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SKOPJE**



**Republic of North Macedonia**

**CONTEMPORARY CHALLENGES OF ECONOMIC  
GROWTH AND SUSTAINABILITY OF BUSINESSES**

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**Welcome speech of Prof. Zoran Janevski, Director of the  
Institute of Economics – Skopje**

Dear Rector, Prof. Nikola Jankulovski,  
Dear professors, researchers, students, colleagues,  
I would say Dear friends,

It is indeed my pleasure to welcome you at this International Scientific Conference on CONTEMPORARY CHALLENGES OF ECONOMIC GROWTH AND SUSTAINABILITY OF BUSINESSES. The conference is organized by the Institute of Economics Skopje, which is an integral unit of the Ss. Cyril and Methodius University in Skopje, the largest, the oldest and the best ranking University in North Macedonia. My name is Zoran Janevski, and I am a professor at the Institute of Economics and Director of the Institute.

The Institute of Economics – Skopje was founded in 1952, and this year it celebrates 70 years of its existence. During these 70 years, the Institute has been an active participant in almost all significant economic challenges faced by the country and the world. For the last 7 decades the Institute has been continuously developing its leading role in the country in the field of higher education and research, conducting masters and PhD studies in several study programs in the fields of Economics and Organizational Sciences and Management. More than 1080 students have obtained a Master's degree and more than 170 candidates have successfully defended their doctoral thesis at the Institute of Economics – Skopje. During its existence the institute has developed and realized more the 500 research projects, and has published more than 180 special publications. In the last 24 years a scientific journal of the Institute called Economic Development has been published. The journal has an International Editorial Board and it is indexed in several databases and repositories.

This conference is part of our anniversary celebration and it is dedicated to the economic growth and sustainability of businesses. This year we are

*Contemporary challenges of economic growth and sustainability of businesses* almost 120 participants, and we are very happy about it and I would like to welcome all of you. You come from 6 different countries, and today we are going to listen to 50 presentations on economics and business-related research works. The programme is organized in three parallel sessions, online on the MS Teams platform.

Why we chose this specific name for our conference? The world is facing many Global challenges in the last years. First, the COVID-19 pandemic: it turned our lives and economies upside down—and I am afraid it is still not over. Second, the war crisis in Ukraine. The economic consequences from this crisis spread fast and far, hitting hardest the world's most vulnerable people. Hundreds of millions of people were already struggling with lower incomes and higher energy and food prices, and this war has made this much worse. Third, for the first time in many years, inflation has become a clear danger for many countries around the world. In economic terms, growth is down and inflation is up. Macroeconomic imbalances have reached unprecedented proportions. The world is facing growing income inequality across and within countries.

All these and many other issues play the essential, the most crucial role in the global economy, and we at the Institute of Economics – Skopje are confident that it is already the critical moment to start working together, to discuss these issues, to share our research findings and results, to exchange our views and increase our efforts to make our choices and to identify solutions.

I wish you a fruitful debate, courageous, but argumentative and fact based, and I am convinced that it will lead to concluding observations and recommendations that will help improve the situation related to the Economic Growth and Sustainable Businesses.

Thank you.

## **Welcome speech of Prof. Nikola Jankulovski, Rector of Ss. Cyril and Methodius University in Skopje**

Dear Director of the Institute of Economics – Skopje, prof. Zoran Janevski, Dear scholars, researchers, colleagues,

It gives me great pleasure to welcome you to the international conference: CONTEMPORARY CHALLENGES OF ECONOMIC GROWTH AND SUSTAINABILITY OF BUSINESSES.

This conference is organized as part of the 70<sup>th</sup> Anniversary celebration of the Institute of Economics – Skopje, Ss. Cyril and Methodius University in Skopje. Since its beginnings, the Institute of Economics has positioned itself as a significant factor in development of the economic thought in the country. In the complex and dynamic environment that imposes ever higher standards in the process of research and acquisition of knowledge and skills, the Institute of Economics paves its way to success by implementing a significant number of scientific and applied projects and supporting the creation of economic policies. Much of the Institute's value lies in its long standing commitment to enhance education and science, as a driving force of economic and social development.

Over the past seven decades, the Institute has achieved a respectable development on a wider scale. This is a result of the high professionalism and consistency in the mission of the Institute, but also of the commitment and the efforts of its management and employees throughout the years. Numerous scientific research projects have been prepared with other education and research centers from Europe and the world, with which the Institute of Economics cooperates in tackling scientific issues and knowledge transfer.

Universities in modern societies cover wide areas of activities, exploring

the concepts, trends and ideas that define the expectations of science and higher education. Ss. Cyril and Methodius University has always actively supported the efforts for scientific breakthroughs and their application in education, business and the society. Today, more than ever before, science

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*Contemporary challenges of economic growth and sustainability of businesses* has the power to change the world we live in and to shape the future. Science and its application in education and business is the basis on which economic benefits are created for both companies and the society.

In these trying times, the world is facing numerous challenges with unforeseeable consequences and implications in all aspects of human's life. Faced with sharp reduction of economic growth, energy crisis, surging inflation, sluggish investments, as well as disrupted supply chains, among others, economies are struggling to introduce policies in an attempt to alleviate the implications of this crisis and set solid grounds for revitalization of the economy and business. Fostering economic growth and creating favorable businesses environment is probably one of today's most important challenges for the humanity.

Having said the above, this Conference brings together scholars and researchers with an aim to discuss the ongoing challenges of economic growth and sustainability of businesses. In these new circumstances, there is an indisputable need to use all available resources to create policies and well-designed structural reforms aimed at mitigating the adverse changes and expected implications in short and medium term, so as to build the foundations for future prosperity.

It gives me a great pleasure to see that a significant number of speakers shall present their research and insights at this conference. More than 50 papers will be presented in 3 parallel sessions covering various aspects pertaining to the economic growth, macroeconomic and sectoral policies as well as critical business issues.

I wish all participants at the conference fruitful discussions while sharing their insights and much cooperation in the future as well.

Thank you.

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## **~~PART I - DETERMINANTS OF ECONOMIC GROWTH -~~** **CURRENT SITUATION AND PROSPECTS**

*Contemporary challenges of economic growth and sustainability of businesses*

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### **MACROECONOMIC PERFORMANCE OF WB COUNTRIES - EMPIRICAL INVESTIGATION**

**Abstract:** The beginning of the 21st century was dominated by significant events that reshaped the Western Balkan (WB) region's political and social structure. The period was characterized by political stabilization and renewal of the transition process, which resulted in economic growth and development of the region. During this period, the Western Balkan countries based their economic growth on accelerating domestic consumption (as a part of aggregate demand) and, consequently, real wages.

Nevertheless, the Global financial crisis dramatically affected the Western Balkan region. Even though the crisis began in 2007, the Western Balkan countries felt the crisis' adverse effects at the end of 2008, when institutional investors started to withdraw their funds, which profoundly impacted the level of foreign currency savings. Furthermore, the Global financial crisis caused a decline in imports, a balance of payments deficit

and reduced FDI inflows which further affected the macroeconomic stability of the region. The economic recovery began in 2010. The main result was moderate economic growth in almost all Western Balkan countries.

The positive economic trends were abruptly interrupted in early 2020 by the COVID-19 influenced health and economic crisis. The COVID-19 crisis resulted in a global slowdown in trade and economic activity, with health and other pandemic costs rising sharply. The emerging crisis has negatively affected the economic growth and development of most Western Balkan countries. In order to prevent the adverse economic effects of the crisis, the Western Balkan economies have introduced a set of fiscal and monetary policy measures (tax policy measures, measures of direct incentives from

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the budget, measures to preserve liquidity etc.). These measures aim to help maintain companies' liquidity and preserve jobs, which can significantly induce a faster exit from the economic crisis after the end of the global pandemic. After the initial shock in the second quarter of 2020 and the subsequent recession, most of the Western Balkan countries' economic and social support programs contributed to their slight recovery in 2021. In other words, macroeconomic stability was preserved, and new production capacities were activated, which was followed by a slight recovery of foreign direct investments. Provided that the Western Balkan countries managed to achieve macroeconomic stability before the crisis, there was room for the economic policy response to be adequate in scope and structure.

According to the above mentioned, the subject of this paper is a comparative analysis of key macroeconomic indicators (Real GDP, Inflation, Unemployment rate, Exports and imports of goods and services, Foreign direct investment) of the Western Balkans in the period 2006-2021. The aim is to assess their relationship and position and draw adequate conclusions and recommendations for policymakers accordingly.

The research is based on a descriptive analysis of secondary data from The Global Economic database.

A comparative analysis of the selected macroeconomic indicators indicates that the COVID-19 pandemic and the global slowdown have had the least severe impact on Serbia compared to other Western Balkan countries. This was a consequence of the achieved macroeconomic and financial stability, previous growth dynamics, built fiscal position, timely implementation of the comprehensive package of measures, and its economic structure. In the forthcoming period, it can be expected that the Western Balkan region, with the implemented structural reforms, will ensure macroeconomic stability and the creation of a favourable foreign direct investment environment, which will undoubtedly impact their further economic growth and development.

**Keywords:** *macroeconomic indicators, WB countries, economic growth*

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## **MACROECONOMIC STABILITY AND GROWTH DETERMINANTS OF THE REPUBLIC OF NORTH MACEDONIA**

**Abstract:** This article addresses major macroeconomic stability's challenges and growth determinants of the Republic of North Macedonia, imposed by external and internal factors. An overview of the



macroeconomic indicators of the country in the period 2016-2021 serves as a basis for identifying the macroeconomics trends, as well as outlining the particular areas of policy-making where outstanding risk-management would be necessary in the mid/long term. The research undertaken for this paper indicate that the major macroeconomic policy challenges relate to public debt management, budget deficit and inflation. Over the analyzed period, the gross external public debt rose from 48.4% of GDP (2016) up to 60.8% of GDP (2021). Although this increase has been largely attributable to COVID-19 crisis management, it raises issues about the debt sustainability and features of the public finance management policy. Budget deficit rose from lowest 1.8% of the GDP (2018) to 8.1% (2020) and 5.4% (2021), implying to the high volatility related to crisis-management. Furthermore, the external shocks driven by war in Ukraine, energy and food prices' increase, as well other turmoils on the international scene, have reflected into rise of the inflation from -0.2% (2016) to 3.2% (2021), which calls for cautious risk management in this field.

In addition to the overall macroeconomic developments, the paper particularly addresses foreign trade structure. It has changed significantly in the past decade, reflecting the inflow of export-oriented FDIs in the automotive industry. As a result, the foreign trade structure became highly concentrated in terms of products and trade partners. The top three exporting

products had share of around 30% of the total export in 2021, while top ten products that absorb over 50% of the total export include only two products of the traditional macedonian industries - steel and tobacco. In addition, the foreign trade structure indicates high import dependence of the export, which, regrettably, has not resulted into substantial net effect for the country. The trade deficit deepened from 1.7bn Euros in 2016 to 2.7bn Euros in 2021. As the changes in the foreign trade structure over the analyzed period has been solely driven by FDIs, the analysis about the

growth determinants of the country leads to the issue of the competitiveness of the national economy. The manufacturing industry has participated with 18% in the GDP in 2019 (pre-Covid data are considered), while trade had share of 20%. The share of the small companies (1-9 employees) dominates with over 82% in the total business entities of the country, reflecting into high volatility of the private sector from any type of crisis.

The GDP average growth rate has been 2.8% over the period 2000-2019, which led to an increase of GDP per capita (in PPP terms) from US\$6151 to US\$17565 over the period. However, the EU average GDP per capita (in PPP) was US\$33000 in 2019. Shrinking the gap with the EU would require GDP growth of at least 5% a year, if the Republic of North Macedonia aims to achieve genuine progress. In purpose of acceleration of the GDP growth, several issues must be addressed - low productivity; low rate of innovation and technological development; shadow economy; unfavorable structure of the economy: mismatch among the labour market demand and supply, as well as education system which does not reflect the needs of the economy. All these issues result into the low competitiveness of the national economy. The paper discuss on these issues and provides recommendations about policy outlook and actions necessary for improvement of the state of affairs in the mentioned areas.

**Keywords:** *macroeconomic indicators, growth, competitiveness*

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## **A MULTIDIMENSIONAL ANALYSIS TO COORDINATE THE RELATIONSHIP BETWEEN PUBLIC GOVERNANCE AND QUALITY OF LIFE ACROSS THE EUROPEAN UNION STATES**

**Abstract:** This research aims to map the challenges faced by public governance in supporting and increasing the level of EU Member State's societal well-being through a complex multidimensional analysis that was achieved by including a set of modern methods, namely bibliometric analysis, vector quantisation, and cluster analysis that were applied on a sample of countries formed by the EU Member States. In this respect, the proposed research supports using two of the most relevant descriptive indicators of the two analysed phenomena, respectively the composite index of quality of life (excluding its subdivisions) and the six indicators that reflect the dimensions of public governance to explore the interdependence between them. To capture essential indicators of the public governance and the quality of life index, official data was used, being considered, extracted

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and processed only the data for the year 2020. Due to the unavailability of data regarding the quality of life index, countries such as Luxembourg, Malta and Latvia were excluded. Still, the United Kingdom continued to

be included due to its membership until 2020. The research objective proposes to assess the impact of public governance on societal well-being, involving a graphical and tabular representation of a complex classification and hierarchy of the EU Member States. The ranking of the analysed countries was obtained according to the perspective of the progress made at the governmental decision-making level, through which the quality of life was subjected to multidimensional approaches. Moreover, we conducted a cluster analysis, which involves the Euclidean distance method as a method of measuring distance, the method of vector quantisation by employing a powerful analytic platform, namely KNIME that allowed us to apply the K-means algorithm, an algorithm that minimises variations within the cluster, and graphical representation of disparities between the EU Member States and to allow the formation of an overview of the level recorded by each indicator, taking into account both sets of the indicators of the two analysed phenomena. Therefore, both through the KNIME and STATA software, the data set was processed in order to visually represent the results, obtaining both the hierarchy and the grouping of countries into clusters. Following the cluster analysis, the analysed countries were distributed according to the values recorded for each selected indicator. The results highlight significant disparities between the EU Member States in assessing public governance measures to ensure societal well-being. Regarding the disparities between European member countries, at the top of the hierarchy, we identified different effective states such as Denmark and Finland; results were recorded because the population of these countries feel a very high level of quality of life due to highly efficient public policies and services. In contrast, we identified other specific countries on the opposite hierarchy spectrum, such as Romania and Bulgaria. These countries face considerable difficulties in significantly improving the quality of life of their citizens, mainly due to the poor way these countries are managed and

analysis, respectively, that in the countries of central and northern Europe, high values of all indicators are registered, while in the eastern and southern areas of Europe, these countries registered minimum values. Furthermore, the research results outline the most essential and relevant channels through which public governance can significantly contribute to improving societal well-being, considering the importance of decision-making transparency, simple methodologies, and meritocracy.

**Keywords:** *public governance, societal well-being, cluster analysis, vector quantisation, European Union*

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## **PRODUCTIVITY AS A SOURCE OF ECONOMIC GROWTH - CURRENT SITUATION AND PROSPECT IN THE REPUBLIC OF NORTH MACEDONIA**

**Abstract:** Today's world situation has made it difficult for economies to function. Economies continue to struggle with the impacts of the COVID-19 pandemic, first to protect people's health and also to ensure the recovery of the economy. This current process has been interrupted by the war in Ukraine and all countries must find ways to ensure macroeconomic stability. So, the insurance of economic growth is paramount. Productivity growth is the one of the most important sources and a key factor for sustained economic growth. Economic recovery and an increase in GDP are preconditions for reducing poverty and improving quality of life.

Productivity is an indicator of the use (exploitation) of the potential of inputs for creating new value added in the economy. In the long term, productivity growth is dependent upon innovation, investment in physical capital, and investment in human capital. These immediate factors are shaped by the environment in which enterprises operate: market structures, infrastructure, the institutional framework and the quality of governance. The main objective of this paper is to study productivity growth in the Republic of North Macedonia and to analyse and propose measures that can be taken and stimulate productivity.

*Contemporary challenges of economic growth and sustainability of businesses* There are two primary ways of measuring productivity: labor productivity and total factor productivity (TFP). Throughout this paper, productivity is considered as output (gross domestic product - GDP) per input of a unit of labour. This concept takes into consideration the number of economic engaged people, rather than the number of working hours as the measures of labour input in the economy. Therefore, the indicator of labour productivity in the Republic of North Macedonia that is calculated yearly and quarterly, is a weighted sum of sector-level productivity as a ration between the value added of a sector and the number of employed persons. The analysis uses the database of State Statistical Office and National Bank of Republic of North Macedonia.

Also, the total factor productivity (TFP) is considered in this paper. Productivity calculations use the Solow growth model of economic growth as a function of labour, capital and productivity. As such, TFP measures the effectiveness of combined factor inputs and is often used to represent technological progress. TFP may also incorporate wider factors such as organizational and institutional characteristics. TFP is also widely known as a Solow' residual. The calculations of the TFP for the previous period of 2000-2020 are presented in this paper.

These two aspects cover the productivity in macroeconomic contexts. The other crucial aspect in the analysis of productivity is the level of productivity of the enterprise.

The Enterprise Survey conducted by the World Bank in 2009, 2013 and 2019 include 360 enterprises in North Macedonia. The Survey covers the question about labour productivity growth by year. This measure that explains the performance of the enterprises is essential to the conclusions about the productivity in firms.

Evaluating employee perceptions of productivity and recent changes in work due to COVID-19 is also valuable for the overall state. Hence, the questions on productivity were part of the online survey distributed among employees in North Macedonia. The findings from the received responses are also included here.

Labour productivity in North Macedonia is low, and in the past five years even negative. Quarterly, the labour productivity shows the lowest values in the 2020 which is the year of the pandemic and cannot be referenced for comparison. Besides that, the labour productivity is with low level and mostly with negative values in the whole analyzed period (2012–2020).

The calculations of the total factor productivity using the Solow's growth model and Cobb-Douglas production function for the past twenty years, shows that GDP average growth is 4,97% and the TFP contribute by 1,69%. Therefore, the expectations for the increase of the GDP and reaching economic growth that can be sustainable is possible with increasing total factor productivity in the North Macedonia.

**Keywords:** *economic growth, labour productivity, total factor productivity, firm productivity*



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**THE RELATIONSHIP BETWEEN ENERGY  
CONSUMPTION AND GROSS DOMESTIC PRODUCT:  
POTENTIAL IMPACT OF THE ENERGY CRISIS ON  
THE ECONOMIC GROWTH OF THE REPUBLIC OF  
NORTH MACEDONIA**

**Abstract:** Energy is a key source of economic growth for any economy because of the fact that many consumption and production activities involve energy as a basic input. Energy is one of the most important inputs for economic development. Some analysts and many studies suggest that energy consumption has a positive correlation with the economic growth of a country. First objective of this paper is to explore the relationship between gross domestic product (GDP) and energy consumption on the sample data taken for the period from 2008 to 2020 for the Republic of North Macedonia. Energy consumption measured in kilo tons of oil equivalent, is taken as an independent variable and gross domestic product (GDP) measured in million denars is taken as dependent variable. To study the relationship between the two variable this paper implies descriptive statistics, correlation and regression analysis. Regression analysis is used to describe the dependence of GDP on energy consumption regarding the possible causation of changes in GDP by changes in energy consumption. Pearson's r correlation coefficient show that the variables of interest are strongly related to each other while the regression analysis show a statistically significant positive correlation between energy consumption and economic growth measured by GDP. These results identify how important is the energy consumption for the

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economic growth of the Republic of North Macedonia. Second objective of this paper is to comment on the potential impact of the energy crisis on the economic growth of the Republic of North Macedonia because of the strong relationship between the energy consumption and the economic growth. Energy crisis is defined as a price rise of the available energy resources or a big shortfall in the supply of the energy resources. Usually it is referred to shortage of electricity, oil, natural gas and other natural resources. If there is not sufficient energy, industrialization will not take place, it is crucial for running industries and output units, for residual and commercial use, for transportation, etc. As the world is changed entirely by globalization, financial and economic crisis, Covid-19 pandemic and

the most recent energy crisis, many issues have emerged among which the energy got sufficient attention of researchers. The 2021-2022 global energy shortage is the most recent in a series of cyclical energy shortages experienced over the last fifty years and it is affecting the countries all around the world. In a country where the economic growth is high dependent on the energy consumption, as it is the case in the Republic of North Macedonia, it is expected that the decrease in the energy consumption caused by the recent energy crisis will lead to a reduction in the GDP. Therefore, this paper suggests that the Government of the Republic of North Macedonia should focus on utilization of energy resources which in turn will smooth the way for economic development. Additionally, the Government should support projects which will enable a shift from oil usage to other energy resources available such as hydro energy, wind and solar energy and to encourage domestic energy production rather than importing.

**Keywords:** *energy consumption, GDP, energy crisis, economic growth*

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## **SLAVERY AS A DETERMINANT OF ECONOMIC GROWTH. THE CASES OF BRITISH AND DUTCH EMPIRES**

**Abstract:** When someone hears the word *slavery*, most people think of the

past, of a long-gone era that has no bearing on today's society. However, slavery is a topic that continues to attract academic interest, with historians, sociologists, psychologists, and economics all studying it. The widespread interest in the study of slavery is demonstrated by the repercussions that this past institution has had on the world that we know today. From an economic standpoint, the issue of slavery is intriguing because it may give information on the economic growth of states that were involved in this practice.

The purpose of this paper is to examine various perspectives in the academic literature towards the economic impact of transatlantic slavery within the British and Dutch Empires. Moreover, the present article aims to observe how and if the enslavement of Africans influenced the economic expansion of the two state entities. During several centuries, the British Empire, together with the Dutch Empire, were actively involved in the transatlantic slave trade, particularly during the 16th, 17th, 18th, and 19th centuries. The transatlantic slave trade was an international slave trade in which enslaved Africans were transported from Africa to the Americas across the Atlantic Ocean. On the one side, the British Empire possessed slave-labor plantations in North America and the West Indies, which mostly produced cane sugar, tobacco, and rice. The Dutch Empire, on the other hand, was more of a maritime phenomenon, with just a few true colonies in the Caribbean, North America, and Taiwan. Due to slave labor, Dutch plantations have become involved in the production and commerce of coffee, sugar, and tobacco.

The main key findings of this article were outlined as a result of a literature

review on the implication of slavery in the economic growth of the British and Dutch Empires. In all, eighteen sources were examined, including ten books and eight articles. Jstor, ProQuest, Science Direct and Francis and Taylor were the main databases used. The primary keywords employed were *transatlantic slavery*, *British Empire slavery*, *Dutch Empire slavery*, *slavery profitability*. More specifically, books and articles supporting the

idea that slavery was a determinant of the British and Dutch empires' economic growth and general development were analyzed, as well as books and articles arguing that slavery was not such a profitable activity, and thus had little impact on the empires' economic expansion.

The key finding suggests that starting with the British Empire, slavery had a huge influence on its economic expansion, according to the literature review. The West Indies, it is believed, has become a pivot for the British Empire's social and economic development, since the sugar cane plantations, which were built on slave labor, generated the greatest profits of all the imperial colonies. On the contrary, other studies claim that the impact of slavery on the British Empire's economic growth is overestimated. They indicate that because of the expenditures involved in transporting slaves from Africa to the Americas, the transatlantic slave trade has actually been less profitable. The literature review discourse is similar in the case of the Dutch Empire. There are opinions which argue that the transatlantic slavery did not impact positively the economic growth of the Empire as this kind of trade was expensive, risky and it took a long time to be successfully accomplished. Nonetheless, other researchers estimate that, while the Dutch plantations did not generate substantial profits, the commerce in coffee, sugar, and tobacco had a significant economic influence inside the Empire because it established new businesses to process and refine raw products.

In conclusion, it should be noted that the academic literature that studies the importance of slavery on the economic growth of the British and Dutch Empires is highly divided. Both pro and con perspectives on the relevance of slavery use strong arguments and proofs in order to sustain their point of view. Despite the fact that the international literature has not yet reached an

**Keywords:** *slavery, transatlantic slavery, British Empire slavery, Dutch Empire slavery, profitability*

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## **ROMANIAN HEALTH CARE SYSTEM IN TIMES OF COVID PANDEMIC**

**Abstract:** The COVID-19 pandemic has significant consequences on the social, political, economic and healthcare aspects of most of the countries. Since it is the third coronavirus outbreak of international concern during the last 20 years, it becomes clear that the transformation of various aspects at both individual and societal and governmental levels is inevitable. The current pandemic has actually been considered a reality check for many economic sectors, in general, and healthcare systems, in particular, in terms of their overall readiness. The healthcare expenditures tremendously augmented along with the increase in the intensity of this new virus. Some short and long run effects on human capital can be depicted or estimated, based on the experience from other pandemics and recessions. On the short term, any health crisis burdens the healthcare systems and government assistance programs, reduces the work capacity, the stock of human capital and the economic prosperity. On the long run, the particular characteristics of the current crisis raise the risk of the potentially lasting morbidity among its many survivors. Therefore, in the context of COVID-19, a major concern was related to the fact that low and middle income states would be much harder hit than the advanced countries not only from the economic point of view, but also from the human capital stocks' perspective. Considering all these aspects, the purpose of this study is to investigate the effects of Coronavirus pandemic on the human capital stock of Romania and the potential recovery pathways. In order to achieve this purpose, we have

help of which we investigated how Romania managed to react to the pandemic, from the public health perspective, in comparison with 4 of the most developed economies from European Union in 2019: the United Kingdom, Spain, Germany and France. We have chosen these states since they were both among the first states according to the real GDP/capita in EU in 2019 and the worst hit by the COVID-19 pandemic. According to our findings, in Romania the number of the confirmed cases was much lower than in the other four developed states, but the severity of the disease among those affected was higher, at least during the last months. Meanwhile, during the last two years, we notice that Romania had the highest number of death per million persons among the five considered states only in two short periods: between middle of April and middle of July, and middle of September and middle of December.

However, despite all these, the current health crisis has highlighted some areas of the Romanian healthcare system where improvements are immediately required so that other future similar scenarios could be successfully managed. Therefore, it is expected a new model of healthcare delivery, with more emphasis on preventive measures, remote care and substantial technological improvements. Moreover, in order to control and limit the long term effects of COVID-19, it is important to consider the health and economics impacts of the pandemic in a close relationship.

**Keywords:** *human capital stock; education; healthcare system; COVID-19 pandemic*



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## **ESTIMATING PUBLIC CLIMATE FINANCE USING OBJECTIVE-BASED COST COMPONENT APPROACH**

**Abstract:** Global warming-induced climate change is the single greatest threat facing humanity. The fight against climate change and achieving the primary objective of the Paris Agreement to limit global average temperatures to well below 2°C, while pursuing efforts to stay within 1.5°C, requires serious and strong climate action by all stakeholders. Climate change is also considered as the “greatest investment opportunity in history” valued at about 10 percent of global GDP, providing an unprecedented opportunity to unlock massive economic and social benefits that can help achieve the Sustainable Development Goals (SDGs). Climate finance globally reached USD 632 billion in 2020 with an annual increase of only 10%, compared to 25% in previous years. The achieved level is far from the USD 4.35 trillion required per year to meet climate objectives by 2030. Developed countries committed to collectively mobilizing USD 100 billion per year by 2020 to assist developing countries for meaningful mitigation actions and transparency in implementation. The commitment was reiterated at CoP 26 in Glasgow and extended to 2023.

The public sector plays a more prominent role in providing climate finance as their share is about 52% of total climate finance each year. Globally, the public sector continues to provide almost all of adaptation finance, while the private sector mostly provides mitigation finance. The COVID-19 pandemic negatively affected the growth of international climate finance as

*Contemporary challenges of economic growth and sustainability of businesses* many developed countries cut these flows. Public climate finance in many developing countries was impacted negatively since the implementation of their national NDCs mostly rely on international support. North Macedonia submitted its roadmap to reduce greenhouse gas emissions by 51% by 2030 through its Enhanced Nationally Determined Contributions (ENDC). The ENDC has 63 mitigation policies and measures (PAMs) that require EUR 25.03 billion for implementation which is largely expected to be provided through public climate finance, especially international support. The purpose of this paper is to present a methodology to estimate public climate finances using the Climate Budget Tagging (CBT) tool developed jointly by the Ministry of Environment and Physical Planning and the UNDP in 2021. The CBT tool helps in identifying, classifying, weighting, and marking climate-relevant expenditures in a government's budget system which subsequently enables the government to estimate, monitor, and track climate-relevant expenditures in the budget. As it provides information on climate-relevant spending, it enables the government to make informed decisions and prioritize climate investments across sectors. The introduction of CBT includes the process of identifying programmes that are climate-relevant along with their earmarked budget in the government budget and attaching a climate budget marker such as a tag to budget lines or groups of budget lines. Following the identification of both mitigation and adaptation-related climate programmes, the next step in using CBT would be to determine the level of relevance of the programme to climate change as some part of the budget allocated to the identified programme as climate-relevant may not contribute to climate objectives. Considering the limitation of the available climate finances both globally and at the national level to address climate change and the urgency of addressing climate impacts, CBT is vital for prudently addressing rapidly growing climate concerns. By generating data on climate-relevant spending, which the usual budget classification would not do, CBT enables public scrutiny to strengthen accountability and

transparency of climate spending. To illustrate how the tool works, this paper will use data from financial

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statements for the execution of the budgets of the City of Skopje for the period 2018-2020 and assess the public climate finance for the City at the programs and activity level. Assessing the level of climate relevance of the identified climate programmes, a combined objective-based cost component method will be used. In this approach, relevance level is calculated as the percentage of total expenditure for each climate intervention minus the share of the expenditure that would take place under a business-as-usual (BAU) scenario. This method also acknowledges that some of the programmes already have climate functions built-in; when these programmes are implemented to contribute to climate functions, the additional benefit they would provide also needs to be considered.

**Keywords:** *climate change, climate finance, climate budget tagging, North Macedonia, City of Skopje*

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# THE IMPLICATIONS OF DIGITALISATION AND COVID-19 ON HEALTH SYSTEMS OF THE EUROPEAN UNION COUNTRIES

**Abstract:** The health systems of the EU Member States are significantly shaped by the new developments and challenges in technology integration and the era of digital transformations, all of these being amplified by the COVID-19 pandemic, requiring various objectives, strategies, and priorities to bridge national gaps in the health systems and enhance the integration of digitalisation in the field of public health. This paper aims to examine the connection and implications of digitalisation and COVID-19 dimensions on public health, identify the impact of the integration of technology in health systems and measure the effects of representative indicators of the COVID-19 extent on public health, within the 27 European Union Member States, over the year 2020. The methodology employed consists of applying two procedures, namely: cluster analysis performed by agglomerative clustering and analysis by applying the method of vector quantisation on the EU27 Member States - clustering through the dendrogram for the indicators of the digitalisation dimension to partition the analysed countries into homogeneous clusters and tabular representation of the most representative

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indicators considering all three dimensions surveyed (health, digitalisation and COVID-19) by grouping countries into three clusters, and analytical approach that consisted in applying data mapping that allows a hierarchy of sample countries - graphical representation of the most representative indicators related to health, digitalisation and COVID-19 to capture the increase or decrease in time of the degree of specific indicators. The main results encompass that the discrepancies in terms of health, digitalisation and COVID-19 tend to manifest differently in the analysed EU countries. Moreover, the results highlight the best performing countries in terms of

health, digitalisation and COVID-19, the countries that need support, the introduction of policy initiatives to increase the level of digitalisation in the medical field, and strategies to strengthen health systems affected by the COVID-19 pandemic. Further, the results indicate that the level of digitalisation of health systems presents significant gaps between EU countries. The level of digitalisation is low in countries such as Romania, Greece, Bulgaria, Cyprus, and the Czech Republic. In contrast, the highest level of digitalisation is recorded in countries such as Finland, the Netherlands, Ireland, and Denmark. Also, as digitalisation has a more pronounced emphasis on health systems, certain benefits and associated risks emerge. Next, the results indicate significant discrepancies in terms of health; the countries Romania, Estonia, Bulgaria, and Croatia need improvements and considerable support in terms of all analysed indicators of the health dimension. On the other hand, countries such as Ireland, Finland, Denmark, and Belgium can serve as models of best practices and effective strategies for the optimal functioning of the health system. The COVID-19 pandemic exerts major pressure on European health systems, stressing the importance of integrating and the existence of technology in the field of health. The results of the research indicate negative consequences and high values of the representative indicators of COVID-19 dimension (number of cases, number of deaths, positive tests) both in the health systems of the Member States of the European Union and in terms of society, countries such as the Czech Republic, Slovakia, Lithuania, Poland, Romania, and Croatia

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*Contemporary challenges of economic growth and sustainability of businesses* where the number of deaths is significant, these countries also having a high number of positive tests. Besides, this research emphasises that the entire EU community needs common approaches and considerable efforts to improve health systems, especially in terms of digitalisation, given the gaps and challenges generated by the COVID-19 pandemic. Ultimately, the results reveal a series of specific recommendations, strategies, and guidelines for improving and strengthening the health systems of the

European Union.

**Keywords:** *EU-27, vector quantisation, agglomerative clustering, health systems, digitalisation, COVID-19*

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## THE IMPACT OF THE COVID-19 PANDEMIC ON CERTAIN MACROECONOMIC INDICATORS IN THE WESTERN BALKAN COUNTRIES

**Abstract:** This article reflects the impacts of the COVID-19 pandemic on the Western Balkan countries (Republic of North Macedonia, Serbia, Montenegro, Croatia, Bosnia and Herzegovina, Albania and Kosovo). Like the other countries in every corner of the world, countries from the Western Balkan region were not remain immune of the consequences of the pandemic. Even before the pandemic, these countries struggled with underdeveloped economies, weak democratic institutions, weak social infrastructure, outward migration, political uncertainties, considerable socio-economic inequalities and shortfalls in public investment. It is assumed that these weaknesses may deepen further as a result of economic slowdown stemming from the Covid-19 crisis. With lower wealth and growth rates than their Western European counterparts, they lack the funds, medical assets and crisis-management systems to effectively counter the crisis. However, the good thing is that the governments were implemented a wide range of preventive and restrictive measures related to mobility and economic activity of the people, as well as introduced stimulus packages, mobilizing both financial aid and monetary policies, to ease the economic impact and help their citizens.

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*Contemporary challenges of economic growth and sustainability of businesses* This paper analyzes the strength of economic impact of the ongoing crisis on key macroeconomic variables: gross domestic product, unemployment rate, poverty rate, export, import, inflation, non-performing loans, public debt, current account balances in the Western Balkan countries. The data



used are statistical data obtained from the data base of the World Bank. We use a qualitative and quantitative approach in order to find out if there are any changes on these indicators in pre-covid and during the covid period. We also examine if there have been a sharp decline in inflows of foreign direct investment and remittances taking into the account that this flows play a key role as a source of finance in these economies. The finding of this analysis is that the pandemic impacted on the Western Balkan countries with different strength in each country and with different extent on each indicator. In general, the coronavirus crisis has overwhelmed the health systems and finances of Western Balkan states. There were decreases in aggregate supply and aggregate demand, reduce in external demand due to closing the borders and stopping travel, contraction in GDP rate, increasing poverty rate, deceleration of both public and private investment, decreasing in remittances as a consequence of lockdown's effect on enterprise revenues. In almost all countries the crisis caused an increase in youth unemployment, which raised the question of a possible new wave of migration. Consumer prices have been rising gradually since the beginning of 2021. Furthermore, there were a deceleration of both public and private investment.

The paper points out the main challenges that the economies of these countries will face in the years to come.

We predict that this region will start to recover due to rebound in domestic consumption, as social distancing measures eased and recovery in the advanced economies, which will provide a boost to demand for the region's exports. Travel across Europe will boost remittances as well as tourism inflows. Imported inflation through commodity, oil, and food prices is likely to continue putting pressure on producer prices.

**Keywords:** *Covid-19 pandemic, Western Balkans, macroeconomic indicators*

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## **CHALLENGES OF THE DEMOGRAPHIC AGEING IN THE REPUBLIC OF NORTH MACEDONIA – CURRENT SITUATION AND PROSPECTS**

**Abstract:** The process of demographic aging in North Macedonia began in the mid - 1990s when its population reached the threshold of demographic age (rank 4 out of 7). The 2002 Census data showed that in less than ten years, total resident population had entered in the stage of demographic age (rank 5). It was influenced by the intensified permanent emigration abroad, which in the next two decades took on the character of an exodus. According to 2021 Census data total resident population in the country amounts 1836713 inhabitants that is 9.2% less than in 2002. All relevant indicators show that today the population is in the stage of deep demographic age (rank 6).

The aim of the paper is to identify the manifested changes and current situation related to basic functional contingents of the resident population in North Macedonia, the main challenges in terms of demographic and socio economic development, as well as prospects on the population development on mid and long term. In the research, the available data of State Statistical Office and other relevant institutions are used.

The analyses show that accelerated demographic ageing in the period 2002-2021 is accompanied with great and very unfavorable changes in the basic functional contingents of the population in the country. They indicate

number of children (0-14) has decreased for more than one fourth (27%), of young people (15-29) for almost one third (32%), and working age population for 12.4%. As for the reproductive base of the population, in 2021 compared to 2002, a significant decline was recorded of female fertile population (15-49) and of women on optimal reproductive age (20-34) i.e. for 21.4% and 25.3%, respectively. At the same time great increase of older population and progressive demographic aging of this contingent happened. The population aged 65+ increased by 47%, and the elderly (80+) for more than twice.

The current unfavorable demographic situation impose challenges related to mitigation of the enormous decrease of the resident population, through stopping the decline of the natural population increase in the country and the intensive emigration abroad. In the last decade the number of children born abroad amounts more than 50 thousand. It means that with the emigration abroad North Macedonia besides young population is losing significant part of the natural population increase. The decrease of the reproductive base of the population causes additional problems associated with further decrease of the fertility and births in the country, which consequently will lead to smaller number of children.

As a result of the working-age population decrease, particularly of young population (15-29) North Macedonia faces lack of labour force and rising mismatch in the labour market's supply and demand. Related to the available human resources in the country should be beard in mind and the decrease of the younger (30-39) and older middle age (40-49) population, which in the period 2002-2021 was 16% and 12%, respectively. Due to great decline in the number of children, a decline in the inflow of new generations of working-age population and young labour force on mid and long term would be expected. Available human resources are and will remain a key factor for the economic development of the country.

The significant increase in the number of older population imposes a burden on the sustainability of the pension system in the country. It will be a big challenge, particularly in terms of decrease of the young working-

age population and unfavorable situation on the labour market. Also, the intensive aging process of the older population implicates rising need for social care of elderly, related to the capacities for their institutional care and implementation of different forms for non-institutional care.

Accelerated population aging imposes serious challenges, which in the current demographic situation in North Macedonia require creation of comprehensive strategy for family. It should include all relevant aspects related to promoting the position and sustainability of the family, by strengthening the role of the marital community, increasing the quality of child care, better educational system, increasing the employment and living standard, improving health and social care, enhancing family support, including care for older family members, etc. These changes should also contribute for decrease of the emigration abroad.

**Keywords:** *demographic ageing, population development, human resources, elderly population, North Macedonia*

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## **INFLUENCE OF THE ONLINE FREELANCING TO THE LABOR MARKET**

**Abstract:** Technological development has transformed and shaped the labor market. The digitalization of the production processes and the appearance of new business models have consequently generated new professions and new modes of working resulting in greater labor prosperity and efficiency. Internet is growing into a huge labor market where freelancers offer their knowledge and skills. The online labor market or gig economy is rising and becoming a standard for almost all knowledge workers. Online gig platforms enable remote workers to serve

multiple projects from their homes instead of working full-time for a single employer. According to the Online Labor Index, as indicator of the online gig economy, the global demand for online freelancing workers has been growing by 11% annually in the period from 2017 to 2021. Online freelancing is getting play an important role in economic development equally for the developed and developing economies. It could be considered as a powerful mechanism for development highest portion of the global digital labor force resides in developing countries. Its relevance is getting higher, especially in times of the global Covid-19 pandemic. The main objective of the research is to analyze the changes resulting from the digitalization of the labor market and growth of the online freelancing. Internet and digital technology have been transforming and revolutionizing the labor market. It has changed the demand for skills, knowledge, and occupations. The paper examines the changing trends in the labor market analyzing primary and secondary data. The main focus of the research is directed to primary research revealing the economic, social, demographic, and motivational aspects behind online freelancing. The primary research is based on survey research. For

that purpose, it is used the Reddit Discord server which is usually used by freelancers to connect and share information. The questionnaire survey was shared among the freelancers who have tried or pursued a career in the gig economy. The acquired answers provide valuable information about the motives and the challenges the freelancers encounter. The main result of the paper is to identify online freelancing as a key visible indicator of the labor market. The research, on one hand, will recognize the benefits related to freelancing as one of the factors of development in the contemporary digital economy, but on the other, it will identify the challenges for the future development of online freelancing. According to the Survey for Future of Jobs by the World Economic Forum, 80% of the employers have reported that they are accelerating the automation of their work processes and use of remote work. Businesses will increasingly collaborate remotely

with freelancers. Recognizing online freelancing as an indicator of development will help businesses and the economies to manage efficiently the challenges the freelancing labor encounters. Complementary to the freelancing mode of labor the policymakers have to update labor market regulations to ensure equivalent treatment of different forms of labor and employment types. Online freelancing is appearing as a new value in the labor market, facilitating the virtual migration or bringing jobs to people. As more businesses around the world adapt to working online, it's clear that remote work will be a regular and increasing mode of working in the future.

**Keywords:** *online freelancing, gig economy, Internet, labor market, digitalization*

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*Contemporary challenges of economic growth and sustainability of businesses*

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## **THE CAUSAL RELATIONSHIP BETWEEN INCOME INEQUALITY AND EDUCATIONAL ATTAINMENT**

**Abstract:** Rising income inequality over recent decades is a growing concern for policy makers worldwide, and has received increasing attention both from economists and in public debate. Rising inequality has

been attributed to a range of factors, including the educational inequality. On the other side, unequal opportunities in education are also one of the factors contributing to income inequality. Economic theory also assumes that, all things being equal, a rise in educational attainment would lead to a rise in earnings inequality. Therefore, this paper investigates whether educational inequality can explain income inequality across countries, but also whether income inequality explains educational attainment. It does so empirically through the use of simple regression. The relationship between income inequality represented by the Gini index and educational achievement represented through PISA scores from the Programme for International Student Assessment (PISA) database. PISA's achievement tests are explicitly designed to allow for cross-national comparisons of academic achievement. PISA varies from other international student success assessments in that it focuses on technical abilities rather than program understanding or mastery. The panel of countries included in the analysis are the 37 OECD countries, while the period of observation are the years 2015 and 2018, which are the years from the latest PISA testing. The analysis concludes that in the simple regression models, the PISA results which are a representation of the educational attainment of a respective OECD country, have negative correlation with the Gini coefficients of those countries. The same is true in the opposite direction.

This means that in the simple regression model improving the educational attainment in the countries decreases income inequality. Also a decrease in the level of income inequality increases the educational attainment of that country. The model has 37 observations, but the probabilities of other factors affecting the income inequality, as well as the educational attainment, are high in single regression models. Thus, to obtain a deeper understanding of the relationship between educational attainment and income inequality, multiple regression models might result in more precise findings. To begin with, average PISA achievement is just one indicator of an education system's success, and the achievement tests on which the



findings in this study are based on low-stakes. Modeling that suggests that changes in PISA scores are related to real-world outcomes such as economic growth (Hanushek & Wößmann, 2010) counters this concern. Therefore, for future research, GDP growth can be introduced as a variable when comparing the PISA scores. This study adds to the body of knowledge on this subject by incorporating more recent cross-sectional data from multiple datasets into a single model that attempts to explain the relationship between income inequality and educational attainment. In conjunction with an increasing body of cross-sectional empirical studies, this paper provides convincing evidence that there is a negative correlation between average academic achievement and inequality. For policies that encourage decentralization, school choice, privatization, and segregation, this is an issue. Future research and theory, on the other hand, would need to clarify why this negative relationship persists and under what social circumstances it exists.

**Keywords:** *income inequality, educational attainment, OECD, PISA, Gini index*

**DOES PUBLIC EXPENDITURE ON EDUCATION  
PROMOTE ECONOMIC GROWTH? EVIDENCE FROM  
THE REPUBLIC OF NORTH MACEDONIA**

**Abstract:** Economic science has long recognized the link between education and economic prosperity. Investing in education allows workers to improve their skills, competencies, and productivity. Education is widely regarded as a crucial component of a country's human capital. As a result, many countries have devised growth-stimulating programs that include increased investment in various levels of education.

Our study has two main purposes. First, we aim to organize and synthesize the results published in previous research projects about the importance of public expenditure on education as a determinant of economic growth. For this purpose, we compared the methodology used and the results reported in more than 20 country specific and regional studies about the impact of education expenditures on growth. When it comes to measuring the effect of the education expenditures on economic prosperity in individual countries, we found out that majority of studies are focused on estimating an ordinary least squares regression models (OLS models) or autoregressive distributed lag models (ARDL models). The regional analysis usually use the panel data approach in ARDL models. We found out that most of the published works confirm the hypothesis that increase in public spending on education have a statistically significant impact on economic growth, both in the short and long term. However, the inverse cases exist as well. For instance, according to several of the research we looked at, there is no statistically significant link between public education spending and economic prosperity.

Second, based on the findings of prior studies, we want to empirically examine the relationship between public education spending and economic

growth in the Republic of North Macedonia. In comparison to other European countries, the Republic of North Macedonia devotes a tiny share of its central government budget to education as a percentage of its GDP. The overall public education spending in year 2020 was 3.3% of the country's GDP. As a comparison, the world average of government

expenditures on education as a percentage of GDP is 3.66%. The average government expenditures on education in the European Union is 4.63%. The main questions we want to address in our study are: 1) Does the increase of public education spending boost economic growth in Republic of North Macedonia on the short term? 2) Is there a long-term relationship between the public expenditures for education and the economic prosperity? 3) What are the implications for public policy with regard to the allocation of public funds for education?

In order to answer to the research questions, we develop an ARDL model. We use data series from 1991 to 2020 to investigate the relationship between education spending and economic growth in the country. The data for public education expenditures are obtained from the Ministry of Education and Science's annual financial statements. We use GDP per capita as a proxy for economic growth. Data about this variable are obtained from the World Development Indicators database of the World Bank. According to our findings, there is a statistically significant link between public education spending and the country's economic growth on the short term. However, on long term, increase of the public education expenditures does not lead to increase of GDP per capita of the country.

**Keywords:** *education, public education, expenditures for education, economic growth*

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## **PERCEPTIONS OF LOCAL ECONOMIC DEVELOPMENT IN NORTH MACEDONIA: A COMPARATIVE ANALYSIS**

**Abstract:** Local economic development (LED) is a concept that explains the process of economic growth and development linked to specific features and dynamics in a local defined area. The purpose of local development goals and local government is to assess the specific advantages and needs of one defined area and to build the capacity for improvement of its economic future and the quality of life for the residents. Measured by various objective indicators such as assessments of the urban and rural planning, valuation of the environmental and anti-pollution strategies, the adequacy of communal services, the impact of the economic policies, and educational and social care services, the local economic development offer insight into the functioning of the local economies and into the local government policies' impact. Nevertheless, there has been scarce research on perceptions of problems of local economic development for the case of North Macedonia, especially from the point of view of their residents. Hence, this research aims to fill the gap by examining the residents' satisfaction of the degree to which various LED indicators are considered real problems in their local communities.

The paper is largely exploratory inasmuch as a theoretical understanding of perceptions of economic problems on a local scale. Using survey data from various municipalities with divergent economic development patterns in North Macedonia, the multidimensional structure of the overall residents' satisfaction is constructed, where the dependent variable is satisfaction/

dissatisfaction, and independent variables are perceptions of the various dimensions of municipalities' competences. The descriptive statistics reveals that most municipalities have problems in communication strategy with their residents, with above 70 % of residents reporting to be not informed properly. In addition, across the municipalities, the biggest dissatisfaction of the residents was related to the public areas maintenance, municipality waste management, and communal services. However, for some LED indicators, the results are more divergent, such as the traffic related problems and the local roads adequacy, with rural municipalities recording higher residents' satisfaction. Finally, probit modeling procedure was performed and after controlling for socio-demographic characteristics, it indicated a strong positive relationship between residents' overall satisfaction, measured as value for tax- money paid and the indicators used to capture various LED areas. In general, the evidence confirms that there is a high level of dissatisfaction among the residents' of the municipalities in North Macedonia, with relatively small variations among various municipalities.

The analysis pointed out that only well communicated and targeted implementation of local development measures can raise residents' satisfaction and development prospects in the local communities in North Macedonia. This analysis also gives rise to an improved diagnostic assessment of local economic resources in the future, pointing out the most rigorous problems. Finally, it can lead to a more robust economic strategy and evidence-based decision making.

In general, the evidence and literature shows that the implementation of the local development goals and measurable indicators can become an important contribution to national economic performance and can become increasingly important for North Macedonia, considering the upcoming global crisis and inter-state migrations, as well as technological advances and consequential spatial differences and imbalances.

**Keywords:** *local economic development, perceptions, North Macedonia*

## INVESTMENT TRENDS OF INSTITUTIONAL INVESTORS

**Abstract:** Institutional investors (pension funds, insurance companies and investments funds) are very important participants in the capital markets. Their performance and investment activities can be determined by various factors. Nevertheless, the financial strength and the economic conditions of the countries are considered the key factors that stimulate the institutional investors' investment behavior. The more developed one country capital market is, the more that country's economy develops. It is non-discussable the positive effect the institutional investors have on the economic growth of the countries. Nonetheless, they also show positive co-integration with the capital markets. What is worth mentioning that institutional investors are considered to have supplementary role to the activities that the current financial institutions provide. In other words, the financial gap that banks cannot fulfill, the institutional investors will take that role. For achieving positive results, long-term investment plans and commitment are needed. The current globalized world pressurizes almost every business entity to be innovative, productive and effective. Hence, making the right investment decision can be challenging task. The relevance of the institutional investors during a period of economic turbulence and financial crisis increases. This is due to their longer time horizons. Existing data shows that the assets under management of institutional investors are continuously increasing throughout the years and are significantly big. Investing those assets in right projects, in right instruments in the capital market or in infrastructure will double the amount after certain period of

time. Therefore, the aim of this paper is to analyze in what do the pension funds, insurance companies and investments funds mostly invest in. Based on the data, analysis is made on their investment trends in the past several years. Hence, those results assist

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in the forecast of their investment trends in the upcoming years and will surely contribute to fulfilling the existing literature. Moreover, this analysis will help understanding the different investment pattern that different type of institutional investors use in different countries. Hence, it may provide the answer why some institutional investors are more developed in the more developed countries and less developed in the less developed countries. The paper also tries to provide and answer whether the investment trends of the institutional investors depend on the level of development of the capital markets. Therefore, grasping the whole picture on understanding the factors that affect their investment decisions, the attractiveness of some instruments over others and the level of economic growth and development of a country will help in making the comparison of the institutional investors' behavior between developed and developing countries. The data is obtained from the Organization for Economic Co-operation and Development website, the World Bank database and Statista website. The method used for the analysis is descriptive and the time horizon is for five to ten years. Considering the obtained results, an opportunity for further and deeper research is created in the field on investments of institutional investors. The more these investors invest and the more they are active in the capital markets, the better off will be all subjects included in the process.

**Keywords:** *institutional investors, growth, markets, trends, investment*

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## **CLIMATE CHANGE AND ITS IMPLICATIONS ON THE FINANCIAL RISKS**

**Abstract:** The impacts of climate change may take different forms, but the common conclusion is that their consequences are felt throughout the whole economy, and thereof are reflected on the financial system. All economic actors in the real sector are directed to each other and, through that cooperation, mutually influence the transfer and multiplication of risks, but also can jointly contribute to mitigating the effects of climate change, which are happening.

Transition risks posed by climate change are related to the need to adapt to low greenhouse gas emissions and environmentally sustainable economies (processes associated with sudden, unplanned implementation of climate



related and environmental policies, technological progress or changes in market preferences and expectations). Physical risks can be acute or chronic. Acute risks are manifested as extreme temperatures, droughts, floods, fires, earthquakes, rising sea levels, water shortages. Chronic risks include rise in

temperature, disease spread, biodiversity loss and other side effects. Due to the impact transmitted by their customers, banks are basically more exposed to transition risks caused by climate change, which may result in financial loss for these institutions.

The purpose of this research is to prove that climate change affects financial risks, as well as to show that timely taken measures by the companies and banks, through appropriate policies, can have positive effects in mitigating the negative consequences thereof.

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A survey questionnaire conducted on a group of companies belonging to sectors with different percentages of greenhouse gas emissions, as well as a comparative analysis conducted on the credit portfolio of one of the largest banks in the banking sector of the Republic of North Macedonia - Komercijalna Banka AD Skopje, concluded that the companies in the Republic of North Macedonia operating in the targeted activities are aware of the climate change, as well as of the risks and challenges resulting thereof, but do little in terms of measuring the harmful impact and reporting. Of the surveyed companies, 63% see a bigger threat from physical risks and 37% see a smaller one, due to transition risks.

Hence, the responsible persons in the companies should develop policies for monitoring the climate risks and their disclosure and for drafting a strategy for correction of the activities. These policies and strategies may refer to the adoption of technologies or new products that will gradually reduce the harmful emissions or lead to net zero CO<sub>2</sub> emissions.

Banks, on the other hand, are becoming increasingly aware of the potential financial risks that may arise due to climate change and that may have a significant impact on the overall results of their operations. They should conduct a test scenario that will be adjusted to the highest concentration of assets with the longest maturity period and the assets with the greatest

potential sensitivity.

The banks, as financial intermediaries, can contribute to a large extent to the gradual and timely alignment with the objectives of the Paris Agreement and facilitate the efforts of the companies to take the necessary steps. By financing specific projects, they can contribute to the improvement of certain conditions that would positively affect the climate and the environment in general.

Extremely sudden and ambitious measures to tackle climate change may be most desirable in terms of mitigating the unwanted effects and events resulting from climate change, but not in terms of short- and medium-term financial stability.

**Keywords:** *climate change, financial risks, banks, companies*

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## **THE IMPACT OF MILITARY EXPANSION AND THE EFFECT OF THE COVID-19 PANDEMIC ON THE INTERNATIONAL ECONOMY**

**Abstract:** The motive for writing this article is to answer the question of what are the new indicators of international economy and how they affected, despite the great turbulence with the Covid-19 crisis, and recently with the military expansion in Ukraine. But, also to indicate whether and to what extent international economy has had a positive impact on overall socio

economic and financial relations in markets around the world. This article connects the issues of the relationship between international economy policy on the one and the monitoring and analysis of the national finances of countries on the other hand.

The main research question refers to what tendencies and movements the international economy and financial markets are facing, in conditions of

great market turbulence, uncertainty and military crisis. Different motives are the reason for the international tendencies, changes and effects caused by Covid-19 pandemic and the military expansion in Ukraine.

On the other hand, an attempt is made to predict what will happen in the following years in the post-war period. But, the question is not just about reviving economies, but how to make a better recovery that will be more sustainable and more resilient to future shocks. The reason for this is the new complex situation in the international economic and financial relations caused by the military expansion in Ukraine. In addition, the issue of inflation and global trade policy has become characteristic. When speaking about the globalized era, these relationships still deserve special analysis, monitoring and control.

Namely, the growth tendency exceeded its potential after the severe recession of 2020, with which the financial markets recovered. While, the main focus in 2021 was on a strong recovery of the process of economies, despite all the consequences caused by the Covid-19 crisis. Many economies and markets

in most parts of the world, despite all the turbulence and turmoil from the Covid-19 crisis, have proven to be a relatively positive.

The purpose of this article is to show the structure and dynamics of the movement of international economy and financial markets, as they went through a process of crisis. Also, the purpose of this article is to cover the new characteristic indicators in the process of new conditions faced by international economy in situation of military crisis. But, this goal is far more complex and as such, should be subject to a good financial market system in an extremely complex and risky environment.

According to the purpose, this article is generally divided into quantitative methodological studies which bring conclusions.

The ultimate goal is to gain knowledge about financial stabilization, to overcome the current risks in dealing with the economic consequences of the military expansion, which is to increase the disposable income and consumption of the population. Accordingly, there is greater success in

dealing with the new challenges of international economy and financial markets.

Also, in this regard, it can be determined that when regulating international capital mobility in this new war crisis period, the connection between stock exchanges, institutional networking, ownership or functional, with other international markets and their long-term stabilization should be important. This should be aimed at overcoming the challenges faced by central banks, portfolio investment, FDI, inflation, etc., which have severely affected international economy and caused great turbulence. The important thing for them is that, before the crisis, they were stable and navigable without any special trading challenges. As an illustration, in just less than 10 years since the last major financial crisis, international economy has once again faced two major crises and major turbulences and uncertainties.

The following results are expected from the research: greater and correct conception of international economy and financial markets from highly developed countries to poorly developed, and developing countries, which will ensure the stability and efficiency of their real economies.

**Keywords:** *international economy, financial markets, financial derivatives, international capital movements*

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*Contemporary challenges of economic growth and sustainability of businesses*

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## **DIGITAL INNOVATIONS IN BANKING FOR ECONOMIC DEVELOPMENT**

**Abstract:** The transition toward digital banking business models can be quite challenging for the banking prospects and the economy. In global terms, commercial banks are facing digital disruption enforced by big tech corporations. At the same time, the commercial banks' role stays vital for economic development serving as stability anchors in challenging times,

with regard to their ability to channel financial flows into targeted economic segments.

The role of banking management exceeds its importance due to the scope of the possible effects on sustainable economic development. Therefore, creating a sustainable strategy as a framework for decision-making, in the long run, enables enforcing ethical principles among the general banking principles. Sustainable banking requires actions for financial inclusion, social development management, social responsibility, environment friendly banking, non-discriminatory banking, anti-corruption measures, etc. The implementation of the sustainable banking strategy requires certain adjustments to the banking processes and activities, enforcing effective follow-up processes in order to verify and evaluate the effects on sustainable financial development. Digital innovations as means for greater sustainability offer more comfortable services by banking or non-banking agents. The frequency of innovation and its success in satisfying its clients enables their long term sustainability. Organizational focus on developing respective information systems infrastructure (teams, technology and working procedures) that ensures flexible knowledge management practices to foster regular innovative results as new products or processes. The newness or the knowledge implemented within the product/process

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is developed by own research or in collaboration with partners/clients. Maintaining lessons learned from successful projects, unsuccessful ones; developing and maintaining highly skilled teams that learn and improve processes and services, have vast knowledge network and has the capacity continuously detect and meet customer needs, has the flexibility to offer bespoke products and services could meet SDG goals.

In terms of innovative activities within various entities, innovation is measured as frequency of innovation, knowledge needed to innovate and how often it is used and whether the innovative product or service has met the projected goals is determined in the selected text that follows. The Research has been conducted previously by the authors in 2015, 2017 and 2022 respectively. The research in 2022 was done using the same questionnaire from 2017 and distributed only to selected entities from the

banking and non-banking sector (fin-tech sector in North Macedonia).

The empirical framework describes the research design and main results obtained through the research of selected enterprises based on Questionnaire that covers key parameters previously discussed in the theoretical framework. Research focus is measuring the existence, the exchange, the creation of knowledge within enterprises and its usage in terms of how/the reasons why new product development and/or improved products of the selected enterprises are achieved.

The research conducted analyses on respective organizational knowledge flows and their respective innovation activities. Since knowledge has not a value, if it is not used, it is important to how and how often knowledge within respective entities is used in building new value for the enterprise.

As long as the enterprise nurtures its persistence in innovation activities, new knowledge, an idea/solution, the likelihood of new product / service / process occurring, and the knowledge of how it is achieved, even if it is discarded and isolated, brings value for the enterprise, the knowledge how to get there remains in the enterprise and can be used for a new cycle of innovation.

**Keywords:** *sustainable development, banking business model, innovation, knowledge management, fin-tech*

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## **PART II - MACROECONOMIC AND SECTORAL POLICIES – CHALLENGES IN NEW REALITY**

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## **THE MACEDONIAN MACRO ECONOMIC AUTO-SUSTAINABILITY MODEL (MMEAS-MODEL)**

**Abstract:** In the past years, national economies faced a serious challenge of economic and non-economic nature, external and domestic. They all had a strong negative impact on economic growth, development and wellbeing. More so, the pandemic Covid-19 crisis, in the past two years, has caused economic implications that in the period to come will manifest in all the economic sectors. Humanity continues to suffer as the COVID-19 pandemic effects spread around the world. The pandemic revealed just how unprepared countries and the international system are to handle global emergencies. Though lethal on a massive scale, this particular pandemic is not an existential threat. Its consequences are grave and will be lasting, but COVID-19 will not affect the global economy on a larger scale, and it is expected the disease to recede eventually. Still, the pandemic serves as a historic wake-up call, a vivid illustration that national governments and international organizations have to do better for their citizens. The changes that have taken place and are still currently active, directly and indirectly affect everyday life of the people. While there is no way to tell exactly what the economic damage from the global COVID-19 coronavirus pandemic will be, there is widespread agreement among economists that it will have severe negative impacts on the global economy.

The continuous decrease in unemployment in the last 5 years in Republic of North Macedonia did not suffice for creating a more sustainable growth. Even without the serious effects of the pandemic on the economic system

of the country, the current economic policy of import dependency did not increase the growth rate of the Macedonian economy. The significant damage of COVID-19 on the world economy forces us to reconsider a deep restructuration domestically and internationally in the next few years. The Republic of North Macedonia has made great strides in reforming its economy over the last decade. However, greater efforts are in need in order to generate economic growth and improve living standards for all. This paper suggests a Post-COVID-19 reconstruction model, called

“Macedonian Macro Economic Auto-Sustainability Model (MMEAS-Model)”. This MMEAS-Model relies on five different economic platforms: 1) National education and technical training standardization platform (P1); 2) National productivity and transportation (logistics) platform (P2); 3) Strategic trade, investment, and tourism platform (P3); 4) Environmental and natural resources management platform (P4); 5) Social equality platform, inclusive reforms, and more appropriate income distribution (P5).

The main objective of MMEAS-Model is not to avoid globalization process and openness of the country, on the contrary it creates a better structure for more equal performance of national economy in global scale. This proposed model would undoubtedly lead to less import of production imputes for strategic industries, eradication of non-sustainable and weak food security platforms as well as partial food dependency, job diversion and rise of the PPP of the population, and also progress of creating and using more social human capital, respectively. As is also to offer a more sustainable growth model for creating a sustainable environment for the future generations. The research method is qualitative based, using methods such as induction, deduction and theoretical sublime of the suggested empirical data, supporting the feasibility of the proposed model.

**Keywords:** *economic simulation, COVID-19, policy modelling, food security, economic development*

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# THE RELATIONSHIP BETWEEN FISCAL POLICY AND ECONOMIC GROWTH. AN EMPIRICAL STUDY ON EMERGING ECONOMIES

**Abstract:** The relationship between fiscal measures and economic growth has been widely debated among scholars both in theoretical and empirical studies. While Keynesian macroeconomic theory argued that increased government spending tends to lead to high aggregate demand and rapid economic development, Wagnerian approach has focused on an opposite view, according to which an increase in national income causes more government spending. However, the neo-classical school did not support Keynes' point of view. It has been argued that increased government spending might slow down the total economic performance due to a bid to finance rising spending, the government might have to borrow money or raise taxes. Since the impact of fiscal instruments on economic growth is a key issue of the macroeconomic policy, especially for developing economies, a better understanding of this issue is relevant for policy makers at least from two major perspectives. It could serve to assess the impact on government spending and then on deficit arising from a structural change in growth. Meanwhile, it could assist to obtain a benchmark against which to evaluate the stance of the expenditure policy and then of overall fiscal policy. Recent empirical studies on the relationship between fiscal policy and economic growth are mainly focused on providing evidence of the impact of government spending, tax level and tax structure on growth, by

*Contemporary challenges of economic growth and sustainability of businesses using one-country or cross-country growth regression models, covering different periods of time. The purpose of the present study is to investigate the impact of three fiscal instruments (direct tax revenue, indirect tax revenue and government consumption expenditure) on the economic growth of the*

emerging economies from the Eastern part of European Union (Romania, Bulgaria, Hungary, Slovakia, Poland and Czech Republic). By using the information available in the Eurostat databases for the period 2000-2019, the research methodology used for achieving the established purpose involved a vector autoregression model. In the econometric equation the dependent variable was the growth rate of the real GDP. Meanwhile, the independent variables were the fiscal instruments: direct tax revenue, indirect tax revenue and government consumption expenditure. Exports, gross capital formation and consumption expenditure of households were the control variables, which reflect the effects of non-fiscal factors. Our findings suggest that the real GDP growth rate in the analysed states is influenced by the shares of the direct tax revenue, exports and investment in the output. If all the other variables are constant, a 1% change in the share of direct tax revenue in GDP will lead to a 0.55% change in the real GDP growth rate in the opposite direction. The signs of all significant coefficients in the model are as predicted by the economic theory: the coefficient before the direct tax is negative and those before exports and gross capital formation are positive. Since the government consumption expenditure in the six analysed countries does not have a significant effect on the economic growth, our results indicate a low efficiency of the public spending. Therefore, the policy-makers could enhance the economic growth by decreasing the share of the direct tax revenue in GDP and by encouraging the increases in the shares of the exports and investments in GDP.

**Keywords:** *fiscal policy measures; economic growth; Eastern EU states*

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## **COORDINATION BETWEEN MONETARY POLICY AND FISCAL POLICY IN THE DEVELOPMENT OF THE CORPORATE SECURITIES MARKET**

**Abstract:** One of the most important goals of macroeconomic policy (pursued) which is implemented in a national economy is to ensure sustainable economic growth, with price stability and external trade balance. In order to achieve such growth, it is necessary to have a high degree of harmonization between the monetary and fiscal policy makers. Otherwise, it may endanger the financial stability of the economy, which in turn will cause an increase in interest rates, inflation and, as a final consequence, endanger economic growth.

The coordination between fiscal and monetary policy is necessary in every economy, although it may have a different form, which is conditioned by the degree of its development and is necessary for the macroeconomic stability of the national economy. Successful coordination requires a developed financial market, transparent implementation of fiscal policy and autonomy in the operation of the Central Bank. Otherwise, the lack of coordination would lead to poor overall economic performance: macroeconomic instability and uncertain environment for the private sector, uncontrolled rise in inflation, which leads to a loss of credibility of policy makers.

Thus, the coordination and interconnectedness in the action of monetary and fiscal policy is an imperative of modern developments in the economic system of the national economy.

*Contemporary challenges of economic growth and sustainability of businesses* A high degree of coordination between fiscal and monetary policy is imposed as a precondition for development in the securities market, The purpose of the research is precisely to analyze the impact of the alignment between monetary and fiscal policy on the development of the government securities market.

Of special mutual interest of both policies, both fiscal and monetary policy, is the development of the financial market, which in turn affects the development of economic life in the national economy, provides opportunities for market financing of the deficit and debt, as and the promotion of indirect monetary instruments.

The positive impact of the developed government securities market on the public debt management policy and the monetary policy consists of the following:

- Efficient functioning of the government securities market enables debt fulfillment with minimal costs;
- The successful functioning of this market is important from the aspect of realization of the defined goals of the monetary policy. Namely, the central bank, as a bearer of the monetary policy, strives for efficient determination of the interest rates, whereby it often uses the government securities as an instrument;
- The developed securities market is of special importance for the fiscal, monetary and other regulatory authorities from the aspect of maintaining macroeconomic stability.

The developed government securities market is important for the private and public sector but also for the financial sector as a whole because it offers reliable instruments for saving and investing.

Thus, the continuous improvement of the cooperation between the monetary authority and the fiscal authority is a necessity in order to ensure macroeconomic stability, the lowest costs for financing the public debt and especially the development of the financial markets.

The existence of a developed market of government securities with a high degree of liquidity has a number of positive aspects for a national

economy, among which the following can be singled out as the most important:

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1. For the fiscal government, the benefit is seen in the possibility of market, and with lower costs, financing the budget deficit. 2. Positive aspects for the monetary authority are: first, achieving greater operational independence of the Central Bank and second, the implementation of monetary policy with market-oriented instruments. 3. For other market participants a positive side is the opportunity to invest in risk-free securities with appropriate compensation. 4. For the development of the financial markets, the advantages are seen: first, in drawing the yield curve from risk-free government securities, whose interest rates serve as a basis for determining the interest rates of other riskier financial instruments, and second, encouraging the development of higher risk securities markets, issued by financial and non-financial companies.

**Keywords:** *monetary policy, fiscal policy, financial market, government securities market*

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## **MACROECONOMIC ANALYSIS OF THE SAME MACEDONIAN ECONOMIC INDICATORS DURING THE PERIOD OF 2000-2020**

**Abstract:** This paper examines, first, linked logical three theses between following macroeconomics aggregate values: grow rate of GDP, growth of employment, growth of the real wages, and growth of labor productivity, in the Case Study of the NR of Macedonia, and, second, also examines the conditions under which Macedonian economic growth might be

sustainable on the long run, by assessing the economic stability.

Macroeconomic analysis although of only four Macedonian aggregate values is expected to answer the question whether Macedonia's economic growth is stable in the long term.

In fact, the macroeconomic analysis in this paper includes four relevant "gainful" aggregate indicators, which does not mean that other real indicators such as growth in investment in fixed assets and the growth of public debt are not significant for this kind of research. Namely, the nature of this paper is not without required limits in term of its length.

This research focus stresses the macroeconomic indicators regarded as "gainful" such as real gross domestic production (GDP), real average net salaries and labor productivity measured as a ratio of GDP, number of employees, primarily because of their importance to stable and the dynamic economic growth in the long-term for any economy.

We are testing three theses through their time series of the four aggregates value during the period of 2000 to 2020 in case study of Macedonian economy, in order to explore the Macedonian strong sustainable economic growth on long run in future.

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The choice of the three auxiliary hypotheses is not accidental. Namely, according to the neoclassical theory of growth (Solow, Barro, Sala-i-Matin, and Fisher) and aggregate production function, stable economic growth of any economy viewed in the long term perspective is associated with a high positive correlation between the increase depending on the employee, real GDP growth in real net salary growth and growth of labor productivity.

The first thesis is that, exists a great correlation between rate of grow of the employment and rate of grow of the GDP;

Our second thesis is that there exists a great correlation between grow rate of the average real net wage and grow rate of the real GDP; The third thesis is that, exists a great correlation between grow rate of the Labor productivity and grow rate of the real GDP.

Further research is necessary to seek conditions under which alternative

economic growth paths are likely to become sustainable on a long run in the case of Macedonian economy.

During the pre-investigation we faced serious inconsistencies in the time series for the analyzed period 2000-2020 and in aggregate real salary and the aggregate number of employees in the country. Statistical inconsistencies in the time series were methodologically resolved by dividing the time series on sub periods, more consistent with the actual circumstances arising from statistical inconsistencies. In fact, statistical indicators of correlation dependence between the analyzed “gainful” aggregates were first surveyed in sub periods, and were later analyzed for the entire time series with additional observations.

As the authors of this paper, the challenge before us was first to face all statistical inconsistencies and secondly to offer certain methodological solutions to overcome them in order to fully understand one of the most important periods of the economic history of the country subject of this research.

**Keywords:** *macroeconomics, economic growth, employment, wage level, labor productivity*

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## **PUBLIC FINANCE RESPONSE IN COVID-19: THE CASE OF NORTH MACEDONIA**

**Abstract:** The past two years, the significant deterioration of the global economic environment and the decline in external demand caused by the health crisis affected the activity of domestic export companies and



industrial production, remittances and foreign direct investment. Restrictive measures to prevent the spread of coronavirus in the country have affected some of the activities within the service sector, such as trade, transport, hospitality and tourism. As a result of all this, the domestic economy faced one of the deepest recessions so far. The effects of the pandemic on the labor market have been limited, due to government measures to mitigate its effects on jobs. The crisis caused by the pandemic with similar negative consequences hit the European economy, so that economic activity in the EU fell by 14% in the second quarter in 2020, while Germany, as the largest economy within the EU and our most important trading partner fell by 11.3 %.

The health and economic crisis in the past period of 2020 and 2021 had a strong impact on the realization of the Budget. Also, the comprehensive measures adopted by the Government to prevent the spread of COVID-19 expressed through six sets of measures (which were aimed at amortizing the impact on the economy and stimulating consumption) had an impact on economic activity and through them enable protection of jobs, budget liquidity was ensured, the highest priority liabilities were serviced, minimizing all less productive spending. Taken measures from the government has very high impact on the economic growth, the first four set of measures contributed to prevent reduce the economic growth for 3.9% in 2020 and with fifth and

six sets of measures contributed to prevent to reduce the economic growth for 0.7 % in 2021.

The health crisis has given new emphasis to the sustainability of public finances over the past two years and strongly emphasized the need to balance between short-term stabilization goals and long-term fiscal sustainability. This situation imposed the need for an expansionary fiscal policy in order to support the economy in a pandemic that led to a rapid increase in the budget deficit and public debt. This imposes the need for rationalization of public expenditures, as well as measuring the results of

their realization in order to increase the efficiency of public expenditure and achieve fiscal sustainability in the medium term.

The analysis is made on the basis of historical data on planned and realized budget revenues and expenditures for the period from 2015 to 2021, in order to see the size and trend of their movement in order to take measures for fiscal consolidation and ensure sustainability of public finances. The research aim is in order to see the size and trend of planned and realized budget revenues and expenditures movement in order to take measures for fiscal consolidation and ensure sustainability of public finances. The main research problem is planned and realized budget revenues and expenditures and its position to deal with the health crises in the Republic of North Macedonia. The research subject is focused on the data reports from the Ministry of Finance of North Macedonia. The data analysis was accomplished using STATA 16 statistical software for data science.

**Keywords:** *budget, fiscal policy, fiscal consolidation, revenues, expenditure, government spending*

# MEASURES AMID THE CHANGING GLOBAL ENVIRONMENT

**Abstract:** International capital flows are key component of the international monetary and financial system. They bring significant economic benefits, that can be both direct and indirect. Nevertheless, volatile capital flows increase the risk of crises and may adversely impact the economic performance. Capital inflow surges may induce various challenges, including price bubbles, inefficient asset allocation and currency appreciation, impairing export competitiveness. In addition, the vulnerability to sudden stops is more pronounced, leading to significant drop of asset prices and currency depreciation, inflationary pressures and foreign currency debt repayment.

One of the most important responsibilities of policymakers is to design an approach for international capital flows management, that can enable them to harness the potential benefits while alleviating the inevitable accompanying risks. In order to effectively manage the capital flows, policymakers have various measures at their disposal. This paper elaborates on several aspects regarding the international capital flows management with relevance to policymakers, offering an in-depth overview on their development and implementation.

The first section sheds light on the evolution of the approach toward capital flows management measures adopted by international financial institutions from a longer-term perspective. For a protracted period, international capital flows were not subject to a universal regulatory framework. The Global

financial crisis markedly shifted the international financial conditions and posed new challenges to emerging market and developing countries, posing a need for a coordinated effort in safeguarding global financial stability. As a result, the IMF has officially released its Institutional approach to capital flow management (IMF, 2012), further extended with

the technical notes from 2013 and 2015.

The next section elaborates on the operational framework for capital flow management, detailing the policies which are recommended to be implemented under various economic scenarios. The operational framework for capital flow management encompasses the following components: macroeconomic policies (monetary policy, fiscal policy, exchange rate policy), macroprudential policy and capital flows management measures (capital controls). The implementation of the various measures should follow a logical sequencing - “natural mapping”, which is further explained in this section.

The paper proceeds with a discussion on the practical issues of international capital flow management in the recent period. A brief overview of the experiences with capital flow management after 2012 is made, focusing on the countries that experienced the largest capital flow surges, the highest capital flows volatility, and the biggest economic and financial crises. It is shown that most countries applied macroeconomic policy measures to accommodate for sudden stops and capital outflows, in accordance with the IMF’s recommendations. In general, they included foreign exchange flexibility, foreign exchange market interventions and monetary accommodation, while the fiscal policy was focused on accomplishing countercyclicality and debt sustainability. Capital flow management measures were mostly implemented in case of crisis or imminent crisis, as part of a broader set of macroeconomic policy measures.

The last part of the paper is dedicated to the integrated framework for macroeconomic policies, which is among the most recent initiatives for capital flow management policies, in alignment with the global economic conditions (Gopinath, 2019). In particular, integrated policy

the imperfections on goods and capital markets. The main feature of the novel integrated framework is that in the determining of the appropriate policy mix, the origins of the shocks, as well as the particular features of the economies, are taken into account.

This paper underlines the need for further analysis of the impact of capital flow management measures on the amount and the structure of capital flows, as well as the spillover effects that may occur. Nevertheless, the main objective and commitment of the international financial institutions remains further development of consistent global approach towards capital flow management.

**Keywords:** *international capital flows, policies, capital flow management measures, natural mapping, integrated policy framework*

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## CAPITAL MARKET VOLATILITY AND INVESTORS' SENTIMENT IN THE POST-COVID-19 ERA

*“What is important in market fluctuations are not the events themselves,  
but the human reactions to those events.”*  
– Bernard Baruch, financier

**Abstract:** *Research purpose:* “Once-in-a-century” pandemic has altered the global economic outlook, limited progress’ intensity, and threatened the financial market stability. The capital market’s particular sensitivity to pandemic-related shocks made it a “heaven” for volatility. As the recovery gains stronger momentum and the global capital market emerges out of the crisis-driven downturn, the aftermath questions arise. The aim of this research was to scrutinize the capital market’s volatility intensity recorded during COVID-19 and to provide an insight into the market investors’ sentiment in the post-COVID-19 era. Volatility represents a common feature of investing and symbolizes the main input to many decisions regarding investors’ portfolio construction (Poon & Granger, 2003). It reflects the extent of changes in asset prices over time (Kulshreshtha & Mittal, 2015). Investors’ sentiment, as the willingness of market participants to invest, manifests expectations about the future returns and investment risk they are ready to follow (Chen & Haga, 2021; Haritha & Rishad, 2020). The main research hypothesis assumes the existence of high stock and bond markets’ volatility, as well as the strong long-term influence this instability has on investors’ sentiment in the post-pandemic era.

*Methods:* From a modest theoretical and empirical foundation, the current capital markets’ volatility knowledge was extracted using the content

*Contemporary challenges of economic growth and sustainability of businesses* analysis method. Two relevant indices originating from the Chicago Board of Trade's index family were engaged using the desk method and observed parallelly in order to quantify the capital market volatility. Specifically, the Volatility Index (VIX) and the Treasury Bond ETF Volatility Index (TB VIX) were used to measure the expected volatility of the stock and the bond market, respectively (CBOE Exchange, 2022). These indices, often addressed as benchmarks of volatility, indicate the degree or expected level of uncertainty in the marketplace and are recognized as investors' strong allies when it comes to portfolio design.

*Key findings:* The obtained research results unveiled the existence of high capital market volatility throughout the pandemic period and the sharp influence this instability has on investors' market sentiment even in the post-pandemic era. These findings support the proposed main research hypothesis and indicate that volatility in the post-COVID-19 era will certainly not end. Investors should use "chance in the disaster" and wisely choose between active and passive investing strategies, guided by their own "bearish" or "bullish" sentiment. Those among them willing to acquire novel profit sources and generate robust and efficient portfolios are expected to read markets' buy/sell signals carefully and rebalance their portfolios like always, during or right after highly volatile periods.

*Conclusions:* Volatility, as a vital determiner of the capital market stability, was observed and indicated in the research through the analysis of VIX and TB-VIX movements, confirming the existence of the capital market's high instability throughout the pandemic period. Nevertheless, in the post pandemic period, investors' sentiment and investment patterns proved to be quite changeable as well. Considering the market as weak-efficient, many investors in 2022 start showing they are not ready anymore to make risky portfolios in the short term for the sake of higher returns, thereby preferring passive over active investing strategy. Since the expectation of unpredictable price variations has negative effects on short-term volatility (resulting in less speculative activities) and positive effects on the long

term volatility, a “bearish” investor’s sentiment that implies less aggressive

trading is currently more certain in the global context, compared to the “bullish” one (which has dominated over the past years). Such investors’ behavior is the expected aftermath of capital markets’ volatility since prices in the past two years oscillated considerably making forecasting the capital market dynamics in real-time almost impossible, as well as a result of the newest predictions regarding the upcoming global recession.

Conducted research can be important in terms of contribution to spotting the best point in time for entry and exit regarding a specific investment and, eventually, reduce the risk of investors’ potential misjudgment. In accordance with the previous claim, it should be noted that research especially contributes to the practical knowledge by shedding light on investors’ current “bearish” and “bullish” sentiments, as well as the differences among them. Finally, recommendations that can be derived in the context of research imply that risk-averse investors’ portfolios in the post-COVID-19 era should strive for a balanced time-lasting distribution of securities.

**Keywords:** *capital market instability, investors’ sentiment, investments, portfolio structure, Coronavirus*



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## **MIRRLEESIAN OPTIMAL TAXATION: REVIEW OF THE STATIC AND DYNAMIC FRAMEWORK**

**Abstract:** In the Static Mirrlees model we will review optimal linear and non linear taxation problem of individuals with heterogenous earnings (abilities). As for the government maximization problem, models in optimal tax theory typically posit that the tax system should maximize a social welfare function subject to a government budget constraint, considering how individuals respond to taxes and transfers. We will also obtain numerical solutions to optimal linear and non-linear taxation. In this part numerical solutions will show how taxes depend on: elasticity of labor, and social marginal weights in the linear case, and in the non-linear

case taxes are dependent on the compensated and uncompensated elasticity and Pareto distribution shape parameter. Here we will also present commodity taxation as supplementary to the labor income taxation. The government can implement differentiated commodity taxation in addition to non-linear income taxes. Atkinson

Stiglitz theorem demonstrated that: Commodity taxes cannot increase social welfare if utility functions are weakly separable in consumption goods versus leisure and the sub utility of consumption goods is the same across individuals. In the dynamic capital taxation part, we will be considering the dynamic Mirrlees approach. In this part recent advances show that the optimal tax formula will depend on the abilities of the workers that are changing throughout their lifetime. Capital is taxed in order to improve incentives to work. On average wealth taxes across individuals are zero ex ante. However, they depend on future labor income-if labor income is below average, your capital tax is positive If your labor income is above average, then your capital tax is negative. The fact that the capital tax varies in this

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regressive way makes investment risky and creates a positive risk premium, which explains how it is possible to have a positive intertemporal wedge/tax. Even though taxes are zero ex-ante. We will provide model and numerical solution to dynamic Mirrlees model where: government does not need to increase taxes just to raise revenue but also needs to provide incentives, since it does not observe and individuals' skill level. Government also wants to provide insurance against skills shocks (e.g., disability). Intuition behind dynamic Mirrlees tax model is that savings affects incentive to work, so government needs to discourage savings to prevent the flowing deviation by highly skilled: 1) save more today; 2) work less tomorrow. That was the second model we reviewed and from there some optimal fiscal policy features are:1) On average wealth taxes across individuals are zero ex-ante ;2) However, they depend on future labor income-if labor income is below average, your capital tax

is positive. If your labor income is above average, then your capital tax is negative. 3) So, this tax or this fiscal policy might be regressive for incentive reasons. This literature on the issue of dynamic taxation was adding uncertainty which would make difference. So, when individuals do face uncertainty, the optimal insurance arrangement calls for taxing capital positively: constrained efficient allocations satisfy an inverse Euler equation, as opposed to the agent's standard intertemporal Euler equation, implying a positive capital tax

**Keywords:** *Optimal taxation, non-linear tax rates, inverse Euler equation*

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## **UNEMPLOYMENT BENEFITS AND NEW BUSINESS VENTURES IN THE EUROPEAN UNION: THE MODERATING ROLE OF ENTREPRENEURSHIP POLICIES**

**Abstract:** There is a general consensus that entrepreneurship represents one of the main engines of economic growth, cutting down unemployment, spurring innovation, and increasing the competitiveness of a country, all problems that many economies are faced with nowadays. Within the global initiative to ensure a better and sustainable future for us all, as reflected in the UN's Sustainable Development Goals, entrepreneurship should be a key pillar of policies targeting new job creation and growth. Also, in the context of the 2030 Agenda for Sustainable Development entrepreneurship is regarded as a contributing factor to building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. Moreover, in the face of the COVID-19 pandemic, resulting in an unprecedented downturn in the global economy and increase in unemployment worldwide, support measures to entrepreneurship are the focal point of policy responses in many countries. Against this backdrop, researchers and policymakers renewed their interest in assessing the impact of factors that may hinder or foster the creation of new businesses and designing the best policies to determine individuals to become entrepreneurs.

The paper seeks to investigate the impact of the unemployment benefit system's generosity on nascent entrepreneurship, in 23 European Union countries. Moreover, it further examines whether these effects depend