HUMAN IMPACTS OF ECONOMIC CHANGES: LABOR PRODUCTIVITY IN NORTH MACEDONIA 1991-2024

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DOI: http//doi.org/10.51331/EB08BB

INTRODUCTION

Productivity is one of the most important factors influencing the economic development of a country. It constitutes a key indicator of the efficiency in utilizing resources and the efforts of an economy to produce more output with fewer resources. Hence, determining the factors that affect the labour productivity represent a challenging task. Productivity measures production efficiency, showing how many goods or services are created for a given resource unit. Productivity is usually measured as the ratio between output (what is produced) and input (the resources used, such as time, labor, and materials). Productivity is important because it helps increase efficiency and improve market competitiveness. An increase in productivity can lead to higher profits and improved living standards. In North Macedonia, productivity has experienced slow growth in some sectors, while certain industries have shown significant potential for improvement.

This chapter will include an analysis of the factors that contribute to productivity growth, such as innovation, technology, and investments in education and training. The industries that have contributed to productivity growth in North Macedonia include the information technology sector, the production of goods and services, as well as the agricultural sector. **The Services Sector** includes tourism, banking, and other services. There has been noticeable productivity growth due to investments in infrastructure and new services. **The Industrial Sector**, particularly manufacturing, has demonstrated productivity growth due to process modernization and the adoption of new technologies. This has helped increase efficiency and reduce costs. **The Agricultural Sector** faces significant challenges in terms of productivity due to the use of traditional techniques and a lack of investment. However, there is potential for growth if more investments are made in modern technology and farmer training.

Improving productivity in these sectors is critical for the country's economic development and for raising the standard of living for its citizens. These industries have benefited from modernization and the adoption of best practices, which have helped increase efficiency and competitiveness in the international market. Furthermore, a detailed analysis of these factors and industries is needed to identify opportunities for improving productivity in the future and to provide a deeper understanding of the challenges and opportunities faced in the Republic of North Macedonia.

THE ROLE AND DEFINITION OF PRODUCTIVITY

Labor productivity is one of the most crucial measures of an economy's ability to increase production with a specific quantity of production inputs. However, as productivity is one of the elements that affect an economy's growth, it should be examined in a broader framework that takes into account all of the other socio-economic elements that significantly influence its development. Productivity is generally defined as a ratio of a volume measure of output to a volume measure of input use. (Dimitar Nikoloski, 2019) It represents the amount of output produced per unit of input (labor, equipment, or capital). Typically, productivity measures how efficiently a company is in producing a material good or delivering a service. Being efficient (productive) means doing things quickly with fewer resources while being effective means doing the right things to achieve the goal. Productivity is a performance measure that compares the output of a product to the input or resources required to produce it. The input can be labor, equipment, or money. Economic productivity is often measured as the ratio between Gross Domestic Product (GDP) and the number of working hours. Analyzing labor productivity by sector helps identify trends in job growth, wages, and technological advancements. (Mediterranean University of Albania 2021)

In the business world, productivity is a measure of the efficiency of a company's production process. It is calculated by measuring the number of units of a product produced concerning the hours worked or by measuring net sales concerning the hours worked. Corporate profits and shareholder returns are directly linked to increases in productivity.

Productivity is a key indicator that measures the efficiency of resource utilization in production and is essential for a country's economic growth and well-being.

The renowned American economist, Paul Krugman, emphasized that *"Productivity isn't everything, but in the long run, it is almost everything"*. This highlights that sustainable growth in living standards depends largely on productivity growth. (Krugman, P. (n.d.); 2024). Additionally, Robert Solow, a Nobel Prize-winning economist, developed the economic growth model, which demonstrates that technological advancements and productivity growth are the main factors driving long-term economic growth. According to his model, increases in capital and labor have a limited impact without improvements in productivity. (Solow, R. M;2009). Meanwhile, Robert M. Stern studied productivity and comparative costs in international trade between Britain and USA, analyzing how changes in productivity influence the competitive advantages of countries.(Stern, R. M. ; 1968). The most commonly reported measure of productivity is labor productivity, published by the Bureau of Labor Statistic**s.** This is based on the ratio of GDP to the total hours worked in the economy. Growth in labor productivity comes from increases in the amount of capital available per worker, the education and experience of the workforce (labor composition), and improvements in technology (multi-factor productivity growth). (U.S. Bureau of Labor Statistics, 2017)

However, productivity is not necessarily a reliable indicator of an economy's health at a given point in time. For example, during the 2009 recession in the United States, output and working hours were declining while productivity was increasing. This means that working hours were decreasing faster than output. (Krugman, P.; 2009). In this case, the rise in productivity may have occurred due to factors that influence the economy differently than overall economic performance. During the 2009 recession in the United States, the economy experienced a sharp decline in output and a significant reduction in working hours. Many companies in the U.S. faced decreased demand for products and services, leading to a drop in production. However, to keep costs lower and survive, some of these companies reduced their workforce or implemented shorter working hours. This could increase productivity, although it might be an illusion of sustainability, as working hours were falling faster than output.

According to Solow (1956), total factor productivity measures the portion of an economy's output growth that cannot be attributed to the accumulation of capital and labor. It is interpreted as contributing to economic growth provided by managerial, technological, strategic, and financial innovations. Multifactor productivity (MFP) is a measure of economic performance that compares the number of goods and services produced to the combined inputs used to produce those goods and services. These inputs can include labor, capital, energy, materials, and purchased services. (U.S. Bureau of Labor Statistics, 2017) If productivity fails to grow significantly, it can negatively impact several economic variables, including wages, corporate profits, and living standards, effectively limiting them. Investment in an economy is equal to the level of savings, as investments are financed by savings. Low savings rates can lead to lower investment rates and reduced growth rates for labor productivity and real wages. When savings rates in the U.S. are low, it is seen as detrimental to future productivity growth. Low savings rates can result in reduced investment rates and, consequently, lower growth rates for labor productivity and real wages. (Mishkin, F. S. ; 2017). In the case of the United States, when savings rates are low, there has been a noticeable long-term negative impact on productivity growth. (Mian, A. R., & Sufi, A. ; 2014). This phenomenon is particularly evident when domestic levels are insufficient, reducing opportunities for capital investments that could enable technological advancements and production efficiency.

In North Macedonia, there have been periods where savings rates have been relatively higher compared to more developed economies like the U.S., particularly due to a strong culture of saving and stable fiscal policies. These savings have allowed for higher levels of investment in certain industrial sectors, leading to productivity growth, although the impact has been more limited in sectors requiring capital modernization and technological improvement. (World Bank.; 2022).

Moreover, when savings are high in North Macedonia, they provide resources for investments that enhance productivity and support real wage growth. However, this depends on the ability to leverage new technologies and increase efficiency in sectors that are more sensitive to technological changes, such as industry and services. The connection between savings, investments, and productivity is evident, but it is influenced by the integration of innovation and development policies. Only when monetary policy tightens and interest rates rise does the economy encourage savings, ultimately promoting future investments.

Productivity can reflect a reduction in production capacity and a potential decline in living standards for workers who lose their jobs or work longer hours to compensate for the losses of others. Moreover, an increase in productivity can only be sustainable if it is supported by consistent investments in technology and worker training, which can be challenging to achieve during periods of economic crisis. In conclusion, while productivity growth may seem positive during a recession, it must be analyzed within the context of other economic and social factors to assess whether it contributes to a sustainable and equitable economic recovery.

The calculation for productivity is straightforward by dividing a company's outputs by the inputs used to produce the given outputs. The most commonly used input is labor hours, while output can be measured in units produced or sales. A real-world example is the automotive manufacturing giant Toyota, which provides a prime example of high-level productivity in practice. The company had very modest beginnings but has grown to become one of the largest and most productive car manufacturers in the world. Its Toyota Production System (TPS) is one of the key reasons for this. (U.S. Bureau of Labor Statistics, 2017).

The essential components of productivity are:

Strategy: The ability to effectively plan and manage goals and resources. This includes setting clear goals, prioritizing tasks, and defining a clear path toward achieving them. (Covey, S. R.; 1989).

Focus: The ability to concentrate on a single task without distractions. Focus is critical for improving work quality and completing tasks on time. (Allen, D. ; 2001).

Productive Decision-Making: The ability to make wise choices about what is most important and urgent. This helps individuals manage their time by focusing their energy on activities that have the greatest impact. (Covey, S. R.;1989)

Sustainability: The capacity to work at a steady pace while consistently incorporating all the above elements into daily activities. Sustainability helps maintain efficiency and long-term motivation. (Allen, D.;2001). Productivity holds significant importance for the economic development of any country, including North Macedonia. It represents an economy's ability to produce more goods and services with limited resources, thereby increasing efficiency and creating opportunities for sustainable economic growth. This is particularly important for developing economies like North Macedonia for several reasons:

1. **Boosting GDP Growth**: When productivity increases, more goods and services can be produced with the same resources, leading to an increase in Gross Domestic Product (GDP). This process improves living standards and creates opportunities for long-term economic development. (World Bank; 2018).

2. **International Competitiveness**: Productivity growth contributes to enhancing a nation's competitiveness. For North Macedonia, higher productivity can help boost exports, improve its position in international markets, and attract foreign direct investment . (Fund for Innovation and Technological Development, 2024) https://www.fitr.mk/).

3. **Job Creation and Wage Growth**: Productivity growth is often linked to the creation of new job opportunities and higher wages. This helps improve

living standards and reduce poverty, which are critical factors for a developing economy like North Macedonia's. (World Bank; 2018).

In North Macedonia, productivity growth has positively impacted job creation and increased both minimum and average wages, improving living standards and reducing poverty.Minimum Wage: In 2012, the minimum wage was 8,050 denars and reached 20,175 denars in 2023. This improvement reflects ongoing policies aimed at enhancing the incomes of vulnerable groups. Average Wage: The average wage increased from around 21,000 denars in 2012 to over 34,000 denars in 2023, showing a steady economic progression. Additionally, poverty has significantly decreased in recent years compared to the past decade, reflecting efforts towards economic inclusion and social development. This trend is documented in reports from the State Statistical Office.

4. **Improvement of Infrastructure and Technology**: Investments in technology and infrastructure improvement can lead to increased productivity. For North Macedonia, modernizing key sectors such as agriculture, industry, and services has the potential to enhance efficiency and promote sustainable economic development. For example, investments in water management systems and modern agricultural technologies have contributed to an increase in agricultural production over the past decade. (World Bank; 2021).
5. **Improvement of Efficiency and Resource Management**: The more efficient use of natural resources and human capital is crucial for boosting productivity. Economies dependent on the service or agriculture sectors, for North Macedonia, can benefit from improvements in supply chains and strategic resource management. A report by the Organisation for Economic Co-operation and Development (OECD) suggests that North Macedonia could achieve a 3% increase in productivity by modernizing management practices in the agricultural sector. (OECD; 2023).
6. **Economic Policies and Development Strategies**: Boosting productivity requires a coordinated approach at the macroeconomic level. Fiscal policies, investments, and reforms in the education sector can contribute to improving the skills of the workforce and maximizing resource utilization. For instance, vocational training programs implemented by the Macedonian government have significantly improved the skills of workers in the industrial sector, helping to reduce unemployment from 23% to 16% between 2015 and 2020.

Productivity gains can occur during recessions and expansions, as seen in the late 1990s, so the economic context must be considered when analyzing productivity data. In connection with North Macedonia's economy, productivity gains can happen during both recessions and periods of economic expansion, as was the case in the late 1990s in the United States. (Federal Reserve Bank of St. Louis, 1999) This demonstrates that productivity growth is not necessarily tied to a specific phase of the economic cycle but can result from **technological innovations, improvements in management and efficiency, and resource optimization.** However, it is important to analyze the economic context of a specific period to understand whether productivity gains are sustainable and what impact they have on economic well-being and living standards.

When it comes to North Macedonia's economy, it is essential to examine productivity trends within the framework of structural transformations and the development of various sectors during different economic periods. After the global crisis of 2008, North Macedonia's economy went through a period of economic slowdown, with a decline in productivity that was partly a result of the recession and reduced demand for exports. However, in recent years, efforts have been made to boost productivity, particularly in the industrial and service sectors, through the use of technology and improvements in work quality. (National Bank of the Republic of Macedonia, 2023)

Furthermore, the analysis of productivity in North Macedonia must consider the impact of foreign investments and the processes of integration into the European Union, which have significantly contributed to modernizing industries and increasing competitiveness. (World Bank; 2022). Nevertheless, productivity growth is often constrained by other factors, such as political uncertainty, inadequate infrastructure, and challenges in developing a skilled labor force. (Brynjolfsson, E., & McAfee, A.; 2014). In conclusion, while productivity gains are possible during both phases of the economic cycle, it is crucial to consider the specific economic context of a country, such as North Macedonia, to better understand the impact of these gains on the sustainable development of the economy. (Solow, R. M.;1956). Many factors influence a country's productivity. Investments in facilities and equipment, innovation, improvements in supply chain logistics, education, entrepreneurship, and competition all contribute to productivity. Between 1991 and 2024, North Macedonia has undertaken a series of investments and measures to enhance productivity across various sectors:

1. **Investments in Infrastructure:** In 2024, the government approved a significant infrastructure investment project valued at over €250 million. This project aims to improve local-level infrastructure and includes 274 projects across the country's municipalities. This historic investment is expected to contribute to improving living conditions and increasing productivity.

2. **Smart Specialization Strategy (2024–2027):** In December 2023, North Macedonia adopted the "Smart Specialization Strategy of the Republic of North Macedonia 2024–2027" along with its Action Plan for 2024–2025. This strategy aims to foster sustainable growth by incorporating knowledge, innovations, and technology, focusing on four primary vertical areas: smart agriculture, information and communication technology, the electro-mechanical industry, and sustainable materials. (Ministry of Education and Science of the Republic of North Macedonia ; 2023).
3. **Investments in Technology and Innovation:** Improving competitiveness and productivity is also a significant focus within the Smart Specialization Strategy. This includes support for enterprises investing in new technologies and the development of high-value-added products.
4. **Investments in Education and Skills:** Another crucial element is enhancing education and professional skills to support human capital development and enable participation in the sectors identified in the strategy.
5. **Investments in Logistics and Supply Chain Infrastructure:** Improving logistics and the supply chain is also a priority, with investments aimed at reducing costs and increasing efficiency for businesses.

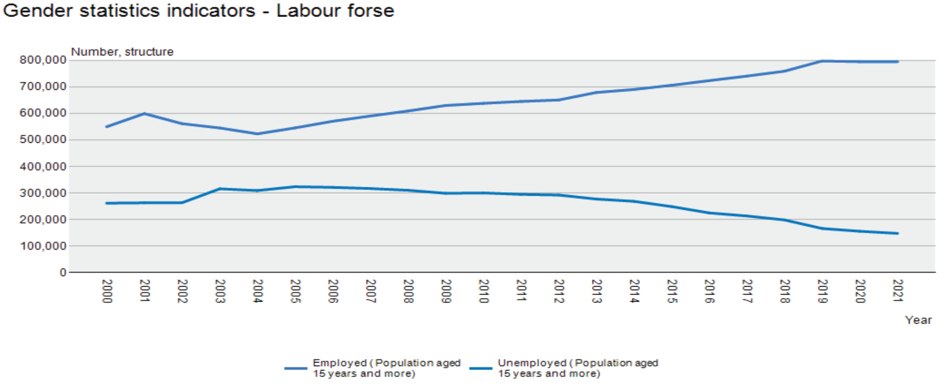
Driving factors of productivity in North Macedonia

Modern organizations are a product of the Industrial Revolution, whose main goal was achieving efficiency. (Greg McKeown, 2014) The idea of awareness suggests that many of today's norms and expectations regarding work and productivity are influenced by this economic organizational model. In other words, due to the legacy of the Industrial Revolution, we tend to think that only work is essential for progress and development, while activities like rest or reflection are often perceived as less important, yet they are prerequisites for the continuous increase of productivity. For an economy like that of North Macedonia, productivity is a key factor in ensuring sustainable development, improving the living standards of citizens, and enhancing the country's economic position in the global market. Increasing productivity not only helps meet internal needs but also makes the economy more capable of facing the challenges of globalization and international competition. The factors driving productivity development in North Macedonia include a combination of economic policies, foreign direct investments, institutional reforms, and structural changes in the economy.

- **Key Factors - Moderate Economic Growth.** North Macedonia has recorded average economic growth of 2-4% in recent decades, driven by foreign investments, improvements in the industrial and service sectors, and growth in exports to European markets. **Foreign Direct Investments (FDI) by t**he free economic zone has attracted foreign investments, particularly in the manufacturing and automotive sectors, improving technology and efficiency in industry. For example, companies like Johnson Matthey and Kromberg & Schubert have contributed to productivity growth in their respective sectors. (World Bank; 2021). The Educational and Professional Reforms: Programs for workforce skill development have increased the professional capacity of the population, although barriers in education remain a challenge. **(OECD, 2022; Eurostat, 2023)**. With a GDP per capita of around 7,000 USD (in 2023), labor productivity remains low compared to the EU average, indicating untapped potential in the economy's sectors.

- **Infrastructure and Technology.** Investments in infrastructure (highways, railways) and technological improvements in the private sector have helped increase economic efficiency, particularly in production and logistics. (Ministry of Economy of the Republic of Macedonia, 2023) **Economic Liberalization:** Free trade agreements with the EU and neighboring countries have facilitated access to new markets, fostering competition and efficiency.
- **Agricultural and Service Sectors:** Improvements in the agricultural sector, including the use of modern technologies, and the growth of service industries such as tourism and information technology, have positively impacted productivity.
- **Support Policies for Small and Medium Enterprises** (SMEs): SMEs constitute around 99% of businesses in North Macedonia, and support for their modernization and digitization has contributed to productivity improvements. Human Resource Efficiency: A skilled workforce remains a key factor for sectors such as industry and services. EU-funded programs for skill development are an important source for increasing productivity. (**Eurostat;** 2023). Internal challenges for productivity growth in North Macedonia include issues such as unemployment, youth emigration, corruption, and the need for restructuring certain sectors of the economy. Opportunities and potential policies related to productivity growth involve economic policy reforms, investments in education and technology, and improving living conditions. Unemployment in North Macedonia has been an ongoing challenge for decades. These data show a noticeable improvement in the labor market in North Macedonia between 2017 and 2023. However, unemployment, especially youth unemployment remains a significant challenge for the country's economic development.

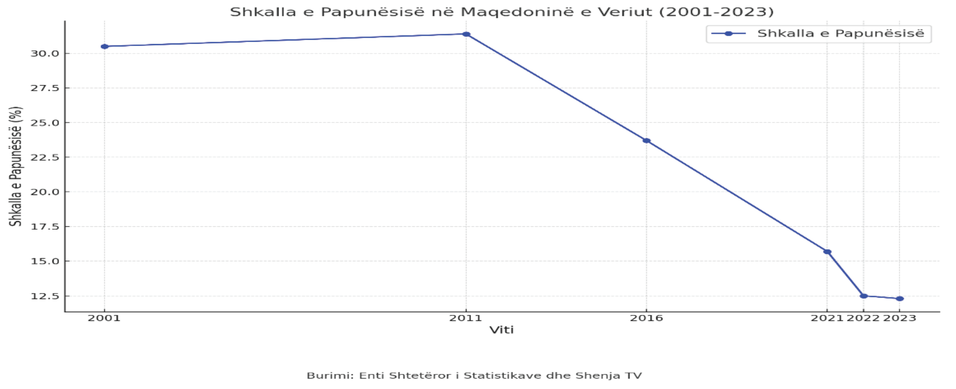
Graph 1. Gender StatisticsIndicators-Labour Forse



Source: Labor Forse indicators - https://makstat.stat.gov.mk

Graph 2 – shows the trend in the unemployment rate in North Macedonia from 2001 to 2023. Here are some key points to highlight: Highest unemployment point (2001): In 2001, unemployment was around 30.5%, reflecting the challenges of economic transition after independence and political tensions in the country. High unemployment during the 2000s: In 2011, the unemployment rate remained high at approximately 31.4%, indicating that the economy was still struggling with structural difficulties. Significant decline from 2011 to 2016: Unemployment began to decrease significantly, reaching 23.7% in 2016. This could be attributed to economic policies and efforts to stimulate the private sector. Continuous downward trend (2016–2023): By 2021, the unemployment rate dropped to 15.7%, thanks to overall economic developments and deeper regional integrations. By 2023, unemployment reached its lowest recorded level during this period, at 12.3%.

Graph 2. Unemployment rate in North Macedonia 2001-2023



Source: The unemployment rate in North Macedonia 2001-2023.

Another critical aspect and challenge for North Macedonia is the lack of employment opportunities, which pushes many young people to emigrate, leaving the country with a limited workforce and a lack of new skills. This directly affects productivity, as a significant portion of the labor force is either unemployed or has moved abroad. To motivate the youth of North Macedonia, particularly recent graduates and skilled workers, to stay and contribute to the country's development, several measures addressing economic, educational, and social factors can be implemented. These measures include: Creating better employment opportunities and stimulating new sectors: Efforts to generate skilled employment opportunities should focus on developing sectors such as technology, innovation, and the green industry. This can be achieved by encouraging private sector investments, promoting the growth of start-ups, and supporting enterprises that offer career opportunities for young people. Improving conditions for remote work means encouraging remote work opportunities that allow young people to work for international companies without needing to migrate. **Improving education and professional training conditions:** Enhancing the quality of education through investments in education and creating a system more aligned with labor market demands is essential. This includes strengthening collaboration between universities and the private sector to develop curricula that reflect market needs. **Training and skill development programs** should provide opportunities for young people to benefit from professional training and courses, enhancing their ability to adapt to new labor market trends. Programs focused on new technologies and digital skills could be particularly attractive to the youth.

1. **Initiatives and support for new businesses and entrepreneurs: Support for start-ups and entrepreneurs:** Providing fiscal incentives and financial assistance to those who want to establish businesses can help reduce emigration levels. Mentorship programs and support for young entrepreneurs can create a more favorable environment for developing new businesses and retaining talent within the country. **Simplifying business procedures:** Reducing bureaucracy and offering support to individuals who wish to start businesses, along with creating conditions for infrastructure development, can encourage many young people to stay and contribute to the local economy.

2. **Improving living conditions and social security: Opportunities for a better quality of life:** Creating opportunities for young people to enjoy a good life in their own country includes improving housing conditions, developing infrastructure and public services, and enhancing social and healthcare security. **Social support for young families:** Offering support to young couples and families through policies that encourage childbirth and provide childcare assistance can serve as a motivational factor to stay.

3. **Facilitating the integration of youth into society: Empowering active youth participation in decision-making:** Creating opportunities for young people to engage in decision-making processes and develop public policies can increase trust in the system and foster their involvement. **Promoting cultural and social activities:** Providing opportunities for young people to engage in cultural and social activities helps develop a sense of community and interaction between different ethnic and social groups.

4. **Improving governance conditions and transparency:** Enhancing governance and combating corruption can create a cleaner and more transparent environment that helps retain youth within the country. (Transparency International, 2023) Corruption and lack of transparency are often key reasons for emigration, so strengthening the rule of law and transparency in public administration would establish a more stable and trustworthy environment. Engaging the diaspora and attracting foreign investments: Building connections with the diaspora can provide young people with access to networks and opportunities offered by North Macedonia's diaspora. For example, employment opportunities, training, and financial resources could be offered to those interested in investing and contributing to the country's economic development.

5. **The impact of corruption:** Corruption is a complex and widespread phenomenon that negatively affects a country's economic, social, and political development. It is often associated with the abuse of power for personal gain, which undermines citizens' trust in state institutions. According to recent studies, corruption negatively impacts the allocation of public resources and reduces foreign investment, thus hindering economic growth. Moreover, corruption exacerbates social inequalities by favoring individuals or groups with privileged access to power. Therefore, fighting corruption requires an integrated approach that includes strengthening the rule of law, increasing transparency, and actively involving civil society. (Klitgaard, R.; 1988).

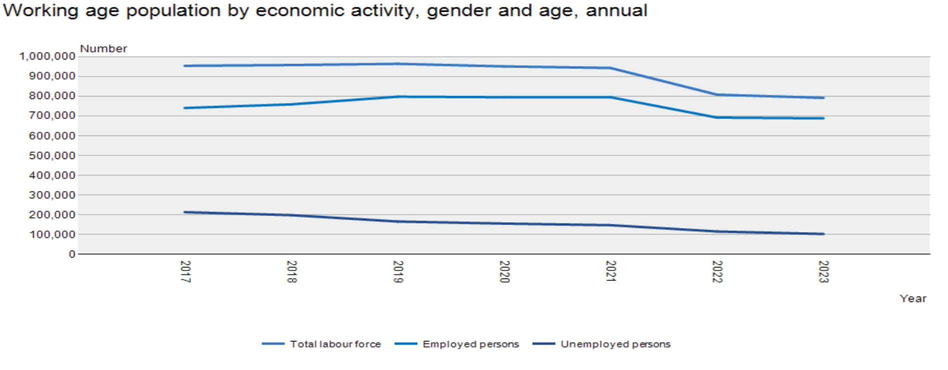
PRODUCTIVITY IN THE REPUBLIC OF NORTH MACEDONIA

Unlike other Yugoslav republics, whose attempts to break away from Yugoslavia in the early 1990s triggered nationalist violence and ethnic cleansing, the Republic of Macedonia peacefully emerged as a sovereign and independent state on September 8, 1991, through a vote by Macedonian citizens. Since then, North Macedonia has faced numerous serious challenges, both domestically and internationally. Internal conflict with the Albanian population and the dispute with Greece over the state's name posed significant threats to foreign investments and economic growth.

In the early 1990s, socialist states transitioned to new economic and political systems, undergoing deep reforms that led to the privatization of state-owned assets and the creation of private markets. While countries like Poland and Romania joined the EU and NATO, North Macedonia and Albania still face challenges in the integration process. Privatization in North Macedonia caused unemployment and economic problems, further exacerbated by external factors, including non-recognition from neighboring countries. (Petrit Pollozhani, 2008) Although North Macedonia and Albania experienced notable growth in GDP per capita since the 1990s, neither achieved EU membership until 2017. Sectors with low levels of corruption provide better conditions for economic development, whereas monopolies remain prevalent in certain industries. The Macedonian economy is characterized **by low productivity**, with labor-intensive sectors that rely on low levels of technology, failing to generate significant added value.

Firstly, if we look at the general employment situation within the period 2017-2023 where we can see a changing dynamics of employment and unemployment rates in the Republic of Macedonia. If we refer to the number of employees on which productivity also depends, we see that in 2023, the labor force in North Macedonia comprised 791,647 individuals, with 688,296 employed and 103,351 unemployed. The activity rate was 52.3%, the employment rate stood at 45.4%, and the unemployment rate was 13.1%.

Graph 3. Working Age Population by Economic Acrivity, Gender and Age, Annual



Source: Working age population by economic activity - https://makstat.stat.gov.mk/

North Macedonia faces low productivity levels, which have resulted in unsustainable economic growth, primarily financed by public debt. The utilization of the labor force remains limited, with a significant portion of workers either discouraged or engaged in the informal economy. (Gligor Bishev, at all ;2020). Overall, North Macedonia encounters major challenges in economic development and macroeconomic stability, while seeking improvements in education, research, and development to boost productivity and living standards.

North Macedonia is a small national economy classified as an upper-middle-income country, with a population of 2.07 million as of 2020 and a gross domestic product (GDP) per capita (in purchasing power parity terms) of $15,931 in 2020 (in constant 2017 international dollars). This represents a contraction of approximately $800 compared to 2019 (World Bank, 2022). Compared to neighboring economies, North Macedonia's economic activity sectors are relatively well-balanced. In 2020, the service sector accounted for 57% of GDP, industry for 22.6%, and agriculture for 9.1%. However, annual declines of 2.6% in services and 6.8% in industry were observed, while agriculture saw a 1.7% annual increase in 2021. The industrial sector of the economy is primarily based on manufacturing (13% of GDP), with a focus on chemicals, basic iron, steel, ferroalloys, machinery, and textiles. In terms of employment, the key sectors are services (employing 55% of the workforce), followed by industry (31%), and agriculture (nearly 14%) (MAKStat, 2021 and (International Monetary Fund [IMF], 2022).

North Macedonia's economy has demonstrated steady growth since 2012, driven primarily by domestic consumption and exports, particularly of basic metals and textile products. While a slight downturn occurred in 2017, it was followed by another period of sustained growth. However, the economy faced significant challenges during the COVID-19 pandemic, with a 6.1% decline in GDP growth in 2020 (Table 1). This contraction was largely attributed to a sharp drop in remittances, which negatively impacted household spending and investment.

Despite this setback, the economy rebounded in 2021 with a 4.2% increase in GDP, fueled by a strong recovery in automotive supply manufacturing, a revival in private consumption, and the implementation of government support measures. Growth is expected to stabilize at 3.2% in 2022, indicating a gradual return to economic normalcy.

Table 1. GDP Growth in 2020

Indicator	Unit of measurement	2016	2017	2018	2019	2020	2021
GDP growth[1]	% year-on-year	2.8	1.2	2.8	3.9	-6.1	4.2
National GDP[2]	EUR billion	9.466	10.03	11.25	11.182	10.879	..
GDP per capita growth[2]	% year-on-year	2.7	1	2.8	3.9	-6.1	..
Inflation[1]	% average	-0.2	1.4	1.5	0.8	1.2	3.2
Government balance[1]	% of GDP	-2.7	-2.7	-1.8	-2	-8.2	-5.4
Current account balance[1]	% of GDP	-2.9	-1.0	-0.1	-3.3	-3.4	-3.5
Exchange rate MKD/EUR[1]	Value	61.6	61.57	61.51	61.51	61.67	61.63
Exports of goods and services[1]	% of GDP	50.9	54.9	60.2	61.9	58.9	65.9
Imports of goods and services[1]	% of GDP	66.2	69	72.9	76.2	71.9	81.9
Net foreign direct investment (FDI)[1]	% of GDP	3.3	1.8	5.6	3.2	1.5	3.7
External debt stocks[2]	% of gross national income (GNI)	73.3	78.7	71.3	74.7	89.9	..
International reserves of the National Bank[1]	EUR million	2 613	2 336	2 867	3 263	3 360	3 643
Gross international reserves[1]	Ratio of 12 months imports of goods and services moving average	4.9	4.1	4.4	4.6	5.3	4.5
Unemployment[1]	% of the total population	23.8	22.6	21.0	17.5	16.6	15.8

Source: European Commission (2022); 2. World Bank (2022).

Despite the significant economic impact of the COVID-19 pandemic, North Macedonia has continued to see a steady decline in its unemployment rate, following a decade-long trend. By 2020, the unemployment rate decreased to 16.6%, supported by substantial fiscal assistance provided to Foreign Direct Investments (FDIs) and domestic companies during the post-pandemic period (OECD, 2021). The rate further fell to 15.3% by the fourth quarter of 2021 (European Commission, 2022).

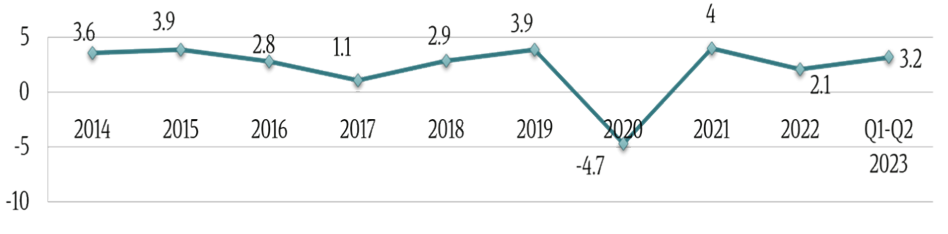
However, while overall labor force participation has shown modest progress—with a 0.6% increase in the labor force and a 0.7% rise in the activity rate of the working-age population in 2020—persistent disparities remain. These include significant barriers to employment for youth and women. For instance, while general female labor force participation declined by 1% in 2020, young people aged 15-24 faced even more acute challenges, with youth unemployment rising to 35.4%. Employment among this age group dropped by 16% year-on-year in 2020 (European Commission, 2021). The unemployment rate for youth aged 15-19 returned to pre-pandemic levels in 2021, after nearly doubling in 2020. However, unemployment among the 19-24 age group remains approximately 50% higher than pre-pandemic levels in 2019, following a 150% surge in 2020. (Employment Service Agency.: 2022) Moreover, long-term unemployment remains a significant challenge in North Macedonia, with 74% of the unemployed in 2021 classified as long-term unemployed. Since 2017, the long-term unemployment rate has been over six times higher than the European Union average (17.4% compared to 2.4%). Addressing these employment disparities, especially for youth and women, and tackling the structural issues contributing to long-term unemployment are critical steps for achieving sustainable economic growth and reducing inequality.

Over the past decade, many underperforming firms have continued to operate in North Macedonia. From 2018 to 2020, the sectors of vehicle manufacturing, healthcare, transportation, and tourism experienced declines in both revenues and productivity. These sectors, which make up the majority of jobs in the country, have lower productivity levels and fewer firms that have experienced positive revenue growth. However, high-productivity firms tend to pay higher wages. In both the manufacturing and services sectors in North Macedonia, firms with higher productivity paid higher wages (see Chart 2). In the services sectors, from 2018 to 2020, the most productive firms paid wages that were on average 29% higher than those paid by less productive firms. Nevertheless, most of the new jobs were created in the less productive firms of the services sector, where more than 55% of the total workforce is employed.

The continuation of low productivity highlights the limited extent to which existing firms are improving their internal capabilities, including their ability to innovate, adopt new technologies, or enhance management practices. Creating an environment where underperforming firms exit and new firms enter could stimulate competition in the market and allow for a more efficient distribution of resources in the economy.

In next Graph, we have the analysis of the gross domestic product from 2014 to 2023, where in 2014 it was 3.6%, followed by slight increases and decreases until 2020 during the pandemic period, which fell to -4.7%. However, in 2021, it reached 4%, and in 2023 it stood at 3.2%.

Graph 4. GDP Growth (%)



Source: https://investnorthmacedonia.gov.mk/sq/stabiliteti-makroekonomik/

Labor productivity is also a key indicator for economic growth, as it shows the economy's ability to increase output with a given amount of production factors. Developing countries face unproductive employment and a decline in productivity. In North Macedonia, labor productivity had low growth rates until 2017, and after that year, worker compensation increased significantly, but productivity declined. In 2020, labor compensation increased by 34%, while productivity grew by only 10%. Before the 2008 crisis, the relationship between productivity and wages was less intense. Wages growing faster than productivity slow down labor demand, leading to a decline in both wages and employment. For the period from 2000 to 2007, productivity increased by 2.9% per year, while compensation grew by 2.5%. In the period from 2010 to 2017, labor productivity and worker compensation increased in sync, with an approximate rise of 12 index points. After 2017, productivity began to decline, while worker compensation continued to grow, especially after the increase in the minimum wage in 2017. Compared to 2017, compensation increased by 22 points by 2020. The increased bargaining power of trade unions, particularly in some industries, has contributed to improved working conditions for employees.

Graph 5. Labor Productivity Indicator in North Macedonia for the Period 2012-2022

Source: National Bank of the Republic of North Macedonia, https://www.nbrm.mk/bilteni.nspx

Graph 5 shows the labor productivity indicator in North Macedonia for the period 2012-2022. Labor productivity in the analyzed years peaked in 2021 at 4.1, and in 2022 it was 3.7. The lowest value was recorded in 2020, when the pandemic began. However, if we exclude 2020, 2021, and 2022 as pandemic years, the conclusion is that labor productivity remained low in all the years analyzed.

Labor productivity in the Republic of North Macedonia has undergone changes and developments influenced by various factors, including economic policies, investments in infrastructure and technology, as well as the structures of labor in the key sectors of the economy. In recent years, North Macedonia has seen moderate productivity growth, particularly in sectors such as services and manufacturing. However, compared to other countries in the region, productivity remains lower, indicating that there is still room for improvement.

North Macedonia has made efforts to develop the services sector, including IT and financial services. Several international companies have invested in this area, contributing to productivity growth in these sectors. New technologies have helped optimize processes and improve efficiency. The manufacturing and production sectors have been crucial for the economy of North Macedonia. However, this sector has faced challenges, including reliance on imports and low levels of automation and investment in advanced technologies. This has affected productivity growth, especially when compared to more developed EU countries.

Despite noticeable achievements, North Macedonia continues to face challenges in its efforts to boost productivity. These include inadequate infrastructure in some regions, bureaucracy, and dependence on traditional sectors of the economy. To improve productivity, North Macedonia will need to invest more in education, technology, and innovation, while also focusing on structural reforms that can improve the efficiency of administration and various sectors of the economy.

COMPARABILITY OF PRODUCTIVITY AND LABOR COMPETITION (BALKAN REGIONS AND THE REGIONS OF NORTH MACEDONIA)

Reflecting on the comparability of productivity and labor competition in the countries of the Balkan region is an important issue for the economic growth and sustainability of North Macedonia's economy since independence. After declaring independence in 1991, North Macedonia underwent a significant process of economic transformation, during which comparisons with other countries in the region played an important role in shaping development policies and strategies. An essential aspect of this comparability is the analysis of productivity across various economic sectors.

The service and industrial sectors have exhibited different patterns of development, with the industrial sector often facing greater challenges in improving productivity due to a lack of investments and infrastructure. Compared to countries such as Albania and Kosovo, North Macedonia has managed to achieve higher productivity in some industries, particularly in terms of innovation and technology. Labor competition is also a key factor influencing economic development. Countries in the region, including North Macedonia, face similar challenges such as unemployment and youth migration. The increase in regional cooperation and the sharing of best practices can help improve competition and productivity, thereby contributing to a more sustainable economic development for North Macedonia and other Balkan countries. (International Monetary Fund (IMF, 2019.) The comparability of productivity and labor competition in the Balkan region is essential for the economic growth and sustainability of North Macedonia, with a focus on improving these aspects. Small market countries like the Republic of North Macedonia support export-oriented strategies as a path to development. North Macedonia's economy is open (133% of GDP) and shows potential for gradual improvements in competitiveness. Imports still dominate exports, resulting in a balance of payments deficit (about 1.6 billion dollars in 2019). With coordinated monetary and fiscal policies, the Republic of North Macedonia should enhance the competitiveness of domestic companies in international markets, leverage the advantages of its current economic structure, rationalize the use of available resources, and invest more in innovation and education.

The comparability of productivity in the Balkan regions and the Republic of North Macedonia is a fundamental issue for understanding economic competition in the region and the opportunities for sustainable economic development. Productivity, measured as output per worker, is a key indicator for determining a developing country's economic strengths and progress. The Republic of North Macedonia has experienced increases in productivity in some sectors but also faces significant challenges in sustainably improving this indicator. The productivity of other Balkan countries, such as Albania, Kosovo, Serbia, and Bulgaria, has shown a wide range of performances, with some countries rapidly improving productivity and others continuing to face challenges similar to those in North Macedonia. Labor competition in the Balkan regions and North Macedonia is a topic with several important dimensions, including economic, political, and social factors.

Many individuals are forced to compete for a limited number of positions in certain sectors, putting pressure on the labor market. Many people from the Balkans migrate to European Union countries in search of better job opportunities. This may lead to a shortage of skilled workers, thereby increasing competition for those who remain. Some sectors in the region, such as information technology, engineering, and business management, are among the most competitive. They require high qualifications and experience, leading to strong competition among individuals for the best positions. Another factor influencing labor competition is the level of education and professional skills. The lack of opportunities for training and the development of new skills in some Balkan countries, including North Macedonia, affects individuals' ability to compete in the global labor market.

DISCUSSION OF LABOR FORCE PERSPECTIVES

Labor force flows in North Macedonia (NM) represent a complex issue that directly impacts the country's sustainable economic development. To balance labor demand and supply, it is essential to consider key perspectives and challenges, including the phenomena of labor force deficits and surpluses.(International Labour Organization (ILO; 2022) Balancing labor demand and supply in North Macedonia (NM) is an issue that directly impacts the country's sustainable economic development. The perspectives and challenges of this process are complex and involve demographic, economic, technological, and political factors. Balancing labor demand and supply in North Macedonia has been a continuous challenge since the country's independence in 1991. During this period, the labor market has undergone significant changes, influenced by economic, demographic, and migratory factors.

Table 2. Labor force flows in North Macedonia

Year	**Number of Employed**	**Number of Unemployed**	**Unemployment Rate (%)**	**Main Sector of Economic Growth**	**Influencing Factors on the Workforce**
1991	~500,000	No data	No data	Industry and agriculture	Transition from socialism to market economy; separation from Yugoslavia.
2000	~550,000	~320,000	36.8	Services	Economic crisis and lack of investments.
2010	~620,000	~290,000	32.0	Construction and tourism	Foreign direct investments and emigration.

2015	~680,000	~200,000	24.6	Services and technology	Technological development and offshoring.
2020	~750,000	~150,000	16.7	Technology, construction, and services	Mass emigration and COVID-19 pandemic.
2024	~691,736	~98,416	12.5	Technology, tourism, and agriculture	Decreasing unemployment but continued high emigration.

To analyze this in more detail, we will discuss key aspects such as labor force deficits and surpluses, their impact on economic sectors, and the appropriate policies needed to achieve balance. Labor force flows in North Macedonia (NM) are influenced by economic, demographic, and technological factors. These flows include both labor force deficits and surpluses, which impact the country's economic development and social stability. Balancing these two phenomena is essential for ensuring a sustainable economy and reducing unemployment. North Macedonia's economy faces challenges related to both labor deficits and surpluses, which directly affect labor market equilibrium and sustainable economic growth. Managing these two issues is critical for maintaining a functional labor market and addressing the needs of different economic sectors.

One of the main challenges is the labor force deficit in key sectors such as information technology, engineering, and healthcare. This is largely due to the migration of young and highly skilled professionals to more developed countries that offer better job opportunities and higher living standards. This situation creates a significant shortage of qualified workers, leading to increased labor costs and reduced competitiveness for domestic companies. The deficit is evident due to the emigration of skilled professionals and insufficient local workforce preparation. Balancing the labor force deficit and surplus is a complex challenge but also an opportunity for the sustainable development of North Macedonia. (Ministry of Labour and Social Policy of North Macedonia, 2023)

Investments in education, skills training, and regional development, along with favorable policies for migration and innovation, can help harmonize the labor market and ensure a strong and sustainable economy for the future. Balancing the labor force deficit and surplus is a key factor in the economic development of North Macedonia (NM). This process involves aligning employers' demand for specific skills with the available labor force supply. Both deficit and surplus influence labor market dynamics, creating challenges and opportunities for economic and social development.

A labor force deficit occurs when the demand for skilled workers or a specific category of employees exceeds the available supply. In North Macedonia, this deficit is most prevalent in rapidly growing sectors that require specialized skills. A labor force surplus happens when the supply of workers is greater than the demand for jobs. In NM, this is common in low-skilled jobs or rural areas. On the other hand, surplus labor is also a concern in certain sectors where there is a large number of applicants for specific positions, but many do not meet the required skills and qualifications. This leads to a situation where employers struggle to find qualified workers, while many individuals remain unemployed or underemployed.

Managing the labor force deficit and surplus is a strategic challenge for NM. Through education reforms, investments in priority sectors, and favorable policies for migration and regional development, the country can achieve a balanced labor market and contribute to sustainable economic and social growth. The discussion on future perspectives and challenges regarding labor force flows in North Macedonia (NM) is crucial, particularly in the context of balancing labor demand and supply, which impacts sustainable economic development. To achieve a stable balance between labor demand and supply, it is necessary to invest in education and vocational training while creating policies that encourage the return of skilled professionals to the country. This will help improve the quality of the workforce and contribute to the sustainable economic development of NM.

AGRICULTURAL PRODUCTIVITY IN NORTH MACEDONIA (CASE STUDY)

The agricultural sector is the foundation of overall economic growth, particularly for developing countries, but it also receives significant attention in highly industrialized nations. The effects of agriculture have a direct impact on a country's economic development, influencing its share of GDP, labor force distribution, and unemployment reduction. Agriculture serves as a vital source of raw materials for industrial development, especially for the food industry, as well as for machinery production, the manufacture of plant protection products, agricultural trade, agritourism, and handicrafts.

The extent of agriculture's contribution to a country's economic development is determined by the level of productivity in overall agricultural production and the productivity of specific factors involved in the sector. (Tadesse, G., & Akpan, U.; 2018). The productivity in the agricultural sector in the Republic of Macedonia is a key factor for the country's economic development. It is defined as the ratio between the total agricultural production and the resources used to achieve that production, such as land, labor, capital, and technology. Agricultural productivity is important for many reasons, such as ensuring more food, increasing market competition, improving the distribution of agricultural income, increasing savings, reducing labor force migration, etc. Agricultural productivity directly depends on technological advancement. For these reasons, investment in all sectors, including agriculture, has a significant impact on the growth and development of a country. The agricultural sector is vital for the country's economy and development.

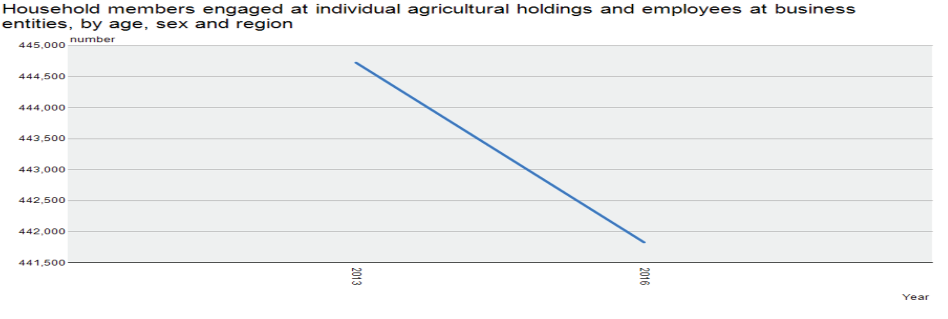
Table 35. Differences and Analysis (North Macedonia & European Union)

Factor	**North Macedonia**	**European Union (Average)**	**Difference and Analysis**
Contribution of agriculture to GDP	10%	1.3%	The sector is more important for North Macedonia's economy, but productivity is lower.
Cereal yield	3-4 tons/ hectare	6-7 tons/ hectare	Productivity is about 50-60% lower due to traditional practices and technologies.
Subsidies per hectare	100-120 EUR/ hectare	200-300 EUR/ hectare	Investments are low, affecting technological development and structural improvements.
Mechanization (tractors/1,000 ha)	30-50	100+	Limited mechanization makes the sector more dependent on labor force.
Use of technologies	10-15% of farms	80-90% of farms	Modern technologies (GPS, drones, automatic irrigation) are rarely used in North Macedonia.
Average production cost	High (due to manual labor)	Low (due to mechanization and optimization)	Production costs are higher in North Macedonia due to un-optimized processes.

Source: Promoting Pro-Poor Growth:Agriculture,DAC Guidelines and Reference Series, Paris:OECD, 2006

Until the mid-20th century, it was believed that agriculture was unproductive, and for this reason, all investments and policies were directed toward industry as a much more productive activity. Industry and agriculture are interdependent, and the development of one activity inevitably leads to the development of the other. Lawrence, M., & Gee, K.-F. (2012). The trend of labor productivity in the Agriculture, Forestry, and Fisheries sector can be divided into two time periods, 2013-2018, and 2018-2020. In the period 2013 2018, there is an intense increase in labor productivity, which reaches 160 index points in 2015, while after 2015 the trend of decreasing labor productivity begin. Hence, the increase in labor productivity in the agricultural sector not only affects the increase in efficiency in the production of primary products, but also has a significant impact on GDP growth and the improvement of foreign trade with focus on export of agricultural products. The increase in labor productivity in agriculture is primarily the result of structural adjustments and technical-technological changes that were made in this sector in the previous period. (Predrag Trpeski at all,; 2022). Agriculture is a source of raw materials for industry, and the industry focuses on producing modern machinery and equipment, as well as plant protection products, which has a direct impact on increasing yields in agriculture. Farmers who apply new techniques and technologies add them to their productivity and generally improve their well-being, while farmers who are not productive enough are forced to leave the market and seek another livelihood.

Graph 6. Household Members engaged at Individual Agricultural Holdings and Employees at Business Entities (by age-sex and regon)

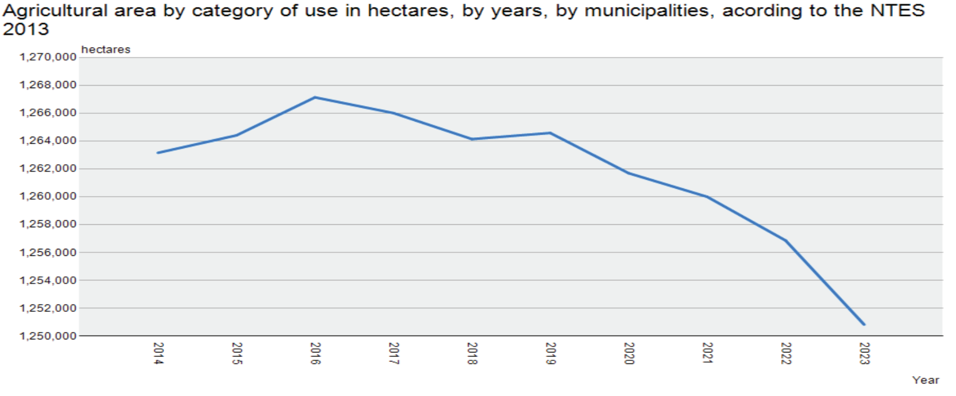


Source: Household member engaged at individual agricultural holding - https://makstat.stat.gov.mk

Household members engaged at individual agricultural holdings and employees at business entities. Total 2013 Republic of Macedonia 444725 2016 Republic of Macedonia 441829.

The comparative advantage of more productive farms increases, meaning they can produce goods at lower costs and, as a result, lower prices, among other things. This makes them competitive in the region and in global markets. [1] Increasing agricultural productivity can contribute to alleviating poverty in less developed countries, where agriculture often employs the majority of the population.

Graph 7. Agricultural Area by Related Categories



Source: Agricultural area by category of use in hectares, by years, by municipalities, acording to the NTES 2013 by Year. REPUBLIC OF MACEDONIA, Agricultural area.. PxWeb

Agricultural productivity is becoming increasingly important with the growth of the world's population. Productivity in the agricultural sector in North Macedonia faces various challenges that affect its capacity to generate sustainable growth. According to analyses, the development of the sector is closely linked to government assistance, adaptation to climate change, and the modernization of agricultural techniques and equipment. The government has also provided various subsidies to improve agricultural technology. For example, up to 600,000 denars have been provided for purchasing equipment such as combines, with priority given to farmers who cultivate large areas. Although agriculture remains an important sector, its contribution to the country's Gross Domestic Product (GDP) is limited. In 2023, the agricultural sector did not make a significant contribution compared to other sectors like trade and services. In 2024, economic development overall was influenced by political and structural factors.

Factors of Agricultural Sector Productivity - Scientific research in the agricultural sector plays a crucial role in increasing labor productivity and achieving higher income by producing goods with competitive advantages that can be placed

1 Promoting Pro-Poor Growth:Agriculture,DAC Guidelines and Reference Series, Paris:OECD, 2006.

alongside domestic and international markets. For these reasons, investment in research and development in all sectors, including agriculture, has a significant impact on a country's economic growth and development. The function of technical progress, developed by Nicholas Kaldor, measures technical progress as the rate of growth in labor productivity. (Kaldor, Nicholas;1957)." According to Nicholas, the higher the rate of growth of capital input per worker, the greater the rate of growth in output per worker, or labor productivity. The growth rate in labor productivity can be explained by the pace of growth in capital intensity. Technological progress is closely linked to human capital. Therefore, the workforce must be compatible with the available technology. Education directly affects the quality of the human capital available, which can be used to a greater extent with higher technology. Education helps individuals adapt more effectively and quickly to new technologies in the context of rapid technological development. The continuous increase in gross expenditure on research and development has been set as a priority objective by the European Union, and the process of Macedonia's integration into the EU requires this prioritization to be applied in North Macedonia as well. (OECD, 2020)

Over the last five years, gross expenditure on research and development in the Republic of North Macedonia has been around 0.2% of GDP. Total investments in development are about 0.22% of the country's gross domestic product, which is a very small portion compared to other European countries. Innovative businesses from the Department of Agriculture and Fisheries accounted for 2% of the total number of innovative entities. Agricultural sector productivity is directly dependent on technological progress.

It is usually measured as the ratio of agricultural output to agricultural inputs. Agricultural productivity can also be measured by what is known as total factor productivity (TFP). This method of calculating agricultural productivity compares the agricultural input index with the agricultural output index. This measure of agricultural productivity was introduced to correct the shortcomings of partial productivity measurements. Changes in total factor productivity are usually attributed to technological progress. Technological progress in agriculture, according to the type of innovation and its effects, is categorized into three types (Giovanni Federico 2005): new and improved plant and animal varieties. The fourth technological progress in agriculture is linked to improvements derived from all previous achievements, to achieve greater and better production with reduced inputs. This involves optimizing production processes and integrating more efficient technologies to enhance agricultural output while minimizing resource use.

Table 4. Productivity Measurements, Factor/Indicators and Value/Proportion

Factor/Indicator	**Value/Proportion**	**Notes**
Expenditure on R&D (% of GDP)	0.2%	Average over the last 5 years in North Macedonia
Total Investments in Development (% of GDP)	0.22%	Compared to European standards, remains very low
Innovative Businesses in Agriculture	2%	From the total number of innovative entities
Total Factor Productivity (TFP)	Slowly increasing	Reflects technological progress in agriculture
Use of Advanced Technologies	Gradual increase	Includes innovations like mechanization and improved production technologies
Century of Major Innovations	19-20	From the use of tractors to plant and animal breeding improvements

Source: Information and comments were compiled by the author. OECD (2020). "The Future of Work: How Does Education Shape Future Employment?" OECD Education Working Papers.

It is essential to enhance agricultural productivity in North Macedonia to ensure sufficient food supply, increase farmers' incomes, and contribute to the country's economic development. This requires an integrated approach that includes improvements in infrastructure, investments in modern technology, and training for farmers. Additionally, the establishment of cooperatives and support for local and international markets can help farmers maximize their benefits. Key factors influencing agricultural productivity in North Macedonia include: (Petroviό, A., & Stojanoviό, M.,2019).

Technology: The use of modern technologies, such as agricultural machinery and advanced cultivation methods, helps improve efficiency and production. **The number of own agricultural machinery and equipment in the** Republic of Macedonia in 2013 are: (State Statistical Office of North Macedonia, 2013)
Single and two-axle tractors in Total 92708; Combine harvesters 1797; and Other fully mechanized harvesters 19744

Education and Training of Farmers: Knowledge and skills enable farmers to apply best agricultural practices and increase yields.

Government Policies: Support through subsidies, trade policies, and infrastructure investments improves production conditions.

Climate Conditions: Favorable climate and soil are crucial for growing different crops and increasing productivity.

Resource Management: Effective management of water, soil, and other natural resources is essential to maximize production.

Market Access and Trade Networks: Access to new markets and strong trade relationships ensure a stable market for agricultural products.

Technological Progress in Agriculture. **First Technological** Progress (Late 19th Century): Introduction of tractors significantly reduced labor requirements, saving time and money while reducing the need for animal traction. **Second Technological** Progress (20th Century): Widespread use of various chemicals and protection tools for plants and animals improved productivity. **Third Technological Progress**: Advances in genetics led to the development of improved plant and animal breeds. To boost agricultural productivity, North Macedonia must adopt a comprehensive strategy focusing on infrastructure improvements, modern technology investments, and farmer education. Additionally, fostering cooperatives and supporting both local and international markets can further enhance agricultural efficiency and economic sustainability.

CONCLUSION

The development of productivity in North Macedonia is a crucial process for enhancing economic competitiveness and improving social well-being. The state should continue to support key sectors such as industry, agriculture, and services, focusing on innovation and modernization. Additionally, support for small and medium-sized enterprises, which are the backbone of the economy, plays a vital role. In this way, productivity growth would contribute to sustainable economic growth and create better opportunities for employment and further development of North Macedonia.

North Macedonia requires significant investments in education and workforce skills. Adapting educational systems to labor market demands is essential to ensure that workers acquire advanced and relevant skills for modern industries. Developing productivity in North Macedonia requires a comprehensive and coordinated approach where investments in education, infrastructure, technology, and business support are key to achieving economic growth. The use of modern technology, support for innovation, and the creation of opportunities for economic diversification can stimulate the development of new sectors and improve efficiency in existing ones. Only by following this approach can North Macedonia ensure sustainable productivity growth and create new opportunities for development and well-being for its citizens.

Reflecting on the comparability of productivity and labor competitiveness among Balkan countries and within the regions and industries of North Macedonia is a strategic topic for understanding economic development. Since its independence in 1991, North Macedonia has faced numerous challenges, including transitioning from a planned economy to a market economy, integrating into the international economic system, and competing with neighboring countries. Labor productivity and economic competitiveness are key factors influencing not only economic growth but also the country's ability to attract foreign investment and build a sustainable economy resilient to global crises.

Balancing labor supply and demand is a crucial factor in ensuring sustainable economic development in North Macedonia. Over the years, labor force trends have been influenced by various factors, including demographic changes, global labor trends, technology, and economic policies. In this context, labor shortages in sectors such as construction, information technology, and agriculture pose obstacles to economic growth.

The economy of North Macedonia has shown a gradual improvement in competitiveness. Imports still dominate over exports, resulting in a balance of payments deficit exceeding $1.6 billion. Over the past decade, the economy of North Macedonia has seen a proportional increase in both exports and imports (6.8 times and 6.0 times, respectively). In 2018, North Macedonia achieved its highest volume of trade in goods and services with the EU, accounting for 82.1% of exports and 62.4% of imports.

Agriculture also holds the potential for increasing exports. The linkage of primary agricultural products with processing industries, such as sugar processing, plant-based oil production, fruit and vegetable processing, flour milling, slaughterhouses, and beverage production, can enhance North Macedonia's export potential. The agricultural sector, as a distinct part of the national economy, is closely linked to economic development. Thus, economic development can have a reciprocal effect on the further growth of the agricultural sector by increasing the purchasing power of the population due to higher living standards, leading to greater demand for agricultural products. Agricultural productivity in North Macedonia is ten times lower compared to EU countries. Numerous analyses indicate that the highest correlation exists between the application of technology and research and development activities.

Although agriculture represents a significant share of GDP and employment in the country, its productivity level remains lower compared to other regional and EU standards. Several factors influence this sector's productivity level, including limited access to financing for farmers. We believe that agricultural productivity in North Macedonia can be increased through the adoption of new plant and livestock production techniques. To achieve this goal, adequate support should be provided through agricultural subsidies for increasing crop and livestock yields, investments in the purchase of machinery and equipment, and training and education for farmers. Outdated production and breeding techniques result in low yields and poor product quality. Investing in new and modern machinery and equipment, adopting new production methods, and even fostering innovation inevitably lead to an increase in agricultural productivity. The low level of education contributes to a conservative attitude towards change and innovation; therefore, it is essential to improve the educational profile of Macedonian farmers by investing in further education, training, and seminars, including lifelong learning initiatives.

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