

Labour Costs and Productivity Analysis of East-European Countries

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Abstract

After the opening of the European Union (EU) labour markets, some EU countries started facing the problem of partial work force drain to richer countries with higher wages. From Estonia, the main migration is to Finland. At the same time, East-European countries face quite a high unemployment rate on the one hand, and many vacant jobs on the other hand – there is a lack of qualified work force. Hence the objective of this article is to analyse the labour market of new member states of the EU coming from East-Europe, with emphasis made on Estonia, more specifically the productivity, labour costs and salaries, problems associated with labour market, and to compare it with the EU levels. The article focuses on the analysis of whether the low wages of Eastern European countries, including Estonia, are justified when compared to the wages of Western European countries, and what are the possibilities and possible benefits of raising them.

1. Introduction

Estonia has the highest GDP per person among former Soviet republics. An important element in Estonia's post-independence reorientation has been closer ties with the Nordic countries, especially Finland and Sweden. Estonia has had a market economy since the end of 1990s and one of the highest per capita income levels in Eastern Europe. The current government has pursued relatively sound fiscal policies, resulting in balanced budgets and low public debt. A balanced budget, almost non-existent public debt, flat-rate income tax, free trade regime, competitive commercial banking sector, innovative e-Services and even mobile-based services are all hallmarks of Estonia's market economy. In addition, Estonian state budget is one of the most balanced and the government debt one of the smallest. Before the economic crisis, the economic growths of Estonia, Latvia and Lithuania were one of the highest in the European Union. Hence these countries were called Baltic Tigers. The crisis, however, took the three countries to a completely different edge – the fall of their GDPs was one of the biggest in the EU. After the crisis, the economic growth factors of Estonia have again been one of the biggest in the union.

In addition, Estonian state budget is one of the most balanced and the government debt one of the smallest. However, the employment rate and wages in Estonia are one of the lowest in the EU. A thorough analysis of the development of a small economy such as Estonia will also help make more general conclusions, at least on the European level. After the economic crisis the GDP usually goes on an upward incline, while the unemployment is hard to curb. Why? To surmount the crisis, companies try to reduce the labour costs to a minimum. They endeavour to get rid of poor quality, redundant and also conflict-prone workers, in the first place. Concurrently a new problem rises – qualified labour is scarce. This problem does not only pester Estonia, it is endemic. One of the root causes are locally prevalent low salaries as compared to the remunerations paid in West-European countries.

After the crisis the economy does not develop along the extensive track, but mainly by the intensive ways, i.e. on account of growth in productivity. Expanding of the production occurs mainly with the help of adopting more efficient machines and equipment and better work organisation, reducing the number of low-qualification workers and increasing the demand for high-qualification ones.

Besides workers, that also affects the people with higher education and other specialists. Regardless of the relatively large unemployment an opposite situation has obtained in the labour market – in many branches of economy, the qualified labour is scarce. Due to free movement of labour in the EU countries a situation has obtained in the East-European member states, incl. also in Estonia: younger and experienced workers leave the country to work abroad, where salaries are higher. It is a foregone conclusion. Looking into the future, all this boils down to the need to increase the efficiency of production and productivity, and also to provide a competitive salary level. For elaboration of means necessary to enhance the efficiency of operating of the labour market, the complex analysis of labour market is needed.

By reference to the above, the **goal** of this article is to analyse the major components affecting the labour market, the labour costs, productivity and salaries and their relation in East-Europe, in the first place in Estonia. It is usually alleged that salaries cannot be increased due to low productivity. Since Estonian productivity in ratios is over twice higher than the salaries, the question “Why?” suggests itself. While the emphasis will be on Estonia, for theoretical generalisations the EU as an entirety has been partially involved in this article.

What are the opportunities to increase the labour market’s efficiency and salaries?

Productivity is an important economic indicator, directly impacting on development of the whole economy and companies, as well as workers’ salaries – *ditto* standard of living. Estonian salaries fall significantly short of the salary level of Nordic and West-European countries. Referred to as the grounds for that is our relatively low productivity, which does not enable increasing remunerations in Estonia to the level of Finland and other countries with advanced economy. Herein below we shall analyse, by reference to Eurostat source materials, how the factors affecting productivity have changed over an extensive period. We shall compare productivity and salaries both in Estonia and Europe. For instance, if the company would like to multiply the salaries, the production should yield the needed amount of extra money. Moreover, the company should retain, besides labour expense some money for overheads, profit etc. The income obtained should exceed the expense incurred. As a rule, labour costs constitutes the largest share in the company expense.

2. Analysis

Figure 1 displays the dynamics of European countries with larger labour costs (Nace Rev. 1.1; Label: Industry and services. Code: C-K) and Figure 2 displays those with lesser labour costs (Code: lc_an_costm).

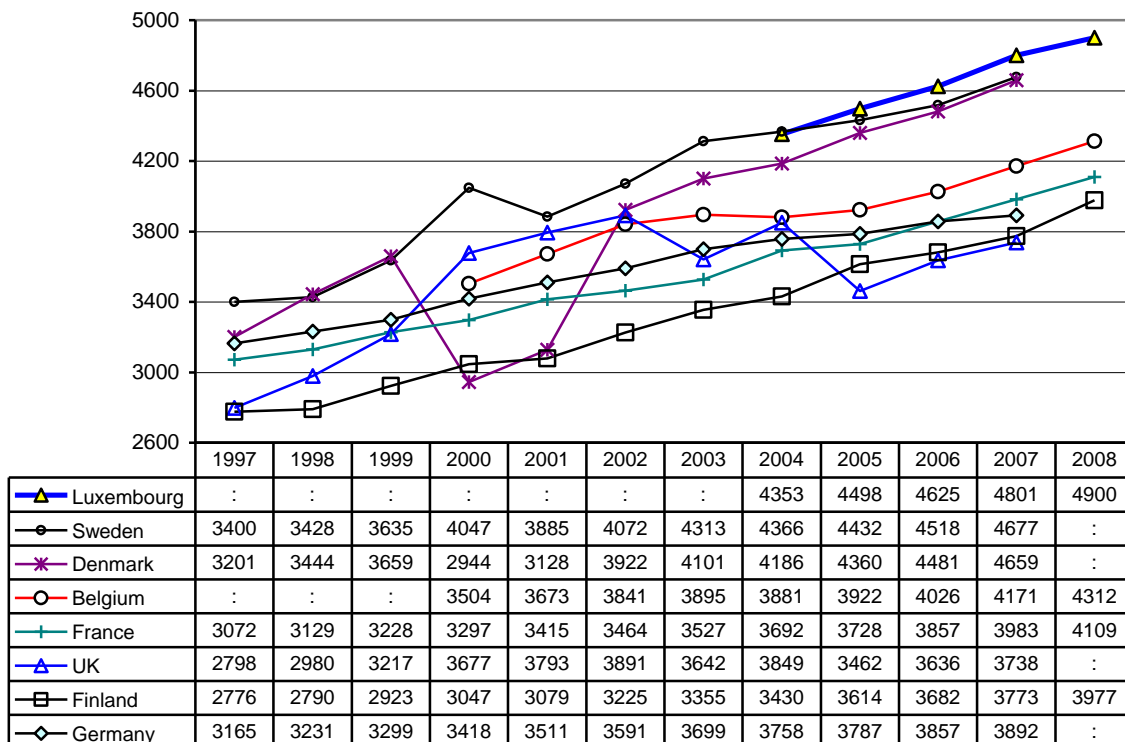


Figure 1. Countries of higher labour costs, EUR per month, 1997-2008

In the period from 1997 to 2008, i.e. up to the economic crisis labour costs rose almost in straight line progression. 2000 witnessed a dramatic decline for Denmark and a steep rise for Sweden. An impressive growth in expenses was manifested in Iceland, almost 1.5 times by 2006 as compared to 2002. This however was followed by major economic hardship and clampdown.

In 2010 (Nace Rev. 2) was labour costs in Netherlands 4456 and Ireland 3957 EUR (Code: tps00173). High labour costs has also caused transposition of production to the countries of lower costs, i.e. into new post-socialist EU countries.

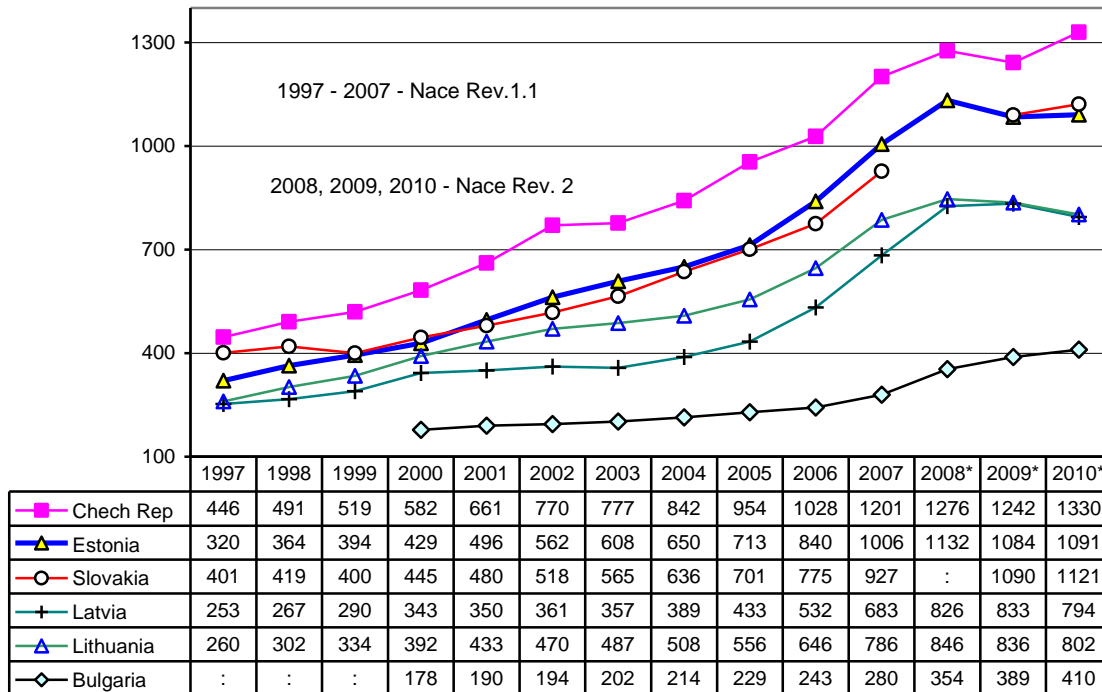


Figure 2. Countries of lower labour costs, EUR per month, 1997-2008

Labour costs of the most successful country among the new EU member states - Slovenia are by far larger than in other post-socialist countries. Hence in 1997 Slovenia’s labour costs amounted to 1139 and in 2007 to 1797 euro. They are significantly lower in Romania and especially Bulgaria, the latest countries having acceded to EU. While everyone has at times been affected by increase of labour costs, Poland displayed noticeable decrease in 2003. Slovenia’s costs was over six times higher than in Bulgaria and 1.5 times higher than in Czech Republic holding the second place. However while comparing European countries of higher and lower labour costs, the discrepancy is over 17 times (!).

Estonian labour costs is from 3 - 4 times lower than in the European countries of larger labour costs and 1.6 times lower than in Slovenia. Whereas Estonia’s costs are 4 times larger than in Bulgaria, but by half larger than in Romania etc. Out of post-socialist EU member states Estonia’s expenses are still among the highest, this country ranking the third.

While in 1997 the EU’s average labour costs was 7.3 times larger than in Estonia, in 2010 that ratio was only 3 times larger. In absolute figures EU’s costs grew in the same period by 965 EUR (2329 > 3294) and in Estonia by 789 EUR (320 > 1109). Hence Estonia’s discrepancy from the EU average has conspicuously shrunk.

In what Follows we will dissect the components constituting labour costs

Share of Estonia’s gross salaries in total labour costs in the years of 1997 – 2008 was stable in the interval 72.78 – 73.85%, in Latvia 78.9% and Lithuania 71.5%, whereas in 2007 it was the largest in Malta (92.86%) and the lowest in Sweden (66.18%). Contrastively, in Finland = 78.52% and Germany = 76.7% (Code: tps00113).

From the foregoing it follows that social security allocations of Estonian employers in ratios in the years of 1997 – 2008 were stable, barely over 25% and only a couple percent points larger than in lead country of Europe - Germany (22.9%). Those allocations were lower in Malta (6.98%), Denmark (7.14%) and Slovenia (13.01%) and the largest in Sweden (30.56%) and Belgium (30.81%) (Code: tps00114).

Other labour costs (working clothes, one-off subsidies etc.) constitute a minor share of the total labour expense. Those have been the highest in recent years in France (4.24%) and the lowest in Bulgaria (0.11%). As a general rule, they are small in tourism countries. In 1997 in Estonia they were 0.23%, but in 2008 already 1.32%, whereas in the meantime the share of other labour expenses was as high as 1.45% (Code: tps00115).

In EU 27 tax burden out of labour costs in the years of 1996 – 2008 was rather stable, keeping in the interval 4.1 – 38.5%, whereas in euro zone countries the average in 2008 was 42.8%. In that year the lower tax burden in labour costs was in Cyprus (11.9%), Malta (17.9%), Luxembourg (28.5%) and the United Kingdom (19.7%) and larger in Belgium (49.8%), Hungary (46.7%), Germany (46.6%) and France (45.4%). Contrastively, USA’s costs constituted 26.6%, Japan’s 2002=23.2% and Norway 34.1%. Estonian tax burden out of labour costs decreased from 2003 (40.7%), in 2008 dropping to 38.2% (Code: tsiem050).

Gross per year salaries’ discrepancy is overwhelmingly large: in Denmark (53165) and Bulgaria (2626) it is 20.2 times. The non-EU affiliated Norway’s (47221.4) and Switzerland’s (47095.9) salaries are among the highest in Europe. Considerable is discrepancy also between the EU-15 countries: in Denmark (53165) and Portugal (15345.2) the discrepancy is 3.5 times. Among new accessions to the EU, in the post-socialist countries Hungary (8952) and Bulgaria (2626) the discrepancy is 3.4 times, whereas the candidate state Croatia’s (9634.4) average salary is larger than salaries in new accessions to the EU, i.e. the post-socialist countries. In new member states, which are veteran market economies, Cyprus (21310) and Malta (15679) they are significantly larger than salaries in post-socialist and even latest EU-15 countries.

Wage share of labor costs in the EU countries is very different. It is in the 2010th lowest in Sweden 66.8, Belgium 67.3 and France 67.1, and the highest in Denmark 87.2, Luxembourg 85.9, Slovenia 85.7, the UK 85.5 and Bulgaria 84.2. In Finland was 78.4%.

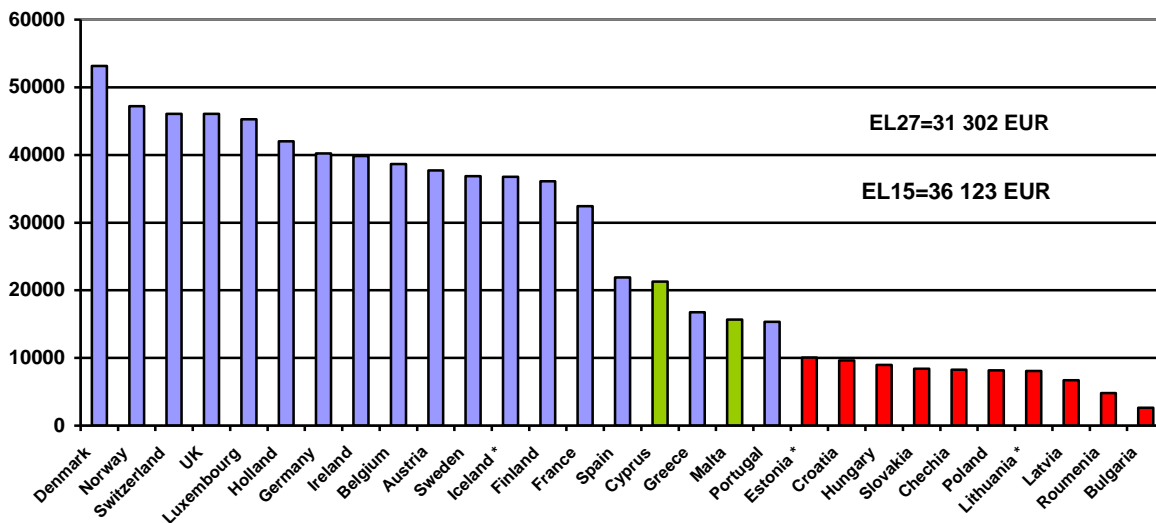


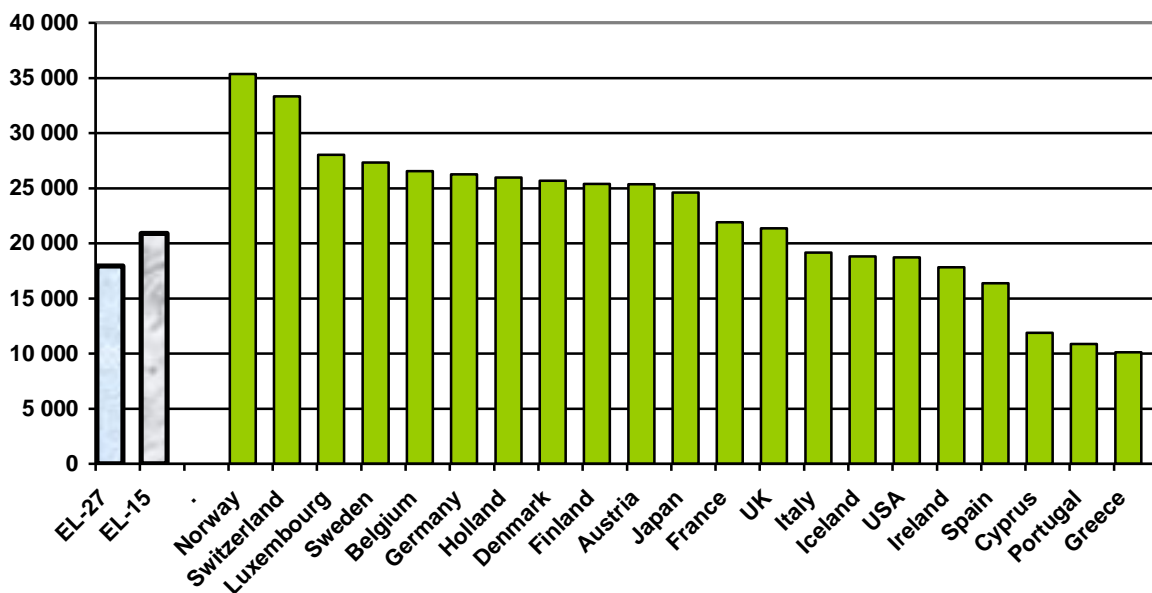
Figure 3. Average gross annual earnings in EU states, EUR

Source: Code: earn_gr_nace

Table 1. Net per year salaries, EUR, 1997 – 2011

	1997	1999	2002	2004	2006	2007	2008	2009	2010	2011
EU (27)	12,489	11,934	15,844	16,407	17,235	17,910	17,975	17,728	18,456	17,928
EU (15)	15,222	14,356	18,723	19,413	20,260	20,942	20,910	20,697	21,350	20,911
Denmark	17,265	18,614	20,355	21,270	22,181	23,246	24,095	24,647	25,249	25,693
Germany	23,966	18,786	21,958	23,022	23,597	24,180	24,739	24,552	25,297	26,253
Ireland	10,451	11,160	13,612	15,170	16,237	16,918	17,658	17,253	17,527	17,817
Greece	6,331	6,684	6,940	8,848	9,797	10,590	10,693	11,872	13,099	10,111
France	12,213	12,574	17,631	17,562	18,823	19,536	20,307	20,614	21,166	21,926
Italy	14,443	13,470	15,065	15,785	16,669	17,042	17,728	18,107	18,639	19,172
Luxembourg	15,099	15,965	21,858	23,072	24,786	25,769	26,179	26,867	27,497	28,016
Portugal	4,287	4,504	8,243	8,477	9,2156	9,956	10,327	10,598	10,736	10,883
Finland	15,023	15,512	18,434	19,478	20,797	22,047	23,170	23,643	24,449	25,385
Sweden	16,072	16,667	20,773	22,232	23,200	24,109	24,271	22,418	25,369	27,320
UK	12,952	14,343	22,995	23,465	25,046	26,402	22,767	20,316	21,696	21,354
Norway	16,759	18,003	25,839	24,724	28,002	29,614	30,240	29,207	33,064	35,361
Switzerland	19,740	20,986	24,907	24,266	24,400	24,184	24,884	26,367	28,939	33,334
USA	17,447	17,198	19,996	15,942	16,925	16,266	16,088	17,752	19,210	18,725
Japan	:	:	24,250	20,599	19,287	17,473	17,878	20,911	23,355	24,605

Source: Code: earn_nt_net

**Figure 4. Net per year salaries, EUR, 2011**

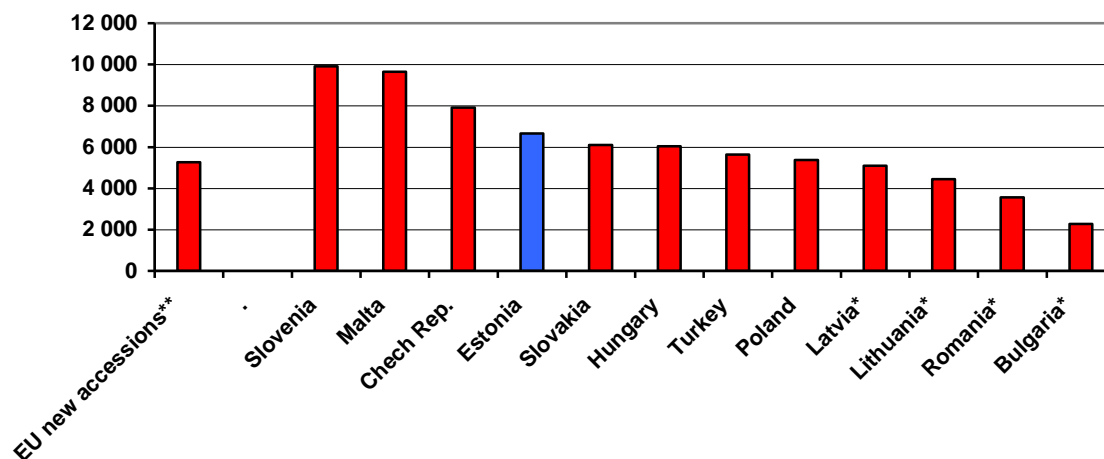
In new EU member states the average net annual salary in 2007 was 5266 EUR, significantly smaller than Estonian salary (in 2011 was 6664). Also contrastively presented herein is the EU candidate state Turkey's salary, which was on an average level among the others. As regards the Estonia's remunerations, presented in greater detail at the end of article will be separately the data on recent years.

In the period under perusal the salaries of the new EU member states (CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK) have grown 2.16 times, in the majority at least 3 and in Estonia 4.34 and Lithuania 3.95 times.

Table 2. Net per year salaries in new states, EUR, 1997 – 2011

	1997	1999	2002	2004	2005	2006	2007	2008	2009	2010	2011
New States (10)	2,438	2,723	4,018	4,054	:	4,833	5,266	:			
Bulgaria	654	866	974	1,077	1,285	1,364	1,612	2,015	2,230	2,276	:
Czech Rep.	2,640	3,033	4,101	4,425	4,965	5,563	6,095	7,378	7,144	7,614	7,915
Estonia	1,522	1,730	3,285	3,819	4,209	4,969	5,958	6,695	6,353	6,438	6,664
Latvia	1,364	1,492	2,221	2,361	2,634	3,233	4,151	5,031	5,137	5,096	:
Lithuania	1,248	1,549	2,285	2,603	2,875	3,376	4,148	4,853	4,523	4,439	:
Poland	2,588	2,995	3,830	3,484	4,050	4,537	4,983	5,509	4,625	5,189	5,370
Romania	756	799	1,404	1,598	2,080	2,414	3,073	3,437	3,218	3,567	:
Slovenia	4,571	5,153	6,614	7,236	7,538	7,945	8,490	9,154	9,334	9,819	9,908
Slovakia	1,649	1,513	2,628	3,223	3,376	3,787	4,501	5,363	5,706	5,884	6,094

Source: Code: earn_nt_net



Note: EU new**=2007; Latvia, Lithuania, Romania and Bulgaria* = 2010.

Figure 5. Net per year salaries in new states, EUR, 2011

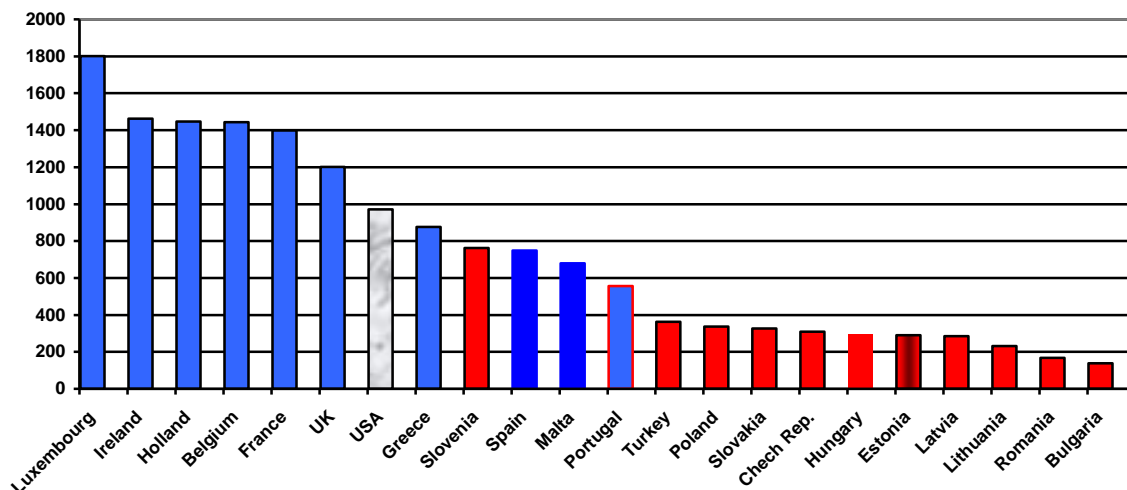
In the years of 1999 – 2011, as a general rule the minimum salaries grew, however due to the economic crisis part of the countries had frozen their salaries for two to three years, incl. in Estonia to the level of 2008. The British decreased minimum salaries in 2011 as against 2008 and the Americans increased it substantially. In Estonia, it has nevertheless increased as from 1999 by 3.6 times; in Latvia 3.8 times and Lithuania 2.5 times. It increased still more in Romania (5.9 times) and Bulgaria (4.2 times). It thence transpires that in evidence is the trend to level out the salaries, although at variable rates, significantly influenced by the position of their economies during the crisis and success of the policy in superseding the crisis.

Discrepancies in minimum salaries still are overwhelmingly large. Hence in Bulgaria it was 13.0 times lesser than in Luxembourg, 5.5 times lesser than in better economy post-socialist Slovenia and 2.1 times lesser than in Estonia. Whereas in Estonia the minimum salary is 6.2 times lesser than in Luxembourg and 2.6 times lesser than in Slovenia. Whereas the Luxembourg's minimum salaries are several times higher than in new EU member states. Reckoning with divergent price levels of the countries, Estonia's minimum salary should be 362 euro, subject to purchasing power standard (PPP).

Table 3. Minimum per month salaries, EUR, 1999 – 2012

	1999	2001	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Bulgaria	32.7	44.5	56.3	61.4	76.7	81.8	92.0	112.5	122.7	122.7	122.7	138.0
Czech Rep.	92.4	142.7	196.4	206.7	235.9	261.0	291.1	300.4	297.7	302.2	319.2	310.2
Estonia	80.3	102.3	138.1	158.5	171.9	191.7	230.1	278.0	278.0	278.0	278.0	290.0
Ireland	-	944.7	1073.2	1073.2	1183.0	1292.9	1402.7	1461.9	1461.9	1461.9	1461.9	1461.9
Greece	522.0	543.6	606.5	630.8	667.7	709.7	730.3	794.0	817.8	862.8	862.8	876.6
France	1036.0	1083.3	1154.3	1215.1	1286.1	1217.9	1254.3	1280.1	1321.0	1343.8	1365.0	1398.4
Latvia	75.2	86.8	114.0	119.0	114.6	129.3	172.1	229.8	254.1	253.8	281.9	285.9
Lithuania	92.1	115.5	124.6	130.3	144.8	159.3	173.8	231.7	231.7	231.7	231.7	231.7
Luxembourg	1162.1	1258.8	1368.7	1403.0	1466.8	1503.4	1570.3	1570.3	1641.7	1682.8	1757.6	1801.5
Hungary	89.2	150.9	211.6	201.9	231.7	247.2	260.2	271.9	268.1	271.8	280.6	295.6
Holland	1064.2	1154.5	1249.2	1264.8	1264.8	1272.6	1300.8	1335.0	1381.2	1407.6	1424.4	1446.6
Poland	158.9	197.4	199.0	175.3	207.9	232.9	244.3	313.3	307.2	320.9	348.7	336.5
Romania	27.3	41.4	71.2	68.0	78.7	89.7	115.3	138.6	149.2	141.6	157.2	161.9
Slovenia	361.3	395.3	450.3	471.0	490.1	511.9	521.8	538.5	589.2	597.4	748.1	763.1
Slovakia	69.4	100.2	134.2	147.7	167.8	182.2	220.7	241.2	295.5	307.7	317.0	327.0
UK	-	977.4	1063.8	1054.2	1134.7	1212.6	1315.0	1242.2	995.3	1076.5	1136.2	1202.0
USA	765.1	959.3	851.2	706.8	655.4	756.7	677.8	688.8	815.8	872.3	940.5	971.2

Source: Code: tps00155

**Figure 6. Minimum per month salaries, EUR, 2012**

Share of minimum salary (Nace Rev.2) in average monthly salary is a major economic policy problem, depending on political decisions and country's economy level. It constitutes nearly a half in Greece (2011=50.1%), France (2009=47.6%), Malta (2011=47.4%), Belgium (2008=47.3%) and Luxembourg (46.7%). It is of lesser proportion, besides Estonia (2010=35.6%) also in Czech Republic (33.4%), Slovakia (36.6%) and Romania (32.3%). In 2009 the share of minimum salary picked up in the majority of East-European EU member states, whereas in Estonia it grew a year earlier. Contrastively, in USA it was 31.4% in 2011 (Code: earn_mw_avgr2).

Table 4. Productivity, basing on PPS, per one worker and hour, 1995 – 2010

	Per person employed (EU-27=100)								Per hour worked (EU-27=100)							
	1995	1998	2001	2004	2006	2008	2009	2010	1995	1998	2001	2004	2006	2008	2009	2010
Bulgaria	31.6	27.4	32.1	34.8	36.4	39.6	40.1	41.3	32.0	28.6	33.0	35.0	36.8	39.9	39.8	41.4
Czech Rep.	64.5	63.9	67.8	73.0	74.0	74.0	75.0	73.4	60.0	58.4	62.9	67.0	68.4	68.7	69.9	67.7
Denmark	109.0	109.7	107.9	109.2	106.9	105.8	106.3	111.6	125.7	123.3	117.0	117.7	114.4	114.2	113.7	120.2
Germany	115.6	112.0	106.2	107.5	108.7	107.9	105.0	105.3	131.1	128.7	123.9	125.6	127.6	126.6	124.7	123.9
Estonia	34.1	41.6	48.3	57.7	62.4	66.0	65.8	69.2	:	:	41.4	48.5	52.1	56.0	59.0	61.0
Ireland	120.8	127.1	129.7	137.1	136.4	128.6	132.1	136.9	:	112.1	114.3	122.7	121.3	116.4	120.1	125.7
France	120.9	120.7	119.5	115.3	115.3	115.3	116.4	115.8	131.8	132.4	133.8	128.9	130.9	129.0	129.9	129.8
Latvia	33.3	36.9	41.5	45.9	48.8	51.6	52.8	54.6	:	:	32.0	36.5	38.4	42.9	44.5	46.7
Lithuania	36.2	41.1	47.3	53.8	56.8	62.1	57.5	62.3	36.2	39.7	43.8	49.9	51.1	54.4	50.8	54.8
Luxembourg	175.7	166.3	163.0	170.5	179.5	178.1	168.2	169.9	:	:	:	181.1	192.4	189.9	184.3	187.1
Hungary	55.0	57.6	61.5	67.0	67.8	70.9	72.1	71.2	47.5	49.0	52.2	56.4	57.0	59.5	60.2	60.1
Poland	46.0	50.8	56.3	61.9	61.1	62.3	65.6	66.8	38.3	42.1	45.8	49.8	49.1	50.2	52.5	53.9
Romania	:	:	25.7	34.6	39.7	49.1	49.2	48.9	:	:	23.5	31.5	35.5	43.7	42.9	43.0
Slovenia	66.8	75.5	76.1	81.5	83.4	83.8	80.9	80.4	:	:	76.1	78.7	83.5	83.7	79.6	79.4
Slovakia	50.3	56.6	60.8	65.7	71.7	79.7	79.7	81.4	46.4	53.9	57.2	63.3	67.5	74.2	73.6	74.6
Finland	111.3	114.2	112.9	113.5	110.6	113.3	110.2	111.5	108.7	111.8	110.4	110.5	108.1	112.0	108.3	109.6
Sweden	111.2	113.2	109.0	115.5	113.1	114.2	111.9	114.5	117.6	117.8	114.2	120.6	118.1	117.9	114.2	115.4
Norway	115.4	114.5	137.1	144.1	159.1	159.8	145.7	150.7	134.5	133.7	162.6	170.1	187.3	186.6	169.6	175.3
United States	138.3	141.5	140.9	143.5	140.6	138.2	140.7	143.5	130.8	131.2	131.1	135.2	132.4	131.1	133.0	:

Source: code: tsieb030; code : tsieb040

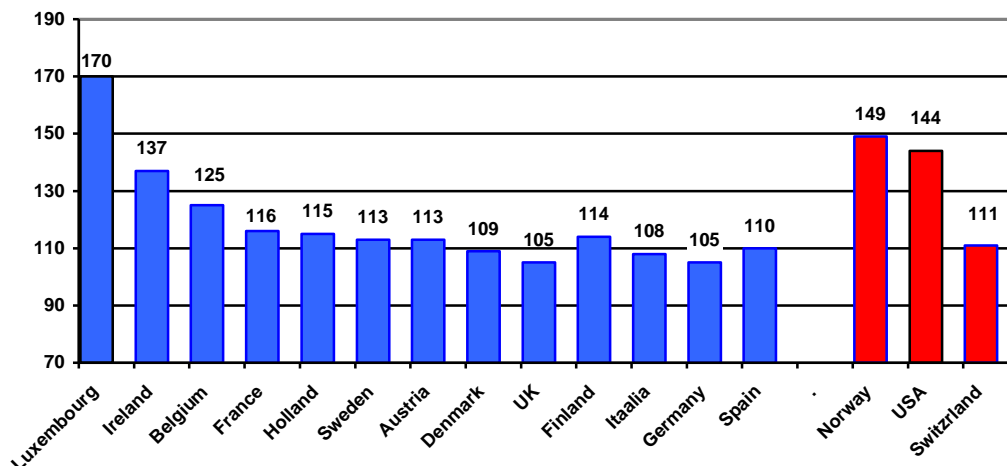


Figure 7. Higher productivity states > EL=100, 2010

Of higher productivity in EU and also globally is Luxembourg and Norway, external to EU.

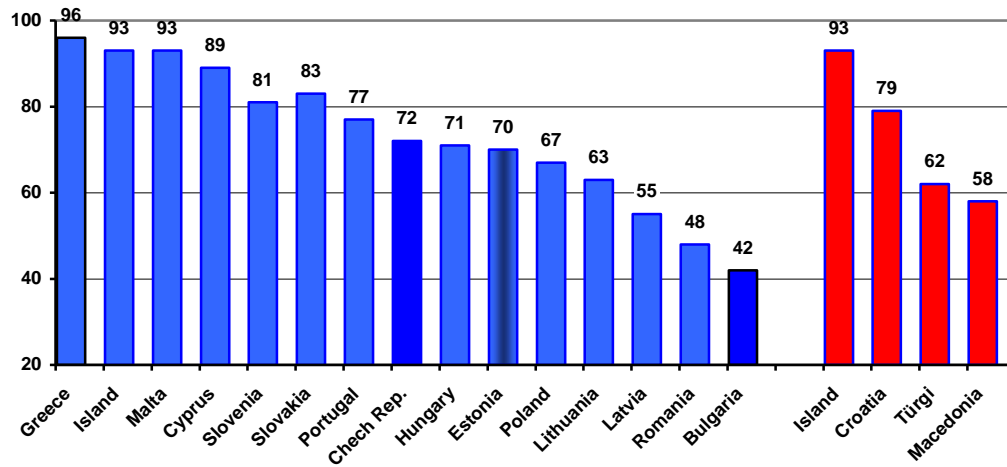


Figure 8. Lower productivity states < EL=100, 2010

Of lower productivity are post-socialist countries, however somewhat higher is the level of Malta and Cyprus. Of somewhat higher productivity than Estonia is the EU-15 state Portugal. Of still higher productivity are EU post-socialist states Slovenia, Slovakia, Hungary and Czech Republic. Of EU candidate states, Croatia excels Estonia and Turkey maintains the same level.

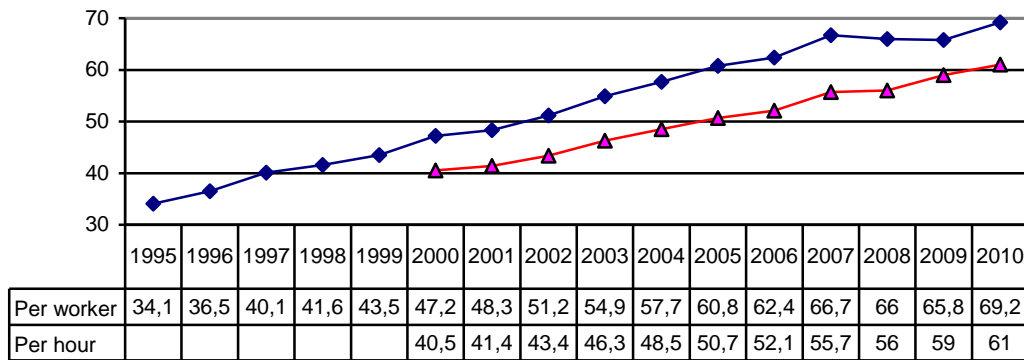


Figure 9. Growth of Estonia's productivity (EL=100), 1995-2010

In Estonia the yield per worker i.e. productivity grew in the period under scrutiny 2.0 times, however it got suspended during the economic crisis. Contrastively, in 2010 in Latvia the yield per one worker was 54.6% and in Lithuania 62.3%, as the EU-27 average. The highest among EU member states it was in Luxembourg (169.9), Ireland (136.9) and France (115.8) and the lowest in Bulgaria (41.3%) and Romania (48.8). In Norway (150.7) and USA (143.5) the productivity was 1.5 times higher than the EU average. The one working hour's productivity displays a similar trend, the highest in Luxembourg 187.1. Estonia's productivity amounts only to 61.0%. However the prevailing trend is that regardless of growth in productivity elsewhere, it rises in Estonia and also other EU new accessions noticeably quicker than in veteran and wealthy EU-15 countries.

When analysing the EU-27 productivity (added value produced by one worker) as per branches of economy and size of companies, one cannot draw an equipollent (equal in force or effect) conclusion as regards the productivity and number of workers engaged in the company. It is conditional of the branch of economy. For that matter, productivity in energy and water management companies is the highest in small firms, with up to 9 persons on payroll. Whereas the largest productivity is evidenced in big firms, keeping in employ 250 workers or more, the companies operating in the lease of movable property, accommodation (housing) companies and in total all branches of economy as an entity. Textile and habiliment (articles of clothing) firms have the largest productivity, with number of workers from 10 - 49; so do the timber companies with number of workers from 50 – 249 (Code: tin00054).

Below we will analyse in greater detail, from among productivity indicators of Estonian companies, the labour expense in current prices, or which the predominant share is constituted by salaries. We will look at Estonian productivity indicators both by reference to sales revenue and added value as per employed and the same by reference to hourly productivity.

In Estonia, productivity differs little as per company size up to 249 workers. In 2003 and 2007 the largest productivity was boasted by firms with workers from 50 – 99; in 2005 with workers up to 9 people and for the rest under survey from 100 – 249 workers. Invariably, big companies of lesser productivity had 250 workers and more. That can be accounted for by larger flexibility in management of lesser companies, lesser number of ancillary personnel and also because workers of small companies are more of “jacks of all trades” than in big companies. In big firms productivity is sapped, as a general rule by large overheads.

Table 5. Productivity indicators of Estonian companies in current prices, 2001-2012

Labour productivity per person employed on the basis of net sales, thousand euro												
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
I quarter	10.8	11.1	12.3	13.6	15.2	17.6	20.6	21.2	18.5	20.8	25.2	26.9
II quarter	12.2	12.9	13.4	15.2	17.3	20.2	23.4	23.4	20.4	24.0	27.6	
III quarter	12.3	12.8	14.0	15.4	18.2	21.0	23.6	24.0	20.8	25.2	28.1	
IV quarter	13.4	13.6	15.0	16.6	19.7	22.0	24.4	22.0	21.7	26,8	29.3	
Labour productivity per person employed on the basis of value added, thousand euro												
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
I quarter	2.1	2.4	2.5	2.7	3.4	4.0	4.2	3.2	3.5	4.3	4.7	
II quarter	2.5	2.6	2.8	3.3	3.9	4.7	4.6	3.7	4.1	5.0		
III quarter	2.5	2.7	2.8	3.4	4.2	4.7	4.6	3.5	4.4	5.0		
IV quarter	2.6	2.7	2.9	3.6	4.5	4.7	4.0	3.8	4.7	5.1		

Source: Code: FS0411

Productivity as per employed by reference to sales revenue was over 20 thousand euro as from the second half of 2006. In 2009 QI a dramatic decline occurred, again followed by a slowly ascending growth, whereas 2010 QIII and QIV were record-breakers. Admittedly Estonia has made its exit from the economic crisis mainly along the intensive track, i.e. on account of growth in productivity.

Productivity as per employed by reference to net value added has changed due to other regularities. As late as in 2010 QIV, Estonia attained the level of three successful quarters of the pre-crisis 2007. Whereas in 2010 QIV the level was already 1.5 times higher than productivity in the deepest slump of crisis in 2009 QI.

After the crisis, productivity recovered quicker by reference to sales revenue than by reference to value added, which implies the runaway selling prices after the crisis. Whereas the above analysis per quarters support evidence to the surmise that in the period of economic crisis the changes are extremely rapid and consequently the analysis with one year precision will not yield a correct picture of changes underway.

Table 6. Estonia companies’ productivity per employed, thousand euro, 2005 – 2010

	2005	2006	2007	2008	2009	2010
By reference to sales revenue	72.1	81.2	92.2	93.6	81.2	95,6
By reference to value added	14.7	17.4	19.3	18.7	17.4	16,7

Source: Code FS008

Sales revenue as per employed, of the first quarter of 2010 was 44.3 thousand euro. It is more than in the previous year, nevertheless it falls short of 2007 and 2008 average.

Business sector’s productivity by reference to the net value added increased in 2010 by 18%, whereas the companies’ average labour expense per employed kept on the level of 2009.

It needs be taken into account in this connection that periods affect the average salary, hence in December, on account of the Christmas bonus, the remuneration makes a quantum leap. When comparing equidistant months, the onset of crisis must be taken into account. In the pre-crisis period salaries made a headway. When comparing 2003 salaries with 2008 salaries, the growth was almost doubling. Whereas the 2010 salaries were lower than two years earlier. Largest gross salary was evidenced in June 2008 – 905 euro and the least in August 2009 – 720 euro. 2010 still witnessed continual incremental growth, however two years earlier it was still higher. June 2008 witnessed the record 904.99 average gross monthly salary, December 2010 evidenced 848.55 euro i.e. less by 56.44 euro.

For analysis of the real income the impact of inflation must also be considered, whereas in 2010 the CPI was much higher than before the crisis. Real salary, reckoning the impact of change in CPI and showing salary's purchasing power, declined for nine quarters on end. In 2010, IV quarter the real salary dropped by 1.2%. (Source: Code YPA51)

Table 8. Average quarterly monthly salary, euro (EMTAK 2008), 2009-2011

	2009				2010				2011			
	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ
Gross ...	837	887	787	832	811	891	793	861	854	923	841	907
Net ...	680	719	639	673	651	712	637	690	685	737	674	725

Source: code WS041...

In 2010 IV quarter the share of net monthly salary constituted 80% of gross monthly salary, being among the highest in the EU member states.

Quite naturally, in the pre-crisis year the salary and consequently labour expense were larger than in 2009. As from the second quarter 2010 the level of the previous year was superseded, however there was a shortfall, as compared to the pre-crisis time.

As per areas of activities the IV quarter of 2010 continually displayed the largest gross monthly salary in finance and insurance business (1337.73) and in information and communication (1305.33). Salaries in manufacturing industry (777.10); trade (740.74) and building (853.35) were much lower. The lesser area however was „other servicing business“ – 502.41 euro. Average gross monthly salary in 2010, IV quarter was the largest in Tallinn 920.46 and Tartu 811.93 and lower in county Valga 610.48 euro [code WS21...].

Table 9. Average gross monthly wages and labour cost per employee, euro, 2002-2012

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
I quarter											
Gross monthly wages	366	405	431	475	549	660	788	776	758	792	847
Monthly labour cost	498	546	581	640	739	886	1 059	1 055	1 030	1 074	1 148
II quarter											
Gross monthly wages	406	442	474	530	609	738	850	813	822	857	900
Monthly labour cost	549	596	639	713	818	991	1 145	1 105	1 114	1 159	1 218
III quarter											
Gross monthly wages	374	411	449	498	580	697	800	752	759	809	..
Monthly labour cost	506	555	605	670	779	937	1 078	1 024	1 027	1 096	..
IV quarter											
Gross monthly wages	416	455	492	555	653	784	838	783	814	865	..
Monthly labour cost	565	617	665	750	879	1 056	1 137	1 069	1 105	1 175	..

Source: code: WS010

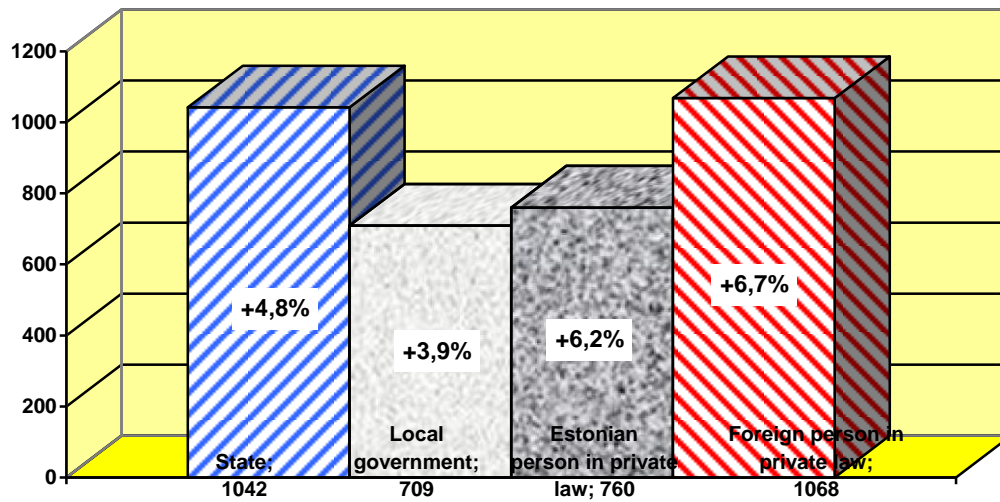


Figure 10. Estonian gross monthly salary per owner, QIV 2011, euro

Embraced have been workers under Employment Contract, Service Contract and Public Service Act. While on the one hand it is emphasised that the salaries of government and self- governments were frozen, because before crisis they enjoyed a non-motivated large growth, the growth analysis of salaries of 2010, IV quarter contradicts to it. Lesser growth of salaries was evidenced in private sector. [Code: WS31]

Productivity reverted to decline in the second half of 2007 and attained the trough of the slump in 2008, IV quarter. Whereas salary increased and its record sizes were evidenced in 2008 II and IV quarter, where productivity had plummeted.

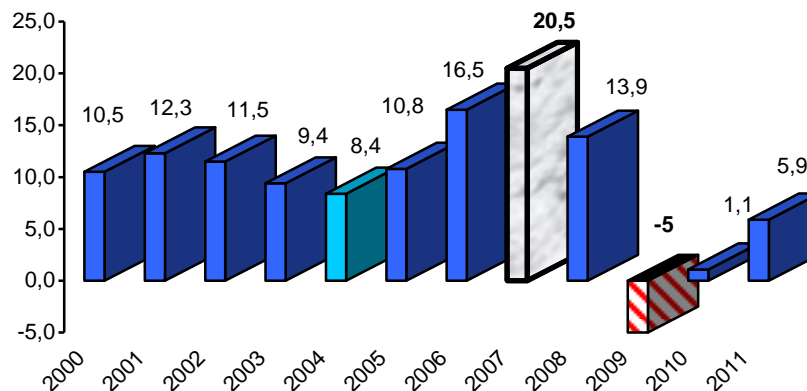


Figure 11. Estonian gross salary, %, 2000-2011

In Estonia, in the 4th quarter of 2011, the average monthly gross wages and salaries were 865 euro and the average hourly gross wages and salaries were 5.19 euro. Compared to the 4th quarter of 2010, the average monthly gross wages and salaries grew 6.3% and the average hourly gross wages and salaries by 7.4%.

At the inception of the decade under survey, starting from 2001 the largest growth in gross monthly salary was witnessed in state companies and smaller in foreign entities under private law. In 2009 all forms of ownership experienced a drop in salaries, mostly in Estonian entities under private law.

As a general rule, Estonian salaries have exhibited slower growth than productivity. That holds true also for other countries presented herein. Whereas sporadically impressive leaps occur in both directions. In 2007 and 2008 there took place a large growth of salary unit as per productivity in the Baltic states. 2010 evidenced the contrary development.

In 2011 Estonian salaries grow quicker than productivity, however in 2012 under prognosis productivity will grow more impetuously than salaries. (Code: tsieb070)

Conclusions

To sum up, during the economic crisis all Estonian economic indicators worsened. 2010. witnessed a major advance, and subsequently the pre-crisis GDP was passed.

In 2010, the monthly labour productivity in Sweden was 1.62 times higher, and in Finland, 1.59 times higher when compared to Estonia; the respective rates for hourly labour productivity were 1.89 and 1.80. The difference, however, is continually decreasing.

In 2010 (Rev. 2), the monthly labour costs in Sweden were 5 085, in Finland 4 040 and in Estonia 1098 euro. Hence, the labour costs in Estonia were 4.63 and 3.68 times smaller than in Sweden and Finland.

In 2010, the gross annual salary in Sweden was 38 023, in Finland, 38 626 and in Estonia 9 490 euro – the relations therefore being 4.01 and 4.07. In 2011, the net annual salary in Sweden was 27 320, in Finland 25 385 and in Estonia 6 664 euro – the respective relations being 4.10 and 3.81.

When compared to the differences in wages, this ratio is normal, as wages form the largest part of labour costs – in Estonia, 73.38% (2010). But when we compare wages and labour productivity, this relation is abnormal.

Based on the data from Sweden, the annual net salary in Estonia according to labour productivity should be 16 864 or 14 455 euro, that is over two times higher than it is now. Based on Finnish data, the respective figures are 15 965 or 14 193 euro. We are currently comparing net salaries due to the differences in Swedish, Finnish and Estonian tax systems.

However, it is not enough to compare merely gross and net salaries: for a deeper analysis, price levels, social expenditures, family budget and other social figures must also be observed. As it is known, the highest price levels are in Switzerland, Norway and from EU countries, Denmark.

In Estonia, certain prices of more expensive goods and services may even reach the price levels of Germany, but in overall, the price levels in Estonia are still lower than in richer Western European countries.

When comparing the salaries in public and private sector in Estonia, it must be considered that in public sector, the number of people with higher education is much bigger than in private sector. Therefore it is not feasible to compare, for example, the salaries in education (public sector) with salaries in services (private sector), as the qualifications of workers are too different. Unfortunately, the salaries of workers with higher education do not differ that greatly from the salaries of workers with basic education.

Estonian productivity is 69%, but salaries are below 30% EU average. Consequently at such level of average productivity it is, as a general rule possible to raise salaries primarily on the expense of owner profit.

This would also lessen the drain of qualified workforce. Keeping qualified workers in Estonia is in the long run also beneficial to the employer. A reasonable raise in the salaries would be a beneficial future investment for the companies. As for the rise of profit, it would be insured by keeping qualified workforce and by lessening or saving from training expenses on new employees, etc. But we mustn't also forget the golden rule of economic theory: the main goal of a business enterprise is earning profit to its owners. Hence, the conflict of interests arises. Therefore we may also look at different enterprises from a viewpoint of whether their activity is focused on today only or does it also consider the future.

Productivity in ratios of other post-socialist countries, new EU states is also substantially higher than salaries. Significant discrepancy of productivity and salaries causes movement of labour of East-European states to the states of higher salaries. Whereas it must be taken into account that East-European countries produce, as a general rule goods of lower value than in Western Europe.

Nevertheless the labour market will put in place, in due course of time the correct relation of productivity and salaries, but by that time new EU member states will have lost part of their precious labour.

The possibility of raising salaries should be analysed separately according to economic branches, jobs and professions. The countries of Eastern Europe, including Estonia, could try to model after the experiences of developed industrial countries.

The salaries could be raised in there areas where the result (turnover and profit) is more connected to the quality if workforce, in order to find better and more competitive employees. It should also be certainly connected to the productivity and quality of work through salaries and bonus systems. These generalisations could also be made to other new European Union countries.

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