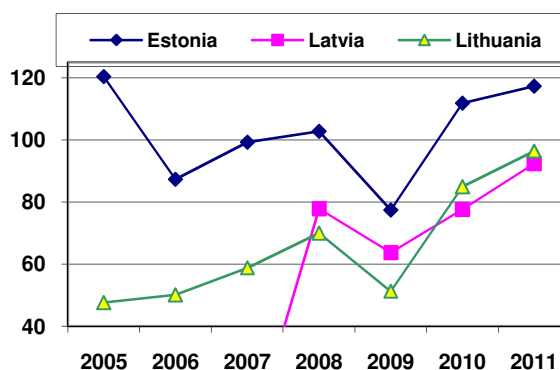
**Table 8. Turnover Per Person Employed. From 10 to 19 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	48.0	39.1	43.3	46.7
Czech Republic	:	:	:	94.0	77.0	80.0	85.6
Estonia	120.4	87.3	99.3	102.8	77.4	111.8	117.3
Croatia	:	:	:	105.1	69.6	73.4	72.6
Latvia	:	:	:	77.8	63.7	77.6	92.3
Lithuania	47.6	50.1	58.8	70.0	51.3	84.9	96.4
Hungary	61.2	54.5	62.7	95.8	87.1	93.2	94.1
Poland	68.3	80.1	79.6	85.2	66.1	79.8	92.2
Romania	32.5	44.1	56.4	250.2	:	51.5	49.8
Slovenia	116.6	108.0	119.8	130.2	107.4	119.8	134.6
Slovakia	:	:	:	89.8	127.1	70.2	59.2



**Figure 15. Turnover Per Person Employed of Transportation of CEE Countries. From 10 to 19 Person Employed [22]**

Source: The Authors' Illustration



**Figure 16. Turnover Per Person Employed Of Transportation Of Baltic Countries. From 10 To 19 Person Employed. [22]**

Source: The Authors' Illustration

As a rule, labour productivity in post-socialist states is on occasion several times lower than the EU average. All of them experienced a decline in 2009, while the 2008 level was exceeded in 2010.

The levels of Latvia and Lithuania are similar to the level of other Eastern European countries. The level of Estonia is much higher and close to the levels of many Western European countries.

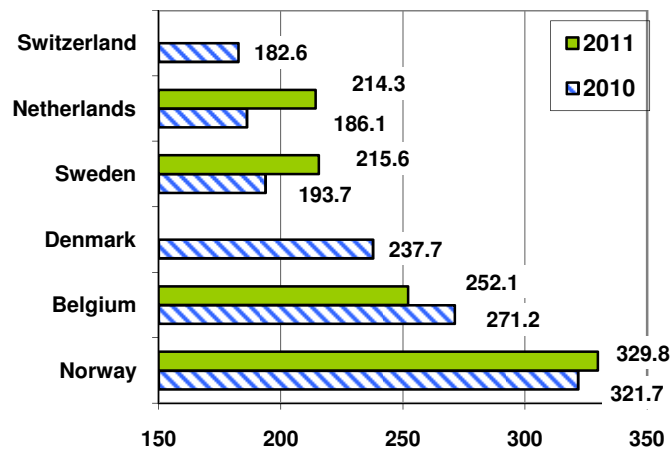
All experienced a decline in 2009, while the levels of 2008 were exceeded in 2010.

As a rule, the labour productivities of these post-socialist countries were sometimes even several times lower than the EU average. All experienced a decline in 2009, while the levels of 2008 was exceeded in 2010.

**Table 9. Turnover Per Person Employed. From 20 to 49 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	230.2	220.8	271.2	252.1
Denmark	:	:	:	110.1	227.5	237.7	:
Germany	:	:	:	125.7	107.0	107.5	108.3
Ireland	:	:	:	207.2	151.5	145.9	168.3
Spain	:	:	:	135.7	129.5	139.2	140.3
Italy	:	:	:	155.3	145.7	172.6	:
Luxembourg	:	:	:	126.6	120.3	129.1	151.4
Netherlands	:	:	:	204.2	187.0	186.1	214.3
Austria	165.9	172.3	190.0	186.4	163.8	160.3	163.6
Portugal	:	:	:	146.1	142.1	136.7	159.1
Finland	:	164.6	151.9	167.5	158.8	170.1	171.6
Sweden	:	:	:	207.5	179.7	193.7	215.6
United Kingdom	:	:	:	145.4	95.8	105.5	105.3
Norway	252.9	273.1	263.2	221.0	242.6	321.7	329.8
Switzerland	:	:	:	:	159.4	182.6	

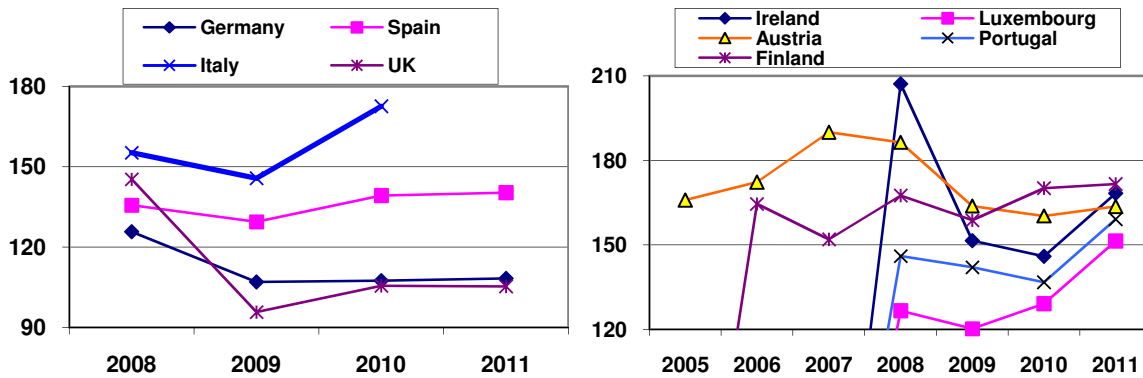
France in 2010 was 139.6 thousand euro.



**Figure 17. Turnover Per Person Employed of Transportation of Major Countries of EU. From 20 to 49 Person Employed 2010 [22]**

Source: The Authors' Illustration

Here, six countries with higher turnovers per person employed are shown. In the case of two countries, it is more than twice higher than the EU average, in the case of others, however, labour productivity exceeds the average of the EU at least one and a half times. The economies of these countries are, however, relatively small and thus have little effect on the indicators of the EU as a whole.



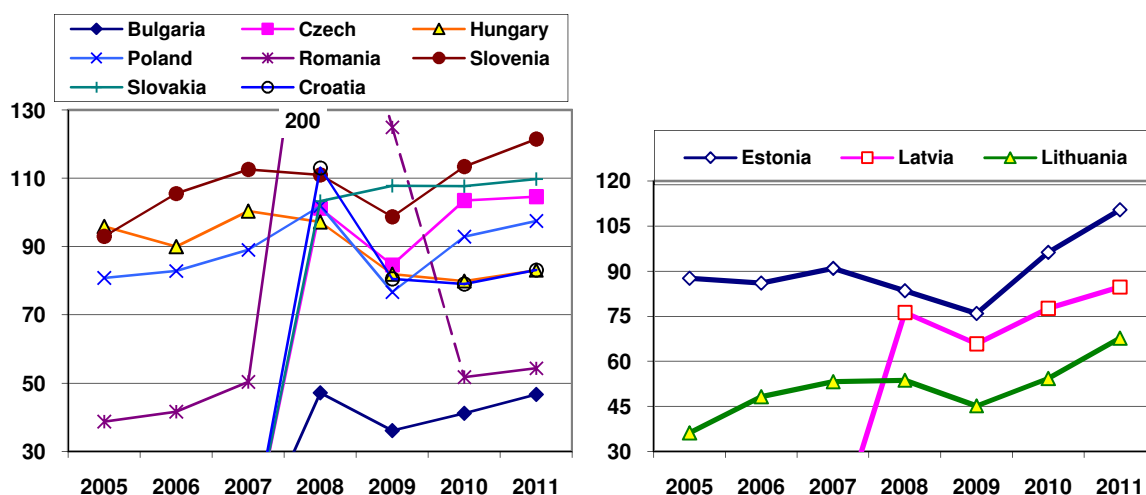
**Figure 18. Turnover Per Person Employed Of Transportation Of Countries of EU. From 20 to 49 Person Employed [22]**

Source: The Authors' Illustration

The labour productivity of this group (20 – 49) of major countries decreased in the crisis year of 2009 as well, which was followed by a growth. Especially high in the case of Italy. The labour productivities of this group of Germany and the UK, however, remained below the EU average. The labour productivity of Germany only increased by 0.9% in 2010. The labour productivity of this group of countries was rather high before the crisis, but dropped in 2009, and only Finland and Luxembourg were able to exceed the levels of 2008 in 2010. In Ireland, however, there was a strong decline.

**Table 10. Turnover Per Person Employed. From 20 to 49 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	47.1	36.1	41.1	46.7
Czech Republic	:	:	:	101.3	84.7	103.5	104.6
Estonia	87.6	86.0	91.0	83.5	75.9	96.3	110.4
Croatia	:	:	:	113.1	80.5	79.0	83.2
Latvia	:	:	:	76.2	65.8	77.6	84.8
Lithuania	36.2	48.2	53.2	53.7	45.2	54.3	67.7
Hungary	95.9	90.0	100.4	97.2	81.9	79.9	83.1
Poland	80.8	82.9	89.1	101.9	76.7	92.9	97.5
Romania	38.7	41.6	50.3	199.7	:	51.7	54.4
Slovenia	93.0	105.6	112.6	111.0	98.7	113.4	121.5
Slovakia	:	:	:	103.3	107.8	107.7	109.8



**Figure 19. Turnover Per Person Employed of Transportation of CEE And Baltic Countries of EU. From 20 to 49 Person Employed. [22]**

Source: The Authors' Illustration

As a rule, the labour productivity of this group of Eastern European countries was considerably lower than the EU average. It was higher in the case of Slovenia, Slovakia, Poland and the Czech Republic and lower in the case of Romania and Bulgaria.

There are big differences between the labour productivities of this group in the Baltic States as well, with the highest twice as high as the lowest in some cases. Estonia has the highest labour productivity, but remains behind Slovenia, Slovakia and the Czech Republic of Eastern European countries and slightly exceeds Poland.

The labour productivities of all Baltic States dropped in 2009 compared to the year before, but in 2010 all had already exceeded the level of 2008. Lithuania was only above Romania and Bulgaria of Eastern European countries.

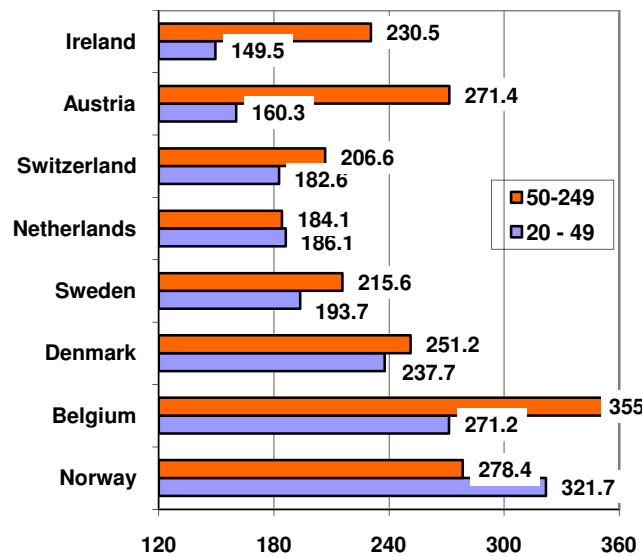
In the Baltic States themselves, labour productivity in this group varies significantly, on occasion by two times. Although Estonia has the highest labour productivity, it is exceeded in Eastern Europe by Slovenia, Slovakia and the Czech Republic, and barely exceeds Poland.

Labour productivity decreased in all Baltic States in 2009 compared to the previous year, but already in 2010 all states exceeded the 2008 levels. In Eastern Europe, Lithuania only exceeded Romania and Bulgaria.

**Table 11. Turnover Per Person Employed. From 50 to 249 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	341.6	310.3	355.0	323.7
Denmark	:	:	:	85.2	226.6	251.2	:
Germany	:	:	:	129.9	121.0	134.4	138.3
Ireland	:	:	:	204.2	227.0	230.5	312.7
Spain	:	:	:	151.7	144.9	152.5	170.5
Italy	:	:	:	115.2	109.6	136.3	:
Luxembourg	:	:	:	143.6	132.4	146.7	137.2
Netherlands	:	:	:	176.3	179.8	184.1	198.7
Austria	217.8	224.9	237.1	235.4	235.9	271.4	281.6
Portugal	:	:	:	130.8	118.7	123.9	120.8
Finland	:	175.1	174.0	193.8	162.5	179.6	186.0
Sweden	:	:	:	220.0	176.9	215.6	221.7
United Kingdom	:	:	:	165.1	125.0	132.3	138.0
Norway	272.1	282.7	279.9	325.4	256.4	278.4	318.4
Switzerland	:	:	:	:	174.1	206.6	

France in 2010 was 139.2 thousand euro.



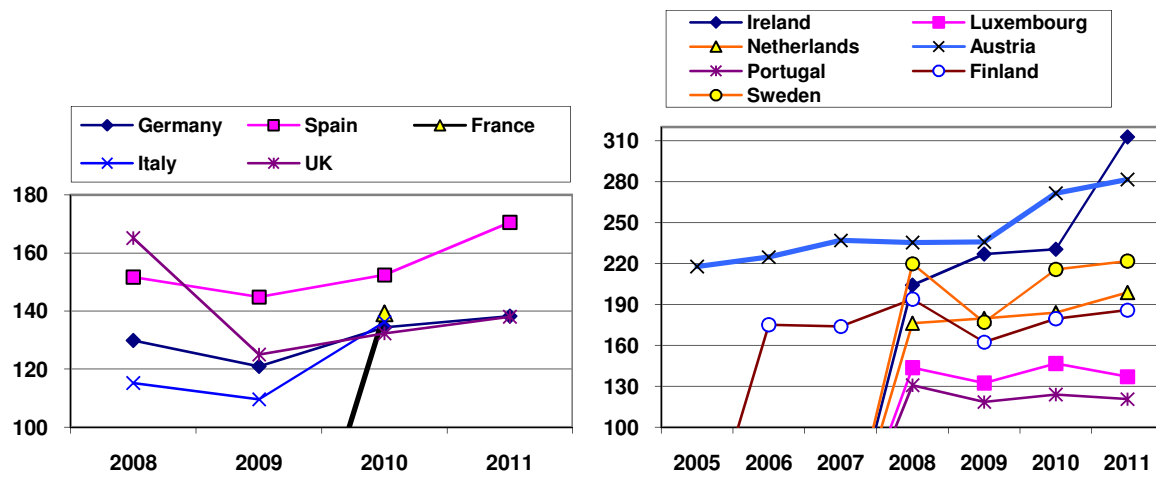
**Figure 20. Turnover Per Person Employed of Transportation Of Major Countries of EU From 50 To 249 Person Employed. 2010. Top-8. [22]**

Source: The Authors' Illustration

Two enterprises have considerably higher labour productivities in this group (50 – 249).

Compared to the previous group (20 –49), six have it higher here, in the case of the Netherlands it is almost the same and in the case of the leader of the previous group, Norway, it is lower. However, in this group (50 – 249) as well, Norway has the second highest labour productivity.





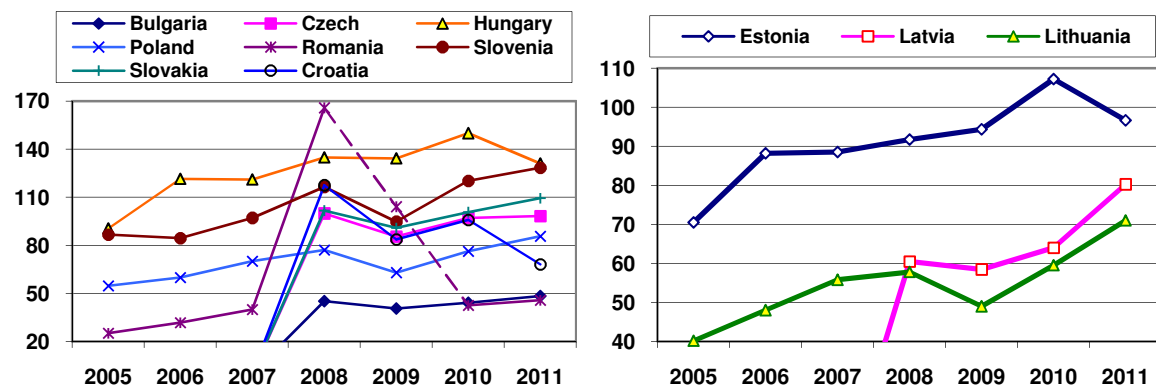
**Figure 21. Turnover Per Person Employed of Transportation of Major Countries Of EU. From 50 to 249 Person Employed [22]**

Source: The Authors' Illustration

The same trends that could be observed in the previous group. In 2010, all major countries exceeded the level of 120. The level was somewhat higher in the case of Spain, others were almost the same. In this group, Austria and Sweden experienced a strong increase, but others progressed as well. However, Portugal, Sweden and Finland did not yet reach the level of 2008 in 2010.

**Table 12. Turnover Per Person Employed. From 50 to 249 Person Employed [22]**

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	45.2	40.7	44.2	48.3
Czech Republic	:	:	:	99.8	85.5	97.0	98.3
Estonia	70.5	88.2	88.5	91.7	94.3	107.2	96.6
Croatia	:	:	:	117.4	83.7	95.9	68.2
Latvia	:	:	:	60.5	58.4	64.0	80.2
Lithuania	40.2	48.0	55.8	57.8	49.0	59.5	71.0
Hungary	90.5	121.5	121.1	134.8	134.2	149.9	131.1
Poland	54.8	60.0	70.2	77.2	62.9	76.3	85.7
Romania	25.3	31.8	40.0	165.7	:	42.7	45.8
Slovenia	86.8	84.6	97.0	116.4	94.6	120.3	128.4
Slovakia	:	:	:	101.6	91.0	100.6	109.5



**Figure 22. Turnover Per Person Employed Of Transportation Of CEE And Baltic Countries Of EU. From 50 To 249 Person Employed. [22]**

Source: The Authors' Illustration

In this group, the labour productivities of Hungary and Slovenia increased significantly.

The general is principally the same. Continuous increase of labour productivity in Estonia, even during the crisis. The level of Estonia is almost twice as high as the levels of Latvia and Lithuania. Compared to the previous group (20 – 49), labour productivity is higher here.

Hungary and Slovenia experienced a significant increase in labour productivity in this group.

The general is principally the same. Continuous increase of labour productivity in Estonia, even during the crisis. The level of Estonia is almost twice as high as the levels of Latvia and Lithuania. Compared to the previous group (20 – 49), labour productivity is higher here.

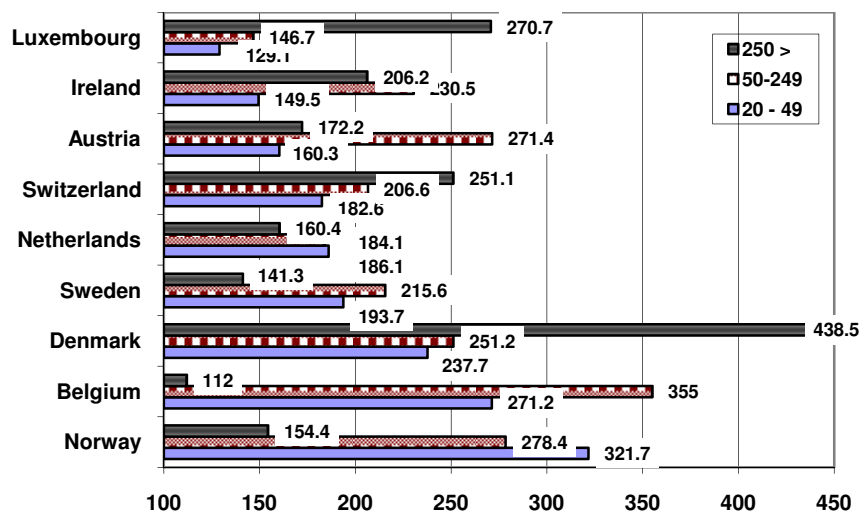
In this group, Estonia and Lithuania experienced a significant increase in labour productivity.

**Table 13. Turnover Per Person Employed. 250 Persons Employed or More. [22]**

	2005	2006	2007	2008	2009	2010	2011
Belgium	:	:	:	120.6	114.1	112.0	122.8
Denmark	:	:	:	188.0	340.9	438.5	:
Germany	:	:	:	131.2	119.8	129.0	132.3
Ireland	:	:	:	194.9	179.2	206.2	226.7
Spain	:	:	:	120.9	111.2	118.1	121.8
Italy	:	:	:	129.1	115.9	124.8	:
Luxembourg	:	:	:	269.8	226.7	270.7	274.8
Netherlands	:	:	:	156.8	145.8	160.4	158.5
Austria	139.4	156.0	164.9	174.9	159.8	172.2	185.3
Portugal	:	:	:	102.6	96.6	101.8	106.0
Finland	:	122.0	129.8	135.4	121.8	133.9	156.4
Sweden	:	:	:	141.7	118.1	141.3	153.4
United Kingdom	:	:	:	126.0	121.6	125.6	137.7
Norway	126.0	131.8	132.3	136.9	127.0	154.4	166.9
Switzerland	:	:	:	:	192.6	251.1	:

France in 2010 was 144.0 thousand euro.

The persisting problem in observing all of these groups is: which group has the highest labour productivity?



**Figure 23. Turnover Per Person Employed Of Transportation Of Major Countries Of EU. Top-9. 2010 [22]**

Source: The Authors' Illustration

This figure shows the countries of the three largest groups which had the highest labour productivities in an another analysed group. This also does not enable to conclude unwaveringly which group is the most efficient. The only country with labour productivity well above 200 was Denmark, with the labour productivity of medium and large enterprises higher as well.

In Belgium, however, there was a three times difference between two neighbouring groups.

Only three of the nine countries observed here had the highest labour productivity on the basis of major companies (250 >), four in the medium group (50 – 249) and two in the small group (20 – 49).

There is, however, no comparison with small enterprises here (0 – 19).

Also, the countries included in the figure do not include major countries, whose volumes are of decisive importance.

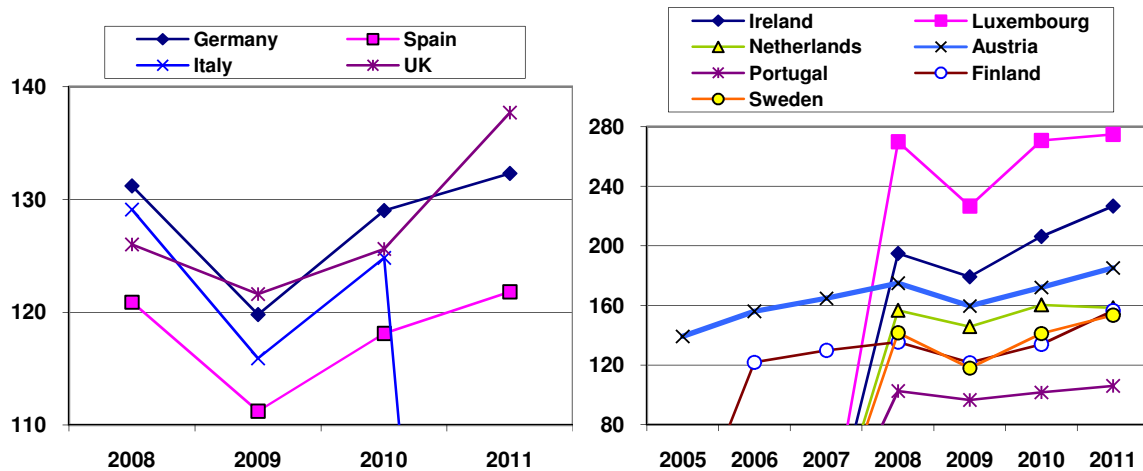


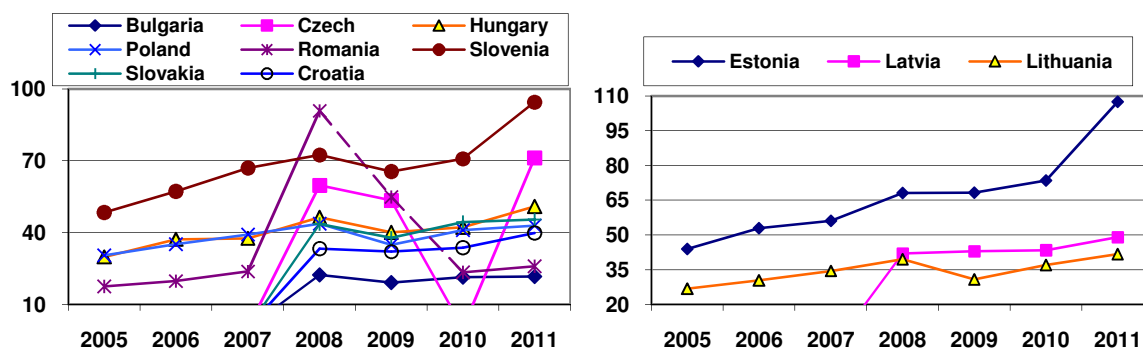
Figure 24. Turnover Per Person Employed of Transportation of Major Countries of EU. 250 Persons Employed or More. [22]

Source: The Authors’ Illustration

The changes are similar to other groups. In 2009, there was a slight decline compared to the year before and in 2010 almost all exceeded the level of 2008. Fluctuations were relatively stable, which shows that large companies cope with a crisis better.

Table 14. Turnover Per Person Employed. 250 Persons Employed or More. [22]

	2005	2006	2007	2008	2009	2010	2011
Bulgaria	:	:	:	22.3	19.1	21.4	21.6
Czech Republic	:	:	:	59.8	53.5	:	71.3
Estonia	43.9	52.9	56.1	68.0	68.2	73.5	107.4
Croatia	:	:	:	33.2	32.1	33.6	39.8
Latvia	:	:	:	42.0	42.9	43.3	49.0
Lithuania	26.7	30.3	34.4	39.4	30.7	36.9	41.6
Hungary	29.8	37.2	37.6	46.4	40.1	42.2	50.9
Poland	30.4	35.1	39.1	43.7	34.8	41.0	42.9
Romania	17.4	19.8	23.8	91.0	:	23.3	25.9
Slovenia	48.4	57.2	67.0	72.5	65.5	70.9	94.6
Slovakia	:	:	:	43.5	37.8	44.3	45.5



**Figure 25. Turnover Per Person Employed of Transportation of CEE And Baltic Countries of EU. 250 Persons Employed or More. [22]**

Source: The Authors' Illustration

Compared to the previous group (50 to 249 person employed), the labour productivity (turnover per person employed of transportation and storage) here (250 persons or more employed) is considerably lower as well. The changes are similar to other groups. In 2009, there was a slight decline compared to the year before and in 2010 almost all exceeded the level of 2008. Fluctuations were relatively stable, which shows that large companies cope with a crisis better.

A comparison of labour productivity in Baltic and Western and Northern European countries, allows to conclude that countries with a stronger economy usually have more effective single person companies. This also presumes the owner's higher intellect, entrepreneurship and initiative, as well as a greater mental potential. In Northern Europe, as a rule, people are accustomed to relying primarily on themselves and less on the help of others – this is also one reason for their success.

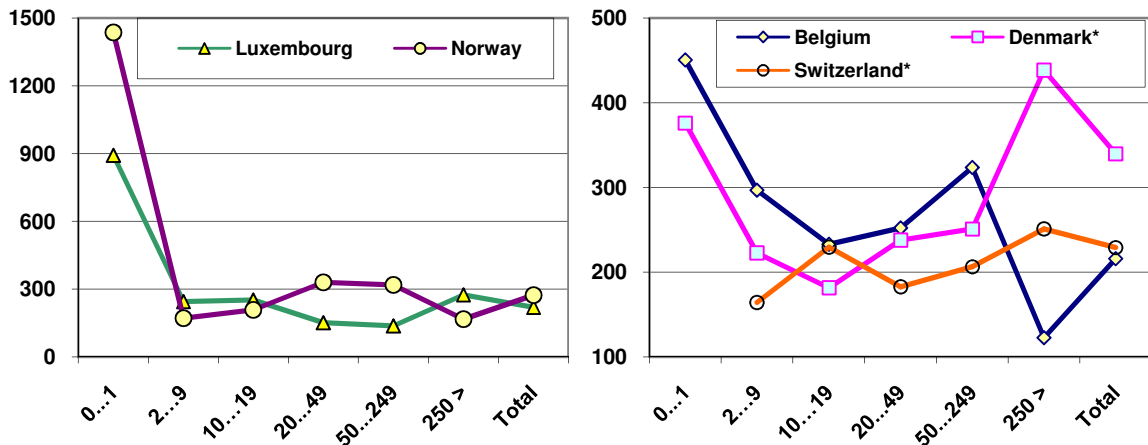
### 3. 3 Productivity Summary Tables by Enterprise Size Class of Transportation and Storage Companies Of EU And EFTA Countries

To conclude, let us take a look at aggregate tables, which show the labour productivities of countries in six groups and the total labour productivity.

In conclusion we look at productivity summary tables by enterprise size class of transportation and storage companies of EU-15, EFTA, CEE-8 and Baltic countries by turnover per person employed and apparent labour productivity (gross value added per person employed).

**Table 33. Turnover Per Person Employed by Size Class of Transportation and Storage Companies of EU-15 And EFTA Countries. 2011 (2010\*)[22]**

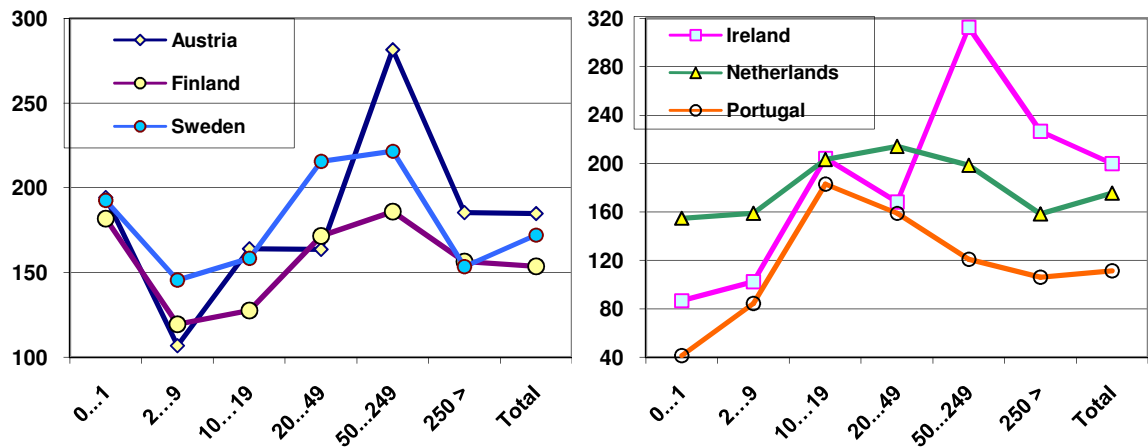
	0 - 1	2 - 9	10 - 19	20 - 49	50 - 249	250 >	Total
Belgium	450.5	296.9	233.0	252.1	323.7	122.8	216.0
Denmark*	376.3	222.7	181.6	237.7	251.2	438.5	340.0
Germany	529.6	102.2	96.1	108.3	138.3	132.3	129.1
Ireland	86.9	102.4	204.6	168.3	312.7	226.7	199.9
Spain	61.8	86.8	133.7	140.3	170.5	121.8	113.8
France*	145.9	118.4	115.8	139.6	139.2	144.0	139.2
Italy*	67.4	126.1	151.1	172.6	136.3	124.8	130.1
Luxembourg	892.7	244.8	252.1	151.4	137.2	274.8	219.7
Netherlands	154.9	159.0	203.4	214.3	198.7	158.5	175.6
Austria	194.2	106.8	164.0	163.6	281.6	185.3	184.9
Portugal	41.3	84.4	183.0	159.1	120.8	106.0	111.4
Finland	181.7	119.5	127.5	171.6	186.0	156.4	153.6
Sweden	192.5	145.5	158.3	215.6	221.7	153.4	172.2
United Kingdom	221.9	131.4	122.0	105.3	138.0	137.7	134.3
Norway	1,436.0	171.7	208.5	329.8	318.4	166.9	273.0
Switzerland*		164.2	229.5	182.6	206.6	251.1	229.3



**Figure 26. Turnover Per Person Employed by Size Class of Transportation and Storage Companies of EU-15 And EFTA Countries. [22]**

Source: The Authors' Illustration

In this group, the one-man businesses of Norway, Luxembourg and Belgium were the most successful. In Denmark, there were two extremes: large enterprises and one-man businesses. In Switzerland, medium sized and large enterprises were the most effective.

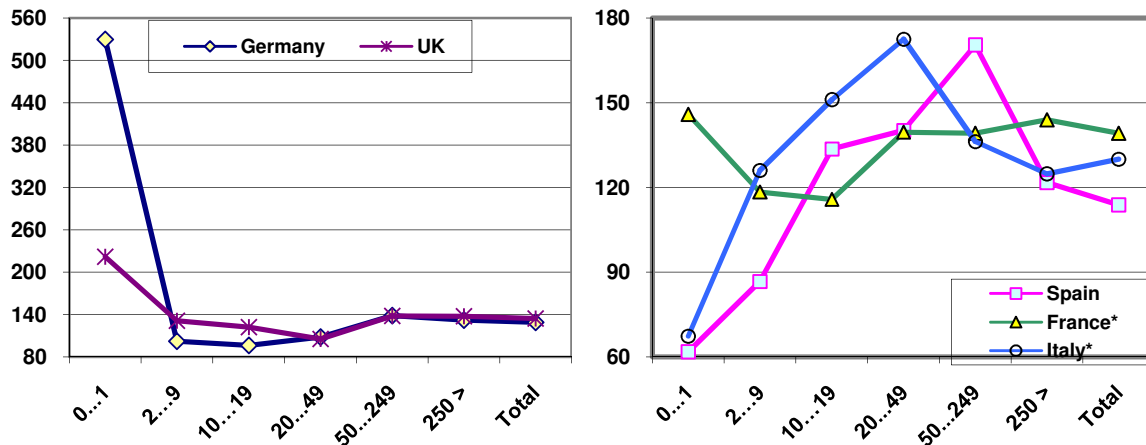


**Figure 27. Turnover Per Person Employed by Size Class of Transportation and Storage Companies of EU-15 Countries. [22]**

Source: The Authors' Illustration

In the group of countries comprising Austria, Finland, Sweden, Ireland, the Netherlands and Portugal average and larger companies were more likely to be effective.

In this group of countries, medium sized and large enterprises tended to be the most effective. In Finland and Sweden, medium sized enterprises (50 – 249) were in the first place, slightly ahead of one-man businesses. In Ireland, the Netherlands and Portugal, the labour productivities of one-man businesses were the lowest.



**Figure 28. Turnover Per Person Employed by Size Class of Transportation and Storage Companies of EU-15 Major Countries. [22]**

Source: The Authors' Illustration

In the group of major countries, the one-man businesses of Germany and the United Kingdom were overwhelmingly the most successful, with large enterprises in the second place. In Italy, there was the opposite trend: medium sized enterprises were the most successful, not large enterprises (250 >). In Spain, medium sized companies (50 – 249) were in the first place. In France, one-man businesses were the most effective, slightly ahead of large (250 >) enterprises in the second place. In France, the distribution was quite even, with small enterprises (2 – 19) less effective.

In the case of the group of these countries, it can be concluded that, as a rule, one-man businesses are more efficient in the countries with strong economies. This also requires higher intellectual level and enterprisingness from the owner. As a rule, the people in the Northern European cultural space are used to counting on themselves, above all.

**Table 34. Turnover per Person Employed by Size Class of Transportation and Storage Companies of CEE-8 and Baltic Countries. 2011 [22]**

	0 - 1	2 - 9	10 - 19	20 - 49	50 - 249	250 >	Total
Bulgaria	30.3	36.7	46.7	46.7	48.3	21.6	32.9
Czech Republic	42.2	79.0	85.6	104.6	98.3	71.3	77.0
Estonia*	84.4	219.5	117.3	110.4	96.6	107.4	127.4
Croatia	34.8	51.9	72.6	83.2	68.2	39.8	49.3
Latvia	83.4	92.7	92.3	84.8	80.2	49.0	69.1
Lithuania	65.4	71.1	96.4	67.7	71.0	41.6	63.1
Hungary	45.2	70.7	94.1	83.1	131.1	50.9	66.5
Poland	39.6	52.9	92.2	97.5	85.7	42.9	53.4
Romania	26.4	41.9	49.8	54.4	45.8	25.9	35.9
Slovenia	49.9	111.0	134.6	121.5	128.4	94.6	104.3
Slovakia	25.1	51.3	59.2	109.8	109.5	45.5	58.2

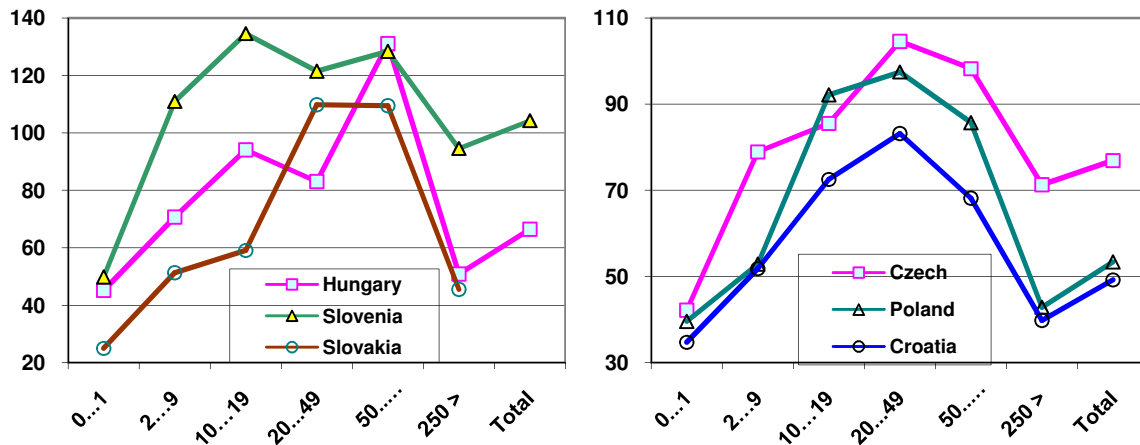


Figure 29. Turnover Per Person Employed by Size Class of Transportation and Storage Companies of CEE-8 Countries. [22]

Source: The Authors' Illustration

In this group of Eastern European countries as well, medium sized enterprises were the most efficient. In six of the CEE-8 countries, the labour productivity of one-man businesses was lower. As a rule, the efficiency of large enterprises was low as well.

Average sized companies were more effective in the group of Eastern European (CEE-8) countries.

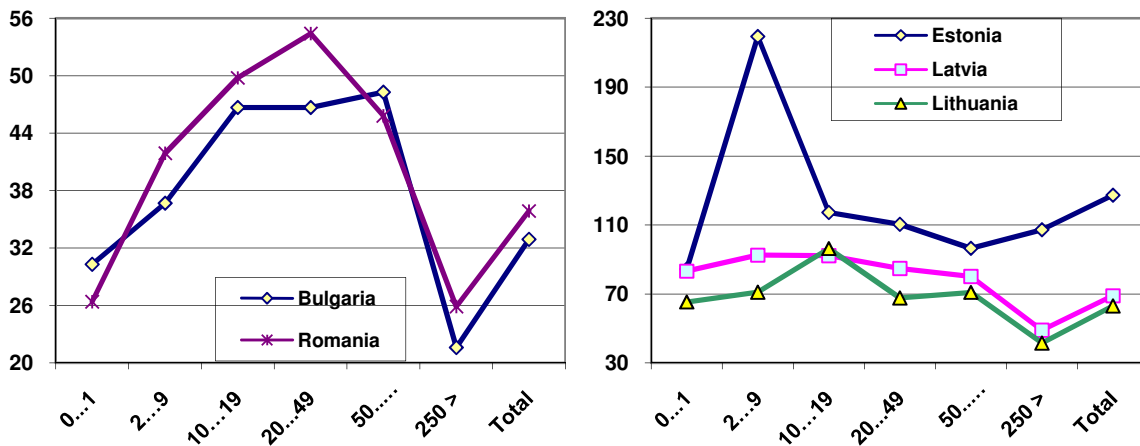


Figure 30. Turnover per Person Employed by Size Class of Transportation and Storage Companies of CEE-8 and Baltic Countries. [22]

Source: The Authors' Illustration

In Estonia, microenterprises (2 – 9) were the most effective, in Latvia, one-man businesses and medium sized enterprises (10 – 19, 20 - 49), and in Lithuania, medium sized enterprises (10 – 19). In all Baltic States, the labour productivities of large enterprises (250 >) were lower in 2010, it was the same in the following year, except in the case of Estonia, where the efficiency of large companies grew considerably.

Since Estonia and Latvia of the Baltic States were among the most successful of the new EU countries, it can be stated here as well that small enterprises were more effective than large enterprises.

The effectiveness of the work of small enterprises does not only depend on the enterprise and its owners, but also on the environment which the enterprise is operating in. These indicators include the tax policy, infrastructure, business partners (partner countries), economies of scale, etc.

## Conclusion

1. As a rule, European transportation enterprises have exited the economic crisis successfully, some sooner, some later. There were great differences between how enterprises overcame the economic crisis.
  2. In 2010, turnover and added value in the EU-27 remained below the 2008 level, while gross operating surplus was higher.
  3. In 2011, number of persons employed in the EU-27 remained below the 2008 was level.
  4. In 2011, turnover, added value at factor cost, number of enterprises, turnover per person employed and gross value added per person employed in the EU-27 remained below the 2008 level, was higher.
  5. In 2010, apparent labour productivity and gross operating rate in the EU-27 were higher than in 2008. Total turnover per person employed in the EU-27 grew in 2009 and 2010 compared to 2008. According to this indicator, transportation and storage successfully overcame the crisis year 2009. However, if we look at turnover per person employed in transportation and storage by countries and the sizes of companies, this trend is no longer valid for most states.
  6. Estonia had the largest labour productivity of the Baltic countries, however, it only comprises 51.6% of the EU-27 average. Slovenia was followed by Croatia and the Czech Republic.
  7. Labour productivity dropped in Lithuania and Latvia in 2009 compared to the previous year. Estonia has had a steady increase.
  8. Labour productivity for micro companies with 2 to 9 persons employed was significantly higher in four countries, incl. Estonia, than in other states. This is the first time an old post-socialist country is successfully competing at labour productivity with older and stronger EU states. At the same time, there are more than 10 time differences in this group of enterprises, and nearly 5 time differences among post-socialist states.
  9. In principle, the transportation companies of the Baltic and CEE countries as a whole exited the economic crisis successfully. On the other hand, the crisis meant the death of thousands of companies and a rise in unemployment.
  10. There were great differences in the dynamics of the labour productivities of countries during the crisis and labour productivity by size class, thus also in how the economic crisis was overcome.
- Thus, in order to get a more accurate overview of what were the lessons learnt by countries as a result of the economic crisis, other key indicators in their interconnection should be observed as well. A more detailed analysis of different types of transportation would also provide a more accurate picture.

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