CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

David Mitrović

Economics and Management

Economics and Management

Thesis title

Evaluation of Economic Development in a Selected Region

Objectives of thesis

The objective of this thesis is to evaluate what level of development was reached in the region of the City of Loznica, located in Western Serbia. It will use the recent period in the past to estimate the development reached thus far and to showcase the potential of the development in the foreseeable future.

Methodology

The bachelor's thesis deals with the evaluation of economic development in a selected microregion. The thesis contains a theoretical and practical part. The theoretical part deals with the theoretical definition of regions, approaches and mechanisms applied in regional development. The practical part analyzes and evaluates economic development of a selected region based on the theoretical approaches presented in the theoretical part. The thesis uses mainly general theoretical methods (comparison, analysis, synthesis).

The proposed extent of the thesis

30 – 40 pages

Keywords

Development, economical factors, indicators, Serbia, comparisson, European Union, Loznica, region

Recommended information sources

BALDWIN, R E. – WYPLOSZ, C. *The economics of European integration.* London: McGraw-Hill Higher Education, 2012. ISBN 978-0-07-713172-2.

HUSTED, S L. – MELVIN, M. *International economics.* London: Addison-Wesley, 2010. ISBN 0321614909.

KRUGMAN, P R. – OBSTFELD, M. – MELITZ, M J. *International economics : theory and policy.* Boston ; Harlow: Pearson Education, 2015. ISBN 978-1-292-01955-0.

SAMUELSON, P A. – NORDHAUS, W D. *Economics.* Boston: McGraw-Hill Irwin, 2010. ISBN 9780073511290.

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Declaration

I declare that I have worked on my bachelor thesis titled " Evaluation of Economic Development in a Selected Region " by myself, and that I have used only the sources mentioned at the end of the thesis.

As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

Prague, 30. 11. 2022   _____

Evaluation of Economic Development in a Selected Region

Abstract

The bachelor thesis inspects and evaluates the economic development of a region belonging to the City of Loznica, located in Serbia, focusing on the recent period in order to forecast how the development will be developing in the future.

Theoretical part of the thesis is focused on examining scientific research of economics, development, growth, and theories used to better explain them. It is then continued with description of the convergence theory, as well as the steady-state equilibrium. Special attention was centered on the inflation phenomena, particularly on the inflation situation in Serbia. Practical part starts with the introduction of general economic parameters that consider Serbia and continues with the detailed examination of those parameters in Loznica, providing comments on the comparison between the two. Factors and indicators compared are namely: GDP growth, demographics, income, employment, trade, and investments. Conclusion provided at the end of the thesis brings the assessment of the development achieved, along with the suggestions on how to improve the growth in the future.

Keywords: Development, economic factors, indicators, Serbia, comparison, European Union, Loznica, region

Evaluation of Economic Development in a Selected Region

Abstract

Bakalářská práce zkoumá a hodnotí ekonomický rozvoj regionu patřícího k městu Loznica, ležícímu v Srbsku, se zaměřením na poslední období s cílem předpovědět, jak se bude vývoj vyvíjet do budoucna.

Teoretická část práce je zaměřena na zkoumání vědeckého výzkumu ekonomie, rozvoje, růstu a teorií sloužících k jejich lepšímu vysvětlení. Poté pokračuje popisem teorie konvergence a také ustálené rovnováhy. Speciální pozornost byla zaměřena na jevy inflace, zejména na inflační situaci v Srbsku. Praktická část začíná představením obecných ekonomických parametrů, které berou v úvahu Srbsko, a pokračuje podrobným zkoumáním těchto parametrů v Loznici s komentářem ke srovnání obou. Porovnávané faktory a ukazatele jsou zejména: růst HDP, demografie, příjem, zaměstnanost, obchod a investice. Závěr uvedený v zakončení práce přináší posouzení o dosaženém vývoji spolu s návrhy na zlepšení růstu do budoucna.

Klíčová slova: Vývoj, ekonomické faktory, ukazatele, Srbsko, srovnání, Evropská unie, Loznica, region

TABLE OF CONTENTS

1. INTRODUCTION

L.C. Robbins defined economy as a science whose field of studies is the behavior of human and the relationship it has between ends and scarce means with alternative uses (Robbins, 1932). He was undoubtably unaware of the impact his broad, yet very applicable definition would have on the generations of the future students, professors, theorists, and practicians of economy.

It was not long after that economy was seen as sort of either emperor or a medium (depending on the standpoint one takes) between the sciences, because it tends to rule or connect different spheres of life and scientific research, always aiming to, and succeeding in overcoming the current, contemporary obstacles by providing a broad, universal, and repetitively precise solutions. But the comprehensiveness of it has led the scientific research in the direction of specifying different, more precise aspects where the economical ideas are implemented. One such is the regional economics.

With that in mind we ought to search for an approach that would best define this specific branch of economics, the regional economics. As the name suggests itself, the main field of observation is a *region*, which must be defined first. Throughout the history, the term has had multiple characterizations, mainly geographical and cultural, but it is worth noticing that those characterizations are in essence just complimentary to the political definitions of regions in general. However, even though all these natures of regions have some relevance to economic perspective to regions, they do not have, in essence, the economic nature (Lösch, 1938). Therefore, in this work, our focus will primarily be on the region that is predefined in the political, governed perspective of the state, that is, how it is pre-constructed and specified by the administrative bodies and state representatives.

We will still have place to explain how a region is specified, and what its characteristics are. Most noticeably, it is a set of many, geographically close *places*, that are, in some way, similar to each other (Pierre-Philippe Combes, 2008). The level of similarities between the places certainly raises once they are fitted in the same region, this being a consequence of many factors (economic, demographic, natural etc.) that are simultaneously affecting the places based in the same region.

2. OBJECTIVES AND METHODOLOGY

The task of estimation of the economic development is a challenge on its own and has been a matter of numerous discussions in scientific circles, mainly focusing on what are the parameters that can and should be used when submitting such analysis. Speaking of development in general, it has been identified as one of the most specific problems within the economic science. Mainly because is the exact opposite to everything that static theory, which we are prone to learn about the most, makes us believe our society is, presents. Whilst that static position explains what happens with the equilibrium and how it is reached in ideal circumstances, the development, as the word itself suggests, is a dynamic phenomenon. It tracks how the economy moves, how it change its equilibrium, how it adjusts to the new conditions in the environment, and exactly these changes, together with a time frame, make the development so different to its static counterpart. (Schumpert, 1912)

There are various theories that favorize different approaches and mechanisms on how the development is best accomplished and, later on, measured. Four common theories of development economics include mercantilism, nationalism, the linear stages of growth model, and structural-change theory.

2.1 Development

Essentially, development of economy is the estimation of the parameters that influence the growth and improvement of the factors that are understood as the legit indicators of the quality of living. Such factors can be economical and social, where some of them can be included in both categories.

Economic growth on long-term bases shows the rise in capacity of a system to supply various goods to its population, while this potential for growth is based in the institutions and the technological competence of the system, along with the ideological compatibility with the ever-growing and everchanging needs of the population (Kuznets, 1973).

Based on what's mentioned above, we can determine on how to estimate the growth, that is which of the parameters can and should be considered into estimation, as the ones most useful

and most indicative ones. According to Barro & Sala-i-Martin the factors proven to be the most impactful on the economic growth are the human and physical capital, technology, and natural resources. Between them, human capital should be considered as the one with the most influence, due to the linear relation between the skilled human workforce and the output produced by the system.

A positive correlation between growth of population in general and the economic growth has been proven historically, however data shows us that the GDP index of a region cannot follow the population growth index (Peterson, 2017). On top of that, research from the United Nations' Department of Economic and Social Affairs brings up a quite very bold statement that the "population growth acts for both cause and symptom of rather slow development" (UN, 2022). Both of these statements are to be considered more in the cases of underdeveloped countries and global regions, as we notice that the economic growth in richer regions of Western Europe and Northern America as well as the ones of those thought the be in the developing phase, mainly Asia and Eastern Europe, has had a greater index value than the value of population growth index in the previous century (Maddison, 2016).

The claim about growing population as a direct consequence and/or a cause for a slower development are comprehensively extended thanks to the other factors that are impactful, as Bloom points out that the inverse relationship tends to fade away once the other factors are counted in, namely physical capital (David E. Bloom, 2003). Such acts as a catapult for economic growth, fundamentally creating a intercorrelation between human and physical capital, thus creating new set of skill and needs, bringing sustainability to the growth equation (Torre, 2008). Such symbiosis is accomplished by extensive inclusion of modern technologies, which are rightfully labeled as the "key driver of economic growth", (Domínguez, 2019).

In light of this, we turn our attention to the physical factors that are playing a capital role in the development of a region. Those are tightly related to the natural resources registered in the area, or to be more precise, one is based on another. Favorable natural resources would include any geographical characteristic of the land that enables easier communication and transport (flat lands, diverse and easily accessible coastline, floatable rivers etc.), as their costs are often a

leading factor for investors to turn their head away from a region. As mentioned in IMF paper by Michael Mussa (Woodruff, 2019), in order to achieve faster integration of capital markets of a region, costs of communication and transport are to be shrunk. In research, condemned by Mohmand, Wang & Saeed in a developing country, they showcase that the impact might not necessary present itself on a short-term bases, especially when it comes to national level (Mohand, 2017). At the same time, looking at the long-term perspective of the same impact, we can see a mutual correlation between development and transport infrastructure, as the study showed when observing the data from the proportionally smaller level, provinces, and regions.

The other physical factor that makes a strong impact on the development of a region is the fertility of soil in region. As Dr. Nair suggests, together with nutrient management, soil fertility directly impacts the yield and the quality of crop (Nair, 2018). Taken from there, the region with the favorable structure of the soil is more prone to higher production, and historically we were witnessing how agriculture played a weighty role in the development of the regions and countries that are considered to be developed today. Although in modern times we see that the role of engine for the economies with higher level of development has shifted from agriculture and other primary industries, at the same time we must take into notice that the stated development was boosted in many aspects exactly on the primary industries, that paved the way to industrial and every other upgrade in their economies (Wyatt, 2009).

On the graph below, provided in research "Global Business Services: Increasing Specialization and Integration of the World Economy as Drivers of Economic Growth", we can see how the role of agriculture diminishes not only throughout development levels but time as well, and with certainty we can say that the economies that aspire to progress at higher pace should work on finding a way to limit their dependence on agriculture sector as fast as possible.

Figure 1: Distribution of Sectors of Economy
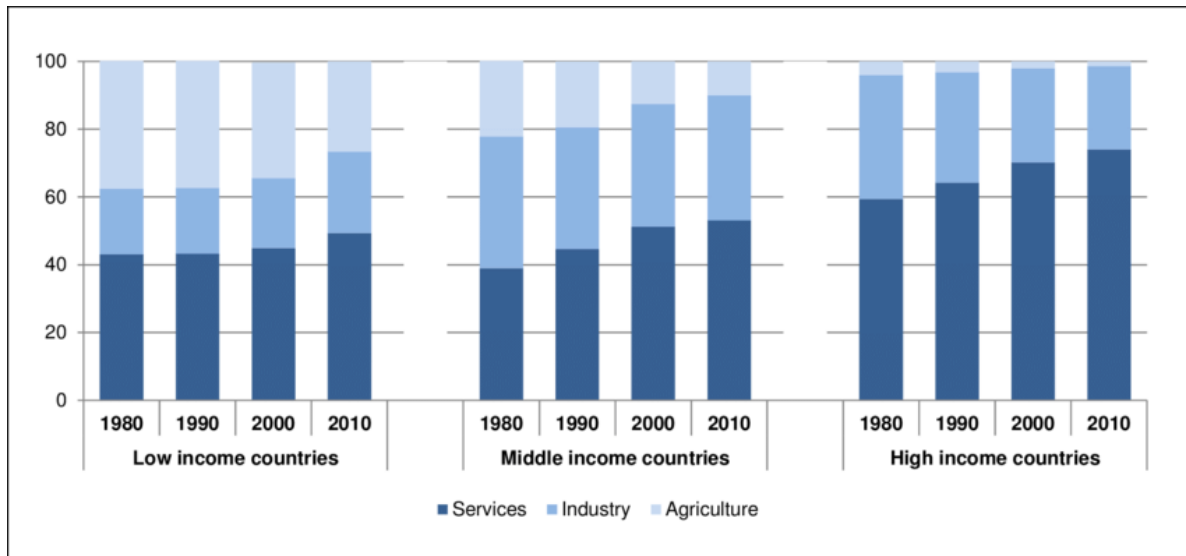
(Wirtz, 2015)

Other than those, investments are especially important when portraying the picture of growth of an economy in a developing country. It is an indicator that shows not just the direct investment in the system (and the existing growth) but it tends to show the trust that is being built and established in such system. It is an indicator of a positive business climate, a manifest to the future growth, which should attract future investments and consequently result in prolonged, sustainable growth (Mitrovic, 2021).

Investments might come from different areas, namely domestic and foreign, and they can also be classified by the size of the investor, should it be a Legal entity or a Natural person, simply *entrepreneur.* The role of entrepreneurship went through a big shift in last decades, as the benefits are being noticed by the countries and local authorities, particularly in those regions where a sudden drop in such endeavors was happening. The benefits of small and medium enterprises are often emphasized in the light of job creations connected to the growth in the per capita income. As much as this business come across as individual and adventuristic, their success is often rooted in good regulations set up by the governmental norms, along with the free market and available resources (Toma, 2013).

With all this in mind we must not forget that the growth in economical perspective must not be only positive. In other words, the economy could be moving backwards. In such case we are witnessing the negative growth, a phenomenon that we have had the opportunity to observe quite recently, and far too often.

2.2 Convergence

One of the techniques that has been widely received and used in attempt to understand and more closely describe the process of growth is the *convergence theory*, an economical method used for measuring the speed and completeness of the process of catching-up that the developing societies accomplish. The theory is both greatly celebrated and criticized, but it essentially brings an insight on how to measure the growth, or colloquially called "catching-up" (Crossman, 2019).

Furthermore, the theory suggests that the economies with lower level of development should have higher results when measuring the growth indicators, as their catching up should result in faster development, since it is based on the lower levels than the already developed ones. This proved to be both right and wrong in multiple examples, but worth mentioning is that if the growth stagnates and the "catch-up" effect remains unaccomplished, such country and system slide into the opposite side of the process, thus they diverge.

Convergence theory has multiple methods on how to estimate the growth, depending on the approach, most notably used ones are:

- real convergence (where the GDP per capita is measured)
- nominal convergence (interesting example of currency convergence, especially significant for Serbia) (Czech Statistical Office, 2013)
- structural convergence (referring to the types of sectors where the capital is produced mainly) (Wacziarg, 2012)

On the same note, we can observe different theoretical approaches that were developed throughout the research and development of the theory. Most notably the Neoclassical Growth Model, that used Ramsey's Growth Model from 1928 as a steppingstone. There, the conditional convergence was explained in more details, speaking of the slowdown of the growth of those

richer countries that the once with poorer economy, should the conditions, in which all of there are, be settled.

Of course, such theoretical assumption is more often than not far from the actual observations, but Barro and Sala-i-Martin provide us with an equation:

Equation 1 Convergence Growth Theory:

$$Y = F(K; LA) = K^{\alpha}(LA)^{1-\alpha},$$

where A, the technology factor has a constant growth rate. K stands for capital, while L is labour. Alpha's symbol represents share of capital, and its value is between 0 and 1 (Quiroga, 2007).

Should the growth rate of Y, K and C (consumption) reach zero, the steady-state equilibrium is accomplished. We note that this is where the new variable of consumption is mentioned for the first time. This is because we are introduced to the *steady-state equilibrium*. Per definition mentioned, the term is used to describe the position where different figures increase at constant rates. Consumption is one of the variable figures.

The basis of this theory is the hypothesis that countries tend to move towards the steady-state, and while being on that trajectory, they are considered to be in the convergence process. If their growth is showing the move-away from the steady-state, they are considered to be in the divergence phase.

An important element of this approach is that it lets each subject be judged and evaluated according to its own equilibrium state, leaving out room for faster growth to those that are distant to greater extent from their own steady-state. Additionally, it does not leave out hope for those underdeveloped, poorer subjects, that they will never catch up with the richer ones, as the Endogenous growth theory does.

Speaking of Endogenous growth theory, this theory speaks of regional divergence as, at least, the plausible outcome, especially if the markets of the regions are left to themselves (Martin, 1996) . The ground basis for such claims was derived from the conclusion that Barro made in 1991, after

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observing multiple studies and analysis conducted in early 1980's, in which he states that the tendency of poorer countries and regions to have faster growth than the richer ones is not consistent when observed on evidence that include samples from objects that don't share similar, richer background, in short, he points out that: "per capita growth rates have little correlation with the starting level of per capita product". The formula used for this theory: Y = AK, ignores the labour outcome, but provides us with a new term – *convergence club*, that tends to group such equilibriums where multiple countries would have same steady-state. The division of the countries is based on their similar values of per capita income and the initial conditions and parameters, assuming that they will converge to one another in their structural characteristics (Apergis, 2011).

Figure 2: Convergence Clubs
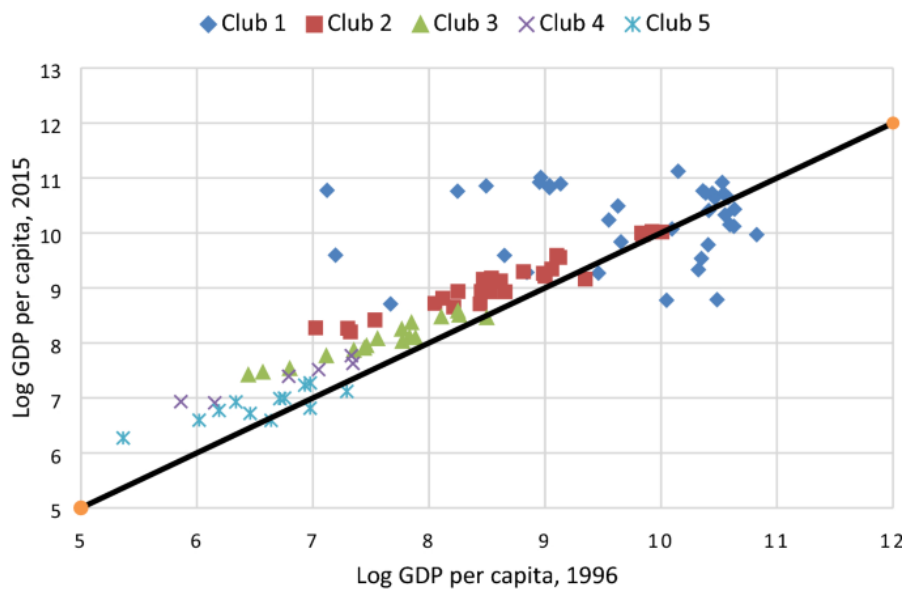
(Basel, 2021)

In a static environment we would be able to observe an absolute convergence, allowing the countries with lower standards to align with the ones that have higher standard of living. This is possible the circumstances and the conditions are steady. Knowing that in realistic approach such environment is nearly impossible to reach, more adequate interpretations would be the conditional convergence, in which case not all factors converge. Lastly, worth mentioning are the

convergence clubs, where we examine the level of convergence of certain country compared to another one, essentially grouping them for easier comparison (Attila Gáspár, 2012).

Notably, in Quah's European Economic Review, it is shown how the comparison to the historical references of the region does not necessarily bring up the relevant conclusion of the convergence theory, as the development on one economy, compared to the development of another one, is more significant than the comparison with its own, previous value. This is partially based on the fact that development is occurring in all spheres, whether progressive or regressive. However, Quah does not leave a lot of doubt about the catching up effect between members of different convergence clubs, decisively stating that "the rich become richer, and the poor poorer" (T.Quah, 1995).

For the purposes of this paper, we will observe the development of a region in more classical, Growth method, with reference to its relative state and its average, leaving out the comparison with the regions that might be considered as part of another *convergence club*.

2.3 Steady-State Equilibrium

It was mentioned previously that the economies tend to move to the steady-state equilibrium, or else they are placed in the growth or recession phase of their development. In order to better understand why this equilibrium is an objective for the economies, and what it brings to the elements and factors of such economies, we must describe such state and its features.

Definition of steady-state provided by the Center for the Advancement of the Steady State Economy (CASSE) speaks of it as a constant that embodies stability in population and capital stock, while maintaining consistent level of throughput (CASSE, 2021). Such stability in those outputs does not necessarily mean the values that are left unchanged over a period of time, but rather minor fluctuations observed in the short-run, with predictable performance over longer periods of time.

As per that, keywords connected to this equilibrium are all correlated to the consistency and stability, marking them as the pinnacles of the optimum state. Although there are some prominent examples that treat stability as "incompatible with development" (Pazos, 1953), most notable

examples of such claims are tightly connected to the studies of political instability and the impacts it has on the overall situation on national economies. One such theory by Mancur Olson speaks of instabilities caused by war, revolution and similar disturbing events as inevitably damaging influences on development in short-term perspective but suggests that such disturbance may have a positive impact in the midterm, and that the stability itself might even have negative impact on the growth, as it slows it down, on the long run (Goldsmith, 1987).

2.4 Regional Economy and Stability

Theorists and researchers are rather concordant when speaking of regional economic development and stability, as those two terms go hand in hand with each other. In research condemned by Sherwood-Call, she showcased that the regional economies "don't face a trade-off between stability and growth (Sherwood-Call, 1990). We note that such statements proved themselves right in different global regions, throughout longer run of time. Important and rather relevant examples for this paper is the study that focuses on the CEE (Central and Eastern European) counties, where their development was observed though the spectrum of political and economic stability experienced from start to finish of their European Union integrations, the Social and Economic Development in Central and Eastern Europe: Stability and Change after 1990 by Grzegorz Gorzelak.

Stable economy is most often described by two main parameters, high level of employment and stable price level (Bach, 1950). Whilst the employment level can be directly attributed to the region and the effort that the local authorities, together with those on national level, make in order to keep the number of employed people high, or reduce the number of unemployed, the stable price level is something that might not be so easy for a region to determine on its own, as that is where the monetary policy of a state plays a crucial role. For the European countries the most important parameter in that sense is the European Central Bank, whose Governing council proclaimed the desired level of price level increase, *inflation,* at the 2% over mid-term (ECB, 2022).

Before we dive deep into the analysis of a specific region, we should first inspect how the global economics was developing in the recent past, because the events have been rather dynamic and

their relevance to the current state is enormous. For the purposes of comparison and more detailed oversight, the data observed will contain information relevant for European Union as the political goal of Serbia and the pivotal reference for what developed region represents, Czech Republic as a country with similar size and independent currency, more importantly as a country whose economic development has been on great trajectory since joining the EU, as well as the country that this research was conducted in, and Serbia, being the country where the subject region of Loznica is located.

2.5 Inflation

For starters, we shall continue with a more detailed examination of the inflation rates that the countries of Euro-zone were hit by, as well as Serbia. It is important to mention that the inflation rate is not something that the regional economy has influence on, but it is greatly influenced by it.

Inflation represents "the rate of increase in prices over a given period of time", (Oner, 2010).

Throughout the previous decades there has been a strong belief that the inflation rates have a negative correlation with the growth rates, and that was confirmed in the research conducted by Andrés and Hernando. Initial instinct was proven to be absolutely correct, as the inflation never has not only positive, but not even neutral effect on how the growth develops. This means that all aspects of the economic system are negatively affected by inflation, and the higher the rates of it, the worse are the impacts (Andres&Hernando, 1997).

The rate of inflation is always taken in consideration when estimating the growth, as the rate of growth (expressed through the GDP increase), has to be adjusted for the inflation rate. In order to acquire the true interpretation of inflation rate, the most common measurement used is the HICP - Harmonized Index of Consumer Prices. Through this index we "measure the changes over time in the prices of consumer goods and services acquired by households" (Eurostat, 2021).

On the graph below we can see how the inflation rates have been developing in the past years, since the end of the recession period. There are different approaches when attempting to explain why countries were affected so diversly by the inflation in the recent periods. In the graph shown particularly the important factor is the currency used, where the 2 individual countries have their

own currency and hence individual monetary politics. However, speaking of EU in general (whose part is Czech Republic, and Serbia is the candidate), we can't but notice that the rates were rather low, rarely going over the aforementioned, and suggested 2 percent. This trend is even more obvious when looking at the rates connected to Euro zone only, which has on average smaller HICP for 0,1 percent than the EU whole (Eurostat, 2022). This might be due to the fact the Central European Bank has changed the monetary politics after the 2008 recession, easing on the prediction of the inflation on short term, and rather focusing on the long-term ones (Mazumder, 2018).

Figure 3: Inflation Rates
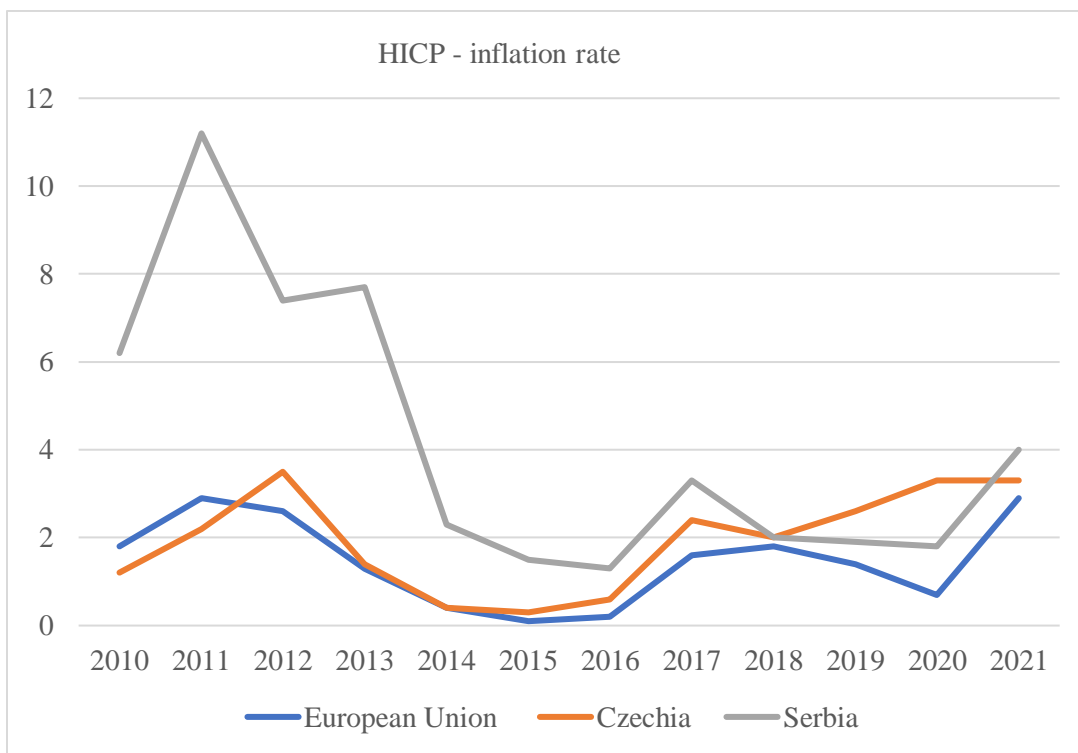
(Eurostat, 2022)

2.5.1 Inflation in Serbia

On the other hand, the values for Serbia, country where Loznica is located, are not as favorable. The table below shows us how the rate was above the recommended index, more often than not. For easier understanding, values above 2.0 are highligted.

Table 1Inflation Rate Serbia

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
6.2	11.2	7.4	7.7	2.3	1.5	1.3	3.3	2.0	1.9	1.8	4.0

(Eurostat, 2022)

The values of HICP will be further used when presenting the calculation of certain growth rates, as those will be adjusted by inflation.

Other parameters of national economy that have impact on development of regional economy are applicable for the region as well, and as such they will be analyzed in the practical part of the paper. However, for better understanding of the global economic situation, we will further inspect them and explain the values that indicate a region developing good.

3. PRACTICAL PART

3.1 Serbia – General Overview

Serbia is a country located in Europe, with rather specific position in the middle of the Balkan peninsula. It is a landlocked country. Its current state Serbia established in 2006 after many years of wondering in different political and ideological solutions. With the contemporary dispute over the 15% of its territory, the political situation is still far from ideal, which is manifested through the instable position the country has in both interior and exterior politics. Serbia is a member state of the United Nations since 2000 and has been on the course to become the member of the European Union, being in the candidate for membership status since 2012.

As previously mentioned, Serbia has had a fair share of turbulent history, and much of it has reflected the state of its economy. With the vast majority of population were peasants and illiterate, they entered the second technological revolution as the part of the Ex-Yugoslavia, in essence a socialist state with a stronghold in leftist, anti-capitalist ideas. This meant that private property and business existed in a marginal presence up until the beginning of 1990s. Ever since then, the state of country's economy has been described as *transition economy* – moving from planned, centralist economy to a global, free market, free flow one (Gurkov, 2015)). The process has been long and exhausting, susceptible to manipulations, frauds and misusage of national capital contained in functionable companies and their assets, but also in the assets of the rather obsolete companies that existed in the socialist times.

In the meantime, country was stuck with the hyperinflation, records showing it to be one of the greatest recorded in history (Johnston, 2022). The rates went up to 313.000.000% on monthly bases, followed by the ongoing armed conflict inside of its borders and on them.

This has resulted in significant migrations of population, leading to unfortunate change in demographic structure of the country, where the number of permanent citizens dropped from around 10 million in 1991 (RZS, 2022) to estimated 6,8 million in 2022 (RTV, 2022). On top of that, population is regarded as one of the oldest in Europe, 8th, (Statista, 2021)) and World, 11th

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(PRB, 2021), with latest average age being at 43.5. Reasons for such sudden shift are stated in the previous paragraph, and consequences were great, from the necessary changes needed in the public sector (education, health and pension system, reforms of state-owned companies) to the strategic reforms that would lead to a healthier and more certain economic situation, hence new foreign direct investments (Jakovljevic, 2020).

Serbia's current GDP per capita was $9214 in 2021 putting it on unfavorable 38th place in the whole Europe, miles away from the average in EU. For comparison, Czech Republic was shown in the graph below, in attempt to illustrate the difference between two countries:

Figure 4: GDP comparison
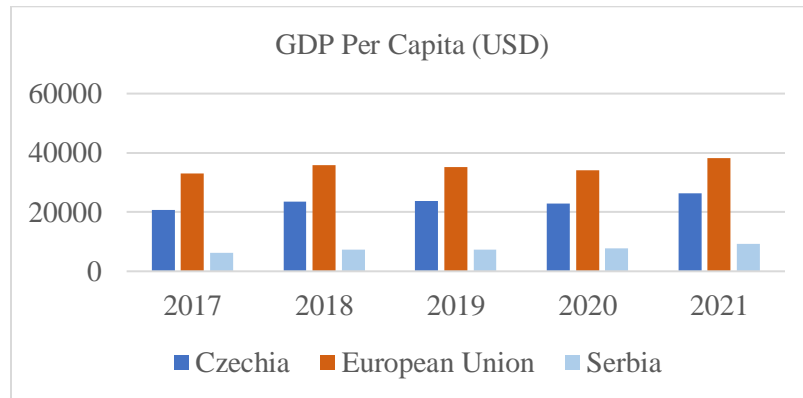
(The World Bank, 2021)

3.2 Loznica

3.2.1 Geography

The territory of Republic of Serbia is split in 2 major parts, Norther and Southern Serbia. Those main 2 parts are each further divided into 3 smaller administrative units, regions. City of Loznica is located in the Mačva region, which is highlighted in the map below.

The whole area of the city takes around 612 km^2, occupying 19% of the total belonging district. It is vastly characterized by the fertile soil in the plains, great surfaces in forests and pastures, lignite, non-metals as well as thermal mineral waters. The alluvial plains are mainly in the valleys of the Drina River. Around 59% the entire surface is specified as the arable land, and additional 32% as forest (RZS, 2018). Significant issue in the norther plane are the underground waters, as well as landslides on the eastern borderlines of it, close to Jadar river. In the nearby locality recently was discovered the deposit of Lithium ore.

Entire western border of the city region is in fact the borderline between Serbia and Bosnia-Herzegovina, as it expands down the course of the river Drina. On the territory of the city there is one border crossing, located 2,7 km from the city. Nearest airport is in the neighboring Bosnia-Herzegovina, at distance of 78 km. Nearest domestic airport is the Belgrade one, and the road to the country's capital is 139 km long. Infrastructure of transportation is one of the biggest challenges of the region, as it lacks appropriate railway infrastructure, and there are no highways in the region nor there is any water traffic nearby, even though nearest river is suitable for cruising.

3.2.2 GDP

Abbreviation stands for gross domestic product, and in short it is used to sum all of the output produced inside one country, as per the IMF (Callen, 2020). For better comparison between entities, the figures are prorated so that the value of output can be assigned to an individual, hence the *per capita.*

The graph below shows the how different entities experienced growth numbers different across the whole decade. The noteworthy drop in 2020, as shown on the graph below, can be explained by the global pandemics, experienced on large scale, but the data shows that country with smaller GDP base (Serbia), experience close-to-zero drop. This is largely due to the fact that the economy in Serbia does not rely on exports and tourism, hence the pandemic-related restrictions did not affect the country's economy on large scale. Once the global economics consolidated again, we note that the rate growth in case of Serbia is again noticeably bigger.

*Figure 6: GDP Per Capita Growth Cross Country*
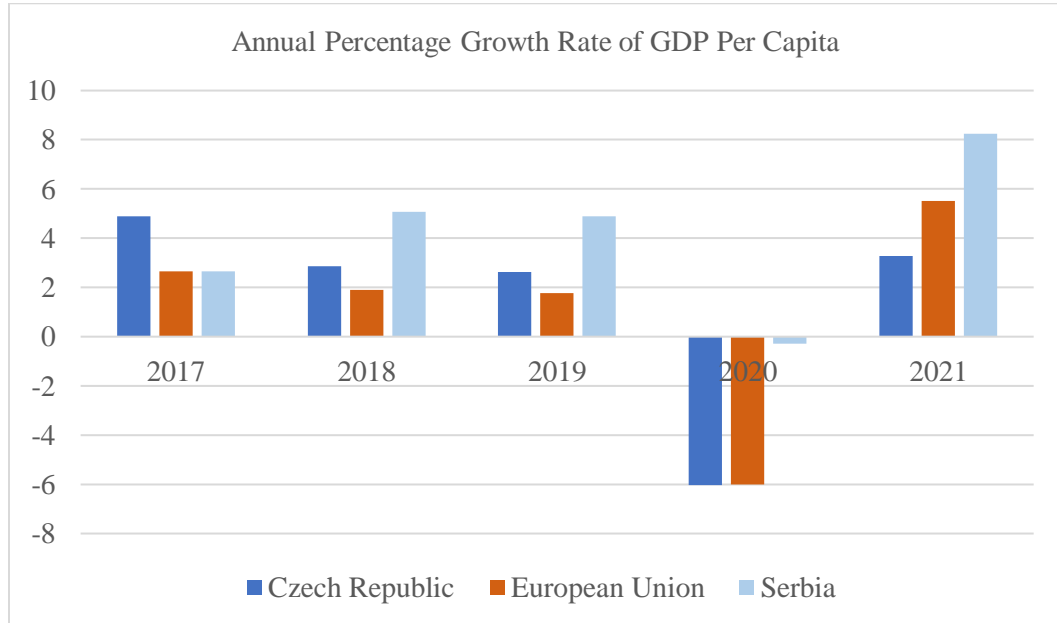
(The World Bank, 2021)

Turning to Loznica and its growth rate of GDP, certain remarks have to be made before presenting the figures. After carefully gathering the data, we note that estimation of nominal GDP for the region of Loznica is not something of common practice, so further calculations were performed, namely by using the expenditure approach for GDP formula. Hence, the formula used for Loznica:

GDP* = Private Consumption Expenditure + Government Consumption Expenditure + Gross Capital Formation (Investment) + Cumulative Export – Cumulative Import

Figure 7: Loznica GDP Growth Rate
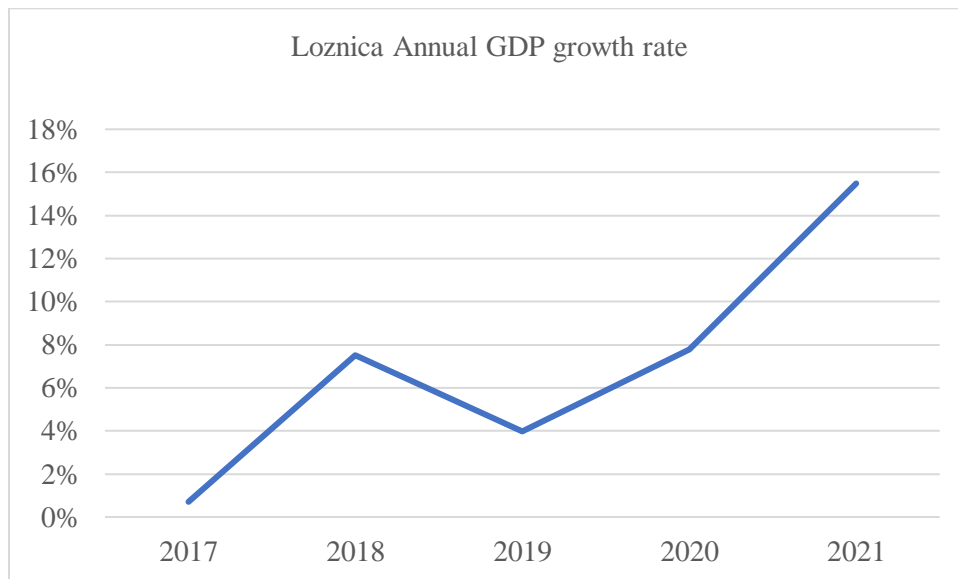
(AS JLS, 2021) (Own calculations)

The graph shows a staggering increase in the last year, and initial look to the available information shows us what lies behind it. Although the values for all of the variables have been increasing, we observe that the volume of investments for the mentioned period had more than doubled in 2021, even after adjusting for inflation. For the year that led to it, increase in 2020 was mostly due to an increasement of direct investments, in other words, the local economy was trusted with more capital by the foreign and domestic enterprises and entrepreneurs. The rate of increase of the allocated national budget funding from the was by 20 percent respectively in the

years 2020, but that was preceded by stagnation in 2019, mostly cause by reduced trade balance, and negative growth of export rate (by 3.65%).

Comparing to the numbers for Serbia, we note that, even if adjusted for trade, the growth rate is something of an extraordinary figure.

3.2.3 Demographics

Situation in demographic picture of Loznica is somewhat replicated from the national level, following the negative trend. As per the most recent data available, the population of Loznica is 73089. This number represents around 1,1% of total population of Serbia. In the past years the total number of inhabitants has been decreasing as shown on the graph, with the drop being most significant in the last year, when the drop was the biggest in terms of difference from the previous year. Loznica lost 922 its inhabitants last year.

Figure 8: Loznica Population Trend
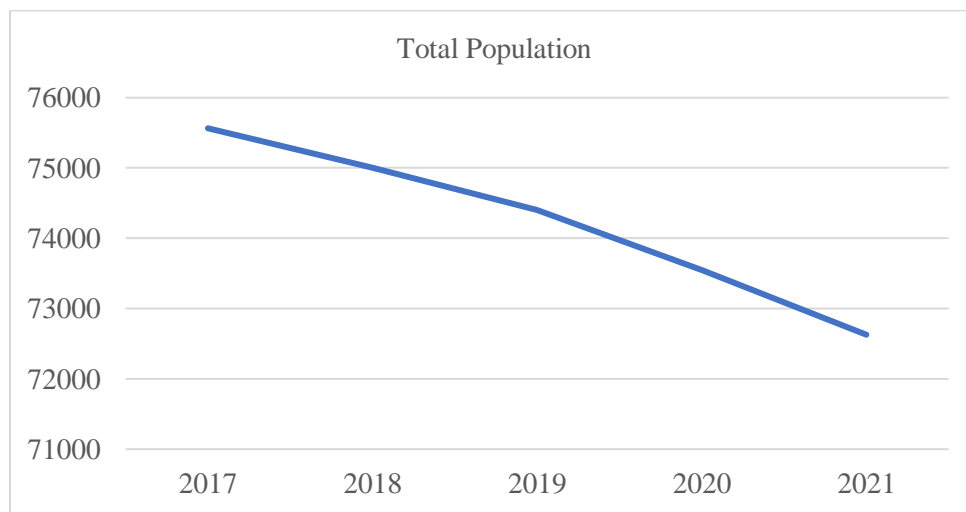
(RZS, 2022)

Reasons for the negative trend could be found in the general increased number of deaths, having the percentage increase of mortality with 17,7 and 17,5 % in past two years. Another one is the migration of population, that has had a negative trend constantly, and difference between emigrated and immigrated in the past 10 years has been negative. Notably however, the

difference has been the lowest in 2021, when the number of emigrants has been bigger that those that moved into Loznica for just 100.

When it comes to the age of population, average age on the whole population is just above the national average, at 43.6. Average age of female population, according to last year's data is 2.4 years more than those of the male population. However, the difference is smaller than the national level one, which stands at 2.9.

In terms of gender diversity, female population is more numerous, as it makes up almost 51% of entire community. Even so, when accounting those capable of work, aged between 15 and 64, man population has prevalence with 318 men more than women fitting into working age population. The margin has been decreasing in the past few years, as it was 428 in 2019.

3.2.4 Employment

When it comes to the employment of population, we note from the graph below that the trend of finding employment has had a steeper trajectory than the one for the entire Serbia:

Figure 9: Employed Population Growth Rate
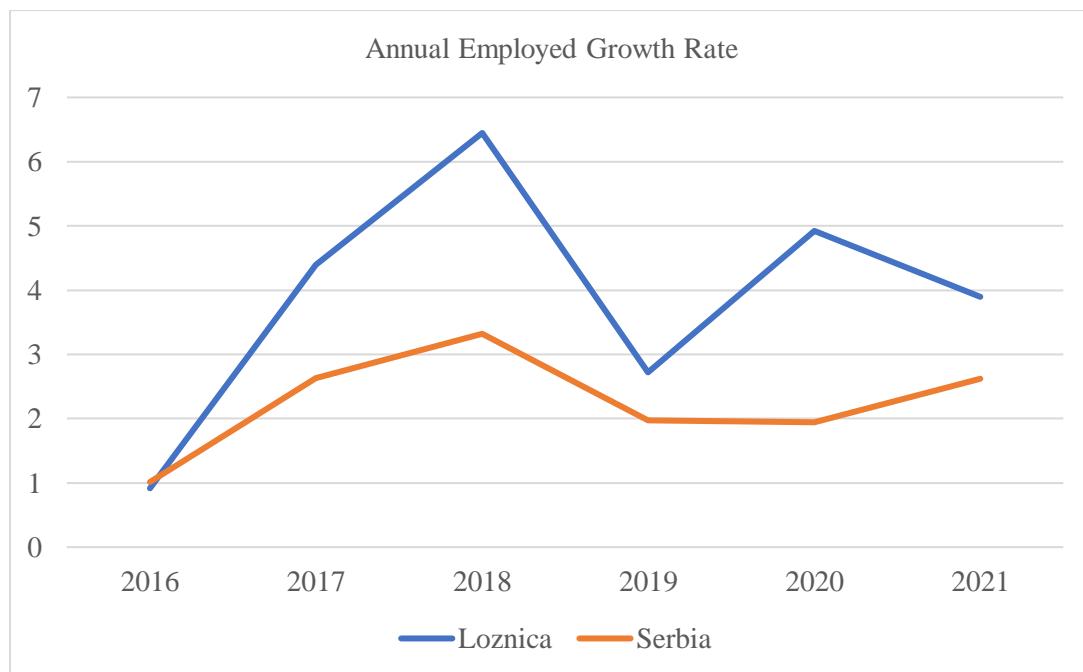
(RZS, 2022)

At the same time, the structure of the employed population is shifting away from agriculture even more. In 2015, 7.8% of total employed were registered as farmers, while in 2021 the percentage has dropped to 4.1%. Meanwhile, entrepreneurs and people employed in smaller enterprises were making just under 26% of working population in 2015. According to the data of 2021, that percentage is 27.3.

Going further we observe the declining numbers of unemployed people in Loznica and compare the trend to the one on the territory of Serbia. It is important to bring up the methodology used by Serbian statistic's department, applied for Loznica as well. Formula used for this calculation:

Rate = Unemployed / (employed + unemployed) * 100, (RZS, 2018)

Figure 10 Unemployed Growth Rare

ANNUAL UNEMPLOYED GROWTH RATE
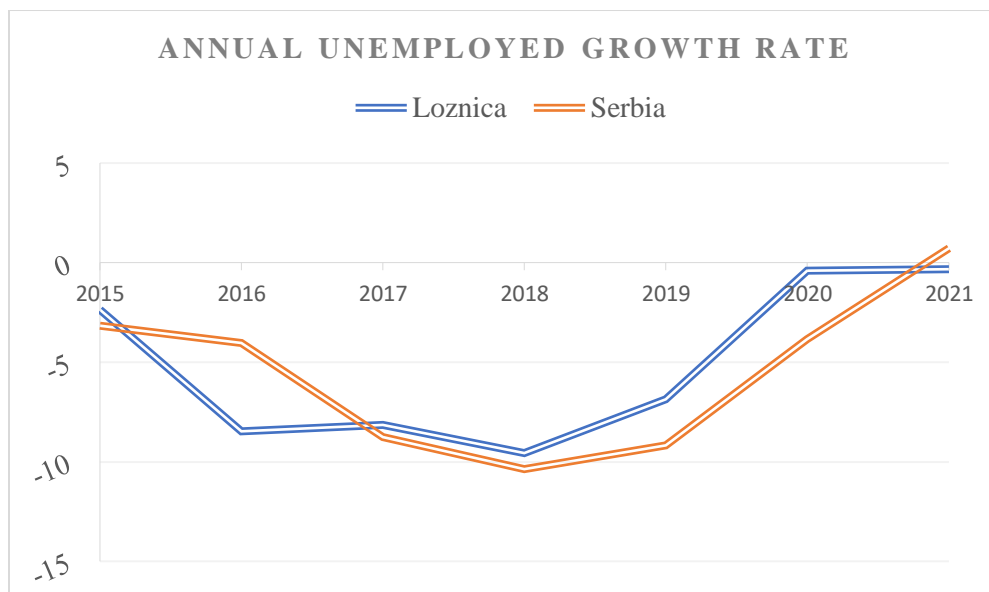
(NZS, 2022)

Graph shows us that the rate of unemployed had steeper drop on national level for most of the observed time frame, but crucially for Loznica region is that the rate never enters the positive side of the graph, meaning that unlike the post-pandemic effect that shook work market on national level did not leave a such negative effect on Loznica region, although the annual change is at lower level than what was observed previously for the same period.

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3.2.5 Poverty

It has presented a rather linguistical struggle for some time now to define the poverty, but simply put it means the scarcity of options, access and opportunities, (Buheji, 2020). The definition being in use in Europe leaves space for relativization of the status of *poor*, as defined by the European Council – "a person or household is considered to be poor when their income and resources are lower than what is thought to be adequate or socially acceptable in the society".

In aspiration to illustrate the situation with the rate of poverty in Europe as closely to the real situation as possible, an alternative, more satisfactory approach was used – *the risk of being at poverty rate*, which is calculated at a threshold at 60% of a median income in the referent country (Dvornáková, 2012)Therefore, the risk has not been increasing, which might come as a surprise, especially when we look back the results that come after previous bigger crises.

Figure 11: Risk of Poverty
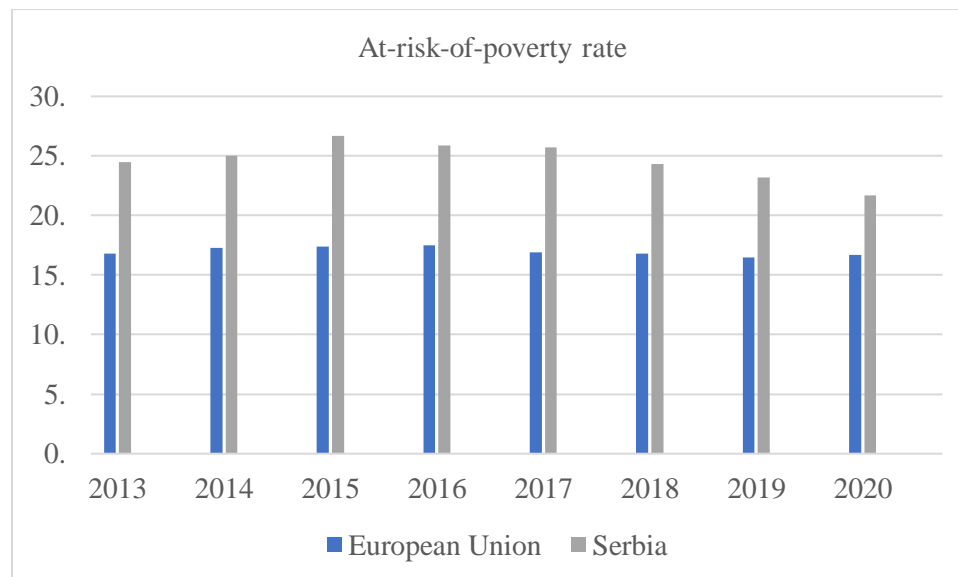
(Eurostat, 2022)

Noticeably, rate is rather high in Serbia, but what should be worrying for Loznica is that the poverty is even more extreme in this region. As per the last available data, the Loznica region averaged a staggering 34.7% of population living under the poverty line. That is well above

national average, considering that the average value for Serbian entire population in the past decade is 24.6%.

3.2.6 Average Income

In attempt to explain such high rate of poverty registered, we turn to the numbers considering average income. The data in the table below are shown in USD, and from the first glance we note that the region of Loznica is falling behind each of the observed year behind the national average. The difference between the rates of growth for the two entities is not alarming by itself, but the rate of growth that difference is being progressively improved for the period.

Table 2: Average Income

	2018	2019	2020	2021	Average growth rate
Serbia	666	722	790	865	9.07%
Loznica	531	572	632	687	8.99%
Difference	-135	-150	-158	-177	9.43%

(RZS, 2021)

3.2.7 Investments

Domestic experts are certain that the business climate is simply not engaging enough to attract significant foreign investments. Roots to it should be searched for in the ongoing corruption and lack of systematic, relentless reforms in all sectors of public life. However, seems rather symptomatic that the investments inclusion in GDP growth in Serbia are the lowest in the Western Balkan's region, as well as in Central and Eastern European region, accumulating to just 16-20% during the time of recovery after the 2010 recession (CRTA, 2019). This includes both

domestic and foreign investments. It even seems rather contradictory that the indexes of those two were matching in 2011, as the table below shows that they nowhere near in recent past.

Table 3: Investments Serbia

Year	Foreign Direct Investment (% of GDP)	Total Investment (% of GDP)	Participation of Foreign in Total Investment
2016	5.79	18.08	32.02%
2017	6.55	19.58	33.47%
2018	8.04	22.66	35.49%
2019	8.29	25.10	33.01%
2020	6.54	23.17	28.20%

(The World Bank, 2020)

Structure of investments in Serbia with regards to sources shows us that the investors find the financial climate in Serbia mildly stabile, hence the participation of the outsourced investments has been rather steady, with the exception of year 2020. The factors that enabled such trend (foreign debt stabilization and growth of the GDP) ensured the investors that the macroeconomic situation is not as unpredictable as it was in the past, but the lack of growth in investments shows that the obstacles for new investors are still hard to overcome, turning them away from Serbia towards regions and countries where they feel their investments would result in faster and more certain profits (Info Business Group, 2020).

The graph provided by the World Bank shows us the level of ODA (official development assistance) received, characteristic for countries in development. Such assistance is usually received in loans and other similar grants. It is indicative that the trend has been rather stable in its tendency to remain low, with the sole exception of 2017 (this could be explained with the Presidential elections that were held that year). For comparison, the average ODA index in developing countries has been steadily increasing in the past couple of years, reaching an average of 4,4% in 2020, mainly due to the pandemics (OECD, 2021).

Figure 12: Foreign Investments Serbia

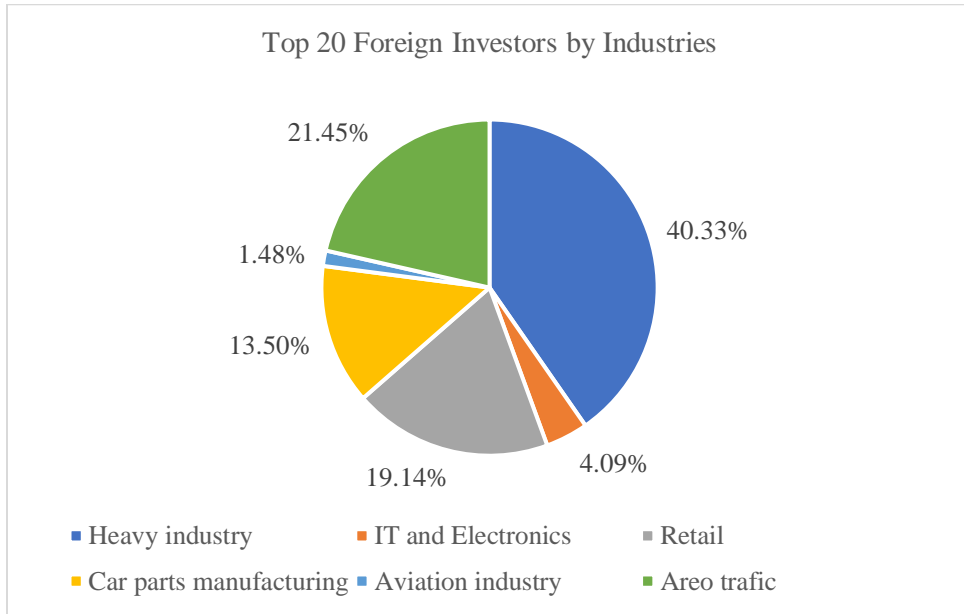Net ODA received (% of GNI)
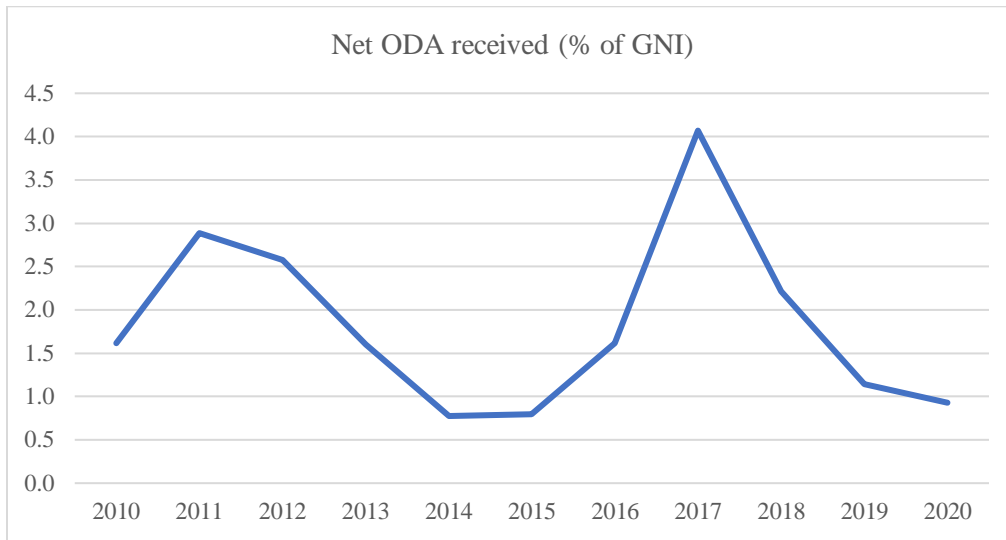
(The World Bank, 2020)

Speaking of direct foreign investors and where they come from, in the period between 2010 and 2020, European Union was involved in over 2/3 of total foreign investments with 67,58%, adding up to €17.546 million (EU in Serbia, 2020). EU countries in this sense were led by Germany and France, but it is worth noting that a single French investment into Belgrade Airport (payment for a 25-year long lease), net worth close to €500 million, makes up close to 1/3 of countries total investments.

Outside of the EU, Russia and China come at second and fourth place respectively, and the rest of the top 10 list is populated by the EU countries, as expected, and the USA.

The graph below depicts what are the branches of economy that the investors consider most valuable and profitable, hence the most suitable ones for investing. The heavy industry investors are coming from Russia and China (gas and mining, respectively), while the automotive industry investments mainly come from Germany and Italy.

Top 20 Foreign Investors by Industries

21.45%

1.48%

40.33%

13.50%

19.14%

4.09%

- Heavy industry
- IT and Electronics
- Retail
- Car parts manufacturing
- Aviation industry
- Areo trafic

(Business Info Group, 2020)

It was previously mentioned that investments had the greatest influence on the growth of the GDP in Loznica, and the following data shows us just how they were developing and what were they focused on.

Figure 14: Investments Loznica

Investments by Industry (thousands of USD)

80000

60000

40000

20000

0

2016   2017   2018   2019   2020

- Manufacturing
- Power Supply
- Civil Engineering
- Retail
- Healthcare

(RZS, 2020)

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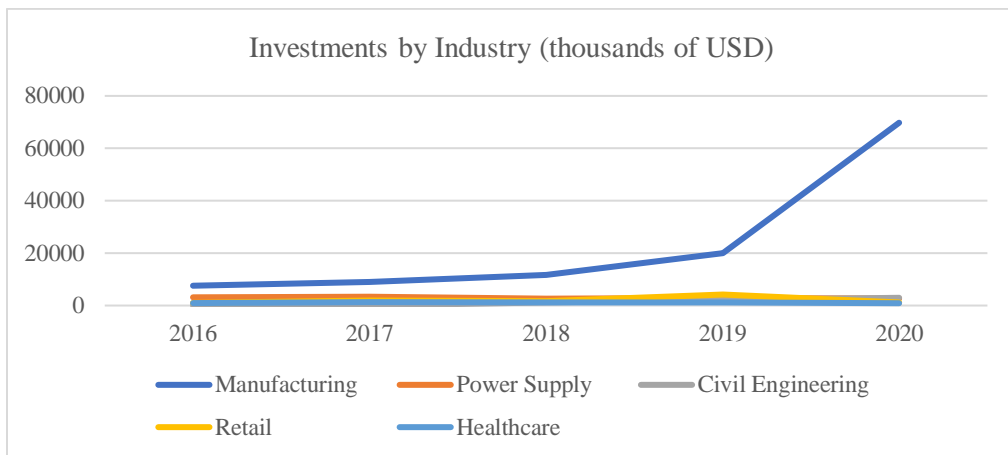
In the graph, top 5 industries by volume of investments are shown, and the prevalence of the manufacturing industry when it comes to gross value of the investment. Interesting to mention is that during the 2016 and 2017 civil engineering sector had little to no investment in the region, mainly because local authorities were investing in this area, so the private sector saw little to no interest to participate in the market at that time.

3.2.8 Trade

As the chart shows us, the targeted investments are diverse, many of them not being part of industries suitable for trades. Speaking of it, historically, the trade disbalance has always been present in Serbia's economics. As the table below shows, it has had a constant negative value, being in deficit, which occurs when imports exceed exports (Amadeo, 2022). The trend of trade balance has switched in 2017, with the exception of the pandemic year, and has a tendency of further increasement of deficit. However, what should encourage is that the average increasement of value of exported goods in the previous 10 years is significantly higher on the export side of the trade, AAGR in the table:

Table 4: Trade Serbia

	Export ($M)	Import ($M)	Balance ($M)
2012	11226	18923	-7697
2013	14610	20550	-5940
2014	14845	20196	-5351
2015	13376	17875	-4499
2016	14883	18899	-4016
2017	16997	21920	-4923
2018	19239.2	25882.8	-6643.6
2019	19633	26730.6	-7097.5
2020	19500.8	26233.3	-6732.5
2021	25566.2	33798.6	-8232.5
AAGR	1.27741	0.786112	

(RZS, 2021)

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According to the most recent data, in the previous year's biggest exporting destinations for Serbia was Germany, with accumulated value of exported goods reaching $3.24B, and over half it included transportation vehicles and other machinery. Second ranked is Italy, with an equal distribution of import between 3 different industries of manufacturing products (transportation, textile, and shoes). Outside of EU, Bosnia & Herzegovina, being a neighborhood country, rank the highest as exporting destinations. Goods that are subject of trade most often come from food industry as well as building materials.

Importance of Bosnia & Herzegovina for Loznica region is big, as the region sits right next to the border. On that note we can check the trade balance for the previous year.

Table 5: Trade Loznica

	2016	2017	2018	2019	2020
Export	47502.1	60111.7	65012.6	62649.2	64928.0
Import	50224.7	51462.5	59616.4	62346.2	75417.5
Balance	**-26.4**	**84.0**	**52.4**	**303.1**	**-101.8**

(AS JLS, 2021)

Seeing that the manufacturing is a branch of industry being invested in the most, and being traded the most with B&H, it is reasonable to assume that there a positive balance is expected in the future as well.

4. CONCLUSION

The task of this thesis was to examine the economic development of a region, in particular Loznica, Serbia. More precise, the objective was to compare the factors of economic growth to the ones of the entire country.

Firstly, the characteristics and factors of development in economics were examined, along with the growth theories, after which it was proceeded with the examination of applicable methodology by which the examined factors will be judged. As the chosen method was convergence, it was thoroughly described, together with the formula which was provided by the theorists. Along the way, the term steady-state equilibrium was introduced, as an optimum state for the examined region.

Practical part of the thesis was focused on afore mentioned parameters, and their comparison to the ones of Serbia. For better understanding of the global situation, some parameters firstly compared to the situation in European Union and Czech Republic in certain places (most notably regarding the inflation influence), as well some historical background was provided.

GDP product of a region was calculated, according to the formula mentioned, and growth rate was compared to the national one, as well as the variables that influenced the growth of GDP in particular years. Later the demographics of the region were described, with reference to the migration factor as well as the age of the population. Furthermore, the employment was inspected, and considering the specific formula used for Serbia, the unemployment rate was also compared between two subjects of research. Related to that, the poverty rate in Serbia was inspected, and given the fact that the relevant, prompt data for Loznica was missing (latest data is 11 years old), the poverty rate was explained by the average income, again compared to the national level.

Later the trade and investments of the region were inspected, mainly focusing on branches of industries that are being traded the most on national level, as well as investments in the industries traded. The trade balance was later observed, compared to what was relevant on national level.

Region of Loznica showed an impressive growth in last year with regards to GDP growth rate, and with the exception of 2019, the trajectory of this parameter is extremely positive. It was however one of the few parameters that was showing advantage to the region compared to the national level. Other that Loznica has shown better values in terms of increase of employed and reduce of unemployed population, and relatively in terms of trade.

On the other hand, the aging population is on the focus points for the region, as the average is higher than that of the national level, and Serbia is one of the oldest nations in the world. National average salary is permanently on the higher level, and the worrying perspective has to be that the difference between the two is even increasing.

With regards to the investments, we note that the economy of Loznica is more dependent on it, both foreign and domestic, but this shouldn't be treated as a negative indicator, but more as a necessity of the underdeveloped.

Loznica as a region has great potential considering its geographical position and rising indicators of economy. It has shown good improvement in various factors, but it is obvious that is ideal from the steady-state equilibrium, as the factors whose growth rate should be equal to 0 did not reach that point yet. But it is on a good trajectory to reach the level of an average region in Serbia. Focus of future investments and development should be on the infrastructure that would enable faster transpiration of produced goods, as well as focus on exporting destinations. Regarding aging population, region should focus on providing attractive conditions for younger people, turning to education in order to both create qualified working force for the roaring industry and provide an environment sustainable extensive growth for future generations.

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