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THESIS:

**“THE RELATIONSHIP BETWEEN PUBLIC EXPENDITURE AND ECONOMIC
GROWTH: THE CASE OF RNM.”**

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Abstract

The role of public expenditure in stimulating economic growth remains a focal point in economic discourse. This master's thesis aims to explore the dynamics of the relationship between public expenditure and economic growth, with a particular focus on North Macedonia. As governments worldwide seek to maximize growth potential, understanding how different components of public expenditure influence economic outcomes becomes imperative.

The research will undertake a comprehensive analysis using historical data for the budget and GDP since 1993 and 1995 and make a comparative analysis to see if specific expenditures under different classifications, notably the economic and functional classification of expenditures, have an impact on the levels of GDP. The study acknowledges the diverse nature of public expenditure, including investments in infrastructure, education, healthcare, defense, and social welfare programs.

Existing literature presents conflicting views on the correlation between public expenditure and economic growth, with arguments ranging from positive effects and stimulation of growth to concerns about crowding out private investment. The findings of empirical studies on the relationship between public expenditure and economic growth across various regions and countries suggest that public expenditure has a positive and significant impact on economic growth in most of the regions and countries analyzed.

Looking into the specific context of North Macedonia, starting from the budget classification of expenditures this thesis seeks to provide insights that are relevant for policymakers. Existing studies on the impact of public expenditures on growth in North Macedonia suggest that this relationship is dependent on the composition of public expenditures and on time – the impact is stronger in the long run rather than in the short run. This thesis pays specific attention to how the composition of public expenditures is defined and organized through a detailed analysis of each category of expenditures.

Historical data on the classification of public expenditures from 1993 and 1995 show that the structure of expenditures in North Macedonia has not changed much in the last 30 years after its independence, with current expenditures having a dominant place, specifically expenditures on social benefits and wages and contributions. Since the structure of public expenditures in North Macedonia has not changed considerably, it is difficult to determine how a shift in different categories impacts growth. This is one of the key limitations of the study. The thesis has also looked at specific moments of political crisis and how they interrelated to the overall effect on growth. This has suggested a strong negative correlation between both.

The research methodology and the regression analysis used in this thesis have shown some correlation between some expenditures and economic growth, notably a negative impact of public order and security spending on growth and a positive impact of education, defense, health sector, and social transfers spending. However, as mentioned in the previous studies these results should be taken with a reservation due to the complex political context in North Macedonia, notably the volatile political climate and the high level of corruption. The main impact of spending in these specific categories is associated with increased consumption that indeed has a positive effect on growth but not in the long term.

Abstrakt

Roli i shpenzimeve publike në stimulimin e rritjes ekonomike mbetet një pikë qendrore në diskursin ekonomik. Kjo temë e magjistraturës synon të eksplorojë dinamikën e marrëdhënies ndërmjet shpenzimeve publike dhe rritjes ekonomike, me fokus të veçantë në Maqedoninë e Veriut. Ndërsa qeveritë në mbarë botën kërkojnë të maksimizojnë potencialin e rritjes, të kuptuarit se si komponentët e ndryshëm të shpenzimeve publike ndikojnë në rezultatet ekonomike bëhet imperativ.

Hulumtimi do të ndërmarrë një analizë gjithëpërfshirëse duke përdorur të dhëna historike për buxhetin dhe PBB-në që nga viti 1993 dhe 1995 do të bëjë një analizë krahasuese për të parë nëse shpenzimet specifike sipas klasifikimeve të ndryshme, veçanërisht klasifikimi ekonomik dhe funksional i shpenzimeve, kanë ndikim në nivelet e PBB-së. Studimi shqyrton natyrën e ndryshme të shpenzimeve publike, duke përfshirë investimet në infrastrukturë, arsim, kujdes shëndetësor, mbrojtje dhe programe të mirëqenies sociale.

Letërsia ekzistuese paraqet pikëpamje kontradiktore mbi korrelacionin midis shpenzimeve publike dhe rritjes ekonomike, me argumente që variojnë nga efektet pozitive dhe stimulimi i rritjes deri te shqetësimet për frenimin e investimeve private. Gjetjet e studimeve empirike mbi lidhjen midis shpenzimeve publike dhe rritjes ekonomike nëpër rajone dhe vende të ndryshme sugjerojnë se shpenzimet publike kanë një ndikim pozitiv dhe domethënës në rritjen ekonomike në shumicën e rajoneve dhe vendeve të analizuara.

Duke parë kontekstin specifik të Maqedonisë së Veriut, duke u nisur nga klasifikimi buxhetor i shpenzimeve, kjo tezë synon të ofrojë njohuri që janë relevante për politikë-bërësit. Studimet ekzistuese mbi ndikimin e shpenzimeve publike në rritje në Maqedoninë e Veriut sugjerojnë se kjo marrëdhënie varet nga përbërja e shpenzimeve publike dhe në kohë – ndikimi është më i fortë në afat të gjatë sesa në afat të shkurtër. Kjo tezë i kushton vëmendje të veçantë mënyrës se si përcaktohet dhe organizohet përbërja e shpenzimeve publike përmes një analize të detajuar të secilës kategori të shpenzimeve.

Të dhënat historike për klasifikimin e shpenzimeve publike nga viti 1993 dhe 1995 tregojnë se struktura e shpenzimeve në Maqedoninë e Veriut nuk ka ndryshuar shumë në 30 vitet e fundit pas pavarësisë së saj, ku shpenzimet aktuale kanë një vend dominues, veçanërisht shpenzimet për shpenzimet sociale dhe paga dhe kontributet. Meqenëse struktura e shpenzimeve publike në Maqedoninë e Veriut nuk ka ndryshuar në mënyrë të konsiderueshme, është e vështirë të përcaktohet se si një ndryshim në kategori të ndryshme ndikon në rritje. Ky është një nga kufizimet kryesore të studimit. Teza ka shqyrtuar gjithashtu momente specifike të krizës politike dhe se si ato lidhen me efektin e përgjithshëm në rritje. Kjo ka sugjeruar një korrelacion të fortë negativ midis të dyjave.

Metodologjia e hulumtimit dhe analiza e regresionit të përdorur në këtë tezë kanë treguar një korrelacion midis disa shpenzimeve dhe rritjes ekonomike, veçanërisht një ndikim negativ të shpenzimeve për rendin dhe sigurinë publike në rritje dhe një ndikim pozitiv të shpenzimeve për arsimin, mbrojtjen, sektorin shëndetësor dhe transferet sociale. Megjithatë, siç u përmend në studimet e mëparshme, këto rezultate duhet të merren me rezervë për shkak të kontekstit kompleks politik në Maqedoninë e Veriut, veçanërisht klimës së paqëndrueshme politike dhe nivelit të lartë të korrupsionit. Ndikimi kryesor i shpenzimeve në këto kategori specifike është i lidhur me rritjen e konsumit që në fakt ka një efekt pozitiv në rritje, por jo në terma afatgjatë.

Апстракт

Улогата на јавните расходи во стимулирањето на економскиот раст останува фокусна точка во економскиот дискурс. Овој магистерски труд има за цел да ја истражи динамиката на односот помеѓу јавните расходи и економскиот раст, со посебен фокус на Северна Македонија. Бидејќи владите ширум светот се обидуваат да го максимизираат потенцијалот за раст, разбирањето како различните компоненти на јавните расходи влијаат на економските резултати станува императив.

Истражувањето ќе преземе сеопфатна анализа користејќи историски податоци за буџетот и БДП од 1993 и 1995 година и ќе направи компаративна анализа за да види дали специфичните расходи под различни класификации, особено економската и функционалната класификација на расходите, имаат влијание врз нивоата на БДП. Студијата ја препознава разновидната природа на јавните расходи, вклучително и инвестициите во инфраструктурата, образованието, здравството, одбраната и програмите за социјална заштита. Постоечката литература прикажува спротивставени гледишта за корелацијата помеѓу јавните расходи и економскиот раст, со аргументи кои се движат од позитивни ефекти и стимулирање на растот до загриженост за потиснување на приватните инвестиции. Наодите од емпириските студии за врската помеѓу јавните расходи и економскиот раст низ различни региони и земји сугерираат дека јавните расходи имаат позитивно и значајно влијание врз економскиот раст во повеќето анализирани региони и земји.

Гледајќи го специфичниот контекст на Северна Македонија, тргнувајќи од буџетската класификација на расходите, оваа теза се обидува да обезбеди согледувања кои се релевантни за креаторите на политиките. Постојните студии за влијанието на јавните расходи врз растот во Северна Македонија сугерираат дека овој однос зависи од составот на јавните расходи и од времето – влијанието е посилено на долг рок отколку на краток рок. Оваа теза посветува посебно внимание на тоа како се дефинира и организира составот на јавните расходи преку детална анализа на секоја категорија на расходи.

Историските податоци за класификацијата на јавните расходи од 1993 и 1995 година покажуваат дека структурата на расходите во Северна Македонија не е многу променета во последните 30 години по нејзината независност, при што доминантно место имаат тековните расходи, конкретно расходите за социјални бенефиции и плати и придонеси. Бидејќи структурата на јавните расходи во Северна Македонија не е значително променета, тешко е да се одреди како промената во различни категории влијае на растот. Ова е едно од клучните ограничувања на студијата. Тезата, исто така, ги разгледа конкретните моменти на политичка криза и како тие се меѓусебно поврзани со севкупниот ефект врз растот. Ова сугерираше силна негативна корелација помеѓу двете.

Методологијата на истражувањето и регресивната анализа користена во оваа теза покажаа одредена корелација помеѓу некои расходи и економскиот раст, особено негативното влијание на трошоците за јавниот ред и безбедност врз растот и позитивното влијание на трошоците за образованието, одбраната, здравствениот сектор и социјалните трансфери. Сепак, како што беше споменато во претходните студии, овие резултати треба да се земат со резерва поради сложениот политички контекст во Северна Македонија, особено нестабилната политичка клима и високото ниво на корупција. Главното влијание на трошењето во овие специфични категории е поврзано со зголемената потрошувачка што навистина има позитивен ефект врз растот, но не на долг рок.

1 CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

The role of public expenditure as a driver of economic growth has been a subject of considerable debate and interest in the economic discourse. Government spending or public expenditure has the potential to influence various sectors of an economy, shape the overall economic landscape, and catalyze sustainable development. As all countries aim to maximize their growth potential and enhance the well-being of their citizens, understanding the complex relationship between public expenditure and economic growth becomes paramount.

Public expenditure encompasses a broad spectrum of government spending, including investments in infrastructure, education, healthcare, defense, social welfare programs, and more. These allocations are often guided by economic policy objectives, political priorities, and societal needs. Understanding how these expenditure decisions translate into economic outcomes is crucial for policymakers, economists, and stakeholders involved in economic planning and development.

In the context of the aforementioned, the relationship between public expenditure and economic growth is a topic of significant interest in the field of economics. The question of whether public expenditure positively or negatively affects economic growth has been the subject of numerous studies over the years. Some researchers argue that increased public expenditure can boost economic growth by stimulating demand and promoting investment. Others argue that high levels of public expenditure can lead to crowding out of private investment and may have a negative impact on economic growth.

To understand the relationship between public expenditure and economic growth, researchers often use macroeconomic models that consider various factors such as inflation, interest rates, and government debt. Empirical studies have yielded mixed results, with some finding a positive relationship between public expenditure and economic growth, while others finding no significant relationship or even a negative relationship. Despite this, policymakers continue to debate the appropriate level of public expenditure and the optimal allocation of resources in the pursuit of sustained economic growth.

This master's thesis will delve into the intricate dynamics and multifaceted nature of the relationship between public expenditure and economic growth. By conducting a comprehensive analysis, this research seeks to provide insights into how different components of public expenditure impact economic growth, both at the aggregate level and within specific sectors.

This study will try to answer if public expenditure has an impact on economic growth in North Macedonia, and provide policy recommendations to the Government institutions on the structures of public expenditure that would be more beneficial to the country.

1.2 BACKGROUND: THE RESEARCH CONTEXT

The objective of this study will be to empirically investigate the relationship between public expenditure and economic growth, using secondary data for the RNM.

Research questions:

- Do public expenditures affect economic growth? If so, is there a positive or negative correlation between the two?
- Are there certain types of public expenditure that have a bigger impact on growth than others?
- What is the structure of public expenditures in RNM and how it has been correlated with growth throughout the years?
- Which other factors have a strong influence on economic growth and affect public expenditure policy in RNM?
- What structure of public expenditures would be recommendable in the case of RNM to promote economic growth?

Since the aim of the research is to verify whether economic growth is affected by public expenditures, our first hypothesis will assess that issue first. It would be assumed that a certain structure of public expenditures would improve economic growth; however, it may not always be that case, because we have to firstly verify whether RNM as country under our study has the capacity to structure its public expenditures in a way that it would promote economic growth. Furthermore, we need to assess the other contextual factors that affect growth and how they are correlated with the policy on public expenditures.

H₁: Public Expenditures have an impact on the Economic Growth in RNM.

An indicator of economic growth that should be investigated is components of the budget based on functional and economic classification of public expenditures as factors that influence economic growth.

H₂: Political instability of RNM affects Economic Growth

The hypothesis that political instability affects economic growth suggests that periods of political turmoil can have a negative impact on a country's economic growth. Political instability can lead to uncertainty in the business environment, discourage investment, and disrupt trade and commerce. Studies have found evidence supporting this hypothesis, and policymakers often consider political stability an important factor in promoting economic development.

1.3 IMPORTANCE OF THE STUDY

The findings of this research will contribute to the existing body of knowledge on the relationship between public expenditure and economic growth. It is anticipated that the outcomes will inform policymakers, economists, and practitioners about the potential trade-offs, policy implications, and optimal allocation strategies concerning public expenditure to maximize economic growth, social welfare, and sustainable development.

Through an analysis of theoretical frameworks and empirical studies, this master's thesis endeavors to provide a comprehensive understanding of the relationship between public expenditure and economic growth. By elucidating the mechanisms through which public expenditure influences economic outcomes, this research aims to contribute to evidence-based policymaking and facilitate informed decision-making processes in the pursuit of robust and inclusive economic growth.

1.4 THESIS ORGANIZATION

This thesis is organized in five chapters.

In *chapter one*, an overview of the study, a general explanation of the research environment and rationale, and particular research on the selected subfield of interest are provided. This chapter presents the research questions and issues, the study's justification, and a synopsis of the material that will be covered in each of the ensuing chapters.

In *chapter two*, a theoretical examination of public spending and economic growth is presented. An overview public expenditures definition is provided and empirical studies and research on the connection between public spending and economic growth, both generally and especially for North Macedonia is given.

In *chapter three*, detailed overview of public expenditures in North Macedonia, illustrated in the country's national budget is provided. A review of the international classification vis-à-vis the one used in North Macedonia is used to provide the overviews of public expenditures in the country that are relevant for the study. Special focus is put on the economic and functional classification of the public expenditures in North Macedonia.

In *chapter four*, the two hypotheses are tested and analyzed. The first hypothesis is testedH1: The second hypothesis is confirmed through a political analysis, more precisely through political developments in North Macedonia, and through implications of internal and external crisis on growth and relation to public expenditures for the country.

In *chapter five*, conclusions, an explanation of the thesis's contribution and relevance, a depiction of the study's limits, and recommendations for further research are provided.

2 CHAPTER 2: THEORETICAL ASPECT AND LITERATURE REVIEW OF PUBLIC EXPENDITURES AND ECONOMIC GROWTH

2.1 INTRODUCTION

Globally, the focus of the academic, policymaking, and economic communities has long been drawn to the complex fabric of economic growth. This ubiquitous phenomenon is not limited by geography and has a significant impact on national prosperity and well-being. With the complexity of the engines driving economic growth increasing, the importance of public expenditures—a crucial component of fiscal policy—becomes even more apparent. This chapter explores the core of this relationship, examining the complex relationship between public spending and economic growth, with a particular emphasis on the unique situation of North Macedonia.

It is important to understand the connection between public spending and economic growth. In a time of economic globalization and interconnectedness, countries are always looking for ways to foster sustainable development and growth. North Macedonia is a small country at the crossroads of opportunity and struggle. Examining the relationship between public spending and economic growth becomes necessary in this setting, not just relevant. Under the circumstances of North Macedonia, this question takes on additional importance. After a period of historical change and adaptation, the country now faces the problems of modernizing and aligning its economic policies with the needs of a changing global economy. The path taken by North Macedonia is distinguished by a special combination of elements, such as its geographic position, political background, and ambitions to join the Euro-Atlantic alliance. In this complex web, it becomes critical to comprehend how public spending has shaped and continues to shape the course of economic expansion.

This chapter provides a theoretical analysis of public spending and economic growth. The subsequent sections provide an overview of empirical studies and research on the relationship between public expenditure and economic growth in general, and specifically for North Macedonia.

2.2 THEORETICAL REVIEW ON PUBLIC EXPENDITURES AND ECONOMIC GROWTH

The relationship between public expenditures and economic growth has been a subject of debate among economists for decades. Some argue that public expenditures can stimulate economic growth by providing essential goods and services, such as infrastructure and education, while others believe that they can crowd out private investment and hinder economic growth.

2.2.1 KEYNESIAN THEORY

Keynesian theory, developed by economist John Maynard Keynes in the 1930s, emphasizes the role of government spending in stimulating the economy during recessions (Keynes, 1937). Keynes argued that when the private sector is reluctant to invest due to economic uncertainty, government spending can increase aggregate demand and boost output. Public expenditures, such as infrastructure projects and social welfare programs, can act as a countercyclical force, stabilizing the economy and promoting growth. Keynes challenged the prevailing classical economic view that markets would automatically self-adjust to full employment, suggesting instead that government intervention could be necessary to stabilize the economy and promote growth. Keynes's theory of public expenditure and economic growth has had a profound impact on economic policymaking. During the Great Depression, Keynesian economics provided the theoretical basis for government intervention to stabilize the economy and promote recovery. Keynesian policies, including deficit spending and public works programs, were widely adopted by governments around the world, and they helped to alleviate the economic crisis of the 1930s.

The 2018 edition of *"The General Theory of Employment, Interest, and Money"* (Keynes, 2018) also addresses public expenditure and economic growth. In fact, it is one of the central themes of the book. Keynes argues that public expenditure can play a crucial role in stimulating economic growth, particularly during periods of recession or economic downturn. He challenges the prevailing classical economic view that markets would automatically self-adjust to full employment, suggesting instead that government intervention could be necessary to stabilize the economy and promote growth.

Keynes's theory of public expenditure and economic growth is based on the following principles: 1) The marginal propensity to consume (MPC); 2) The multiplier effect; and 3) The psychological law of saving. His theory of public expenditure and economic growth has had a profound impact on economic policymaking.

2.2.2 NEOCLASSICAL ECONOMICS

Neoclassical economics, a dominant school of thought in the late 19th and early 20th centuries, generally views government intervention in the economy with skepticism. Neoclassical economists argue that markets are self-regulating, and that government intervention can lead to inefficiencies and distortions. They believe that public expenditure should be limited to providing essential goods and services that the private sector cannot adequately provide (Barro & Sala-i-Martin, 2003). However, there are some distinguished researchers that prove that public expenditure is positively related with growth, like Robert Solow and David Romero.

Robert Solow is an American economist who won the Nobel Memorial Prize in Economics in 1987. He is known for his work on economic growth, and he developed the Solow model, which is a neoclassical growth model that explains how factors such as capital accumulation and technological progress can lead to economic growth. Solow also argued that government spending can play a role in promoting economic growth, particularly by investing in infrastructure and education. Moreover, he argues that the promotion of investment by tax or public expenditure policy gives a direct and permanent push to the growth rate.

Also, he argues that education may cause people to leave the labor force in the short term, but over time, the quantity and quality of education has a significant role in determining the skill level of the labor force and, consequently, the number and quality of the productive services provided by workers. (Solow, 1956, 1993, 2000; Solow & others, 2003).

The rationale behind the neoclassical policy statement, "Do we have to invest more to grow faster?!" is that better production growth is a temporary result of an increase in savings rates, which in turn leads to additional investment. The growth rate doesn't change over time. However, the production level is greater. Therefore, increasing investment may not always be the best course of action if consumption is the ultimate goal.

David Romer is a professor of economics at the University of California, Berkeley. He has done extensive research on the effects of government spending on economic growth and found that government spending on infrastructure and education can have a positive impact on economic growth, while government spending on consumption can have a negative impact on economic growth (Mankiw et al., 1992; D. Romer, 1993).

2.2.3 ENDOGENOUS GROWTH THEORY

Endogenous growth theory, emerging in the 1980s, challenges the neoclassical view of economic growth as being solely determined by diminishing returns to capital. Instead, endogenous growth theorists argue that factors such as human capital, technological advancements, and institutional factors play a crucial role in sustaining long-term economic growth. They believe that public expenditures can contribute to economic growth by investing in education, research and development, and infrastructure (Barro & Sala-i-Martin, 2003; Chandra, 2022; Gross & Klein, 2022).

Paul Romer is an American economist who won the Nobel Memorial Prize in Economics in 1996. He is known for his work on endogenous growth theory, which suggests that economic growth is not driven solely by exogenous factors such as population growth or technological progress, but also by endogenous factors such as government policies and institutions. Romer argued that government spending on research and development can lead to technological innovation, which can in turn drive economic growth (P. M. Romer, 1994).

2.2.4 NEW KEYNESIAN ECONOMICS

New Keynesian economics, developed in the 1980s and 1990s, incorporates elements of both Keynesian and neoclassical theories. New Keynesian economists acknowledge the role of markets in allocating resources but also recognize that market failures and macroeconomic rigidities can hinder economic growth. They believe that government intervention, including public expenditures, can be justified to address these inefficiencies and promote stable economic growth (Di Matteo, 2020; Gordon, 1990). Most of the current world's renowned researchers and professors of economics are New-Keynesian. The following are just some of the most heard economists in modern economics that support the use of public expenditure to promote growth.

Joseph Stiglitz is an American economist, Nobel Memorial Prize laureate in Economics, and professor of economics at Columbia University. He is known for his work on information economics, risk management, and economic development. Stiglitz has argued that government intervention is often necessary to address market failures and promote economic growth. He has supported government spending on infrastructure, education, and research and development, as well as policies such as progressive taxation and social safety nets (Stiglitz, 1997, 2014).

Olivier Blanchard is a French economist who is currently the C. Douglas Dillon Professor of Public Policy Management at the Massachusetts Institute of Technology. He is a former chief economist of the International Monetary Fund. Blanchard has argued that government intervention can be justified to address macroeconomic shocks and promote economic stability. He has supported government spending on infrastructure, education, and research and development, as well as policies such as countercyclical fiscal and monetary policy (Blanchard et al., 2017; Blanchard & Simon, 2001).

Paul Krugman is an American economist who is currently the Paul Samuelson Professor of Economics at Princeton University. He is a Nobel Memorial Prize laureate in Economics. Krugman has argued that government intervention is often necessary to address economic downturns and promote economic growth. He has supported government spending on unemployment benefits, food stamps, and other forms of social assistance, as well as policies such as quantitative easing and fiscal stimulus (Krugman, 1979, 2009).

Gregory Mankiw is an American economist who is currently the Robert M. Solow Professor of Economics at Harvard University. He is a former chairman of the President's Council of Economic Advisers. Mankiw has argued that government intervention can be justified to correct market failures and promote economic efficiency. He has supported government regulation of monopolies and externalities, as well as policies such as antitrust laws and environmental protection regulations (Mankiw, 2022; Mankiw et al., 1995).

2.2.5 NEO-SCHUMPETERIAN THEORY

Neo-Schumpeterian theory, based on the work of economist Joseph Schumpeter, emphasizes the role of innovation in driving economic growth. Schumpeter argued that innovation, often led by entrepreneurs, leads to the creation of new products, processes, and industries, which can fuel economic expansion. Neo-Schumpeterian economists believe that public expenditures can promote innovation by supporting research and development, providing education and training, and creating a favorable regulatory environment for entrepreneurship (Hanusch & Pyka, 2007; Schumpeter & Backhaus, 1934).

2.3 DEFINITION OF PUBLIC EXPENDITURES

Public expenditure, often known as government spending, is a vital element of the macro-economic policy of any country. In general, it consists of all the expenses that governments make to provide public goods and services, help achieve economic growth and fund the various responsibilities a government has. (Burkhead & Miner, 2007). Public expenditure as such is at the heart of public finance management and as such has a crucial role in shaping the socio-economic development of the country. Thus, public expenditure encompasses all the costs needed to address different social, economic and regulatory requirements of an economy.

There is not one single definition of public expenditure (Herrera, 2007). The most widely accepted definition is that public expenditure involves all expenditures made by the state at all levels. This includes the central and local government as well as all the bodies, agencies and directorates related to them including public enterprises. In this respect, public expenditure would represent the total amount of money that government, including directorates and agencies, spend in a specific period of time to meet the policy objectives. This specific period, known as the fiscal years, can be a calendar year (common) or another period. The important thing is that a fiscal year always includes 12 months regardless of whether it is same as the calendar year or not (Castro & Martins, 2018). The expenditures on the other side include funding of a wide range of costs, such as for provision of goods and services, transfers to individuals (salaries, social assistance, etc.), households and businesses and finally servicing of the debt (both internal and external).

To get a profound understanding of public expenditures it is crucial to explore its components. In general, economic components can be classified in two main categories (Wuttipong, 2014):

- **Current expenditures:** this category includes all the costs needed to maintain the everyday operation of the government. It goes from wages and salaries for public servants, to administrative costs and various government programs, such as education, health, defense, environment, etc. In short, current expenditures represent all the short-term spending that takes place entirely within a fiscal year. These costs can be more specifically divided into two sub-categories:
 - Operating costs – these are all the costs to run the public service, such as salaries, maintenance costs, costs for goods and services, etc.
 - Redistribution costs – these are costs to serve the public interest and usually paid to households, such as pensions, social benefits, different types of subsidies, social allowances, etc.
- **Capital expenditures:** unlike the current expenditures, is spending that is made on long-term assets that are capitalized over a longer period of time and can include multiple fiscal years. As such these expenditures are usually directed towards the development of transport infrastructure in the country, such as road and rail infrastructure, air and water transport as well as public transport. These expenditures also involve investment on other infrastructure, such as building schools, hospitals, community centers, cultural institutions, investment in research and development and others. In this respect, capital expenditures include all the costs to increase capital productivity, foster economic growth and improve the quality of life of citizens.

The aforementioned is the simplest categorization of public expenditure according to the type of expenditure. However, there are different categorizations, and an important one is the one between exhaustive spending and transfer payments, whereas the first is about spending on goods and services and the second on the redistribution of wealth. According to the International Monetary Fund (IMF, 1991), the balance of expenditures between these two categories is what at the end determines the economic impact of public expenditures. First, we need to look what these categories are:

1. **Transfer expenditures:** In the simplest form, these expenditures are such that nothing is received in return. As mentioned above, transfer payments redistribute the purchasing power between different members of society. Transfer payments can take the form of social welfare programs, unemployment benefits, pensions and different types of subsidy schemes. Thus, the transfer expenditures can be also depicted as a form of social protection and as such used by governments as a tool to promote social and economic development. A study by Awawori studies in more detail government transfers (Awaworyi et al., 2014). To the general population transfer payments are the main indicator for the economic impact of public expenditure. This is because redistribution reduces disparities in the society and ensure a minimum amount of wealth. Looking more specifically into the transfer expenditures the following components can be identified:

- **Income Redistribution:** The aim is to address inequalities in wealth in society by taking money from those with higher income and providing it to those with lower income (e.g. taxes). The redistribution function helps ensure a minimum standard of living.
- **Social Welfare Programs:** these are programs to assist those that cannot be assisted through the income redistribution and need to be part of specific targeted programs, such as:
 - Unemployment benefits: These are benefits given to people who are of working age but are unable to find employment due to a shortage of jobs or who have lost their jobs as a result of organizational restructuring. These programs might be thought of as safety nets during times when one is unemployed and unpaid.
 - Social Assistance Programs: These are programs aimed at the weakest members of society, like low-income families who might not qualify for other forms of aid or unemployment benefits. These programs assist in paying for necessities of life such as food, housing, and medical care. They are an overt initiative to fight poverty in a community.
 - Old Age Pensions: pensions, also referred to as retirement benefits, are given to senior adults who do not participate in the labor force of the nation. The goal of these benefits is to guarantee pensioners' financial security.
 - Disability benefits: by the very name these are payments made to people with special needs to assist their financial wellbeing and help improve the quality of their lives.
 - Subsidies: Subsidies are another type of transfer payment; they are sums of money given to companies in various locations with the intention of promoting the growth of a certain industry. These might take the form of agricultural subsidies, which would aid farmers in continuing their operations and benefit the agricultural industry as a whole. However, corporations might also receive subsidies to help them lessen the effects of uncontrollably occurring global crises. For instance, numerous company subsidy

programs have been created as a response of the COVID-19 issue. In general, the objectives of these programs are to assist vital industries (such as agriculture, the environment, renewable energy, etc.) or to encourage specific behaviors.

- Education Support: Low-income families receive these transfer payments especially so that their kids can go to school. This assistance may come in the form of grants, scholarships, books, tuition, or other expenses.
 - Child and family benefits: Families with dependent children are eligible for benefits. These payments cover a variety of expenses associated with raising a child, such as child allowances, child subsidies, and tax credits. Benefits for families and children can occasionally be utilized to further a particular demographic agenda. For instance, in nations where the birth rate is dropping, subsidies for the third child are typical, as was the case with North Macedonia at one point of time.
 - Healthcare assistance: The government occasionally provides transfer payments to citizens in order to assist them in paying for their medical costs. These can take the form of direct financial assistance to pay for medical expenses or discounts on health insurance premiums.
 - Poverty alleviation: The primary instrument for reducing poverty is transfer payments. Through giving those in need financial support, they assist people in escaping poverty, lowering food insecurity, and improving their quality of life.
 - Economic stabilization. Governments may decide to increase the portion of transfer payments during economic downturns, like recessions, in an effort to encourage demand and consumer spending. This is frequently employed to lessen the adverse consequences of the recession.
2. **Exhaustive expenditures**: include different categories of spending related to a great number of activities, programs and services that have an aim to accomplish the policy objective that governments put in their programs (Honadle, 2018). These expenditures are called exhaustive because they include a wide range of public goods and services provided to the citizens. Below is a general categorization of these expenditures for better understanding of what they entail.
- **Public Goods and Services**: By the very name these are expenditures that governments allocate to provide public goods and services for the citizens. These include These include:
 - Education: transfers for construction and maintenance of public schools, colleges, and universities.
 - Healthcare: Expenditures on construction, equipment and maintenance of public hospitals, clinics, and healthcare programs.
 - Infrastructure: Investment in roads, bridges, public transportation, and utilities.
 - Public Order and Peace: Funding for police, fire departments, and emergency services
 - Defense: It is spending to protect the country's sovereignty and security.

- **Healthcare and Public Health:** Expenditures related to healthcare as mentioned above are partially covered with transfer payments but these expenditures include not only services but also public health initiatives:
 - Public Health Services: Initiatives to prevent and control diseases, vaccinations, and health education.
 - Health Insurance: Funding for public health insurance programs like Medicaid and Medicare (in the United States).
- **Education and Research:** Investments in education go beyond schools and colleges:
 - Research and Development: Funding for scientific research, innovation, and technological advancement.
 - Scholarships and Grants: Financial aid for students pursuing higher education.
- **Environmental Protection:** Expenditures directed at preserving and protecting the environment:
 - Environmental Agencies: Funding for agencies responsible for environmental regulation and conservation.
 - Clean Energy Initiatives: Support for renewable energy projects and environmental sustainability.
- **Culture and Art Programs:** Governments often allocate resources to support cultural preservation and the arts:
 - Museums and Libraries: Maintenance and operation of public cultural institutions.
 - Grants for the Arts: Funding for artists and cultural organizations.
- **Foreign Aid:** Expenditures related to international relations and assistance:
 - Development Aid: Support for developing countries in areas such as healthcare, education, and infrastructure.
 - Humanitarian Assistance: Aid during crises, including natural disasters and conflicts.
- **Public Order and Justice:** Funding for the justice system and public safety measures.
 - Courts and Legal Services: Maintenance of the legal system and access to justice.
 - Prisons and Corrections: Operation of correctional facilities and rehabilitation programs.
- **Transportation and Communication:** Investments in transportation and communication networks:
 - Roads and Transportation Infrastructure: Maintenance and development of transportation systems.
 - Communication Networks: Expansion and maintenance of telecommunications and internet infrastructure.
- **Research and Development:** Governments invest in research and development to drive innovation and economic growth. This includes support for scientific research, technological advancements, and innovation-driven initiatives.
- **Agricultural Support:** Assistance to the agricultural sector, which may include subsidies, price stabilization programs, and research for food security and rural development.
- **Disaster Response and Relief:** Funding allocated to respond to natural disasters, emergencies, and humanitarian crises.

There is another component of public expenditures that falls within the exhaustive expenditures, that is **debt service**. This is a key component of public expenditures and varies from country to country depending on the level of public debt the country has. Public debt includes all the borrowings governments make to finance their operations and investments. Borrowing comes with a cost known as interest payment and each debt has to be returned in full by the end of the contract period. Countries get debts with favorable conditions from the International Finance Institutions (IFIs), such as the World Bank, IMF and EBRD. But the country can also borrow from banks, issue bonds domestically or internationally and through Treasury bills. All these together build the country's public debt, and each year under the public expenditures a certain amount of interest payments needs to be planned and executed and the repayment of the principal. Managing public debt is a critical aspect of fiscal policy, as excessive debt can lead to financial instability that can lead to an economic crisis.

The exhaustive public expenditures reflect how multi-layered government spending is. The allocations that government makes to different sectors and programs makes a difference in the economic policy and ultimately affects the economic growth of the country. Therefore, public expenditure decisions are crucial for the economic growth of a country and shape the well-being of its citizens and the economy. Ultimately a proper choice between the transfer payments and exhaustive spending needs to be made, especially taking into account the exhaustive expenditures are reflected in the national income while transfers are not. For this it is important to know the composition of the expenditures (Piana, 2001) because there is not an immediate correspondence between the general indicators. As an example, high public expenditures are not necessarily reflected in a large share of public spending and similar levels can have different impacts on the economy and society. It is therefore important to analyze and see the composition of public expenditures and the priorities it has, the balance between exhaustive and transfer payments in order to determine if the public expenditure policy of a government is adequate to ensure economic growth and wellbeing for its citizens, that is ultimately the end goal of each government program.

2.4 REVIEW ON EMPIRICAL EVIDENCE ON PUBLIC EXPENDITURES AND ECONOMIC GROWTH

Empirical studies on the relationship between public expenditures and economic growth have yielded mixed results. Some studies have found a positive correlation between public spending and economic growth, while others have found no significant impact or even a negative relationship. The mixed findings may be attributed to differences in the type of public expenditures, the quality of governance, the level of economic development, and the methodology employed in the studies.

The relationship between public expenditures and economic growth is a complex and multifaceted issue that continues to be debated among economists. While the empirical evidence is inconclusive, there is a consensus that public expenditures can play a role in promoting economic growth, particularly when they are directed towards investments in human capital, infrastructure, and innovation. However, the effectiveness of public expenditures in promoting growth is also dependent on factors such as the quality of governance, the macroeconomic environment, and the institutional framework.

A study from IMF (IMF, 1995) which discusses the relationship between public expenditures and economic growth, emphasizes the importance of sustained and equitable economic growth as a primary objective of public expenditure policies. Public expenditures play a crucial role in physical and human capital formation, contributing to economic growth both in the short and long term. The study acknowledges the complexity of assessing the impact of public expenditures on economic growth, considering factors such as the efficiency of expenditure and the diverse nature of public programs.

Empirical studies aiming to estimate the effects of public expenditures on economic growth present varied results. Some studies suggest a negative association between the share of public spending and economic growth, while others find a positive correlation. The relationship between aggregate public expenditure and economic growth is noted to be sensitive to small changes in model specifications. Additionally, the text explores the impact of specific expenditure components, such as public investment, education, health, and military expenditures, on economic growth. While positive correlations are found between education and growth, and military expenditures can create jobs, the overall relationship between public investment and economic growth appears to be weak in empirical studies.

Public investment is highlighted as an area with direct relevance to economic growth, as it is considered essential for private sector capital accumulation and human capital formation. However, the text notes challenges in empirically establishing strong links between public investment and economic growth, citing variations in study results and the influence of factors like crowding out. Overall, the text underscores the complexity of analyzing the impact of public expenditures on economic growth and the need for a pragmatic approach in policy analysis.

Table 1 summarizes the findings of 13 empirical studies on the relationship between public expenditure and economic growth across various regions and countries. The studies employ a variety of methodologies, including panel data analysis and time series analysis. The overall findings suggest that public expenditure has a positive and significant impact on economic growth in most of the regions and countries analyzed. However, the impact of public expenditure varies depending on the type of public expenditure, with productive public expenditures, such as those on education and infrastructure, having a more positive impact than unproductive public expenditures, such as those on social protection. Additionally, the impact of public expenditures is often stronger in the long run than in the short run. These findings highlight the importance of effective and efficient public expenditure allocation for promoting sustainable economic growth.

Table 1: Overview of empirical studies on the relationship between public expenditure and economic growth in the world

Author	Journal	Title of the Study	Type of Methodology	Sample Country	Findings
Deepti Ahuja and Deepak Pandit (Ahuja & Pandit, 2020)	Journal of Development Economics	The Impact of Public Expenditure on Economic Growth in Developing Countries	Panel Data Analysis	59 Developing Countries	Public expenditure has a positive and significant impact on economic growth in developing countries.

Cenc, Helena (Cenc, 2022)	Our economy	Government Expenditure and Economic Growth in Euro Area Countries."	Panel Data Analysis	19 Eurozone Countries	Government expenditure has a negative impact on economic growth.
Norman Loayza, Pablo Fajnzylber and César Calderón (Loayza et al., 2004)	Central Bank of Chile	Economic Growth in Latin America and the Caribbean	Panel Data Analysis	21 Latin American and Caribbean Countries	Public expenditure has a positive and significant impact on economic growth in Latin America and the Caribbean.
Aregbeyen Omo (Aregbeyen, 2007)	African Journal of Economic Policy	Public Expenditure and Economic Growth in Africa	Panel Data Analysis	48 African Countries	Public expenditure on education and infrastructure has a positive and significant impact on economic growth, while public expenditure on social protection has a negative and significant impact on economic growth.
Hieu Huu Nguyen (Nguyen, 2019)	The Journal of Asian Finance, Economics and Business	The role of state budget expenditure on economic growth: empirical study in Vietnam	OLS for the period 2000-2017	Vietnam	Public expenditure has a positive impact on economic growth in Vietnam.
Andrea Bassanini and Scerpetta Stefano (Bassanini & Scarpetta, 2002)	OECD Economic studies	The driving forces of economic growth: panel data evidence for the OECD countries	Panel Data Analysis	21 OECD Countries	Public expenditure has a positive and significant impact on economic growth in OECD countries.
Ahuja, Deepti, and Deepak Pandit (Ahuja & Pandit, 2020)	FIIB Business Review	Public expenditure and economic growth: Evidence from the developing countries	Panel Data Analysis	59 countries in 1990–2019	Empirical results confirm the unidirectional causality between economic growth and government expenditure.
Niu, Xiao-Tong, You-Cai Yang, and Yu-Cong Wang (Niu et al., 2021)	Frontiers in Public Health	Does the economic growth improve public health? A cross-regional heterogeneous study in China	Panel Data Analysis	31 Provinces in China	Public expenditure has a positive and significant impact on economic growth in China.

Dan Lupu, Mihai Petrisor, Ana Bercu and Mihaela Tofan (Lupu et al., 2018)	Emerging Markets Finance and Trade	The Impact of Public Expenditures on Economic Growth: A Case Study of Central and Eastern European Countries	Panel data and Time Series Analysis	Quarterly data period 1995–2015, for 10 selected CEE countries that joined the European Union	The economy is positively impacted by spending on health care and education, but it is negatively impacted by spending on social welfare, general public services, economic affairs, and defense.
Luiz Carlos Ribeiro Neduziak and Fernando Motta Correia (Neduziak & Correia, 2017)	Brazilian Journal of Public Administration	The allocation of government spending and economic growth: a panel data study of Brazilian states	Panel Data Analysis and Time Series	26 Brazilian States, 1995 to 2011	Only spending on habitation and urban planning along with social assistance and social security is statistically significant and productive, all other either unproductive or irrelevant.
Aleksey Balaev (Balaev, 2019)	Russian Journal of Economics	The structure of public spending and economic growth in Russia	Time Series Analysis	Russia	Public expenditure has a positive and significant impact on economic growth in Russia.
Bassam Abdullah Albassam (Albassam, 2022)	International Review of Administrative Sciences	Government spending and Economic Growth in the Middle East and North Africa	Panel Data Analysis	18 MENA Countries	Public expenditure on education and infrastructure has a positive and significant impact on economic growth, while public expenditure on social protection has a negative and significant impact on economic growth.
Gnangoin, Yobouet Thierry Bienvenu (Gnangoin et al., 2019)	Economies	Public Spending, Income Inequality and Economic Growth in Asian Countries: A Panel GMM Approach	Robust GMM	19 Asian Countries	Public expenditure can have a positive impact on economic growth when it is used effectively and efficiently. Current government consumption reduces economic growth

Source: Authors own work

The literature reveals nuanced perspectives and contradictions regarding the impact of public expenditures on economic growth. One nuanced aspect highlighted is the variation in this impact based on the level of development of a country. In developing nations, public expenditures directed towards infrastructure and social services tend to yield more significant benefits for economic growth compared to developed countries. This discrepancy arises from the less developed state of infrastructure and social services in developing countries, necessitating increased investment in these areas to stimulate economic

growth. Another nuance emerges concerning the quality of governance, indicating that the effectiveness of public expenditures in promoting economic growth is contingent upon the governance standards of a country. The nuanced nature of this correlation can be the reason for the inconsistencies and complexity found in the research on the relationship between public expenditures and economic growth.

The impact of public spending on economic growth is contingent on various factors, including the composition of public spending, the developmental stage of the country, and the quality of governance. This multifaceted interplay contributes to the divergent findings and perspectives present in the existing literature. It is crucial to recognize that the current body of research on the relationship between public expenditures and economic growth in North Macedonia is limited. To gain a more comprehensive understanding of this relationship and identify the specific types of public expenditures most conducive to promoting economic growth in North Macedonia, further research is needed. Addressing these gaps in knowledge will contribute to a more nuanced and context-specific comprehension of the dynamics between public expenditures and economic growth in the case of North Macedonia.

2.5 REVIEW OF EMPIRICAL RESEARCH ON NORTH MACEDONIA

There is a limited number of empirical studies on the relationship between public expenditures and economic growth in North Macedonia. However, the existing studies suggest that the relationship is complex and depends on a number of factors, including the composition of public spending, the level of development of the country, and the quality of governance.

One study, by Katerina Shapkova Kocavska (Shapkova Kocavska, 2023), found that public expenditure on education has a negative effect on economic growth in North Macedonia in the short run. The author suggests that this may be because public expenditure on education improves the level of education of the workforce, which makes them more productive, thus the spending on the education is needed to transform the expenses into productive human capital.

A study by Ziberi, Rexha, Ibraimi and Avdiaj (Ziberi et al., 2022), found that one-point increase in public expenditures on education will positively affect economic growth in the North Macedonia. Their research demonstrates how the North Macedonian labor market's supply and demand for actual jobs are out of balance.

A study by Mitev et al, (Mitev & Trpeski, 2022) investigates the connection between health expenditures (a measure of human capital) and economic growth in North Macedonia from 2000 to 2019, employing the Lucas model and regression analysis (OLS method). The study finds a positive relationship between health expenditures and economic growth, highlighting the significance of human capital in the country's development. The results suggest that increasing human capital, particularly through health investments, enhances the returns on physical capital investments.

A study by Ivanovski et al. (Ivanovski et al., 2020), examines Granger causality in a VAR (Vector Autoregression) framework to assess the influence of the State Budget's capital expenditures on

Macedonia's GDP. While capital spending on infrastructure projects is known to impact GDP directly and indirectly, the study questions whether non-essential capital expenditures from the State Budget affect GDP growth. The econometric analysis does not reveal Granger causality between capital expenditures and the GDP of North Macedonia for the period 2006-2019, implying that capital expenditures, including non-essential ones, may not be reliable indicators for accurate GDP forecasts with an acceptable level of certainty.

A study by Velickovska et al. (Velickovska & Sadiku, 2019), analyzes the impact of government expenditures on economic growth in Macedonia from 2000 to 2016, using time series regression models and VAR methodology. Findings support the positive influence of increased government expenditure on GDP, in line with expansionary fiscal policy. The study highlights the need for reform in the public expenditure structure, specifically advocating for an increase in capital expenditures to drive economic growth through investments.

A study by Musliu (Musliu, 2018), explores the relationship between government expenditure and economic growth in Macedonia, focusing on two conflicting views: Wagner's Law and the Keynesian approach. Using co-integration, causality, and error correction models on quarterly data from 2005 to 2015, the analysis suggests that economic output Granger causes government expenditure, supporting Wagner's Law. The findings caution policymakers about relying on public spending as a tool for economic stimulation.

A study by Alili et al. (Alili et al., 2017), examines the relationship between productive and unproductive public expenditures and economic growth in the Republic of Macedonia over the period of 17 years (2000-2016). Using ADF and Johansen co-integration tests on time series data, the analysis shows that the data become stationary in their first difference, and there is one co-integrating vector, indicating long-term significant effects of public expenditures on economic growth. The results from the Vector Error Correction Model (VECM) suggest that productive expenditures positively impact real GDP, while unproductive expenditures are insignificant in the model.

A study by Fetai et al. (Fetai et al., 2017), reveals a negative coefficient (0.3903854) for general government final consumption expenditure, indicating a negative impact on real per capita GDP growth. The findings suggest that increased government expenditures negatively affect economic growth by diverting capital from private productive activities to less efficient government use.

A doctoral thesis by Joshevska (Joshevska, 2016) investigated the causal relationship between government expenditures and GDP from 2005 to 2015 using quarterly data in million denars. Employing Vector Autoregression and the Granger Causality test, the study found a reciprocal link: government expenditures positively impact GDP, indicating economic growth, and conversely, GDP influences government expenditures.

A study by Djambavska (Djambavska & Lozanoska, 2015) examines public expenditures in North Macedonia from 2005 to 2013, focusing on capital expenditures and their impact on economic growth. Most of the expenditures consist of current expenses, transfers, and goods/services purchases, with a limited share allocated to capital expenditures. Despite a slight increase in capital spending, reliance on

borrowing diminishes its impact on economic growth. The analysis recommends reforms to enhance the public expenditure structure, emphasizing increased investment-driven capital expenditures to stimulate economic growth.

A study, conducted for Western Balkan countries by Qehaja et al. (Qehaja et al., 2022), investigates the relationship between government expenditure, economic growth, and the impact of tax income on government spending in Western Balkans nations from 2000 to 2020. Using various econometric models, including Ordinary Least Squares, Fixed Effects, and Random Effect models, the study employs panel data spanning 21 years. The research covers six Western Balkan nations and concludes that there is a positive and statistically significant association between government expenditure and economic development over the studied period.

Another study, conducted in Western Balkans by Prole et al. (Prole & Petković, 2021), uses Spearman's correlation coefficient to assess the connection between public expenditure and economic growth. The findings vary across countries: in Montenegro, there's a strong and statistically positive relationship; in Albania, it's negligible; while in Bosnia and Herzegovina, North Macedonia, and Serbia, the link is negative. The study highlights that North Macedonia exhibits the strongest negative interdependence with a coefficient of -0.783.

A study by Nikolova (Nikolova & Angelov, 2021), investigates the connection between government expenditure and economic growth in five Balkan countries (Bulgaria, Romania, Slovenia, Croatia, and Greece) from 2000 to 2020. Using the Johansen cointegration test, the analysis finds a long-term cointegration relationship in all countries. The Granger causality test for short-term causality reveals some heterogeneity among countries, but most show a unidirectional causality from economic growth to government expenditure. The study underscores the need for a different approach to public finance management to enhance economic growth in these Balkan countries.

A study by Pula (Pula & Xhelili, 2022), aims to assess the efficiency of Kosovo's government public spending compared to EU and Western Balkans countries from 2007 to 2016. Using the Public Sector Performance Index (PSP), Public Sector Efficiency Index (PSE), and Data Envelopment Analysis (DEA), the results indicate that Kosovo ranks 30th out of 35 countries in terms of PSP (0.86, 15% below the average) and 23rd for PSE (0.96, 5% below the average). The input-output efficiency analysis suggests that countries could reduce total public spending by 54% while maintaining the same level of public performance. Additionally, output-oriented efficiency analysis shows that countries could increase outputs by 27% with the same level of inputs.

A study by Kaleci (Kaleci, 2018), investigates the determinants and policies influencing economic growth in Western Balkan Countries (Albania, Bosnia and Herzegovina, Montenegro, Serbia, Croatia, North Macedonia, and Kosovo) from 1995 to 2016 and reveals that Western Balkans countries are converging toward a steady level of growth. Foreign direct investment, gross savings, and domestic credit to the private sector positively impact per capita growth, while corruption, unemployment, and general government final consumption have negative associations with per capita growth. Interestingly, the paper notes a puzzling result that schooling is not a significant factor for growth in the Western Balkans. The

study emphasizes the importance of attracting more foreign direct investment and reducing corruption for sustained economic growth in the region.

The research on public expenditure and economic growth in North Macedonia is summarized in the following table:

Table 2: Overview of empirical studies on the relationship between public expenditure and economic growth in North Macedonia and the region

Study	Key Findings
K. Shapkova Kocevska (2023)	Public expenditure on education has a short-term negative impact on economic growth in North Macedonia. Suggests this may be due to the transformation of expenses into productive human capital.
Ziberi et al. (2022)	A one-point increase in public expenditures on education positively affects economic growth in North Macedonia. Highlights supply and demand imbalances in the labor market.
Mitev et al. (2022)	Positive relationship between health expenditures and economic growth in North Macedonia. Increasing human capital through health investments enhances returns on physical capital.
Ivanovski et al. (2020)	No Granger causality found between State Budget's capital expenditures and GDP in North Macedonia for 2006-2019. Suggests capital expenditures may not be reliable indicators for GDP forecasts.
Velickovska et al. (2019)	Increased government expenditure positively influences GDP growth in Macedonia, supporting expansionary fiscal policy. Advocates for reform, emphasizing increased capital expenditures for economic growth.
Musliu (2018)	Supports Wagner's Law - economic output Granger causes government expenditure in Macedonia. Cautions policymakers about relying solely on public spending for economic stimulation.
Alili et al. (2017)	Long-term significant effects of public expenditures on economic growth in Macedonia. Productive expenditures positively impact real GDP, while unproductive expenditures are insignificant.
Fetai et al. (2017)	General government final consumption expenditure negatively impacts real per capita GDP growth in Macedonia. Increased government spending diverts capital from private productive activities.
Joshevaska (2016)	Reciprocal link found between government expenditures and GDP in North Macedonia from 2005 to 2015. Positive impact on GDP from government expenditures, indicating economic growth.
Djambavska (2015)	Calls for reform in North Macedonia's public expenditure structure, emphasizing increased investment-driven capital expenditures for economic growth.
Qehaja et al. (2022)	Positive and statistically significant association between government expenditure and economic development in Western Balkan countries from 2000 to 2020.
Prole et al. (2021)	Spearman's correlation coefficient results vary across Western Balkan countries. Strong positive relationship in Montenegro, negligible in Albania, and negative in Bosnia and Herzegovina, North Macedonia, and Serbia.
Nikolova (2021)	Long-term cointegration relationship found between government expenditure and economic growth in five Balkan countries. Most show unidirectional causality from economic growth to government expenditure. Calls for a different approach to public finance management.

Pula (2022)	Kosovo ranks 30th out of 35 countries for PSP and 23rd for PSE, suggesting room for improvement in government spending efficiency. Countries could reduce total public spending by 54% while maintaining the same level of performance.
Kaleci (2018)	Western Balkans countries are converging toward steady growth. Foreign direct investment, gross savings, and domestic credit to the private sector positively impact per capita growth. Corruption, unemployment, and general government final consumption have negative associations. Schooling is not a significant factor for growth in the Western Balkans. Emphasizes the importance of attracting foreign direct investment and reducing corruption for sustained economic growth.

Source: Authors own work

One pattern that emerges from the existing studies is that the impact of public expenditures on economic growth depends on the composition of public spending. Productive public expenditures, such as those on education and infrastructure, tend to have a positive impact on economic growth, while unproductive public expenditures, such as those on social welfare programs, tend to have a negative impact on economic growth. Another pattern that emerges is that the impact of public expenditures on economic growth is stronger in the long run than in the short run. This suggests that it takes time for public investments to have a positive impact on economic growth.

The methodologies used in the existing studies vary. Some studies use cross-country data, while others use data from North Macedonia only. Some studies use simple regression models, while others use more complex econometric models. One strength of the existing studies is that they use a variety of methodological approaches. This helps to reduce the risk of bias and provides a more robust understanding of the relationship between public expenditures and economic growth. However, there are also some weaknesses in the existing studies. One weakness is that some studies use data that is not up to date. Another weakness is that some studies do not control all of the relevant factors that can affect economic growth.

In general, the different types of public expenditures have different impact on the economic growth in North Macedonia. Productive public expenditures, such as those on education, infrastructure, and R&D, are generally considered to have a positive impact on economic growth in theory. These types of expenditures can help to improve the productivity of the workforce, create new businesses, and foster innovation. On the other hand, unproductive public expenditures, such as those on social welfare programs and subsidies, can have a negative impact on economic growth in theory. These types of expenditures can crowd out private investment and reduce the incentive to work.

Overall, the existing empirical studies on the relationship between public expenditures and economic growth in North Macedonia provide some insights, but more research is needed to better understand this complex relationship. The relationship between public expenditures and economic growth is complex and depends on a number of factors. The existing empirical studies on the relationship between public expenditures and economic growth in North Macedonia are inconclusive. More research is needed to better understand this complex relationship and identify the types of public expenditures that are most likely to promote economic growth.

3 CHAPTER 3: OVERVIEW OF PUBLIC EXPENDITURES IN NORTH MACEDONIA

3.1 INTRODUCTION TO PUBLIC EXPENDITURES IN REPUBLIC OF NORTH MACEDONIA

The structure of both, revenues and expenditures, from the budget of North Macedonia is regulated under the Organic Budget Law, which was adopted in September 2022 replacing the old legislative framework that was in force for almost two decades. The new Law introduces reforms, especially in the medium-term projecting and budgeting, making the Fiscal Strategy the key document for budget planning. The budget preparation cycle is extended to provide for better planning and inclusiveness and aligned with the three-year Economic Programme that is an obligation under the EU accession process. In this respect a strong link between the economic policies and spending with the EU related reforms is provided. In terms of effects on the public expenditures, the new Organic Budget Law aims to consolidate public expenditure and redesign them through increased investment in infrastructure.

Based on the Fiscal Strategy 2022-2024 (Ministry of Finance of RNM, 2021), the average share of total expenditures of the Budget of the Republic of North Macedonia accounts for around 34.4% of GDP. The public expenditures of North Macedonia have a goal to achieve the strategic priorities of the country, support economic growth, the priorities in the EU integration process and the obligations deriving from NATO membership. When public expenditures are planned, first and foremost is to secure timely and regular salaries for the public sector employees, timely and regular payment of pensions and other social benefits, such as agricultural subsidies, SME support and others.

The national budget is the basis for the analysis of public expenditures. The government of North Macedonia allocates its budget to a variety of sectors and areas, including:

- Social protection: This includes expenditures on social assistance, pensions, and unemployment benefits.
- Education: This includes expenditures on public schools, universities, and other educational institutions.
- Healthcare: This includes expenditures on public hospitals, clinics, and other healthcare facilities.
- Infrastructure: This includes expenditures on roads, bridges, airports, and other transportation infrastructure; water and sanitation infrastructure; and energy infrastructure.
- Economic development: This includes expenditures on support for businesses, research and development, and other economic development initiatives.
- Other: This includes expenditures on national defense, security, and other government services.

The national budget encompasses the general part of the budget, a special part of the budget and the multi-annual fiscal framework. All revenues and expenditures are parts of the 1) Overview of revenues and expenditures, the 2) Overview of financial means and liabilities or the 3) Overview of indebtedness and debt repayment (Собранието на Република Северна Македонија, 2022).

3.2 OVERVIEW OF REVENUES AND EXPENDITURES IN NORTH MACEDONIA

For this thesis, the overview of revenues and expenditures with special focus on the expenditures is of more relevance. This overview includes:

1. Revenues

- a. tax revenues
- b. social contributions
- c. transfers and donation
- d. capital revenues
- e. revenues from sale of goods and services
- f. other revenues

2. Expenditures

- a. current expenditures
- b. current transfers
- c. capital expenditure
- d. capital transfers
- e. interest payments
- f. other expenditures

3. Budget balance or difference between the revenues and expenditures

- a. Inflow
 - i. granted loans
 - ii. sale of financial instruments
 - iii. repayment of granted guarantees
- b. Outflow
 - i. loans
 - ii. acquiring financial instruments
 - iii. guarantee payments
- c. Net increase or decrease of financial means and obligations as a difference between revenues and expenditures

4. Overview of indebtedness and liabilities

- a. indebtedness (inflow)
- b. debt repayments (repayment of principal and on Treasury bills) - outflow

- c. Net-idebtedness or net-repayment of the debt as a difference between indebtedness and debt repayment
- d. Indebtedness plan as foreseen under a
- 5. ***Change in the balance sheet as a difference between revenues and expenditures from the Overview of revenues and expenditures, the Overview of financial means and liabilities or the Overview of indebtedness and debt repayment***
- 6. **General part of the budget is shown based on the economic classification and classification based on sources of financing.**

In terms of classification and the structure of public expenditures, the new law does not introduce many changes, Pursuant to the law, similar as in the past, there has to be budget classification to identify the use of the budget means. These budget classifications are:

1. **Organizational classification:** is the classification that organizes the budget uses in a hierarchical organizational structure linked and mutually coordinated entities in order to determine the competences for planning and managing public expenditures to reach the set objectives.
2. **Economic classification:** classifies the expenditure according to their economic objective in categories, sub-categories, and accounts.
3. **Functional classification:** classifies the expenditures based on their function to accomplish the general and specific objectives.
4. **Programme classification:** divides the budget into policies, programs, sub-programs and activities in line with the strategic plans while grouping all public services and activities with a common goal into the organizational structure.
5. **Classification based on financing sources** that classifies revenue but also the expenditures and other transfers based on their purpose.

For this thesis, the economic classification and functional classification seem the most adequate to make an analysis of the public expenditures and their relation to growth. This overview provides the necessary data to understand what the Government priorities are and how these priorities are realized and with what type of expenditures and of these are the right modality to ensure the desired level of growth.

3.3 ECONOMIC CLASSIFICATION

The Economic Classification of the expenditures of North Macedonia is based on the IMF's Government Finance Statistics Manual (GFSM) 2014 and European System of National and Regional Accounts (ESA) 2010.

In North Macedonia, the economic classification includes the following.

Balance of expenditures in North Macedonia

- 1 **Wages and Contributions** - are the amounts payable in cash, or any other financial instruments used as means of payments, to employees in return for work performed)
 - i. Basic wages - these are the compensation for the work on the agreed salary.
 - ii. Social Contributions - actual payments made to social security funds, employment-related pension funds, and other employment-related social insurance schemes to obtain entitlement to social benefits for their employees. This category consists of actual contributions payable to insurance enterprises, social security funds, or other institutional units responsible for the administration and management of social insurance schemes, or employment-related pension schemes.
 - iii. Contributions - (other types of contributions)
- 2 **Reserves and undefined expenditures**
 - i. Permanent reserves (unforeseen expenditures)
 - ii. Current reserves (miscellaneous expenditures)
- 3 **Goods and Services**
 - i. Per-diems and travel compensation
 - ii. Community services, heating, communication and transport
 - iii. Materials and small inventory
 - iv. Maintenance and repair
 - v. Contracted services
 - vi. Other current expenditures
 - vii. Temporary employment - amounts payable to contractors, self-employed outworkers, and other workers who are not employees of general government or public sector units
- 4 **Current Transfers to Local Self-Government Units** - North Macedonia has a law on financing local self-government units since 2005. This law governs the payments that must be paid to these units on top of the revenues that they are legally authorized to collect. They include the proceeds from personal income taxes collected in the current year, specifically 3% of the personal income tax from salaries of actual people, collected in the municipality in the area where the actual people's permanent residence or place of stay is located, and 100% of the income tax from actual people engaged in crafts. Additionally, 3% of the value added tax collected in the preceding fiscal year is given to municipalities. Municipalities also get funding that can be designated for certain purposes, such as fire safety and elementary education.
 - i. Transfers from VAT
 - ii. Earmarked grants
 - iii. Block grants
- 5 **Interest**
 - i. Interest payments to non-residential creditors
 - ii. Interest payments to residential creditors

6 Subsidies and Transfers

- i. Subsidies for public enterprises - Government of the Republic of North Macedonia founded 14 public enterprises, being a single shareholder in 15 companies. These entities are employers of around 15.5 thousand workers, accounting for a significant part of Macedonian economy. There are in total 29 joint-stock companies and state owned.
- ii. Subsidies for private enterprises
- iii. Transfers to Non-Governmental Organizations (NGOs)
- iv. Miscellaneous transfers
- v. Payments based on court decisions

7 Social Benefits

- i. Social contributions
- ii. Benefits to the Pension Fund
- iii. Contributions to the Unemployment Agency
- iv. Contributions to the Health Insurance Fund

8 Capital Expenditures

- i. Purchase of equipment and machines
- ii. Construction buildings
- iii. Other construction buildings
- iv. Purchase of furniture
- v. Strategic goods and other reserves
- vi. Investment in non-financial means
- vii. Purchase of vehicles
- viii. Capital transfers to the LSGUs
- ix. Capital subsidies to companies and NGOs

9 Repayment of Principal

- i. Repayment of principal to non-residential creditors
- ii. Repayment of principal to residential institutions

In the period 1994 -2021, as it can be seen in the Table 3 below, the distribution of expenditures through economic categories shows that the biggest portion of expenditures is on social benefits (27.08%) followed by expenditures on wages and contributions (16.7%) and goods and services (16.5%). Subsidies and transfers to public and private enterprises also take a considerable part of expenditures (8.7%) followed by transfers and grants to local-self-government units. In general, around 90% of the budget of North Macedonia is on current expenditures, while capital expenditures are around 10%.

Table 3: Average share of public expenditures in the national budget of North Macedonia based on the economic classification for the period 1994-2021

NATIONAL BUDGET Economic classification (the amounts are expressed in 000 MKD)	AVERAGE 1994-2021	SHARE OF BUDGET
CURRENT EXPENDITURES	106,478,057	79.72%
Wages and contributions	21,958,791	16.44%
Reserves and unspecified expenditures	710,817	0.53%
Goods and services	21,698,977	16.25%
Transfers to extra-budgetary funds (Pension, Employment and Health Fund)	2,322,728	1.74%
Transfer to local self-government units	8,571,961	6.42%
Repayment of interest (loans domestic and foreign)	4,121,337	3.09%
Subsidies and transfers (public enterprises, NGOs, others)	11,455,677	8.58%
Social benefits (social assistance, pensions, health and unemployment benefits)	35,637,769	26.68%
CAPITAL EXPENDITURES	11,591,739	8.68%
REPAYMENT LOAN PRINCIPAL	15,500,409	11.60%
TOTAL EXPENDITURES	133,570,205	100.00%

Source: Authors own work

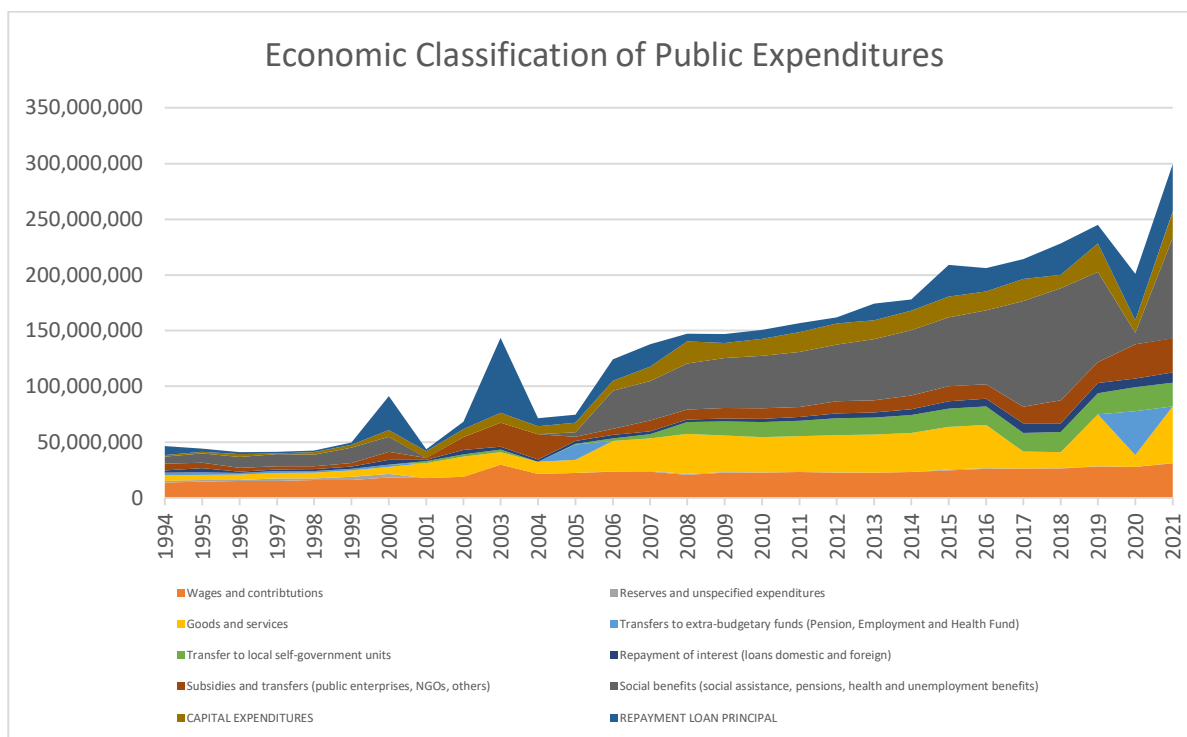


Figure 1: The structure of economic classification of public expenditures 1994-2021 (Source: Authors calculations)

In the last three years 2020-2022, however, the structure of expenditures is a bit different. Expenditures on social benefits have increased considerably over the years and now represent 53% of the overall expenditures, while subsidies and transfers as well as grants to municipalities also take up a bigger part of the budget now.

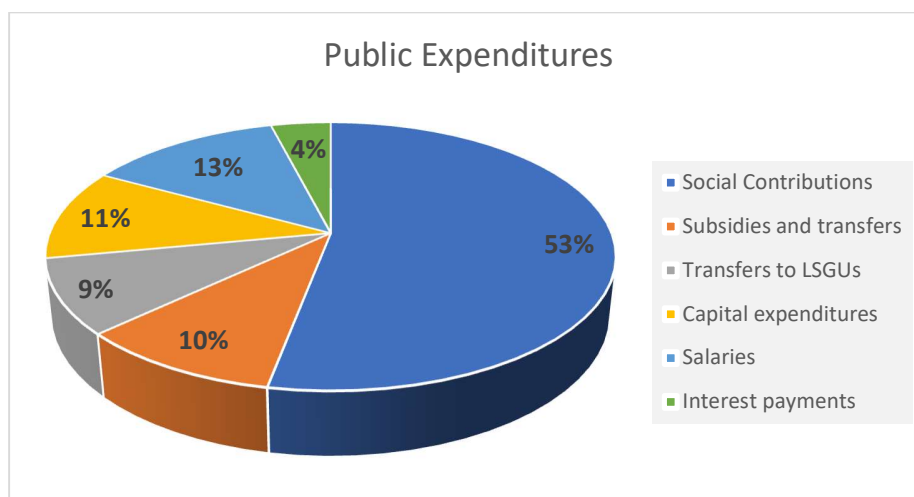


Figure 2: Average structure of current expenditures 2020 - 2022 (as % of total expenditures) – North Macedonia

Source: Projections from the Ministry of Finance of North Macedonia (Ministry of Finance of RNM, 2021)

From the aforementioned, as depicted in Figure 2, it can be seen that current expenditures are the largest category in the budget of North Macedonia.

3.3.1 CURRENT EXPENDITURES

Looking at the structure of the current expenditures, **social protection spending** is the highest and around half of the total public expenditure in North Macedonia. The social protection expenditures in North Macedonia are the highest in the Western Balkans with an average of 15% of GDP in the last decade according to the World Bank. This is also the only budget line that has continuously grown over the years. The Social protection spending in North Macedonia includes pension and disability insurance (52 percent of social transfers), transfers to the Health Insurance Fund (25 percent), social assistance (7 percent), and unemployment benefits (1 percent). This included both standard transfers and transfers to cover the pension fund deficit and the transition costs. The quite high spending on pensions in 2012 is probably one of the reasons for this rise. Pensions, on the other hand, eats up the largest portion of public expenditures as a single item and have increased due to pension reforms, indexation, introduction of the second and third pension pillar, etc. According to the World Bank (World Bank, 2015), the share of pension in the GDP increased from 8.8% in 2007 to 10.3% in 2016. The other categories in social protection spending consist of a wide range of benefit programs that sometimes overlap. One of the biggest is spending on health protection or specifically the transfer to the Health Insurance Fund, around 25% of the social protection expenditures. While these expenditures have decreased their efficiency is questionable given that out-of-pocket payment for health services in North Macedonia remains quite high. In spite of the high unemployment rate (now 15%), spending on unemployment benefits is remarkably low; on average 0.4% of GDP since 2009.

The second biggest category in the structure of public expenditures is **wages and spending on goods and services**. These two categories account for 20 to 30% of the total amount of public expenditure in North Macedonia. Yet, when compared to the region they remain relatively low. The spending on wages reflects more the growing public administration than the rise in salaries, which have been frozen between 2009 and 2016. The same goes for spending on goods and services, which remains low. However, since this category includes maintenance and repairs, the low spending has contributed to poor infrastructure, low maintenance of public buildings, and deteriorating conditions of public buildings, such as schools, hospitals, roads, etc. (World Bank, 2015).

The third category that can be considered significant is **subsidies and transfers**. The largest part of these subsidies are agricultural subsidies, as support to farmers and rural development programs. According to the World Bank subsidies constituted 2.4% of GDP in 2017 excluding tax relief and other tax expenditures. Although agricultural subsidies are high, agriculture's contribution to GDP has been falling. The policy on agricultural subsidies deserves a special section, but the direction of subsidies to some uncompetitive products like tobacco, has a negative effect on growth. Overall, agricultural subsidies of such nature are often considered as a measure to prevent social unrest and thus fall more into social protection category (World Bank, 2015)

Interest payments are low. However, in certain periods of time they have risen given the rising debt and maturity of debts. As such, throughout the period 1994-2021 the average is something around 12%.

3.3.2 CAPITAL EXPENDITURES

The second category in this structure of expenditures is capital expenditures. What remains consistent throughout the years is that the current expenditures take up a very large part of the budget and while capital expenditure stands around 10%, the latter is only a planned amount. In reality the realization of capital expenditures is very difficult and there is continuous underspending (see table below) in capital expenditures for different reasons. Capital spending has increased throughout the years, but the realization has been problematic. Capital spending has consistently been under-realized. While between 2009 and 2017 central government budgeted capital spending averaged 14% of total spending (4.9 %of GDP) (World Bank, 2015), real spending hardly ever reached 10%. This is an important aspect to consider when discussing the role of public expenditures in economic growth. Capital expenditures that include project on intensification of the implementation of infrastructure projects, i.e. investments in road and railway infrastructure, energy and utilities infrastructure, as well as capital investments aimed at improving the conditions in the health, education and social systems, agriculture, culture, sports, environmental protection and judiciary, are an important boost to growth.

3.4 FUNCTIONAL CLASSIFICATION

The functional classification is quite relevant because it organizes the government activities according to their objectives, such as social security, education, health, etc. This classification is useful to analyze how spending is spread amongst the different resources and how it is related to the general objectives of the government, which are almost always amongst others aiming at higher growth rates. The historical data based on the functional classification also enables analysis of trends and key turning points in spending. North Macedonia uses the Classification of the Functions of Government (COFOG) established by the United Nations, which is a widely accepted international standard in this field and includes ten parts (OECD and UNSD, 1999). Each category in COFOG is reviewed in parallel with the budget of North Macedonia. In the list provided below, subcategories from the COFOG classification that are not included in North Macedonia's budget are omitted.

1. General public services: this includes

- i. Executive And Legislative Organs, Financial And Fiscal Affairs, External Affairs - (includes costs for administration, operation or support of the executive and legislative bodies)
- ii. Foreign Economic Aid - (includes economic aid to developing countries and those in transition and aid provided through international organizations)
- iii. General Services - (this is for a group of services that are not linked to a specific function and usually involve costs of central offices of the various levels of government)

- iv. Basic Research - (includes costs to acquire new knowledge without any application)
- v. R&D General Public Services - includes costs for investigation to acquire new knowledge, applied research)
- vi. General Public Services N.E.C. - (for general public services but excluding public debt service)
- vii. Public Debt Transactions - (interest payments and outlays for government loans).

2. Defense

- i. Military Defense - offices of military attaches, field hospitals
- ii. Civil Defense - administration of civil defense affairs and services
- iii. Foreign Military Aid - military aid and operations of military missions accredited abroad or part of international military organizations or alliances
- iv. Other defense functions - costs for administration and monitoring of policies, plans and programs related to defense, legislation on defense, etc.

3. Public order and security

- i. Police service - management of police matters and services, employment and travel permits for immigrants, upkeep of arrest logs and police-related statistics, laws governing traffic, etc.
- ii. Fire protection services - administration of civil protection services such mountain rescue and flooded area evacuation, as well as affairs and services related to fire prevention and fighting.
- iii. Law Courts - administration, the functioning and upkeep of the legal system as a whole, including the ombudsman, tribunals, enforcement of penalties and settlements, and civil and criminal courts.
- iv. Penitentiary institutions - administration and support of functioning of penitentiary institutions, prisons, detention centers and rehabilitation of criminals.
- v. Other - public order and safety affairs that do not fall under the aforementioned categories.

4. Economic issues

- i. General economic, commercial and issues related to the labor - coordination between the various branches of government, general economic and commercial affairs management, and consumer protection and education. In addition, concerns about general labor affairs, services, labor condition supervision and regulation, etc.
- ii. Agriculture, forestry, hunting and fishery - management of forestry, fisheries, and agricultural matters; land settlement and agrarian reform; exploitation of forest services; commercial and recreational hunting and fishing; etc.
- iii. Fuels and energy - This category includes all grades of coal, lignite, and peat, regardless of the process utilized to extract them. In addition, other forms of fuel and electricity, such as thermal or hydro supplies and more recent sources like wind or solar heat, as well as liquefied petroleum gases, refinery gases, etc.

- iv. Mining, artisanship and construction - This category covers minerals that contain metals, such as sand, clay, stone, salt, minerals used in chemicals and fertilizers, asbestos, gypsum, and more. It also covers the issuing of licenses and leases, control of production rates, and inspection of mines to ensure compliance with safety standards.
- v. Transport - Administration of activities and services pertaining to the development, use, operation, and upkeep of transportation infrastructure, including highways, bridges, tunnels, parking lots, and bus terminals, as well as railway and air transport; oversight and control over transport users (license of vehicles and drivers, vehicle safety inspections, bus work schedules, etc.); and construction and reconstruction of infrastructure. It includes things like radio and satellite navigation systems, aircraft regulation and control, urban roads, streets, bicycle routes, and footpaths.
- vi. Communications - The management of matters pertaining to the establishment, growth, enhancement, functioning, and upkeep of communication networks (such as postal, telephone, telegraph, wireless, and satellite networks); licensing of communication networks; allocation of frequencies, delineation of target markets and rates to be charged, etc.); generation and distribution of general data, technical records, and statistical data on communication matters; grants, loans, or subsidies to facilitate the establishment, functioning, upkeep, or modernization of communication networks.
- vii. Other industries - This covers managing services and operations associated with multi-developmental projects, lodging and horeca, distribution trades, storage and warehousing, and tourism.
- viii. Other economic affairs - Administration, operation or support activities relating to general and sectoral economic affairs that cannot be assigned to the aforementioned categories.

5. Protection of Living Environment

- i. Environment - All activities related to the protection of the environment.
- ii. Waste management - Grants, loans, or subsidies to support the operation, construction, maintenance, or upgrading of waste collection, treatment, and disposal systems, administration, monitoring, inspection, operation, or support of such systems. comprises the gathering, handling, and getting rid of radioactive waste.
- iii. Waste water management - Grants, loans, or subsidies to support the operation, building, maintenance, or upgrading of such systems, administration, monitoring, inspection, operation, or support of sewage systems and waste water treatment.
- iv. Curbing pollution -Activities related to protecting the environment, groundwater and soil, reducing noise and vibration, and mitigating radiation are all included in this area.

6. Dwellings and community development

- i. Dwelling development - Development and regulation of housing standards; acquisition of land required for housing construction; building, purchasing, and renovating of residential properties for the general public or individuals with special needs; etc.
- ii. Community Development - Administration of land-use and building regulations; planning of new or rehabilitated communities; planning the development and enhancement of infrastructure related to housing, industry, public utilities, health, education, culture, and recreation, among other things.
- iii. Water supply - Water supply administration including estimation of future needs, monitoring and controlling all aspects of potable water supply, such as water quality, pricing, and quantity limits, building or running state-enterprise water supply systems, producing and disseminating general information, technical documentation, and statistics on water supply affairs and services, and providing grants, loans, or subsidies to support the building, operation, maintenance, or upgrade of water supply systems.

7. Health services

- i. Health - Government spending on health includes money spent on both individual and group health services.
- ii. Medical equipment and materials - This category includes prescription drugs, prosthetics, medical equipment and appliances, and other health-related items that people may purchase with or without a prescription, typically from pharmacies, dispensing pharmacists, or manufacturers of medical supplies. They are meant to be used or consumed outside of a hospital or other healthcare facility.
- iii. Outpatient service - This group includes medical, dental, and paramedical services that practitioners and auxiliary personnel provide to outpatients. The services might be provided in dispensaries, hospitals' outpatient clinics, or at home. Medication, prosthetics, medical equipment and appliances, and other health-related supplies are all provided directly to outpatients by medical, dental, and paramedical professionals and assistants as part of outpatient services.
- iv. Public health service - Included are public health services not associated with a hospital, clinic, or practitioners; public health services not provided by medically qualified doctors; public health service laboratories; services to patients, the majority of whom are in good health, at workplaces, schools, or other non-medical settings.
- v. Other health functions - Included are: health affairs and services that cannot be assigned to the aforementioned categories.

8. Recreation, culture and religion

- i. Sport and recreational activities - includes accommodations for spectators and the ability for local, regional, or national teams to compete in sports.

- ii. Culture services - includes: local, regional, or national festivities as long as they are not primarily planned to draw visitors.
- iii. Broadcasting and printing - Management of publishing and broadcasting operations; oversight and control of publishing and broadcasting services, as well as any necessary loans or subsidies.
- iv. Religious and other community services - Grants, loans, or subsidies to support labor unions, political parties, fraternal, civic, youth, and social organizations; provision of facilities for religious and other community services, payment of clergy or other officers of religious institutions; support for the holding of religious services

9. Education

- i. Education - Government spending on education include both one-time and ongoing services for individual students as well as services for a group of students.
- ii. Pre-school and primary education - Provision of pre-school and primary education.
- iii. Secondary education - Secondary education provision; management, oversight, management, or assistance of schools and other secondary education-providing establishments; grants, loans, and allowances to assist students pursuing secondary education.
- iv. Tertiary education - The provision of postsecondary education at universities and other postsecondary education-providing institutions; management, oversight, management, or assistance of these establishments; scholarships, grants, loans, and allowances to assist students pursuing postsecondary education.
- v. Other type of education - This includes educational programs outside the regular educational program in the country. This is often for adults without any requirement for prior instruction such as vocational training. This category also includes scholarships, grants and other allowances to support student get a degree that is not denied by any of the existing levels of education.
- vi. Subsidiary services of education - Provision of ancillary services for education, including management, operation, or support of lodging, food, and medical and dental care, as well as other relevant ancillary services, primarily for students at all levels.
- vii. R&D education - Grants, loans, and subsidies to support applied research and experimental development related to education carried out by non-government organizations like research institutes and universities; management and operation of government agencies involved in these activities.
- viii. Other functions education - Included are education affairs and services that cannot be assigned to the aforementioned categories

10. Social protection

- i. Social protection - Government spending on social protection encompasses both the cost of services and transfers given to homes and individuals as well as the cost of services rendered collectively.

- ii. Sickness and disability - Social protection is provided in the form of cash benefits or benefits in kind, which replace lost wages entirely or partially when an individual is temporarily unable to work due to illness, injury, or a physical or mental impairment that is either permanent or likely to last longer than a minimum amount of time.
- iii. Old age and child protection - the administration, operation, or support of such social protection schemes; cash benefits, such as old-age pensions paid to persons upon reaching the standard retirement age; and various services and goods provided to elderly persons to enable them to participate in leisure and cultural activities, travel, or take part in community life. Social protection against the risks associated with old age, such as loss of income, inadequate income, lack of independence in carrying out daily tasks, retirement, etc. consists of pension plans for government workers and military personnel.) It also includes social benefits for children of different categories, including children of war veteran, of children who have lost their parents before reaching the age of 25, etc.
- iv. Families and children - Social protection for families with dependent children in the form of cash benefits and in-kind benefits, such as birth grants, maternity allowances, parental leave benefits, family or child allowances, and other payments to support households and help them meet the costs of specific needs (like those of single parent families or families with children with disabilities), as well as miscellaneous goods and services provided to families, young people, or children (holiday and leisure centers).
- v. Unemployment - Provision of social protection in the form of cash benefits and benefits in kind to persons who are capable of work, available for work but are unable to find suitable employment; administration, operation or support of such social protection schemes; cash benefits, such as full and partial unemployment benefits, early retirement benefits paid to older workers who retire before reaching the standard retirement age due to unemployment or job reduction caused by economic measures, allowances to targeted groups in the labour force who take part in training schemes intended to develop their potential for employment, redundancy compensation, other periodic or lump-sum payments to the unemployed, particularly the long-term unemployed; benefits in kind, such as mobility and resettlement payments, vocational training provided to persons without a job or retraining provided to persons at risk of losing their job, etc.
- vi. Housing - Redundancy compensation, other payments to the unemployed, particularly the long-term unemployed; cash benefits, such as full and partial unemployment benefits; early retirement benefits; allowances to targeted groups in the labor force who participate in training schemes intended to develop their potential for employment; other forms of social protection in the form of cash and in-kind benefits to persons who are capable of work but are unable to find suitable employment; administration, operation, or support of such social protection schemes;
- vii. Other social exclusion - Social protection is provided to people who are socially excluded or at risk of social exclusion in the form of cash benefits and benefits in kind (e.g., the impoverished, low-income workers, immigrants, indigenous people, refugees, alcohol and drug abusers, victims of criminal violence, etc.).

An analysis of the budgets and final accounts of North Macedonia for the period 1996-2021 shows that 50% of the public expenditures of North Macedonia go for the economic issues and for social protection function. Education and general public services come second with 27.5% and 11% share of the budget while health and public order and safety are third with around 8% share of the budget. The rest of the budget is divided between defense with a share of around 5% and the remaining for environment, culture and community development.

Table 4: Average share of public expenditures in the national budget of North Macedonia based on the functional classification for the period 1996-2021

National Budget Functional classification (the amounts are expressed in 000 MKD)	Average 1996-2021	Share of budget
General public services	13,112,924	10.79%
Defense	6,330,872	5.21%
Public order and security	10,614,894	8.74%
Economic issues	27,440,087	22.59%
Protection of Living Environment	591,129	0.49%
Dwellings and community development	1,602,800	1.32%
Health services	9,517,196	7.83%
Recreation, culture and religion	2,781,263	2.29%
Education	16,080,119	13.24%
Social protection	33,412,651	27.50%
Other	6,002,292	4.71%
TOTAL BUDGET:	121,483,935	100.00%

Source: Authors own work

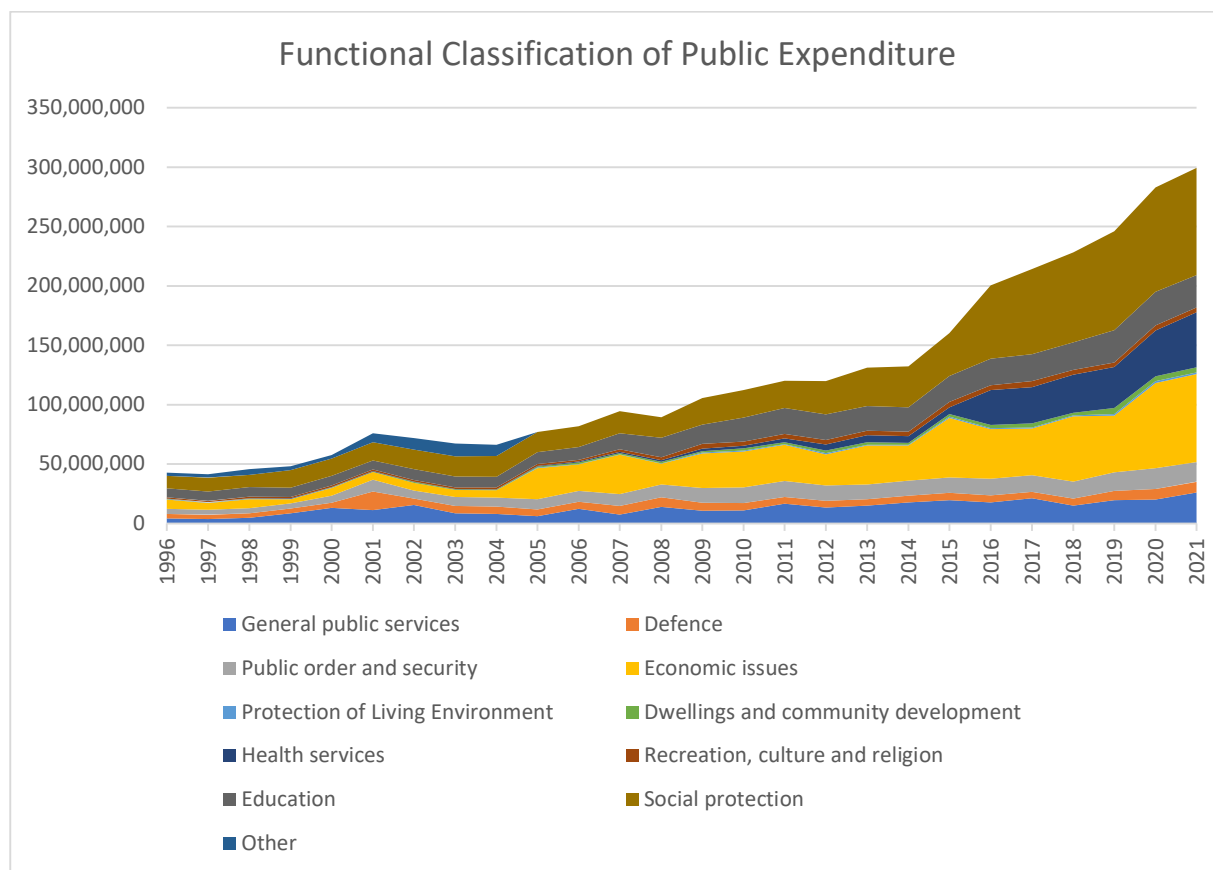


Figure 3: The structure of functional classification of public expenditures 1994-2021 (Source: Authors calculations)

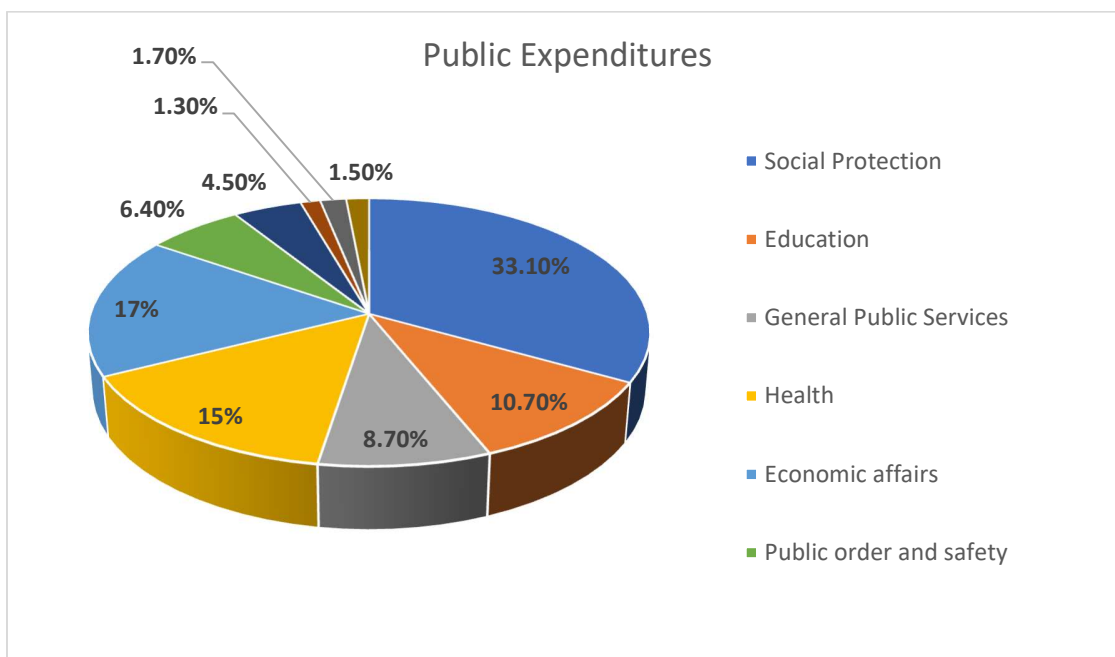


Figure 4: Expenditures of the Budget of the RNM for 2022 by functional areas (as % of total expenditures) – North Macedonia

Source: (Ministry of Finance of RNM, 2021)

4 CHAPTER 4: RESEARCH METHODOLOGY AND RESULTS

4.1 SAMPLING DESIGN

This section presents the source of data which are employed for the empirical analysis of this thesis. The data are collected from the realized budget of North Macedonia for the period 1996 – 2021. For the purpose of this thesis, both the functional and economic classification of the budget is taken into account, thus we have two models that we consider. The data have been collected from the national budgets of the Republic of North Macedonia that have been published in Official Gazettes since 1996, and when available from the budget proposals from the Ministry of Finance of North Macedonia. In the national budget for each year, data on total expenditures per item under the economic and functional classification have been extracted and incorporated in one series of data for the period 1996-2021. Table 5 below provides the description of the variables employed in the analysis and the regression model 1 that is done with variables from the functional classification of the budget.

Table 5: Description of the variables

Variable	Description
year	Time series for the period 1996 – 2021. Observations: 26
generalpublicservices	Spending on General Public Services
defence	Spending on Defense
public orderandsecurity	Spending on Public order and security
economicissues	Spending on Economic issues
protectionoflivingenvironment	Spending on Protection of living environment
dwellingandcommunitydevelopment	Spending on Dwellings and community development
healthservices	Spending on Health Services
rectreationcultureandreligion	Spending on recreating, culture and religion
education	Spending on Education
socialprotection	Spending on Social Protection
GDP	GDP of North Macedonia
resid	Residuals
yhat	Linear prediction
diff_generalpublicservices (β_1)	Independent variable: The change in spending on general public services between consecutive time periods.
diff_defence (β_2)	Independent variable: The change in spending on defense between consecutive time periods.
diff_publicorderandsecurity (β_3)	Independent variable: The change in spending on public order and security between consecutive time periods.
diff_economicissues (β_4)	Independent variable: The change in spending on economic issues between consecutive time periods.
diff_healthservices (β_5)	Independent variable: The change in spending on health services between consecutive time periods

<i>diff_education</i> (β_6)	<i>Independent variable: The change in spending on education between consecutive time periods.</i>
<i>diff_socialprotection</i> (β_7)	<i>Independent variable: The change in spending on social protection between consecutive time periods.</i>

Table xx below provides the description of the variables employed in the analysis and the regression model 2 that is done with variables from the economic classification of the budget.

4.2 RESEARCH METHODOLOGY

This study employs an observational research design to investigate the impact of various public expenditure categories on the economic growth of the examined region. The research design was chosen to facilitate a comprehensive analysis of the relationships between government spending and Gross Domestic Product (GDP) changes. Observational studies are well-suited for this investigation as they allow the examination of naturally occurring phenomena in their real-world context.

Regression model 1:

$$\begin{aligned} \text{diff_GDP} = & \beta_0 + \beta_1 \times \text{diff_generalpublicservices} + \beta_2 \times \text{diff_defence} \\ & + \beta_3 \times \text{diff_publicorderandsecurity} + \beta_4 \times \text{diff_economicissues} \\ & + \beta_5 \times \text{diff_healthservices} + \beta_6 \times \text{diff_education} + \beta_7 \times \text{diff_socialprotection} + \epsilon \end{aligned}$$

Regression model 2:

$$\begin{aligned} D_GDP = & \beta_0 + \beta_1 \times D_Reserves + \beta_2 \times D_GOODS\text{and}CAPEXP \\ & + \beta_3 \times D_Trasfertolocalselfgovernmen + \beta_4 \times D_Subsidiesandtransferspubli \\ & + \beta_5 \times D_Socialbenefitssocialassistan + \epsilon \end{aligned}$$

In this study we employ linear regression. In model 1 we utilize linear regression with *diff_GDP* as the dependent variable and various government expenditure categories as independent variables. In model 2 we apply linear regression with *D_GDP* as the dependent variable and different economic indicators and government spending categories as independent variables. Moreover, we employ robust standard errors to account for potential heteroskedasticity in both models, as well as calculate Variance Inflation Factor (VIF) to assess multicollinearity among independent variables. In both models we perform correlation analysis among independent variables to identify potential multicollinearity and understand relationships between variables, and conduct Breusch–Pagan/Cook–Weisberg test for heteroskedasticity to assess the assumption of constant variance in the error terms.

Ordinary Least Squares (OLS) regression are applied in both models to estimate the coefficients of the regression equations. Coefficients, standard errors, t-values, p-values, and other statistics from the regression results are analyzed for both models to compare their explanatory power and identify

significant predictors. Fit indices such as R-squared, F-test, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC) are used to assess the goodness of fit and overall model performance. Significance tests are conducted on individual coefficients to determine the impact and statistical significance of each variable on the dependent variable.

By employing these techniques, the regression models aim to provide insights into the relationships between government expenditures, economic indicators, and Gross Domestic Product changes. These methods help ensure the reliability and validity of the regression results.

4.3 DATA AND REGRESSION ANALYSIS

4.3.1 FUNCTIONAL CLASSIFICATION – MODEL 1

The first thing that was done was to set time series, creating time variable: year, 1996 to 2021 and delta: 1 year. The second step was to check for stationarity using Dickey-Fuller test for unit root. The data showed that except for “defence” all the variables were non-stationary, so the variables were transformed through differencing. Table 6 below shows the results of the transformation and

Table 7 show the summary statistics of the variables employed in the model.

Table 6: Dickey-Fuller test for stationarity. Before and after differencing

Dickey-Fuller test for unit root Number of obs = 25

----- Interpolated Dickey-Fuller -----

Before transformation				After transformation			
Variable	Test Statistics	Mackinnon approximate p-value	Conclusion:	Variable	Test Statistics	Mackinnon approximate p-value	Conclusion:
generalpublicservices	-1.411	0.5769	non-stationary	diff_generalpublicservices	-8.510	0.0000	stationary
defence	-4.260	0.0005	stationary	diff_defence	-7.602	0.0000	stationary
Publicorderandsecurity	-0.909	0.7849	non-stationary	diff_publicorderandsecurity	-6.018	0.0000	stationary
economicissues	-0.196	0.9390	non-stationary	diff_economicissues	-8.658	0.0000	stationary
protectionoflivingenvironment	-0.584	0.8746	non-stationary	diff_protectionolenv	-5.067	0.0000	stationary
Dwellingsandcommunitydevelopment	-0.825	0.8115	non-stationary	diff_Dwellings	-9.841	0.0000	stationary
healthservices	1.254	0.9963	non-stationary	diff_healthservices	-4.470	0.0002	stationary
recreationcultureandreligion	-1.118	0.7080	non-stationary	diff_recreationcult	-6.596	0.0000	stationary

education	0.090	0.9654	non-stationary	diff_education	-3.987	0.0015	stationary
socialprotection	1.740	0.9982	non-stationary	diff_socialprotection	-3.549	0.0068	stationary
GDP	1.204	0.9960	non-stationary	diff_GDP	-5.311	0.0000	stationary

Table 7: Descriptive statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
year	26	2008.5	7.649	1996	2021
generalpublicservi~s	26	230051.3	101331.48	63822.367	455149.41
defence	26	111067.93	42285.913	65436.578	279107.91
publicorderandsecu~y	26	186226.2	69922.633	73020.945	301232.13
economicissues	26	481405.04	359680.04	57214.492	1302504.1
protectionofliving~t	26	10370.691	7402.318	644.035	25798.158
dwelling sandcommun~t	26	28119.301	24484.182	2494.456	91682.773
healthservices	26	166968.35	258095.63	4248.351	812465.44
recreationculturea~n	26	48794.088	24808.037	17963.176	94829.266
education	26	282107.35	127072.7	132095.83	497548.28
socialprotection	26	586186.85	463781.22	183712.66	1585110.3
GDP	26	4.182e+08	1.716e+08	1.856e+08	7.203e+08
diff generalpublic~s	25	15219.55	68762.769	-117529	113526.33
diff defence	25	3712.611	56102.452	-182781.66	198170.81
diff publicorderan~y	25	8666.146	20980.814	-51626.969	72179.508
diff economicissues	25	46626.548	168979.43	-276945.88	424852.88
diff protectionlenv	25	661.338	3590.256	-3538.719	11241.299
diff dwellings	25	2866.742	13288.875	-20078.332	52041.965
diff healthservices	25	32294.214	84822.814	-7194.648	411600
diff recreationcult	25	2146.581	9286.386	-23002.352	27863.84
diff education	25	13848.889	24121.71	-19230.219	69709.063
diff socialprotect~n	25	55936.086	94456.404	-24385.672	446672.94
diff GDP	25	21388877	16709441	-23265278	50897212
resid	25	.125	13784328	-43764768	22011226
yhat	25	4.275e+08	1.677e+08	2.046e+08	7.132e+08
growth rate	25	.056	.037	-.034	.131
lagged growth	24	.056	.038	-.034	.131
above threshold	26	.538	.508	0	1

In the *third* step, the variables were checked for multicollinearity and correlation. The Variance Inflation Factor (VIF) was used to show the extent of multicollinearity in the model. The results of the VIF are shown in the Table 8 below.

Table 8: Variance inflation factor

Variable	VIF	1/VIF
diff_publicord~y	10.39	0.096292
diff_defence	10.03	0.099655
diff_socialpr~n	5.59	0.178991
diff_healthser~s	5.44	0.183680
diff_protectio~v	2.68	0.372536
diff_dwells	2.32	0.431756
diff_educat~n	2.13	0.470214
diff_economi~s	1.89	0.528976
diff_gener~s	1.68	0.596157
diff_recrea~t	1.39	0.721603
Mean VIF	4.35	

The results indicate potential multicollinearity, especially those with values higher than 10. Thus, the correlation matrix was generated. Table 9 below shows the stata output for the correlation.

Table 9: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) diff_GDP	1.000										
(2) diff_generalpu~s	0.242	1.000									
	(0.243)										
(3) diff_defence	-0.010	-0.206	1.000								
	(0.963)	(0.324)									
(4) diff_publicord~y	-0.143	-0.218	0.865	1.000							
	(0.495)	(0.295)	(0.000)								
(5) diff_economi~s	-0.193	-0.396	0.007	0.100	1.000						
	(0.355)	(0.050)	(0.972)	(0.635)							
(6) diff_protectio~v	-0.326	-0.237	-0.084	0.218	0.480	1.000					
	(0.111)	(0.253)	(0.688)	(0.295)	(0.015)						
(7) diff_dwells	0.251	0.395	-0.023	0.026	-0.412	0.066	1.000				
	(0.226)	(0.051)	(0.914)	(0.902)	(0.041)	(0.753)					
(8) diff_healthser~s	0.215	-0.083	-0.013	0.034	-0.159	-0.200	0.066	1.000			
	(0.302)	(0.693)	(0.950)	(0.871)	(0.448)	(0.338)	(0.753)				
(9) diff_recrea~t	-0.264	0.090	-0.093	0.064	0.099	0.308	0.064	-0.135	1.000		
	(0.201)	(0.670)	(0.659)	(0.761)	(0.636)	(0.135)	(0.760)	(0.519)			
(10) diff_education	0.165	0.182	-0.093	0.157	-0.056	0.194	0.464	-0.116	-0.002	1.000	
	(0.429)	(0.384)	(0.659)	(0.452)	(0.790)	(0.352)	(0.020)	(0.582)	(0.992)		
(11) diff_socialpr~n	0.107	-0.135	-0.026	0.027	-0.188	-0.096	0.191	0.869	0.033	-0.105	1.000
	(0.610)	(0.519)	(0.904)	(0.898)	(0.369)	(0.648)	(0.360)	(0.000)	(0.876)	(0.618)	

The interpretation of the correlation matrix:

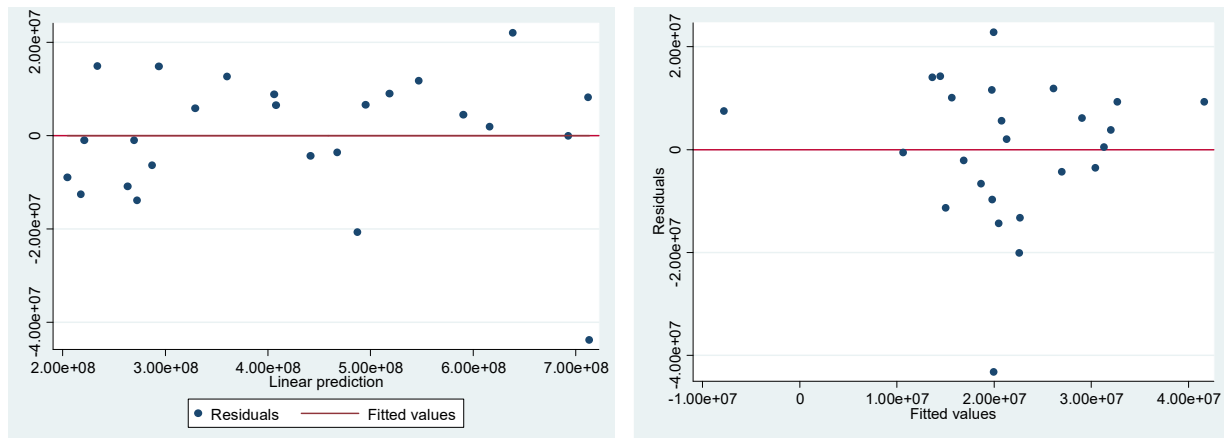
- **diff_GDP** and **diff_generalpublicservices** (0.2425) shows that there is a positive correlation between the change in GDP and the change in general public services, but it is not very strong.
- **diff_GDP** and **diff_publicorderandsecurity** (-0.1432) shows that there is a negative correlation between the change in GDP and the change in spending on public order and security, but again, it's not very strong.
- **diff_GDP** and **diff_economicissues** (-0.1930) shows that there is a negative correlation between the change in GDP and the change in spending on economic issues. This correlation is moderate.
- **diff_GDP** and **diff_protectionoflivingenvironment** (-0.3265) shows that there is a moderate negative correlation between the change in GDP and the change in spending on the protection of the living environment.
- **diff_GDP** and **diff_dwellings** (0.2509) shows that there is a positive correlation between the change in GDP and the change in spending on dwellings and community development.
- **diff_GDP** and **diff_healthservices** (0.2151) shows that there is a positive correlation between the change in GDP and the change in spending on health services.
- **diff_GDP** and **diff_recreationcultureandreligion** (-0.2645) shows that there is a moderate negative correlation between the change in GDP and the change in spending on recreation, culture, and religion.
- **diff_GDP** and **diff_education** (0.1655) shows that there is a positive correlation between the change in GDP and the change in spending on education, but it's not very strong.
- **diff_GDP** and **diff_socialprotection** (0.1071) shows that there is a positive correlation between the change in GDP and the change in spending on social protection, but it's weak.

Since the test for multicollinearity and correlation matrix indicate correlation, a decision to remove few variables from the model was made. A simpler model does not sacrifice explanatory power. It makes interpretation easier and reduces the risk of overfitting. As variables with potential high correlation were identified **diff_protectionoflivingenvironment** and **diff_economicissues**, thus the first was removed from the model. Another variable, **diff_healthservices**, has a VIF of 5.44, and is not very important in the context of the study thus was removed from the model. Likewise, regarding **diff_dwellings**, while not extremely high, the VIF for this variable is 2.32, and thus was removed from the model. Last, the variable **diff_recreationcultureandreligion** has a moderate negative correlation with **diff_GDP** and a VIF of 1.39 and was removed from the model.

In the fourth step, examining the residuals and a test for heteroscedasticity was conducted using the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity. The null hypothesis of this test assumes that

there is constant variance (homoskedasticity) of the residuals. The alternative hypothesis assumes non-constant variance (heteroskedasticity) of the residuals. The residuals are shown in the Figure 5 below.

Figure 5: Scattered plots of the residuals



- scatter plot of residuals (resid) against the linear predictions (yhat) along with a fitted regression line and a horizontal line at $y = 0$.
- plot of the standardized residuals against the fitted values (rvfplot)

The results of the Breusch-Pagan / Cook-Weisberg are the following:

Table 10: Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of diff_GDP
Chi2(1) = 0.20
Prob > chi2 = 0.6527

Here, the p-value (Prob > chi2) is 0.6527, which is greater than the typical significance level of 0.05. Therefore, the null hypothesis of constant variance is not rejected. This suggests that there is no evidence of heteroskedasticity in the residuals. In other words, the variance of the errors in the regression model is reasonably constant across different levels of the independent variable(s) used in the test. But since the residual plotting above indicates some presence of heteroskedasticity, using robust standard errors in the model was a way to account for this, since the variance is not constant across the observations. The robust option adjusts the standard errors for heteroskedasticity, providing more reliable standard errors and confidence intervals.

The last step, the regression was run, and the following table provides the results:

Table 11: Linear regression Model 1

diff_GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
diff_generalpublic ~s	40.037	59.463	0.67	.51	-85.419	165.493	
diff_defence	263.125	111.119	2.37	.03	28.685	497.565	**
diff_publicorderan ~y	-755.855	315.219	-2.40	.028	-1420.909	-90.802	**
diff_economicissu es	2.27	40.51	0.06	.956	-83.199	87.739	
diff_healthservices	103.429	45.665	2.26	.037	7.083	199.775	**
diff_education	280.192	112.273	2.50	.023	43.317	517.066	**
diff_socialprotect ~n	-41.054	39.505	-1.04	.313	-124.403	42.295	
Constant	21323052	4859603.5	4.39	0	11070185	31575919	***
Mean dependent var	2138877.360	SD dependent var			16709441.201		
R-squared	0.318	Number of obs			25		
F-test	3.474	Prob > F			0.017		
Akaike crit. (AIC)	907.936	Bayesian crit. (BIC)			917.687		

*** $p < .01$, ** $p < .05$, * $p < .1$

4.3.2 INTERPRETATION OF REGRESSION RESULTS – MODEL 1

The regression results provide insights into the relationship between changes in Gross Domestic Product (diff_GDP) and various independent variables from the functional classification of the budget of North Macedonia. Here's a summarized interpretation:

1. **Defence spending ("diff_defence"):** The coefficient (β_2) is 263.1251. A one-unit increase in defense spending is associated with an estimated increase of 263.12 units in GDP, holding other variables constant. The positive coefficient suggests that an increase in defense spending is linked to an increase in GDP.

2. **Public order and security (“diff_publicorderandsecurity”)**: The coefficient (β_3) is -755.8555 . A one-unit increase in spending on public order and security is associated with an estimated decrease of 755.86 units in GDP, holding other variables constant. The negative coefficient suggests that an increase in spending on public order and security is linked to a decrease in GDP.
3. **Health services spending (“diff_healthservices”)**: The coefficient (β_5) is 103.429 . A one-unit increase in spending on health services is associated with an estimated increase of 103.43 units in GDP, holding other variables constant. The positive coefficient suggests that an increase in spending on health services is linked to an increase in GDP.
4. **Spending on education (“diff_education”)**: The coefficient (β_6) is 280.1919 . A one-unit increase in spending on education is associated with an estimated increase of 280.19 units in GDP, holding other variables constant. The positive coefficient suggests that an increase in spending on education is linked to an increase in GDP.

The variables related to general public services, economic issues, and social protection do not show statistically significant associations with changes in GDP. The statistical significance of these results is assessed using p-values:

- Variables **diff_defence**, **diff_publicorderandsecurity**, **diff_healthservices**, and **diff_education** are statistically significant ($p < 0.05$).
- Variables **diff_generalpublicservices**, **diff_economicissues**, and **diff_socialprotection** are not statistically significant.

The overall model fit is supported by a significant F-statistic ($p = 0.0170$) and an R-squared value of 31.79%, indicating that the model explains a substantial portion of the variance in **diff_GDP**. Robust standard errors are employed to account for potential heteroskedasticity in the data, ensuring more reliable standard errors in the presence of model misspecification. In conclusion, the analysis suggests that changes in defense spending (**diff_defence**), public order and security (**diff_publicorderandsecurity**), health services (**diff_healthservices**), and education (**diff_education**) significantly influence changes in Gross Domestic Product.

4.3.3 ECONOMIC CLASSIFICATION – MODEL 2

The *first* thing that was done was to set time series, creating time variable: year, 1996 to 2021 and delta: 1 year. The *second* step was to check for stationarity using Dickey-Fuller test for unit root. The data showed that the variables were non-stationary, so the variables were transformed through differencing. Table 12 below shows the results of the transformation and Table 13 show the summary statistics of the variables employed in the model.

Table 12: Dickey-Fuller test for stationarity. Before and after differencing

Before transformation				After transformation			
Variable	Test Statistics	Mackinnon approximate p-value	Conclusion:	Variable	Test Statistics	Mackinnon approximate p-value	Conclusion:
Wages	-1.689	0.4368	non-stationary	D_Wages	-7.714	0.0000	stationary
Reserves	-2.347	0.1571	non-stationary	D_Reserves	-6.103	0.0000	stationary
Goodsandservices	-2.639	0.0852	non-stationary	D_GoodsandServices	-3.482	0.0000	stationary
Transfertolocalselfgovernmen	0.036	0.9614	non-stationary	D_Transfertolocalselfgovernmen	-8.658	0.0000	stationary
Repaymentofinterestloansdom	-0.645	0.8605	non-stationary	D_Repaymentofinterestloansdom	-10.128	0.0085	stationary
Subsidiesandtransferspublic	-1.238	0.6572	non-stationary	D_Subsidiesandtransferspublic	-5.214	0.0000	stationary
Socialbenefitssocialassistan	-1.673	0.4453	non-stationary	D_Socialbenefitssocialassistan	-5.796	0.0000	stationary
CAPITALEXPENDITURES	-2.117	0.2377	non-stationary	D_CAPITALEXPENDITURES	-13.739	0.0000	stationary
REPAYMENTLOANPRINCIPAL	-4.220	0.0006	non-stationary	D_REPAYMENTLOANPRINCIPAL	-8.080	0.0000	stationary
GDP	1.204	0.9960	non-stationary	diff_socialprotection	-3.549	0.0000	stationary

Table 13: Descriptive Statistics of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
D GDP	25	21388877	16709441	-23265278	50897212
D Wages	26	633914.96	2943456.1	-8299933	10858480
D Reserves	26	-49248.577	811109.88	-3300000	1396374
D GoodsandServices	26	1778963.8	13925380	-35873092	40534612
D Transfertolocals~n	26	812372	1522330.8	-2321221	6789293
D Repaymentofinter~m	26	211929.92	1259563.8	-3023042	2634805
D Subsidiesandtran~c	26	986218.58	5650859.2	-19003480	11959485
D Socialbenefitss~n	26	3152314.5	23291529	-70346264	79912248
D CAPITALEXPENDITU~S	26	844428.65	5540064.8	-14808864	13822759
D REPAYMENTLOANPRI~L	26	1534770	20635104	-60008796	61000000

Variables were checked for multicollinearity and correlation. The Variance Inflation Factor (VIF) was used to show the extent of multicollinearity in the model. The results of the VIF are shown in the Table 14 below.

Table 14: Variance inflation factor

	VIF	1/VIF
D REPAYMENTLOANPRI~L	8.708	.115
D Wages	7.232	.138
D CAPITALEXPENDITU~S	3.468	.288
D GoodsandServices	2.978	.336
D Repaymentofinter~m	2.225	.449
D Reserves	2.02	.495
D Socialbenefitsso~n	1.728	.579
D Subsidiesandtran~c	1.391	.719
D Transfertolocals~n	1.244	.804
Mean VIF	3.444	.

The overall mean VIF is 3.444, suggesting a moderate level of collinearity on average. It's crucial to assess the individual variables contributing to higher VIF values. In addition to VIF, correlation matrix between variables is provided in Table 15 below.

Table 15: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) D_GDP	1.000									
(2) D_Wages	0.044 (0.833)	1.000								
(3) D_Reserves	0.189 (0.365)	0.092 (0.653)	1.000							
(4) D_GoodsandServ~s	0.578 (0.002)	0.099 (0.631)	0.022 (0.915)	1.000						
(5) D_Transfertolo~m	0.051 (0.810)	-0.038 (0.853)	-0.045 (0.825)	-0.041 (0.842)	1.000					
(6) D_Repaymentofi~o	0.292 (0.157)	0.046 (0.825)	0.535 (0.005)	0.235 (0.248)	-0.126 (0.540)	1.000				
(7) D_Subsidiesand~i	-0.289 (0.161)	0.226 (0.267)	0.176 (0.391)	-0.314 (0.118)	0.011 (0.956)	0.086 (0.677)	1.000			
(8) D_Socialbenefi~t	0.637 (0.001)	0.142 (0.490)	0.095 (0.643)	0.585 (0.002)	-0.182 (0.373)	0.318 (0.114)	-0.222 (0.275)	1.000		
(9) D_CAPITALEXPEN~S	0.590 (0.002)	0.176 (0.390)	-0.021 (0.917)	0.752 (0.000)	0.020 (0.921)	0.346 (0.083)	-0.298 (0.139)	0.541 (0.004)	1.000	
(10) D_REPAYMENTLO~L	-0.056 (0.789)	0.828 (0.000)	0.334 (0.095)	-0.232 (0.254)	0.064 (0.756)	0.106 (0.606)	0.438 (0.025)	-0.075 (0.715)	-0.156 (0.446)	1.000

The interpretation of correlation matrix:

- D_GDP is positively correlated with D_GoodsandServices (0.578, $p=0.002$), D_Transfertolocalselfgovernmen (0.051, $p=0.810$), D_Repaymentofinterest (0.292, $p=0.157$), D_Socialbenefitssocialassistan (0.637, $p=0.001$), D_CAPITALEXPENDITURES (0.590, $p=0.002$), as well as negatively correlated with D_REPAYMENTLOANPRINCIPAL (-0.056, $p=0.789$).
- D_Wages has no significant correlation with other variables.
- D_Reserves is positively correlated with D_GoodsandServices (0.022, $p=0.915$), D_Transfertolocalselfgovernmen (-0.045, $p=0.825$), D_Repaymentofinterest (0.535, $p=0.005$), D_Subsidiesandtransferspublic (0.176, $p=0.391$), D_Socialbenefitssocialassistan (0.095, $p=0.643$), D_CAPITALEXPENDITURES (-0.021, $p=0.917$), D_REPAYMENTLOANPRINCIPAL (0.334, $p=0.095$), and negatively correlated with D_Transfertolocalselfgovernmen (-0.041, $p=0.842$).
- D_GoodsandServices is positively correlated with D_Reserves (0.022, $p=0.915$), D_Repaymentofinterest (0.535, $p=0.005$), D_Subsidiesandtransferspublic (-0.314, $p=0.118$), D_Socialbenefitssocialassistan (0.585, $p=0.002$), D_CAPITALEXPENDITURES (0.752, $p=0.000$), and negatively correlated with D_Transfertolocalselfgovernmen (-0.041, $p=0.842$).
- D_Transfertolocalselfgovernmen is negatively correlated with D_GDP (0.051, $p=0.810$), D_Reserves (-0.045, $p=0.825$), D_GoodsandServices (-0.041, $p=0.842$).
- D_Repaymentofinterest is positively correlated with D_GDP (0.292, $p=0.157$), D_Reserves (0.535, $p=0.005$), D_Subsidiesandtransferspublic (-0.314, $p=0.118$), D_Socialbenefitssocialassistan (0.585, $p=0.002$), D_CAPITALEXPENDITURES (0.752, $p=0.000$), D_REPAYMENTLOANPRINCIPAL (0.334, $p=0.095$).
- D_Subsidiesandtransferspublic is positively correlated with D_Reserves (0.176, $p=0.391$), D_Repaymentofinterest (-0.314, $p=0.118$), D_Socialbenefitssocialassistan (0.095, $p=0.643$).
- D_Socialbenefitssocialassistan is positively correlated with D_GDP (0.637, $p=0.001$), D_Reserves (0.095, $p=0.643$).
- D_CAPITALEXPENDITURES is positively correlated with D_GDP (0.590, $p=0.002$), D_Reserves (-0.021, $p=0.917$), D_GoodsandServices (0.752, $p=0.000$).
- D_REPAYMENTLOANPRINCIPAL is positively correlated with D_GDP (-0.056, $p=0.789$).

From Table 15, high correlation between Capital expenditures and Goods and Services as well as between Repayment of Loans and Reserves is observed. Two choices that can be undertaken in this case is to remove one of the variables or sum the highly correlated variables. Both approaches were tried for correlated variables and regression results were showing best performance for the model when differences in capital expenditures were summed with differences in goods and services. On the other hand, summing the differences of reserves and repayment of loan principal were producing another highly correlated variable with Wages. Thus, we decided to keep the sum of difference in capital expenditures and difference in goods and services, whereas we dropped the repayment of loan principle from the model.

As in model 1, the residuals were examined and Breusch-Pagan/Cook-Weisberg tests for heteroskedasticity was conducted. The residuals are shown in Figure 6 below.

Figure 6: Scattered plot of residuals against linear prediction and standardized residuals against fitted values

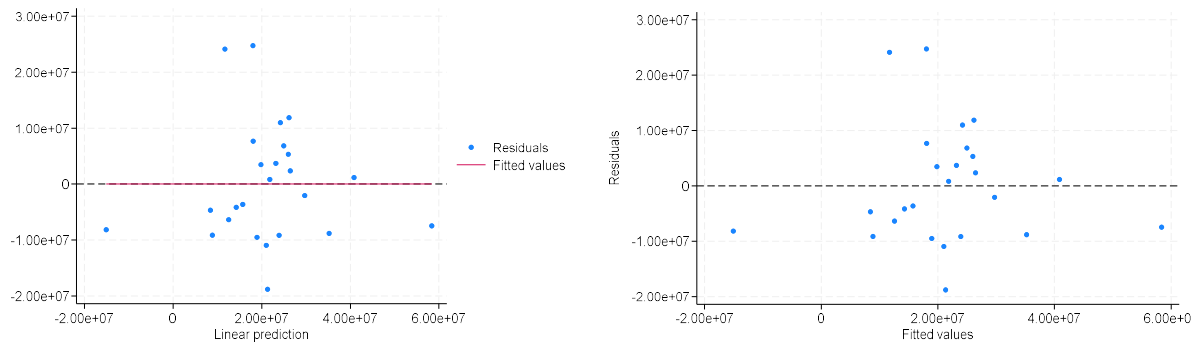


Table 16: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of D_GDP
Chi2(1) = 0.66
Prob > chi2 = 0.4178

The results of the Breusch-Pagan / Cook-Weisberg indicate that since the p-value (0.4178) is greater than the conventional significance level of 0.05, the null hypothesis is not rejected. This suggests that there is not enough evidence to conclude that the variances of the residuals are systematically related to the fitted values of D_GDP. Therefore, based on this test, there is no strong indication of heteroskedasticity in the regression model. Next the regression model was run, and the following table provides the results:

Table 17: Linear regression Model 2

D_GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
D_Reserves	3.539	2.221	1.59	.127	-1.108	8.187	
D_GOODSandC APEXP	.281	.118	2.39	.028	.035	.528	**
D_Transfertolocal s~n	1.615	1.168	1.38	.183	-.829	4.06	
D_Subsidiesandtra n~c	-.343	.3	-1.14	.267	-.971	.285	
D_Socialbenefitss o~n	.302	.086	3.49	.002	.121	.483	***
Constant	18778765	2498832.7	7.52	0	13548648	24008882	***
Mean dependent var		21388877.360	SD dependent var		16709441.201		
R-squared		0.543	Number of obs		25		
F-test		13.759	Prob > F		0.000		
Akaike crit. (AIC)		893.937	Bayesian crit. (BIC)		901.251		

*** $p < .01$, ** $p < .05$, * $p < .1$

4.3.4 INTERPRETATION OF REGRESSION RESULTS – MODEL 2

The regression results provide insights into the relationship between changes in Gross Domestic Product (D_GDP) and various independent variables from the economic classification of the budget of North Macedonia. This regression analysis aims to uncover the factors influencing changes in Gross Domestic Product (GDP). By examining various economic variables, we seek to understand their impact on the economic growth of the country. The model includes several independent variables, each representing distinct aspects of economic activity. Below is a summarized interpretation:

1. The sum of Goods and Services and Capital Expenditures (***D_GOODS and CAPEXP***) shows a statistically significant positive relationship with D_GDP. The coefficient (β_2) of 0.281 ($p = 0.028$) indicates that an increase in expenditures on goods and capital is associated with a positive change in GDP.
2. Social Benefits Spending (***D_Socialbenefits***) exhibits a statistically significant positive association with D_GDP. The coefficient (β_4) of 0.302 ($p = 0.002$) suggests that an increase in social benefits and assistance is linked to a positive change in GDP.

The variables related to reserves, transfers to local self-governments and subsidies and transfers do not have a significant impact on changes in GDP.

The overall model is statistically significant (F-test: 13.759, $p = 0.000$), and it explains 54.3% of the variance in changes in GDP. The AIC and BIC values are 893.937 and 901.251, respectively, providing measures of model fit and complexity. This regression analysis contributes valuable insights into the determinants of GDP changes in North Macedonia. While expenditures on goods and capital, as well as social benefits and assistance, emerge as significant factors, other variables such as reserves, and certain transfers may not be robust predictors. These findings enhance our understanding of the economic dynamics and have implications for policymakers aiming to foster sustainable economic growth.

To conclude, the data analysis and regression models 1 and 2, confirm the first hypothesis of the thesis:

H₁: Public Expenditures have an impact on the Economic Growth in RNM.

In Model 1, defense, public order and security, health services, and education spending significantly predict GDP changes. In Model 2, goods and capital expenditure, and social benefits and assistance significantly predict GDP changes.

4.4 OVERVIEW OF POLITICAL DEVELOPMENTS IN NORTH MACEDONIA

North Macedonia is the only country from the former Yugoslavia that became independent peacefully on 08 September 1991. However, ever since the country has been struggling with a myriad of problems, both internal and external. The first problem the country faced right after independence was from its neighbor Greece, which refused to recognize the country under its name due to a name dispute. Although the country became a UN member state under the name “the former Yugoslav Republic of Macedonia” relations remained tense and escalated in 1994, when Greece imposed a trade embargo on North Macedonia. This coincided with the UN embargo on the northern border of Yugoslavia. Together, this hit North Macedonia badly and according to some estimates the losses the country suffered were around USD 2 billion. The embargo lasted for 18 months, and the relations between the two countries were formalized in 1995. However, the situation remained tense.

Meanwhile, domestically tensions between the two biggest ethnic communities, e/Macedonians and ethnic Albanians were on the rise. The ethnic Albanians boycotted the referendum and did not vote for the Constitution of the country. The ethnic Albanians parliamentarians insisted that Albanians need to be recognized as a constituent nation equal to ethnic Macedonians. In the following years tensions were mounting and reached their high in 1994, when e/Albanians formed a private university in Tetovo. This led to police raids and incidents. The university continues to operate illegally while tensions move to a next level. Inter-ethnic violence flared in 1997, when special forces entered the city of Gostivar to forcibly remove the Albanian flag put by the mayor. Three people were killed and more than 200 people injured in this incident.

The Kosovo war in 1999 increased tensions even further. Ultimately, North Macedonia hosted around 300.000 refugees from Kosovo. On top of these the economic effects were felt also from the sanctions that the US and EU imposed on Yugoslavia. While there is no precise calculation of the costs for the economy of North Macedonia, some estimates say that it could have cost the economy more than USD 3 billion given that North Macedonia’s economy accounted for more than 60% of the pre-war trade with Yugoslavia (International Crisis Group (ICG), 1998).

The conflict in Kosovo also brought security risks in North Macedonia. In 2001 there was an armed conflict between the ethnic Albanians led by the National Liberation Army and the ethnic Macedonian security forces. The internal conflict that erupted early 2001 was a turning point for the relations between the two biggest communities, the ethnic Macedonians, and ethnic Albanians. On 13 August 2001, the international community brokered the Peace Accord – Ohrid Framework Agreement (OFA). The Agreement ended the 7-month conflict that left around 100 casualties on both camps, preventing it from escalating into a civil war and securing peace and stability not only in North Macedonia but the entire Balkans.

Following a series of long and difficult reform to implement the provisions of OFA, North Macedonia presented its candidacy for EU member State and thus begun the EU integration path. However, the name dispute with Greece re-emerged as a serious stumbling block for any further step in this agenda. And not only for the EU, but for NATO too. In 2008 North Macedonia did not get an invitation to join NATO and in 2009 the EU did not approve the recommendation of the Commission to start the accession talks because

Greece blocked this process. In this period, North Macedonia enters a limbo and serious backsliding in all reform areas is noted, especially in democratic governance and rule of law. This leads to an eruption of a new political crisis in 2015, when the opposition party revealed wiretapping materials showing mass misuse of the security service and an overall state capture. This crisis lasted for two years and erupted with storming of Parliament in April 2017 when the new parliamentary majority was electing the representatives.

After 2017, with a new Government, North Macedonia enters a period that promises a lot. In 2018, North Macedonia and Greece reached an agreement (so called Prespa Agreement) on the name dispute. The new name of the country is “North Macedonia”. This allows North Macedonia to become a NATO Member State which becomes official in 2020. However, progress in the EU path was stalled again, this time by neighboring Bulgaria due to a dispute over the language and identity. This dispute prevented North Macedonia to formally start accession negotiation and now is pending the enactment of constitutional changes to reach this.

4.5 IMPLICATIONS OF INTERNAL AND EXTERNAL CRISIS ON GROWTH AND RELATION TO PUBLIC EXPENDITURES

The myriad of crisis moments has certainly affected the economic prosperity and growth of North Macedonia throughout the years. This has been reflected both in the GDP growth rate and public expenditures. The only period when North Macedonia has had negative GDP growth rates are exactly on the years of political turbulence and other external or internal shocks. These are the period after independence till 1995, in 2001 due to the internal conflict, in 2009 following NATO’s decision not to invite North Macedonia combined with the global financial crisis, in 2012 when a parallel track for the EU path (High Level Accession Dialogue) is introduced given the stalemate with Greece and in 2020 because of the COVID-19 crisis.

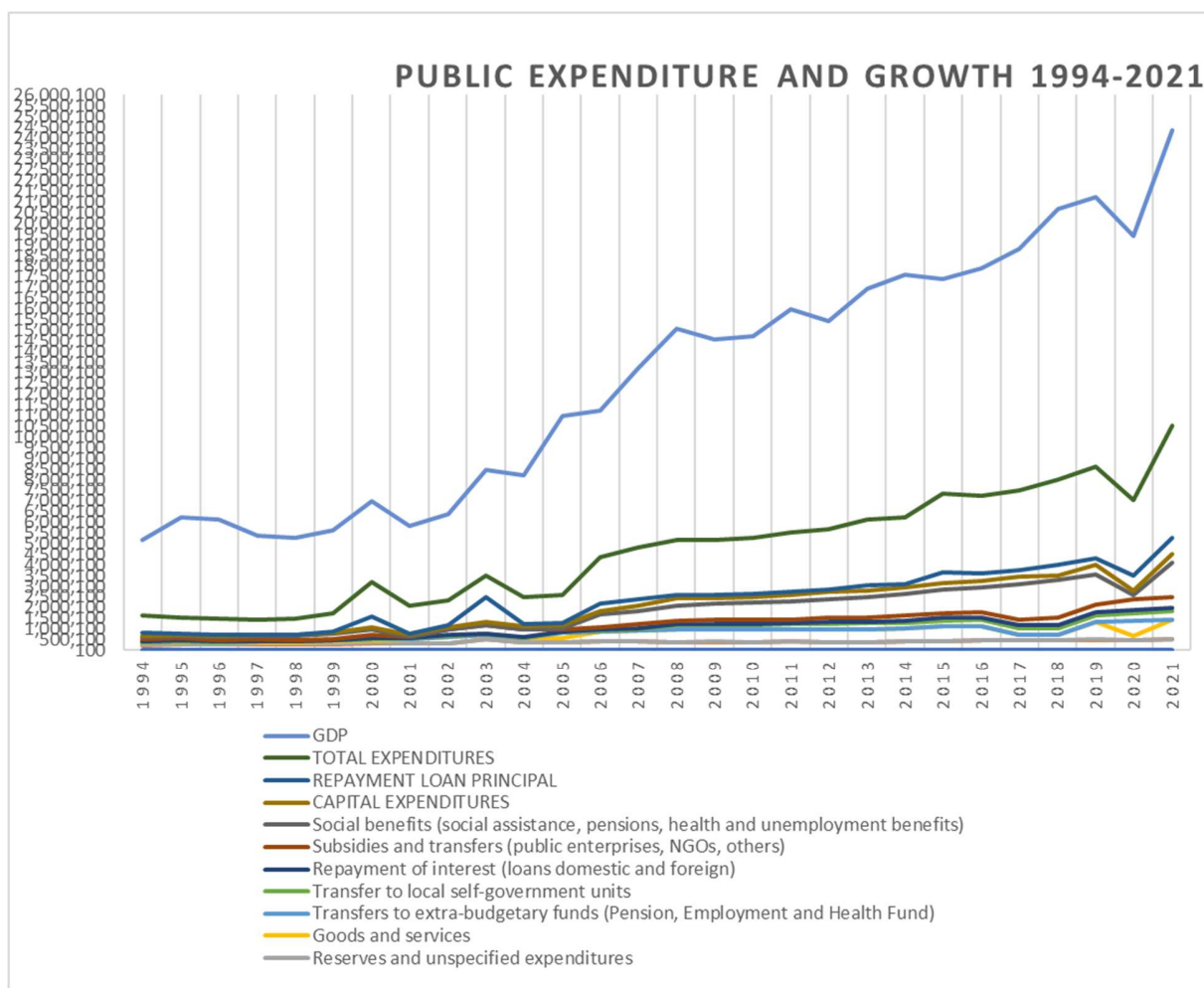


Figure 7: Different categories of public expenditures based on the economic classification vis-à-vis growth for the period 1994-2021

Source: Authors own work

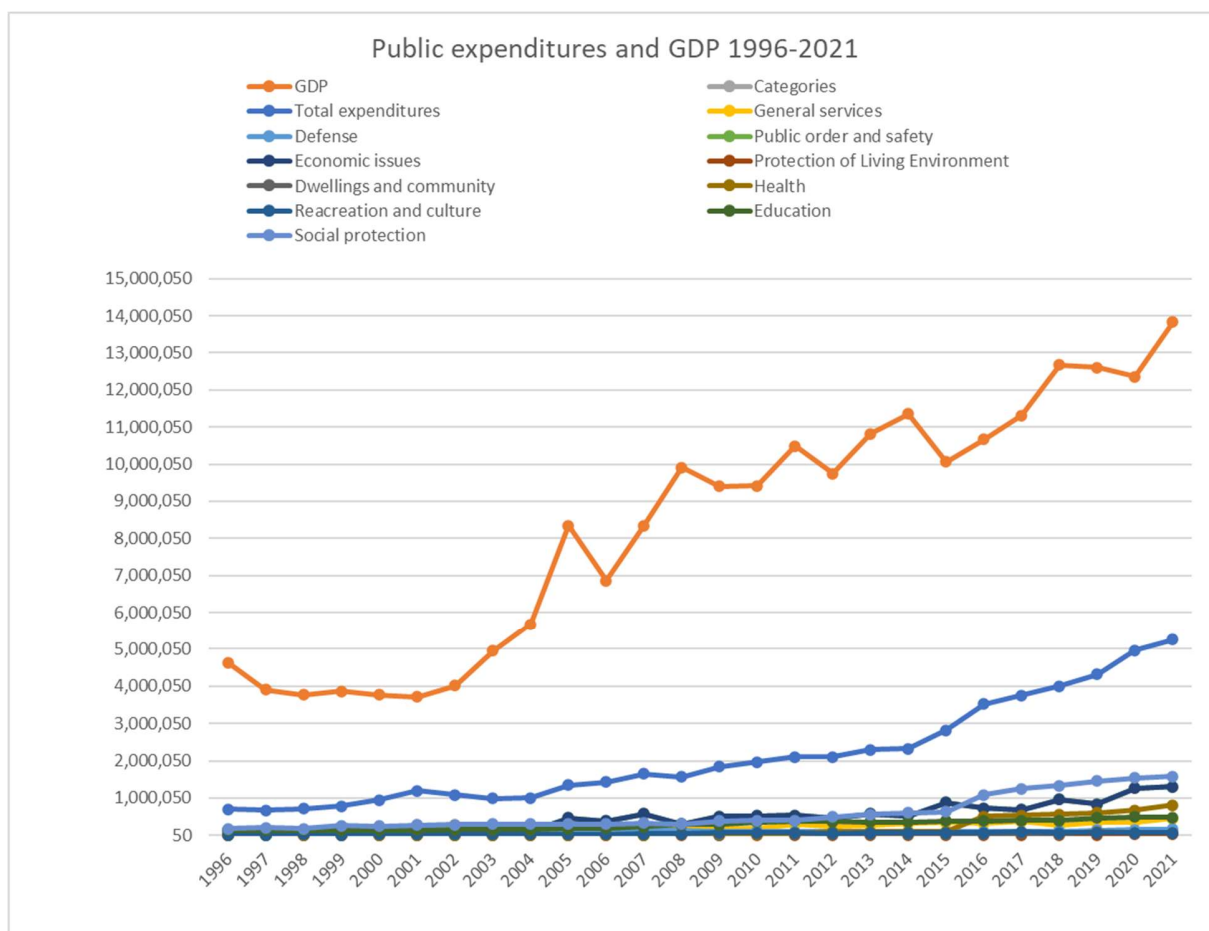


Figure 8: Different categories of public expenditures based on the functional classification vis-à-vis growth for the period 1996-2021

Source: Authors own work.

Since the independence in 1991, North Macedonia has registered negative growth rates all until 1995, when an agreement with Greece (the interim agreement) was reached. The trade embargoes imposed by Greece and the UN embargoes on former Yugoslavia have cost North Macedonia several years of negative growth. GDP growth begins to steadily pick up in the period between 1996 and 1998 at a level below 2% of GDP. In 1999 and 2000 the economy of North Macedonia grew quickly, reaching GDP growth rates above 4% of GDP. But this momentum was interrupted with the insurgency in 2001, which affected the growth rate and North Macedonia went years back to -3.1% GDP growth. On the expenditure side, the biggest change was in the expenditures for defense based on the functional classification and those on goods and services based on the economic classifications. Public spending on defense and goods and services in this period rose by 245 percentage points and 113 percentage points, respectively. This indicates that spending on defense and goods services did not contribute to growth and actually led to negative growth.

Following two years of recovery, the economy started picking up again in 2005, reaching its historic high in 2007 with 6.5% of GDP growth rate. This is the period when the major reforms were carried out in the country and the perspectives and prospects of the country were generally strong after the candidacy for EUY membership was confirmed. However, the blockade from Greece in 2008 to enter NATO and in the consequent year to start the accession talks represented a new moment which negatively affected growth. Combined with the global financial crisis, which in reality did not have a major effect in North Macedonia, growth dropped to -0.5% in 2009.

From the public spending perspective, 2009 is marked with a big increase in spending on economic issues (functional classification) by more than 250% as well as an increase of more than 60% in the areas of police, health, and dwellings. Same as in 2001, spending on police proves to be negatively correlated with growth but also on economic affairs which may be more in subsidies to enterprises than really growth-related issues.

From 2009 onwards the growth momentum that North Macedonia registered in the years preceding it never returned. While it started to pick up in 2010 and 2011 in 2012 it went down again to -0.5% mainly because the democratic governance deteriorated to a high extent and given the stalemate with Greece new instruments were introduced to keep the momentum in the EU track. Growth drops again following a protracted political crisis in 2015 and slowly goes back to 1.1% of GDP in 2017 when the new Government takes office. In the coming two years and with the signing of the agreement with Greece the outlook for North Macedonia improves and this is reflected in the growth rates. However, the blockade in 2020 to open accession talks and in addition to this the COVID-19 crisis brought North Macedonia's growth way down to -4.7% in 2020. From the public expenditure side, the only item in which spending increased around 70% in 2015 is on economic issues, indicating that the economic issues budget line while seemingly should contribute to growth in reality it does not.

In 2020 when the COVID-19 crisis hit the country, the spending noted a sudden change in priorities with a great amount of funds being transferred to the extra-budgetary funds (health, pensions) for the first time at the cost of significant reduction of funding for all other items. This year also marks for the first time an increase of more than 150% in capital expenditures, likely for the construction of the modular hospitals, but given the purpose of these capital expenditures it does not contribute to growth. From the functional classification the only part in which spending increases considerably with around 67% is on economic issues, again correlating this category with negative growth.

With this analysis we confirm the second hypothesis of the thesis:

H₂: Political instability of RNM affects Economic Growth

To conclude, North Macedonia has been in a protracted political crisis since the country's independence in 1991. The different internal and external shocks have had a detrimental effect on growth and public expenditures have not been able to be planned and managed in the direction of ensuring continuous and sustainable growth. It can be concluded that political stability is a prerequisite for good public finance management and proper growth.

5 CHAPTER 5: CONCLUSIONS

5.1 INTRODUCTION

This study has examined the complex relationship between public spending and GDP growth in North Macedonia, which is shaped by political as well as economic factors. This study examines governmental expenditures in functional and economic categories, offering insight into the implications and recommendations related to specific spending categories. Regression models have demonstrated a positive relationship between GDP growth and spending on social assistance, defense, health, and education as well as on purchases of goods and capital. However, a negative relationship exists between GDP growth and spending on public safety and security. Each of these public spending categories—from health and defense to social assistance and education—has a distinct effect on the economy's path. Beyond economic considerations, political constraints gain significance, making it difficult for politicians to strike a balance between issues of transparency, accountability, and prudent resource allocation. This study underlines the need for a comprehensive strategy that not only supports economic growth but also handles political difficulties, building resilience, inclusion, and sustainable development. It also offers implications and recommendations deriving from these relationships.

5.2 MAIN FINDINGS OF THE RESEARCH

5.2.1 FUNCTIONAL CLASSIFICATION

The breakdown of public expenditures in different categories based on the functional classification of the budget has proven to be a useful tool to determine the relation between each category and GDP growth. The regression model 1 shows that there is a positive correlation between spending on defense, health and education with GDP growth and that there is a negative correlation between spending on public safety and security and GDP growth. To get a better understanding of these correlations we need to analyze the data and see how the two variables interrelate also in the context of North Macedonia.

1. **Defense spending vs. GDP growth:** The regression model shows that there is a positive correlation between increased expenditures in defense and GDP growth. In general, spending on defense can have a positive impact on GDP through various channels. First, defense spending often involves purchase of material, equipment and services from various industries. This in turn creates demand for goods and services and stimulates economic activity. The increased demand also boosts production and contributes to economic growth. Also, defense spending in research and development often result in innovations that may have wider applications amongst the general public. The transfer of technology supports productivity gains in non-defense sectors and thus stimulates overall economic activity. Finally, defense expenditures create jobs in the defense industry but also other industries. The income earned goes to higher consumer spending, which is a significant component of GDP.

Military spending in North Macedonia includes spending involved in defense projects, operations and maintenance, procurement, military R&D, military aid (in the military expenditures of the donor country), retirement benefits for military personnel and social services for personnel, as well as personnel from the military and civil service. In the period 1996-2021, military expenditures has been steady with the exception of 2001 when these expenditures increased sharply due to the internal conflict in the country. After 2001, military expenditure drops to earlier years levels until 2020, when the country becomes a NATO member state. Since 2020, defense spending increased more in order to meet the NATO requirement of 2% of GDP allocation for defense. Since North Macedonia does not have high investment in research and development, the military spending has been mainly in purchase of goods and services that has had a positive effect on economic activity and thus a positive effect on GDP.

2. **Health spending vs. GDP growth:** The regression model also shows a positive correlation between spending on health issues and the increase of GDP. In general, spending on health services contributes to higher GDP growth through several mechanisms. First, a healthier population is more productive. Healthy people are more willing to join the labor market and increase productivity. Second, healthier people will take less sick leave and contribute to higher output and efficiency. Also, similar to defense, the health sector is a significant source of employment and increased spending leads to more jobs, which in turn contributes to more income that increases consumer spending, again an important component of GDP. Finally, healthier people are more likely to pursue education and skill development contributing to increased human capital in the country.

In the case of North Macedonia, health spending has increased continuously between 1996 and 2021. For the first time there is a sharp increase in 2005 of over 70% compared to the year before and in the next ten years it continues to grow, while in 2016 it increased sharply by over 400% compared to the year before. Given that in 2016 the country was in a political crisis and it was an election year, the increased spending for health care indicates that it has mainly affected the increase of consumer spending, which in turn has contributed to GDP growth. While in general the quality of health services is below the level of the EU, it has improved a lot over the years. The best indicator is the Human Development Index (HDI), which combines life-expectancy, education levels and GDP per capita. North Macedonia's HDI has increased from 0.642 in 1995 to 0.770 by 2021, indicating that the country has reached high levels of human development. Health spending is a component that contributes to higher HDI (Olan McEvoy, 2023). Also, jobs in the health sector have increased continuously and this has had a direct effect in increasing consumer spending and thus the GDP.

3. **Spending on education vs. GDP growth:** The regression model 1 shows a positive correlation between spending on education and GDP growth. The relationship between spending on education and GDP is complex in general. Most of the experts agree that investment in education can have positive effects on the long term. Several elements are crucial for this. First, education is often seen as the key driver of human capital development, which translates in enhanced skills and knowledge of the workforce that can contribute to higher productivity. Also, a well-educated

workforce is more productive while higher access to education contributes to greater social mobility by providing individuals with the knowledge needed to participate in the workforce and contribute to economic growth. Finally, investment in infrastructure, such as schools, books and technology can have a positive impact on growth in the long term.

In North Macedonia, spending on education has been steady in the period between 1996 and 2006. After this it began to increase gradually and by 2011, spending on education almost doubles compared to 1996 and continues to grow in the years after. Data on government education spending in North Macedonia are not available after 2002. However, it is clear that education spending in North Macedonia as percentage of GDP drops after 2002 from above 4% of GDP to around 3% of GDP. In 2020, public expenditure on education in North Macedonia was 3.3% of GDP, which is much lower than the OECD average of 4.2% of GDP and that in the EU of 4.6% of GDP. Although, North Macedonia has embarked on a reform of the education system, education outcomes remain low as demonstrated with the results of the PISA 2018 est. Also, the physical infrastructure of schools is not optimal and the capacities of the teachers require serious investment.

The fact that the regression model shows a positive correlation between education spending and growth may be a result of high spending on education as a percentage of GDP in the early years after country's independence and given that the effects can be seen in the long term, they are seen now. The other aspect is that a great portion of education spending goes on wages and contributions for the public servants employed in the education sector. This means steady income that results in higher consumer spending that contributes to higher growth. One of the greatest risks of low spending on education in the last ten years may reflect negatively in the future and it is an important element for policymakers to have in mind. One good indicator for this is the Human Capital Index (HCI), which was launched by the World Bank in 2018 to measure the amount of human capital a child born today can expect to attain by age 18. The Human Capital project on North Macedonia (2020) (World Bank, 2020) indicates that a child born in North Macedonia today will be 56 % as productive when she grows up as she could be if she enjoyed complete education and full health. This is lower than the average for Europe & Central Asia region and Upper middle-income countries. Between 2010 and 2020, the HCI value for North Macedonia increased from 0.54 to 0.56.

4. **Public order and security vs. GDP growth:** The regression model 1 shows a negative correlation between spending on public order and security and GDP growth. While there isn't a universal negative correlation between spending on public order and security and GDP growth, excessive spending on these areas, without effective governance and proper allocation of resources, can potentially have negative economic consequences. Some aspects to consider include the opportunity cost, meaning that higher spending on public order and security may come at the expense of other sectors such as education and healthcare, which have a positive correlation with GDP growth. Also, an important aspect to consider is the level of corruption in the country because this can lead to inadequate or even misallocation of funds, which instead of being used to fight crime and ensure public safety, are spent on wrongdoings. Finally, excessive policing and

security measures can negatively impact the business environment, hinder investment and create legal uncertainty that is detrimental for economic activity.

In North Macedonia, spending on public order and defense has been steady at around 2% of GDP till 2001, when there is a sharp increase due to the internal conflict. In the following years, spending on public order and security drops but is still higher than in the per-conflict period at around 3% of GDP until 2012 after which it drops to around 2.5% of GDP. While there are no major fluctuations in this category of spending, except for 2001, the negative correlation may be explained with the weak governance and the high level of corruption. In 2015, a major wiretapping scandal was revealed in which the police and security services had been wiretapping illegally more than 20.000 people and using the information to eliminate political rival and for the personal enrichment of the political elite. The country report of the European Commission notes that the country has state capture. Many high-profile corruption cases are initiated as a result following the formation of Special prosecution office. Also, North Macedonia record quite a high Corruption Perception Index (CPI) and is quite down on the list compared to the EU countries. All these factors have affected the business environment, investment, and civil liberties that in turn have had a negative effect on economic activity and growth. Spending on public order and security has certainly been misused in a good portion of years and the high level of corruption indicates that spending on public order and security could not contribute to growth.

It's important to note that the relationship between spending on public order and security and GDP growth in North Macedonia is highly contextual and depends on various factors, including the level of crime, the effectiveness of law enforcement, and the overall governance of a country. What North Macedonia's policymakers need to consider is that countries with efficient and accountable law enforcement systems that strike a balance between maintaining public order and fostering a favorable economic environment are more likely to experience positive economic outcomes. Targeting the fight against corruption and organized crime with budget allocation on public order and security can change this correlation into positive.

5.2.2 ECONOMIC CLASSIFICATION

The breakdown of public expenditures based on the economic classification in the regression model 2 also provides a statistically significant positive correlation between some expenditures and GDP growth. These are expenditures on goods and capital expenditures as well as on social benefits and assistance. When cross tabulated with the results from the functional classifications it shows that this type of expenditures under each of the functions (education, health, defense) that is positively correlated to GDP growth has the highest contribution to growth.

1. **Capital expenditures and expenditures on goods vs. GDP:** The positive correlation between capital expenditures, expenditures on goods, and GDP growth can be understood through various economic mechanisms. First, capital expenditures usually include spending on long-term productive assets, such as equipment and infrastructure. Their increase increases the productive capacity of the economy. Then, capital expenditures often include investment in technology and

innovation that can positively impact GDP by fostering a more dynamic economy and they contribute to job creation, which boost consumer income and spending and thus contributes to GDP growth. On the other hand, aggregate demand in the economy is directly influenced by government spending on goods and services. The government's procurement of products and services generates demand for output, which in turn drives up corporate sales and production. Higher expenditures on goods by consumers contribute positively to GDP growth by driving demand, production, and job creation. A healthy and growing consumer sector is often indicative of a robust and expanding economy.

In North Macedonia, capital expenditures have been low at 10% of the overall budget and there has been continuous capital underspending. The positive correlation with GDP growth at such low levels indicates that capital expenditures are a category that policymakers need to consider seriously boosting. This can affect the boosting effect on growth of the expenditures on sectors that already show a positive correlation with GDP growth as shown in regression model 1 (education, health, defense). Investment in physical infrastructure of schools, health facilities and defense inventory could have a multiplier effect on growth. The same goes for goods and services, which have increased sharply following the internal conflict in 2001 and then have continuously been growing. The expenditures on goods in North Macedonia have increased the aggregate demand but also created a multiplier effect by stimulating economic activity in the sector goods and services have been purchased. This sector in North Macedonia, which is relevant for both capital and goods & services is the construction sector, which is part of the industry that has a share higher than 20% of GDP.

2. **Social benefits vs. GDP growth:** Social assistance programs, which include social benefits, pensions, unemployment benefits and other financial aid to vulnerable groups have an important role in fostering economic developments. First, spending on social assistance increases the finances of individuals and households, which in turn increases the demand for goods and services and drives economic activity. Also, social assistance programs provide safety for the vulnerable groups during economic downturn. The resilience in consumer spending even during economic crises helps keep a stable level of GDP growth. Finally, an important aspect of social assistance programs is that it helps human capital development because the help results in improved health and education outcomes.

In North Macedonia, social assistance increases sharply between 2002 and 2004 (owed mainly to a major pension reform) and is on a continuous rise after 2018. Pensions make the largest portion, which with ageing population are expected to be on a continuous rise. According to the World Bank (World Bank, 2017), North Macedonia's total spending on social protection, is relatively high compared to Western Balkans peer countries, at about 14 percent of GDP; yet anti-poverty programs are among the lowest in the region. The positive correlation between social assistance spending and GDP growth in North Macedonia, is best explained with the variable for injecting resources into the hands of individuals facing financial challenges. This injection of funds stimulates consumer spending and drives economic activity. While spending on social assistance has been increasing since 2008, most of the rise was due to categorical rather than well-targeted

benefits according to the World Bank. Many reports of civil society organizations indicate that social benefits are mainly used by political elites to buy votes and include a much wider group than really vulnerable groups. In this manner, a portion of social assistance spending may eat up spending on sectors that could have a more multiplier effect on GDP growth.

5.2.3 POLITICAL DEVELOPMENTS

North Macedonia has been in protracted political crisis ever since its independence. Starting from the trade embargo from neighboring Greece in the 90s, to internal tensions erupting into a conflict in 2001, the stumbling blocks on the Euro-Atlantic path and the major wiretapping scandal in 2015, the country has been in a continuous political turmoil. Moreover, throughout the years there have been two major external shocks, the global financial crisis in 2008 and the COVID-19 pandemic in 2020 that have affected the country's finances. Finally, weak governance, high Corruption Perception Index (CPI) and crime levels have had a detrimental effect on the economic growth of North Macedonia. If these elements would be subtracted from the equation, the correlations between certain categories of expenditures and GDP growth could be likely seen in different light. However, the analysis of the regression models shows that political stability, level of governance, rule of law and fight against corruption and organized crime are significant variables when predicting economic growth. Therefore, in the case of North Macedonia it is impossible to base policy making on economic and financial indicators only. A multi-layered approach is needed in which strengthening democratic governance and rule of law through a detailed reform agenda go hand in hand with the economic policy and allocation of public expenditures.

5.3 LIMITATIONS OF THE STUDY

In this study we have addressed the several limitations. Further analysis, sensitivity testing, and consideration of other factors could enhance the robustness of the model. While the regression models identify associations between public expenditures and GDP growth, they do not establish causation. Other unobserved factors and dynamic interactions within the economy may influence both public spending and economic growth. Cautious interpretation is needed to avoid overestimating the direct causal impact of specific expenditures. The models might suffer from omitted variable bias, where important variables that are not included in the analysis could impact the estimated coefficients. For instance, factors like political stability, global economic conditions, or technological advancements may play a role in economic growth but are not considered in the current models. We have addressed the issue of political stability through qualitative analysis of the political developments and effects, but not the global economic conditions, or technological advancements that were out of the scope of this study, but might have a tremendous effects.

5.4 IMPLICATIONS AND RECOMMENDATIONS

The study confirms that public expenditures impact economic growth in North Macedonia. A balanced and strategic approach to public expenditures, considering both functional and economic classifications, is essential for fostering sustainable economic growth in North Macedonia. Policymakers must prioritize

investments in key sectors while addressing governance challenges to ensure the efficient use of public funds.

Following the functional classification of expenditures there are clear implications and recommendations that can be derived from the models.

1. **Defense spending:** Increased defense spending is positively correlated with GDP growth in North Macedonia. This indicates potential economic benefits through the stimulation of various sectors, job creation, and technology transfer. **Recommendation:** Policymakers should consider the economic benefits of defense spending, ensuring that it aligns with national security needs. Emphasis on research and development within the defense sector can contribute to broader economic innovations.
2. **Health spending:** Higher spending on health services is positively correlated with GDP growth, reflecting a healthier and more productive population. **Recommendation:** It is important to continue invest in health care by focusing especially in preventive medicine, as well as healthcare infrastructure (increased capital spending) and address challenges that can contribute to growth.
3. **Education spending:** The recent trend of decline in education spending as a percentage of GDP may have negative implication for human capital development given the positive correlation between education spending and growth that the regression model shows. **Recommendation:** Education spending should become a priority during policymaking. It should focus on infrastructure needs (capital expenditures), and strengthening teachers' capacities and curriculum development. Policymakers should consider the long-term effect of education spending.
4. **Public order and Security Spending:** The negative correlation between spending on public order and security and GDP growth indicates potential inefficiencies or misallocation of resources in this area. **Recommendation:** When it comes to funding for public order and security, policymakers must address the problems of corruption and poor administration. To optimize the positive effects of these investments on economic growth, efficient resource allocation, strong governance, and the fight against corruption are crucial.

Following the economic classification of expenditures there are clear implications and recommendations that can be derived from the models.

1. **Expenditures on good and capital:** These expenditures have the potential to contribute to higher economic growth. **Recommendation:** If policymakers want to promote sustainable economic growth, they should prioritize increasing spending on capital and goods. To maximize the impact on GDP and optimize resource allocation, a sophisticated strategy is required.
2. **Social assistance expenditures:** The positive correlation between social benefits spending and GDP growth underscores the pivotal role of social assistance programs in influencing economic development in North Macedonia. However, the reliance on categorical rather than well-targeted benefits pose challenges, raising concerns about the optimal allocation of resources and the potential for misuse. **Recommendation:** If policymakers want to promote sustainable economic growth, they should prioritize increasing spending on capital, products, and social benefits. To

maximize the impact on GDP and optimize resource allocation, a sophisticated strategy is required.

The study also confirms that political instability affects growth in North Macedonia. A just and open society is built on the rule of law, which guarantees the observance of agreements, the defense of property rights, and the establishment of frameworks that provide certainty for business. The potential benefits of government spending and initiatives could be weakened by doubts and disagreements in the absence of a strong legal basis. The political commitment to fight crime and corruption is equally essential. Corruption destroys public institutions' credibility and takes funds away from more useful purposes. Fighting corruption ensures the effective use of public resources and creates an atmosphere free from unwarranted intervention that promotes economic growth. Policymakers must understand that sustained and inclusive development goes beyond fiscal and monetary tools in the pursuit of economic growth. While spending is important, larger socio-political considerations have a significant impact on how expenditures are perceived. Political stability fosters long-term planning and investor confidence, which in turn fosters an atmosphere that is favorable to economic growth.

From this study few general implications and recommendations emerge:

- The expenditure on defense and public order and security has a significant positive impact on GDP growth. This suggests that investments in these areas might contribute to economic expansion.
- Goods and capital expenditure significantly impact GDP growth positively. This indicates that investments in these areas can be crucial for economic development.
- Social benefits, particularly social assistance, show a significant positive impact on GDP growth. This suggests that social welfare programs can contribute to overall economic prosperity.
- Policymakers may prioritize goods and capital expenditure for economic development.

The findings underscore the importance of thoughtful budget allocation. Prioritizing sectors with significant positive impacts on GDP growth can be a key strategy. Policymakers should adopt a multi-faceted approach considering both sector-specific investments and broader economic factors to maximize the impact on GDP growth. The models provide insights, but further research and data may refine the understanding of the relationships between public expenditures and economic growth. Regular monitoring and evaluation of public spending effectiveness can guide adjustments in resource allocation to achieve desired economic outcomes. These insights and implications provide a starting point for discussions and policy considerations. It's important to note that these interpretations are based on the specific variables and context of your regression models. They should be considered in conjunction with a deeper understanding of the economic and policy landscape of the region or country under study.

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