

**ASSYMETRY IN THE HIRED LABOUR REMUNERATION AND
PRODUCTIVITY IN UKRAINE**

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Abstract: *The article examines existing problems in the present asymmetry as relates to the labour remuneration and labour productivity of hired workers in Ukraine. Considered are factors and reasons for the labour compensation asymmetry as well as aspects of a worker's contribution into product manufacturing within the economic system of the country. Methodological approaches are developed for the evaluation of maximum productivity of hired labour on the basis of the Cobb-Douglas production function as an instrument of correlation between product output and labour with capital.*

Conclusions are substantiated that further proceeding with low labour payment standards and vague correlation between remuneration and labour productivity will serve as a key de-motivation factor negatively influencing further development of economic and labour activity which will directly contribute to the increased migration processes in the country.

Keywords: *labour remuneration, labour productivity, labour compensation, workforce, cost of labour, asymmetry.*

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Under traditional market economy any product of labour is comprised of two different income parts: profit on capital and labour remuneration. This means that the size of compensation for the labour directly depends on the agreement between a working individual and employer, with the latter in most cases having much more stronger negotiation position. However, increasing productivity of an employee in the process of product manufacturing does not necessarily result in the immediate and adequate wage increase. In fact, wage dynamics is rather stipulated by distribution proportions of production results between a worker, employer and a third party - the state, which also has to receive its portion of revenue in the form of paid taxes on production and import.

Any asymmetry in hired labour remuneration and productivity results directly from the existence of social risks as relates to general human development. The most severe problem here remains to be a deliberate lowering of labour remuneration which had been inherited by Ukraine from its old administrative-planned economic system with its low level of wages, high volumes of social expenditures and strictly regulated prices for goods and services. Under transitional economy, the desire to remain somewhat competitive on the world market in the situation of a very high energy and material inefficiency has resulted in continuing the practice of low labour cost. However, at present this very factor can no longer guarantee any competitive advantage, but rather transforms into enormous obstacle for economic growth and human development [1, c. 222-223].

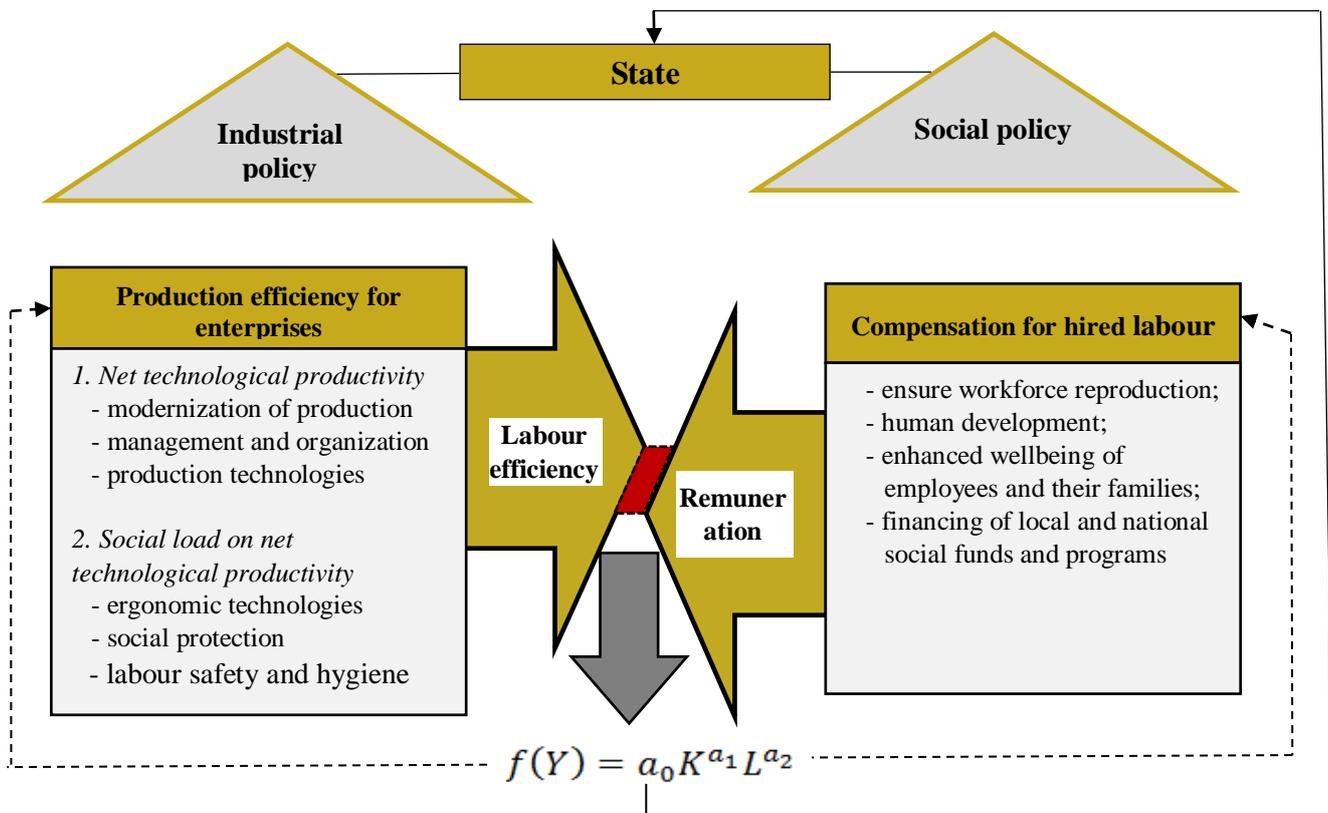
According to the principles of economic theory, the hired labour wages should reflect the marginal income of employees' work. If one employee becomes very production efficient he should obviously enjoy high marginal income since any additional hour of his work will result in significant

increase of production output. Hence, more efficient workers should enjoy higher wages as compared to less efficient ones. Therefore, if employer decides to pay to a highly efficient worker lesser than marginal income from his labour, the chance arises that any other company could easily increase its profit by simply proposing higher wage to such efficient working individual by hiring him over.

Moreover, labour cost per unit of production reflects direct connection between productivity and amount of labour spent for product manufacturing, and thus labour cost should encompass not only wage or remuneration but also all other related expenses incurred by employers, i.e. contributions to the social insurance system. Any increase of labour cost per unit of production indicates growth of remuneration for labour input into such production, yet on the other hand if such increase exceeds labour efficiency and productivity growth this can easily jeopardize competitiveness of the country unless duly compensated by the reduction of other associates expenses.

There is also immediate correlation between the extent of wage increase and labour productivity dynamics: higher labour productivity growth provides for more expansive possibilities to increase wages at the enterprise, which enables such enterprises to ensure extensive reproduction and produce enough products with least expenses while at the same time being able to increase amounts of material stimulus.

The economic context of wages, as an integral part of workforce cost, lies in the need for employer to ensure not only its timely payment but also honouring all other social payments related to employment, including professional training and re-training, refreshment courses for employees, etc. If employer can guarantee comprehensive reproduction of workforce, this adequately stimulates workers to demonstrate higher efficiency. Furthermore, increased expenses by employer for labour force will inevitably lead to introduction of labour-saving technologies thus providing technological basis for increased local and general social labour productivity (Picture 1).



Picture 1. Asymmetry in labour remuneration and productivity

Modern market economy dictates that it is not enough to consider labour productivity as a mere instrument to produce maximum volume of products per unit of time, but more importantly it represents the ability to produce higher quality products or completely innovative products. However,

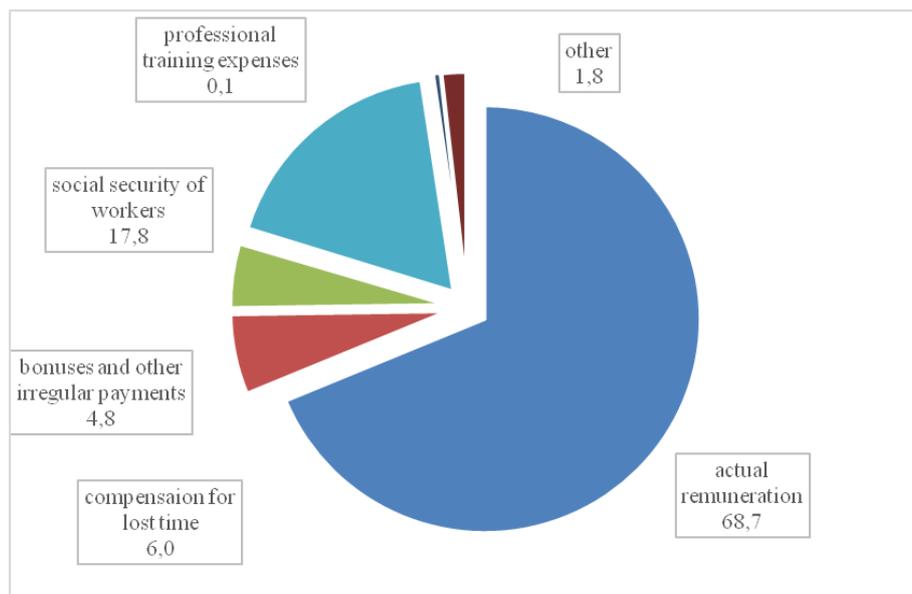
even this approach toward labour productivity should not be idealized since it ensures economic efficiency criteria only from the employer's standpoint when labour expenses constitute just a portion of total expenses and this creates grounds for possible asymmetry in labour remuneration and productivity (low level or reduction of such expenses can be stipulated by low wage rates).

Moreover, it would not be completely correct to compare productivity with real wages received with application of various deflators when determining the cost of workforce for an enterprise. Based on this, it is therefore necessary to distinguish between the real wage for producer, which reflects workforce cost changes on the part of the enterprise, and real wage for consumer which results from the change in the purchasing power of remuneration from the standpoint of all hired workers. Thus, to obtain more accurate evaluation of the correlation between labour productivity and wage increase dynamics it is necessary to use data on changes in actual wages for the producer.

Ensuring rapid pace of labour productivity growth dictates the need to eliminate asymmetry in the sphere of labour remuneration and productivity because there is always a possibility to lose stimulating effect of remuneration. Increased stimulatory role of wages should therefore be based on the strategy aimed at ensuring simultaneous growth of productivity, output and labour remuneration.

In general, the actual situation in Ukraine is that even full employment of family members does not always guarantee sufficient income in such families. For instance, current statistics states that 79% of families which are considered to be poor have at least one employed member. This can be explained by a relatively low level of labour remuneration in Ukraine resulting from low labour productivity especially due to the continuous usage of outdated and inefficient equipment and resource-consuming production technologies.

The analysis of factories' expenses on workforce per sectors of economic activities can only be made on the basis of selective survey data available from the State Statistics Committee of Ukraine which are performed once every four years. The very absence of more accurate and timely data as well as lack of possibility to compare indicators' changes dynamics makes it extremely difficult to obtain solid and comparable data on enterprises' expenses for workforce. Yet, even the available data on distribution of expenses at enterprises for workforce in 2018 demonstrates insignificant, or even negligible, funding by employers for professional-qualification re-training of personnel (0,1 % of total amount) which admittedly constitutes an important pre-condition for labour productivity increase (Picture 2).



Picture 2. Structure of enterprises' expenses for workforce in Ukraine in 2018i, % [2]

Crisis that hit most of the Ukrainian enterprises in 2014-2015 resulted in the need to find alternative possibilities to save and limit expenses (first of all, it led to rapid growth of wages' backlog,

applying the practice of part-time employment as well as reduced finding for professional re-training of personnel). All that allows us to make a conclusion that the situation with distribution of expenses for workforce at enterprises over the period of 2010-2013 had considerably worsened in the country. Such financial difficulties at enterprises were even further compounded by the obligations of timely payments to suppliers, thus the only obvious option to resolve this problem quickly was to pile up the wage backlog. Evidently, any possibilities for increase of labour productivity, let alone labour remuneration, had become extremely limited.

At macro level the labour cost dynamics per unit of production generally reflects the change of structural portion of hired labour remuneration component in GDP - actually this presents the correlation between labour cost (including social security contributions) and GDP size. Analysis of the labour remuneration component changes in GDP as well as marginal labour productivity demonstrates its increase - from 40,8% in 2014 to 43,1% in 2018, with simultaneous reduction of employers' contributions to social security fund - from 26,6% to 17,8%.

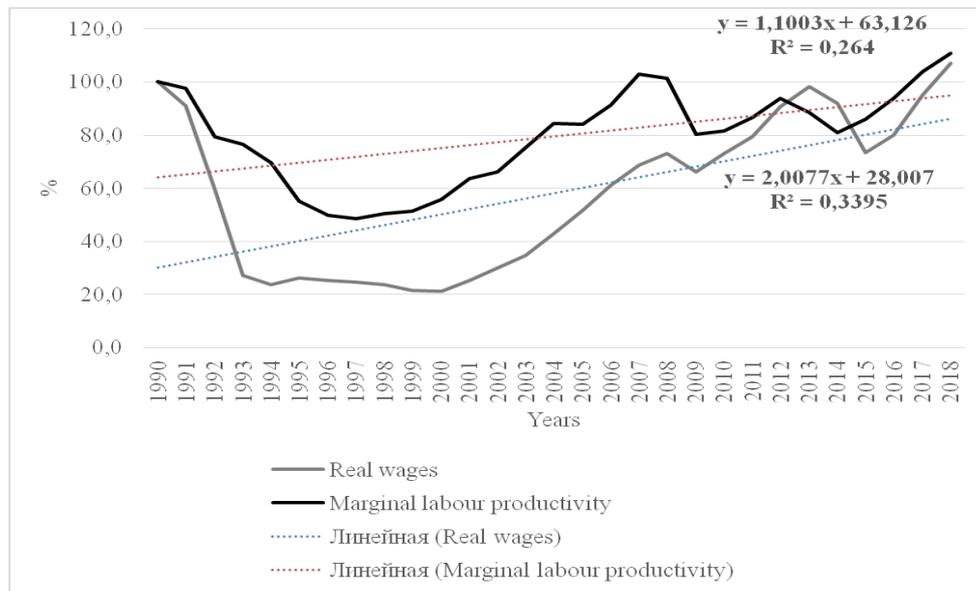
This clearly demonstrates increasing gap between real wages for consumers and real wages for producers, which also proves to be true for the Ukrainian economy. Therefore, all this considerably complicates efforts to ensure adequate correlation between growth pace of labour productivity and remuneration because the existing methodological discrepancy leads to increased margin of error in the process of evaluation of such indicators. As a result of such situation, improvement of methodological basis for evaluating the correlation between labour productivity and remuneration becomes a priority in the context of distinguishing real wages from the standpoints of producer and consumer. No less important, however, remain efforts to determine adequate proportions as relates to the growth pace of labour productivity and remuneration.

In order to establish asymmetry in the sphere of labour remuneration and productivity we have developed methodological approaches toward evaluation of marginal productivity of hired workers on the basis of the Cobb-Douglas production function as a research instrument to identify connection between product manufacturing and labour with capital. This enabled us to create a function for the national economy of Ukraine (1990-2018) in comparative prices, which has the following expression:

$$Y = 6175,1 \times K^{0,4825} \times L^{0,2906}$$

This function demonstrates that the parameter which characterizes quantitative impact of the volume of capital investments into Ukrainian economy on dynamics of its development, together with the parameter which characterizes quantitative impact of the number of employed by national economy in Ukraine on dynamics of its economic growth constitute 0,4825 and 0,2906 respectively. This means that 1% increase of capital investment will provide production output growth of approximately 48,2%, while increase in employment - by 29,1%. In other words, there is a direct dependence of the production output in Ukraine on dynamics of capital investments and employment level in the national economy. Furthermore, based on the works of modern American economists D. Akerberg, K. Caves and G. Frazer [3] we can state that if $\alpha + \beta < 1$ this means that production output grows slower than increase of K and L factors, and thus the economic growth is non-present (or perhaps other important factors had been overlooked).

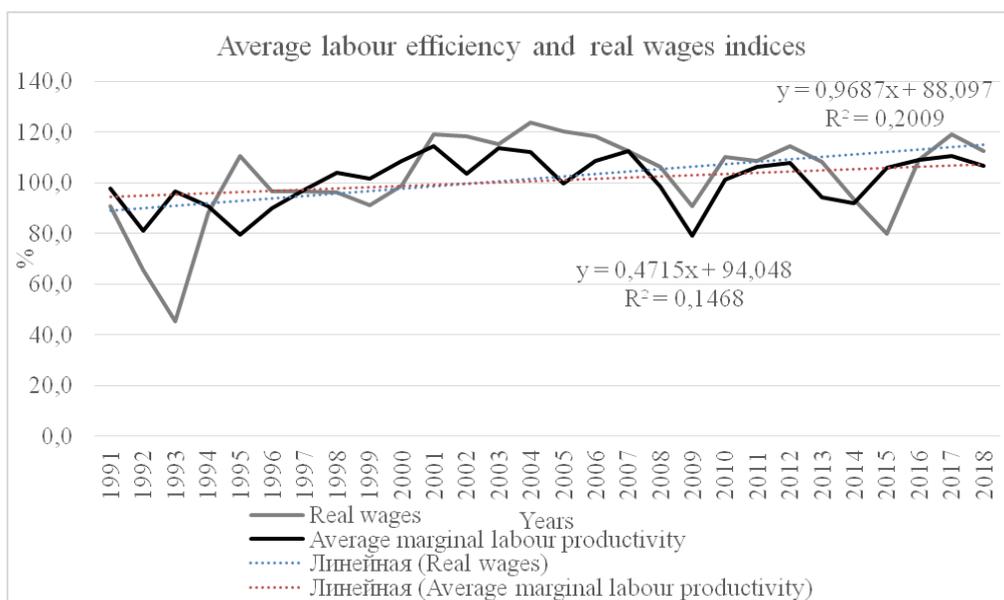
Moreover, this allows to calculate average labour productivity in the Ukrainian economy as per key sectors of economic activity (industrial and agricultural production, construction) as a reflection of the extent of employee's contribution into product manufacturing. So, the comparison of average labour productivity and real wage over the time-period of conducted research demonstrates that in parallel with the drop of real wages also observed was the drop in average labour productivity of hired workers in Ukraine. However, the drop in the size of disposable income during crisis years of 1992-1995, 2008-2009 and 2014-2015 was significantly larger than the drop in average labour productivity in the country's economy.



Picture 3. Marginal labour productivity and real wages in economy of the country, %, 1990 = 100%

This explains why enterprises were unable to provide higher level of labour remuneration, as indeed upon the drop in demand for goods and services such enterprises can maintain necessary level of labour productivity only through reductions in employment pro rata such drops in demand. If factories continue paying wages to all its employees, then reduced productivity will cause loss of profit, smaller wages or both at the same time. Still, many Ukrainian enterprises continue laying off their employees which results in higher unemployment rate. Analysis shows that the drop in Ukrainian GDP had been faster compared to unemployment growth during crisis years of 2008-2009 and 2014-2015 due to the fall in marginal labour productivity.

So, the key reason behind low labour remuneration in Ukraine is the low labour productivity of hired workers. Thus, over the period from 2001 until 2018 the average labour efficiency grew 1,6 times while real wages increased by 4,2 times (Picture 4), meaning that the pace of wage growth had been much higher than the pace of average labour productivity growth.



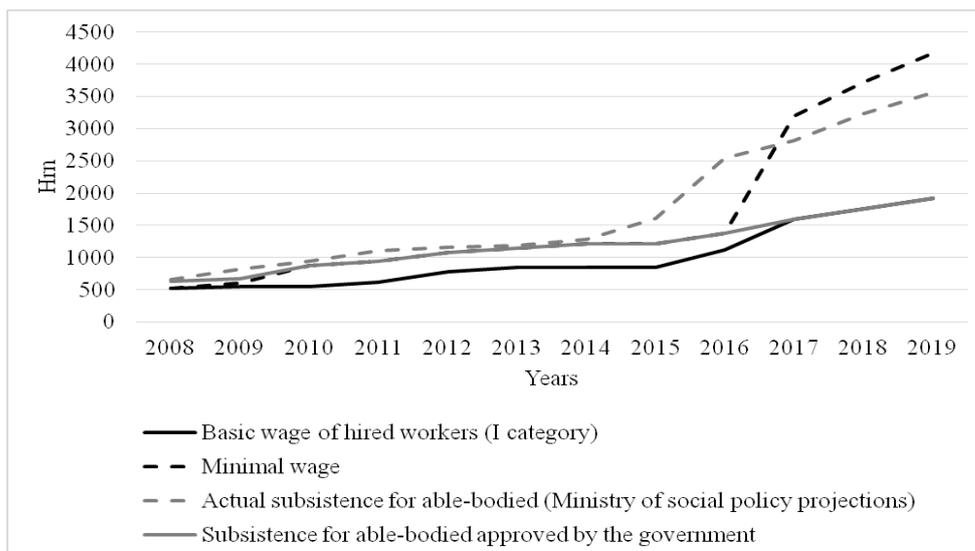
Picture 4. Pace of average marginal labour productivity in economy and real wages in Ukraine

Concerning the extent of asymmetry between labour productivity and remuneration there exist different points of view and explanations. Generally, increase of nominal wage by more than growth rate of labour productivity plus inflation leads to increased labour consumption per unit of production being manufactured. Also, increase of real wages not supported by respective labour productivity growth creates conditions for macroeconomic instability. Under other equal conditions, the long-term macroeconomic stability can be achieved only if wages grow in direct correlation to the labour productivity growth.

The world experience underlines the need to ensure parallel growth of both labour remuneration and labour productivity. In EU countries overall labour productivity growth outpaces remuneration growth, and dynamics of wages can be faster than labour productivity dynamics only in specific exceptional cases and for short time periods. In Ukraine, for instance, now such situation is stipulated by the need to compensate for losses in real income incurred by working personnel over the period of hyperinflation in 1990s, especially with consideration of the fact that the level of wages has been very low and lagging far behind not only the wage level in EU countries but also in some CIS countries.

The pace of wage growth can be faster than that of labour productivity as a result of changes in the size of material expenses or other elements of product cost or operational expenditures. This becomes possible upon reduction of material expenses or other elements related to the cost of the product with respective increase of wage component aimed at ensuring that the price of product does not go up. The main purpose here is to be able to increase wages on the basis of labour productivity growth within such limits that would ensure reduction of labour expenses per unit of products which then allows for greater growth of labour productivity compared to the growth of remuneration. This would help achieve higher labour productivity and remuneration with current effective prices or even with such prices going down. To attain this goal additional investments should be attracted and innovative activities expanded [4, P. 90].

However, to ensure relative symmetry between remuneration growth and growth of labour productivity in the country it is required that the minimal wage be capable of performing stimulatory function and become a guarantor of social security of hired personnel, thus it should be higher than actual hand-to-mouth subsistence. As per EU standards the size of minimal wage should be 2,5 times the size of subsistence which, regrettably, is far from true in Ukraine [5, P. 84] (Picture 5).

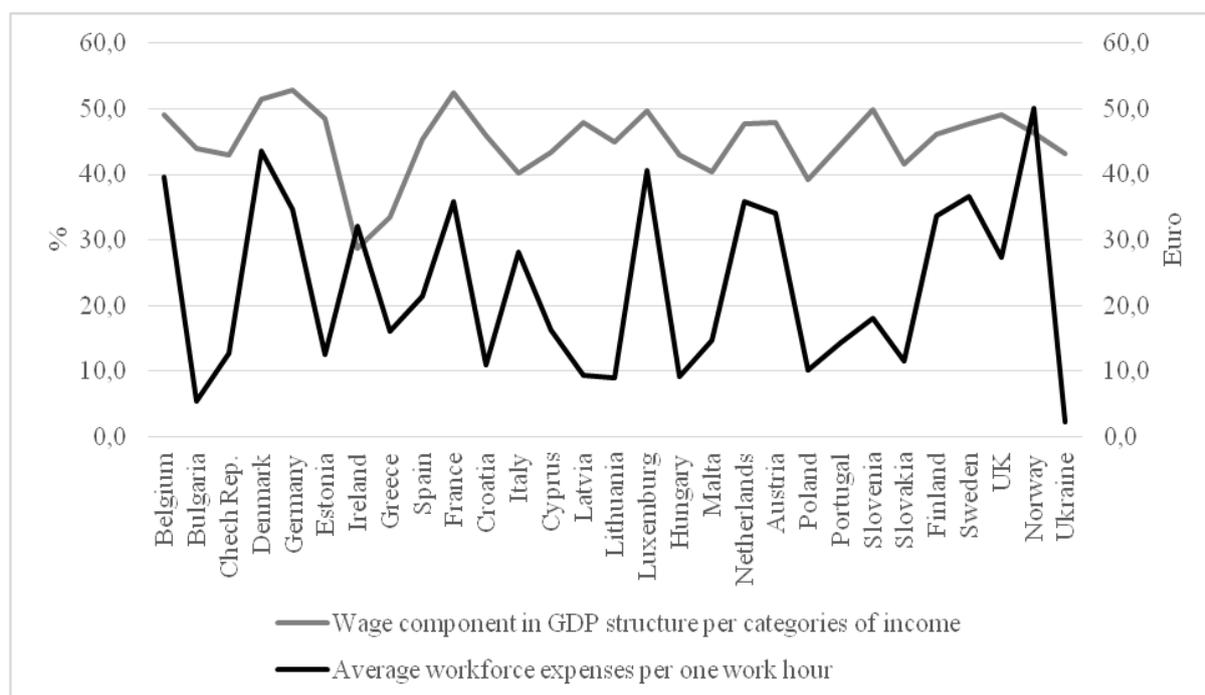


Picture 5. Dynamics of changes in the state standards of Ukraine

Analysis of labour productivity indicators per sector of economic activities allows us to state that low productivity stipulates low labour remuneration of hired personnel and vice versa - low wages (as basis for social contribution payments by employers and formation of wage fund for hired

workers) leads to low productivity, since it limits the size of created added value. For instance, in the spheres of education and health protection, where facilities mostly exclusively belong to public area, over 85% of total added value go to wages. And as a result of low wages (in education - 20,6%, and in health - 34,0% lesser than average level in the country) these types of activities produce one of the lowest rates of labour productivity. Obviously, we have to take into consideration the specifics of such types of activities: non-market character of services, low component of material expenses, etc. Same specifics becomes even more true for the state administration, however here we observe completely different correlations: component of remuneration in total added value is highest among all types of economic activities (93,6%), and therefore wages are among highest (by about 43,2% more than average) and labour productivity is also close to average rates for the economy. Yet the highest rate of productivity (three times the level of average in the economy) is demonstrated by financial activities where wages are the highest (almost two times higher than average in the country) and gross income constitutes almost 55% of total added value.

From the point of view of neo-classical growth theories, increase of labour productivity is considered an endogenous indicator which is determined by the dynamics of aggregate demand and real wages. With prolonged low or even zero wage growth the labour productivity falls as investments into research and development become irrelevant along with increased capital intensity of production and introduction of labour-saving technologies. The study conducted across selected OECD countries has shown that the growth of real wages by 1% brings labour productivity growth of 0,3%, and in some countries (France, Germany, Netherlands, Great Britain, USA, Scandinavian countries) - by 0,38% [6, p. 4-5].



Picture 6. Hired workers wage component in the structure of GDP as per income categories and average expenses for workforce per one work hour in Ukraine and other EU countries in 2018

Structuring of GDP per income categories demonstrates that generally modern distribution proportions in Ukraine are similar to those in most countries of the Europe (Picture 6), however with relatively high rate of wages component in GDP the average workforce expenses per one work hour remain at the lowest level (in 2018 those were just meagre 2,3 Euro).

To a large extent the hired workers wage component is maintained at a high level due to the largest rate of social contributions paid by employers which provides almost a quarter of total volume

of labour remuneration. So, according to the World Bank data Ukraine remains an obvious leader among the 10 countries subject to monitoring both as per volume of tax burden on labour as well as the amount of taxes and obligatory contributions which should be paid by the companies out of their wage funds (Table 1).

Table 1. Size of the tax burden

Country	General tax rate (% of profit)	Labour taxes and payments (% of profit)	Labour taxes portion in general rate (%)
Ukraine	37,8	24,8	65,6
Georgia	16,4	0,0	0,0
Peru	35,6	11,0	30,8
Bulgaria	27,1	20,2	74,5
Serbia	39,7	20,2	50,9
Bolivia	22,7	18,8	22,5
Guatemala	35,2	14,3	40,6
Paraguay	35,0	18,6	53,1
Armenia	18,5	0,0	0,0
Indonesia	30,0	11,5	38,3

Source: [7]

Moreover, lineal approximation of the connection of real wages and marginal productivity with the lead of one of parameters confirms that greater interconnection has dependence on employers obtaining increased productivity first and then raising labour compensation to hired personnel.

Problems of labour remuneration and protection of employees' income become especially serious in the situation of global recession. Traditionally, in Ukraine greater attention has always been paid to the remuneration problems in public sphere, however in the so called real sector of economy, where wages are generally higher than average, the situation also happens to be very difficult. As the experience of 2008-2009 and 2014-2015 crises has demonstrated, the negative effect was mostly observed in industry and construction spheres. Specifics of labour remuneration in these types of economic activities lies in the fact that the amount of remuneration for labour is in most cases directly dependent on output results (especially under piece-rate pay system). But nowadays this output mostly depends on the used technologies and equipment rather than qualification and efficiency of an employee. So for instance, wear and tear of assets in industry is generally around 69,4%, in processing industry - 76,4% [8, p. 5]; which means that the outdated equipment and technology very much limit possibilities for productivity growth in the real sector.

Currently, discussions are being held at many international forums to determine ways to fight "great recession" by either giving preference to severe austerity measures (including reducing of wages) or attempt restoring growth by stimulating consumer demand and employment with increased wages for employees. ILO experts maintain that under existing budgetary and household debt burden in many countries, which make obtaining new loans very difficult, any limitations on wage growth and labour market deregulation would not be able to support sustainable economic recovery but rather lead to prolonged stagnation in production and labour productivity. Thus, real wages can and should grow, however this process should be closely connected to a balanced macroeconomic policy, notably low interest rates and progressive taxation schedule for high-profit groups [6, p. 20-21].

Preserving significant wage differentiation as one of the most severe social shocks of covariance type is directly connected with the absence of correlation between the level of labour income received and professional-qualification level of employees [9]. The low standards of labour remuneration enable employers to avoid any efforts aimed at modernization of technical and technological base as well as ignore introduction of any innovations aimed at reducing material and energy consumption. So, in the structure of operational expenses from sold product (works, services) the portion of expenses for labour remuneration together with deductions to social funds constitutes

meagre 9%, while the component of the cost of goods and services purchased for re-sale and resold without any additional processing reaches 53%, with material expenses at 27%. As a result, almost 60% of the output goes to the intermediate consumption.

In general, it has to be noted that the impact of labour remuneration as a factor of many social risks becomes multifaceted and spreads in different directions; it is therefore not only limited to the labour sphere but rather embraces the entire human development risk system. Low labour remuneration as well as its excessive and unsubstantiated differentiation contributes greatly to increased social inequality and leads to marginalization of low-paid workers thus causing social instability. Also, growing mobility resulting from the search for better pay leads to migration losses among the population as well as depopulation of areas with less vibrant economies.

Continuing with the low labour remuneration standards and weak connection between wages and labour productivity will de-motivate economic growth and labour activity as well as stimulate migration processes. This can also aggravate social shocks of dynamic type related to the outflow of the most productive part of the population which would eventually negatively impact the quality of human capital [10]. (*When classifying shocks by the time of their occurrence it is possible to distinguish static and dynamic social shocks, with the reasons for the latter being, first of all, existing differences in the leverage of unions as relates to the social-labour relations as well as differences in the tendency of inflation-unemployment connection shifts which stipulates different speed of wage increase*).

Lack of effective coordination as relates to determining adequate wage is resulting from the absence of institutionalized information system with regard to prices in the labour market, i.e. information about the level of wages in various groups of workers. Such information remains "private data" for some companies and has not been translated into a "public benefit". Special reviews of wages being conducted by the Ukrainian consulting companies can not fill this informational gap as those are mainly based on very small and specific selections. As a result, some employers were able to significantly overpay their personnel by setting their wages well above the market level, while others - greatly underpay their employees. This inevitably expands asymmetry in the sphere of labour remuneration as well as in worker's contribution into product manufacturing.

All that creates a sort of deadlock when without such information disclosure it is impossible to ensure coordination in establishing labour remuneration, while the very lack of such coordination prevents necessary informational transparency. Employers who fear losing most productive of their employees consider it is better not to share such information with the others and keep it classified. However, by hiding such rate signals from each other they in fact deprive the labour market of needed pricing transparency, without which its operation would never be efficient.

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