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LABORISM AS A BASIS FOR THE CREATION OF MONETARY UNIONS

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Summary Stability indicator of labour productivity makes it a good measure of the economic level achieved by an economy. The aim of the paper is to present a method for the application of labour productivity index Q to solve an important macroeconomic questions. It is also a good basis to build rankings of labour productivity, as well as monitoring the development of each country. Article focuses on determining the level of labour productivity of the economy of Ukraine in comparison to the economies of other countries. In Ukraine, the labor productivity index Q falls in the past few years. This means that every year on 1 hryvnia labor cost accounts for less real GDP. This is a very negative trend, which indicates the need to implement urgent measures aimed at changing the country's economic policy. In article also suggests an original solution to the problems of creation of monetary unions.

Аннотация. Стабильность показателя производительности труда делает его хорошим основанием для определения достигнутого страной экономического уровня. Целью статьи является презентация способов применения показателя производительности труда Q в решении важных экономических вопросов. Он может использоваться для построения рейтингов производительности труда различных стран, а также для мониторинга их развития. Статья фокусируется на определении показателя производительности труда Q для эконо-

Анотація. Стабільність показника продуктивності праці робить його доброю підставою для визначення досягнутого країною економічного рівня. Метою статті є презентація способів застосування показника продуктивності праці Q у вирішенні важливих економічних питань. Він може використовуватися для побудови рейтингів продуктивності праці різних країн, а також для моніторингу їх розвитку. Стаття фокусується на визначенні показника продуктивності праці Q для економіки України та його порівнянні в різних країнах. В Україні показник продуктивності праці Q знижується протягом останніх кількох років. Це означає, що з кожним роком на 1 гривню виплачуваних заробітних плат припадає менший обсяг реального ВВП. Це дуже негативна тенденція, яка вказує на необхідність вжиття термінових заходів, спрямованих на зміну економічної політики країни. У статті також пропонується оригінальне вирішення проблеми створення валютних союзів.

мики України и его сравнении в разных странах. В Украине показатель производительности труда Q снижается на протяжении последних нескольких лет. Это означает, что с каждым годом на 1 гривну выплачиваемых заработных плат приходится меньшее количество реального ВВП. Это очень негативная тенденция, которая указывает на необходимость принятия срочных мер, направленных на изменение экономической политики страны. В статье также предлагается оригинальное решение проблемы создания валютных союзов.

Key words: human capital model, labour productivity, Ukraine's economy, monetary unions.

Ключові слова: модель людського капіталу, продуктивність праці, економіка України, валютні союзи.

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Introduction. State economies usually grow at different rates and may show convergence or divergence of the specific measures. What are the

best measures to take for comparison? M. Dobija [8] presents a theory that shows the versatility of the labor productivity index Q to assess the economic

growth of various countries. This indicator is defined as the ratio of real GDP to labor costs. The Q ratio theory shows the need for wage compatibility with the value of labor, which allows behavior of human capital.

The method by which we calculate index Q for Ukraine's economy is based on the use of a common model to define this parameter ($Q = \text{GDPR}/W$). Stability of labour productivity index shows that it is a good measure of the economic level achieved by a particular economy. Also it is a good basis to build the comparative ratings, as well as to monitor the development of individual states. The results of calculation of the productivity Q for Ukraine's economy for the period 2006-2014 years will be compared with those of established for a number of other countries. This will build their rating, based on the universal indicator of labor productivity Q. It also suggests an original solution to the problems of creation of monetary unions.

1. Laborism as an original scientific research program in the sphere of human capital and labour

The research in the area of human capital (in the light of its abstract nature as the ability of doing labor) and existent economic constant of potential growth has been made for over 15 years. The first article in this area was published in 1997 [13]. Since then, there have been a lot of publications in which authors developed issues in the area of human capital measurement theory, the theory of fair wages for their work, the theory of basic and premium wages, the labor productivity theory, the theory of money and economy without deficit [5, 21, 26]. These theories are a consequence of implementation of the human capital measurement model and understanding the relationships between categories of capital, labor and fair wages.

According to T. Schultz's theory and theories of other scientists in the field of human capital re-

search in the light of investing in people, we do not find effective attempts of understanding the nature of the capital. In accordance with their approaches, capital is "undoubtedly a good thing" [7, p. 120], but the scientific formulation is missed here. This is the traditional approach in economic research, when the question of nature of the capital is not resolved, but just postponed. This is the reason of lack of compliance in these studies between some key economic categories.

Failure to fully understand the principle of duality is an obstacle for understanding of capital's nature. Therefore, there is not sufficient knowledge of the basic connections between capital, labor and wages. Though, these concepts are central for economics. That fact affects the majority of economic theories, for which the solution of basic problems triad "capital - labor - equitable remuneration (fair wages)" is a key question [5, pp. 143-144].

Nowadays there are all reasons to conclude that the original scientific research program in the sphere of human capital has been formed as a result of economic research, which has begun in the 90-s of the last century. From year to year these studies become more and more developed and wider range finds proper theoretical explanation. What is more, such open economic questions as money, credit and budget deficit are elucidated differently within the new scientific research program. One of the last publications of M. Dobija [6] became a sign of fundamental changes in economic thought. There are signs that the new scientific research program, proposed by the author, is gradual in terms of methodology of I. Lakatos. In this program capital, labor and fair wages constitute an inseparable triad (as illustrated in Figure 1), in which labor is presented as a capital transfer to labor products. The origin of the name for the scientific research program comes from laborism (eng. "labor").

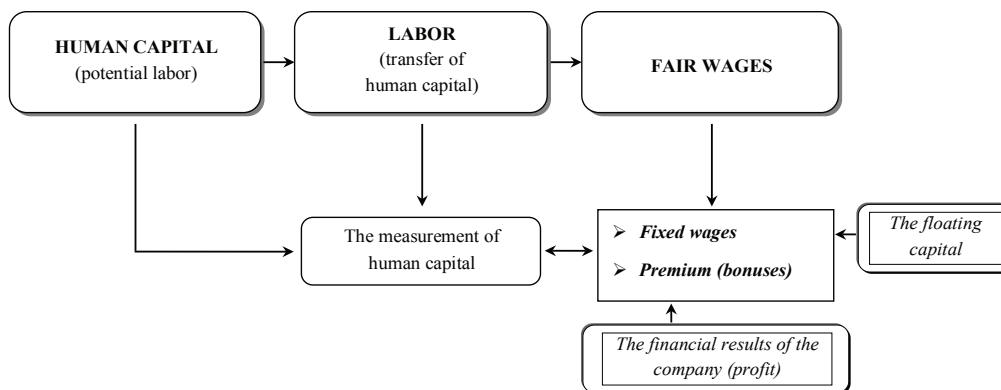


Figure 1. The triad: capital – labor – fair wages

The research program is based on the understanding of nature of the capital as the ability to work, and advanced study of its theory. Exactly this fact is the most important in the program.

2. The human capital measurement model and fair minimal wage

Human capital is a natural attribute of an employee. Its explanation is provided by the human capital theory models. For determination of each person's needed capital expenditures extent, such as cost of living, education, experience and capital expenditures on human's work, as in case of professors. Identification of these expenditures and definition of capital growth function as a result of the acquired experience, leads to well-known and well-verified human capital model that was shown in many previous surveys [4, 5, 10, 11, 20, 22-26].

Human capital is a function of many variables, where: k – the monthly maintenance costs, t – the time variable, T – the length of professional career (in years), and p – the economic constant of potential growth. Stated below formula represents the simplest model of human capital:

$$H(T, p) = K \tag{1}$$

where $H(T, p)$ – the value of human capital,
 K – the capitalized cost of living with rate p .

The expanded model contains more variables associated with professional education and obtained work experience. Its character can be described as follows [1, pp. 5-24]:

$$H(T,p) = (K + E) \times [1 + Q(T)] \tag{2}$$

where $H(T,p)$ – the value of capital of person with T years of experience,

K – the capitalized costs of living,

E – the capitalized costs of education,

$Q(T)$ – the growth factor experience after T years of work.

This model can also be presented in additive form:

$$H(T,p) = K + E + D(T) \tag{3}$$

where $D(T)$ is the capital of work experience after T years and $D(T) = H(0) \times Q(T)$, where $D(0) = 0$. This model is more convenient for analysis and explaining the wages.

The human capital model can be supplemented with capital creativity ratio (R) or variable U_i , which is used in the human capital measurement model of university professors [20]. It sets the extent of capitalized costs of getting another scientific degree (where t is the amount of years from the date of receiving the degree to measurement date). These models are shown in Table 1.

Table 1

The human capital measurement models of employees

| № | The human capital measurement models | Characteristics of the human capital measurement models |
|---|---|---|
| 1 | $H(T) = K$ | The human capital of an employee who does not have a university degree and work experience (consists only of capitalized costs of living) |
| 2 | $H(T) = K + E$ | The human capital of an employee who has a university degree (there is an additional variable – the capitalized costs of education) |
| 3 | $H(T) = (K + E) \times (1 + Q(T))$ | The human capital of an employee who has work experience (the rate of capital growth experience depends on years of professional experience, especially in the first years of work) |
| 4 | $H(T) = K + E + D(T)$ | The additive form of the employee's human capital model |
| 5 | $H(T) = K + E + D(T) + R$ | The human capital of an employee who has a capital of creativity |
| 6 | $H(T) = K + E + D(T) + U_i \times (1 + Q(t))$ | The human capital of university professors (where, t – the number of years from the date of receiving the degree to measurement date) |

Source: author's research.

Thus, we can determine the extent of the human capital of each employee by using the models described above and this amount will be a basis for de-

termining fair wages for every employee. It should be emphasized that level of capitalization is also important and from study it is 8% per annum [23-26, 28].

Table 2

Models of wage as a derivative value of human capital

| Models of wage | Characteristics of models |
|---|---|
| $W = H(T) \times 0,08$ where $H(T) = K$ | The human capital of an employee who does not have a university degree and work experience (consists only of capitalized costs of living) |
| $W = H(T) \times 0,08$ where $H(T) = K + E \quad i \quad T = 0$ | The human capital of an employee who has a university degree (there is an additional variable – the capitalized costs of education) |
| $W = H(T) \times 0,08$ where $H(T) = (K + E) \times (1 + Q(T))$ | The human capital of an employee who has work experience (the rate of capital growth experience depends on years of professional experience, especially in the first years of work) |
| $W = H(T) \times 0,08$ where $H(T) = K + E + D(T) + R$ | The additive form of the employee's human capital model |
| $W = H(T) \times 0,08$ where $H(T) = K + E + D(T) + U \times (1 + Q(t))$ | The human capital of an employee who has a capital of creativity |

Source: author's research.

Using the models described above we can determine the size of the human capital of each employee. Received as a result of that amount will be the basis for estimating the fair remuneration. Suitable models of wage, constructed on the basis of human capital measurement models, are systematized in Table 2.

3. Characteristics of labour productivity Q in the light of laborism

The Q-value is the labour productivity, defined as the value of production that is attributable to the monetary unit of labour costs. It is a function of several variables: the technical equipment of labour, asset turnover, return on assets and the level of payment. The model of this function is well-researched and presented in previous researches [11, 17, 22, 27]. In these studies there was shown that the functional relationship between the above given variables determines the level of productivity.

The starting point of the treatment of non-linear expenditure function of the process of production is the representation of the process of production in prices as a function of production costs [10, pp. 17-18]:

$$P = K (1 + r) (1 + I) \quad (4)$$

where P is the value of production during the year in prices, K is the cost of production, r is the

profitability I – profitability percentage, which is above average.

If the difference between the selling price (P) and cost of production (K) to denote the variable N (i.e., $N = P - K$), then in the above given equation the variable r will be presented as $r = N/K = P/K - 1$. The value of N/K is the profitability cost and is a function of two variables: return on assets $ROA = N/A$ indicator that determines the turnover of assets in relation to the cost of K. It is known [10, 25], the average value ROA is at the level of 0.08 [1/year].

The replacement of I in equation (4) refers to the percentage of return that is above average. When there is the percentage of I, this means that the enterprise has a value, which is called the intellectual capital. Just then the percentage of profit exceeds its average value in the sector, and the intellectual capital of the enterprise can be calculated using the following equation:

$$N/(A + X) = 0,08 \quad (5)$$

that is,

$$X = N/0,08 - A = 12,5N - A \quad (6)$$

where A is the value of the assets of the company. This issue is described more particularly by D. Dobija in his work [2]. Assuming that the turnover is represented by the value $w = K/A$, we get:

$$K = w \times A \quad (7)$$

Hence, $r = N/wA$, that is:

$$r = ROA/w \quad (8)$$

In its turn, the production costs include: W – the cost of labor and B – other expenses provided for the technology and production process, from which we get the equation:

$$K = W + B \quad (9)$$

The cost of materials, amortization and cost of services, which are the part of the value of B , we attribute to the assets. So, we get the amount of the assets in relation to the cost, reduced by the amount of accrued wages. Then $B/A = z$, i.e. $B = A \times z$, where z is the rate of annual asset utilization. So, now we can write the formula:

$$P = (W + A \times z) (1 + r) (1 + I) \quad (10)$$

where A – the assets according to the historical cost. After doing the appropriate mathematical transformations, the production cost can be represented as:

$$P = W \times [1 + A/W \times z] (1 + r) (1 + I) \quad (11)$$

Because the cost of labour W is derived from the human capital ($W = u \times H$, where u is the percentage of human capital payment, and H is the total value of human capital of workers), after doing appropriate transformations, we obtain the following formula:

$$P = W \times [1 + A/H \times z/u] (1 + r) (1 + I) \quad (12)$$

Using the approximate equation: $1 + x \approx e^x$, we can express the production function using the following formula:

$$P = W e^{r+I} [1 + A/H \times z/u] = W \times Q \quad (13)$$

$$Q = e^{r+I} [1 + A/H \times z/u] \quad (14)$$

where Q – value, which determines the productivity. The Q -value is the labour productivity, which we understand as the multiplier of labour cost that determines the cost of production. It is also the cost of production per monetary unit of the labor costs. The obtained functional relationship expresses the non-linear relationship between seven variables that determine productivity:

$$Q = [1 + \frac{A}{H} \times \frac{z}{u}] \exp[\frac{ROA}{w} + I] \approx \exp[\frac{Az}{uH} + \frac{ROA}{w} + I] \quad (15)$$

Comparing the above given formal description of production with existing patterns of production and economic growth, which are presented in works of M. Woźniak [29, pp. 126-147] and other authors, it can be confirmed that this model is one-dimensional, as it indicated by the formula $P = W \times Q$, since labour productivity Q is a function of several variables, namely: the technical equipment of labour A/H , asset

turnover, return on assets ROA and the level of payment.

On the basis of the function of production, we can use the model of production of the synthetic value of control M [18, p. 209]. It will look like the following:

$$P = W \times e^{r+I} \left(1 + \frac{A}{H} \times \frac{z}{u}\right) \cong W \exp \frac{A \times M}{H} \quad (16)$$

where, M is a synthetic value which determines the level of management.

The variable M integrates the influence of all the above given variables that are associated with making decision. Namely, the variable asset turnover (z), the wage level (u), profitability (r) and the intellectual capital (I): $M = M(z, u, r, I)$. These variables are directly associated with current decisions of the company management.

The variable of control M is set using the system of accounting and reporting of the company. These two systems generate the data needed to measure it. Therefore, the above given non-linear function of production may be used to establish the level of the enterprise management. According to this model the value of the variable of control M can be set if there is a possibility of establishing the value of human capital of employees (H).

Since the establishment of the variable of human capital (H) is quite problematic, in this case you can replace the main indicator of wages L (here applies the relationship: $L = p \times H$ (with $p = 0,08$), which is determined by the value of H as a function of L). Therefore, the variable of human capital H is calculated using the sum of the basic wage L (i.e. $N = L/d = 12.5 L$), which is much easier to install in the accounting system of the enterprise.

After doing the appropriate transformations, we obtain the following equation:

$$P = W \times Q \cong W \exp \frac{A \times M}{H} = W \times e^{\frac{A \times p \times M}{L}} \quad (17)$$

From the point of view of the whole economy of the country all manufactured and marketed products consist of the total value of gross domestic product (GDP). Therefore, in the context of the above given equations in macroeconomic research it used the following relation:

$$GDPR = W \times Q \quad (18)$$

where $GDPR$ – is real GDP, W is the total wage fund in the economy, Q is the rate of labour productivity. That is, the rate of labour productivity in the economy is presented as the ratio of the total value of real GDP to the total wage fund in the economy.

From the equation (18) we see that the preservation of the long-term development requires not a decrease, but an increase of the real purchasing power of the average wage and at the same time, at least, maintaining the achieved level of productivity. Also this shows that the rise in the wage rate can occur only under condition of preservation or growth of the rate of labour productivity Q.

4. Labour productivity as a determinant of real wage in the economy of Ukraine

On the basis of statistical data it is possible to calculate the labour productivity of a particular country and analyze its changes. Below are the calculations of the index of labour productivity for the economy of Ukraine.

A method of calculation of the labour productivity for the economy of Ukraine, is based on the use of the general model setup of this indicator ($Q = GDP/W$). This is a direct calculation. The total amount of wages in the economy of Ukraine is calculated by multiplying the average annual wage in the country (per person) on the total number of all workers in the economy. To this amount is added the quota of social insurance and subtracted the percentage of wages that refer to the public sector. In Ukraine, as in the most countries, wages in the public sector are financed from taxes. From point of view of the hu-

man capital theory it is known that work is a transfer of the human capital of the worker to the objects of labour. This applies to each kind of the work and also individuals who work in the public sector. And this, in its turn, indicates that work in this sector is self-financed [3, 11, 12, 14].

Therefore, despite the simplicity of the expression $Q = GDP/W$ calculation of this indicator on the basis of the available data is quite troublesome. Because wages in the public sector during the current economic policies are financed by taxes withheld from the wages of the workers in the private sector, to determine the correct rate of labour productivity Q it is necessary to reduce the total amount of wages in the economy (W) to the portion of taxes allocated to the financing of wages in the public sector. It is assumed that 15% of taxes paid by workers from wage fund wages in the public sector [19]. The revised wage rate is characterized as the rate of the wages, which can be used.

From the point of view of the above given, the rate of labour productivity determines the value of real GDP that is attributable to unit of wages which can be used. All statistics and quota of the real GDP were taken from the official website of the State statistics service of Ukraine [30]. Table 3 presents the estimates of labour productivity of the economy of Ukraine in 2006-2014.

Table 3

The calculated rate of labour productivity for the economy of Ukraine in 2006-2014

| Year | GDPR, mln. UAH | Number of employees, thousand people (1) | The average size of the annual salary by one person, UAH (2) | The social insurance, % (3) | The total amount of wages in the economy W ($1 \times 2 \times 3$), mln. UAH | The total amount of wages in the economy W, adjusted by a percentage wages for the budget sector (*) ($W \times 0,85$), mln. UAH | Labour productivity ($Q = GDPR/W$) |
|------|----------------|--|--|-----------------------------|--|--|--------------------------------------|
| 2006 | 544 153,0 | 20 730,4 | 12 492,0 | 1,372 (37,2%) | 355 298,8 | 302 004,0 | 1,80 |
| 2007 | 720 731,0 | 20 904,7 | 16 212,0 | 1,372 (37,2%) | 464 980,4 | 395 233,3 | 1,82 |
| 2008 | 950 503,0 | 20 972,3 | 21 672,0 | 1,372 (37,2%) | 623 590,0 | 530 051,5 | 1,79 |
| 2009 | 914 720,0 | 20 191,5 | 22 872,0 | 1,372 (37,2%) | 633 617,0 | 538 574,5 | 1,70 |
| 2010 | 1 085 935,0 | 20 266,0 | 26 868,0 | 1,372 (37,2%) | 747 063,5 | 635 003,9 | 1,71 |
| 2011 | 1 316 600,0 | 20 324,2 | 31 596,0 | 1,372 (37,2%) | 881 048,2 | 748 891,0 | 1,76 |

Table 3 (continuation)

| | | | | | | | |
|------|-------------|----------|----------|------------------|-------------|-----------|-------------|
| 2012 | 1 408 900,0 | 20 354,3 | 36 300,0 | 1,372 (37,2%) | 1 013 717,4 | 861 659,8 | 1,64 |
| 2013 | 1 410 609,0 | 20 404,1 | 39 180,0 | 1,372 (37,2%) | 1 096 821,6 | 932 298,3 | 1,51 |
| 2014 | 1 365 123,0 | 19 920,9 | 41 760,0 | 1,372 (37,2%) | 1 141 362,4 | 970 158,0 | 1,41 |

(*) it is assumed that 15% of taxes paid by workers from wage fund wages in the public sector.

Source: own elaboration based on statistical data [30].

From the theoretical analysis it is known that a decrease of the rate of labour productivity Q, in the context of its role in the formation of economic relations, is a very negative phenomenon. If such a situation arose, it is possible to state that the total amount of wages in the economy was too large in relation to the amount of real GDP.

As we can see from table 3, the rate of labour productivity Q in Ukraine has decreased over the past few years. This means that with each subsequent year on 1 hryvnia of labour costs accounted a smaller amount of real GDP. For example, in 2013 this indicator was 1.51 (table 1), whereas in developed countries (e.g. USA, UK, Germany) it exceeded 3.0

[8]. This is a very negative trend in the economy of Ukraine, which demonstrates the necessity of taking prompt measures which will be aimed at changing the economic policy in the state.

6. The tendencies of the development of individual countries in the context of labor productivity Q

The table 4 shows the tendencies of development of individual countries in the context of labour productivity Q. The following countries were compared: Ukraine, Belarus, Poland, USA, UK, Germany and China. The values of labour productivity Q in the US, UK, Germany, Poland and China are taken from [8].

Table 4

The comparison of labour productivity in the selected countries during 2006-2013

| Countries / Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|------------------|------|------|------|------|------|------|------|-------|
| Ukraine | 1,80 | 1,82 | 1,79 | 1,70 | 1,71 | 1,76 | 1,64 | 1,51 |
| Poland | 1,88 | 1,99 | 1,85 | 1,87 | 1,90 | 1,94 | 1,96 | 1,99 |
| Belarus | 2,21 | 2,25 | 2,35 | 2,19 | 2,10 | 2,44 | 2,29 | 2,01 |
| Germany | 3,31 | 3,38 | 3,39 | 3,28 | 3,17 | 3,16 | 3,35 | 3,37* |
| USA | 3,46 | 3,47 | 3,56 | 3,50 | 3,45 | 3,65 | 3,62 | 3,66* |
| UK | 3,20 | 3,52 | 3,44 | 3,08 | 3,10 | 3,22 | 3,28 | 3,31* |
| China | 1,42 | 1,51 | 1,69 | 1,76 | 1,77 | 1,78 | 1,89 | 1,97* |

*The estimated level of labour productivity Q.

Source: [8]. The data around Ukraine and Belarus own calculations.

As we can see from the table 4 the index of labour productivity Q is a good basis for interpreting the economic position of particular country compared to other countries. It can be used to characterize and compare the levels and tendencies of development in various countries. We should note that the trend of reducing the rate of labour productivity is maintained in the economy of Ukraine. This is quite a negative situation that demonstrates the need of ur-

gent changes in the economic policy of both states. In its turn, the change in the index of labour productivity in the economy of Belarus during the period of 2006-2013 indicates a high stability of the economic situation in the country. Thus, making appropriate comparisons of labour productivity Q in the different countries we can install and monitor the trends of their development.

Also on the basis of the comparison of labour productivity Q of different countries we can make an important statement concerning the creation of economic unions. Such alliances can be created between countries that have close values of Q. Otherwise, there will be a situation that we could observe in the economy of Greece after the introduction of the Euro

in this country. A country like Germany with the index of labour productivity 3.4 cannot be directly compared with Greece, where the figure barely exceeds 2.0. Therefore, only countries with a similar index of Q may form economic unions (table 5). This question is described more particularly by M. Dobija in his work [9].

Table 5

The grouping of countries in the context of productivity (2006)

| 1 < Q < 2 | | 2 Q < 3 | | 3 Q < 4 | |
|------------|------|-----------|------|------------|------|
| Polska | 1,88 | Grecja | 2,08 | Niemcy | 3,33 |
| Estonia | 1,78 | Słowenia | 2,27 | Szwajcaria | 3,53 |
| Portugalia | 1,85 | Hiszpania | 2,17 | UK | 3,20 |
| Słowacja | 1,86 | Włochy | 2,49 | Francja | 3,20 |
| Czechy | 1,87 | Belarus | 2,21 | Belgia | 3,35 |
| Węgry | 1,95 | | | Holandia | 3,44 |
| Ukraine | 1,80 | | | Dania | 3,43 |

Source: [9, p. 170]. The data around Ukraine and Belarus own calculations

The list of macroeconomic problems, that can be solved by using the indicator of labor productivity Q, is large enough and is given below. However, it should be noted that the equation $GDP = W \times Q$ is the basic model which allows to understand the nature of the formation of the GDP in the state. This model shows the role of wages, which creates demand, standard of living and the inflation rate and labour productivity determines the organization and management of manufacturing and administrative processes in the country.

Major macroeconomic problems, that are solved when you apply the indicator of labour productivity, include:

- the control of the size of the public sector. This control involves determining the allowable amount of wages in the public sector (in the planned year), under the condition that Q is not reduced. The reduction of the sum of wages $W = ABC/Q$ by the sum of wages earned in the private sector determines the allowable size of wages in the public sector;

- the control of inflation. Inflation disappears by itself if the sources of their origin disappear. The main source of inflation is the issuance of money in isolation from labour. It also occurs when the number of people who earn a lot increases, and creates not equivalent products. Inflation depends on real productivity [5, p. 148] and will be equal to zero if the real and nominal efficiency is equal. Furthermore, the actual productivity cannot decrease. This situation is achieved when wages correspond to the value of labour;

- the allowable sum of credit for the economy. In addition to the above given interpretations it is also known the in-depth studies of the use of labour productivity in macroeconomics. Mieczysław Dobija in the context of the theory of labour productivity has set the allowable sum of credit for the economy [4, pp. 177-179]. The allowable amount of the loan, under condition of zero inflation, is presented as $W(Q - a)$, where a represents the part of wages that are combined to form deposits in commercial banks;

- the average value of the exchange rate. Marcin Jędrzejczyk, in his turn, using the theory of labour index has explored a model of estimating the average value of the exchange rate [19]. From the research of this author arises that the average annual value of the exchange rate (ER) is a function of the square of parity of labour productivity;

- rankings of the states. Also, as it can be seen from table 4, the rate of labour productivity Q is a good basis to build the important rankings of the states. With its help, we can characterize and compare the development levels of different countries. The stability of labour productivity indicator is a good measure of the achieved economic level.

The measurement of labour productivity allows us suggest an important hypothesis, which concerns human capital and wage. This hypothesis specifies that in order to achieve complete conformity of the legally established minimum wage with the minimum wage established on the basis of human capital theory, the rate of labour productivity needs to reach the level at least 2.8. In the economy, which is char-

acterized by a measure of labour productivity at the level of 2.8 and above, the employee receives wages at a decent level, and this allows compensating the scateration of the individual human capital. In Ukraine the labour productivity is only 1.41 in 2014. This situation shows the lack of conditions for the preservation of human capital in the economies of these states.

Conclusions

Nowadays there are enough reasons to conclude that the original research program in the field of the human capital was formed as a result of the economic research, which began in the 90s of the last century. The program is gradual as the survey in this area of research becomes more studied year by year and a wider range of problems finds its theoretical explanation. The last issue, that found its theoretical explanation, is the index of labour productivity Q which can be widely used in macroeconomics.

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The stability of the parameter Q makes it a good measure of the achieved economic level of countries. It is a good basis for building rankings, as well as to monitor the development of the separate countries. On the basis of the comparison of labour productivity Q of different countries we can make an important statement concerning the creation of economic unions. Such alliances can be created between countries that have close values of Q (countries with a similar index of Q may form economic unions).

In Ukraine the index of labor productivity Q has decreased over the past few years. This means that with each passing year at 1 UAH of labor costs account a lesser amount of GDP. It is a very negative trend of the economy of Ukraine, which indicates the need for urgent actions aimed at changing the economic policy of the country. One way to improve the situation should be the appropriate adjustment of wages in the country, which provide for their adaptation to the size of the human capital of workers.

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