SPOTLIGHT ON:

Spotlight On 1. Wage level, dynamics and inequality in Serbia

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1. Introductory Considerations: Importance of Wages

The level of wages and their dynamics are important for the economic development and social stability of a country. Economically speaking, wages, along with interest rates and currency exchange rates, are the most important determinants of a country's economy. Therefore, wage growth disproportionate from production and productivity trends can have negative effects. If wages are too low, or if their growth is slower than productivity growth, then they can limit the economic growth of the country; and if wages are too high, or if they grow faster than productivity, then they can weaken the country's competitive position and result in disruption of macroeconomic stability (e.g. high foreign trade deficit and/or inflation), which will, after a while, cause an economic crisis, forcing wages to be brought into line with production and productivity. From a social perspective, wages account for the important source of income for the largest number of individuals in any country. Consequently, the standard of living of the population depends on the level and dynamics of wages, and all this has an impact on social cohesion in the country. Extreme wage inequality can lead to social polarization and exacerbate conflicts, which may then negatively affect economic and social development.

According to the latest *Global Wage Report* (ILO, 2019) the average world labour force participation rate stands at about 60 per cent of the total working-age population, with approximately 3.3 billion individuals engaged in employment. Among all who are employed, some 55 per cent, that is, 1.8 billion individuals, are wage and salaried workers, which represents an increase of some 760 million wage and salaried workers compared to 25 years ago. For most of these workers, income from wages makes up a significant proportion of their total income. On average globally, the share of wages in the total income of households including at least one member of working age ranges from about 40 per cent in some low- and middle-income countries to between 60 and 80 per cent in high-income economies. Hence, analysing wage level and dynamics is key to understanding the growth of living standards for economic policy creators. The similar situation is also in Serbia, where, according to the latest data, there are about 2.16 million employed people, while, the number of employed people, according to the LFS is 2.91 million people, and the share of average wages in the total incomes of households including three members is slightly over 50 per cent.

The latest International Labour Organization estimate (2019) shows that in 2018 compared to the previous year in Northern America wage growth was 0.7 per cent, while in Western Europe, wage growth was not recorded at all. Similarly, in Central and Eastern Asia and Latin America, wage growth was 0.5 per cent and 0.7 per cent, respectively. In high-income economies, the slow increase in average wages in a context of stronger economic growth in the last years is all the more surprising as unemployment rates have generally declined. Namely, the average unemployment rate among the European Union countries in 2018 stood at around 7 per cent, the lowest rate recorded since 2008 financial crisis. In the United States, unemployment rate was somewhat less than 4 per cent, which is historically also one of its lowest level. It is generally considered that there exists an inverse relationship between unemployment rates and wage growth, so that when unemployment rates go down wage growth accelerates and, conversely, when unemployment rates increase, wage growth slows down. However, this relationship did not appear very strong in the last years in developed countries. The largest wage growth, among all analysed regions, was observed in Eastern Europe and it was 5 per cent in 2018 compared to 2017. A potential explanation for this situation in Eastern Europe can be the emigration of workers to developed European countries and extremely low unemployment rates (for example, unemployment rates in the Czech Republic, Poland and Romania are below the EU average). Although unemployment rates declined, the extent to which this indicator provides a robust perspective on the state of the labour market is limited. This is of particular importance because in these countries individuals cannot afford to remain unemployed, and hence must remain active, often in the informal economy. The 2018Report of the International Labour Organisation indicates the fact that almost 40 per cent of all wage earners in low- and middle-developed countries earn their livelihood in the informal economy (ILO, 2018).

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In addition to analysing the wage level and dynamics, measuring the wage share in the gross domestic product is also one of the important topics in the economy. The stability of this share, documented by Caldor several decades ago, is no longer evident in the recent period. Specifically, reports from significant international organizations indicate a decline in the wage share of the gross domestic product. According to data of the International Labour Organization, the share of wages in the gross domestic product decreased in 91 out of 133 countries, including a larger number of developing countries and developed countries. For example, this share for the most developed countries decreased from about 55 per cent in the 80s of the last century to about 50 per cent in 2018. Developing countries also saw a decrease in the wage share in the gross domestic product, as it from 40 per cent in the 1990s dropped to somewhat more than 35 per cent in 2018. Eurostat data, however, indicates that over the last two decades, the wage share in the gross domestic product has remained almost unchanged on average for EU countries. However, significant differences are noticeable among EU countries. Thus, the wage share in the gross domestic product in 2018 compared to 1998 decreased in Ireland (by 10 percentage points), Malta (by 4 percentage points) and Portugal (by 3 percentage points), and increased in Bulgaria (by 10 percentage points), Romania (for 7 percentage points) and Hungary (for 5 percentage points).

Taking above into consideration, in this *Spotlight On,* the focus of analysis will be on measuring wages and wage inequality in Serbia. The analysis will provide an insight into trends of nominal and real average wages in Serbia over the previous two decades. *Spotlight On* will analyse various wage indicators and wage inequality. Also, a part of the analysis will be devoted to explaining the wage determinants and the consequences of deviating from the equilibrium. A separate section of *Spotlight On* will be allocated to the comparison of wages and wage inequality in Serbia and selected countries. The last part of this *Spotlight On* will be dedicated to analysing the minimum wage and the reasons for its introduction, and an assessment of the relation between the minimum wage and other wage indicators.

2. Wage Measurement

The wage level and dynamics are measured using various statistical indicators such as an average (mean), median and mode wage. Also, an important indicator is a minimum wage in countries where it is set. The average (mean) wage is calculated by summing wages of all employed and dividing the total by the number of employed people. This indicator shows how much an average worker earns. The main disadvantage of the mean value is that it tells us nothing about the wage distribution and is exceptionally sensitive to extremes. This means that a few high-wage earners will increase the average significantly. To illustrate, here is a simple example. If we have a person who earns 20,000 and another who earns 120,000, the average wage will be 70,000 – as much as 50,000 less than what one actually earns and 50,000 more than what the other earns. [3] Mean wages, like any other mean indicator, are often used to make calculation easy. The median wage is the boundary between what the highest 50 per cent of employed people are paid and what the lowest 50 per cent are paid. The advantage of this indicator is that it is not sensitive to extremes. For example, if the median wage is 50,000, this means that 50 per cent of the employed have wages higher than 50,000, while 50 per cent of the employed have wages lower than 50,000. The mode wage represents the most commonly wage paid. If the mode wage is 30,000, it means that the largest number of persons earn 30,000. The minimum wage is the minimum amount of remuneration that an employer pays to a worker for standard work performance and is regulated by the law. The minimum wage is usually determined on the basis of an agreement between employers, trade unions and the state.

Apart from nominal wages, i.e., wages in current money, it is also necessary to observe real wages, i.e., wages in constant money. The advantage of using real wages is that it eliminates the effect of price changes, and reflects changes in the real value of wages over time. For international comparisons of wages in different countries, it is necessary to observe wages in the same currency (most often euros for Europe or US dollars for global comparisons), as well as adjusted wages for differences in prices in different countries (the PPP concept).

The informal employment rate in Serbia, although having decreased in recent years, is still high, at around 20 per cent, according to Labour Force Survey data[4]. This means that every fifth worker in Serbia is informal employment. It is also a widespread practice in the private sector for the employer to pay only a portion of the wage to his employee legally, paying applicable taxes and contributions, while the rest of the wage is paid "cash in hand", without paying any taxes and contributions for this portion. Research on shadow economy conducted in 2017 showed that out of

3 It is not a rule that the deviation from the average value must be the same.
4 For more details see „Labour Market" section in this issue of *QM*.

100 dinars in the shadow zone, approximately 62 dinars refer to undeclared wages and salaries (Krstic & Radulovic, 2018). Due to all of the above, in Serbia, net wage is a more relevant indicator. However, for comparison of international wages, gross wages are generally observed.[5]

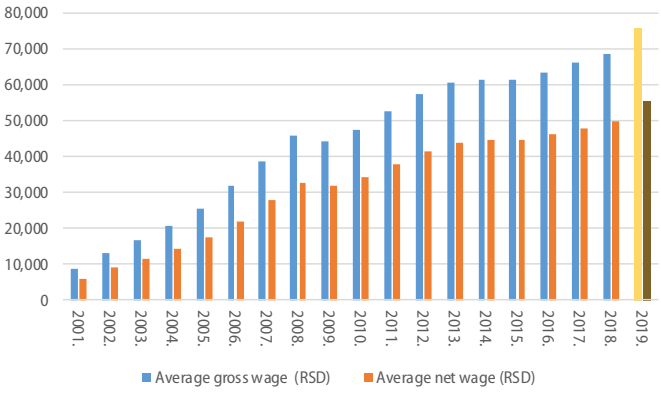
None of the indicators relating to average wages provides information on the level of wage inequality, which provides significant information not only about the functioning of the labour market, but also about the overall economic and social system of a country. Wages are the largest share of the total household income, and therefore one of the key causes of income inequality is wage inequality. This topic has been intensively dealt with by well-known economists such as Piketty, Stiglitz, Atkinson, Milanovic, and others. There are numerous metrics used to measure inequality such as: Gini coefficient, income variation coefficient, quintile measure, the ratio between the ninth and the first decile, the ratio between the ninth decile and the median, the ratio between the median and the first decile, the Palma ratio, the Theil index. Given that the focus of this paper is not a detailed analysis of inequality, we will briefly explain the most commonly used measure of inequality – the Gini coefficient. The Gini coefficient is a measure of income inequality ranging between 0 and 1 (that is from 0 per cent to 100 per cent). A higher Gini coefficient index indicates greater income inequality. A Gini coefficient of 100 per cent would mean that the entire income in the country belongs to one individual, while all others have zero income. A Gini coefficient of zero per cent means that everyone has the same income. In practice, a Gini coefficient ranges from about 25per cent to 65 per cent. The Eurostat publishes data for Gini coefficient for the total disposable household income, and disposable household income before transfers (including and excluding pensions). Data on the Gini coefficient for wages is not published in statistics, but can be found within various surveys for individual countries.

3. The Wage Level and Dynamics in Serbia and Comparison with other Countries

3.1. Trends in wages in Serbia from 2001 to 2019

If we look at the period spanning almost two decades, according to the data of the Statistical Office of the Republic of Serbia, the average gross wage[6] increased 7.8 times, from RSD 8,691 in 2001 to RSD 68,629 in 2018. Similarly, if we look at the same time period, it can be observed that, according to the data of the Statistical Office of the Republic of Serbia, the average net wage recorded a steady growth. Namely, the average net wage ranged from RSD 5,840 in 2001 to RSD 49,650 in 2018. The net wage earned on average by a person employed in Serbia in 2018, therefore, is as much as 8.5 times higher than it was in 2001.[7] Until 2008, the average net wage in Serbia grew from around 6,000 to about RSD 28,000 as a result of both real economic growth and relatively high inflation. Subsequently, from 2008 to 2018, the value of the net average wage increased from about RSD 33,000 to about RSD 50,000. In 2019, wage growth sped up, and it is therefore estimated that the average net wage will be around RSD 55,500, while the average gross wage will reach approximately RSD 75,000.

Figure 3.1.1: Trends in gross and net average wage in Serbia from 2001 to 2019



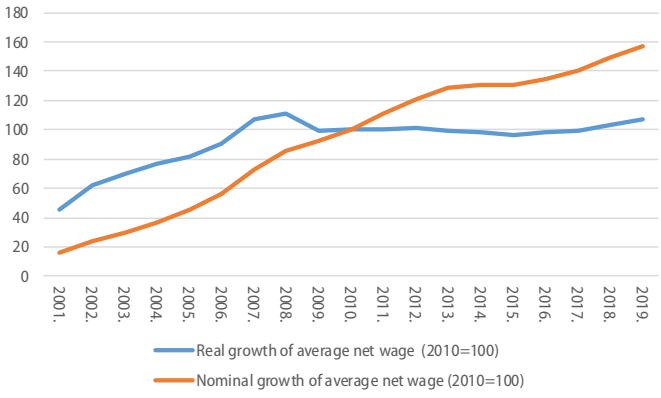
Note:
(1) Estimate for 2019;
(2) There was a break in the wage trend from 2009 and from 2018, which was the result of changes in the methodology used for calculating wages.
Source: Figure based on data from the Statistical Office of the Republic of Serbia

However, it should be noted that in order to determine the trends of purchasing power of the average wage, it is necessary to analyse the trends of real wages. This is particularly important because trends of other types of income, such as pensions or financial assistance, are strongly linked to the trends of real average wages. Real wage trends can be determined by removing inflation from nominal wages.

The trending of average nominal net wage index indicates that during the entire analysed period, from 2001 to 2018, nominal wages rose. Cumulatively, nominal

5 Comparison of net wages is difficult because of differences in tax systems.
6 Gross wages include net wages and taxes and contributions paid on behalf of the employee, but not contributions on behalf of the employer.
7 When comparing wages before 2009 with wages in the period after 2009, it should be taken into consideration that from the beginning of 2009, the wages of workers employed by sole proprietors began to be included in the calculation of wages, which resulted in a decrease in average wages by 8-9 per cent.

Figure 3.1.2: Trends in nominal and real average net wage in Serbia from 2001 to 2019 (base indices, 2010=100)



Note:
(1) Estimate for 2019;
(2) There was a break in the wages trend from 2009 and from 2018, which was the result of changes in the methodology used for calculating wages.
Source: Figure based on data from the Statistical Office of the Republic of Serbia

average net wages increased by 687 per cent in this period, meaning that the average net wage increased, on average, by 38 per cent annually. However, after removing inflation, a completely different picture of trends in average net wages can be observed. Between 2001 and 2018, cumulatively, average net wages rose by 152 per cent in real terms, or about 8.5 per cent annually. Therefore, average net wages have increased 2.5 times over almost twenty years, which is significantly less than their nominal increase. In fact, there are two distinct trends in the fluctuation of the real value of average net wages. In the period before the beginning of the financial crisis, from 2001 to 2008, the real net average wages increased cumulatively by 155 per cent. In the aftermath of the financial crisis, from 2009 to 2018, real average net wages stagnated, i.e. they grew by less than 1 per cent annually. Consequently, it can be said that, over the last ten years, the purchasing power of average net wage has remained almost unchanged.[8] However, in 2019, according to an estimate based on wage trends for the first six months of the year, the average real wage is expected to grow by 7-8 per cent.

An average wage in Serbia, similar to other countries, is calculated by dividing the total sum of wages by the total number of employed people, expressed in full-time equivalent. However, in the statistical distribution of wages, it is recognized that the number of those who earn less than the average is always higher than the number of those who earn more than the average. Statistically speaking, the wage distribution leans towards the origin of the coordinate system. Specifically, it is common for two-thirds of wages to be below, and one-third of wages to be above the average wage level. In this regard, a median wage is used as an alternative indicator of average wage. The median wage, as stated, is the value of wages that divides the set of all employees into two equal segments with the first half earning less and the other half earning more. Also, an important indicator is a mode wage, which represents the value[9] of wages received by the largest number of employees.

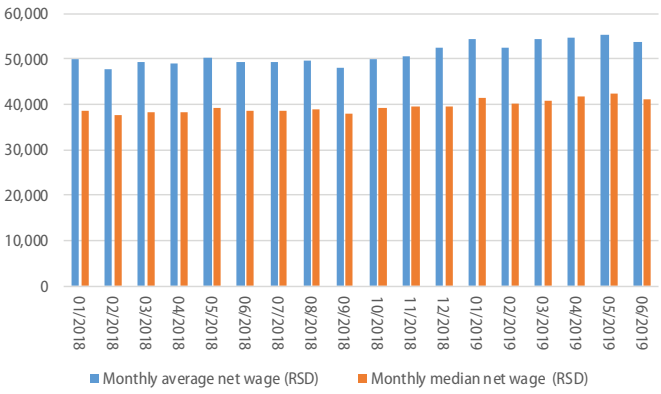
Until the beginning of 2018, the Statistical Office of the Republic of Serbia did not have data on each employee's wage, but only data on a sample of wages, so it was not possible to determine how much most of the population earns and what the amount of wage is that divides the population into two equal segments according to wage distribution. This flaw in previously used methodology, based on the RAD-1 questionnaire data, has largely been eliminated by shifting to a new methodology based on the use of data from the Tax Administration Office. As the Statistical Office of the Republic of Serbia now has data on the wages of all employed people, it is possible to calculate other important indicators, such as a median wage and a mode wage.

Data from the Statistical Office of the Republic of Serbia from January 2018 to June 2019 indicates that the average monthly net wage was around RSD 52,800. During the same period, the median monthly net wage was RSD 39,600. In other words, although an employed person in Serbia earns an average salary of about RSD 53,000, half of the employed population of Serbia earn less than RSD 40,000 and the other half earns more than this. Therefore, the median wage which divides the sum of wages into two equal parts is about RSD 13,000 lower than the average wage. The median to average wage ratio was about 0.77 during the entire observed period, which means that the median wage is about 23 per cent lower than the average wage. This is not surprising, given that the statistical distribution of wages is asymmetrical and leans towards the origin of the coordinate system.

Official data on the mode wage, i.e. the wage earned by the largest number of employees is not available, although the Statistical Office of the Republic of Serbia is now able to publish data on this indicator, as the methodology has changed. The Statistical Office of the Republic of Serbia published data on mode wage in one of its publications at the beginning of last year, where the mode net wage for January 2018 was listed as being approximately

8 Of course, other factors that may affect the standard of living must be taken into account before reaching the final conclusion. For example, one important factor is the price of the average basket of goods. Nevertheless, based on the available data on the trends in the price of the average basket of goods, this conclusion would not change significantly.
9 In practice, instead of one amount, a range of wages covering the highest number of wages is usually used.

Figure 3.1.3: Trends in average and median monthly net wage in Serbia from January 2018 to June 2019



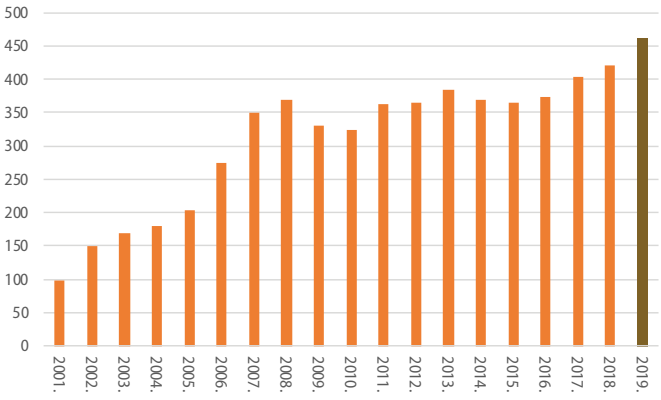
Source: Figure based on data from the Statistical Office of the Republic of Serbia

RSD 26,000. This indicates that the highest number of employed persons in Serbia receive wage that are nearly twice less than the average wage. Moreover, based on this, it can be concluded that the largest number of employed people in Serbia earn wages that are close to the minimum wage. This situation was probably affected by the "shadow economy", that is, the tendency of small and medium-sized enterprises and sole proprietors to report minimum wages to government bodies, including the Tax Administration, even though the actual wage paid to employees is higher.

While real wages are a good indicator of the standard of living, wages in euros are an indicator of both the standard of living of the population and the international competitiveness of the Serbian economy. Between 2001 and 2018, the average net wage in euros increased almost 4.3 times, twice its real growth. Wages in euros reflect not only the trend of real wages but also the trend of the real dinar exchange rate, which means that, during periods which record real appreciation of the dinar, wages in euros grow faster than real wages, while in periods which record real depreciation of the dinar, wages in euros grow more slowly than real wages. The faster growth of wages in euros than the real wage growth was particularly affected by the significant real appreciation of the dinar in the 2001-2002 and the 2005-2008 periods. The trends of average net wages in euros show a similar pattern to the trends of real average net wages, with more intensive changes in euro wages. In the pre-crisis period, from 2001 to 2008, wages in euros rose as much as 3.8 times, which is significantly higher than the real growth in the same period. In the crisis and post-crisis period, from 2009 to 2018, average net wages in euros rose by about 25 percent, while real wages stagnated.

What is particularly significant is the fact that the average net wage in 2018 reached 420 euros, which is 20 euros more than it was in 2017, and only 50 euros more than it was in 2008. In 2019, as a consequence of high real wage growth in both the public and private sectors, the average wage is expected to reach around 470 euros.

Figure 3.1.4: Trends in average net wage in euros in Serbia from 2001 to 2019

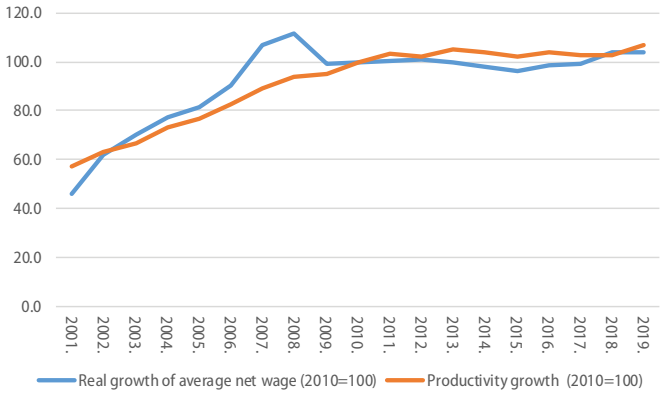


Note: (1) Estimate for 2019
Source: Figure based on data from the Statistical Office of the Republic of Serbia and the National Bank of Serbia

It is important to recall that since 2016, economic policy makers have announced every year that the average net wage will reach 500 euros at the end of that year. This begs the question: what determines the value of wages in euros? In one of the previous issues of the Quarterly Monitor[10], it has been shown that the average level of productivity is a basic determinant of the average wage in one country, that is, differences between countries in terms of productivity levels are reflected in the form of differences in the level of average wage achieved, as well as that the movement of the average wage over time depends on productivity trends. Looking at the trends of real wages and productivity per employee in Serbia from 2001 to 2018, it can be seen that average net wage had a very similar trajectory as productivity growth. Productivity, like real wages, grew strongly before the economic crisis, and after the economic crisis its growth was much slower. Certainly, there are some differences by year, but the trends of real wages and productivity over a longer period is similar. Namely, real wages increased faster than productivity until 2008, after which their growth was slower. The slower growth of real wages than productivity growth in the period after 2008 can be explained, primarily, as has already been pointed out in the previous issues of the Quarterly Monitor, by returning real wages to sustainable, i.e. productivity-determined context. Therefore, average net wage cannot be expected to grow significantly unless accompanied by significant productivity growth.

10 For more details see Quarterly Monitor 51, Highlights 2: What determines the level and dynamics of wages in Serbia.

Figure 3.1.5: Index of real average net wage and employee productivity in Serbia from 2001 to 2019 (base indices, 2010=100)



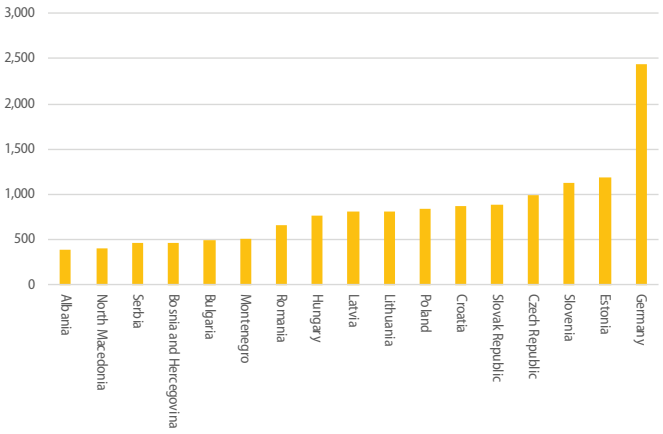
Note:
(1) Estimate for 2019;
(2) CROSI (Central Registry of Compulsory Social Insurance) employment data was used to calculate employee productivity
Source: Figure based on data from the Statistical Office of the Republic of Serbia

The trends of real wages over a long period of time cannot deviate significantly from the trends of productivity. If a larger and longer-lasting deviation of real wages from the level of productivity occurs, the consequences can be extremely negative for the economy of a country. If average wages grow faster than productivity does, there will be an increase in foreign trade deficit and subsequently, an increase in external debt. Also, investment level is expected to stagnate or decline, further reducing productivity. This, in turn, leads to a slower growth of real wages and, consequently, a threat to the standard of living of the population in the future. If average wages rise more slowly than productivity increases, deflation occurs, leading to increased unemployment and slower economic growth. In this case, inequality, social polarization and conflict exacerbation are also expected. A significant and long-term deviation of the average real wage trend from the productivity trend in a country, regardless of the direction of this deviation, has negative consequences on macroeconomic stability, economic growth and social cohesion. Therefore, economic policy measures should not encourage wage growth which is significantly faster than productivity growth, as this first leads to an increase in external deficits and, to a lesser extent, inflation, and subsequently to a stagnation or fall in real wages, in order for them to match productivity.

3.2. Comparison of average wages in Serbia with selected countries

It is also important to determine the position of Serbia in relation to Central and Eastern European countries[11] based on average wage. When the countries of the above region are observed, Germany, as the best positioned, and Albania, as the worst positioned country, stand out in terms of their average net wages. The average net wage in 2018 in Germany was 2,270 euros, while in Albania it was almost six times less. Germany is followed by Slovenia and Estonia, in which the average net wage was 1,062 euros and 957 euros, respectively. In a large number of Central and Eastern European countries, the average net wage for 2018 ranged between 600 and 900 euros. It includes the Czech Republic with 873 euros, Croatia with 802 euros, Poland with 784 euros, Slovakia with 748 euros, Latvia with 738 euros, Lithuania with 693 euros, Romania with 656 euros, and Hungary with 635 euros. The average net wage in a significant number of Southeast European countries was around 500 euros or less. Most of these countries, with the exception of Bulgaria, are countries of the former Yugoslavia that are not part of the European Union. These are Montenegro with 511 euros, Bulgaria with 457 euros, Bosnia and Herzegovina with 449 euros, Serbia with 420 euros, Northern Macedonia with 390 euros, and Albania with 387 euros. In terms of average net wage in 2018, Serbia is, the same as in previous years, at the very bottom of the list among Central and Eastern European countries.

Figure 3.2.1: Average net wage in euros in Central Eastern European countries in 2018

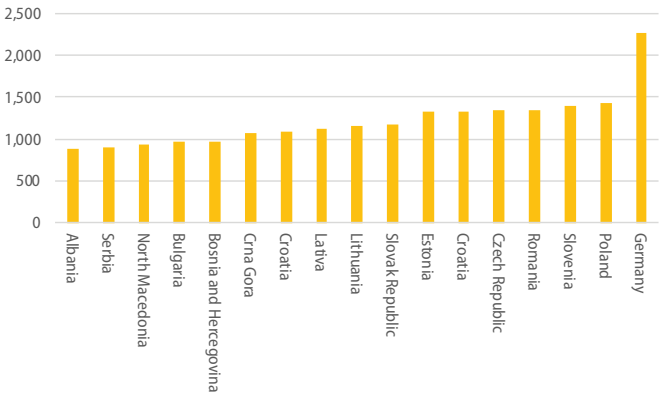


Source: Figure based on data from the Eurostat and national statistical offices

When comparing wages in different countries, we should keep in mind that average prices vary from country to country. As a rule, average prices in developed countries are higher than those in less developed countries. These differences are due primarily to higher prices of non-tradable goods, such as public utilities, healthcare, education, etc. It is therefore necessary for wages in euros in all countries be expressed in PPP-euro, i.e. as if prices in

11 Germany is included in the analysis as a reference country, although it economically and politically belongs to the region of Western Europe.

Figure 3.2.2: Average net wage in PPP-euro in Central and Eastern European countries in 2018



Note: (1) It is assumed that prices in all countries are equal to the prices in Germany for 2018
Source: Figure based on data from Eurostat and national statistical offices

all countries were the same. Taking into account the differences in average prices, the differences in average net wages among European countries are significantly reduced. However, these differences remain relatively high and reflect differences in the level of development of these countries and differences in productivity level. Thus, for example, despite the fact that this difference has been halved, the purchasing power of average net wage in Serbia is 2.5 times lower than it is in developed Germany. If PPP-euro is applied, Serbia's relative position is slightly better than in Central European countries, as average prices in those countries are higher than in Serbia. However, compared to the countries of Southeast Europe, Serbia's position is similar or even slightly less favourable when using PPP-euro than it is when current euros are used.

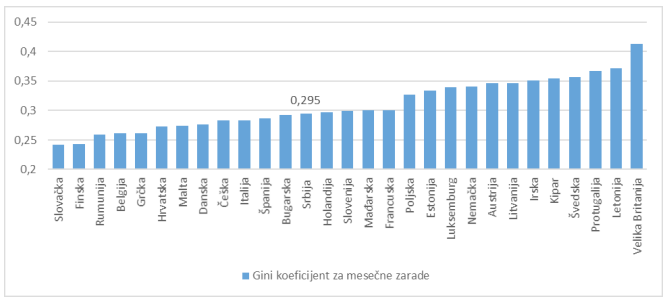
4. Wage Inequality in Serbia and Comparison with other Countries

Wage inequality is important because wages represent a significant portion of income, therefore wage inequality directly affects overall inequality. Changes in wage inequality explain around 25 per cent of changes in income inequality between 2006 and 2011 in the European Union. A 0.1 increase in the Gini coefficient for wages implies an increase of 0.04 points in income inequality. However, it is noticeable that wages have less impact than earlier, which is primarily due to a decrease in employment as well as a share of wages in overall income (Dreger, Lopez-Bazo, Ramos, Royuela, & Surinach, 2015).

Wage inequality is affected by a number of factors. Dreger et al., (2015) use a number of variables in the regression analysis of inequality for EU countries from 2006 to 2011, such as: foreign trade openness, gross domestic product, male and female employment rate, participation of part-time workers, percentage of employees with temporary contracts, strictness of employment protection, employment share in industry and agriculture, tax wedge, minimum wage, union coverage, bargaining, etc. The following variables have a statistically significant negative impact on the Gini coefficient for annual wages in European Union countries: union coverage, government intervention in wage bargaining, and minimum wage. Collective bargaining coverage has a statistically significant positive impact on the Gini coefficient. Other variables generally do not affect the Gini coefficient (Dreger et al., 2015).

Krstic & Zarkovic-Rakic (2017) calculated the Gini coefficient for monthly net wages in Serbia based on 2013 SILC data. To compare Gini coefficient values for other countries, results obtained by other researchers will be used. Dreger, Lopez-Bazo, Ramos, Royuela, & Surinach (2015) investigated wage and income inequality in the European Union, using micro SILC data in 2012. Figure 4.1 shows the Gini coefficient for monthly net wages for Serbia and for gross wages for EU countries. The data do not refer to the same year. Also, the indicators for gross and net wages are not directly comparable, but due to the lack of other data for Gini coefficient for wages for Serbia, we will use net wages. The Gini coefficient for wages for Serbia was 0.295 in 2013 and this value is at the European Union average of 0.310 in 2012.

Figure 4.1: Gini coefficient for monthly gross wages in EU countries and monthly net wages in Serbia

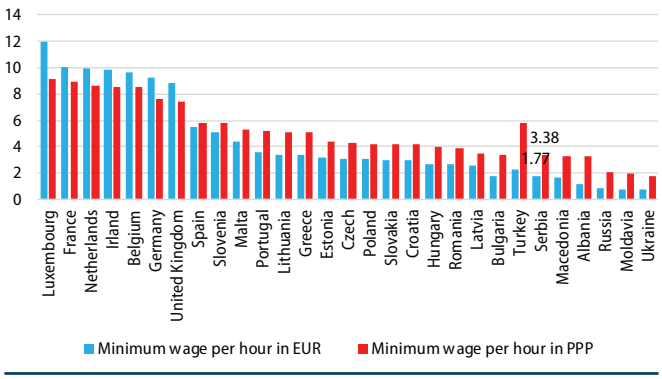


Notes:
(1) Gini coefficient data for European Union countries refer to 2012, except for Belgium and Ireland, where data are for 2011;
(2) Gini coefficient for Serbia refers to 2013;
(3) Gross wage was used for EU countries and net wage for Serbia
Sources: Krstic & Zarkovic-Rakic (2017) for Serbia, Dreger et al., (2015) for EU countries

Globally, the Gini coefficient for wages is the lowest in high-income countries and highest in low- and middle-income countries. The Gini coefficient for hourly wage for high-income countries averages 0.261, for upper-middle-income countries it is 0.405, for lower-middle-income countries it is 0.371 and for low-income countries it is 0.473. The world average is 0.355 (ILO, 2018).[12]

12 Gini coefficient was calculated based on available data for 64 countries. For more detail information, see report of the International Labour Organization.

Figure 5.1: Minimum hourly wage in euros and PPP in selected countries for January 2019



Note:
(1) Converted in euros at average exchange rates for 2018;
(2) For conversion into purchasing power parities, 2017 World Bank purchasing power for private consumption was used;
(3) For the United Kingdom, national living wage was used for all working-age population above 25 years;
(4) For Serbia and Northern Macedonia is an estimate as the minimum wage is specified as a net wage.
Source: *WSI minimum wage database*

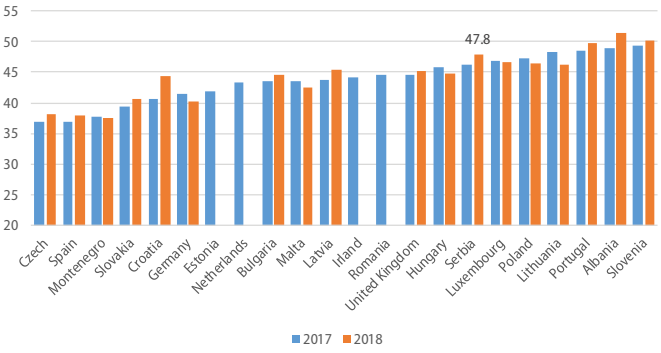
5. Minimum Wage in Serbia

Debates about the effects of a minimum wage have been going on since its introduction in the early twentieth century. Research shows that the existence of a minimum wage reduces employment and increases unemployment on the one hand, while on the other hand, the minimum wage is important for safeguarding workers' rights and reducing poverty (Jandric & Aleksic, 2018). The minimum wage in Serbia is a net amount per working hour, which is not the practice in most other countries, where the set minimum wage is a gross amount. We will compare the minimum wage in euros and the minimum wage expressed in PPP-euro for Serbia and countries of the region and the European Union. In addition, the ratio of the minimum to the average and of the minimum to the median wage in Serbia and the countries of the European Union and OECD will be analysed.

Figure 5.1 shows the minimum hourly wage in euros and PPP-euro in selected countries. The wage in Serbia is among the lowest minimum hourly wage, expressed both in euros and PPP-euro. Countries with lower minimum hourly wages are Northern Macedonia, Albania, Russia, Moldova and Ukraine.

A more detailed analysis of the minimum wage requires for it to be compared to average wage, as well as median wage. Data on median wage is not available for all countries, which makes it impossible to compare minimum and median wages between countries. Figure 5.3 shows the ratio between the minimum and average monthly wages in 2017 and 2018 in European countries which have set a minimum wage. We can see that this ratio is relatively high in Serbia. Countries with a higher ratio than Serbia are Luxembourg, Poland, Lithuania, Portugal, Albania and Slovenia, in 2017. The ratio of the minimum to the average wage in Serbia was 47.8 per cent in 2018, while the highest was in Albania 51.4 per cent and Slovenia 50.1 per cent. The least ratio was in Montenegro 37.6 per cent, followed by Spain 37.9 per cent and Czech Republic 38.1 per cent in 2018. The ratio of the minimum to the average wage in Serbia was 49.3 per cent for net wages and 48.1 per cent for gross wages, for the first half of 2019. [13]

Figure 5.2: Ratio of the minimum to the average wage in Europe, 2017 and 2018

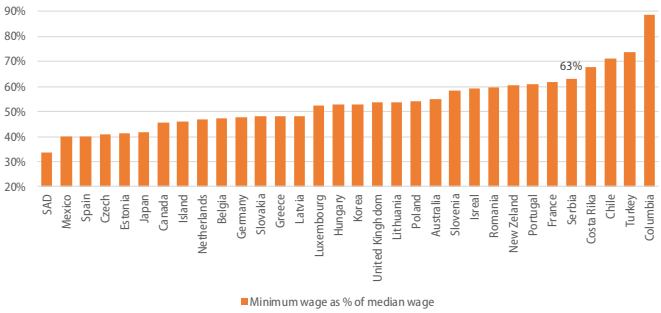


Notes:
(1) Average wages include activities B-S (NACE Rev.2), except for extraterritorial organizations and bodies and households as employers;
(2) Data on average wage is expressed as gross
Source: Eurostat

Given that there is no data on the ratio of the minimum to the median wage for most countries on the Eurostat website, OECD data for OECD member countries in 2017 will be used. The ration of the minimum to the median wage in Serbia is high, accounting for 63 per cent on average for the period 2018-H1 in 2019. A higher minimum-to-median wage ratio means that the minimum wage is the most commonly paid wage for employees who are at the bottom of the wage distribution. This ratio is higher than in several OECD countries, namely Costa Rica, Chile, Turkey and Colombia.

13 This figure for Serbia in 2019 is not directly comparable to Eurostat data for 2017 and 2018 due to the scope of activities used for calculating average wage. The average wage for Serbia is the total average wage, and covers all activities, not just B-S activities, as is the case with EU data.

Figure 5.3: Ratio of the minimum to the median wage in OECD countries and Serbia



Note: (1) Data for OECD member countries are for 2017, and for Serbia it is average value for the period M01 2018 – M06 2019
Source: OECD and Statistical Office of the Republic of Serbia

Table 5.2. Ratio of the minimum wage to the minimum basket of goods in Serbia from 2014 to June 2019

Year	Minimum wage	Minimal consumer basket	Minimum wage as a % of minimal consumer basket
2014	20,010	34,302	0.58
2015	21,054	34,825	0.60
2016	21,054	35,093	0.60
2017	22,533	36,090	0.62
2018	24,882	36,629	0.68
01/2019-06/2019	26,711	37,085	0.72

Source: Figure based on data from the Statistical Office of the Republic of Serbia and the Ministry of Trade, Tourism and Telecommunications of Serbia

Table 5.3. Change in the ratio of the minimum to the average net wage in Serbia from January to June 2019

Indicator	Ratio
Current amount of minimum wage	26,711
New amount of minimum wage	30,022
Average net wage	54,145
Current amount of minimum wage as % of average net wage	0.49
New amount of minimum wage as % of average net wage	0.55

Source: Figure based on data from the Statistical Office of the Republic of Serbia and the Ministry of Trade, Tourism and Telecommunications of Serbia

Table 5.1: Ratio of the minimum to the median wage and of the minimum to the average wage, in gross and net, from January 2018 to June 2019

Indicator	Ratio
Gross minimum and average wage	0.48
Net minimum and average wage	0.50
Gross minimum and median wage	0.63
Net minimum and median wage	0.64

Source: Statistical Office of the Republic of Serbia

Table 5.1 shows the minimum-to-median wage ration in Serbia for gross and net. It is not possible to compare net ratios with other countries, as data for other countries is only available as gross. The minor difference in gross and net amounts is due to the small tax progressivity.

In recent months, Serbia's public discourse has seen demands from trade unions to increase the minimum wage to match the value of the minimum basket of goods. This requirement raises the fundamental question: can wages in one country be arbitrary or are they determined by economic factors such as productivity? In this regard, it is important to consider the relation between these values and to determine how this change would affect the minimum to average wage ratio. For the period between 2014 and mid-2019, it can be observed that this ratio increased significantly over the last few years. From 2014 to 2017, the minimum wage was about 60 per cent of the minimum basket of goods. Thereafter, and especially in the first six months of 2019, this ratio increased, and the minimum wage reaches a level that is slightly higher than 70 per cent of the minimum basket of goods.

It is also important to analyse how increasing the minimum wage to correspond to the value of the minimum basket of goods will affect the change in the minimum to average net wage ratio. As the minimum wage increased from RSD 26,711 RSD to RSD 30,022 from January to June 2019, and this corresponds to an approximate value of the minimum basket of goods, the ratio of the minimum to the average net wage increased. Specifically, there was an increase in the minimum to average net wage ratio, from 0.49 to 0.55.[14] This certainly contributes to raising the standard of living for a large portion of the population of Serbia, but the limitations of this increase must also be taken into account. It is necessary to strike a balance between measures to increase the standard of living of the population immediately and improving it in the future. Also, this balance must be viewed not only

14 Of course, this change is only indicative, since an increase in the minimum wage also leads to an increase in the average wage, both directly (since the minimum wage enters into the calculation of the average wage) and indirectly (due to the impact of the growth of the minimum wage on the growth of other wages).

from the aspect of time, but according to economic and demographic trends. Minimum wage growth which is economically unsustainable and not accompanied by corresponding real economic growth, like productivity growth, could be an obstacle for wage increase in the future. Therefore, before reaching a final conclusion on how significant increased minimum wage will be for the citizens of Serbia, it is necessary to consider the negative effects of such an increase, especially if it does not remain within a sustainable framework.

6. Conclusion

The average net wage in Serbia increased nominally 7.8 times between 2001 and 2018. Cumulatively, average net wages increased nominally, on an annual average, by 687 per cent and 38 per cent, respectively. When the inflation trend is included in the analysis, it can be noted that real average net wages have increased by more than 2.5 times over the last 18 years, which is significantly less than the nominal growth. By changing the wage calculation methodology in January 2018, the Statistical Office of the Republic of Serbia is now able to calculate other wage indicators, such as median and mode wage. In the period from January 2018 to June 2019, the average net wage was approximately RSD 52,800, while the median net wage in the same period was approximately RSD 39,600.

Expressed in euros, the net wage of employees in Serbia averaged 420 euros in 2018. Between 2001 and 2018, the average net wage in euros increased slightly more than 4 times, twice the real growth. Faster growth of wages in euros than the growth of real wages was primarily driven by the real appreciation of the dinar. The wage dynamics was such that in 2001 the average net wage was about 100 euros and it kept rising nominally until the 2008 financial crisis, when it reached a level of about 370 euros. This was followed by a post-crisis period, with no significant fluctuations in average net wage in euros, as it ranged from around 360 to 420 euros between 2011 and 2018. According to recent estimates, the average net wage in 2019 is expected to reach 470 euros.

Comparative analysis indicates that Serbia is ranked at the back end by the average net wage among countries of Central and Eastern Europe in 2018. The only countries in which an average individual at the end of last year earned a lower wage than the one earned in Serbia were Northern Macedonia and Albania. When the fact that average prices vary in different countries is included in the analysis, that is, average net wages are expressed in euros of the same purchase power, these differences between Central and Eastern European countries are shrinking. However, despite this shrinkage, they remain relatively high.

The minimum wage is important for allowing workers a minimum guaranteed remuneration for their work and poverty reduction on the one hand, while on the other hand, the trend of the minimum wage affects the trend of average wage, productivity, unit labour costs, employment, etc. Therefore, excessive growth in minimum wage, while improving the standard of living of workers, can have a negative impact on other macroeconomic variables. Serbia's minimum hourly wage is among the lowest, expressed both in current euros and PPP-euro, compared to European countries. However, an analysis of the ratios between minimum and median and minimum and average wages provides a different picture. The ratio of the minimum to the average gross wage in Serbia compared to other countries is relatively high and is almost 50 per cent. The ratio of the minimum to the median gross wage is 63 per cent for the first half of 2019. This ratio is among the highest in OECD countries.

Finally, we can say that in order to properly analyse wage levels, trends and determinants, it is necessary to take into account numerous wage indicators, as well as to compare the same indicators with other countries, both those which are at the similar level of development, and developed countries.

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