

LABOUR PRODUCTIVITY IN NORTH MACEDONIA IN THE CONTEXT OF THE EU INTEGRATION

Asst. Prof. Kristina Stefanova, PhD

University of National and World Economy

Abstract:

The aim of the article is to outline the tendencies in labour productivity in North Macedonia in the period 2000 - 2018 in the three main sectors of the economy and for the economy as a whole. In the context of the European integration, it is crucial for the country to make progress in this area in order to converge with the EU-27, as this could be a facilitating factor for real income convergence and is an indicator of similarities in the technological principles used. The analysis shows that labour productivity in North Macedonia increased by 18.4% between 2000 and 2018, but the value is far from the EU-27 average and is also below the values of the Member States with the lowest values of the indicator. As far as sectoral labour productivity is concerned, only the industry sector shows an increase and a narrowing of the gaps with the EU-27 in the area. These processes are influenced by the quality of the labour force, the efficiency of the education system, the level of expenditure on research and development, etc.

Keywords: North Macedonia, Labour productivity, Sectoral labour productivity, Convergence, European Union.

Introduction

Labour productivity is an important indicator of the achieved level of economic development and competitiveness of the economy. The indicator encompasses productivity resulting from the use of labour and also reflects the contribution of other factors of production and the technologies used. According to neoclassical and endogenous growth theory, labour productivity plays a key role in achieving economic growth and improving living standards in the long run. In this context and in view of the process of European in-

tegration of North Macedonia, the achievement of convergence of labour productivity with the EU is important, as it is a facilitating factor for real income convergence and an indicator of a similarity of the technological principles used. North Macedonia's progress in this area is crucial for increasing the productivity of enterprises and their competitiveness in trade relations with the EU, which is the country's main trading partner.

There are various dynamics and magnitudes of labour productivity in different sectors of the economy. This is due to their different characteristics, such as the combination and quantity of factors of production used, the technological principles applied, their share in the economy, the differences in investment in human and physical capital, etc. Changes in labour productivity at a sectoral level, as well as changes in the sectoral structure of production, can affect the dynamics of labour productivity in the economy as a whole. In this respect, identifying the trends in labour productivity of the economic sectors shows what the driving forces are for the dynamics of labour productivity of the economy as a whole.

The purpose of this paper is to identify the trends in labour productivity in North Macedonia in the period 2000 - 2018 in the three main sectors and for the economy as a whole, to compare them with the average level of the European Union and to outline whether there is a process of sigma convergence between North Macedonia and the EU-27 in this area. Furthermore, the paper aims to compare the labour productivity trends between North Macedonia and the two countries with the least favourable labour productivity development among the EU Member States (Bulgaria and Romania).

For the purpose of the analysis, real labour productivity is calculated as a ratio between gross value added (GVA) at constant prices (chain linked volumes 2010, million euro) and employment (number of persons employed). Labour productivity is calculated for each economic sector and for the economy as a whole for each year of the reference period. The classification NACE Rev.2 is used to distinguish the three main sectors of the economy. According to this classification (2008 revision) 21 economic activities are distinguished (from A to U). The agriculture, forestry and fishing sector are defined by activity A, industry (including construction) by activities C to F and services by activities G to U. The data source is Eurostat as the single statistical organisation responsible for the methodological and operational measures to produce high quality data for the EU.

Empirical analysis

Labour productivity in North Macedonia has increased between 2000 and 2018. However, in 2018 the value of the indicator remains far below the EU-27 average, but also below the levels of the countries with the lowest values in the EU - Bulgaria and Romania (see Figure 1). The observed differences

between North Macedonia and the EU-27 average, Bulgaria and Romania indicate differences in the technological principles applied. Low labour productivity is a serious problem for North Macedonia, as it affects the overall productivity of enterprises. The Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo states that one of the challenges for North Macedonia is that „companies suffer from low levels of productivity. Productivity growth is also very slow. This hinders companies' competitiveness and integration in the global economy“¹.

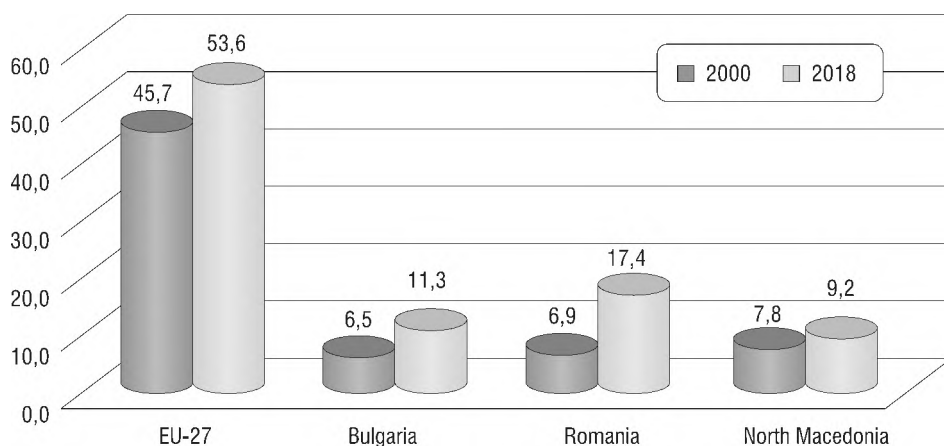


Figure 1. Labour productivity

In 2000, labour productivity in North Macedonia was higher than in Bulgaria and Romania. However, in 2018, an opposite trend can be observed. This is because labour productivity rates of change in Bulgaria and Romania are several times higher than in North Macedonia, indicating that these countries have made greater progress in this area. The rates of change in the two EU Member States are also several times higher than the EU-27 average (see Figure 2). This suggests that a catching-up process to the EU-27 average has taken place in Bulgaria and Romania as a result of European integration. In Bulgaria and especially in Romania, labour productivity has moved significantly closer to the EU-27 average. Romania doubled its labour productivity as a percentage of the EU-27 average between 2000 and 2018 (see Figure 3). Nevertheless, the country remains in penultimate place (ahead of Bulgaria) in terms of the value of labour productivity among European Union countries in 2018.

¹ European Commission, (2021), Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo, Brussels, p.104.

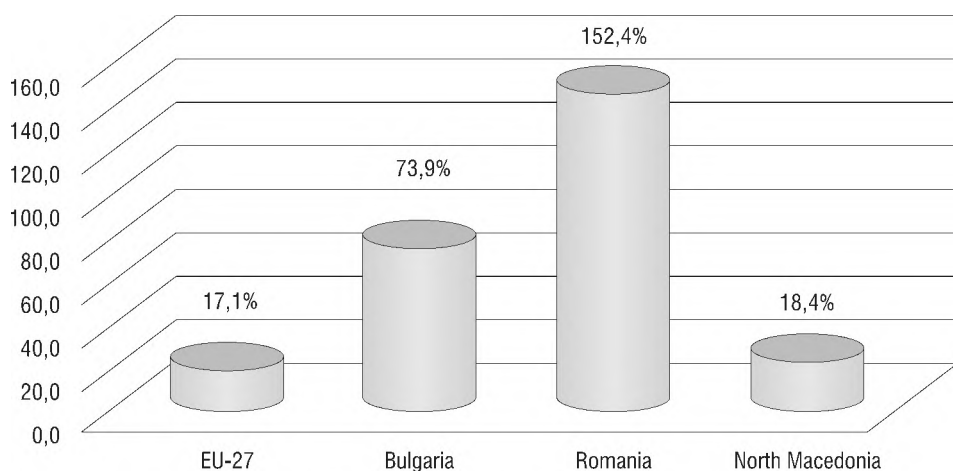


Figure 2. Rate of change of labour productivity 2000-2018 (%)

Despite the low starting position of North Macedonia, a high rate of change was not registered in the period 2000 - 2018. It is only 1.3 percentage points higher than in the EU-27, which does not indicate a real catching-up process with the EU-27 in this area (see Figure 2). The data in Figure 3 show that the level of labour productivity in North Macedonia as a percentage of the EU-27 average remains almost at the same level in 2000 and 2018. Even in 2018, this indicator decreased compared to 2007. However, it is important to point out that in 2018 North Macedonia reached a higher value of labour productivity than Bulgaria and Romania in 2000 (when their EU accession negotiations officially started) and a higher value of the indicator than in Bulgaria in 2007 (when the country joined the EU).

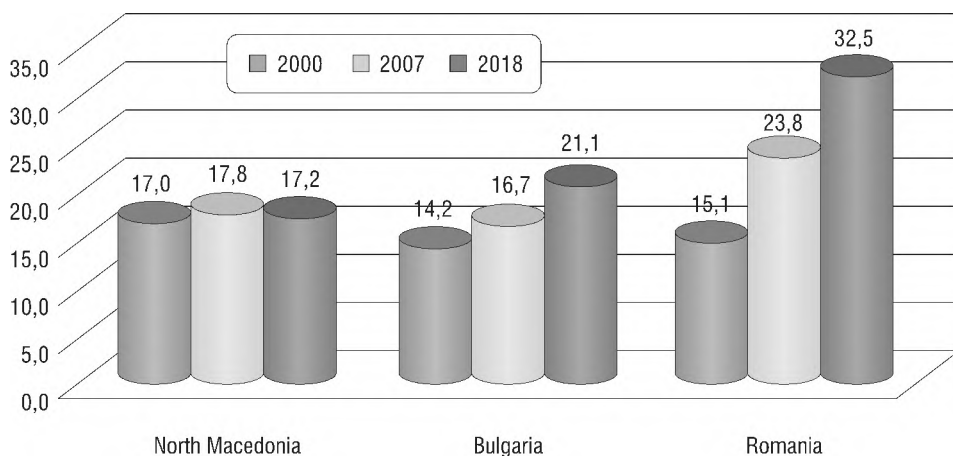


Figure 3. Labour productivity in Bulgaria, Romania and North Macedonia (% of EU-27 average)

Throughout the period under observation, labour productivity in North Macedonia is the highest in the services sector, followed by industry sector. The lowest labour productivity is recorded in the agriculture, forestry and fishing sectors, as it is also typical for the EU-27 on an average. Labour productivity for the economy as a whole fluctuates around that in the industry sector.

In two sectors of the economy - services and agriculture, forestry and fishing labour productivity fell in 2018 compared to 2000, which is a very unfavourable development for the country. While in agriculture, forestry and fishing sector the decline is not so significant (5.8% in 2018 compared to 2000), the services sector is characterised by a sharp reduction after 2007. During the global economic crisis, the unfavourable trend worsens, after which labour productivity in the services sector remains lower and does not return to pre-crisis levels. The reported decline in 2018 compared to 2000 was 15.6%. Only the industry sector reported an increase in labour productivity in 2018 compared to 2000.

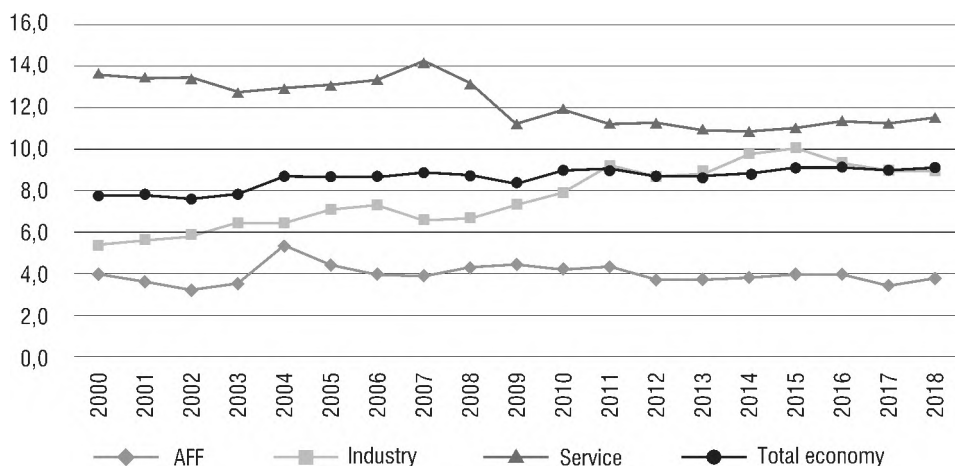


Figure 4. Sectoral labour productivity in North Macedonia

The derived trends in labour productivity of the economic sectors show that restraining influence on labour productivity growth in the economy of North Macedonia during the period under review had mainly labour productivity in the services sector. This is due, on the one hand, to the significant decline in labour productivity in this sector and, on the other hand, to the highest share of the services sector in the country's GVA (63.8% in 2018). Labour productivity in the agriculture, forestry and fishing sector also has a restraining effect on overall labour productivity, but to a much lesser extent than the services sector. One of the reasons for this is that, in line with the EU trend, the agriculture, forestry and fishing sector accounts for the smallest share of the country's GVA. It is also traditionally characterised by lower labour productivity because of the characteristics of the production process

and the more limited possibilities to introduce new technological innovations. This is confirmed in the Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina, and Kosovo. The document states that agriculture, forestry, and fishing sector in North Macedonia is characterised „by insufficient use of modern technologies“². Only the industry sector contributes to the increase in overall labour productivity, as the growth of the indicator in this sector over the period 2000 - 2018 is significant (66.5%). However, the share of the sector in GVA is more than twice smaller than that of the services sector, so the labour productivity in the economy as a whole cannot increase significantly during the period under consideration.

In the services sector, the smallest differences between North Macedonia and the EU-27 in labour productivity in 2018 are observed, but at the same time, in line with the downward trend in the value of the indicator, there is a sigma divergence of the country with the EU-27 in 2018 compared to 2000. The reason for this conclusion is the increased differences with the EU-27, measured by the coefficient of variation. An identical trend of sigma divergence is observed in the agriculture, forestry and fishing sector.

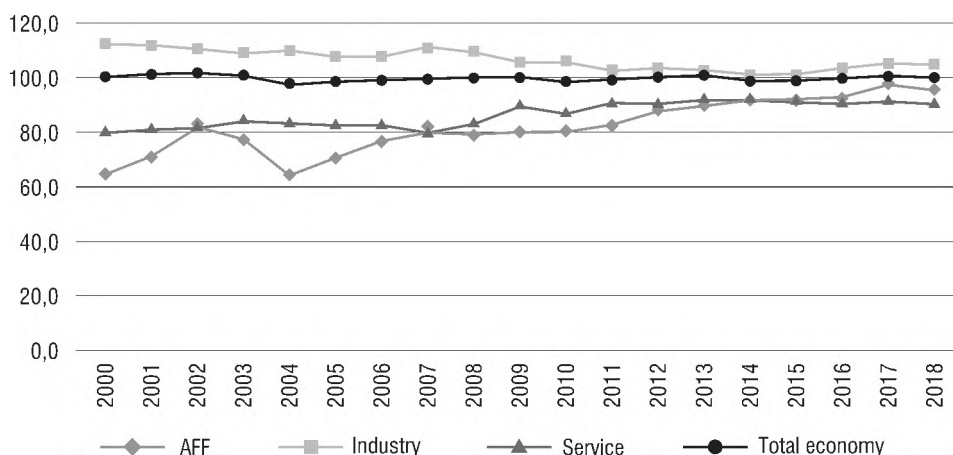


Figure 5. Coefficient of variation between North Macedonia and the EU-27 average of labour productivity

The industry sector had the highest differences with the EU-27 throughout the period, but it is the only sector where the distance with the EU-27 in terms of labour productivity has decreased in 2018 compared to 2000 (see Figure 5). This is also implied by the strong increase in labour productivity in this sector in 2018 compared to 2000.

² European Commission, (2021), Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo, Brussels, p. 136.

Although the period under study is almost twenty years, the differences between North Macedonia and the EU-27 average in labour productivity in the economy as a whole, as measured by the coefficient of variation, are almost the same in 2000 and 2018. The variation does not show significant dynamics in all years of the period considered (see Figure 5). The formal criterion for the existence of sigma convergence between North Macedonia and the EU-27 is fulfilled (the coefficient of variation is lower in 2018 (99.9%) than in 2000 - (100.3%)), but it cannot be unambiguously stated that convergence exists. On the contrary, it can be concluded that the position of North Macedonia on the EU-27 in terms of labour productivity in the economy as a whole is relatively constant in the period 2000 - 2018.

Conclusion

The analysis carried out in North Macedonia does not clearly indicate the existence of catching up process with the EU-27 in terms of labour productivity in the period 2000 - 2018. The level of the indicator is low and in the sector that contributes most to GVA it is declining. Together with the gradual increase in wages, this leads to a significant deterioration in the competitiveness of enterprises. One of the reasons for the reported unfavourable trends is the insufficiently qualified labour force and the system of higher education, which does not contribute to overcome this problem. The North Macedonia 2020 Report defines „skills shortages, reflecting shortcomings in the education system and the outflow of skilled workers, as well as infrastructure investment gaps“³ as factors that worsen labour productivity and the competitiveness of the economy.

Labour productivity is positively influenced by the quality of education and investment in human capital. In quantitative terms, Eurostat data on the population by educational attainment level (tertiary education) show that the share of the population with tertiary education in North Macedonia is growing and exceeds the value of labour productivity in Romania and Italy in 2018, 2019 and 2020. At the same time, however, the OECD's International Student Assessment Programme (PISA) shows that the country has performed rather poorly in recent years. It occupies one of the last places in 2018 among the assessed countries and lags far behind all EU Member States⁴. In this context, Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo identifies as the number one key challenge for North Macedonia „improving the quality and relevance of the education system to increase employment and mitigate skills mismatches“⁵. In this regard, the country needs a reform of the education system in order to

³ European Commission, (2020), North Macedonia 2020 Report, Brussels, p. 7

⁴ OECD, (2019), PISA 2018 Results. Combined Executive Summaries Volume I, II & III, p. 17-18.

⁵ European Commission, (2021), Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo, Brussels, p. 114.

prepare the necessary labour force according to the demand in the labour market. This will translate into higher labour productivity.

The low expenditure on R&D as a % of GDP also adversely affects labour productivity in North Macedonia. The values (0.36% in 2018 and 0.37% in 2019) are significantly below the EU-27 average as well as below the level in Romania, which is the country with the lowest levels of the indicator in 2018 and 2019. This influences the quality of physical capital and technologies used in the production process, which in turn affects labour productivity and competitiveness.

In conclusion, the unfavourable trends in labour productivity observed in North Macedonia are a problem that the country needs to overcome. Progress in this area is important for the economic development of North Macedonia and the implementation of the European integration process, as it will support the real income convergence with the EU and competitiveness of the country in European markets. The trends of very low labour productivity growth in the economy as a whole and the decline of the indicator in the services sector reflect other major problems for the economy of North Macedonia. They are related to the quality of human capital and the capacity of the education system to train the necessary skills of the labour force to meet the demands of the labour market.

Bibliography:

1. Ark, B. (1995), *Sectoral Growth Accounting and Structural Change in Postwar Europe*, Default Journal, University of Groningen.
2. Artige, L., Nicolini, R. (2006), *Labor Productivity in Europe: Evidence from a Sample of Regions*, CREPP Working Paper, 08, October.
3. Chenery, H., Robinson, S., Syrquin, M. (1986), *Industrialization and Growth: A Comparative Study*, Oxford University Press, Oxford.
4. European Commission, (2020), *North Macedonia 2020 Report*, Brussels.
5. European Commission, (2021), *Commission's Overview and Country Assessments on 2021 Economic Reform Programmes of Albania, Montenegro, North Macedonia, Serbia, Turkey, Bosnia and Herzegovina and Kosovo*, Brussels.
6. OECD, (2019), *PISA 2018 Results. Combined Executive Summaries Volume I, II & III*.
7. Reiter, O., Schwarzhappel, M., Stehrer, R. (2020), *Productivity and Competitiveness of the Western Balkan countries. An Analysis Based on the wiiw Western Balkan Productivity Database*, Policy Notes Policy Notes and Reports 37, The Vienna Institute for International Economic Studies.
8. Stefanova, Kr. (2019), *Importance and factor determination of the structural labour market convergence in the European Union - theoretical aspects*, Research Papers of UNWE, Issue 5, pp. 295-309 (in Bulgarian).
9. Eurostat - official site