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## Article

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Article

# Selected Socio-Economic Aspects of the Last Two Economic Crises in Slovenia Assessed through a Three-Stage Territorial Model

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**Abstract:** The aim of this paper is to provide a systematic insight into the socio-economic aspects of the last two economic crises in Slovenia: the Economic crisis between 2009 and 2013, and the COVID-19 crisis in 2020. A three-stage territorial model was developed as a theoretical tool for this study. The data for the analyses came from various statistical sources and from the available literature. The socio-economic aspects of both economic crises were analysed in 11 categories and at three territorial levels: macro (national), meso (regional) and micro (locational). Both economic crises differ fundamentally in many aspects. Compared to the Economic crisis, the COVID-19 crisis was much shorter and less severe, and had relatively little impact on the socio-economic structure of Slovenia and its regions. Both economic crises had some common features: reduction of interregional disparities and different development paths of regions during the crisis, as well as strong economic growth in the first year of recovery. The proposed model can be extended by additional territorial levels and by adding additional social and political-geographical aspects.

**Keywords:** economic geography; economic crisis; spatial-structural model; regional development; socio-economic aspects; COVID-19; Slovenia



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## 1. Introduction

During the socialist period that began after the Second World War, in socialist Yugoslavia, and consequently also in Slovenia, which was then an integral part of the federally organized state, it was not possible to speak of an economic crisis as it was understood in the context of economic cycles in capitalist societies. However, Šušteršič (2003) developed a model to illustrate the periods of political economic cycles under socialism. According to this model, economic fluctuations were accompanied by a series of reforms and counter-reforms to maintain national economic prosperity and the political stability of the ruling party. The dramatically changed political and economic circumstances in the former Yugoslavia, in Central and Eastern Europe at the end of the 1980s and worldwide have changed the perspective for understanding and interpreting long-term economic developments. The disintegration of Yugoslavia in 1991 and the beginning of a war in some parts of the former socialist country led to an economic crisis in Slovenia that lasted for about half of the 1990s. However, the causes of the economic downturn had already been apparent since the mid-1980s, when deindustrialization began due to the obsolescence of the socialist economic concept and the political crisis in Yugoslavia. Although there were additional shocks in the second half of the 1990s due to the global division of labour, particularly in labour-intensive industries, Slovenia did not experience an economic crisis until 2009.

The 2009 crisis was quite a shock for Slovenia. Neither the economy nor the government were prepared for the consequences of the global financial and economic crisis that began in the United States of America in 2007. The shock was all the greater because the entire society was in an adrenaline rush after joining the European Union (EU) on 1 May

2004. After accession, the economy experienced rapid growth, taking advantage of the free movement of goods, finance, services and, to some extent, labour. The Economic crisis that began in 2009 was protracted. A recovery was not seen until 2014. Even after that, some negative effects of the prolonged economic crisis were still felt in the economy. Then, the COVID-19 crisis hit Slovenia in 2020 along with the rest of Europe and the world.

Slovenia has experienced three economic crises since 1990. However, the aim of this paper is to provide a systematic insight into the socio-economic aspects of the last two economic crises in Slovenia, i.e., the economic crisis after the global financial crisis of 2007–2009 and the economic crisis during the COVID-19 lockdowns in 2020, focusing on two main research questions: (i) what were the socio-economic consequences of each of the economic crisis and (ii) how the two economic crises were different from each other. The theoretical approach of this study follows the three-stage territorial model for analysing the socio-economic aspects of economic crises, which consists of the field of economic geography research and its application in this paper.

This paper consists of three main parts: description of the theoretical and methodological approach together with definition of economic crises in Slovenia, presentation of the economic-geographical aspects of both analysed economic crises at macro-, meso- and micro-territorial levels and discussion with the main conclusions.

## 2. Theoretical and Methodological Approach

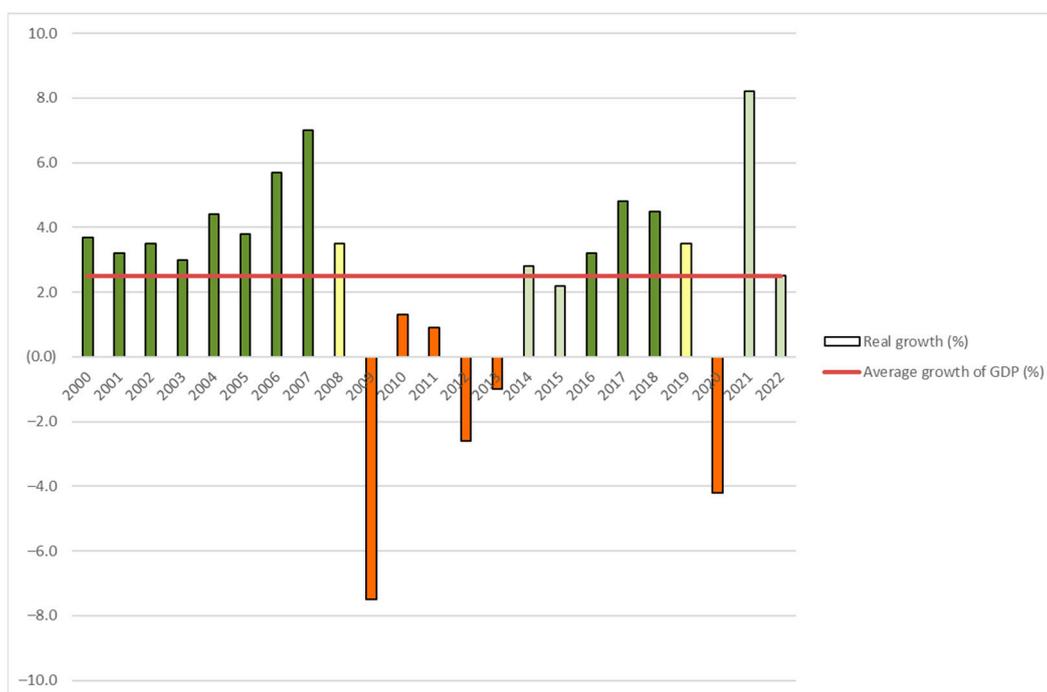
### 2.1. Defining Stages of Economic Cycles in Slovenia after 2000

An economic crisis is generally understood to be a situation in which a country's economy experiences a sudden decline in total output or real gross domestic product (GDP). The result of the economic crisis is a decline in real per capita income and an increase in unemployment and poverty (Tambunan 2021). The term is related to economic recession, which is defined as a decline in GDP for two consecutive quarters. Economic recession is more of a technical term, while economic crisis is not strictly tied to quarterly GDP statistics, but considers a broader time horizon after the recession ends, with difficulties in the economy and society persisting with high unemployment and weak GDP growth (Economic Crisis: Resilience of Regions 2014). The presence of an economic crisis can also be interpreted as a specific part of the economic (business) cycle following a period of economic growth and expansion. Economic crises are characterised by economic decline, creative destruction and a high degree of structural change in the economy (Škare and Stjepanović 2016). However, economic crises can also be the result of external shocks to the economy at the global, national or regional level, such as natural disasters (earthquakes, floods), armed conflicts, factory closures or diseases (Economic Crisis: Resilience of Regions 2014).

There is no universal method for determining the beginning and end of an economic crisis (Škare and Stjepanović 2016). DiPasquale et al. (2021), for example, have shown the usefulness of the break-spine approach to identify changes in the pattern of a particular indicator to analyse structural breaks used to divide a time continuum into pre- and post-crisis periods. However, an economic crisis is usually described using economic indicators based on (absolute) declines or changes in the general level of production (National Bureau of Economic Research 2010) and based on the deviation from its long-term trend (Zarnowitz 1992). Based on both approaches, a model to define which economic cycle Slovenia was in from 2000 onwards was developed. The analysed period attempts to shed light on the recent economic development in Slovenia, while the fundamental transformation of the national economy in the 1990s was too specific to be compared with the recent economic factors, processes and situation.

The starting point of the model is real GDP growth. Growth rates for each year and the average growth rate for the entire period 2000–2022 were calculated (Figure 1). Years with an above-average GDP growth rate were in the expansion phase of the economic cycle, while the slowdown was characterised by negative values of GDP growth or an oscillation around zero. The slowdown was characterised by a significantly lower growth

level before the decline, while the recovery phase of the economic cycle was characterised by below-average GDP/capita growth after the decline.



**Figure 1.** Real GDP growth in Slovenia and the economic cycle, 2000–2022. Dark green columns: economic expansion; yellow columns: slowdown; orange columns: economic crisis; light green columns: recovery. Source: [Statistical Office of the Republic of Slovenia \(2024\)](#).

The Slovenian economy has recorded average growth of 2.5% over the last 23 years. After the start of the new millennium, the Slovenian economy was in the expansion phase of the economic cycle. Annual GDP growth rates were above 3%, and even higher after joining the European Union in 2004. A slowdown was observed in 2008, and from 2009 the Slovenian economy was faced with a decline in GDP. It was a double-dip recession, as GDP growth rates in 2010 and 2011 were positive but below average, and the economy showed the weakness typical of an economic downturn. In 2012, the economic situation deteriorated again, with negative growth rates for two years in 2012 and 2013. A recovery was not observed until 2014. From 2016 onwards, there were three years of economic growth with above-average real GDP growth. Before the COVID-19 crisis in 2020, economic growth was slower, mainly due to the crisis in the automotive industry, which accounts for a significant part of the national economy. In 2020, GDP contracted by 4.2% due to the severe economic disruption during the lockdowns. The first year after the two economic crises (2014 and 2021) was characterised by above-average GDP growth. After the COVID-19 crisis, growth was particularly pronounced as the population tried to meet its economic, social and psychological needs after the lockdowns. Therefore, after the year 2000, Slovenia was in an economic crisis in the years between 2009 and 2013 (Economic crisis) and 2020 (COVID-19 crisis). Both crises differ fundamentally in their origin: the Economic crisis was triggered by the global financial and economic crisis of 2007–2009, while the COVID-19 crisis was triggered by society’s confrontation with the emergence of health problems and not by endogenous economic dynamics. The COVID-19 crisis, therefore, deviates from the economic cycle theory.

## 2.2. Economic Crises in Slovenia after 2000: Previous Research

Researchers have assessed the economic crises in Slovenia primarily by analysing economic development factors: assessment of public finances at the national level, including

macroeconomic aggregates and stability (Neck et al. 2011; Lesnik et al. 2014; Verbič et al. 2016), local budget planning issues (Feldmann 2017; Horvat et al. 2021) and the use of various financial instruments to deal with the financial crisis (Ponikvar et al. 2013; Markovič-Hribernik and Tomec 2015; Verbič et al. 2016). Particular attention was paid to the influence of economic problems and ways of overcoming them at the microeconomic level (Mörec and Rašković 2011; Makovec Brenčič et al. 2012; Dolenc et al. 2012; Rašković and Mörec 2012; Burger and Rojec 2018). A variety of approaches have been used to assess the impact of the economic crisis on the labour market through the analysis of social dialogue and unemployment, especially among young people (Žnidaršič et al. 2011; Stanojević and Klarič 2013; Feldmann 2017; Farčnik and Domadenik 2019; Potočan et al. 2019). In addition, researchers looked at various aspects of the role of the economic crisis in relation to the quality of life (Srakar and Verbič 2015), the development of tourism (Mihalič 2013) and the development of foreign direct investment (Vujanović et al. 2021). Some studies dealt with the spatial effects of the economic crisis: changes in the attractiveness of regional centers (Drobne and Bogataj 2013), the housing market (Sendi 2010), but also with the spatial consequences of the economic crisis at the locational level (Kušar 2012).

The regional level of research can be traced primarily by analysing the economic resistance, recovery and resilience of regions in Slovenia during the economic crisis (Brozzi et al. 2015; Lapuh 2016; Lapuh 2017; Oprea et al. 2020), but also by analysing the consequences of the economic crisis at the regional level (Banerjee and Jesenko 2014; Cuadrado-Roura et al. 2016). The crisis in Slovenia was also assessed in the wider territorial context of Central and Eastern European countries (Krzak et al. 2014; Oprea et al. 2020; Robert et al. 2020), ex-Yugoslavia (Njegomir et al. 2010; Jovanović et al. 2013; Vujadin et al. 2013) and other areas (Domonkos et al. 2021; Hočevar 2022).

Research into the economic consequences of the COVID-19 crisis is not so well represented in the literature. It focuses primarily on the presentation of the main economic consequences (Damijan 2020; Angelova and Pastarmadzheva 2022), the measures taken by the state (Burger 2021; Lahovnik 2022) and in-depth comparative analyses between (selected) European countries (Czeczeli et al. 2020; Oravský et al. 2020; Podvršič et al. 2020).

### *2.3. Developing a Three-Stage Territorial Model for Assessing Socio-Economic Aspects of the Economic Crises*

The most important research question is how the various socio-economic aspects of an economic crisis can be systematically addressed. The theoretical conceptualization enables a systematic analysis of the development factors, processes and their spatial consequences at different territorial levels.

Systematic models and concepts for analysing socio-economic consequences of economic crises often integrate elements from economic geography, regional science and urban research. They attempt to assess how economic downturns affect different regions and places differently. One of the most influential concepts has been that of regional economic resilience. The resilience concept was originally developed in the natural sciences to assess the impact of shocks on different environmental systems. Later, the number of social and natural phenomena explained by the resilience concept grew with the inclusion of topics from psychology, psychiatry and natural disasters (Manyena 2006), including economics, economic geography and development studies. Regional (economic) resilience has been addressed by a number of scholars, including Christopherson et al. (2010), Martin (2012), Martin and Sunley (2015) and Ženka et al. (2024). Spatial econometric models were used to analyse changes in spatial interdependencies and interactions between regions due to economic crises. Useful insights into the concept have been presented, for example, by Rey and Le Gallo (2009), Lo Cascio et al. (2013) and Görgün and Sülkü (2020). The concept of territorial capital, which considers goods and services based on different degrees of appropriability and rivalry as well as the tangible and intangible physical characteristics of regions (Camagni 2009), has also been used to analyse the economic consequences of economic crises, mostly at the regional level (Mazzola et al. 2012; Lo Cascio et al. 2013;

Fratesi and Perucca 2018). The topic of the economic crisis was also discussed in urban economic models. These models examined how the economic crisis affected urban areas differently, considering factors such as industrial composition, labour market dynamics and housing markets (Sendi 2010; Holgersen 2014; Shutters et al. 2021).

These models and approaches not only help researchers to better understand the geographical consequences of economic crises, but also policy makers to develop targeted interventions and strategies to address regional inequalities and promote economic resilience.

However, the above models and concepts do not sufficiently consider the geographical complexity, i.e., the interconnectedness of the economic, social and spatial aspects of the economic crisis at different territorial levels and cannot be used to analyse locational phenomena. Therefore, a three-stage territorial model for analysing the economic-geographical aspects of the economic crisis was developed (Table 1). It attempts to analyse the consequences of the economic crisis at three different territorial levels: the macro-territorial level, the meso- or regional territorial level and the micro-territorial level. The latter can be used to analyse the consequences of the economic crisis that manifest themselves in micro-locations and lead to obvious changes in the spatial structure. The higher the territorial level, the more abstract approaches are required to analyse the consequences of the economic crisis. Economic dynamics, differences in the intensity of the consequences of the economic crisis, changing relations between countries and regions, processes of polarization are the backbone of the approach at the highest territorial level. At the meso- territorial level, the focus is on changes in the socio-economic structure of regions, as well as the concept of resilience of regions. The micro- territorial level is needed to legitimize the investigation of the spatial consequences of the economic crisis, be it through the identification of brownfields and vacant housing or through the investigation of crisis development strategies of companies and local communities.

**Table 1.** Three-stage territorial model for assessing socio-economic aspects of the economic crises.

Territorial Level	Field of Economic-Geographical Research	Application in the Paper
Macro level	Economic dynamics, unemployment rates, differences in the intensity of consequences, changing relations between countries and regions, polarization (national level of the research)	Analysis of basic economic indicators on the national level (GDP, level of unemployment, national debt, number of companies), development compared to EU, FDI dynamics, interregional disparities
Meso level	Changes in economic strength and socio-economic structure of regions, regional resilience (regional level of the research)	Analysis of basic economic indicators on the regional (NUTS 3) level, resilience of regions, quality of life in regions
Micro level	Vacant dwellings, formation of brownfields, case studies of successful development approaches and resilient companies (individual/ location level of the research)	Vacant apartment buildings, business premises and construction sites, brownfields, an example of a resilient company

The proposed model for the systematic analyses of the socio-economic aspects of the economic crisis is a spatial-structural model by its nature, but it also contains elements of the regional economic resilience framework and urban economic models.

#### 2.4. Methods

Several methods were used in the preparation of this paper. Statistical data on the social and economic structure and development in Slovenia were obtained from the national statistical office, Eurostat and the Organization for Economic Co-operation and Development (OECD). The data on foreign direct investment were taken from the publications of the Bank of Slovenia (Direct Investment 2009 2010; Direct Investment 2022 2023) and from the database on foreign direct investment of the Wiener Institut für Internationale Wirtschaftvergleiche (WIIW 2019). Relative values of socio-economic indicators were cal-

culated (mainly percentages) to allow comparison between different time periods and territorial levels.

The field data on brownfields (functionally derelict areas) in Slovenia came from two inventories from 2017 and 2023 ([Functionally Derelict Areas Database of Slovenia 2017, 2023](#)).

The analysis of interregional disparities in Slovenia follows the approach of [Rodríguez-Pose and Gill \(2004\)](#) and [Kušar \(2021b\)](#) by calculating the coefficient (variance of the natural logarithm) from the GDP/capita data of all statistical (NUTS3) regions in Slovenia for the analysed period, calculated as:

$$C_i = \text{var}(\ln X) \quad (1)$$

where  $C$  is the value of the coefficient for year  $i$  and  $X$  is the value of GDP/capita in year  $i$  for each statistical region in Slovenia. The higher the calculated variance values, the greater the differences in development between the regions and the more pronounced the process of development polarization is obtained.

A non-parametric Kruskal–Wallis one-way ANOVA test, which is used to determine whether there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable ([Kruskal-Wallis H Test Using SPSS Statistics 2024](#)), was used to measure the statistical relationship between the phase of an economic cycle in Slovenia (two phases: expansion and decline) and the occurrence of different types of brownfields after the year 2000 (four categories: construction sites, services, industry, agriculture). The null hypothesis is that the distribution of the occurrence of brownfields is the same in both phases of the economic cycle.

### 3. Results

#### 3.1. Socio-Economic Aspects of Economic Crises in Slovenia: Macro-Territorial Level

A decline in economic activity in Slovenia with negative GDP growth was observed in 2009, 2012 and 2013 and during the COVID-19 crisis in 2020. The detailed analysis of GDP growth/decline periods is presented in the previous part of the paper. The decline in national GDP during the Economic crisis was one of the sharpest declines in the European Union. According to the OECD, only Lithuania (−14.8%), Estonia (−14.6%), Latvia (−14.3%) and Finland (−8.1%) recorded a sharper decline in real GDP growth in 2009 than Slovenia (−7.5%). The situation was different during the COVID-19 crisis. The decline in GDP in Slovenia was −4.2%. With this value, Slovenia was above the EU average and in the middle of the EU member states. National GDP per capita in Purchasing Power Standards (PPS) did not reach the same level of development as before the Economic crisis until 2021 (2008; Index = 90). In addition to the sharp economic decline during the Economic crisis, the recovery was therefore significantly slower than the EU average. The situation was different after the COVID-19 crisis, when Slovenia took a further step towards achieving the EU average.

During the Economic crisis, unemployment in Slovenia began to rise as early as 2009, reaching 9.9% at the time. This was 2.6 percentage points higher than the 2008 level and later rose continuously to 15.4% in 2014. In 2015, the level of unemployment was already lower (by 0.8 percentage points), while unemployment fell significantly after 2015. Nevertheless, the unemployment rate in Slovenia was below the EU average, although unemployment in Slovenia increased more strongly. During the COVID-19 crisis, the level of unemployment was unproblematic. In 2020, it reached 5.0%, 0.6 percentage points higher than in 2019. In 2021, unemployment was slightly lower (by 0.2 percentage points), while in 2022 it was even below the 2019 level (4.0%). The situation in Slovenia was much better than in the EU, where the unemployment rate reached 7.2% in 2020, while the overall increase in unemployment before and after the COVID-19 crisis was quite similar in both territorial units.

Before the Economic crisis, Slovenia was one of the EU member states with the lowest levels of public debt measured as a percentage of national GDP. With a debt of 21.8% of GDP in 2008, it was in 7th place. The situation began to change after the start of the

Economic crisis. As early as 2009, Slovenia recorded a sharp increase of 12.7 percentage points. Public debt continued to rise in the following years, reaching 82.6% in 2015. After this year, public debt fell in relative terms, but remained at a level of 70.0% of GDP. While Slovenia had a low level of debt before the Economic crisis, its debt level is now much closer to the EU average. The value of the indicator rose from 65.4 in 2019 to 79.6 in 2020. After the COVID-19 crisis, the values fell again, but partly due to the increase in the overall GDP value.

The decline in economic activity during the economic crisis is also reflected in the number of companies. During the Economic crisis, the number of companies in Slovenia increased by 21,158, or 13.1%. However, this increase is exclusively due to the increase in the number of micro-enterprises with up to nine employees. The number of companies fell in all other categories: there were 712 or 9.5% fewer small companies (10–49 employees), 164 or 7.6% fewer medium-sized companies (50–249 employees) and 33 or 9.1% fewer large companies (250 or more employees). Measured in terms of the number of companies, the Economic crisis had a particularly negative impact on small and large companies. On the other hand, the number of companies in all categories increased during the COVID-19 crisis. At the end of 2020, only three large companies did not exist anymore compared to 2019, but their number was higher for 11 in 2021 than in 2019.

Foreign direct investment (FDI) is important as a potential driver of economic development, as it promotes economic growth, employment and productivity (Deichmann 2021). In Slovenia, foreign direct investment plays a much smaller role in the national economic system than in other Central European countries (Kušar 2021a). In 2007, the last year of expansion before the start of the Economic crisis, FDI stocks in Slovenia reached EUR 9765.1 million or 27.8% of GDP. By 2008, the value of FDI stocks had already fallen by 12% to EUR 8598.0 million, although FDI inflows were still positive (EUR 831.8 million). In 2009, the total value of inward stock decreased again, this time by 9.0%. In 2010, 2011 and 2012, the value of FDI was higher, but this was followed by another decline of 3.8% in 2013. After that, the value of FDI inward stock value was higher every year, even during the COVID-19 crisis (Table 2).

**Table 2.** FDI stock value and inflow during the economic slowdown and crisis in Slovenia, 2008–2013 and 2019–2020.

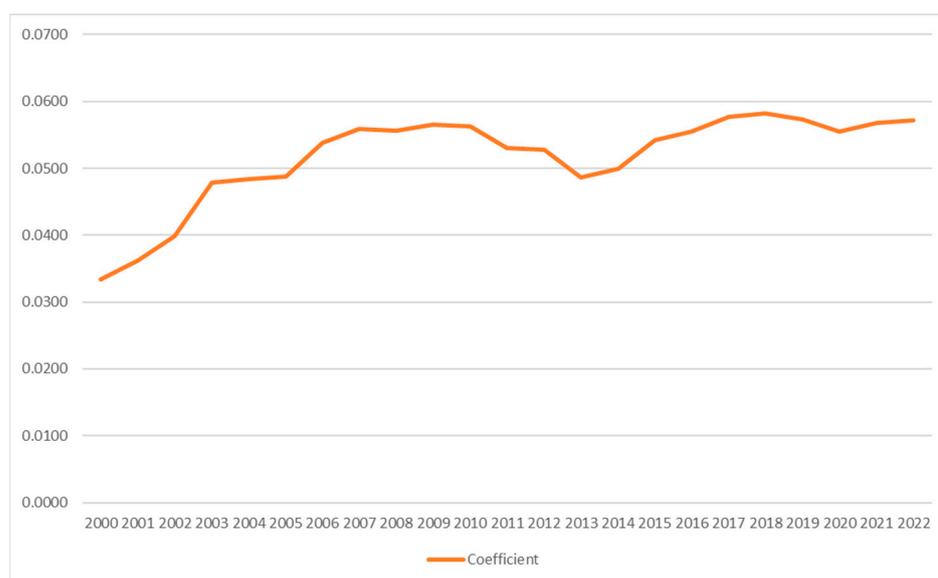
Year	FDI Stock Value (Million EUR)	FDI Stock Value (% of GDP)	FDI Inflow (Million EUR)
2008	8598.0	22.7	831.8
2009	7827.8	21.6	−342.5
2010	7982.9	22.0	79.5
2011	8880.1	24.1	782.2
2012	9248.6	25.6	264.1
2013	8896.5	24.5	−113.9
...			
2019	16,178.7	33.3	1306.8
2020	16,663.8	35.4	192.6

Source: WIIW (2019) (data for 2008–2013), *Direct Investment 2022* (2023) (data for 2019–2020).

The characteristics of FDI inflow show a different picture of FDI dynamics in Slovenia during the economic crises (Table 2). In 2009 and 2013, FDI inflows were even negative. This means that investors partially withdrew their investments from Slovenia due to several factors, including changes in value/price, changes in capital affiliation in the ownership structure of related companies and different reporting populations (Direct Investment 2009 2010). The lowest absolute inflow was recorded during the Economic crisis in 2010 and 2012, while a significant decline was also recorded during the COVID-19 crisis in 2020. The average inflow before the 2008–2013 economic crisis was more than 2.5 times higher than during the economic crisis: the average inflow of direct investment in the period 2000–2007 was EUR 663.9 million, while during the crisis it was only EUR 250.2 million. The average

inflow after the Economic crisis until 2019 was much higher than in the pre-crisis period at EUR 1078.7 million, as government support for attracting foreign direct investment was much higher at that time (Kušar 2021a). During the COVID-19 crisis, the average value of inflows was lower again, reaching EUR 749.7 million. In the post-COVID-19 years 2021 and 2022, FDI inflows flourished again with an average of EUR 1748.7 million.

The coefficient used to measure interregional disparities in Slovenia shows an increase from 0.0334 in 2000 to 0.0559 in 2007, or 67.4%. This increase corresponds to the economic expansion after 2000. The trend reversal was observed in 2008, when the coefficient fell by 0.45%. In the first year of the economic crisis, the value of the coefficient rose slightly (by 0.0009 or 1.63%) to 0.0565, but it fell in the following four years. In 2013, it reached 0.0486 and was thus 14.0% below the 2009 value. With the start of the recovery after 2013, interregional disparities began to increase again, albeit at lower rates. The coefficient rose until 2018, when it reached 0.0582 or 19.8% more than in 2013 (Figure 2).



**Figure 2.** Value of the coefficient (variance of natural logarithm of GDP/capita) for measuring interregional disparities in Slovenia, 2000–2022. Source: [Statistical Office of the Republic of Slovenia \(2024\)](#); own calculations.

The slowdown in 2019 and the COVID-19 crisis in 2020 were characterised by the decrease in the value of the coefficient of interregional disparities: it decreased by 1.66% in 2019 and by 3.15% in 2020. Thus, during the two economic crises, interregional disparities in Slovenia decreased. The coefficient rose again in 2021. After 2016, a stagnation of interregional disparities in Slovenia can be observed, with a slightly negative trend when comparing the value of the coefficient in 2018 (0.0582) and 2022 (0.0572).

### 3.2. Socio-Economic Aspects of Economic Crises in Slovenia: Meso-Territorial Level

The meso-territorial level or the regional level in Slovenia is represented by NUTS 3 territorial units called statistical regions. There are 12 statistical regions in Slovenia. However, their role is much more important as they serve as the territorial level for the implementation of national regional policy.

Although Slovenia is a relatively small country with around 20,000 square kilometers and 2.1 million inhabitants, the statistical regions are relatively different from the developmental point of view. The Central Sava region is an old industrial region and the least developed statistical region in Slovenia. On the other hand, the Central Slovenia region is the most developed region, where Ljubljana, the capital of Slovenia, is located. The

Mura region is a traditional less developed region, while the Southeast Slovenia region is characterised by more recent industrial development.

The statistical regions in Slovenia were facing different development dynamics during the Economic crisis (Table 3). The Central Sava region was hit the hardest. It experienced an economic decline between 2009 and 2015. That is two years more than in Slovenia. Three regions, namely, Central Slovenia, Gorizia and the Coastal-Carst region, experienced economic decline in all five years of economic decline. Interestingly, the Central Slovenia and Coastal-Carst regions are generally among the most developed regions in Slovenia in terms of economic indicators. The shortest decline was recorded in the regions of Upper Carniola and Carinthia. Both regions were affected by a decline for two years. Six regions recovered one year earlier than Slovenia.

**Table 3.** Economic cycle in NUTS 3 regions in Slovenia, 2007–2015.

NUTS 3 Region	2007	2008	2009	2010	2011	2012	2013	2014	2015
Mura	E	S	D	D	R	D	R	R	R
Drava	E	S	D	D	R	D	D	R	R
Carinthia	E	S	D	D	R	R	R	R	R
Savinja	E	E	D	R	R	D	D	R	R
Central Sava	E	S	D	D	D	D	D	D	D
Lower Sava	E	S	D	D	R	D	R	R	R
Southeast Slovenia	E	S	D	D	R	D	R	R	R
Central Slovenia	E	S	D	D	D	D	D	R	R
Upper Carniola	E	S	D	R	R	D	R	R	R
Littoral-Inner Carniola	E	S	D	D	D	D	R	E	E
Gorizia	E	S	D	D	D	D	D	R	R
Coastal-Carst	E	S	D	D	D	D	D	R	E
SLOVENIA	E	S	D	D	R	D	D	R	R

Notes: E—expansion, S—slowdown, D—decline, R—recovery. Years of decline marked with grey color. Source: Statistical Office of the Republic of Slovenia (2024).

The regions hardest hit during the first phase of the economic crisis were Carinthia, Upper Carniola and South-East Slovenia. In all three regions, manufacturing represents an important part of the economic structure. The least developed regions were the Coastal-Carst, Central Sava and Mura regions. The latter two regions are characterised by a low overall level of development, while the Coastal-Carst region has the greatest importance of the service sector in Slovenia. The economic development of the Central Slovenia region was roughly in line with the national average. Studies by Lapuh (2016) have shown that the Mura, Carinthia and Savinja regions recovered the fastest economically, while the Littoral-Inner Carniola, Coastal-Carst, Gorizia and Central Slovenia regions had difficulties achieving above-average economic development during and after the economic crisis.

In the search for resilient regions during the economic crisis, i.e., regions capable of withstanding, absorbing or overcoming the economic shock and recovering from it relatively quickly (Lapuh 2017), only the Mura region showed economic resilience (Lapuh 2016). Although the Mura region is the second least developed region in terms of GDP per capita, it was able to change the development path much better than other regions in Slovenia. On the other hand, the most developed region of Central Slovenia took much more time and effort to recover, as it was defined as one of the least resilient regions in Slovenia. Interestingly, the low level of recovery was particularly characteristic of regions with an above-average role of construction, educated inhabitants and an above-average role of the R&D sector (Central Slovenia, Gorizia, Drava regions; Lapuh 2016).

During the COVID-19 crisis, the Slovenian regions experienced varying degrees of economic decline as well. The regions most affected were Upper Carniola and Coastal-Carst regions. Tourism is an important economic sector in both regions. The Lower Sava region, on the other hand, was not in an economic crisis, as its GDP per capita was higher in 2020

than in the previous year. A below-average decline in economic growth was also recorded in the Central Slovenia, Mura and Central Sava regions. The latter two regions are the least developed regions in Slovenia, while the former is the most developed region in Slovenia.

The recovery in 2021 was strong in all regions. It was strongest in the Littoral-Inner Carniola, Central Slovenia and Drava regions. Above-average recovery was also measured in the Gorizia and Savinja regions. Economic growth in 2021 was slowest in the Southeast Slovenia, Carinthia and Coastal-Carst regions. However, a strong economic recovery was also recorded in the regions with the slowest recovery, with relative values of around 7.0%. Comparing both elements of the analysis (changes in GDP/capita for 2009–2020 and 2020–2021), Central Slovenia was the most successful region.

During both economic crises, interregional disparities decreased significantly. With the recovery process, disparities began to increase again. After the COVID-19 crisis, for example, economic development in Central Slovenia was much higher compared to other Slovenian regions, which led to an even greater developmental divergence from other regions. The Central Sava region continued to lag, while a process of mutual convergence took place in other regions (Kušar et al. 2024).

The quality of life in the regions was assessed in the Regional Development Report 2018–2022 (Kušar et al. 2024). Although the report focused primarily on the COVID-19 crisis, it also included a long-term assessment of the quality of life in the regions. During the economic crisis, the regions experienced a dramatic decline in employment and an increase in social exclusion. The incomes of the population stagnated. The effects of the economic crisis on quality of life were also evident during the recovery phase of the economic cycle. It was only shortly before the COVID-19 crisis that the quality of life reached pre-Economic crisis levels (Kušar et al. 2024).

The decline in quality of life during the COVID-19 crisis went unnoticed at both national and regional level. The crisis was much shorter. The government put together 10 packages of measures to help the hardest-hit sectors of the economy (tourism, logistics) and various social groups. In some parts of Slovenia, unemployment after the COVID-19 crisis was even lower than before the crisis. A similar situation was also observed in five regions. However, the COVID-19 crisis had a negative impact on certain dimensions of quality of life, such as the use of public libraries and public transport. The low levels also persisted in the following years (Kušar et al. 2024).

### 3.3. Socio-Economic Aspects of Economic Crises in Slovenia: Micro-Territorial Level

The decline in economic activity during the 2009–2013 economic crisis had a geographical dimension that was reflected in the spatial structure at the micro-territorial or locational level. Lack of financial resources for investment and company bankruptcies due to the turmoil in the macro-regional and global market led to the emergence of brownfields. Before the start of the economic crisis, the construction sector invested heavily in the construction of flats, single-family homes and new business premises. Shortly after the start of the financial and economic crisis, many investments were halted, and many investors faced bankruptcy. The banks, which had subsidized construction by granting loans, stopped providing fresh funding, as there was a shortage of funds on the European financial market and the requirements for investors to prove their equity base were increased as the confidence of financial market participants was severely weakened.

The emergence of brownfields was observed throughout the country, but was particularly visible in Ljubljana, the capital of Slovenia. The field inventory carried out in 2011 mapped 97 locations with partially or completely vacant residential buildings or construction sites, where there were 1500 newly built but unoccupied flats and around 75,000 square meters of available commercial space. Both types of dwellings were at different stages of construction: concrete skeletons only, completed buildings but without occupants or partially occupied apartment blocks. The residential buildings were relatively evenly distributed across Ljubljana, but in some areas, there was a clustering: in the city centre and in the outskirts of the city, mostly on reclaimed brownfield sites. Office buildings

and groups of office buildings were mapped in locations with the best accessibility for cars (Kušar 2012). The process of their activation was very slow. The main reason for this was a lengthy legal process following investor bankruptcies, but waiting for a better economic environment from the new owners, mostly banks, also played an important role. Some failed investments have still not been capitalized, even though they are in attractive parts of Ljubljana. For example, the investment in Tobačna City on the south-western edge of Ljubljana's city center is still an abandoned construction site, while a large investment near Ljubljana's main railway station will not start until 2024.

A better and more systematic insight into the emergence of brownfields during the economic crisis was made possible after 2017, when the first inventory was carried out in Slovenia. At that time, 1081 brownfields of nine different types with an area of 3422 ha were registered in Slovenia (Lampič et al. 2017). The year of abandonment was also available for most brownfields (Functionally Derelict Areas Database of Slovenia 2017). By calculating a non-parametric Kruskal–Wallis one-way ANOVA test that analyses the phase of an economic cycle in Slovenia (two phases: expansion and decline) and the occurrence of brownfields after the year 2000 (four categories: construction sites, services, industry, agriculture,  $N = 376$ ), the null hypothesis that the occurrence of brownfields is equally distributed in both phases of the economic cycle was retained, with the exception of the brownfield type abandoned construction sites, where the null hypothesis was rejected, meaning that only abandoned construction sites are the only brownfield type statistically associated with the economic crisis.

When modelling the economic mechanisms of brownfield emergence, only abandoned construction sites are statistically linked to the phase of the economic cycle. The emergence of other types of brownfields in Slovenia between 2001 and 2016 is therefore the result of other development factors, primarily global macroeconomic conditions and the changes and peculiarities of the transition process from a planned to a market economy, which in Slovenia is characterised by the gradualism approach.

During the last economic crisis in 2020, which was due to the COVID-19 lockdown, the emergence of new brownfield sites in Slovenia was not observed. This year, only five new brownfields emerged, of which only one, a vacant construction site of an apartment block in Slovenj Gradec, could be attributed to the economic crisis (Functionally Derelict Areas Database of Slovenia 2023). The low unemployment rate, the extensive state aid for companies, the relatively short economic crisis and the strong economic upturn after the end of the lockdowns prevented the occurrence of long-lasting economic-geographical aspects of the economic crisis.

Although the economic crisis is an obstacle to the implementation of long-term management strategies, as the development factors taken into account when planning the company's development are changing dramatically, the most resilient companies can adapt very quickly to the new circumstances.

During the 2008–2013 economic crisis in Slovenia, the national daily newspaper *Finance* presented 340 companies that were financially successful even during the crisis. These companies were labelled "Lomilci krize" (crisis brakers). One of these companies was Carthago d.o.o., which is based in the settlement of Odranci in the north-eastern part of Slovenia (Pomurje region, Slovenia). Carthago is a greenfield foreign direct investment in Slovenia. The company's main product is motorhomes. The German investor chose Odranci in 2005 when the decision was made to move part of the production of motorhomes from Germany to another country in order to reduce production costs (Kušar 2011). During the economic crisis, the plant continued to expand production and hire new employees. This production facility was the savior of the entire Cartago Group, which was struggling with a serious decline in sales. Key elements of the company's success were the production strategy (producing a niche model of motorhome suitable for every driver), large investments in technological development that led to production innovations, a conservative financial policy (avoiding excessive borrowing) and constant preparedness

for times of crisis (Šubic 2024). Today, Carthago has more than 900 employees in Slovenia. The company recently opened a new production facility in the nearby town of Ormož.

#### 4. Discussion and Conclusions

A systematic approach to the study of economic crisis is the central theoretical focus of this paper, in which the socio-economic consequences of two economic crises that Slovenia experienced after the year 2000 were analysed. An economic crisis is a period of the decline in the economic growth, measured by GDP, but also a period in which the economy is still very much affected by the negative development trends.

The socio-economic aspects refer to the changes in the various socio-economic characteristics at different territorial levels. The analysis of the socio-economic consequences of the economic crisis focuses on the changes in economic power and dynamics, development relations between territories, economic polarization, changes in economic structure and power, but also on changes in social structure. It also includes the visible consequences of economic stagnation, such as the emergence of brownfields. On the other hand, the model also makes it possible to show the reaction to the economic crisis, e.g., of companies. The model looks at the consequences of the economic crisis at three spatial levels: macro (national level), meso (regional level) and micro (locational level). Higher territorial levels are characterised by a higher degree of abstraction in the analyses. A model that could be used to analyse the interrelationship between economic, social and spatial aspects of the economic crisis at different territorial levels was developed, to extend the existing economic (-geographical) theoretical approaches, such as the regional economic resilience framework, econometric models, the territorial capital model and urban economic models, which generally focus on a limited number of mainly economic factors, with a comprehensive geographical approach.

Two economic crises were analysed in the research: the Economic crisis that began in 2009 and lasted until 2013, and the COVID-19 crisis in 2020. The origin of both economic crises differs from each other in the cause of the economic decline. The Economic crisis began due to financial and economic imbalances and mistrust during the global financial crisis of 2007–2009, while the COVID-19 crisis was caused by the cessation of most economic activities to prevent the spread of the COVID-19 virus.

Based on the analyses according to the three-stage territorial model, the basic economic-geographical characteristics of both economic crises can be highlighted in Table 4, which also presents the most important research results and the answer to the research question of what the socio-economic consequences of each of the economic crises were.

The second research question that was stated at the beginning of the paper was, whether there are any differences between the Economic crisis and the COVID-19 crisis. The two economic crises differ fundamentally in many aspects. The cause of the two crises is different, but so is the extent of the consequences. Compared to the economic crisis, the COVID-19 crisis was much shorter and less severe, with relatively little impact on the economic-geographical structure: the level of unemployment, public debt, the structure of companies, the role of foreign direct investment, the formation of brownfields and the quality of life. However, both economic crises share some common characteristics: strong economic growth in the first year of the economic recovery, a reduction in interregional disparities during the economic crisis, which increased again afterwards, and different development paths of the NUTS3 regions. The industrialized regions were hit harder during the Economic crisis, the tourism regions during the COVID-19 crisis.

However, as economies are still in the period after the COVID-19 crisis, it has not been possible to shed light on all aspects of the recovery. Although the COVID-19 crisis was short-lived, important consequences can be observed. Some specific elements of quality of life (use of public libraries, use of public transport) have been fundamentally affected, mainly due to increasing digitalization in all areas of life. The COVID-19 crisis has triggered processes of digital transformation and green transition. Both processes will have a strong impact on economic-geographical changes at all territorial levels. The COVID-19 crisis took

place at the beginning of fundamental changes at the macroeconomic level: deglobalization, changes in global production values, green transition, decarbonization of the economy and increasing geopolitical tensions.

**Table 4.** Main socio-economic aspects of the Economic crisis (2009–2013) and the COVID-19 crisis (2020).

Category	Economic Crisis	COVID-19 Crisis
Intensity	Slovenia was one of the most affected countries in the EU	Decline smaller than the EU average
Length	Long-lasting crisis: it took five years to move to another stage of the economic cycle	It took only one year to move to another stage of the economic cycle
Recovery	Slow recovery: pre-crisis levels of economic strength compared to the EU average was reached only in 2021	Recovery significantly stronger than in other EU member states
Unemployment	Level of unemployment doubled: from 7.3% in 2008 to 15.4% in 2014	Not an issue; after the crisis it was lower than before the crisis
National debt	Strong increase of national debt	Small increase of national debt
Companies	Pressures on the survival of larger companies, but also success stories	Increase of the number of companies in all categories
FDI	Decrease of the value of FDI	No influence on FDI dynamics
Interregional disparities	Decrease of interregional disparities	Decrease of interregional disparities
Regional development	Diverse development trajectories of NUTS3 regions	Diverse development trajectories of NUTS3 regions
Brownfields	Formation of specific type of brownfields: abandoned construction sites	No influence on formation of brownfields
Quality of life	Overall decrease of the quality of life	Low influence on the quality of life

There are some limitations regarding the theoretical and methodological approach of this study and the quality of the interpretation of the results that are worth mentioning. As the COVID-19 crisis is less present in the literature than the Economic crisis, it was not possible to analyse its socio-economic aspects as thoroughly as for the Economic crisis. As mentioned in this paper, in 2022, the final year of the analysis due to data availability on the regional level, the Slovenian economy was still in the recovery phase, which means that not all socio-economic aspects could be assessed and should be addressed in future research activities. The theoretical model for assessing the socio-economic aspects of the economic crises should be extended to include additional territorial levels. For example, this paper does not consider the situation at the micro-regional level (municipal level), where there may be certain deviations from the socio-economic trajectories described at the regional level, because although relatively small, not all regions in Slovenia are homogeneous in terms of development. The findings on the individual economic crises and the comparison of the two crises analysed are very specific to Slovenia and limit the generalizability of the conclusions to other countries and regions with different or somewhat similar socio-economic contexts.

There are some interesting potentials for future research. The theoretical approach presented in this paper and applied during the research focuses primarily on the economic-geographical (socio-economic) aspects of the economic crisis. However, future development of the model can be expanded to include other aspects, such as political-geographical ones or more disaggregated social aspects, such as exploring inequalities between different social groups at different stages of the economic cycle, like DiPasquale et al.'s (2021) research on race and class patterns of income inequality in post-recession times. Future research on the socio-economic aspects of economic crises should consider a broader territorial

framework (e.g., Central European countries), which would allow a comparative analysis of the socio-economic aspects of economic crises, but also a better understanding of the socio-economic situation and processes during and after the economic crises in Slovenia.

Considering the fundamental differences in the genesis and socio-economic aspects of the Economic crisis and the COVID-19 crisis presented as results of the research, the political response to crises must be specific and unique, arising from their roots and characteristics. However, not only the economy, but also the most vulnerable social groups should receive special support. The policy response to the COVID-19 crisis in Slovenia proved to be successful and contributed not only to a quick economic recovery, but also to keeping social development at an acceptable level.

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