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WHAT DETERMINES INFORMAL ECONOMY AND INFORMAL EMPLOYMENT - THE CASE OF NORTH MACEDONIA

Abstract: The importance of the informal economy is seen in the fact that more than 60% of world employment operates in some form of informal economy. Additionally, on average, about 35% of GDP in developing countries is generated in the informal sector, while the informal sector in these countries employs about 70% of the workforce. In the case of the Republic of North Macedonia, this proportion ranges from 36% to 24% for the period 2006 - 2021 which confirm the relevance of this research. The aim of the paper is first to estimate the level of informal economy in the country and furthermore to analyze the impact of the main determinants - labor market determinants on the informal production and informal employment in the Republic of North Macedonia. We employ regression analyses for the period 2006-2021 to determine the key factors behind informal economy and informal employment. The following variables are included in the analysis: Labor Freedom, Tax Burden, Business Free-

dom, Minimum Wage, and Self-Employed workers. The results of the empirical analysis show that the increase in Labor Freedom and Tax Burden has statistically significant impact on informal production growth, while increase in Business Freedom statistically significantly reduces the informal economy. The increase in the proportion of the minimum wage relative to the average wage causes a reduction in informal production. Regarding informal employment, the obtained results show that the growth of Labor Freedom and Business Freedom has statistically significant impact on informal employment. Also, regarding the self-employed, the growth of this category of employment has statistically significant positive impact on the growth of informal employment.

KEYWORDS: DETERMINANTS OF SHADOW ECONOMY, INFORMAL LABOR MARKET, LABOR MARKET INSTITUTIONS, SHADOW ECONOMY.

JEL CLASSIFICATION: J017, J380, J460.

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1. INTRODUCTION

The informal economy represents a widespread tendency in world economies, which with its scope and specificity represents a challenge for research and analysis among the policy makers, and the academic community. The complexity but also the importance of the informal economy is best illustrated by the statement that: "although economists are not able to precisely define the informal economy, it is still all around us and is easily noticeable"¹. During the analysis of the scope and definition of the framework of the informal economy, usually according to the needs and purpose of the research topic, it can be segmented into informal economic activities and informal employment². The informal economy includes all economic activities that are legal but not recorded in official statistics. Also, some economists define the informal economy as a set of unregistered economic activities that would contribute to an increase in the Gross Domestic Product if they were integrated into the official statistics³. Among the definitions of the informal economy that note the largest scope of informal economic activities, they define informal economy as "activities that generate income and that circumvent or avoid regulation, taxation or monitoring by government authorities"⁴. Furthermore, in part of the definitions for the scope of the informal economy, it is defined as market-based production of legal goods and services that are deliberately not reported in official statistics to avoid paying taxes and contributions, as well as non-compliance with other administrative and legal standards⁵. From here it can be concluded that, although informal economic activities are difficult to precisely define, they are still very easy to notice in daily economics transactions⁶. Informal employment that exists in parallel with the informal economy has a significant scope, especially in developing countries. According to the ILO definition, workers fall into the category of informal workers if they are not paid social contributions, if they do not have paid annual leave or leave in case of illness⁷. Hence, it should be emphasized that although the majority of informal employment is in the informal sector, it must be noted that there are workers who are informally employed in business entities that are part of the formal economy. Also, part of the workers who work in the informal economy may be

¹ Tonin (2013)

² ILO (2011)

³ (Schneider, Shadow Economies of 145 Countries all over the World: Estimation Results over the Period 1999 to. 2005)

⁴ Dell' Anno and Schneider (2003)

⁵ Schneider and Williams (2013)

⁶ Tonin (2013)

⁷ ILO (2021)

employed in the formal sector at the same time. Such examples show the complexity in defining and measuring informal economic activities and informal employment. Regarding the representation of the informal economy and informal employment, it must be emphasized that they are most represented in developing countries. In these countries, the strong intensity of informal economy can be seen in the fact that informal economic activities amount to about 1/3 of GDP, while informal employment is estimated from 20% to 80% of the labor force⁸. However, it must be noted that for the majority of low-skilled workers, as well as workers with modest work experience, employment in the informal sector for them is usually the first step in integration into the labor market. Hence, entry into the informal labor market represents a kind of "bridge" for integration into the formal labor market, thus the informal labor market is also called a "safety net" where a significant part of low-skilled workers, especially the young workforce, find his temporary employment⁹. The very fact that a significant part of informal employment is young workers and their participation decreases with age, confirms the fact that for part of the workers in the formal sector, the first employment started in the form of informal employment¹⁰. Hence, it can be concluded that informal employment represents a "stepping stone" towards formal and better jobs, especially for workers who would remain outside the formal labor market. For the purposes of our analysis, the definition of informally employed persons will be consulted, according to the Labor Force Survey (LFS). According to the LFS, all workers who are not registered in the relevant institutions and for whom social and legal protection are not provided, regardless of whether they work in formally registered companies, unregistered companies, self-employed persons or in the domestic sector, are considered informally employed persons¹¹. Consequently, it is understood that individuals without employment contracts are part of the informal economy, i.e., they fall under the category of informally employed. In addition, domestic workers are part of informal employment, but for the purposes of this analysis, we abstract from their employment status.

The fact that the informal economy is a complex phenomenon, which, in addition to economic, is also determined by institutional, social and cultural factors allows us in this analysis to examine the influence of Labor market institutions on determining the extent of informal economy and informal employment. Such factors have a strong influence on individuals' labor market decisions regarding whether to remain

⁸ Schneider and Enste (2000), Ulysea (2018)

⁹ International Labour Office (2007)

¹⁰ Perry and al. (2007)

¹¹ LFS (2017)

in the informal economy or enter formal employment. The decisions of firms operating in the informal sector related to their entry into the formal economy are also determined by the barriers to entry, the costs and benefits they have in the formal economy, bureaucratic procedures, economic freedoms, trust in public institutions and benefits from public services. Hence, in the paper the subject of analysis is: measurement of the degree of the informal economy and informal employment, as well as the influence of Labor Institutions in determining the degree of the informal economy and informal employment. The measurement of the degree of informal economy in North Macedonia is calculated by applying the alternative methods for assessment the informal economy. For the purposes of this analysis, the indirect method for calculating the level of the informal economy using the Electricity Consumption Method (ECM) was used. This method starts from the assumption that the consumption of electricity observes consistency with the trend of movement of economic activity. With the ECM method, changes that occur in electricity consumption, and are not followed by corresponding changes in economic activity, basically constitute the informal economy. The determined degree of informal economy according to the ECM method is the subject of an econometric regression analysis in the second part of the paper. Using a regression analysis, an attempt was made to analyze the effects of labor market institutions on shadow economy and shadow employment. Given the fact that informal economy and informal employment are complementary, that is, the informal economy to a certain extent also contains informal employment, it is considered justified to analyze the impact of labor market institutions on the degree of the informal economy and informal employment. The determinants whose impact on the informal economy and informal employment are examined in the paper are Labor Freedom, Business Freedom, Tax Burden, Self-employment, and Minimum Wage.

The paper is structured as follows, after the introduction and elaboration of the informal economy and informal employment, a brief overview of relevant empirical studies was conducted. The empirical literature review consists relevant studies that analyzes informal economy, informal employment and labor market institutions. After that the brief overview of determinants of labor market institutions was made. In this part a comparison of Labor Freedom, Business Freedom, Tax Burden, Self-employment, and Minimum Wage between Western Balkan countries was made. The next part is reserved for econometric analysis of informal economy and informal employment determinants. The last part concludes where the main findings about the informal economy and informal employment determinants in North Macedonia are elaborated.

2. EMPIRICAL LITERATURE REVIEW

Measuring the degree of informal economy, considering that it is about determining economic activities that are not part of the official statistics, is characterized as "measuring the unknown". In the absence of data on the informal economy, it is recommended that the assessment of the informal economy be made in relation to GDP. In the definition of the informal economy, it covers the production of goods and services that is in accordance with the law, but is not covered by official channels, that is, it is not reported to public authorities¹². On the other hand, informal employment can take different forms. Informal employment includes a formally employed person who works undeclared in a second job, an employee who works undeclared in a formal enterprise, an employee who works in an informal enterprise¹³.

Informal economic activities can cause significant costs and negative consequences for firms and workers who are part of the informal economy. The size, determinants and basic disadvantages caused by the informal economy depend primarily on the characteristics of the country itself. However, the authors segment the reasons that lead to the emergence and maintenance of the informal economy into four groups: taxes, regulations, prohibitions, and corruption¹⁴. Among the basic disadvantages that informal workers face are: the absence of protection of informal workers from the labor legislation and from the relevant labor institutions, absence of a system for social protection, as well as the payment of the social contribution, inability to use the active policies of the labor market, low level of labor productivity, inability to use opportunities for qualification etc.¹⁵ In relation to firms operating in the informal economy, in addition to causing unfair competition and not contributing to public finances, they distort the efficiency of resource allocation, undermine labor productivity and reduce the degree of economic growth.¹⁶ The main negative consequences for companies operating in the informal economy include low productivity and a weak technical-technological level, limited access to financial capital, inability to export, inability to enter into official contracts with suppliers and consumers, resulting in the absence of long-term cooperation and strategy.¹⁷

¹² Schneider et al., (2010)

¹³ Thomas (1992), Schneider et al. (2010), OECD (2004)

¹⁴ Tanzi (2002)

¹⁵ Kamila and Schneider (2011), Packard (2012)

¹⁶ Schneider and Enste (2000)

¹⁷ Schneider (2002)

The representation of informal employment shows a heterogeneous character in European countries. Research shows that there are significant differences in the profile of informal workers in different regions of Europe, even between EU countries. Most of the informal workers in Bulgaria, Romania and Slovenia fall into the category of informal workers without a legal contract and the nonprofessional self-employed. In the case of informal workers in the Czech Republic, Hungary, Lithuania, Poland, and Slovakia, informal self-employment is the dominant form of unregistered work. The authors note this form of informal employment in Greece, Portugal, Italy and Spain. The authors conclude that although informal employment in Europe takes different forms, the most common form of non-informal employment is informal self-employment, which further confirms and justifies the inclusion of this group of workers in our analysis. In terms of the distribution of informal workers by gender, among the informal workers in Europe there are predominantly men, while the participation of women in informal employment is low. Men in the informal labor market are particularly represented in the new EU member states, especially in Bulgaria, Estonia, Hungary, Latvia, and Slovakia. Regarding the age structure of workers within Europe, it can be noted that the largest proportion of formally employed workers is observed between workers aged 25 to 54 years. On the other hand, among the informally employed, the largest participation is observed by workers under the age of 25. This further confirms the empirical findings that informal employment is more prevalent among younger workers, and decreasing with age.¹⁸

In the empirical literature, there are also researches related to the determinants of the degree and trend of the informal economy and informal employment. A large number of factors contribute to the decision of economic subjects and workers to remain in the informal economy or to move to the formal economy. In the literature, there are no universal factors that influence the growth of the informal economy, individual factors have their influence depending on the context and level of economic development, as well as the country's institutional capacity. In summary, the level of economic development is one of the basic determinants of the degree of informal economy. The empirical findings confirm that the level of economic development is inversely proportional to the degree of the informal economy¹⁹. Also, the negative rates of economic growth, supplemented by the rigidities of the formal

¹⁸ Packard (2012)

¹⁹ Perry et al. (2007)

labor market, influence the increase of the informal economy and informal employment²⁰.

Regarding the benefits and costs of informal employment, it is considered useful to note that a significant part of formally employed workers are covered by labor legislation, that is, they can use the measures and policies of the labor market, on the other hand, workers who are informally employed, very easily become unemployed in times of economic crisis. The negative effects to which informal workers are exposed are most noticeable during negative movements in the economy. The economic downturn that appeared as a result of the COVID-19 pandemic did not pass the Republic of North Macedonia either. The consequences of COVID-19 have caused some informal workers to face a reduction in their standard of living and well-being. The increase in unemployment in 2020, compared to the level of informal employment in 2019, is 54,692 workers. The authors explain this increase in unemployment during the COVID-19 pandemic with the fact that some of the informal workers register as unemployed in order to take advantage of the various measures and benefits that were available to them, which were adopted to deal with the negative consequences of COVID-19 pandemic.²¹ The restrictions from the COVID-19 pandemic, which resulted in a sudden stop and slowdown of economic activities, caused a strong negative impact on informal enterprises²². Regarding the negative consequences that informal enterprises had in the COVID-19 pandemic, they were of a financial but also a structural nature. A significant loss in the income of informal enterprises contributed to these entities facing a lack of financial resources, but also in the inability to borrow additional financial capital from the banks. As a result of this situation, informal enterprises fell into a state of low liquidity and solvency, which forced them to close their businesses temporarily or permanently. The loss of income of such enterprises (which for the most part are reduced to enterprises with one or two employees) contributed to them losing the only income they have and falling into poverty. In addition to the loss of the unique income of these enterprises, there is a significant increase in unemployment, which has its own long-term effects on economic activity²³.

The degree of informal economy is also determined by the degree of regulation, that is, by the limitation of market forces and mechanisms and the setting of certain barriers for entry and exit from the market. The degree of regulation affects the

²⁰ Ibid

²¹ Hristovska et al. (2021)

²² ILO (2020)

²³ Ibid

economic subjects for an increase in direct and indirect costs²⁴. The authors make a segmentation between fiscal, labor, and product-market regulations. The research concludes that the degree of regulation has an inversely proportional influence on economic growth, while it has a positive influence on the degree of the informal economy. This finding is especially confirmed in labor market regulations, where a significant impact on the growth of informal employment is observed. In the research of the example of Latin American countries, the inverse relationship between the burden of labor cost and other legal restrictions on the degree of informal employment is confirmed. In the research, the authors come to the conclusion that the increase in such market regulations increases shadow employment²⁵. Also, the significant differences in the degree of informal economy between individual economies is determined by the legitimacy and trust of government and other public institutions. The differences in the level of the informal economy between highly developed countries and developing countries are primarily determined by the general trust of the state, and the services provided by the public institutions. Some of the authors consider the level of informal economy as an indicator of deficit of legitimacy of the state, and rules of official economic activities²⁶. Quality public services will increase the benefits of companies from their operations in the formal economy, while on the other hand, strong institutional capacities will contribute to increasing the costs of operating in the informal economy.

Information about the extent of the informal economy in the Republic of North Macedonia can be obtained from previous research²⁷. Research shows that the degree of informal economy in North Macedonia has a downward trend. In 2000 the degree of informal economy was estimated at 34% of GDP, while in 2010 the degree of informal economy was estimated at 24.01%. In other empirical studies where the amount of the informal economy as a part of GDP is estimated with the MIMIC model, the authors come to the conclusion that the degree of the informal economy in 2007 was 34.9%, while in 2013 it was estimated at 29.9% of GDP. In research by Kelmanson and others the degree of informal economy in North Macedonia in 2016 was estimated at 37.6% of GDP²⁸. The latest research on the degree of the informal economy in North Macedonia shows that the informal economy has seen a

²⁴ Loayza (2018)

²⁵ Perry op. cit.

²⁶ Enste (2003)

²⁷ Kaliberda and Kaufman (1996), Garvanlieva et al. (2012)

²⁸ Kelmanson et al. (2019)

significant decrease. In 2019, the informal economy was estimated at 21.3% of GDP²⁹.

3. OVERVIEW OF SELECTED DETERMINANTS (VARIABLES) OF INFORMAL ECONOMY AND INFORMAL EMPLOYMENT

The Index of Economic Freedom focuses on four aspects that cover the economic and entrepreneurial environment, that is, the control that government authorities have over economic activities. The index of economic freedom covers the following four aspects: Rule of law, Government size, Regulatory efficiency, and Market openness. Within these four aspects, the subject of measurement are 12 components that include economic freedoms, they are evaluated on a scale from 0 to 100. Considering the fact that the basis for the functioning of economic activities is the respect for the right to private property, in this property rights are also subject to analysis. As part of the Rule of law, property rights are analyzed from the perspective of the legal framework and its impact on the possibility to acquire, hold, and utilize private property, as well as the degree of respect for these rights. Judicial Effectiveness, i.e., the efficient and fair judiciary is in function of protecting the rights of citizens and business entities, which is also subject to analysis. In this direction, the degree of independence of the judiciary, the quality of the judicial process and the perception of the quality of the judiciary and its independence are analyzed. Government integrity represents a basic component for the public's trust in government measures and policies, as an increase in the motivation of business entities and workers who function within the framework of the informal economy to integrate into the formal economic processes. Government integrity includes the following factors: perception of corruption, risk of bribery, and the influence of certain elites and private interests on the state. Furthermore, the next two aspects that determine the overall score of countries are Government size, and Regulatory efficiency, factors that measure the degree of regulation of economic activities, and have a significant impact on the economic and business freedoms of enterprises and workers. Government size is determined by Business freedom, Labor Freedom, and Monetary Freedom. Business and Labor freedom are taken as independent factors whose impact on the informal economy and informal employment is measured using regression analysis. The following factors are included in the determination of Labor freedom: Minimum Wage, Associational right, Paid annual leave, Notice period for redundancy dismissal, Severance pay for redundancy dismissal, Labor

²⁹ Hristova op. cit.

productivity, Labor force participation rate, Restrictions on overtime work, and Redundancy dismissal permitted by law. Business freedom consists of the following factors: access to electricity, business environment risk, regulatory quality, and women's economic inclusion. Open market is composed of trade freedom, Investment freedom, Financial Freedom³⁰.

The movement of the Overall Score of Economics Freedom in North Macedonia and Western Balkan countries for the period 2005-2021 are presented in Figure 1. It can be noted that compared to other countries from the Western Balkans, starting from 2010, North Macedonia has the highest overall score. In 2005, the overall score of North Macedonia was 56.1 points, while in 2010 it rose to 65.7 points, which represents an increase of almost 10 points in 5 years. On the other hand, in the period 2010-2016, the overall score ranges from 65.7 to 68.5 points. In the next period 2017-2021, the highest overall score of North Macedonia is observed, which in 2019 is 71.1. In 2022, the overall score is estimated at 65.7 points, which ranks North Macedonia in 53rd place in the world and 32nd in the region, which characterizes it as a moderately free country in terms of economic freedom status. The reduction of trade freedom and the rule of law (property rights, judicial effectiveness, and government integrity) are emphasized as factors influencing the reduction of North Macedonia's score³¹. Of the four aspects that determine the overall score, the greatest impact on the downward trend that begins in 2017 is Rule of law. Namely in 2022 Rule of law records the lowest values, corruption and evasion of punishment remain a serious problem³². In the empirical literature, these two aspects are cited as among the most significant factors that lead businesses and workers to integrate into the formal economy. The lowest value of Overall score in 2022 is recorded by Montenegro with 57.8 points. In the period 2009-2016, a modest trend of increase in the overall score can be observed, which amounts to 64.9 points. However, in the period after 2016, although with certain oscillations, the downward trend of the overall score is evident, which reaches its lowest value in 2022. Factors that contributed to this decrease in Montenegro's overall score include the sharp drop in the fiscal health score, judicial effectiveness, and weak government integrity. With government spending 48.5% of GDP, and average budget deficit of 6.5% of GDP, and public debt 108.8% of GDP, Montenegro is characterized by low fiscal health, government spending, and if we add to that low government integrity, and judicial effectiveness It is quite understandable that Montenegro is in 103rd place as mostly unfree country from the

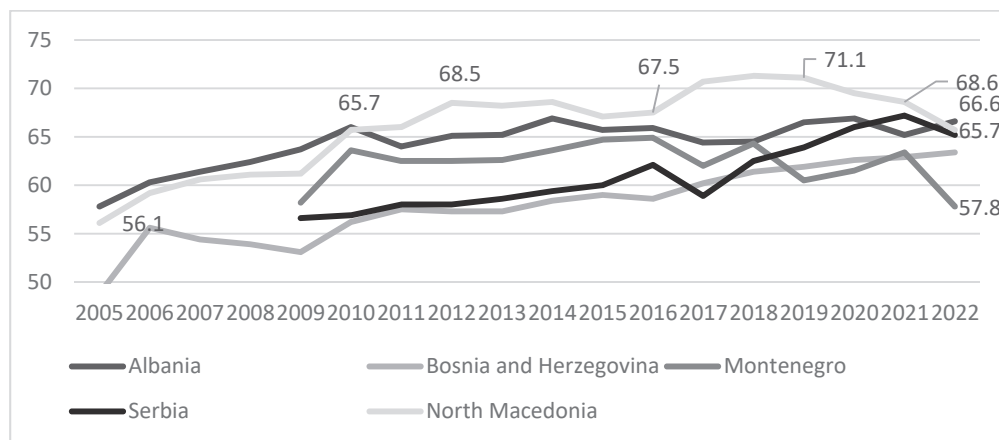
³⁰ Heritage Foundation (2022)

³¹ Ibid

³² Ibid

economic freedom perspective. The movement of Serbia's overall score in the analyzed period, on average, shows a significant upward trend, placing Serbia at 59th rank in the world and 35th rank in Europe with an economic freedom score of 65.2. The improvement of Serbia's economic freedom score is primarily in the improvement of fiscal health and judicial effectiveness, but also in monetary and trade freedom. However, on the example of Serbia, it is noted that Government integrity and Judicial Effectiveness are not at the desired level³³. The trend of Economic freedom score of Albania is characterized by a certain stability in its movement, which places Albania among the countries with moderately free economic freedom. The score of 66.6 in 2022 ranks Albania in 30th place in Europe, which records the highest overall score compared to the rest of the Western Balkan countries. Property rights and judicial effectiveness stand out as domains where Albania is making significant progress. However, as in the rest of the countries of the Western Balkans, a low score of property rights, Judicial Effectiveness, and Government Integrity was observed in the case of Albania. Hence, it can be concluded that although in the countries of the Western Balkans there is a certain improvement in the economic freedom score, Rule of law remains one of the domains where a significant failure is observed.

Chart 1: Overall Score Index in Western Balkan Countries (2005-2021)



Source: Heritage Foundation Data Base

3.1. Labor Freedom and Business Freedom Score

Labor freedom covers the possibility of workers and businesses to enter into work contracts, to work, to exercise their rights based on an employment relationship,

³³ Ibid

while for companies it means the possibility to freely hire, but also to fire workers for whom there is no need. So, Labor freedom is defined as the possibility of individuals to find and keep their workplace. Practically, the labor market, although it functions on market principles like other markets, is still under certain state regulation and control. Government labor regulations take variety of forms, including minimum wages controls, controls on hours worked, work conditions, restrictions on hiring and firing, as well as other aspects determined by labor legislation. Labor Freedom Score is conceptualized from the following factors: Minimum wage, Associational right, paid annual leave, Notice period for redundancy dismissal, Severance pay for redundancy dismissal, Labor productivity, Labor force participation rate, Restrictions on overtime work, Redundancy dismissal permitted by law³⁴. The components that affect the value of the Labor Freedom Score have a significant impact on the degree of informality, especially on informal employment³⁵. The increase in labor costs, especially the increase in taxes and contributions, the increase in the rigidity of labor legislation, the increase in the legal minimum wage, not only affect the reduction of formal jobs, but also affect the transfer of some of those jobs to the informal economy. Also, the increase in labor costs, along with the creation of additional administrative procedures, influence self-employers and small firms to redirect part of their activities to the informal sector. Also, the increase in the tax wedge on labor affects the take-home wage, which creates additional intentions to avoid paying taxes and contributions by companies and workers, which directly encourages the informal economy. Part of the empirical studies confirm that one of the key factors contributing to the growth of the shadow economy is the hike in taxes and social contributions³⁶. The results show that in addition to direct taxes, indirect taxes also have a significant impact on the decisions to move to the informal economy. Simpler procedures and tax schemes (such as the flat tax) influence the decisions of companies and businesses to work in the formal economy, while the increase in intricacy and complexity of the tax system influences small businesses as well as the self-employed to conceal part of their activities³⁷. The authors also conclude that extent of regulatory and administrative discretion is the main factor driving people to informality, not higher taxes per se. Some of the business entities decide to redirect their activities to the informal economy, not initially because of the increased taxes, but because of the increase in the complexity of the procedures,

³⁴ Ibid

³⁵ Perry et al. (2007)

³⁶ Schneider and Enste (2000)

³⁷ Ibid

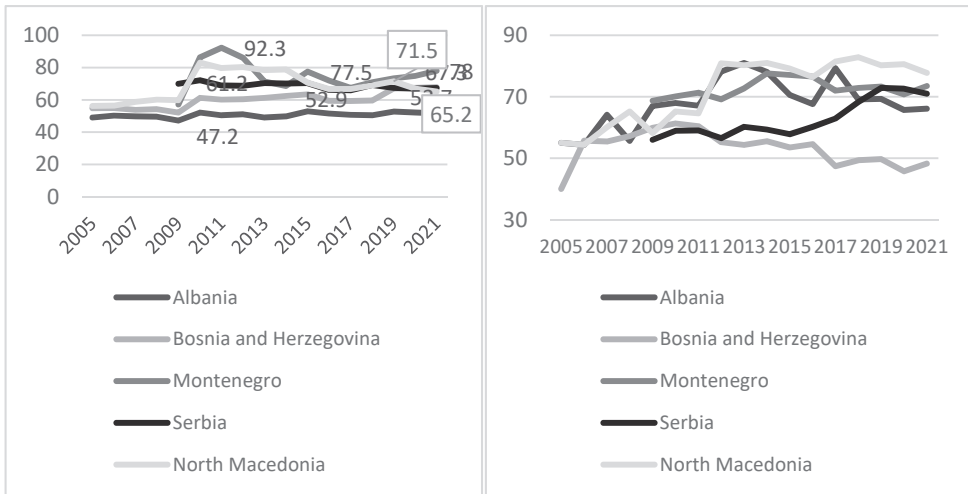
bureaucratic burden and corruption³⁸. Also, strict Employment protection legislation (EPL), i.e. the reduction of the freedom of workers and employers to conclude and terminate employment contracts affect the reduction of formal employment, i.e. the increase of informal employment.

The trend of the Labor freedom score in Western Balkan countries is presented in Figure 2. The trends of the movement of the Labor Freedom Score aim to show the degree of regulation of the labor market, that is, to provide an integrated picture of the degree of legal and regulatory framework in the markets. of labor in the countries of the Western Balkans. The movement trend shows that the Labor Freedom Score in North Macedonia shows a downward trend. Namely, the highest score was recorded in 2010 when it was 83.1 points, while in 2021 it decreased to 65.2 points, which means a drop of about 18 points. In the case of Serbia and Bosnia and Herzegovina, the Labor Freedom score notes some stable movement, which in 2021 amounts to about 67 points, which places these two countries in the category of moderately free countries in terms of regulation and economic freedoms on the labor market. Labor Freedom Score in Albania has the lowest value compared to the other countries of the Western Balkans. In the analyzed period, the labor freedom score of the example of Albania ranges from 47 to 53, while in 2021 it is 51.6, which categorizes this country as mostly unfree in terms of labor freedom.

Business Freedom score starting from 2012 records the highest value in North Macedonia, compared to the rest of the countries of the Western Balkans. On the other hand, Business freedom score in Bosnia and Herzegovina starting from 2010 shows a downward trend, in 2021 it amounts to 48.2 points, which makes the country one of the countries with a below average Business Freedom Score. Serbia also sees a more significant increase in the Business Freedom Score, especially after 2012. However, in the last two years there has been a decline in the Business Freedom Score in the countries of the Western Balkans. In addition to the rest, such changes are a consequence of government measures and interventions on the labor market, especially in 2020 when the COVID-19 pandemic had a negative impact on economic processes, especially on the labor market. The reduction of bureaucratic procedures through the so-called "regulatory guillotine" which was carried out in 2006 in North Macedonia. With this reform, the activities and bureaucratic and administrative procedures were reduced to a large extent, which led to a more significant improvement in the Business Freedom Score of North Macedonia.

³⁸ Friedman et al. (2000)

Chart 2: Labor Freedom and Business Freedom Score in Western Balkan countries 2005-2021



Source: Heritage Foundation Data Base

3.2. Minimum Wage and Tax Burden

Although economists do not have a consensus on the effects and impact of the statutory minimum wage on the balance of the labor market, it exists in almost over 90% of countries. A growing number of countries have established some form of minimum wage, whether it is regulated by law or collective agreements. Regarding the effects that the statutory minimum wage has on the employment and labor market integration of young and low-skilled workers, there is a significant divergence in the views of economists. However, the empirical literature points to the conclusion that the impact that the statutory minimum wage has on the labor market is largely determined by the amount of the minimum wage, that is, its participation in the average wage, as well as the scope of workers who receive the minimum wage. Hence, if the statutory minimum wage is established at a high level, that is, if it occupies a significant proportion of the average wage, it can be an obstacle for companies to hire workers with marginal productivity lower than the minimum wage.

In terms of informal employment, some authors argue that although the statutory minimum wage is not relevant for informal workers, still in the defining of the wage that should be received by informal workers, the statutory minimum wage serves as

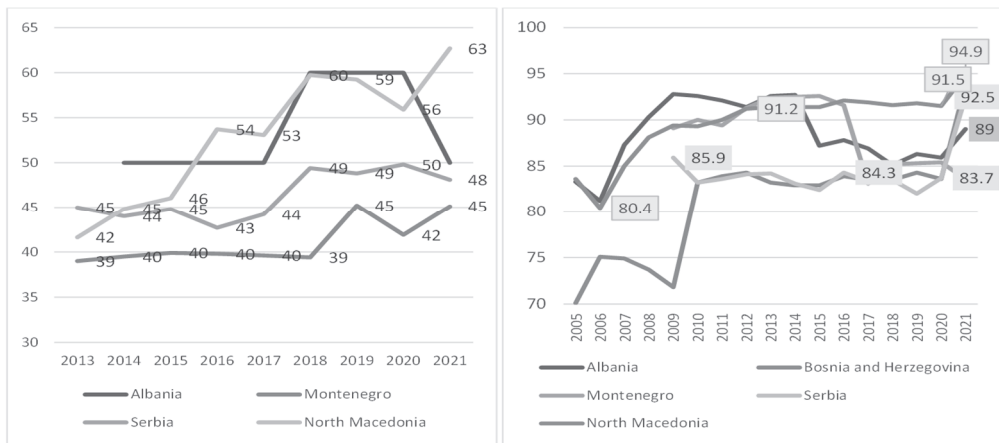
an amount around which the wages of informal workers are determined³⁹. The trend of the movement of the statutory minimum wage in relation to the average minimum wage in North Macedonia but also in the countries of the Western Balkans aims to present the movement of the level of the minimum wage, as well as to give an integrated picture of the state of the statutory minimum wage in these countries. It can be concluded that the statutory minimum wage, as a ratio to the average wage in the countries of the Western Balkans, shows significant differences. On the example of Montenegro, the share of the statutory minimum wage in the average wage ranges from 39% in 2013 to 45% in 2021. The statutory minimum wage in the example of Serbia ranges from 43% to 50% of the average wage in the country. Hence, it can be concluded that the participation of the statutory minimum wage in the average wage in these two countries is below 50%. On the example of North Macedonia, there is a growing trend in the movement of the statutory minimum wage, that is, its share in the average wage. Starting from 42% in 2013, the share of the statutory minimum wage in the average wage, on average, shows a growing trend. Several significant increases in the statutory minimum wage lead to it rising to about 63% of the average wage paid in the country. The significant scope of the statutory minimum wage in the case of North Macedonia is also seen in the fact that there is a significant increase in the scope of the number of workers who will receive the statutory minimum wage. Estimates are that 80,000 to 100,000 workers receive the statutory minimum wage, representing 11 to 15% of total employment in the country. Also, if the sectoral aspect of the participation of the statutory minimum wage is analyzed, its participation in the average wage ranges from 60% to 90% in individual sectors. What is important to note is that in addition to the fact that the legally established minimum wage is relevant for formally employed workers, it also serves as the initial basis for determining the wages that will be received by workers who are part of the informal economy. Thus, the increase in the statutory minimum wage, in addition to putting pressure on formal employment and the determination of other wages in the formal sector, also has an impact on informal employment.

Tax Burden is an indicator of the amount of tax paid by a person, company, or country in a specified period considered as a proportion of total income in that period. Most often, Tax Burden is inversely related to Fiscal freedom, that is, the increase in Tax Burden affects the reduction of fiscal freedom of companies and people. The movement of the Tax Burden Index in Western Balkan countries for the period 2005-2021 is shown on a graph. The analysis of Tax Burden in the individual countries of the Western Balkans aims to determine the scope of the tax imposed by

³⁹ Tonin (2013)

the authorities in the individual countries, and hence to enable conditions for further comparative analysis. Namely, it can be noted that the Tax Burden in the countries of the Western Balkans ranges from 70 index points in Bosnia and Herzegovina (in 2005) to a high 94.9 index points in North Macedonia (in 2021). In 2021, the Tax Burden in North Macedonia is 94.9 index points, Serbia 92.5 index points, Albania 89 index points. The high Tax Burden index influences workers and companies operating within the formal economy to redirect part of their activities to the informal economy in order to avoid part of the tax burden. Hence, the reduction of the Tax Burden will have a positive impact on the reduction of the informal economy and informal employment.

Chart 3: Minimum Wage as a proportion of Average Wage and Tax Burden in Western Balkan countries (2013-2021)



Source: Heritage Foundation Data Base.

4. DATA AND METHODOLOGY

Measuring the informal economy and informal employment is a challenge that economists face. Direct and indirect methods are used in the literature in order to measure what is not included in official statistics. For the purposes of this paper, the data from the Labor Force Survey on informally employed persons in the Republic of North Macedonia were used. Such data provide information about the volume and form of informal employment, the activities in which informal workers are represented, as well as the division by gender. Such data enable analysis of the trend and characteristics of informal workers, but also serve to create an econometric analysis with the aim of analyzing the basic determinants of the labor market that

influence the movement of informal employment. Furthermore, in order to assess the extent of the informal economy, it is considered optimal to apply the Electricity Consumption Method (ECM). This method analyzes the consumption of electricity and the movement of total economic activity, that is, it starts from the assumption that the increase in economic activities is aligned with the increase in electricity. If the increase in electricity is not followed by a corresponding increase in economic activity, in that case, with this method, it is assumed that the rest of the economic activities are realized outside of the official statistics. Some of the shortcomings of this method that are worth mentioning here are in the domain of: first, electricity as the only source of energy, that is, neglecting other types of energy; Secondly, some of the economic activities need a small amount of electricity, or they do not need electricity at all, or they use other sources of energy. This method showed relevant results in the previous studies covers this field⁴⁰. The formula for calculating the informal economy using the electricity method is given below:

$$St = St_{previous} (1 + \frac{1}{u} gE_t - gY_t) = So\Pi * (1 + \frac{1}{u} gE_i - gY_i)$$

Where S_t represents the informal economy in year t ; S_0 is production in the informal economy in the base year; gE_t is the annual growth rate of electricity consumption; gY_t is the annual GDP growth rate; i represents the year, U represents the elasticity of production from electricity consumption.

In order to analyze the causal relationship between the degree of the informal economy and informal employment and Labor institutions (Labor Freedom, Business Freedom, Tax Burden, Minimum Wage, Self-Employment) two regression estimations were created using the Ordinary Least Square Method for the period 2006-2021. The first regression equation analyzes the impact of Labor Market Institutions on the level of the informal economy. It is given below:

$$Informal\ Economy_{it} = \beta_0 + \beta_1 Labor\ Freedom_{it} + \beta_2 Tax\ Burden + \beta_3 Business\ Freedom + \beta_4 Minimum\ Wage + \epsilon_{it} \tag{1}$$

Given the fact that the degree of the informal economy and informal employment observe a complementary ratio, that is, part of informally employed workers are engaged in the informal economy, it is considered useful to analyze the impact of Labor Market Institutions on the movement of informal employment. The equation is given in the following:

⁴⁰ Novkovska and Dumcic (2018), Garvanlieva, Andonov and Nikolov (2012)

$$\begin{aligned} \text{Log}(\text{Informal Employment})_{it} = & \beta_0 + \beta_1 \text{Labor Freedom}_{it} + \beta_2 \text{Business Freedom}_{it} + \beta_3 \\ & \text{Log}(\text{Self-employed})_{it} + \beta_4 \text{Log}(\text{Gross Minimum Wage (1)})_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

The data for the variables used in the analysis are taken from the database of the Heritage Foundation Index (Overall Score, Labor Freedom Index, Business Freedom Index, Tax Burden), while the data for informal workers are taken from the database of the State Statistics Office (SSO).

5. DISCUSSION OF EMPIRICAL RESULTS

The measurement of the informal economy confirms the thesis that informal economic activities occupy a significant part of the total economic activities in the country. The results of the assessment of the degree of the informal economy in North Macedonia show a downward trend in the movement of the informal economy in the analyzed period. The highest degree of informal economy was observed in 2006, when the informal economy amounted to 39% of GDP. This participation of the informal economy is not surprising considering the fact that the informal economy in North Macedonia reached up to 50% of GDP. As of 2008, the participation of the informal economy in GDP decreased by about 6 percentage points, while the number of informally employed workers decreased from 164,943 to 112,247 workers. This reduction is primarily the result of the favorable economic environment in the country and the region, but also the reforms undertaken. Some of the reforms include the so-called regulatory guillotine, as well as the introduction of the Gross salary concept. However, after 2008, as a result of the decrease in economic growth, that is, the financial crisis that affected the European economies, there is an increase in the informal economy, which reached 37.8% in 2012. Starting from 2012, there has been a constant decrease in the volume of the informal economy in North Macedonia, and in 2019 it was 21.3%. Starting from 2020, the restrictive measures that were adopted as a result of the COVID-19 pandemic, the stoppage of supply chains, the reduction of economic growth contributed to a certain increase in the informal economy, which in 2020 is estimated at 22.3% of GDP which implies about 1 percentage point increase compared to 2019. At the same time, the number of employed persons in the domain of the informal economy is decreasing and in 2020 it amounts to 107,766 workers. The results of the ECM assessment of the informal economy show that in 2021 the degree of the informal economy in North Macedonia is 24.7%, which represents an increase of about 3 percentage points compared to the period before COVID-19. Regarding the movement of informal employment, the results show that the participation of informal employment in the

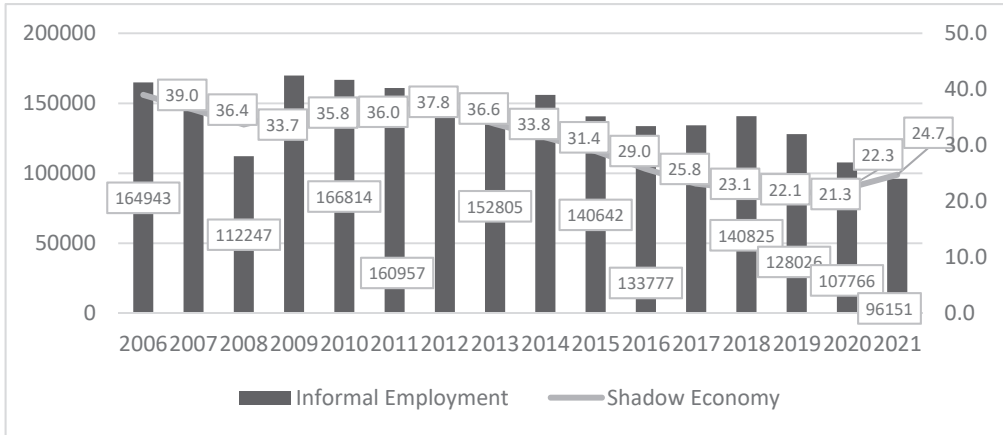
total employment in North Macedonia is 14% in 2021, which compared to 2017 marks a decrease of 8 percentage points (22% in 2017).

The prevalence of informal employment is highest in the agricultural sector, which is also the case in North Macedonia. The share of undeclared work can vary depending on the economic situation in the country, sometimes even depending on the degree of segmentation of the labor market, the extent to which informal employment is more prevalent in "tradable" sectors (such as manufacturing, agriculture, minerals extraction and tourism) in relation to "untradable" sectors (such as household services and business activities). Regarding the distribution of informal workers by individual sectors/activities, it can be noted that most of these workers work in Agriculture, Forestry, and Fisheries. From the total number of workers who work in this activity, 28,851 workers belong to the unpaid family worker category, 20,097 workers declared themselves as self-employed, while only 3,935 workers in agriculture are informally employed by another employer. The high participation of informal workers in the agriculture sector only confirms the widespread trend of high representation of informal workers in this sector, especially in developing countries. The other sectors where there is a significant participation of informal workers are Construction, Processing industry, and Wholesale and retail trade. In construction in 2021, there are 12,073 informal workers who work for another employer, 3,580 workers who declared themselves as informal self-employed, and 617 unpaid-family workers. In other activities, 10,901 workers are informally employed by another employer, which means that in addition to the fact that these workers do not have paid contributions for health, pension and disability insurance, they are not even subject to labor legislation and cannot use the benefits that are due to them according to the law on labor. Worldwide, data on informal employment show that more than half of jobs in the non-agricultural sector are informal, especially in developing countries⁴¹. On average, the share of informal employment in total employment in the countries of Central America is over 50%, while in some of the countries in South America it is much higher (Peru 71%, Paraguay 71%, Argentina 50%, Chile 33%)⁴².

⁴¹ Jutting and Laiglesia (2009)

⁴² ILO (2011)

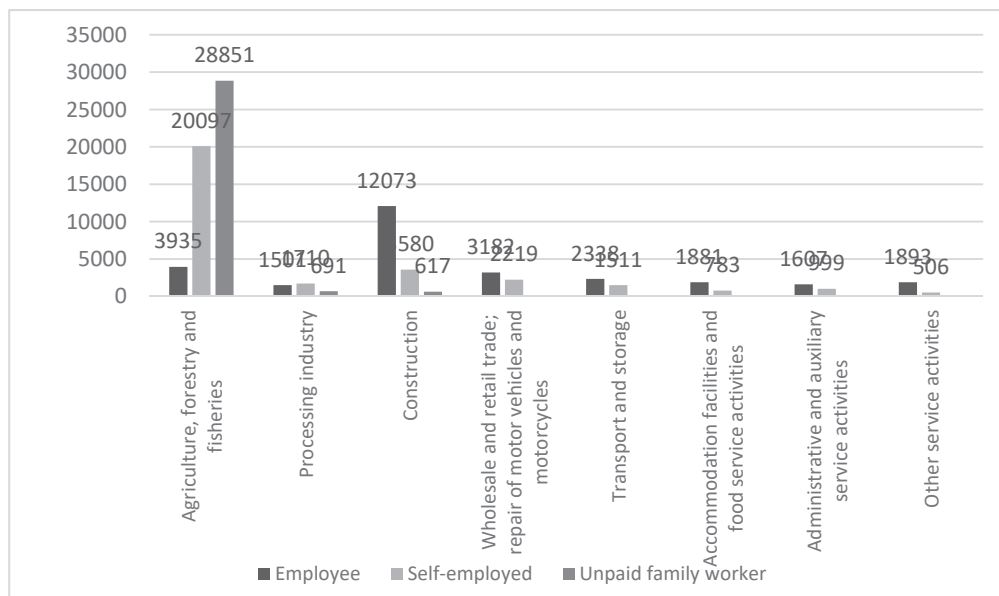
Chart 4: Informal Economy as percentage of GDP and Informal Employment (Number of informal workers)



Source: Author’s calculation and Labor Force Survey data

If the analysis of informal employment focuses on the characteristics of informal workers, it can be noted that informal employment is significantly represented among men compared to women. Namely, in 2021, 67% of informal workers were men, a proportion observed in the period 2017-2022. Regarding the separate age groups of informal workers, it can be noted that the majority of informal workers are between the ages of 35 and 54. If the distribution of informal employment by age groups is analyzed, it can be concluded that informal employment grows with age, from 15 years to 44 years, while after this age category, a decrease in the participation of informal workers is observed. In this direction, it must be noted that 7,291 workers aged 15 to 24 who function within the informal economy are at an age where they should be part of the educational process, be it in secondary or college education.

Chart 5: Informal Employment by type of Employment and by sectors in 2021 (Number of Workers)



Source: SSO Database

The results of the conducted econometric analysis, i.e. of the two models, which, by applying regression estimation, analyze the effects of labor market institutions on the informal economy and the informal employment in North Macedonia are given in Table 1 and Table 2. Given the fact that North Macedonia is facing a high degree of informal economy, which has seen an increase in the last two years, it is considered justified to analyze the individual determinants of the informal economy. The degree of regulation, that is, the institutional restrictions and barriers are analyzed through the prism of Labor Freedom, Tax Burden, Business Freedom, and Minimum Wage. The degree of informal economy was taken as the dependent variable, which was calculated for the needs of this paper by applying the Electricity Consumption Method (ECM Method). The determinants, that is, their influence on the level of the informal economy in the Republic of North Macedonia are subject to econometric analysis using the OLS Method. The degree of adjustment of the model expressed through adjusted R2 is 96%. This proportion of explanation of the degree of informal economy results from the fact that in the analysis the indexes for Labor freedom, Business freedom, Tax burden, and Minimum Wage were taken as independent variables, which are composed of the mutual influence of several factors, especially the factors that affect the degree of regulation of conducting business and the rights and freedoms of workers. Also, the separate coefficients show a statistically

significant influence between the increase of independent variables and the extension of the informal economy as the dependent variable. The increase in Labor Freedom, as well as the increase in Tax Burden contribute to the increase in the level of the informal economy, while the increase in Business freedom and the increase in the minimum wage have a statistically significant effect on the decrease in the level of the informal economy. Hence, it can be concluded that an increase in Labor Freedom by 1 index point contributes to an increase in the informal economy by 0.35%, while an increase in Business Freedom by 1 index point contributes to a decrease in the informal economy by 0.26%. The greatest intensity of influence on the degree of informal economy is shown by the increase in Tax Burden. An increase in Tax Burden by 1 index point contributes to an increase in the informal economy of 1.73%, which indicates a disproportionate increase in the informal economy that produces an increase in Tax Burden.

Table 1: Regression estimation results - Method: Least Squares

Dependent Variable: INFORMAL ECONOMY	Coef.	Std. Error	t-value	p-value
Constant	-107.8102	38.29722	-2.815091	0.0306
Labor Freedom	0.348698	0.116500	2.993130	0.0242
Tax Burden	1.728015	0.405064	4.266035	0.0053
Business Freedom	-0.259966	0.074187	-3.504181	0.0128
Minimum Wage	-0.545068	0.085995	-6.338374	0.0007
R-squared	0.980863			
Adjusted R-squared		0.968105		
S.E. of regression		1.081108		
F-statistic	76.88171			
Prob(F-statistic)	0.000028			

Source: Authors' calculations.

The results of the causal relationship of Labor Freedom, Business Freedom, Self-employment and Minimum Wage on the level of informal employment in the example of North Macedonia are shown in table no. In addition to the indices for Labor Freedom and Business Freedom, as an independent variable in the analysis, the persons who are self-employed are also included. Most of the employees who belong to the Self-employed category are people who are self-employed in their own enterprises that have only a few employees (mostly family members), most often part of the employment of these workers belongs to the category of informal employees. Hence, it is considered justified to include the number of people who are formally

self-employed in the analysis of the determinants of informal employment. The degree of adjustment of the model, expressed through Adjusted R2, is at a high level, that is, about 90% of the changes in informal employment are determined by the changes of the variables included in the model. The results show that the increase in Labor Freedom has a statistically significant impact on the degree of informal employment, that is, it affects the increase in informal workers. On the other hand, the increase in Business Freedom has a statistically significant effect on the reduction of informally employed persons. An increase in Labor Freedom by 1 index point contributes to an increase in informal employment by 0.0097%, which, although it shows a statistically significant and positive relationship, is nevertheless of weak intensity. On the other hand, the increase of Business Freedom by 1 index point, contributes to the reduction of informal employment by 0.008%, which, although the statistically significant and negative relationship is emphasized, it is nevertheless of weak intensity. The analysis shows that the degree of formally self-employed persons has a significant impact on the level of informal employment in the Republic of North Macedonia. Namely, the increase in self-employment by 1% contributes to the increase in informal employment by 0.90%. The statistically significant, positive relationship between self-employment and informal employment shows that informal employment is represented in the business entities of self-employed persons, that is, the increase in formally self-employed persons directly affects the increase in informal employment.

Table 2: Regression estimation results - Method: Least Squares

Dependent Variable: LOG				
(INFORMAL EMPLOYMENT)	Coef.	Std. Error	t-value	p-value
Constant	2.864803	2.593217	1.104729	0.3196
Labor Freedom	0.009661	0.003662	2.638557	0.0461
Business Freedom	-0.008307	0.003009	-2.760827	0.0398
Log (Self Employed)	0.899199	0.187858	4.786598	0.0049
Log (Gros Minimum Wage(1))	-0.139871	0.097299	-1.437538	0.2101
R-squared	0.944677			
Adjusted R-squared	0.900418			
S.E. of regression	0.036567			
F-statistic	21.34445			
Prob(F-statistic)	0.002420			

Source: Authors' calculations.

6. CONCLUSION REMARKS

The informal economy permanently exists in all world economies, however, developing countries are characterized by a higher level of informal economy compared to highly developed economies. When conceptualizing the framework of the informal economy and informal employment, a clear distinction must be made between informal economic activities and informal workers. Hence, informal employment is part of the total economic activities that make up the informal economy. The informal economy is observed between formally registered business entities that do not register part of their activities in official statistics, business relationships in which barter is observed as a form of exchange in order to fulfill mutual obligations, workers who are formally employed but also part of they perform their activities as undeclared with another employer. Hence, the characteristics of business entities, business relationships, as well as the characteristics of jobs must be taken into account when calculating and analyzing informal economic activities.

The high degree of informal economy contributes to the analysis of the basic indicators of the labor market being considered incomplete if it is not complemented by an analysis of the degree and scope of informal economic activities, especially informal employment.

Regarding the representation of the informal economy and informal employment, it must be emphasized that they are most prominent in developing countries. In these countries, the strong intensity of informal economy can be seen in the fact that informal economic activities amount to about 1/3 of GDP, while informal employment is estimated from 20 to 80% of the labor force.

Compared to other countries from the Western Balkans, starting from 2010, North Macedonia has the highest overall score. In 2022, the overall score is estimated at 65.7 points, which ranks North Macedonia in 53rd place in the world and 32nd in the region, which characterizes it as a moderately free country in terms of economic freedom status. The reduction of trade freedom and the rule of law (property rights, judicial effectiveness, and government integrity) are emphasized as factors influencing the reduction of North Macedonia's score. Of the four aspects that determine the overall score, the greatest impact on the downward trend that begins in 2017 is Rule of law. Namely in 2022 Rule of law records the lowest values, corruption and evasion of punishment remain a serious problem. Precisely these two aspects are listed among the most significant factors that drag businesses and workers to integrate into the formal economy.

The trend of Labor Freedom Score in North Macedonia shows a downward trend. Namely, the highest score was recorded in 2010 when it was 83.1 points, while in 2021 it decreased to 65.2 points, which means a drop of about 18 points. Business Freedom score starting from 2012 records the highest value in North Macedonia, compared to other countries from the Western Balkans. However, in the last two years there has been a decline in the Business Freedom Score in the countries of the Western Balkans. In addition to the rest, such changes are a consequence of government measures and interventions on the labor market, especially in 2020 when the COVID-19 pandemic had a negative impact on economic processes, especially on the labor market.

The statutory minimum wage is relevant in negotiating the wages informal workers should receive, the statutory minimum wage serves as an amount around which informal workers' wages are determined. Statutory minimum wage, as a ratio to the average wage in the countries of the Western Balkans, shows significant differences. On the example of Montenegro, the share of the statutory minimum wage in the average wage ranges from 39% in 2013 to 45% in 2021. The statutory minimum wage in the example of Serbia ranges from 43% to 50% of the average wage in the country. Hence, it can be concluded that the participation of the statutory minimum wage in the average wage in these two countries is below 50%. On the example of North Macedonia, there is a growing trend in the movement of the statutory minimum wage. Starting from 42% in 2013, the share of the statutory minimum wage in the average wage, on average, shows a growing trend. Several significant increases in the statutory minimum wage lead to it rising to about 63% of the average wage paid in the country. Estimates are that 80,000 to 100,000 workers receive the statutory minimum wage, representing 11 to 15% of total employment in the country.

Informal economy in North Macedonia shows a downward trend in the movement of the informal economy in the analyzed period. The highest degree of informal economy was observed in 2006, when the informal economy amounted to 39% of GDP. Starting from 2012, there has been a constant decrease in the volume of the informal economy in North Macedonia, and in 2019 it was 21.3%. Starting from 2020, the restrictive measures that were adopted as a result of the COVID-19 pandemic, the stoppage of supply chains, the reduction of economic growth contributed to a certain increase in the informal economy, which in 2020 is estimated at 22.3% of GDP which implies about 1 percentage point increase compared to 2019. At the same time, the number of employed persons in the domain of the informal economy is decreasing and in 2020 it amounts to 107,766 workers. The results of the ECM assessment of the informal economy show that in 2021 the degree of the

informal economy in North Macedonia is 24.7%, which represents an increase of about 3 percentage points compared to the period before COVID-19.

Regarding the distribution of informal workers by individual sectors/activities, it can be noted that most of these workers work in Agriculture, Forestry, and Fisheries. From the total number of workers who work in this activity, 28,851 workers belong to the unpaid family worker category, 20,097 workers declared themselves as self-employed, while only 3,935 workers in agriculture are informally employed by another employer. The high participation of informal workers in the agriculture sector only confirms the widespread trend of high representation of informal workers in this sector, especially in developing countries. Results for distribution of informal employment by gender shows that informal employment is significantly more prevalent among men compared to women. Namely, in 2021, 67% of informal workers were men, a proportion observed in the period 2017-2022.

The degree of adjustment of the model expressed through adjusted R^2 is 96%. This proportion of explanation of the degree of informal economy results from the fact that in the analysis the indexes for Labor freedom, Business freedom, Tax burden, and Minimum Wage were taken as independent variables, which are composed of the mutual influence of several factors, especially the factors that affect the degree of regulation of conducting business and the rights and freedoms of workers. The individual coefficients show a statistically significant causality between the increase of independent variables and the extension of the informal economy as the dependent variable. The increase in Labor Freedom, as well as the increase in Tax Burden contribute to the increase in the level of the informal economy, while the increase in Business freedom and the increase in the minimum wage have a statistically significant effect on the decrease in the level of the informal economy. The results shows that an increase in Labor Freedom by 1 index point contributes to an increase in the informal economy by 0.35%, while an increase in Business Freedom by 1 index point contributes to a decrease in the informal economy by 0.26%. The greatest intensity of influence on the degree of informal economy is shown by the increase in Tax Burden. An increase in Tax Burden by 1 index point contributes to an increase in the informal economy of 1.73%, which indicates a disproportionate increase in the informal economy that produces an increase in Tax Burden.

The results for informal employment show significant dependence on labor market institutions. Degree of adjustment of the model, expressed through Adjusted R^2 , is at a high level, that is, about 90% of the changes in informal employment are

determined by the changes of the variables included in the model. The results show that the increase in Labor Freedom has a statistically significant impact on the degree of informal employment, that is, it affects the increase in informal workers. On the other hand, the increase in Business Freedom has a statistically significant effect on the reduction of informally employed persons. The analysis shows that the degree of formally self-employed persons has a significant impact on the level of informal employment in the Republic of North Macedonia. Namely, the increase in self-employment by 1% contributes to the increase in informal employment by 0.90%.

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