DYNAMICS OF LABOUR INCOME SHARE IN LATVIA AND THE EU

Olegs Krasnopjorovs
University of Latvia, Latvia

Abstract

This paper provides quantitative evidence that during the recent economic expansion the wage growth in Latvia as well as in other Baltic States, by far exceeded the productivity increase. First, we construct a real wage–labour productivity relation and demonstrate that a positive gap is still evident by the end of 2009, although decreased markedly during the recent year. Second, we calculate employee compensation to gross value added (GVA) ratio and labour income share composites for each EU country and show how their dynamics is related to time and economic cycle. It was found that the labour income share is a cyclical in the old EU countries on average but procyclical in Latvia and Estonia. Third, we decompose employee compensation to GVA ratio into changes of economic structure, composition of employment and true wage–productivity effect and show that only the latter two effects were significant in Latvia.

Key words: *labour income share, compensation of employees, labour productivity, wages*

1. Introduction

According to the mainstream view regarding current imbalances in the Latvian economy, wages grew too rapidly while labour productivity merely stagnated during the past boom; therefore, in order to restore competitiveness, both wage cuts and structural policies to enhance productivity are needed. The most recent IMF country report on Latvia (2008) stated that "wage growth above productivity improvements exerted upward pressure on consumer price inflation and eroded competitiveness" (p.61), and further, "the program includes strong incomes policies to reduce inflation and improve competitiveness, and structural policies that should boost productivity growth" (p.97). To paraphrase, nowadays labour receives "too much" compared to the level which could be derived from its productivity resulting in a deterioration of competitiveness.

The **aim** of this paper is to assess wage–productivity dynamics both directly, by constructing a cumulative wage and labour productivity graph, and indirectly, by studying the evolution of employee compensation to GVA and labour income share in Latvia in comparison with other EU Member States. The **methodology** involves constructing of the employee compensation to GVA ratio and labour income share composites for Latvia as well as for other EU countries; interpreting its dynamics relative to the economic cycle; decomposing employee compensation to GVA changes into economic structure, employment composition and true wage-productivity effects; evaluating whether wage–productivity relation is dependent on economy's structural effect.

The data for empirical calculations are taken from Central Statistics Bureau of Latvia and Eurostat databases. All necessary values are calculated using computer software programs Microsoft Excel and EViews 6.

This research paper is primarily based on foreign studies published by the staff of academic institutions and policy related institutions. However, this paper provides evidence that the unique experience of the Baltics contradicts to some stylized facts of labour income share posted by other researchers, possibly because their papers were based on the OECD countries. In particular, the author found that the labour income share was procyclical in the Baltics while Gomme and Rupert (2004) report the countercyclicality of the labour income share as one of the stylized facts. Regarding Latvian researchers, the labour income share analysis has not been considered so far in academic papers in Latvia; moreover, the wage–productivity relation was not analyzed quantitatively in a similar way. The author's pioneering construction of labour income share composite in Latvia was published in Bank of Latvia's Monetary Review (2008) while the first quantitative estimations of the gap between cumulative hourly real wage and labour productivity levels were recently published by the author in the Bank of Latvia report (2009).

The paper is structured as follows. Section 2 reviews the wage–productivity dynamics in Latvia during the last 10 years and shows the accumulated positive gap between these variables and the recent progress to restore competitiveness. Section 3 presents a technique to construct the labour income share by adjusting compensation of employees share in GVA by the proportion of self-employed in total employment, while section 4 provides empirical evidence on its dynamics in the EU and in the Baltic States in particular. Section 5 decomposes the variation of the labour income share into changes of the economic structure, composition of employment, and the true wage–productivity effect, while section 6 concludes.

2. How Far We Moved from Wage–Productivity Tradeoff

First, we construct a real wage–labour productivity relation. The Central Statistics Bureau of Latvia (CSB) publishes real wages only net of taxes; the drawback is that its dynamics is influenced by taxation changes (for example, a decrease of personal income tax rate from 25% to 23% as of January 2009 reduced the gap between gross and net wages, so the net wage y-o-y growth rate increased as compared to gross wages). Therefore, gross real wages were calculated by dividing gross nominal wages by consumer price index (both obtained from the CSB). Wage growth could be regarded as a wage per hour increase as the CSB publishes monthly wages in full-time equivalent units. Further, we calculated hourly labour productivity by dividing the Gross Value Added (GVA) by the number of hours worked. Both variables are from the CSB database.

To estimate the present gap between real wages and labour productivity, we need to know the equilibrium wage to productivity ratio or, alternatively, define a base period when the wage level was commensurate with labour productivity and then to draw a cumulated wage and productivity graphs. The latter strategy is implemented, inter alia, to show the effective exchange rate dynamics particularly by the Bank of Latvia in its effective exchange rate statistics database (2009) since defining equilibrium exchange rate level is subject to similar subjectivity as equilibrium wage to productivity ratio. A reliable option for the base period is the first quarter 2004 (just before the EU entry); however, the results are similar if any other base period is chosen during 2000–2005 when the real wage rise was broadly in line with the labour productivity increase. Assuming that in the first quarter of 2004, wages in the country were commensurate with productivity, and representing the cumulative seasonally adjusted wage and productivity levels from this time, it becomes obvious that the gap between wages and productivity appears in the third quarter of 2006 and expands until the third quarter of 2008. The real hourly wage grew faster than productivity up until the first quarter of 2008, and during the following two quarters the difference between these indicators increased mainly as a result of dropping productivity. Then, by the end of 2009, about 84% of the difference between wages and productivity has been eliminated reflecting considerable competitiveness gains during 2009 (see Figure 1). However, real productivity – real wage assessment assumes full and instantaneous inflation. At the opposite extreme, assuming zero inflation pass-through, one should assess nominal wage – real productivity relation. Although the gap between nominal wage and real productivity is clearly on the downward path, only 37% of the gap was eliminated by the end of 2009 as compared to its peak in 2008 Q3. In reality, there is a partial pass-through of inflation, and it is believed to be relatively high in Latvia due to high price flexibility assessed by Melihovs and Zasova (2007).

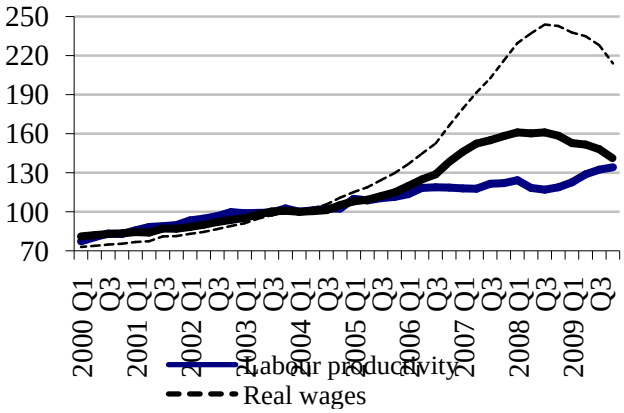


Figure 1: Labour productivity and wage cumulative level in Latvia (2004 Q1 = 100; seasonally adjusted data).

Sources: Central Statistics Bureau of Latvia data [3], author's calculations.

Although the wage–productivity differential is evident, it does not necessarily point to macroeconomic imbalances. The wage–productivity gap could accumulate also from structural changes in the economy. Let's consider a hypothetical example and assume that initially economy consists of two sectors, namely A and B, and the share of each sector in GVA is 50%. Next, let us assume that the labour remuneration share in each sector's value added is 30% and 70% respectively (real-world prototypes could be agriculture and financial intermediation for sector A and education for sector B). Then the labour remuneration share in GVA is 30%*0.5 + 70%*0.5 = 50%. Further, we assume that the share of sector B in GVA increased from 50% to 70%. Therefore, the labour remuneration share in GVA increased to 30%*0.3 + 70%*0.7 = 58%. In this case, we will graphically obtain a permanent and positive wage–productivity differential, although the competitiveness of the economy as a whole as well as competitiveness in either sector has not deteriorated. Therefore, a further assessment is needed, and we now turn to the employee compensation ratio to GVA and labour income share analysis.

3. Deriving Labour Income Share

Further, we analyze the wage–productivity relation with the compensation of employees and labour income share in gross value added (GVA), which could be regarded as an indirect assessment of wage–productivity relation.

The GDP income approach decomposition shows which part of GDP is allocated to labour income, capital income, and indirect taxes. If a buoyant economic growth brings the labour share down, as was the case during the recent expansion in the United States (Gomme, Rupert, 2004) and since the mid-1980s in West Europe, political debates emerge with trade unions demanding pay increases, governments justifying increased taxation of profits (Bentolila, Saint-Paul, 2003). Furthermore, economists try to explain this pattern by a rise in rents accruing to firms owing to rising imperfection in goods markets, unions' weaker bargaining power, labour market deregulation, stronger bargaining power of firms or globalization which pushed industrial countries to adopt labour-saving technologies (for a review, see the European Commission report, 2004).

In this paper, the labour income share is defined as a ratio of labour compensation to value added, where labour compensation consists of compensation of employees (national accounts component D1) and adjustment for imputed labour compensation of self-employed. Adjustment reflects the fact that income of self-employed is tabulated in national accounts as mixed income rather than compensation of employees. For example, if the proportion of the self-employed in total employment increases, the compensation of employees to GVA ratio will fall but the labour income share should remain the same. For details of computation of

labour income share given the employee compensation to GVA ratio see (Arpaia, Pichelmann, 2008).

We denote employee compensation to GVA ratio as α and labour income share as β. It could be calculated as

$$\alpha = \frac{D1}{GVA} \quad (1)$$

$$\beta = \alpha \cdot (1 - \eta) \quad (2)$$

where D1 stands for compensation of employees, GVA is gross value added, and η is proportion of self-employed in total employment. For example, if α = 0.5 and η = 0.9, then β = 0.55.

It should be noted that various labour income share measures exist and some analysts may prefer one over other. For example, one of the most often used measures for the US is labour share for the nonfarm business sector, which, compared to the measure used in this paper, excludes the government, nonprofit institutions, farms, housing and private household services sectors (for details see Gomme, Rupert, 2004).

4. Cyclicality and Convergence of Labour Income Share in the EU

The employee compensation to GVA ratio during 2000–2009 varied on average from 0.39 in Greece to 0.64 in Denmark. The corresponding numbers for the labour income share in GVA were 0.45 for Slovakia and 0.88 for Luxembourg. In order to address the relation between these two measures and the income level, a ten-year period has been selected to eliminate the possible effect of economic cycle on the share of labour income in GVA. The relation between the employee compensation to GVA ratio and income level is positive and statistically significant at 1% level (see Figure 2); moreover, the relation between the labour income share and income level is also positive and significant at 5% level. One possible explanation for this positive relation could be that the higher the income level, the more important the role of human capital in production process is. Another explanation could be a greater role of labour unions and higher collective bargaining coverage in Scandinavian countries which also exhibit a relatively high income level. It should be noted that the relation was stronger at the beginning of the period and weakened somewhat thereafter. In particular, the labour income share in the Baltic States converged to EU average even faster than per capita income level.

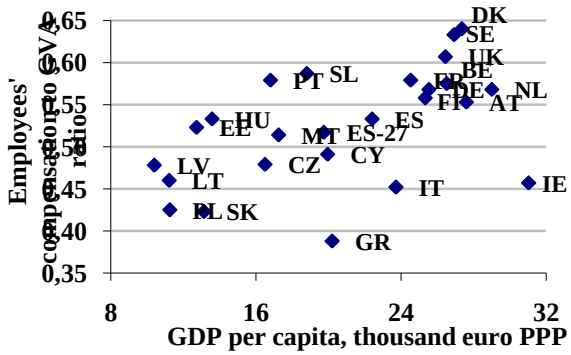


Figure 2: Correlation between income level and employee compensation to GVA ratio (on average, 2000 – 2008; Luxembourg omitted as an outlier[1].

Sources: Eurostat data, author's calculations.

[1] Country notation: BE – Belgium, BG – Bulgaria, CZ – the Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE – Ireland, GR – Greece, ES – Spain, FR – France, IT – Italy, CY – Cyprus, LV – Latvia, LT – Lithuania, LU – Luxembourg, HU – Hungary, MT – Malta, NL – the Netherlands, AT – Austria, PL – Poland, PT – Portugal, RO – Romania, SL – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden.

Both the employee compensation and labour income share in GVA were broadly stable in the medium-term in the EU15 and EU9 countries, and only short-term fluctuations around equilibrium were recorded (see Figure 3). This confirms the views of supporters of neoclassical economics that the labour income share is broadly stable in the medium term (Gomme, Rupert, 2004). However, as to the Baltic States, the labour income share recorded considerable fluctuations in the medium-term, and the dynamics can be analyzed in three periods. During 1995–2001, it decreased gradually in Estonia while fluctuating in Latvia and Lithuania. In the second period (2002–2004), the share of labour income stabilized in all Baltic countries (at a somewhat lower level in Latvia). In the third period starting with 2005, the share of labour income grew rapidly, with Latvia demonstrating the fastest growth in the entire EU. Thus, in 2008, the employee compensation to GVA ratio in Latvia and Estonia surpassed the EU15 average and was close to that in Scandinavian countries. However, during the period of labour shortage, employees share in total employment increased and the rise in labour income share was not as steep: in 2008, Latvia and Estonia exceeded the EU9 average level and were still below the EU15, whereas Lithuania was even below the EU9 average. Overall, in the Baltic States, both the employee compensation to GVA ratio and labour income share were procyclical (with the notable exception of Lithuania for the latter), thus opposing the empirical evidence for the OECD countries by Gomme and Rupert (2004).

Though, on average, in the EU15 and EU9 countries the employee compensation to GVA ratio and labour income share fluctuated only in the short run, over time they changed significantly in individual countries (see Figure 4). EU countries converged somewhat during the past ten years regarding the employee compensation to GVA ratio. Overall, employee compensation share in GVA tended to decline in countries were it used to be high (except for Denmark) and to rise (e.g. Latvia and Lithuania) or decrease (Poland and Slovakia) in countries where it used to be relatively low. Overall, there is a statistically significant (at 10% level) negative relation between the employee compensation to GVA ratio and income level; nevertheless, the relation between labour income share change and its initial level is not statistically significant, implying that self-employed share in total employment react to the income level as well.

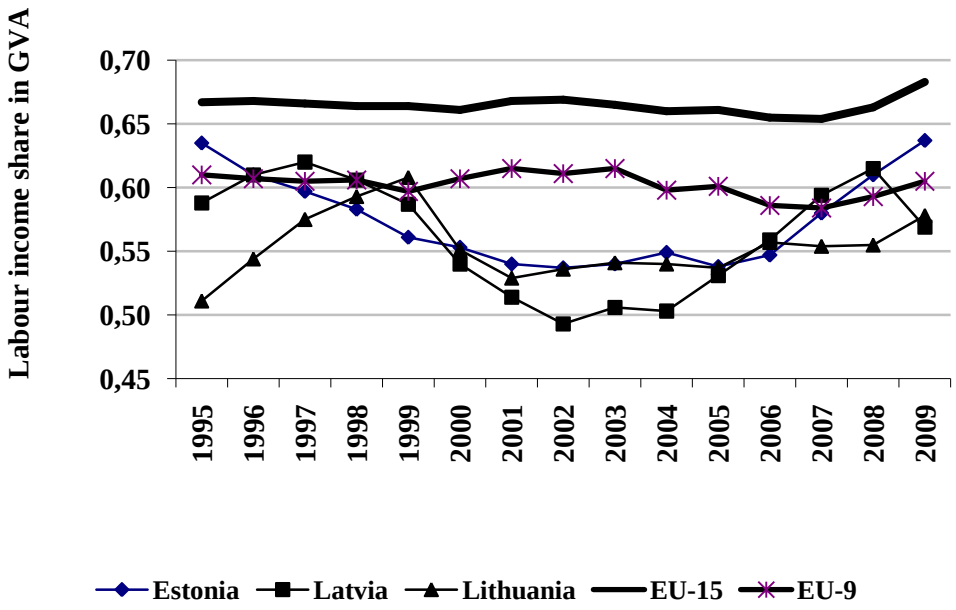


Figure 3: Labour income share in GVA
Sources: Eurostat data [6], author's calculations.

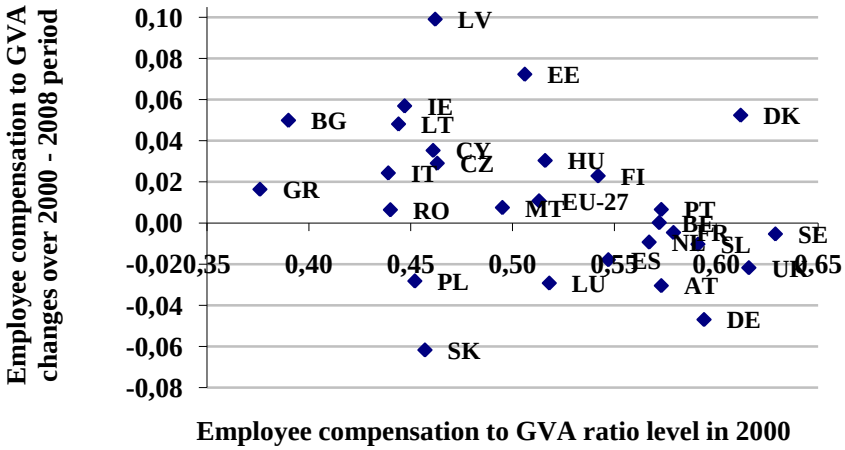


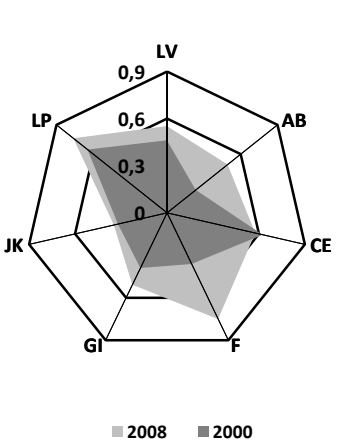
Figure 4: Employee compensation to GVA ratio in 2000 and changes over 2000–2008
Sources: Eurostat data [6], author's calculations.

5. Decomposition of Employee Compensation to GVA Ratio in the Baltic States

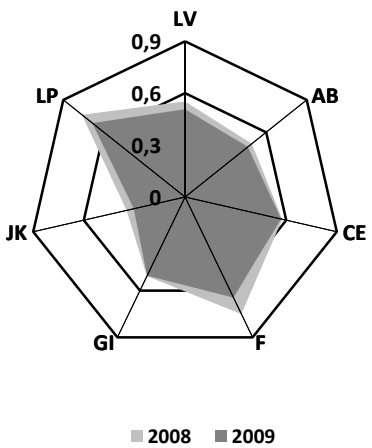
Intuitively, when real wages grow faster than productivity, employee compensation to GVA ratio increases. However, there are two extra factors that influence changes in the employees' compensation to GVA ratio. One is the changes in the structure of national economy. For example, even if there is not a single sector in national economy where the employee compensation to value added ratio has risen, the total share would go up together with an increasing weight of labour-intensive sectors.

In order to evaluate the effect of structural changes in national economy on the share of labour income in GVA, a breakdown in six industries according to the Eurostat classification (NACE 1.1.) has been applied (AB: agriculture and fishing, CE: industry in its broad definition including mining and quarrying, manufacturing and energy, F: construction, GI: trade, hotels and restaurants, transport and communication, JK: financial intermediation, real estate and business activities, LP: public administration and defense, education, health care, other services).

Figure 5 shows that during 2000–2008 the employee compensation to value added ratio in the Baltic States increased in all sectors except manufacturing. The notable exception of manufacturing reflects that the buoyant rise in physical capital made manufacturing more capital–intensive despite pressures to increase wages. In Latvia and Estonia, the steepest increase was in construction; while in Lithuania it was rather modest, reflecting the less pronounced real estate boom in this country.



a)



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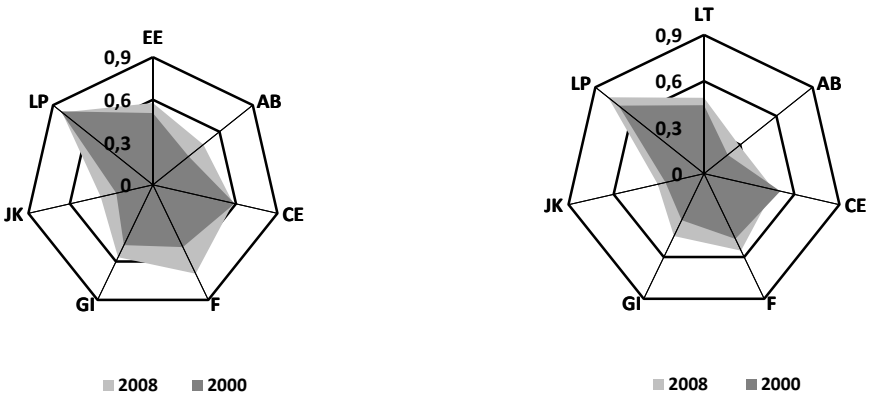

c) d)

Figure 5: Compensation of employees share in value added by sector in: a)b) Latvia (LV); c) Estonia (EE); d) Lithuania (LT)

Sources: Eurostat data, author's calculations.

The other additional factor that affects the employee compensation to GVA ratio is the share of self-employed in total employment. The income of self-employed is a part of mixed income; therefore, an increase in the self-employed share in total employment decreases the ratio of compensation of employees to GVA. In Latvia and Lithuania, the proportion of self-employed in total employment was on a downward trend during recent years but in Estonia it was broadly stable.

Assessing the effects of the three factors on the dynamics of employee compensation to GVA ratio, it is concluded that the increase during 2000–2008 was affected by different factors. In Estonia, it was mainly on account of the increase in the share of employee compensation in each additional sector value added, whereas in Lithuania a significant fall of the proportion of self-employed in total employment contributed most. In turn, in Latvia both factors were important. It should be noted that structural changes in the economy were not very important in any country (see Figure 6). Note also that a fall of employee compensation to GVA ratio in Latvia in 2009 is by about ¾ explained by a "true wage-productivity effect", i.e., by employee compensation share decrease in each sector value added.

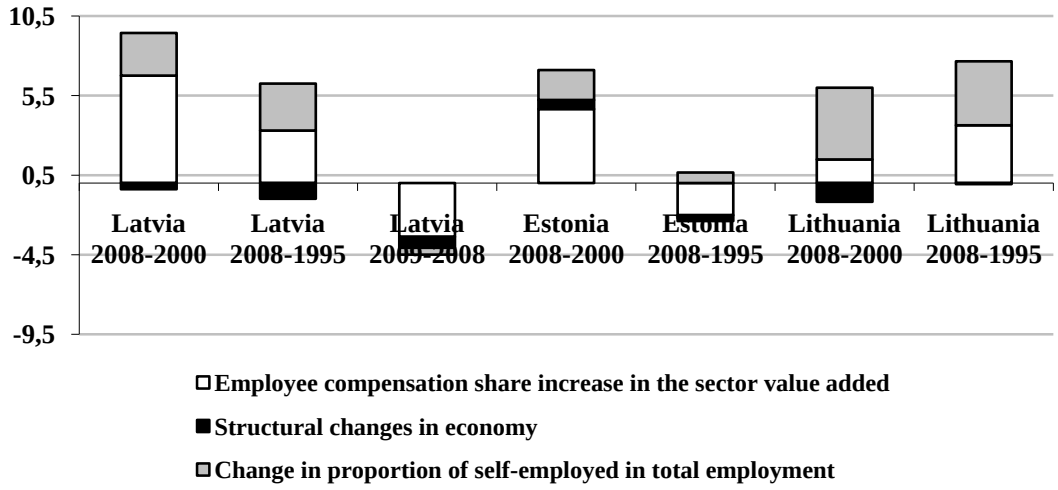

Figure 6: Decomposition of employee compensation changes in Latvia, Estonia, and Lithuania

Source: author's calculations.

Despite significant changes in the economic structure in the Baltic States, Figure 6 shows that they had only minor impact on the employee compensation to GVA ratio dynamics. In particular, the share of agriculture diminished as the share of financial intermediation increased, while both sectors have similarly low employee compensation to GVA ratios (about 0.3). Furthermore, the share of manufacturing decreased, whereas the share of trade went up, but these two sectors had similar ratios as well (about 0.5 – 0.6).

The finding that the employee compensation to GVA ratio is almost unaffected by economic structural changes means that the structural composition of economy has almost no impact on the wage–productivity relation presented in Figure 1. Therefore, Figure 1 shows that internal imbalances were still in place by the end of 2009 in the Latvian economy although competitiveness rebounded markedly during 2009.

6. Conclusions and Suggestions for Further Research

There are several conclusions that can be drawn from the research as well possible directions for further research.

1. In Latvia, the gap between real wages and productivity became apparent in the second half of 2006, it widened until the mid-2008, to decrease by about 84% by the end of 2009. Both the wage decrease and the labour productivity growth contributed to narrowing the gap between the two.
2. There is statistically significant positive relation between the labour income share and the income level. However, it weakened somewhat during recent years when the rise of labour income share outpaced income convergence to EU-average level in the Baltic States.
3. The labour income share is broadly acyclical both in EU15 and EU9, and strongly procyclical in Latvia and Estonia.
4. The labour income share in the Baltic States is still lower than in EU15 on average, despite the employee compensation ratio of GVA exceeding the EU15 average level in 2008. This is attributed to a fall in the proportion of self-employed in total employment during the recent expansion, especially in Lithuania and Latvia. However, the labour income share in Latvia, Estonia and Lithuania surpassed the EU9 average level in 2008. In 2009, Latvia was the only Baltic State that experienced a decrease of labour income share.
5. The employee compensation ratio to GVA increased in all sectors except manufacturing during 2000–2008 in the Baltic States. In Estonia and Latvia, the steepest increase was in construction while in Lithuania it was rather modest, reflecting the less pronounced real estate boom in this country.
6. The primary factor of increasing employee compensation ratio to GVA was the rising compensation/value added ratio in each individual sector ("true wage-productivity effect") in Estonia and a decrease in the proportion of self-employed to total employment in Lithuania. In Latvia, in turn, both factors were significant; however, about ¾ of adjustment that took place during 2009 is attributed to the true wage-productivity effect.
7. Possible directions for further research:

a) Analysis of the compensation to value added ratio dynamics using 31 sector breakdown according to the Eurostat classification, possibly including the grouping of tradable and non-tradable sector.
b) Estimation of labour contribution to the production process by a growth accounting exercise and comparing it to the labour income share derived from national accounts in order to evaluate whether the current labour income share is too high or low for the Baltic countries.
c) Use of quarterly rather than annual data when analyzing the labour income share and compensation of employees to GVA ratio to incorporate short-term dynamics into analysis.

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About the author:

Olegs Krasnopjorovs
University of Latvia
PhD student in Economics (Econometrics),
Scientific research areas: economic growth, public spending efficiency, labour market, productivity and competitiveness, fiscal policy, time series econometrics
E-mail: olegkrasn@inbox.lv