

Wage development in Slovakia, selected influential factors

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Abstract The contribution is focused on assessing wage development in the Slovak Republic according to criteria selected in advance. The object of the research is the average gross monthly wage and the minimum wage in the monitored period, from 2007-2019. This also includes the period after the global financial crisis, which brought negative fluctuations to the labour market. Among the basic criteria through which the development of the average wage is monitored are sex, age, education, region and sector. Wage development is an important economic indicator which has a significant impact on the competitiveness of businesses on the microeconomic level and on the macroeconomic stability of the economy as a whole. A wage is a regularly studied indicator of statistical monitoring and is also compared in the context of transnational observations. Wages are in many businesses the most important component of expenses, the most exact planning of which is important with every strategic decision. Therefore, the monitoring and forecasting of wage development in economy, or more precisely in key sectors, comprises important information.

Keywords average wage, minimum wage, wage development, factors of influence, labor market, unemployment

1. INTRODUCTION

Wage plays an important role in the life of every person. It is a means of satisfying basic life needs and should be remuneration for the work of an employee. Wage, work, employment or unemployment are concepts that people come across nearly every day. From the early existence of humanity a wage has played an important role in people's lives. In the oldest times people were rewarded with a natural wage, which provided them with food and served as a resource for exchange in trade. As time went by, work began to be appraised with money, but the value of money changed over time, as did the value of work, and the economy developed continuously. The price of food, property or energy is constantly increasing; therefore, if wages remained on the same level, people would not have the resources needed for subsistence or other items for increasing their standard of living. In a market economy a wage arises by virtue of the supply and demand for labour forces, and we understand it as remuneration of a worker for work done, or in the broader sense the price for the worker's labour. A wage represents the result of a functioning labour market and at the same time we

can also see it as a certain form of agreement between an employer and an employee. At the same time, the state tries through its policies to secure working citizens a basic living standard and a claim to a dignified life through the setting of a minimum wage. Because it is workers who with their incomes influence to a great measure the development of the economy through their share in the GDP (Bucevska, 2011).

At present a great problem is the unwillingness of some people to work for a minimum wage, because they prefer to register with the labour office and collect some form of state support. On the other hand, a large group exists who would like to work even for a minimum wage but who cannot find work and live on the margins of poverty. Before entry to the labour market it is important to know the present state of wages in the Slovak Republic and the influences that affect wage levels. Several factors influence wage development, such as the situation on the labour market, inflation, work productivity, technology, globalization, financial markets and labour market institutions, as do age, sex, education, work experience, region; in addition, the diverse nature of work or exceptional capabilities and skills of individuals also play a part. The global financial crisis left the most significant impact on the labour market in Slovakia after 2008 and the following 5 years, although the situation was more evident here than in other affected countries.

The aim of the contribution is to create a relevant image of wage development in Slovakia, its regions and sectors, to assess the impact of individual factors on the amount of wages and also to predict the possible trends of future development.

2. DEVELOPMENT OF THE AVERAGE AND THE MINIMUM WAGE IN THE SLOVAK REPUBLIC

Table 1 shows the favorable development of labour market parameters which we can monitor in the previous two years. Continuing growth in the measure of employment versus 2017 (by 1.3 percentage points) was accompanied by a decrease in the number of unemployed (by 19.9%), a decline in the measure of unemployment to an historical minimum (6.6%), an increase in the number of jobs available (sectors of industrial production showed more open jobs by a third), or additional acceleration of growth of the average wage (4.4% growth and real wage growth). Furthermore, the result of this favourable development was

declining pressure on public finances in the area of volume of unemployment allowances paid out or higher tax revenues. From the broader macro viewpoint higher employment, together with rising wages, enabled the end household consumer to persist in the position of the driving engine of economic growth (Morvay et al., 2018; Přívara, 2019).

Table 1 Development of the labour market parameters between 2017-2018

	2017	2018
Minimum wage (€)	435	480
Average wage (€)	954	1013
Inflation (%)	1.31	2.51
Number of unemployed (thous.)	224	179.5
Unemployment (%)	8.1	6.6
Employment rate (%)	71.1	72.4

Source: own processing based on the Statistical Office of the Slovak Republic

A wage is one of the most important elements of incomes for citizens of Slovakia and also makes up the largest portion of costs for employers. From the viewpoint of each employee, a wage is an important factor, because it has a significant impact on his prosperity and quality of life. The position of employees in a company and their possibilities for personal growth at work and in the social sphere is determined by a wage. Higher wages depend on many factors, such as education achieved, practice, job position, work experience, work tasks, age, sex and the sector and region where we work. Average wage is one of the most monitored statistical indicators. The Statistical Office each year publishes data on the average wage for the whole economy of the Slovak Republic as well as summaries or in parts divided by various criteria (e.g. according to sector, education, regions, etc.). The concept of an average wage means the arithmetic average of all wages in Slovakia. It typically applies that 70% of people earn less than the average wage in the national economy (the portal: minimálnamzda.sk, 2019). Wage development is caused by the oscillation of various parameters of economic development. Whether this is a change in the rate of inflation, GDP or unemployment, these facts are always reflected in the level of wages, which increased during each year of the monitored period.

Wage development in Slovakia in the monitored period between 2008-2018 is shown in the following table.

Table 2 Development of average monthly wage in the Slovak Republic between 2008-2018

Year	Average wage (€)	Year-on-year change (€)	Year-on-year change (%)
2008	723	54	7.47
2009	745	22	2.95
2010	769	24	3.12
2011	786	17	2.16
2012	805	19	2.36
2013	824	19	2.31
2014	858	34	3.96
2015	883	25	2.83
2016	912	29	3.18
2017	954	42	4.4
2018	1013	59	5.82

Source: own processing based on the Statistical Office of the Slovak Republic

Table 2 shows that the overall trend of average monthly wage development during the past 10 years has shown a growing trend. A growth in wages was recorded each year, namely ranging from 2.16% to 7.47% (17 €- 54 €). In 2008 we see the largest percentage year-on-year growth in the average monthly wage for the entire period, specifically 7.47% (54 €). From 2009 a notable decline appears in the year-on-year change in wages, by a percentage value of 2.95% (22 €); this was caused mainly by the global financial crisis, which had an unfavourable impact on the overall performance of the economy. In 2011 the year-on-year change in wages showed its lowest value, only 2.16% (17 €). This period also witnessed a slowing of economic growth even though employment was rising; the slower growth in the economy was caused by a slowing growth in work productivity. A positive change took place in 2014 and the following years, when the average monthly wage showed a climbing tendency. In 2018 the average monthly wage crossed the 1,000 € mark for the first time.

In 2018, we see an effort to make wages more attractive with a 13th and 14th monthly payment, which permitted the employer to choose this form of motivation for employees as a benefit without increasing the basic wage. According to economists (Štefanides, 2019) the estimated average monthly wage for 2019 is 1,063 € which will represent 5.82% growth versus 2018. We can assume that lower growth may also be caused by increasing surcharges for work through the weekend, holidays and at night, which from May 2019 came into the 2nd phase of growth.

Mandatory contributions for recreation are also a newly introduced benefit for employees (Grófová, 2019). The average wage in Slovakia for the past 3 years achieved stronger growth, but Slovakia still remains among the lower rungs on the ladder of all EU countries. Only 6 states in the European Union have a lower average wage. Romanians and Bulgarians, now traditionally, earn the least (portal minimálnamzda.sk, 2019).

A minimum wage is the lowest work income by which an employee is ensured a living standard at a minimally acknowledged social level. The government of the Slovak Republic each year sets the amount of the minimum wage with a resolution in euro per worked hour or per month. For 2018 a legal minimum wage was stipulated by law in 22 out of 28 EU Member States, with the highest legally stipulated minimum wage in Luxembourg and the lowest in Bulgaria. Countries such as Finland, Sweden, Denmark, Italy, Austria and Cyprus do not have a minimum wage guaranteed by law (Eurostat, 2019). Opinions vary on the importance and meaning of a minimum wage in economy. On one hand, a minimum wage guarantees a working person the certainty, that their income will not fall below the set level; however, on the other hand, it makes the labour market less flexible. At present, the minimum wage is set nationwide, that is, it does not take into consideration the differences between the sexes, professions, sectors in which employees work or even geographical aspects. When adjusting the amount of the monthly minimum wage, the overall economic and social situation in the country is taken into account over the two calendar years preceding the calendar year for which the minimum wage is to be set, especially the development of employment, consumer prices, the life minimum (Act No. 663/2007 Coll. on the Minimum Wage) and average monthly wages in the Slovak economy (Rievajová, Pogány, 2013).

When determining the amount of the monthly minimum wage the assumption is that the relevant social partners (representatives of employers and unions) will agree on its amount. If the social partners do not agree on the amount of the minimum wage, then the Ministry of Labour, Social Affairs and Family proposes its amount.

The government decides on the definitive amount for the following calendar year no later than on 20 October. The resolution of the government on a change in the minimum wage is published in the Code of Laws of the Slovak Republic no later than by 1 November of the calendar year of the year preceding that for which the minimum wage is set. At the same time, legislation sets the equation which is used to calculate minimum wage growth for the following calendar year – this is set at least in the amount of the product of the minimum wage valid in the current calendar year and an index of year-on-year growth of the average monthly nominal wage of an employee in the Slovak Republic for the preceding calendar year. This data is published by the Statistical Office of the Slovak Republic. We identify with the opinion of several economists (Staněk, Chovančuliak, Kubová) that the minimum wage is a purely political category. Its increasing has nothing in common with economic reality. It would be more suitable to return to the idea from the 1990s about an automatic mechanism for setting the minimum wage on the basis of development of relevant statistical indicators, e.g. the average wage and inflation.

Data on the amount of the minimum wage for the monitored period between 2008 and 2019, are presented in Table 3.

Table 3 Development of the minimum wage in the Slovak Republic between 2008 – 2019

YEAR	MW (€)	YC (€)	YC (%)	MW/AW (%)	CPI (%)
2008	268.87	0	0	37.19	4.6
2009	295.5	26.63	9.01	39.69	1.62
2010	307.7	12.2	3.96	40.01	0.96
2011	317	9.3	2.93	40.33	3.92
2012	327.2	10.2	3.12	40.65	3.61
2013	337.7	10.5	3.11	40.98	1.4
2014	352	14.3	4.06	41.03	-0.08
2015	380	28	7.37	43.04	-0.33
2016	405	25	6.17	44.41	-0.52
2017	435	30	6.9	45.6	1.31
2018	480	45	9.38	47.38	2.51
2019	520	40	7.7	48.92	2.24

Source: own processing based on the Statistical Office of the Slovak Republic where:

MW — minimum wage

YC — year-on-year change

MW/AW — share of the minimum wage in the average wage

CPI — consumer price index.

The minimum wage set from October 2007 was valid until the end of 2008. As we can see in Table 3, the minimum wage was subsequently raised only from 1 January 2009. For this reason its level was the same in 2007 and 2008, that is, the year-on-year rise was at 0%. In 2009, after the introduction of the euro currency, the minimum wage grew by 9.01% (26.63 €). After the outbreak of the global financial crisis, it was raised in 2010 by only 3.96% (12.20 €). After parliamentary elections in 2010 right-wing parties came to power, which predicated changes in the business environment and an effort to change the labour code. We can monitor the greatest growth in 2018, when versus 2017 it increased by 9.38% (45 €), which represents 44% (211.13 €) growth compared with 2008. For 2019 the minimum wage is set at 520 € which represents 7.7% (40 €) growth versus the preceding year. Over the past 10 years the minimum wage has grown by 251.13 €. Opinions differ on the increasing of the minimum wage. While trade unionists promote the growth of the minimum wage, employers asked that it not be raised

or only by a lower amount. If we compare the growth of the minimum wage with the development of inflation, we find that minimum wage growth has not copied inflation developments over the whole period covered. Over the monitored 10-year period only in the post-crisis years of 2011-2012 was year-on-year growth in the minimum wage lower than the year-on-year rise in inflation; the opposite trend in favour of minimum wage growth was recorded from 2014 up to the present.

The greatest difference was in 2018, when year-on-year growth in the minimum wage was 9.38% and inflation was on a level of 2.51%. When monitoring the development of the minimum wage determining its share in the average wage in the economy is an important aspect. On the basis of recommendations of the European Committee of Social Rights, the minimum wage should achieve at least 60% of the average wage in a national economy; without the existence of such a guarantee there is the danger of generating a higher risk of working poverty and its dependence on the social system. When monitoring the share of minimum wage in the average wage from Table 3, we can say that the minimum wage achieves approximately 40% of the average wage for almost the whole monitored period. The lowest value for the share of the minimum wage in the average wage in Slovakia occurred in 2008, at 37.19%. In 2004 it had the highest share in the average wage – at 41.10% – when the average wage was higher than the minimum wage by 309.24 €. For recent years the value of the share has oscillated around 40% and only in 2018 did it reach 47%. In 2019 the share of the minimum wage in the average wage is expected to be 49%. The share is approaching the recommended value, and in recent years the dynamic pace of growth in the minimum wage in Slovakia has been faster than the year-on-year growth in average wages. For a comparison, we present in the following Table 4 the percentage share of the minimum wage in the average wage in 2018 in the selected countries of European Union.

Table 4 Comparison of the share MW/AW in selected EU member states in 2018

	Minimum wage (€)	Average wage (€)	Share of MW/AW (%)
Germany	1,498	3,775	39.68
France	1,498	3,200	46.81
Luxembourg	1,999	4,682	42.7
Belgium	1,563	3,949	39.58
Netherlands	1,614	4,164	38.76
Slovakia	480	1,013	47.38
Czech Republic	479	1,141	41.98

Source: own processing based on Eurostat

From Table 4 it is evident that France had the highest share of minimum wage in the average gross monthly wage. In Germany, Belgium and the Netherlands the percentage share of the minimum wage in the average wage moved around 39%. Likewise, the Czech Republic and Luxembourg had a similar percentage share, and the amount of minimum and average wage in Luxembourg is approximately 4 times higher than in the Czech Republic. According to economist R. Sulík (TASR, 2017) no country in the EU has a minimum wage on the level of 60%, and he is convinced that if such an obligation exists, then it is a bad one and it's necessary to cancel it. At the same time he warned that many other parameters, for example, bankruptcy proceedings or bonuses for local councillors, are linked to the minimum wage. He also pointed out that a minimum wage cannot be raised by 15%, because this causes great financial problems for employers. The analyst Chovančuliak (TASR, 2017) says that increasing the minimum wage by more than

8% is very dangerous. This may cause a major problem, mainly in the poorer parts of Slovakia, which have a continuous problem with unemployment. According to B. Ondruš, state secretary from the Ministry of Labour, Social Affairs and Family of the Slovak Republic, low wages chase people from specific sectors, such as the tourism industry or agriculture, and for a minimum wage today people don't want to go to work. He noted that it's not possible to eliminate jobs by raising the minimum wage, because employers are unable, even with low-paying jobs, to find workers. B. Kollár, a Member of the National Council of the Slovak Republic (TASR, 2017), says that regulation and decisions of the state, for example, high prices for energy, prevents employers from increasing wages. According to several economists, increasing minimum wages does not cause a problem for wealthy regions, such as in the west of the country, because companies almost never pay minimum wages here. However, raising the minimum wage by more than 8% can cause problems for companies in the east of the country, areas with high unemployment. Small businesses in particular will have their labour costs increased (Kollárová, 2018).

3. WAGE IN THE INDIVIDUAL SECTORS OF THE ECONOMY

One of the criteria for monitoring the development of average wages is monitoring by individual economic activities (sectors). Until 2008, individual sectors were listed in the Statistical Branch Classification of Economic Activities (OKEČ). Gradually, the Statistical Office of the Slovak Republic has moved to a revised classification of sectors, SK NACE Rev. 2, which is derived from the European version of NACE Rev. 2. The reason for the classification revision was to provide comparable of economic statistics on both European and international levels. This also means taking into account technological and structural changes in the economy. Since this classification has been used since 2008, we decided to monitor the development of the average wage by individual sections of the classification from that year (SO SR, 2007).

The following Table 5 shows how the average wages for individual sectors of the Slovak economy changed from 2008-2018. Differences in the amount of average wages by sectors were to a great measure influenced by the different demand for employees in selected economic activities. Employees in the information and communication sectors earned the highest wages in 2008 (€1689). Employees in the financial and insurance sectors, those working in the supply of electricity, gas, steam and cooled air as well as professional, scientific and technical activities, earned more than €1000 on average. For the entire monitored period, the lowest average wages, from €540 to €750, were in the accommodation and dining services sectors. After 2008, the financial crisis manifested itself in certain sectors as a decline of average wages. After recovery of the economy, from 2010 on, average monthly wages began to grow in every sector. In the 3rd quarter of 2018 we can see that the highest wages were maintained in the same sectors as at the beginning of the reporting period, namely information and communication, suppliers of electricity, gas, steam and cooled air supply, as well as financial and insurance activities. The lowest wage remained in accommodation and dining services and administrative and support services, as it was at the beginning of the monitored period.

According to Zuzana Rumiz, CEO of the ManpowerGroup in Slovakia, finding suitable candidates to fill jobs, which leads to wage growth and strengthens the need for investment into retraining and employee development, remains a great challenge. According to a survey by the Manpower Group in 2019, employers in the

processing industry are planning to take on the most employees, with an Index of + 20%. Favourable labour market conditions are also available for the finance, insurance, real estate and other business services sectors, with an Index of + 18%; to the transport, storage and communications sectors with + 14%; to the agriculture, hunting, forestry and fishing branches with + 11%; and to construction sector at + 11%. Employers in production and distribution of electricity, gas and water report subdued recruitment activities, with an index of 0%. Compared to the previous quarter, in 2019, there is significant index growth in the agriculture, hunting, forestry and fisheries sectors by 21 percentage points (p.p). The construction and accommodation and dining sectors report growth by 11 p.p. A decline in the index appeared mainly in the production and distribution of electricity, gas and water — by 4 p.p. In a year-on-year comparison, the index dropped significantly in agriculture, hunting, forestry and fisheries sectors (by 16 p.p.) and in the mining sector (by 8 p.p.). Recruiting plans have been strengthened mainly in the construction sector (by 6 p.p.). On the basis of business size, the largest companies — those with more than 250 employees — have the most positive outlook, with an index of + 26%. Medium-sized businesses expect a stable recruitment environment with an Index of + 13%, and also small businesses, which report an index of + 12%. Micro-enterprises — those with fewer than 10 employees — are the most cautious in hiring new workers, at + 6%.

According to a survey by the Grafton Slovakia agency (2018), the reasons for the increased growth in wages will be a record-breaking low unemployment rate and a price battle for workers. The employment of foreigners will be standard. The role of wages as the most powerful tool for retaining talent will strengthen. While companies have thus far tried to attract and maintain employees more with benefits and improved working conditions, today no other recourse remains to them than to work with the level of pay.

Table 5 Wage development in individual sectors of the economy, 2008–2018 (€)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 3.Q.
SK total	788	803	828	853	881	891	957	993	1034	1095	1144
Agriculture, forestry and fishing	617	587	608	703	727	740	776	815	848	903	990
Total industry	798	780	854	889	911	933	992	1036	1067	1146	1213
Mining and extraction	836	829	855	937	922	932	986	1030	1107	1117	1156
Industrial production	765	747	826	867	890	916	974	1021	1054	1135	1195
Supply of electricity, gas, steam and cold air	1240	1306	1393	1366	1385	1396	1475	1534	1613	1672	1826
Water supply, wastewater treatment and drainage, waste and waste disposal services	714	724	779	801	813	824	862	872	889	972	990
Construction	791	807	814	791	835	815	851	881	921	949	1143
Wholesale and retail trade, repair of motor vehicles and motorcycles	802	799	778	764	808	830	915	938	971	1032	1060
Transport and storage	744	761	770	793	803	319	364	896	917	996	1036
Accommodation	540	504	509	505	545	557	530	593	617	652	751

and catering services												
Information and communication	1689	1810	1891	1624	1611	1646	1791	1856	2015	1983	2090	
Financial and insurance activities	1459	1472	1571	1514	1527	1427	1627	1670	1736	1760	1758	
Real estate activities	772	777	758	796	868	898	973	982	1167	1104	1095	
Professional, scientific and technical activities	1219	1278	1230	1062	1102	1153	1271	1286	1225	1357	1638	
Administrative and support services	513	551	539	640	644	651	669	696	751	814	783	
Public administration and defense, compulsory social security	926	880	867	987	974	916	986	1012	1077	1157	1238	
Education	599	637	650	695	717	746	807	837	875	950	889	
Health and social assistance	627	673	732	766	830	866	924	973	1014	1060	1044	
Arts, entertainment and relocation	600	634	611	662	705	658	732	758	787	851	897	
Other activities	597	619	601	652	691	665	721	703	724	768	824	

Source: own processing based on the Statistical Office of the Slovak Republic

4. WAGE IN THE INDIVIDUAL REGIONS OF SLOVAKIA

One of the most important criteria in monitoring wage developments in the national economy is monitoring the wages by region. The current territorial-administrative arrangement by region was established in 1996. Since then, 8 administrative regions have comprised the Slovak Republic: Bratislava, Trnava, Trenčín, Nitra, Žilina, Banská Bystrica, Prešov and Košice, which are shown in Figure 1.

Figure 1 Map of Slovakia by regions



Source: <https://slovakregion.sk/slovensko>

The best way to observe and compare wage differences in the economy of the Slovak Republic is to compare the average wage by region. When comparing the average wage by individual region, we see how wage differences between regions are manifested and how they are deepening (Rajčáková & Švecová, 2018). Table 6 shows the wage levels in the individual regions and their development in the Slovak Republic in the monitored period, 2008 – 2018.

Table 6 Wage development in individual regions of Slovakia between 2008–2018 (€)

Region / Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 3.Q.
SR	792	803	825	853	881	891	957	993	1034	1095	1144
Bratislava Region	1140	1178	1160	1124	1159	1182	1286	1319	1356	1426	1496
Trnava Region	755	752	787	815	831	841	892	930	965	1050	1074
Trenčín Region	700	688	732	774	797	809	863	902	945	1020	1062
Nitra Region	684	678	707	753	783	782	829	855	908	959	1001
Žilina Region	718	709	759	801	830	820	875	918	950	1018	1054
Banská Bystrica Region	688	675	702	756	783	779	837	861	897	940	977
Prešov Region	632	636	659	697	715	721	767	799	830	875	896
Košice Region	749	761	792	848	851	855	908	945	972	1025	1063

Source: own processing based on the Statistical Office of the Slovak Republic

The highest average wages are maintained throughout the entire monitored period in the Bratislava region. Employees in Trnava and Košice regions earn the second highest average wage, and the average wages in these two regions are close to the national average. The lowest average wages from 2008 – 2012 were found in the Prešov region. It is no surprise that the Bratislava region is also the most productive region in the country. This is because it is the region with the highest concentration of jobs available in Slovakia. A great many companies are based here, and therefore, as the capital city, Bratislava is an attraction for people from other regions, who see here more opportunities to find work. The average gross monthly wage in Bratislava not only exceeds the national average, but also the other regions. The Trnava Region is among those, where average wages have remained slightly below the national level. Based on a comparison of the data with the Slovak Republic, wages in the Trenčín region are lower for the whole monitored period. Each year, the difference between wages in this region and national data was a little bit higher. Based on wage development, the Trenčín region can be classified as a region with a medium-high average gross wage. The development of wages since the beginning of the monitored period has been smooth, without larger fluctuations. Throughout the entire monitored period the development of gross wages in the Nitra region have remained low, next to last among the regions. Wages in the Nitra and Banská Bystrica regions are on the same level, with a minimal difference in wages between them. Upon comparison with the national average, wages in the Banská Bystrica and Nitra regions have remained comparable. Wages have remained below the national average throughout the whole monitored period. Development during the monitored period is smooth, with no major fluctuations. The Žilina region can be ranked among the regions with a medium to high average monthly gross wage. It has held a position in the middle of wage development along with the Trenčín region. Wages in the Prešov region have been the lowest from the start and throughout the monitored period. This region is in the last place when compared with the other regions. Its year-on-year increases have been on the level of increases in other regions, and the difference with the national average is not markedly different from the other regions. We rank wages in the Košice region as the second largest in comparison with other regions in Slovakia. This is one of the few regions with wages at levels similar to those of the national average.

Among the determining factors of the wage level in the Bratislava region is the greater number of investment projects flowing into the capital city, the higher concentration of university-educated people as well as higher labour productivity. Bratislava has a major impact on national GDP, because many people from surrounding districts

and even regions, even from the city of Košice in the east, come here for the greater opportunities on the labour market and the higher value of work. At the same time, however, it can be said that the cost of living is significantly higher around the capital than in other regions. Thanks to its geographical location, several large companies, such as Volkswagen and larger investors, have concentrated in Bratislava, because they have branches in nearby Vienna, Budapest and Prague. In the Trnava and Trenčín regions the operating of businesses and the expansion of production by the Peugeot automobile factory in Trnava or several logistics investments have caused growth in average wages. A similar development is to be expected in the Nitra region after the launch of production at the new Jaguar plant. The problems facing underdeveloped areas include a lack of infrastructure, poor connections to major transport routes and the stronger focus on agriculture. Differences are manifested both in the equipping of basic as well as higher infrastructure (transport, telecommunications) and in research and development and workforce qualifications (Rievajová, Klimko, 2018).

5. IMPACT OF SELECTED FACTORS ON WAGE DEVELOPMENT

The level of wages is different in different time periods, for different jobs, in various countries and regions within a country. These differences are caused by economic and social factors that are differentiated in individual countries and regions of the given countries. We can rank the development of GDP, inflation and the labour market situation among the primary economic factors. We assign education and age of employees, standard of living in the given area, differences in the quality of work or the exceptional skills of individuals among the social factors. Likewise, wage levels are also influenced by various global and regional factors, such as globalization, technological changes, financial markets and labour market institutions, economic cycles, the political situation, natural conditions (location) and others. Each of these factors influences in a different way, at different intensities and time horizons, and may occur individually, simultaneously or linked to one another (Pauhofová, 2016).

According to Rievajová (2009), among the causes that influence differences in wages are those caused by the fact that different professions, differences caused by the unique skills of individuals, differences between the wage value of a highly qualified labour force and a low qualified force and differences caused as a result of labour market segmentation impose such differences on people. Differences in wages constantly exist; however, if these inequalities arise due to sex, religion, age or race, then they are a sign of discrimination.

5.1 Globalization

Globalization as a worldwide phenomenon helps trade and the movement of capital and goods between states. This causes inflows of foreign capital and goods to our country, too, which has a positive impact on the creation of jobs and expanding the assortment of products for more affordable prices (Strielkowski, Rausser, Bilan, & Tsevukh, 2018). In Slovakia in the recent past this has meant the arrival of automobile manufacturers (Kia, VW, Peugeot, Citroën, Jaguar, Land Rover), machine production (Whirlpool), clothing and shoe production (ECCO), the wood-processing industry (IKEA, Decodom) and the like. On the other hand, foreign investors force out domestic producers and foreign suppliers push out domestic products from the offer through more affordable prices, and this

again causes a reduction of domestic producers (Danaj, Lazányi, & Bilan, 2018; Wang, 2019). In consequence of globalization and technological changes, individual countries are forced to adapt their economies in that they will modernize their industries and take advantage of trends in technological progress in order to ensure competitiveness of businesses. We can observe around the world that some countries, such as, e.g. Denmark, France, the USA, the United Kingdom or China, have already adapted their economies to intelligent production and have thus brought visible results. Germany is the largest innovator in introducing measures for digitization. Since the European Union is not lagging behind in this trend, Slovak industry is forced to respond to changes, because this would negatively impact the entire economy (MESR, 2018; Přívara, 2019; Přívara et al., 2019). Slovakia as an open economy is very dependent on exports and the ability to remain globally competitive. The low wage level in the country is crucial mainly in relation to the existing structure of exports. In general, it applies that the lowest wage levels are in the sectors of raw materials and commodities, higher in the production and assembly sectors and the highest with technological sectors. Assembly and manufacturing predominate in the structure of Slovak exports. Therefore, low wages in this sector are a crucial factor. The pressure of global competition is very significant for Slovakia and strongly influences the development of income polarisation (Ondrovič, 2015).

5.2 Technological changes

Technological changes are a factor that has a negative impact on wage levels. They often cause workers to be replaced by machines or require them to develop higher qualifications, while low-skilled workers find poor application. Companies prefer using technology due to the resulting speed, precision, performance, economy and reliability. In Slovakia carmakers in particular use the most modern technologies, and on some production lines no human labour is required at all, and in order to service them only workers with higher qualifications are needed. On one hand technology in some activities replaces the labour force, but on the other hand it creates new job opportunities. However, it is essential to adapt educational policies and employment to new trends and challenges, because machines and computers are able to replace even routine manual work. They do not have analytical and social skills and are unable to think creatively; therefore, the labour market requires specific types of skills from the labour force (Přívara & Přívarová, 2019; Přívara & Rievajová, 2019). Lifelong education focused on obtaining professional skills is a preventive measure against the impact of automation, and it is true that the higher the level of education, the lower likely the threat from automation. From the viewpoint of employment and wage amounts, automation does not influence the labour force on the labour market in the same way. The labour market creates opportunities for employees with high qualifications and skills, which leads to a substitution effect, i.e. it replaces human labour with medium-skilled technology. According to prognosticators, unemployment in highly qualified jobs will show a growing trend in Slovakia over the next 10 years. This relates especially to specialists, managers and professionals in various fields. The majority of economically active citizens of Slovakia have low qualifications, which as a result leads to a loss of employment or very low pay for performing work, which is manifested in a lower share of wages in GDP (Martinák, 2017).

According to OECD sources (Arntz, 2016), Slovakia is a country which is most threatened by the impact of the substitution effect on the labour market. It is for the moment protected against massive automation by the cheap labour force. However, in the future the range of automation will increase, because the structure of the

Slovak economy depends on sectors of transport vehicles, machinery, computers and electronics. It is in these specific industries that 70% of the robots installed around the world operate. A large number of jobs in Slovakia are replaceable by machines, but in small and medium-sized businesses wage costs are still cheaper than automation costs. In large foreign companies operating in Slovakia, there is, as a consequence of falling costs for automation, a risk of so-called reshoring – the return flow of companies to the native country – because so-called offshoring – low costs for labour – is losing meaning. It is evident that this 21st century phenomenon will impact the Slovak market and in the future its influence will grow significantly larger.

5.3 The state and trade unions

Wage inflexibility is typical for the labour market, because in circumstances of imperfect competition, companies themselves decide on wages. Nevertheless, they are limited by trade unions – by the conditions set down in a collective bargaining agreement, as well as by the state through legislation – for example, in the setting of a minimum wage. Thus, aside from companies and households, trade unions and the state also affect the labour market. As a result of their activities, wage rates also remain above or below the level of the limit for work for a longer time (Holková, 2007). The labour market is regulated through the economic, legal and political instruments of the state. The state, too, is an important employer on the labour market in the areas of the military, health care, education and so on. It also affects the labour market through the method of taxation of income or via social payments. State influence can take the form of legal provisions, laws and regulations, with the most important regulatory instrument being the statutory minimum wage (Ivanová, 2005). It is important to lay down certain rules between employers and employees in relation to work. On one side stand employers with their demands, and on the other employees, who organize themselves into trade unions, which helps them to better promote their own interests. Trade unions are an important partner of the state (government) and employers in tripartite negotiations, which are primarily concerned with questions of wages and working conditions. The results of the negotiations result in a general agreement and are reflected at a lower level (the company level) in a collective agreement. Trade union activities can lead to increased labour productivity, e.g. by ensuring better overall working conditions for employees, increasing labour mobility, but also to a drop in efficiency by limiting the supply of labour (De La Peña Esteban & Peña-Miguel, 2018), strikes and other forms (Holková, 2007). Trade unions provide a certain counterbalance to the monopoly power of companies, but we also see them as a labour supply monopoly. This has become one of the main causes of imperfect competition in the labour market and consequent wage inflexibility (Horehájová, Masarová, 2007).

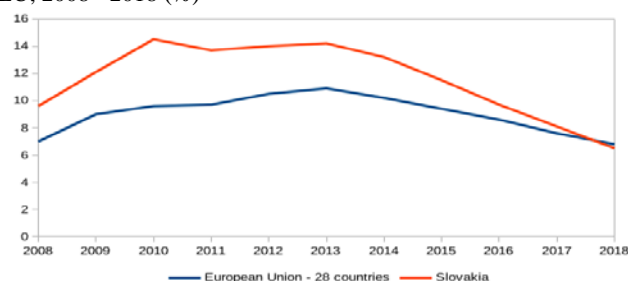
5.4 Unemployment

One of the most serious social issues in Slovakia and an important factor that influences the level and development of wages is unemployment (or employment). The measure of unemployment affects the performance of the national economy, the standard of living and last but not least the choice of a job and the wage associated with it. When unemployment is too high, the bargaining power of workers is weak, and so they have almost no possibility of pressuring employers and negotiating a higher wage, because many unemployed people who would be willing to work for their current wage are waiting for that job. In the case of an unfavourably low measure of unemployment, workers would have greater bargaining power and could claim higher (satisfactory) pay for their work with

little risk of losing their job. Thus, this would cause employers to not be able to permit a slowing of production by a lengthy search for new labour force with sufficient qualification with weaker demand for jobs (Hetteš, Ferenčíková, 2014; Deskar-Škrbić, Drezgić, & Šimović, 2018).

The relationship between unemployment, nominal wages and prices is depicted by a Phillips' curve, which illustrates the relationship between the development of the measure of unemployment and changes in nominal wages. The original curve derives from the assumption that changes in nominal wages depend on the measure of unemployment. From its shape it's possible to see that a relatively small lowering of unemployment leads to a sharp increase in nominal wage rates. The Phillips curve is valid with the suppressing of inflation and unemployment; it cannot be applied with chronic inflation. Its curvature is given by the variability of nominal wages, which increase for too long with growing demand for the labour force, but slightly go down with growing unemployment (Ištvaniková, Lukáčik, Szomolányi, 2002; Hudcovský, Lábaj, & Morvay, 2017).

Graph 1 Development of the unemployment rate in Slovakia and the EU, 2008 - 2018 (%)



Source: own processing based on Eurostat

Graph 1 depicts the total measure of unemployment in the Slovak Republic and the European Union from 2008 to 2018. Unemployment in Slovakia in comparison to the EU average is at all times higher up to 2017, when the unemployment figures were the same, at about 8%. The impact of the financial crisis in the EU began to appear in the Euro Area especially in 2008. The global economy began to slow down, and the EU Commission carefully advised that lower economic growth and higher inflation can be expected in 2008 (Euractiv, 2016). The lowering of economic growth had a large impact on the labour market. The declining trend in unemployment seen in the preceding years was stopped as a consequence of the recession. In 2009 unemployment grew in Slovakia to 12.1%. The crisis peaked in Slovakia in 2010, when unemployment climbed to 14.5% (Morvay, 2011; Andriescu, 2018; Přívara, 2019). However, 2010 did not mean the end of the crisis and its impacts on unemployment; we can still see a level of increased unemployment up to 2013. From 2010 to 2013, despite small deviations, the measure of unemployment moved on approximately the same level. We begin to see economic recovery and the end of the impact of the crisis in 2014, when employment began to climb. This positive trend in the economy and in employment has endured from 2014 up to the present. In 2018 the unemployment rate fell under the EU average (7.3%), specifically to 6.6%. The highest unemployment was recorded in Slovakia in 2010, when it was at 14.5% and in the EU in 2013, at 11.4%.

5.5 Inflation

Inflation is a process of breakdowns in the micro- and macro-balance in the monetary and real economy spheres. It is expressed by an increase in prices for products and services, or by a permanent

drop in the purchasing power per monetary unit. Price indices are used to measure inflation. From a macroeconomic point of view, inflation represents growth in the overall price level, thus, not a rise in the prices of individual products. It is a reflection of an imbalance in the value and material aspects of gross national earnings. Inflationary pressures can be reduced by increasing unemployment or by regulating wages and prices. Inflation is most often defined as a price phenomenon, such as an increase in price levels. We label with the rate of inflation the change in the price level over a defined period, expressed as a percentage (Ištvaniková, Lukáčik, Szomolányi, 2002). According to experts, the primary factors that will affect inflation growth in Slovakia in the near future are a significant growth in wages in the economy as well as rising prices for services. The current prognosis of the Slovak Ministry of Finance (MFSR) assumes a stable price increase of 2.6% in 2019. In January 2019, consumer prices have increased by 2.2% year-on-year. The largest influence on price growth at present is the strong wage growth in the economy. The overheating of the labour market forces wages and the prices for services to go up, which will continue to be the main driver of inflation in 2019. According to the prognosis, inflation is projected to move just below 2% in 2020 (Žúdel, Habrman, Pécsyová, 2019).

5.6 Influence of age on wages

One of the main factors that significantly influences the amount of wages is age. With rising age, employees acquire a great deal of new experience, knowledge, expertise and skills that they can use to their benefit and for the industry in which they work. These traits create the foundations for increasing labour productivity, and thus they increase wages. At the same time, it is necessary to keep in mind that with the increasing age of employees, their family responsibilities, health problems, various physical and psychological problems are also growing (Dashöfer, 2012). The following Table 7 shows us the average wages by age in Slovakia in € for the monitored period from 2007 to 2017.

Table 7 Development of average monthly wage by age, in years, 2007 – 2017 (€)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0-19	407	435	424	445	488	520	494	535	582	591	649
20-24	537	572	576	589	602	636	641	668	687	732	791
25-29	704	757	781	795	806	833	834	869	886	931	989
30-34	775	843	876	911	939	967	985	1036	1057	1096	1148
35-39	764	815	876	910	934	971	1003	1072	1108	1158	1225
40-44	742	801	835	871	897	938	964	1037	1077	1134	1201
45-49	719	789	810	831	854	882	911	970	1008	1077	1134
50-54	704	759	779	804	829	856	893	932	974	1022	1077
55-59	714	752	768	793	817	842	861	910	944	977	1038
60	702	740	773	809	846	895	917	961	1002	1030	1061

Source: own processing based on the Statistical Office of the Slovak Republic

As we can see in Table 7, the lowest wage in 2007 was earned by young people under the age of 19 and aged 20-24. In the other age categories, the average monthly wage was between 700 € and 800 €. Over the monitored period, we can see that the development of average wages in the age categories of 30 and up was very similar. In 2017, nearly all the age categories were earning over the 1,000 € mark, and we can say that the highest wages were earned by employees aged 35-39 and 40-44.

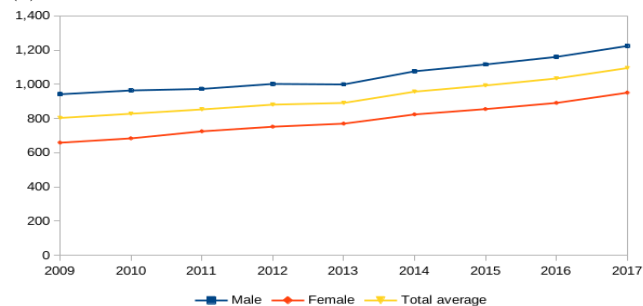
So, in general, the lowest wages go to the age category of employees up to 24 years old. In this period of life a person has very little work experience and tends to have lower qualifications, too. Furthermore, this may be caused by the fact that this group includes mainly secondary school graduates as well as students earning while studying for a degree. They, too, often have insufficient experience and work experience. This may be one of the reasons for the lower wages for young people. In the examined period, the highest paid employees were in the 35-39 years of age category. The assumption for workers at this age is that they are already well into their working lives and have developed work habits and experience. Many people at this time of life reach the peak of their careers, the time when their salary is at its highest. An employer is more willing to invest into employees demonstrating greater enthusiasm and productivity when working, and thus it wants to keep such employees. Investments will be returned to the employer in the form of a loyal and productive labour force. However, with time the labour force gradually begins being replaced by a younger labour force. The development of scientific-technological innovations as well as new technologies disadvantages older people to a certain extent and helps younger future employees, who are more flexible in this regard.

5.7 Influence of sex on wages

The UN Commission for Economic, Social and Cultural Rights points out the inequalities between men and women in Slovakia, especially their representation on various levels in the public sector, in authorities with crucial powers and in political parties, where they perform this same type of work. Slovakia could avoid these matters by amending already valid legislation, including the Labour Code and Anti-discrimination Act, by performing a larger number of inspections and by applying sanctions. Wage conditions must be the same for men and women, with no sex-based discrimination. Women and men have the right to the same wage for the same work performed in the same working conditions and with achievement of the same work results (Barancová, Schronk, 2013). One of the main factors which have a significant influence on slower wage growth for women versus wages for men is education. Gender differences in wages are influenced by the level of achieved education but also its focus. High-paying jobs and economic activities are especially filled by men. In contrast, professions characteristic for women are for the most part low-income jobs. Differences in wages are also influenced by prejudices of employers in regard to the suitability of men in managerial functions. Another reason why women have lower wages than men is the greater care they tend to provide for children and relatives. One reason may be the fact that a woman in a certain period of life will interrupt her career path with maternity leave, which leads to stagnation in her income (Filadelfiová, 2007). The difference of wages between the sexes is obvious, because the wages of women during the whole monitored period did not come close to those of men, which were notably higher. Men of each age earned more than the average wage in the Slovak economy, and by contrast, the average monthly wage for women in the monitored period exceeded the overall average wage in Slovakia only in 2017. The average hourly wage for women in Slovakia in 2018 was 19% lower than that of men. Slovakia thus ranked in sixth place in the EU in this regard, and the European average of the difference in payment for women and men is 16.2%. The overall difference in remuneration represents the difference between the average annual income of women and men. Three types of disadvantages that women face are included in it, namely a lower hourly wage, fewer hours of paid worked and a lower measure of employment (for example, due to interrupting a career to care for children or relatives). The total difference in remuneration in Slovakia

represents 37.3%, and the overall difference in remuneration in the EU is on average 39.6%. The importance of the subject is also evident in the approach of the European Commission itself. It created an action plan for years 2018 and 2019 in which it requested improvement in respecting the principles of equal pay by amending the guideline on gender equality (European Commission, 2018).

Graph 2 Development of average monthly wage by sex, 2007-2017 (€)



Source: own processing based on the Statistical Office of the Slovak Republic

5.8 Impact of education on wages

The average gross wage of employees in Slovakia differed significantly depending on the achieved level of education. Education in most cases serves as a criterion for the selection of employees. For some employers, education is a prerequisite for certain qualities of an employee, which the employer is accustomed to valuing appropriately. Over the past decade the total education level of the population has sharply increased. The representation of persons with a completed secondary school education is climbing. This development corresponds with the gradual pushing out of the labour force without qualifications, or with low qualification from the labour market. This trend is also significantly reflected on the level of employee remuneration (Filadelfiová, 2007). Table 8 shows data on the amount of average wages of employees in Slovakia by level of education achieved.

Table 8 Development of average monthly wage by education, 2007–2017 (€)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Basic	462	493	502	515	536	559	587	607	637	670	717
Upper secondary professional	546	590	612	619	625	654	697	726	752	797	855
Complete upper secondary general	668	735	792	785	805	841	856	889	900	951	1010
Complete upper secondary professional	692	759	764	788	814	841	865	909	939	986	1036
1st degree university	827	900	929	937	930	951	969	1021	1058	1120	1164
2nd degree university	1171	1205	1256	1259	1278	1299	1331	1397	1448	1504	1563
3rd degree university	1234	1277	1306	1304	1307	1331	1355	1390	1444	1540	1609

Source: own processing based on the Statistical Office of the Slovak Republic

From Table 8 we can see that workers with only a primary school education completed had a lower average wage in the years 2007-2017. Average wages for this category moved during this period from €462 to €717. People who had a 3rd level university education had the highest wages and did so from 2007, when their average wage was €1234 to 2017, when they earned €1609 on average. The

difference in earnings between workers with a primary education and those with a 3rd level university education is very striking. Completing the highest degree of education brings with it the highest wages. In 2008 the wage of workers with a primary education were 31.8% lower than the average in the economy, and the average wage of workers with a 3rd level university education was 76.6% higher than the average wage in the economy. Upon comparison of the monitored period, even with 2017, workers with a primary education earned 24.8% less than the average wage and workers with a 3rd level university education earned 61% more than the average in the Slovak economy. The difference between the average pay of an employee with a university education and one with a secondary school education in Slovakia was 37%. Despite this being a palpable difference, among V4 countries, this gap for university graduates is actually lower. While values in Poland (45%) and Czech Republic (41%) are comparable with Slovakia, in Hungary this is an especially large difference. Earnings of local employees with a university education are namely up to 69% higher there (Richterová, 2018).

6. CONCLUSIONS

Slovakia has undergone great changes in the past 26 years. In 1993 it has become independent from Czechoslovakia, and in 2004 it has become a member of the European Union. Despite the fact that Slovakia is among smaller countries with a low level of average wage, over the past ten years wage development has shown a climbing tendency.

The most important element in the incomes of economically active citizens is their wage, which should be fair and should also reflect the true value of work performed. At the same time, however, it should motivate employees to a higher performance. If wages are not sufficiently motivating, this can have as a cause a slowing of social and economic development of a country. Questions on wage levels and development are relevant not only for companies but also for the national economy. Companies are bound by legislation in the remuneration of their employees. From a macroeconomic point of view a wage is an important indicator of economic development and has a big influence on the stability of the whole economy. Wage levels are influenced in part by external but also by internal factors of an individual nature, such as age, sex, education of the worker, as well as the branch and professions; regional aspects are also of great importance. A wage is a regularly studied indicator of statistical monitoring and is also comparable in the context of transnational observations. Therefore, the monitoring and predicting of wage development in an economy or in key sectors is important information for each employee, manager and leadership of a company. A wage difference can on one hand be considered as beneficial and necessary, and on the other we can see it as a serious problem of the Slovak economy. Thanks to better knowledge about it, acquired by monitoring development for the period 2007 – 2018, we focused and compared in detail data on the level of the minimum wage and the average wage in individual categories. Subsequently, we indicated the factors that influence individual categories, and how these wage differences affect the Slovak economy. Certain factors emerged that a worker may or may not be able to influence in order to secure a higher wage. Mainly the level of his or her education can have an influence, and subsequently work performance as well as the place of work. On the other hand, a factor that a worker cannot influence in any way is his or her age. We also highlighted gender inequality in the contribution, the disparity between men and women in regard to wages. The status of the gender inequality situation is monitored by the Government Council for Gender Equality, in line with EU definitions. The results

that we found confirm that men are paid higher wages than women. In recent years the question of education, which should secure a better start for a person's working life and also a better job, which is directly proportional to a higher wage, has come to the forefront. Education ranks among the influential factors clearly having an impact on the wage level of every employee in the economy of the Slovak Republic.

We consider the main cause of the deepening wage gap to be the global financial crisis, the consequences of which are still evident in the economic development of many countries still today. From the outbreak of the crisis, we monitor increasing unemployment rates, and this unhealthy economic phenomenon put pressure on lower wages. At a time of demographic aging of the population, a reduction in the number of jobs and increasing unemployment, a higher degree of economic, employment and social policy coordination is necessary on both the EU and national levels. Such an approach should contribute to the support of economic growth, more job creation and overall increase in the quality of life. At the same time, it supports and encourages the efforts of states to secure financial and social sustainability of the applied systems of social protection.

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