

CURRENT TRENDS, CHALLENGES, AND OPPORTUNITIES: PREDICTING FUTURE ECONOMIC TRENDS AND IDENTIFYING POTENTIAL CHALLENGES AND OPPORTUNITIES FOR MACEDONIA

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INTRODUCTION

The Republic of North Macedonia started its transition process in the 90s of the 20th century, in extremely difficult conditions. After the independence, in addition to the presented internal unfavorable conditions and problems, the country in the same time, faced with numerous external negative shocks. Despite the difficult situation, North Macedonia started the transition process and implemented key reforms. In the past three decades, during the transition process, were implemented numerous reforms in all key areas, following the experiences and good practices from the countries in the Region and other successful countries in transition. The achieved results in North Macedonia in the area of economic growth and development, role of law, institutions, as well as in the other crucial areas – human development, education, science and environment are below compared with the successful transition countries and the EU member states. The low development progress and the weak results in the crucial social areas impose the need for design of a new development model for the Macedonian economy. The aim of the paper is to identify the current conditions and

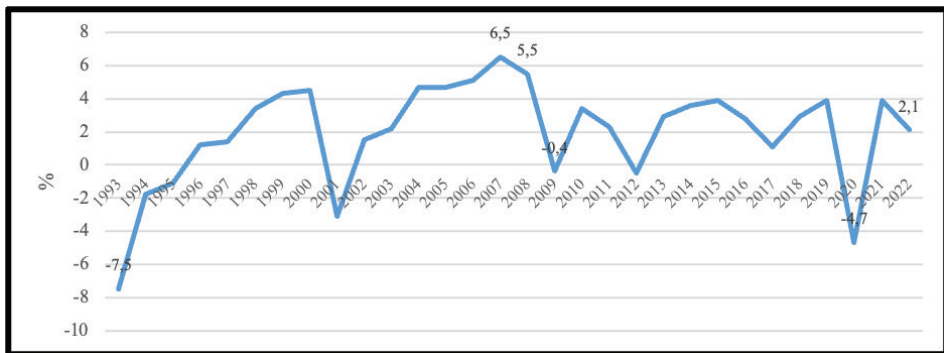
limitations of the Macedonian economy, which will be used as a starting point for design of recommendations for creation and implementation of a new development model for the Macedonian economy that will ensure achievement of sustainable development. In order to achieve the paper's goal, three scientifically based approaches for a decomposition of the Macedonian GDP were applied. The following three methods were used: the production (sectoral) method, the expenditure method and the growth accounting method. Furthermore, for properly addressing of the limiting factors, the analysis is focused on the following areas: technological progress and innovation, human capital, income inequality and poverty, environmental protection and the quality of institutions. The analysis is focused on those areas having in mind the fact that sustainable development could not be achieved without a commitment to social progress, environment balance, economic growth and strong institutions. In the paper are presented data from relevant national and international institutions as well as calculations prepared by the authors. From a methodological aspect, within the paper dominates the use of the method of analysis and synthesis.

ASSESSMENT OF THE ECONOMIC GROWTH IN NORTH MACEDONIA

The development process in which the Republic of North Macedonia has been gone through its independence till today, can be generally assessed as very complex and unsustainable. The Republic of North Macedonia is a country with a low development performance and since independence has achieved low, even stagnant growth rates, measured through GDP growth rate, which are significantly lower than the potential growth rates of the country, in range from 4.5% to 5%. In the almost thirty-year period, from 1993 to 2022, the average economic growth rate is 2%. In the first years after its independence, North Macedonia achieved negative economic growth rates and cumulatively in the period from 1991 to 1995, the country has lost almost a third of its GDP (MANU 2017). In the period of the Great Financial Crisis 2007 – 2008, the growth rates in the country were in the range from 5.5% to 6.5%, which is at the level of the potential GDP, while in 2009, as a consequence of the crisis, the growth rate is negative -0.4%. In the period from 2010 to 2019, the average growth rate in the country was 2.6%, while in 2020, as a result of the Covid-19 crisis, the growth rate has declined to -4.7%. In the following year, the economy has partially recovered and with a growth rate of 3.9%, the country failed to return to the pre-pandemic level. The relatively low growth rate in 2022 is a result of the energy and cost of living crisis that North Macedonia has faced with. The Macedonian economy continues

to be vulnerable, it faces with domestic challenges, as well as with shocks and influence of international aspect. Even in the pre-pandemic period, the country was significantly lagging behind the peer countries and the countries from the Region, while with the current low and stagnant growth rates, North Macedonia needs several decades to reach the EU average. The country's aspiration to overcome the economic gap and the gap in the standard of living of the developed countries is very difficult to be achieved.

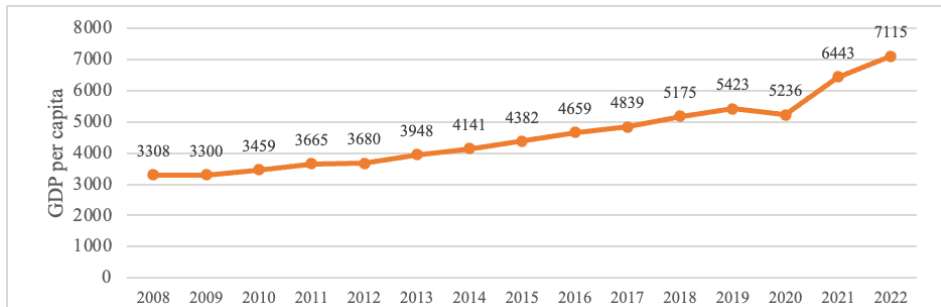
Figure 1. GDP growth rate in Republic of North Macedonia



Source: NBRSM 2023.

The GDP per capita has almost doubled in the past two decades, and according to the World Bank ranking, North Macedonia is in the bottom of the upper middle-income countries. A more significant increase in the living standard has been achieved in the last two years, but as a result of the unfavorable demographic trends, not as a result of its real increase. The convergence process of North Macedonia towards EU member states in terms of GDP and GDP per capita is quite slowly. Comparing the average pre-pandemic growth rate of GDP per capita of North Macedonia with average growth rate of the EU, it could be concluded that it takes almost 40 years North Macedonia to reach the EU average standard of living, which is a quite long period.

Figure 2. Republic of North Macedonia GDP per capita growth rate in Republic of North Macedonia

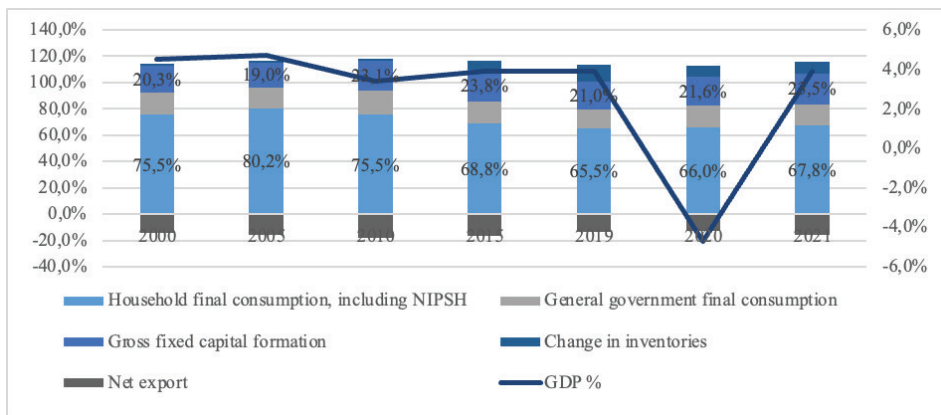


Source: SSO 202a.

The obstacles which lead to low growth rates and slow improvement of the living standard are numerous. In order to properly identify why the Macedonian economy in the entire period after the independence achieves low growth rates that significantly lag behind the potential one, it is necessary to identify the fundamentals and key factors that determine the economic growth of the country. Hereafter, the anatomy of the Macedonian growth rate is observed through the use of the aggregate demand approach, the sectoral (production) approach and through the growth accounting method.

Figure 3 shows the structure of the Macedonian GDP through the method of aggregate demand is presented, as well as the relative participation of its components.

Figure 3. The structure of aggregate demand in North Macedonia



Source: Authors' own calculations using SSO data

As can be seen from figure 3, the final consumption has the largest share in the Macedonian GDP, namely the household final consumption, including the final consumption of non-profit institutions serving households – NPISHs. Its relative share in GDP in 2000 was 75.5%, while in 2019 as a result of the Covid-19 crisis, the share of final consumption has decreased by 10 pp and amounted 65.5%. In 2021 the share has increased slightly and reached 67.8%. The gross capital formation, including the gross fixed capital formation and changes in inventories accounted for 21.9% of GDP in 2000. Their share in GDP in 2021 has significantly increased and reached 32.2%, which represents a growth of more than 10 pp. The increase in gross capital formation is mainly due to the increase in the inventories, while the investments in gross fixed capital formation have only slightly increased. The net export has the negative share in GDP as a result of the higher import than export. It is concerning the fact that during the period of analysis, from 2000 to 2021, the net export has increased by almost 2 pp.

Of a high importance for the analysis is identification of the sources of GDP growth, i.e. estimating the contribution of the components of GDP through usage of the aggregate demand approach. In the period 2001 – 2021, the household final consumption, including NPISHs has the highest average relative share in GDP of 71.7%. In the twenty-year period, the average growth of the household final consumption is 4.8%, while its absolute contribution to the growth rate is 1.86%. The general government public consumption which has an average relative share of 17% to the growth rate, contributes with 0.44% to the average growth rate of 2.6% in the period 2001 – 2021. The average relative share of gross fixed capital formation in the GDP structure is 22.5%, while its absolute contribution is almost 0.6%. Over the twenty-year period, the investments in gross fixed capital formation have increased by 6.4% on average. The average growth rate of export is higher than the average growth rate of import, but the average absolute contribution of export to GDP is 1.24%, while of the import is negative, - 1.67%. The high share of import, despite the increase of the export is generally due to the import dependance of the export, i.e. most FDI are import dependent.

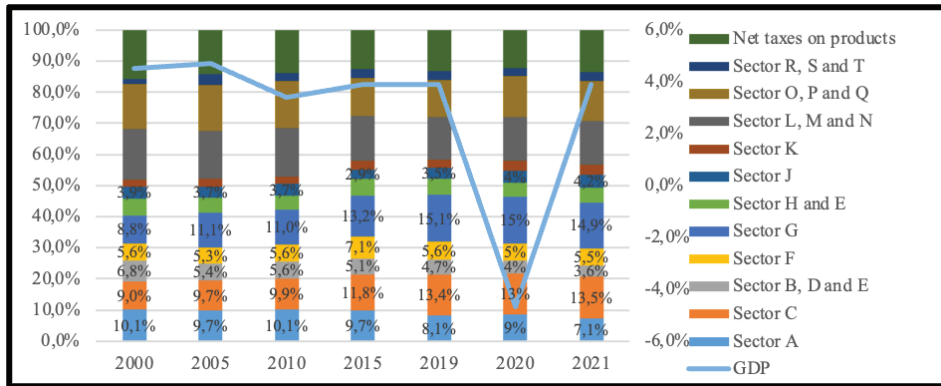
Table 1. Sources of GDP Growth Rates in North Macedonia, Through Aggregate Demand Approach, 2001 - 2021

	2001 – 2021		
	Growth rates	Contribution	Relative share
Household final consumptions, including NIPSHs	4,8%	1,86%	71,7%
General government final consumption	5,5%	0,44%	16,9%
Gross fixed capital formation	6,4%	0,59%	22,5%
Change in inventories	-12,7%	0,14%	5,5%
Export of goods and services	9,7%	1,24%	47,5%
Import of goods and services	8,7%	-1,67%	-64,1%
Gross domestic product	2,6%	2,6%	100%

Source: Authors' calculations based on SSO data.

Figure 4 is showing the structure and relative share of economic sectors in GDP in the Macedonian economy, through the usage of production (sectoral) method. The presented data indicate on several facts regarding the sectoral structure of GDP in the country. First, there is a trend of continuous decrease of the value added of sector agriculture in the structure of GDP. This sector participated with 10% in the value added in GDP 20 years ago, and has decreased to 7% in 2021. Despite the government's measures in recent years intended for modernization of this sector, presented mainly in forms of subsidies, there is still a downward trend in the value added of this sector in GDP. The share of the manufacturing sector in the value added to GDP has increased from 9% to 13%, and this is generally a result of the high inflow of FDI in the recent years, mainly in the automotive industry. On the other hand, the value added of construction in GDP has increased through the period of analysis, the highest share of this sector in GDP was in 2015, 7%, this was a result of the construction expansion in that year. The participation of the manufacturing; construction, mining and quarrying; energy and waste and wastewater management in 2021 is 23% and has increased compared with the previous period. In the past twenty-year period, the biggest increase in the value added in GDP is reached by the wholesale and retail trade sector, which has increased by more than 6 pp. The participation of the services sectors – information and communication and financial and insurance activities in the value added of GDP has increased from 6.1% in 2000 to 7.3% in 2021.

Figure 4. Sectoral Structure of GDP in North Macedonia



Source: Authors' own calculations using SSO data

The decomposition of the growth rate through the sectoral method has shown that the highest average absolute contribution to the growth rate of the Macedonian economy has the manufacturing and the wholesale and retail trade, with 0.3%. In the period of analysis, 2001 – 2021, the manufacturing sector has grown by 7.9%, while the trade sector has the highest average growth rate of 8.2%, compared with the other sectors. The average absolute contribution of the sectors information and communication and financial and insurance activities in GDP is 0.2%, while their average relative contribution in GDP is 6.3%.

Table 2. Sources of GDP growth rates in North Macedonia, through production (sectoral) approach, 2001 - 2021

	2001-2021		
	Growth rate	Contribution	Relative share
A - Agriculture, forestry and fishing	4,2%	0,2%	9,6%
C – Manufacturing	7,9%	0,3%	10,6%
B - Mining and quarrying; D - Electricity, gas, steam and air conditioning supply; E - Water supply; sewerage, waste management and remediation activities	2,7%	0,1%	5,2%
F – Construction	6,1%	0,2%	6,0%
G - Wholesale and retail trade; repair of motor vehicles and motorcycles;	8,2%	0,3%	12,2%

H - Transportation and storage; I - Accommodation and food service activities	5,4%	0,1%	4,8%
J - Information and communication	5,8%	0,1%	3,7%
K - Financial and insurance activities	7,7%	0,1%	2,6%
L - Real estate activities; M -Professional, scientific and technical activitie; N - Administrative and support service activitie	4,7%	0,4%	15,2%
O - Public administration and defence; compulsory social security; P - Education; Q -Human health and social work activities	4,7%	0,4%	13,8%
R - Arts, entertainment and recreation; S - Other service activities; T - Activities of households as employers; undifferentiated goodsand services-producing activities of households for own use	10,4%	0,1%	2,7%
Value added	5,4%	0,0%	
Net taxes on products	5,0%	2,2%	86,2%
Gross domestic product	2,6%	2,6%	100%

Source: Authors' calculations based on SSO data.

In order to study more deeply the anathomy of growth rate of Macedonian economy is applied the growth accounting method. Through the following formula is decomposed the economic growth and it is measured the contributions from labour, capital and total factor productivity (TFP).

$$Y = A \cdot F(K, L)$$

Where, Y presents the output (GDP), A presents the total factor productivity (TFP), K presents the physical capital input (K) and L presents the labour input (L).

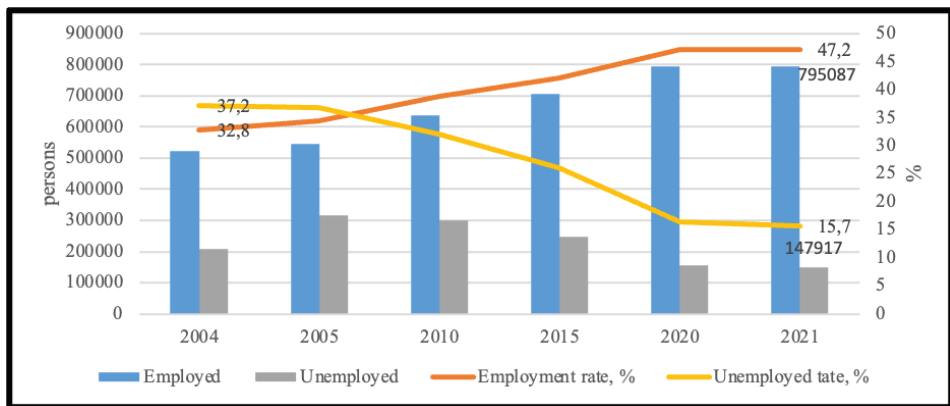
In terms of growth rate, the formula is expressed as:

$$\Delta Y/Y = \Delta A/A + \alpha \cdot \Delta K/K + (1-\alpha) \cdot \Delta L/L$$

Where: $\Delta Y/Y$ is growth rate of output, $\Delta A/A$ is growth rate of TFP, $\Delta K/K$ is the growth rate of physical capital, $\Delta L/L$ is the growth rate of labour, α presents the output elasticity of physical capital and $1-\alpha$ the output elasticity of labour.

For the case of Macedonian economy due to the lack of data for number of working hours of employees in the Macedonian economy, the labour is calculated through the number of employed. The average growth of employed in North Macedonia for the period 2005 - 2021 is 2.5%.

Figure 5. Labour Market in North Macedonia, Employed and Unemployed, Persons and Rates



Source: SSO 2024a.

The calculation of the value of physical capital as input in growth accounting formula faces with numerous difficulties. In the national statistics there are not available data for the measurement of the real value of the physical capital (fixed assets) in the country. Because those data are not available, an estimation of the value of the physical capital was made by aggregation of the sum of investments i.e. gross fixed capital formation in equipment and machinery; products in agriculture, forestry, fisheries and aquaculture and in other equipment in the previous 10 years and the sum of gross fixed capital formation in construction in the previous 70 years.¹

Table 3. Gross Fixed Capital Formation, According Classification of Products by Activities in North Macedonia

million denars	2004	2005	2010	2015	2020	2021
Gross fixed capital formation	59 605	58 720	100 851	133 254	144 506	171 094
Products of agriculture, forestry, fisheries and aquaculture	695	412	668	674	944	775

1 The result of the net capital value is obtained when a depreciation rate of 1/10 is applied to the value of equipment and machinery, cultivated assets and other equipment, while a depreciation rate of 1/70 is applied to the value of investments in construction works.

Machinery and equipment	17 706	18 681	30 231	39 521	45 486	57 272
Construction	37 770	36 393	64 069	85 481	84 657	97 326
Other products (including R&D)	3,434	3,234	5,884	7,578	13,420	15,721

Source: SSO 2023b.

The calculation of the physical capital in the Macedonian economy through the application of the above explained method shows that the average growth rate of the physical capital in the period 2005 – 2021 is 5.3%.

For the estimation of the coefficients for partial elasticity for labour and physical capital the Cob-Douglas production function for constant returns of scale is applied. This means that they are constant and do not change regardless of the change in the level of technology progress. In the most empirical estimations are used given values for those coefficients. For the purpose of the paper for α (elasticity of output with respect to physical capital) it is used value of 0.4, while for $1-\alpha$ (elasticity of output with respect to labor) it is used value of 0.6.²

The results from the growth accounting method shows that mainly the growth rate in the Macedonian economy in the period 2004 – 2021 is a result of the increase of the physical capital and labour. Physical capital is a main source of a growth. The absolute contribution of the physical capital amounts to 2.1%, while in relative contribution it determines 61.8% of the growth of the Macedonian economy. The labour on average determinates 1.5% of the average growth rate of 3.4% in the period 2004 – 2021. The average relative share of labour in the growth rate is 44.1%. The TFP has a negative contribution in the growth rate. Those results are also evident in other empirical analysis (MF 2020). The negative contribution of TFP in the analyzed period may be a result of the economic crisis, the Global financial crisis and the Covid-19 crisis that strongly hit the Macedonian economy and have a negative effect on the factor productivity.

² These values are widely accepted in the economic analysis, but they can vary by industry and country, reflecting different production technologies and labor-capital ratios.

Table 4. Sources of GDP Growth Rates in North Macedonia, Through Growth Accounting Method, 2004 - 2021³

	2004- 2021		
	Growth rate	Contribution	Relative share
Physical capital (K)	5.3%	2.10%	61.8%
Labour (L)	2.5%	1.50%	44.1%
Total Factor Productivity (TFP)	2.4%	-0.20%	-5.9%
Gross Domestic Product (GDP)	3.4%	3.4%	100%

Source: Authors' calculations based on SSO data.

R&D, INNOVATION AND TECHNOLOGICAL PROGRESS

Today R&D investments are of a crucial importance for the economic and social progress of each country. Hence, increasing the R&D investments is of fundamental importance for the development of the Macedonian economy. According to the key indicators, the situation in this field in North Macedonia is in deep crisis, because in the past decades, the R&D investments in the country were treated as cost, not as an investment for the future of the country. The slow transformation process of Macedonian society into a knowledge-based society, leads to not having a strategic approach for the development of this crucial social and economic sphere.

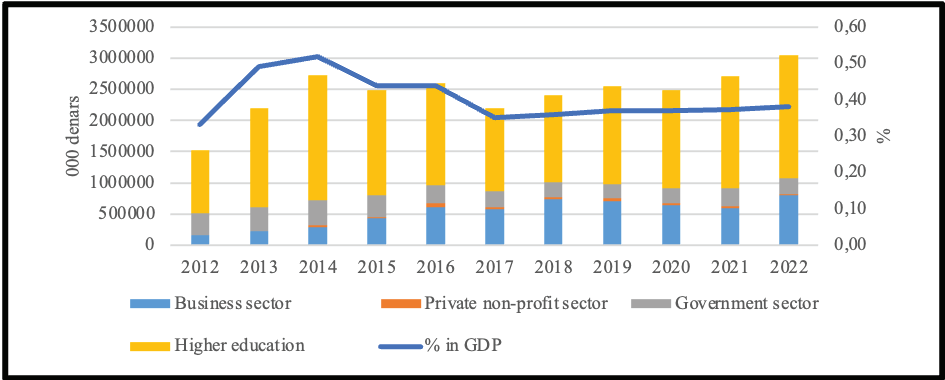
According to the key indicators, in this area, North Macedonia is lagging behind the developed countries, the EU average and countries from the Region. The R&D investments have a declining trend in the recent period and in 2022 they are at level of 0.38% of GDP. For a comparison, in the same year, the R&D investments reached 2.27% of GDP at EU level (Eurostat 2023). As it can be seen from figure 6 the highest R&D investments in North Macedonia were made in 2015, when they reached 0.52% of GDP, but they were still lower than the defined target. In the Strategy for Innovation of the Republic of Macedonia for the period 2012 – 2020, the defined target was R&D investments to reach 1.8% of GDP by 2020, but in 2020 they reached only 0.37% of GDP.

The structure of the R&D investments by sectors (business sector, higher education, government sector and private non-profit sector) is unfavorable, having in

3 Variations in the calculated results are possible as a result of the use of a different method for calculation of the values, mainly for the value of the physical capital.

mind the marginal share of the business sector in the total investments. In North Macedonia about a quarter of the total R&D investments (26.4%) were made by the business sector, while its share in GDP is only 0.1%. For a comparison in 2022 at EU level the investments in R&D made by the business sector reached 1.48% of GDP, while the business sector participates with 66.2% in the total R&D investments (Eurostat 2023). The dominant share in R&D investments in North Macedonia has the higher education. Almost 65% of the total R&D investments were made by this sector. The sectoral investments and its share in total R&D investments in North Macedonia is unfavorable and atypical compared to the EU and other developed countries.

Figure 6. R&D Investments, Structure of R&D Investments by Sectors, Share of R&D Investments in GDP in North Macedonia



Source: SSO 2023c.

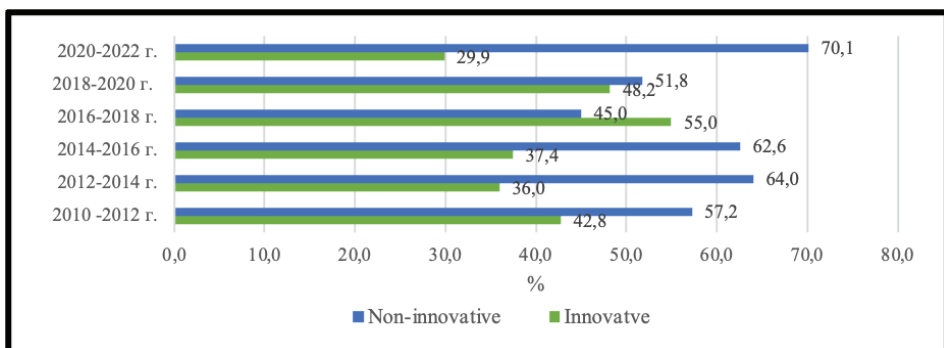
The Global Knowledge Index (GKI) which measures the knowledge related performance in the countries, identifies a serious weakness in the R&D area in North Macedonia. R&D and innovation is one subindex of GKI. In the last GKI report for 2022, the weakest component of GKI for North Macedonia is R&D and innovation. The value of R&D and innovation is 28.29 index points and North Macedonia is ranked on 59th position out of 133 countries (<https://www.knowledge4all.com/country-profile?CountryId=1108>). As main problem for the poor R&D performance and low innovativeness is identified the low R&D intensity, and especially low R&D investments made by the business sector. The low R&D input, presented by R&D investments, result in low output, presented through application for patents and trademarks, intellectual property rights, citations per document, number of published articles/average document per researcher, etc.

The numerous accumulated problems, as well as the stagnation in this area, resulting from the inconsistent solutions, generally of a palliative nature, as well as the politicized reforms, which could be characterized as “reforms for the sake of reforms” have resulted in legging of North Macedonia behind the EU and global trends and achievements in the R&D area.

Investing in R&D and introduction of innovations is of a key importance for strengthening the resilience and the technological independence of the countries, as well as for improvement of the productivity and competitiveness of the business sector. R&D and innovation have a crucial role in overcoming the economic, social and environmental challenges that nowadays countries faced with. Having in mind this, an overview of the current situation in the domain of innovativeness in the Macedonian business sector is done, and the main obstacles for the country’s low innovation performance are identified.

According to the latest available data, in the three-year period 2020 – 2022, almost 30% of the enterprises with more than 10 employees in North Macedonia are innovative. Compared with the previous period 2018 – 2020, the innovativeness of the Macedonian business sector has decreased by 18 pp. By the sectors, the most innovative is the division - Other professional, scientific and technical activities, where 81% of the enterprises are innovative, and sector - Supply of electricity, gas, steam and air conditioning, where innovativeness exceeds 52%. The high innovativeness of these sectors is due to their dynamic nature.

Figure 7. Share of Innovative and Non-Innovative Enterprises in North Macedonia



Source: SSO 2024b.

As innovative enterprises in the period 2016 – 2018, 2018 – 2020 and 2020 – 2022 are classified those that have introduced a product innovation and/or process innovation. While in the previous periods in innovative enterprises were included the enterprises that have introduced one of the four types of innovation: product innovation, process innovation, marketing innovation or organizational innovation⁴. In the business process innovation are included not only the technological innovations, but also the non-technological innovations – marketing and organizational innovations. In the Macedonian business sector, about 54% of the business process innovation, are organizational innovation, i.e., innovation in a form of new or significantly changed methods of organizing work responsibilities, decision making or human resources management. A slightly smaller percentage of the introduced innovation, almost 48% are in a form of marketing methods. The dominant share of the non-technological innovation in the Macedonian business sector is a proof that most of the introduced innovations are not a result from R&D activities, but a result of purchase of a new equipment, training of employees, etc.

HUMAN CAPITAL

Increasing the quality of human capital in North Macedonia is key factor for achievement of inclusive growth and sustainable development, as well as for improvement of the business productivity, dealing with the population aging, “brain drain”, improvement of the labour force participation rate, etc.

The Human Capital Index (HCI), calculated by the World Bank quantifies how the insufficient investment in education and health in today’s generation of children affects their productivity and their earnings in the future. The value of HCI for North Macedonia shows that a child born in North Macedonia today will be 56% as productive when he/she grows up as could be if he/she enjoyed complete education and full health. The value of HCI for North Macedonia increased from 0.54 to 0.56 in the period between 2010 and 2020. However, the value of HCI for North Macedonia is the lowest within the countries in the Western Balkan, and it is lower than the average for Europe and Central Asia, which is 69%. The value of HCI for North Macedonia is at the level of high middle-income countries. In the Systematic Country Diagnostic prepared by the World Bank, the loss of the human capital in the country is mainly result of the insufficient level of investment in education and the low level of quality of the education system (World Bank 2023a).

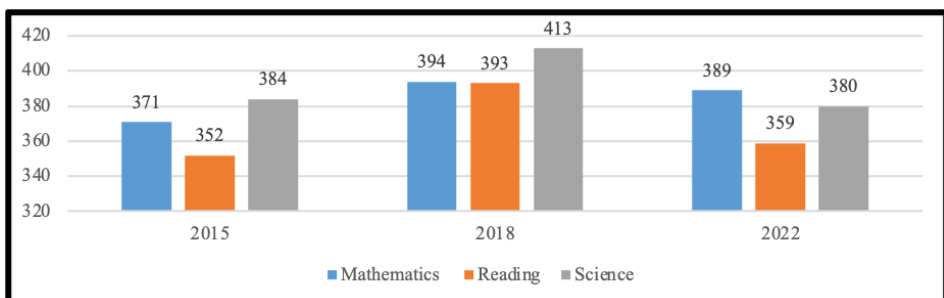
4 The changes in the definition of innovative enterprises and types of innovation are a result of methodological changes. See more at: Methodological notes: Innovative business entities

A crucial prerequisite for building human capital is access to education at all levels, starting from preschool to higher education. From this aspect, the access to all levels of education in the country has been improved in the past years.

The formation of human capital and mainly its productivity do not depend only of the access to education, but most important is the quality of the learning process. The figures for North Macedonia show that by the age of 18, our children attend 12 years in education (pre-school, primary, secondary education) but the quality of learning that they gain is equivalent to 7.3 years of schooling, presenting a learning loss of 3.7 years. This data is an indicator for the low quality of the education system in the country. In 2018 the learning losses were even greater, the learning loss reached 4.4 years. Despite the reforms in the education system, the education outcomes and results are not significantly improved (World Bank 2020).

The PISA results are used for the measurement of the quality of the education system. The PISA 2022 results for North Macedonia are weaker compared with the previous PISA results from 2018. This is an indicator for the downward trend of the quality of the learning process in the country. The downward trend is presented in all three areas: math, reading and science. According to the latest PISA results, the OECD's average results in mathematics is 472 points out of 625, in reading 476 points and in science 485 points. For a comparison in North Macedonia the average result in mathematics is 389 points (394 points in 2018), in reading 359 points (393 points in 2018) and in science 380 points (413 points in 2018).

Figure 8. PISA Results for North Macedonia, by Thematic Areas



Source: OECD 2023.

The low productivity and quality of human capital in the country, which in a large extent are a result from the low quality of the learning process and inadequate educational programs with the labour demand, have distorting consequences on the labour market. The unemployment rate in the transition period was very

high, as a result of the process of privatization, but in the recent years is continuously decreasing. In 2015 the unemployment rate was 26.1% and has decreased to 16.4% in 2020, but despite the decrease of the unemployment rate, North Macedonia still has the highest rate compared with the countries from the Region and higher than the EU average of 7.2% in 2020 (Eurostat 2024a).

An additional problem for the human capital in the country is the high emigration rate of young and qualified personnel. If this emigration continues, there is a serious threat for the country of not been able to use the benefits of investing in human capital. The emigration of highly educated individuals is known as brain drain and according to the brain drain rate, North Macedonia is in the group of the countries with highest intensity of brain drain (World Economic Forum 2019). The emigration of the highly education persons from the country is generally a result of the high unemployment rate of the young people and the process of massification of the higher education and overproduction of highly educated individuals. Other factors which impact the emigration rate are: the search for better living standards and higher wages in the receiving countries, underestimation of the young people on the labour market, lack of vocational training on the working place, etc. (IOM 2022). Emigration, especially intellectual emigration has negative implications on formation of human capital and a negative multiplier effect on the development of the Macedonian economy. The annual loss for North Macedonia as a result of the emigration of the working age population is estimated to cost about 333 million euros, or about 3.1% of GDP (Government of RS Macedonia 2024 Strategy for Human Capital).

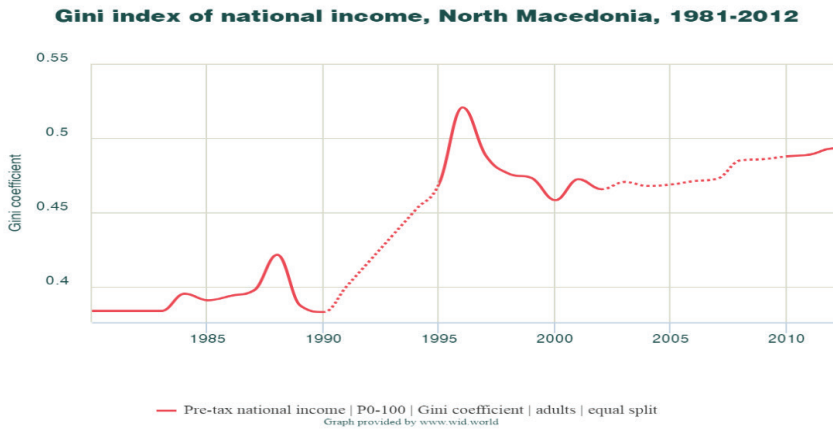
INCOME INEQUALITY

In the Constitution Republic of North Macedonia is declared as a welfare state, although the current situation and the available data do not support this declaration.

In the image 1 it is presented the Gini coefficient for North Macedonia for the period 1980 – 2010. In the period after country's independence, the Gini coefficient reached 40%, which is a warning level of income inequality. In the 1990s, during the period of transition and privatization of the state capital, inequalities in the country significantly increased as a result of the privatization model that enabled the concentration of the state capital in the hands of a few powerful people, i.e. oligarchs. In the same time the privatization process was followed by massive layoffs, reduction and wage cuts for workers. The income inequalities culminated in 1996, when the Gini coefficient reached a value of 52%, which is

a proof for the high income inequalities in the country. In the next period until 2010 some significant decline in income inequality is not reached.

Figure 9. Gini Coefficient for North Macedonia (National Income Before Taxation)

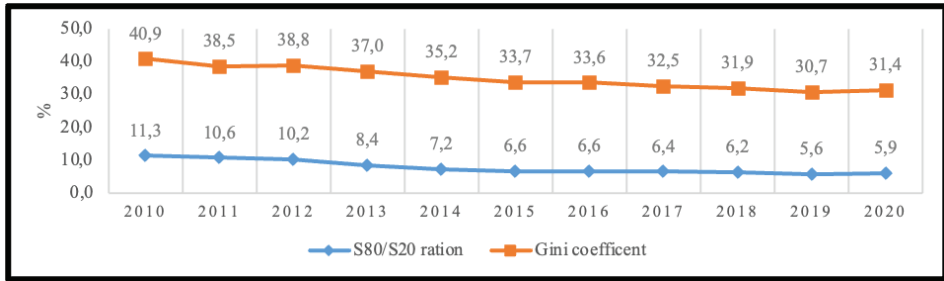


Source: World Inequality Database 2023.

Figure 10 is showing the Gini coefficient and the S80/S20 ratio for North Macedonia for the period 2010 – 2020. Both indicators indicate on decreasing trend in the income inequalities over the presented years. The value of the Gini coefficient has decreased by 10 pp, from 2010 to 2019, while in 2020 has increased by 0.7 pp. The increase in income inequality in North Macedonia in 2020 has the same trend as in most countries and is the result of the Covid-19 crisis, which has led to a significant rise in income inequalities and rise of the top 5% wealthiest population.

An even greater decrease in income inequalities is registered through the calculation of the income ration of the highest and lowest 20 percent equivalized incomes of persons within the households. The S80/S20 in 2010 was 11.3% and in 2020 was 5.9% which shows a decrease by 5.4 pp. Following this indicator also a slight increase in income inequality was registered in 2020 as a result of the Covid-19 crisis. According to the both indicators, Gini coefficient and S80/S20, North Macedonia is a country with a higher income inequality compared with the EU average. Analyzing the indicators it could be concluded that in recent years there are improvements in the area of income inequality, but the results from the Life in Transition Survey (LiTS) show that more than 70% of the population in North Macedonia has the opinion that income inequality between the rich and the poor in the country is increasing (World Banka 2019).

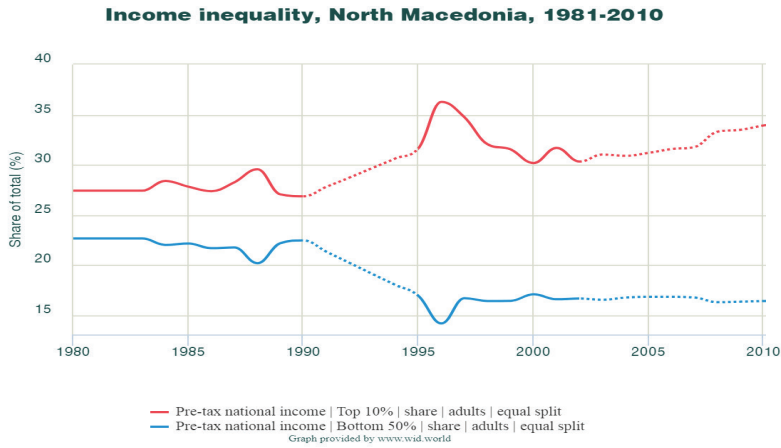
Figure 10. Gini Coefficient and S80/S20 Ratio in North Macedonia



Source: SSO 2022a, 2022b.

The analysis of income distribution in the country, over a longer time period shows that the position of the poorest 50%, the position of the 50% of the population with lowest income, has worsened in the 90s, in the first years after the independence as a result of job losses of the population with lowest income, and the increase of income of the top 10% of the population with the highest income. The income inequalities pick the top in the mid-1990s and the situation in this area does not improve significantly until 2010. From the analysis of the income inequality by income groups it could be concluded that in the first years after country independence, the income inequality increased as a result of the privatization process, not properly formulated social policies or their completed absence in the first years after independence, and not established minimum wage policy. All those factors led to an income decrease of the poorest population and the income increase of the richest population, i.e. of persons with highest incomes, which contributed to the persistence of high income inequality during the 2000s. The most affected is the middle-income class, which in the first period after independence stagnated, but then started to continuously decline.

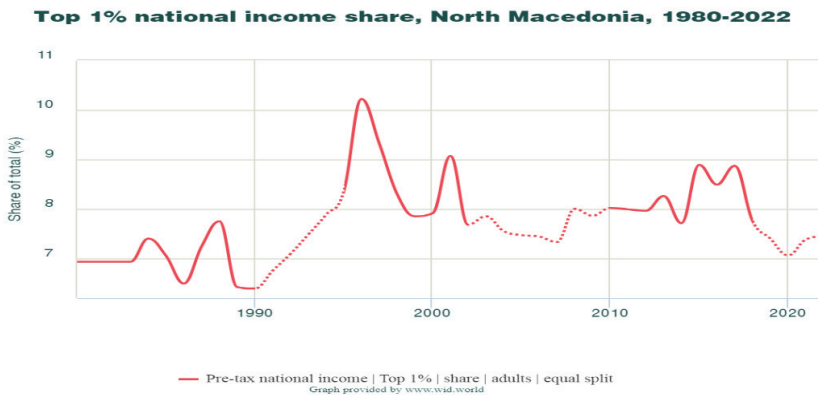
Figure 11. Income distribution in North Macedonia, top 10% and bottom 50% share



Source: World Inequality Database 2023.

A complete picture of the income inequality will not be obtained if the level of income distribution of the top 1% of population with highest income is not analyzed. There is a lack of official statistical data of the income of the top 1%. Therefore, image 3 presents the national income before taxation for the top 1% for the period from 1980 to 2022. The highest income of the top 1% was realized in the transition years, as a result of the enriched fund managers in the privatization. In the 2000s the income of the top 1% has decreased, although still continues to be relatively high, reaching 8% in 2010, and more significant growth is achieved in 2015 and 2017 to 8.9%. In the following years this tendency is decreasing and in 2022 reached 7.4%, which present a decrease of 1 pp compared to 2017.

Figure 12. The Share of the National Income of top 1% Before Taxation in North Macedonia



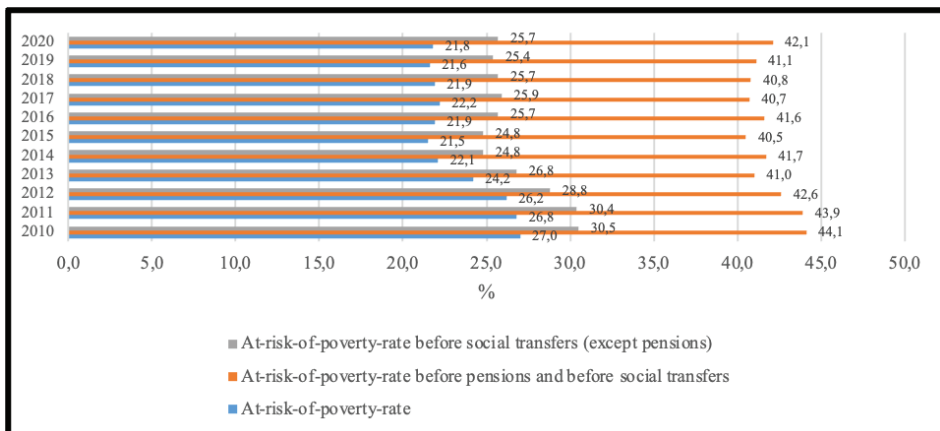
Source: World Inequality Database 2023.

AT-RISK-OF-POVERTY RATE

In North Macedonia poverty is one of the biggest social problems. The poverty rate increased significantly in the mid-1990s during the privatization of the state enterprises, when a large number of employees lost their jobs.

Over 40% of the population in North Macedonia lives in at-risk-of-poverty or social exclusion. The poverty rate before the payment of pensions and social transfers has stagnated. In a ten-year period, it has decreased by only 2 percentage points, from 44.1% in 2010 to 42.1% in 2020. The poverty rate decreased significantly after the payment of pensions, i.e. in 2020 it is reduced by more than 16 pp and is 25.7%. For a comparison, the poverty rate after the payment of pensions has decreased by almost 5 pp from 2010 to 2020, which indicates on the effective role of pensions in the fight against poverty. This is not a surprising fact considering that pensions have recorded continuous growth in the past years. The poverty rate decreases after the distribution of social transfers (social assistance, unemployment benefits, health care). After the social transfers the poverty rate decreased by almost 4 pp from 2010 to 2020 and is 21.8%. A total of 15.4% of the country's population in 2020 lives in long-term poverty. This data does lead to the conclusion that social transfers contribute to poverty reduction; however, their effect is significantly lower compared to the effect of pensions.

Figure 13. General Indicators for at-risk-of-poverty in North Macedonia



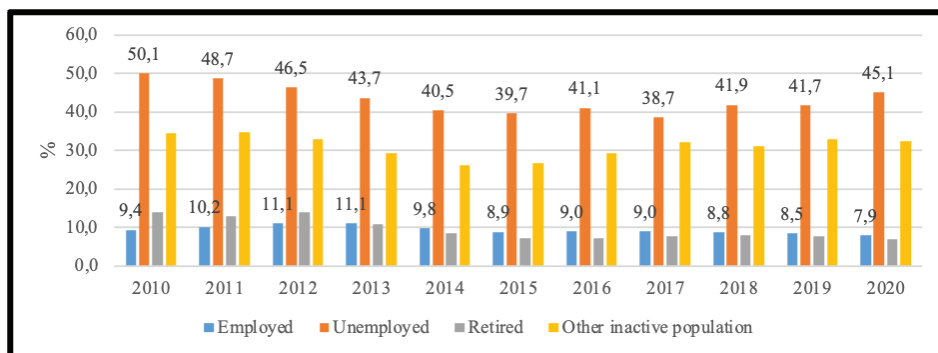
Source: SSO 2022c, 2022d, 2022e.

Job growth and wage increases, including the minimum wage, are responsible for more than 90% of poverty reduction between 2009 and 2020 (World Bank 2023a). Remittances, which exceed 3% of GDP in recent years, have a certain influence on poverty reduction, although not very significant, and they serve

as an informal mechanism for social protection for households. It can be concluded that the increase in pensions significantly contributes to the reduction of poverty in North Macedonia. The other social transfers, including social assistance, targeting the poorest and most vulnerable categories of citizens, do not have a significant impact on poverty reduction and have not been established at an optimal level.

Another serious problem in the country is the relatively high poverty rate among employed. In 2020, almost 8% of employed are at-risk-of-poverty, compared to 10 years ago, this rate has decreased by 2 pp. Some progress has been achieved, although the percentage of employed who are at-risk-of-poverty is still high, which is a clear indicator of the non-inclusive model of economic growth in the country. Most of the people who are at-risk-of-poverty in the country are economically inactive, unemployed. In 2020, a total of 45% of people who are at-risk-of-poverty are unemployed.

Figure 14. At-risk-of-poverty-rate by Most Frequent Activity Status in North Macedonia



Source: SSO 2022f.

POLLUTION AND ENVIRONMENT PROTECTION

In the Republic of North Macedonia, the right for a healthy environment is established in the Constitution of the country in Article 43: Every person has the right for healthy living environment. Everyone is obliged to promote and protect the environment and the nature. (Constitution of the Republic of North Macedonia). However, the analysis and the indicators are showing an alarming situation in the country in the area of air, water, soil pollution, use of natural resources, flora and fauna, waste pollution, unplanned urbanization (Стафилов и Шајн 2019; Миткова и др. 2019). The environmental crisis, is still not treated as a

priority problem and has not encouraged radical changes in public policies and behavior.

In the last two decades, North Macedonia has been in process of adapting the domestic legislation to the EU legislation, as well as to the other international legislation that deals with environmental issues. Most of the adopted laws and strategic documents have been in force for more than a decade. However, there is a serious gap between the publicly declared commitments presented in the legal framework and the quality of the environment. This discrepancy is alarmed and highlighted in numerous reports prepared by the national and international institutions.

As a result of the current situation, the main question is: what are the obstacles for the non-implementation of the legal framework in the area of environment and its media, what are the main reasons for the inefficiency of the competent institutions in this area?

One of the most important laws regulating the protection of the environment in North Macedonia, also known as the “ecological constitution”, is the Law on Environment. The main goals of this law are: preservation, protection, restoration and improvement of the quality of the environment; protection of human life and health; protection of biological diversity; rational and sustainable use of natural resources and implementation and promotion of measures for solution from regional and global character.

European Commission reports on the progress of the Republic of North Macedonia on the way to EU assess the efficiency in the area of the environment protection in the country and the degree of compliance of the national legislation and standards in the environment protection in the country to the EU legislation. In the recent period according to the Reports there is not registered some significant progress in this area. In the last Report a certain level of readiness and limited progress in Chapter 27 Environment and Climate Change is assessed (EC 2023).

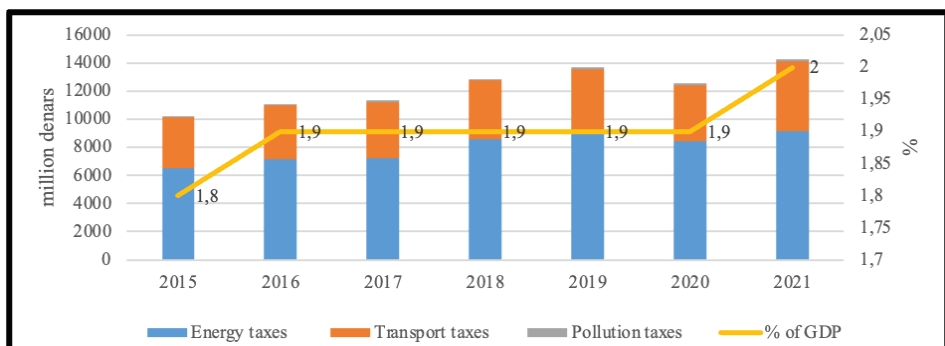
In order to improve the institutional capacity and legislation in the area of environment protection and its media, it is necessary to improve the rule of law and to increase the capacity and efficiency of institutions. At the same time, it is of crucial importance implementing the environmental policies in close coordination with other policies, such as (fiscal, educational, transport, energy, health, etc.) of which the economic policy for accelerated and sustainable development, based on the concept of a green economy is of particular importance.

In North Macedonia for improvement of the regulation in the area of environment of key importance is straightening the economic regulation. In the

economic regulation, the environmental or green taxes play a major role. In the Tax System Reform Strategy for the period 2021 – 2025, the implementation of green taxes is listed as one of the five key priorities part from the Macedonian tax system reforms. The main goal of green taxation is reduction of the pollution and creation of environmental, economic and social benefits. Among the main benefits from the green taxation are: reduced environmental pollution, protected natural resources, increased tax revenues and established framework for environmental taxation (MF 2020b).

In 2021, in North Macedonia 14 273.4 million denars environmental taxes were paid, which is 13.7% more compared with 2020 (SSO 2023c). In 2020 a decrease of paid environmental taxes was recorded mainly as a result of the decrease of the economic activity and pollution due to the Covid-19 crisis. According to tax categories, in 2021, energy taxes have the largest share, 64%, compared to 2020, their share has increased as a result of the increased fuels excise. Energy taxes are followed by transport taxes, with a share of 34.9%, while pollution taxes and taxes on use of natural resources account for a 1.1% of total environmental taxes in 2021. The share of the tax categories in the environmental taxes is relatively stable through the entire period. In North Macedonia the share of environmental taxes in GDP in 2021 is 2%, while in EU is 2.2% (Eurostat 2024b). The share of environmental taxes in GDP in North Macedonia is the highest in 2021, compared with the other years.

Figure 15. Environmental Taxes, by Categories and as % of GDP in North Macedonia



Source: SSO 2023d.

INSTITUTIONAL QUALITY

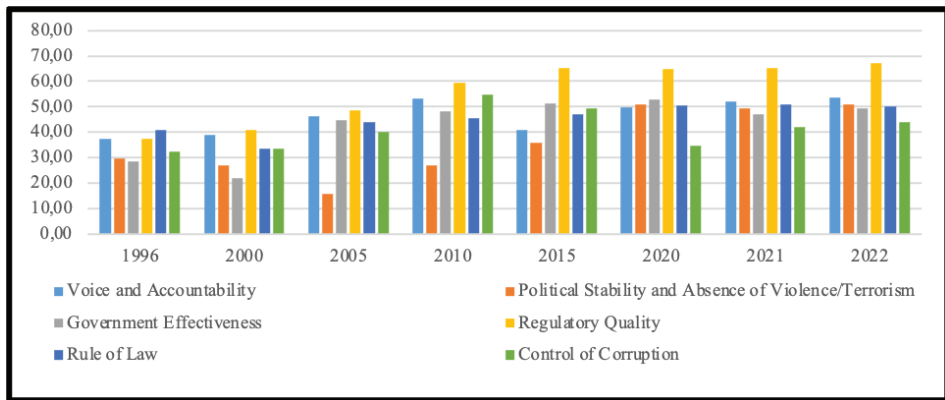
In North Macedonia in the past decades significant institutional reforms were made, but still major weaknesses in the institutional system are evident. Those institutional weaknesses are one of the major limitations for the productivity and growth of the Macedonian economy. In order to increase the productivity of the business sector, to accelerate the growth rate there is a need for improvement of the institutional infrastructure, good governance, regulatory framework and business environment. The key role of the institutions for the development process is particularly visible through the protection of property rights, fight against corruption, good governance, efficient public administration, effective tax system.

In the paper the main institutional aspects significant for the development process of the Macedonian economy are analyzed. In figure 13 are presented the values of Worldwide Governance Indicators (WGI) for North Macedonia, for selected years, as a measure for the institutional quality. In the World Bank Report (2023) it is stated that according to the WGI values, North Macedonia lags significantly behind the peer countries⁵. The ineffective reforms and the inefficient improvement of the institutional quality can slow down the process of country's entry in the EU. The basic characteristics of the institutions in the country are: highly partisan institutions, institutions with low quality and low capacity. The analyzed indicators show that the biggest challenge for the country since its independence are the fight against systematic corruption and establishment of the rule of law. The persistence of long-term corruption and the ignorant attitude towards this essential problem is recorded through the control of corruption, as one dimension of WGI. Since 1996 till today, this is the weakest dimension of WGI for North Macedonia.

More significant improvement in the terms of institutional quality is achieved in the area of quality of the regulatory framework i.e. the ability of the government to prepare and implement sound policies, as is a prerequisite for economic and social development.

5 Peer countries for the Republic of North Macedonia aspire to be the European countries with small and open economies that are similar to North Macedonia (population density, production - GDP ratio) but which have higher levels of economic growth. At the same time, these are the countries that started the transition from a centrally planned economy to a market economy almost at the same time as North Macedonia (in the beginning of the 1990s). In that sense, it concerns the following countries: Bulgaria, Croatia, Estonia, Latvia, Lithuania, Slovakia, Slovenia (World Bank 2023).

Figure 16. Worldwide Governance Indicators for North Macedonia

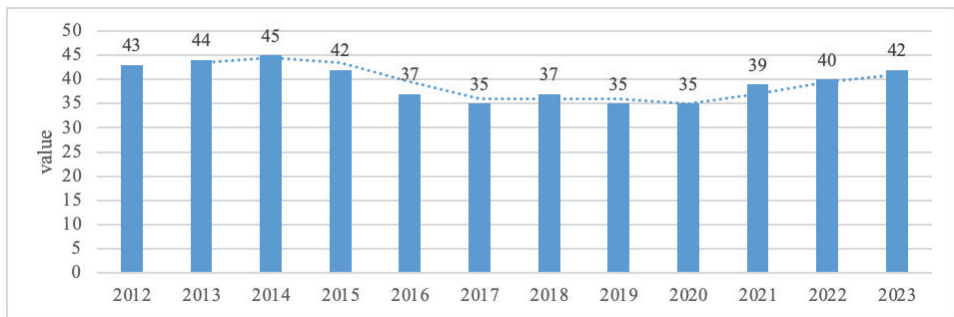


Source: World Bank 2023b.

Despite the numerous formal reforms implemented in the last two decades in the country, systemic corruption still remains one of the most pressing problems for the Macedonian society and unfortunately is recognized as main institutional characteristic. Corruption together with new forms of crime (economic, environmental, etc.) are recognized as the most serious threat to human freedom and rights throughout the transition period of Macedonian society, as they penetrate into all spheres of the society, take on systemic characteristics and, unfortunately, they are beginning to be tolerated more as a “lifestyle” (MANU 2017).

According to the Corruption Perception Index (CPI) calculated by Transparency International, corruption continues to be one of the key obstacles for the democratic transformation of the country. The value of CPI indicates on lack of progress in the country in preventing corruption. The value of CPI for North Macedonia for 2023, reached 42 points on a scale of 0 (the most corrupt country) and 100 (the least corrupt country) and with this value North Macedonia is ranked at 76th position out of 180 countries. The value of the index decreased from 45 points in 2014 to 35 in 2017, 2019 and 2020. North Macedonia was ranked on highest position in 2014 at 64th place, and in 2023 the country is still below the world average of 43 points, which remains unchanged for almost a decade.

Figure 17. Corruption Perception Index for North Macedonia



Source: Transparency International 2024.

CONCLUSION

The Republic of North Macedonia is a country with a low development performance. The country starting from its independence until today, achieves low and unsustainable growth rates, measured through GDP. Through the entire 30-years period the country lags behind its potential growth rates. According to the standard of living, measured by GDP per capita, North Macedonia is in the group of high middle-income countries. With the current low and stagnant economic growth rates and the slow rise in living standards, North Macedonia needs several decades to reach the EU average in terms of economic growth and living standards. In order to study the structure of the Macedonian economy, three scientifically based approaches were used: the aggregate demand method, the sector (production) method and the growth accounting method. By applying these approaches, a decomposition of the GDP growth rate for the Macedonian economy, was made.

From the analysis of growth sources through the application of the aggregate demand approach, it can be concluded that the growth model in North Macedonia in the past period is mainly based on the final consumption, mainly on the household final consumption. The share of final consumption in EU member states is on average about 75%, while in North Macedonia the share of final consumption in GDP is higher by almost 10 pp and it is around 85%. Despite the increase of gross fixed capital formation over the years, this component is still significantly lower than the necessary one that would produce positive multiplier effects for the Macedonian economy. The dominant share of the final consumption in the structure of GDP is an indicator of the low competitiveness of the Macedonian economy, the low degree of integration in the global economy

and the insufficient level of investments, which results in the unsustainability of the country's development model.

The sectoral decomposition of GDP indicates on a decreasing trend of the share of industry in GDP, as opposed there is an increasing trend of the share of service sectors. The current trend of deindustrialization of the economy is evident in a large number of countries from the region, but North Macedonia still needs to strengthen the industry, improve its competitiveness and increase its participation in the creation of GDP in order to achieve higher and sustainable growth rates.

The results of the growth accounting method show that the main source of economic growth in the Macedonian economy is the physical capital i.e. the gross fixed capital formation in construction and exploitation of natural resources. The unfavorable structure of the physical capital, the increased share of gross fixed capital formation in construction, as opposed to gross fixed capital formation in machinery, equipment and R&D equipment is a serious concern. This unfavorable structure of physical capital is reflected in the negative participation of the TFP in the growth rate of the Macedonian economy. Gross fixed capital formation i.e. investments in construction have a very low level of knowledge implemented in them, which indicates that the growth model of the Macedonian economy is unsustainable on a long run. In order to achieve a sustainable growth, it should be increased the participation of TFP in the growth rate, and this can be achieved through investments in advanced technologies, R&D, implementation of innovations, investments in achievement of new skills, trainings etc.

The key indicators on the level of development of the scientific and research system in North Macedonia indicate on a low quality in this area. The low level of R&D investments, mainly by the business sector leads to the conclusion that the underdevelopment of this area seriously threatens the country's development process, technological progress and productivity growth. The low level of R&D investments by the Macedonian business sector, result in a low level of innovativeness of the business sector, and a dominant participation of non-technological innovations. On the other hand, the technological innovations, product and process innovation, are the driver of technological development, productivity and competitiveness. The stagnation of this area results from the inconsistent measures, lack of a systemic approach in overcoming numerous problems and not recognition of the crucial importance of this area for the development process of the country.

The strong human capital is a precondition for achievement of inclusive and sustainable growth in North Macedonia, and it is significant in different aspects, such

as in dealing with the problem of aging population, brain drain, overcoming the problems on the labour market, straightening productivity etc. According to the analyzed indicators the country is facing with numerous problems in this area. To improve the human capital quality a precondition is reforms and investments in the education system, as well as in health care and social protection. The need for reforms in the education system is also evident in the PISA results. The reforms should be undertaken starting from preschool to higher education. The reforms should be oriented to improving the quality of the learning process, improving knowledge, skills and competencies reached through the educational process.

The growth model in North Macedonia produces a high level of income inequalities, accompanied by a high poverty rate. The income inequality rate was highest in 1990s, in the period after the country independence, but still in the recent period North Macedonia has the highest income inequality rate compared with the country from the Region and significantly higher compared with the EU average. For building an inclusive growth model, should be implemented measures for overcoming the inequalities in opportunities and should be established adequacy targeted measures for reducing income inequalities and reducing the poverty rate.

The environmental crisis and environmental pollution present a serious problem in North Macedonia. A first request for environmental protection is the change of the behavior of the physical and legal units and change in public policies. The straightening of the economic regulation, through introduction of green taxation is a main mechanism for transition to green and sustainable development. Well-designed tax reforms in the field of green taxation will reduce the emission of greenhouse gases and CO₂ and will simultaneously create numerous economic, environmental and social benefits.

One of the main reasons for the weak economic growth and social crisis in North Macedonia is the legal and institutional system in the country. In the past period were established key laws, which should serve as a basis for the implementation of reforms in the economic and social system in the country. However, in the multi-decade period the prevalence of systemic corruption, the low degree of rule of law, the weak judicial system as well as the inefficient institutions slow the development process. Particularly significant for strengthening the institutional capacity, quality and efficiency, which are a prerequisite for social and economic development, is the protection and implementation of the universal standard of "good governance", which are formulated in national and international conventions, and which are also the basic criteria that North Macedonia should fulfill as a candidate country for EU membership.

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