

Estonian, Latvian, and Lithuanian Companies' Working Efficiency Before and after the Economic Crisis

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Abstract

The goal of this article is to analyse the working efficiency, or labour productivity, of the Baltic States before and after the economic crisis and to compare them on the European Union (EU) level. A number of proposals to increase labour productivity for both workers and entrepreneurs have been listed in the summary.

Keywords: Baltic States, workforce, working efficiency, labour productivity.

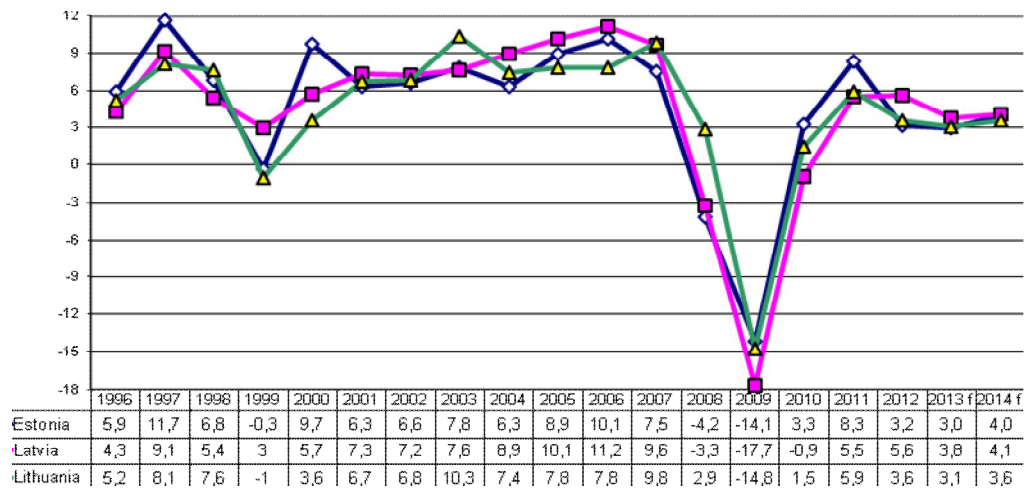
1. Introduction

For an introduction, let us look at the background of these countries. The Baltic States were a half-century of Soviet-bloc countries. This will help to understand better the economic backwardness of the Western European countries. [The Occupation 2012; Tanning 2013] Before and after (2011 – 2012) the economic depression, the Baltic States were successful. The Baltic countries had the highest growth rates in GDP in Europe between 2000 and 2007. Hence, these countries were called the Baltic Tigers. The United Nations lists Baltic States as a country with a "Very High" Human Development Index. [Human] Lithuania, Latvia and Estonia have been members of the European Union and the NATO since 2004. These countries are a member of the Council of Europe, NATO, IMF and WTO. The working efficiency in Baltic countries, considering the situations before the crisis, during the crisis and after the crisis, will be viewed. The techniques and labour market survey definitions used by the authors have been specified in Methodological Notes (EU-LFS) [Methodological Notes]; *productivity per worker or per hour* [Code: tsdec310]; *economic growth rate of GDP* [Code: tec00115]; *GDP per capita* [Code: tsdec100] and *GDP per person employed* [Code: tec00114] has been defined by Eurostat.

2. Analysis

The theoretical basis of workforce productivity measurement has been provided in more detail in the authors' earliest publications. [Tanning 2012 a; b; Tanning 2013] For an introduction, see the development of the economy (GDP) of the Baltic States, EU 27 countries, USA and Japan.

The trend line shows the cyclical development of the Baltic countries' economy (GDP). In addition to the economic decline during the years 2008 – 2009, there was also a decline in 1999 (Estonia and Lithuania). In 2009, real GDP fell by 14.8% in Lithuania, by 17.7% in Latvia and 14.1% in Estonia. If an annual real GDP increment of more than 10% can be considered excellent, then the result in 2003 – 2007 was a GDP growth rate that was one of the largest in the world. The development of the Baltic countries' 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 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, the growth of GDP in 2011 and also in 2012 was highest in the EU.



Note: f – forecast

Figure1. Real GDP growth rate – volume. Percentage change during the previous year.

[Code: tec00115] Source: authors’ illustration

In 2011, the U.S. as well as the EU 27 as a whole, including Germany, Sweden, Latvia and Lithuania, reached a record level per capita. Finland and Estonia were short of the 2007 – 2008 level. Real GDP growth rate, percentage change during the previous year in 2012: USA = 2.2%; Japan = 2.0%; EU 27 = -0.3%; Euro area (17) = -0.6%; Germany = 0.7%; France = 0.0% and Sweden = 3.9%. [Code: tec00115]

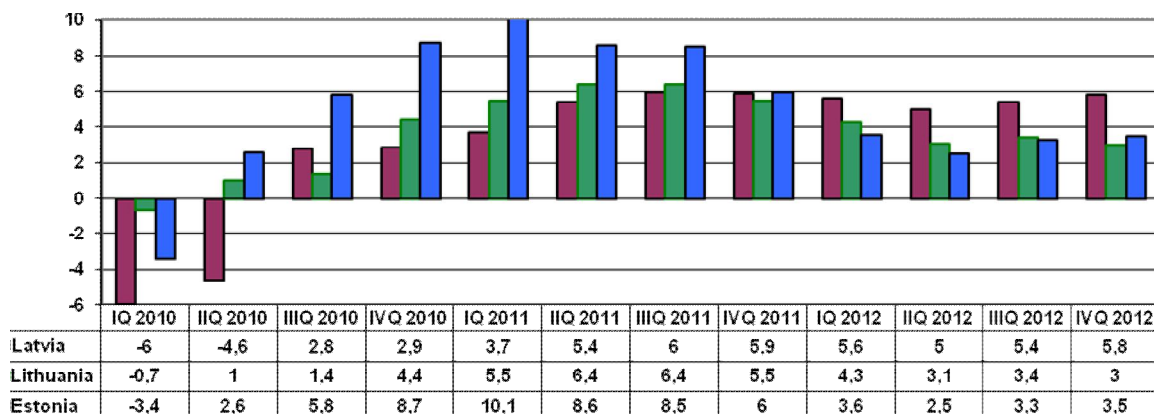


Figure2. GDP growth rate at market prices in the Baltic States. Percentage change during the previous year. [Code: namq_gdp_k]

Quarterly analysis provides a more accurate picture. In 2011 Estonian and in 2012 Latvian economy (GDP) showed fastest development in the Baltic countries as well as among all EU-27 countries.

GDP growth rate in 2012 was of EU (27) during the three last quarters and of the Euro area (17 countries) during all quarters negative – which means going back to the economy. Against the background of Baltic countries this seems a particularly good result in the last 10 quarters.

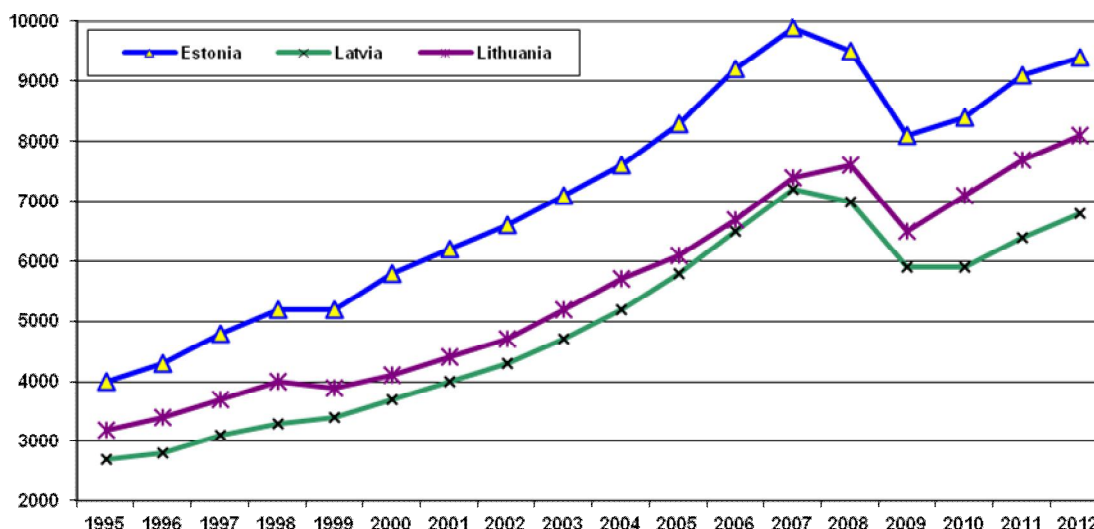


Figure 3. Real GDP per capita, EUR per inhabitant, 1995 – 2012 [13 Code: tsdec100]

Source: authors' illustration

Between 1995 and 2007, GDP per capita in constant prices in Estonia increased by 2.48 times, by 2.31 times in Lithuania and 2.67 in Latvia. The economic crisis brought the levels significantly down and in 2011, Lithuania was the only country that managed to exceed pre-crisis levels; in fact, Estonia and Latvia were also short of the level of the year 2006. In Estonia yield per worker, i.e. productivity grew 2.0 times during the period under examination; however, it came to a pause during the economic crisis. In contrast, in 2010 in Latvia, yield per one worker was 54.6% and 62.3% in Lithuania, similar to the EU-27 average. The indicator was highest among EU member states in Luxembourg (169.9), Ireland (136.9) and France (115.8) and lowest in Bulgaria (41.3) and Romania (48.8). Productivity was 1.5 times higher than the EU average in Norway (150.7) and the USA (143.5). One working hour productivity displays a similar trend, having been highest in Luxembourg 187.1. Productivity in Estonia amounts only to 61.0%.

Table 1. Labour productivity per employed person. Index (EU-27 = 100) [Code: tec00116]

	1995	1997	1999	2001	2003	2004	2005	2006	2007	2008	2009	2010	2011
Estonia	34.1	40.0	43.5	48.4	55.0	57.7	60.8	62.4	66.7	65.8	65.1	68.4	67.6
Latvia	33.4	35.7	38.3	41.6	44.2	45.9	47.8	48.9	51.5	51.7	52.9	53.8	62.7
Lithuania	36.2	38.6	40.6	47.4	52.6	53.9	55.1	56.9	59.6	62.1	58.1	62.6	64.9

However, the prevailing trend is that regardless of growth in productivity elsewhere, the indicator rises noticeably quicker in Estonia and also other new EU accessions than in veteran and wealthy EU-15 countries. When analysing productivity in EU-27 (added value produced by one worker) by sectors of economy and the size of companies, one cannot draw an equipollent (equal in force or effect) conclusion regarding productivity and the number of workers engaged in the company. It is conditioned by the particular sector of the economy. For instance, productivity among energy and water management companies is highest in small firms with up to 9 persons on payroll. On the other hand, for companies active in the lease of movable property, accommodation (housing) companies, and among all the sectors of the economy taken together as an entity, productivity is highest in big firms that employ 250 or more workers. Highest productivity among textile and habiliment (articles of clothing) firms can be noted in companies with 10 – 49 workers; the same can be said about timber companies with 50 – 249 workers [Code: tin00054]. A more detailed analysis of the productivity indicators of Estonian companies and the labour expenses in current prices, i.e. the predominant share constituted by salaries, is brought out below. In Estonia, productivity differs little for companies with the size of up to 249 workers. In 2003 and 2007 firms with 50 – 99 workers boasted the largest productivity; in 2005 it was companies with up to 9 workers and for the rest of the surveyed period, companies with 100 – 249 workers dominated. Invariably, large companies with smaller productivity had 250 and more workers. This can be accounted for by the fact that smaller companies have larger flexibility in management, a smaller number of ancillary personnel and also because the workers of small companies are more likely to be “jacks of all trades” than in big companies.

In big firms productivity is sapped, as a general rule, by large overheads. Estonian labour productivity growth in 2010 was 4.6% and -1.7% in 2011.

Table 2. Labour productivity. Euro per hour worked. [Code: tsdec310]

	1995	1998	2000	2002	2004	2006	2007	2008	2009	2010	2011	2012
Estonia	:	:	7.0	7.7	8.7	9.7	10.3	10.0	10.3	10.9	10.8	11.1
Latvia	:	:	4.2	4.7	5.5	6.3	6.7	6.7	6.6	6.9	7.8	8.1
Lithuania	4.5	5.3	5.6	6.5	7.5	8.2	8.7	8.8	8.3	8.7	9.2	10.2

In Norway, the indicator for euro per hour worked has grown from 49.3 thousand to 68.9 thousand during the years 1990 – 2011, from 29.8 to 44.4 in Sweden, from 25.7 to 40.0 in Finland, from 37.4 to 48.9 in Denmark, from 33.4 to 45.4 in France, from 31.2 to 42.3 in Germany, from 29.5 to 41.5 in the United States; and during the period 1995 – 2011 from 25.3 to 31.9 in the EU (27 countries). In 2011 Norway (68,900 EUR) and Luxembourg (60,000 EUR) had highest productivity, *Euro per hour worked*, in Europe and also globally. EU 27 = 31,900 EUR. [Code: tsdec310]

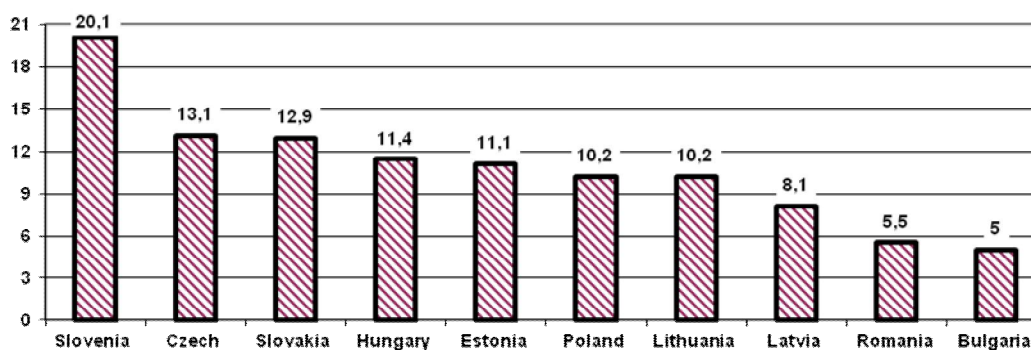


Figure 9. States with lower productivity, Euro per hour worked, < EL=100, 2012 [Code: tsdec310]

Source: authors' illustration

Table 3. Labour productivity per hour worked. Index, 2005=100 [Code: tec00117]

	2006	2007	2008	2009	2010	2011	2012
EU (27 countries)	102.1	103.6	103.1	101.7	103.9	105.3	105.3
Estonia	105.0	112.1	108.9	111.7	118.2	116.9	116.9
Latvia	106.9	114.6	114.7	111.9	117.3	133.6	133.6
Lithuania	106.7	112.8	115.0	107.5	113.9	119.8	119.8

Compared to 2005, labour productivity per hour in all 10 of the new post-socialist EU countries has increased at a more rapid pace than the EU 27 average. Ireland had the greatest increase of the old EU member states (117.3) and Latvia among the new members (133.6). Hungary had the smallest growth (104.6) among new members, which was even lower than the EU 27 average. The level of Estonia among the new member states was average.

Table 4. Labour productivity per hour worked. Percentage change over previous year [Code: tsdec310]

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU (27 countries)	1.8	1.7	1.5	1.7	1.2	2.1	1.4	-0.5	-1.4	2.1	1.4
Estonia	5.9	5.0	6.1	5.8	6.0	5.0	6.8	-2.8	2.5	5.8	-1.1
Latvia	6.5	6.3	6.2	9.3	6.6	6.9	7.2	0.1	-2.4	4.8	13.8
Lithuania	11.8	4.8	8.9	6.0	1.7	6.7	5.7	1.9	-6.5	5.9	5.2

Labour productivity grew for all countries until 2008. In 2008 some countries, including Estonia (-2.8), experienced a decline. In 2009, all countries, except for Estonia and Poland were experiencing a decline. In 2011 hourly labour productivity only decreased in Estonia compared to the previous year. The greatest productivity growth in 2011 occurred in Latvia (+13.8%). From the second half of 2006, productivity per employed person of Estonia with reference to sales revenues was over 20 thousand Euros.

A dramatic decline occurred in QI of 2009, which was followed by a slow growth, whereas QIII and QIV of 2010 were record-breakers. Admittedly, Estonia has made its exit from the economic crisis mainly along the intensive road, i.e. on account of productivity growth. Productivity per employed person with reference to added net value has changed due to other regularities. As late as in QIV of 2010, Estonia reached the level of the three successful pre-crisis quarters of 2007. Whereas in QIV of 2010, the level was already 1.5 times higher than productivity in the deepest slump of the crisis in QI of 2009. After the crisis, productivity recovered quicker with reference to sales revenue than with reference to added value, which is an indicator of the runaway selling prices after the crisis. While the above analysis by quarters supports the assumption that during the period of the economic crisis changes take place extremely rapidly, as a consequence, an analysis with one year precision will not provide a correct picture of upcoming changes.

Table 6. Productivity per employed person for Estonian companies (thousand Euros), 2005 – 2011 [Code FS008]

	2005	2006	2007	2008	2009	2010	2011
With reference to sales revenue	72.1	81.2	92.2	93.6	81.2	95.4	112.2
With reference to value added	14.7	17.4	19.3	18.7	17.4	19.6	22.7

Sales revenue per employed person was 44.3 thousand Euros in the first quarter of 2010, which is more than in the previous year but still falls short of the average of 2007 and 2008. The productivity of the business sector with reference to added net value increased by 18% in 2010, while the companies' average labour expenses per employed persons remained at the level of 2009. Based on sales revenue, labour productivity per employed person grew steadily for all companies until 2008, as did hourly productivity based on sales revenue, then a great decline of 13.2% and 10.0% respectively followed, which, on the other hand, is much smaller than the decline of total business output or real GDP. However, already in 2010, both indicators reached record levels. The new Employment Contracts Act, which made labour relations more flexible, and the more effective unemployment insurance system also had great influence.

Table 7. The enterprises' added value and productivity measures, by indicator and economic activity (EMTAK 2008) of Estonia [Code FS008]

A similar comment also holds for labour productivity and hourly productivity based on added value.

Economic activities' total	2005	2006	2007	2008	2009	2010	2011
Labour productivity per person employed on the basis of net sales, thousand Euros	72.1	81.2	92.2	93.6	81.2	95.4	112.2
Hour productivity on the basis of net sales, Euros	42.85	48.22	55.52	56.27	50.57	59.12	67.96
Labour productivity per person employed on the basis of value added, thousand Euros	14.7	17.4	19.3	18.7	17.4	19.6	22.7
Hour productivity on the basis of value added, Euros	8.71	10.33	11.64	11.21	10.84	12.13	13.78

Still, in 2010 labour productivity per employed person based on sales revenue in smaller firms remained below the labour productivity of the pre-crisis years. However, growth was strong in large companies with 250 or more employees, where it grew to 103,500 Euros (in comparison, the same indicator was only 64,600 Euros in 2005). This also led to the sum of all companies achieving the greatest labour productivity in 2010. Hourly productivity based on sales revenue in 2010 still remained low for companies with up to 20 employees, while larger companies reached already record levels. Again, large companies with 250 and more workers experienced a particularly large increase, where it grew to 61,150 Euros (in comparison, the same indicator was 37,350 Euros for such companies in 2005), amounting to an annual growth of 18.1%. As a whole, labour productivity and hourly productivity based on added value reached record levels for all companies in 2010. SME still remained below the 2007 level and for companies with 10 to 19 employees, below the 2008 level. On the other hand, companies with more than 20 employees already reached record levels in 2010. During the years 2002 – 2004, hourly productivity based on net added value in transportation was better than the Estonian average.

The construction boom began and in 2008 raised hourly productivity in construction to a higher level than the state's average; the difference was especially great in 2007. The following crisis, on the other hand, brought the productivity of builders sharply below the average. Although the builders' productivity grew significantly in 2011 and 2012, it remained lower than in other economic sectors. While productivity in the processing industry remained lower than the average both before and during the crisis, it was the highest in 2010 and 2011. In 2012, however, productivity in transport slightly exceeded industry. Both one and the other were better by specific quarters in recent years, thus they were equal. Productivity in the retail and wholesale trade during the years 2005 – 2008 was higher than the average and lower after the crisis. As a rule, there were no significant differences in the productivity of different sectors of economy before or after the crisis, excl. construction. Taking into account this publication and the previous work of the authors [Tanning 2010; Tanning 2012 a; b; c; d; Tanning 2013] have made the following conclusions and suggestions.

3. Conclusions and suggestions

Conclusions

1. Companies came out of the economic crisis by a surge of hiring professionals, engineers and customer service staff.
2. Companies were brought out of the economic crisis by the growth of labour productivity.
3. The importance of large companies, especially those with 250 and more employees, was decisive.
4. In the Baltic countries, Estonia had the highest labour productivity indicators, which has ensured better other key indicators, compared with Latvia and Lithuania.
5. However, the Estonian labour productivity indicators are twice lower than in most developed post-socialist Slovenia.
6. Rich countries of Western Europe to reach a level the Baltic countries should be increased of productivity per worker for two and per hour worked three times.

To increase labour productivity the following should be taken into account:

1. By the employee.
 - 1.1. Objective factors (different innate abilities, talents, working and living conditions),
 - 1.2. Subjective factors (self-realization, motivation, commitment, a desire to work better, ambition, education, qualification, a variety of mental and physical abilities, laziness, negligence, drunks, the courage to set high goals and the desire to strive for them).
2. By the employer (the company).
 - 2.1 Objective factors [better organization of work, using more efficient machinery and equipment, innovation, improving working conditions (lighting, noise, humidity, temperature, air composition, etc.), natural conditions, material possibilities],
 - 2.2 Subjective factors [moral (cheering, encouragement, etc.) and material incentives (salary, bonuses, bonus payments, etc.), creating conditions for up-skilling and re-training, the work environment (working collective, i.e. co-workers, etc.), not overly demanding, behaviour with the staff (guaranteeing human integrity, name-calling, etc.), taking internal tensions to the minimum, a desire to develop the company and increase its fame, the educational level and experiences (information capital) of the management leadership, the ambition of the company's management].
3. Several of the factors for raising mental and physical work productivity are different. Typically, an increase in the company's productivity depends more on the employees who do mental work (engineers, economists, etc.). It is important to establish an optimal relationship between the groups. The excellent drawings for a machine designed by an engineer will still usually be finished in metal by workers.
4. Each company, sector of the economy and region has its peculiarities, and taking these into account would increase labour efficiency.

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