

BUSINESS CYCLES IN EUROPEAN REGIONS

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Purpose: The main purpose of the considerations is to present and analyze the most important morphological features of cyclical fluctuations for the 27 European Union countries as a whole (aggregated indicator – EU27) and for individual EU countries in the period from the first quarter of 2000 to the fourth quarter of 2022 based on the gross domestic product dynamics indicator. On the basis of the constructed indicators, which made it possible to isolate business cycle fluctuations, the degree of synchronization of the cycles of individual EU regions with the EU27 reference cycle was assessed.

Design/methodology/approach: The methodological foundations of the research process and the empirical assessment of regional business cycles in the EU were preceded by theoretical analyzes regarding the concept, essence and morphological features of regional business cycle fluctuations. The study is based on 92 observations for each studied region. Dynamic indicators were built reflecting changes in general economic activity, i.e. quarterly time series of GDP. The obtained series were decomposed and deseasonalized. Upper and lower turning points were identified, resulting in phases of growth and slump in a given economy. This made it possible to present full business cycles and then assess them (in particular, determine the degree of synchronization between individual countries and the reference cycle).

Findings: By assessing the course of fluctuations in business cycles of the entire economy of the European Union as a whole and fluctuations in business cycles of individual regions making up the EU in the period from the first quarter of 2000 to the fourth quarter of 2022, it can be concluded that this progression is not uniform. Divergences in business cycles in the European Union are an important feature of the data. This differentiation depends largely on the specific development of each region.

Originality/value: The course of cyclical fluctuations was determined for all countries that are members of the European Union, as well as in individual EU regions.

Keywords: economic fluctuations, international business cycles, cycle synchronization, region, European Union.

Category of the paper: Research paper.

1. Introduction

One of the most important policies conducted within the European Union is regional policy. Since the end of the 1960s, a process of strengthening the position of regions perceived as an autonomous economic and social system has been observed. This is related to the tendency promoted by the EU to raise the importance of the region in the administrative and economic system. The issue of regional business cycles becomes important in the context of the relevance and effectiveness of economic policy. The uneven dynamics of regional development results in economic divergence of European regions, which may result in different resistance to economic crises.

Understanding the phenomenon of cyclicity is crucial for the proper conduct of economic policy, which is why issues related to business cycle fluctuations are an area of interest for modern economists (Spychała, 2015). One of the features of the modern, globalized world economy is closer economic cooperation. This is accompanied by an increasing convergence of the business cycles of the economies of the countries participating in this process. This mainly applies to the European Union, and in particular to the euro zone countries, as an example of the most integrated economies in the world.

The problem of rapprochement, similarity, interplay, co-movement, and finally synchronization of business cycles, as a direct effect of globalization and regionalization, is currently the topic of many scientific studies that fall within the broader trend of analyzing the effects of international economic integration. In this context, many researchers ask about the existence or formation of a global business cycle as a result of globalization. R. Lumsdaine and E. Prasad (2003) define this issue by pointing out that the intensification of international trade and dynamic financial flows between countries have raised the question about the impact of the phenomenon of globalization on the transmission, spread and channels of mutual influence of business fluctuations between individual countries. Understanding the essence of international business cycles, or rather recognizing the relationship between short-term economic booms and busts experienced by economies in different parts of the world, is of great importance today (Lumsdaine, Prasad, 2003; Domańska, 2013).

Dynamically developing regions with significant diversification of the economic structure are considered more resistant to economic breakdowns. In turn, regions with a less diversified economic structure and, at the same time, a lower level and pace of development experience economic changes more rapidly (Niemira, Klein, 1994). With this in mind, understanding the regularity and morphological divergences of regional business cycles allows for more effective counteracting of the negative effects related to the course of changes in economic activity that characterize individual areas.

2. The essence of business cycles and economic development

The most famous definition of the business cycle occurring in a market economy was developed by A. Burns and W. Mitchell, according to which "the business cycle is a type of fluctuations occurring in aggregates representing the economic activity of nations organizing their production in enterprises. Cycles consist of periods of expansion occurring at the same time in many economic activities, followed by crises, slumps, and booms that connect with the expansion phase of the next cycle" (Burns, Mitchell, 1946). The cited definition was modified by I. Mintz, who defined the growth cycle as "regular fluctuations in aggregate economic activities. Growth cycles consist of a period of high growth rate, occurring simultaneously in most economic activities, followed by a period of relatively low growth rate, leading to a high growth rate phase of the next cycle" (Mintz, 1972). According to I. Mintz, the business cycle consists of only two phases, therefore the periods of recovery and expansion of the classic cycle according to the definition of A.F. Burns and W.C. Mitchell's term was replaced by a period of high growth rate, while periods of crisis and stagnation were replaced by a period of relatively low growth rate.

The economic process, defined by the course of the main macroeconomic variables (e.g. Gross Domestic Product, aggregate demand, aggregate value of industrial production), consists of: the trend and deviations from it in the form of periodic fluctuations, as well as irregular fluctuations of a random nature. A trend is always related to the occurrence of a long-term development tendency. However, periodic fluctuations include: cyclical medium-term fluctuations that repeat with more than a year's regularity, and seasonal fluctuations that repeat in time intervals shorter than a year. This understanding of economic development is widely accepted among economists, and it results from the combination of the assumptions of the neoclassical theory of growth (stimulated in the long run by the accumulation of production factors) with elements of neo-Keynesian analysis, which seeks the causes of deviations in the values of macroeconomic variables from the long-term trend in price and wage rigidity in the economy. Therefore, the issue of different economies becoming more similar as a result of integration and globalization processes should be reduced to the question of the convergence of their cyclical fluctuations and the possible convergence of long-term trends (Domańska, 2013). World literature refers to this issue as international synchronization of business cycles and in this respect analyzes, among others, similarity of morphological features in the course of variables, such as: the nature of the upper and lower turning points, the duration of individual phases of cycles and entire cycles, their frequency, amplitude and intensity of fluctuations, the characteristics of turning points, as well as their objective and temporal structure.

3. Concepts of the development of business cycles in the conditions of European integration

There are two strands of views in the literature on the subject regarding the international and interregional effects of deepening economic integration. The beginning of this division was initiated by the results of research on the effects of a single monetary policy within the common currency area in regional terms. As a result of these considerations, the problem of economic fluctuations in the regional aspect is currently approached in two ways in the literature on the subject (Spychała, 2020).

The basics of the first concept were formulated by P. Krugman (1991). His analysis was comparative in nature between the regions of the European Union and those in the United States. P. Krugman pointed out that the intensification of economic cooperation between the countries of the monetary union over time leads to specialization of production and regional concentration of industry in accordance with the theory of comparative costs. It also favors economies of scale and limited export diversification, which intensifies the desynchronization of fluctuations in economic activity (Krugman, 1991; Camacho, Perez-Quiros, Saiz, 2008; Markowski, 2022).

The second concept is related to the hypothesis of endogeneity of the criteria of the optimal currency area. The concept proposed by J. Frankel and A. Rose (1998) assumes that with deepening economic integration, symmetrical changes occur, leading to more synchronized business cycles in national and regional terms. According to this concept, as a result of the elimination of economic barriers between countries and regions of one currency area, trade intensifies. An increase in the level of synchronization of cyclical fluctuations was considered to be a direct effect of this process. J. Frankel and A. Rose pointed out the pursuit of a common economic policy in the integrating area as an additional factor contributing to the synchronization of business cycles (Frankel, Rose, 1998; Warzala, 2014).

J. Frankel and A. Rose, who made a fundamental contribution to the development of the endogeneity theory, stated that assessing a given country's readiness to join the monetary union on the basis of historical data is misleading. Based on their assumptions, one may be tempted to say that only the adoption of a common currency "releases" the tendency to intensify trade and convergence of economic fluctuations (Markowski, 2022). Other studies in the world literature also prove that European national-regional business cycles are characterized by greater synchronization in the more developed countries of the monetary union (Artis, Hang, 1997; Beine, Candelon, Sekkat, 2003; Barrios, Lucio, 2003; Marelli, 2007). On the other hand, among the publications in which an attempt was made to verify endogeneity, we can find works showing the lack of a relationship between, for example, trade interdependence and cyclical convergence (Hallet, Piscitelli, 2002; Canova, Dellas, 1993). These works cast doubt on the conclusions of J. Frankel and A. Rose.

R. Warząła (2018) lists at least two arguments limiting the importance of the synchronicity of business cycles in the Economic and Monetary Union. Firstly, differences in economic conditions in individual Member States may be a countercyclical factor. This will be the case when domestic demand and exports are interchangeable components of aggregate demand. When the domestic economic situation deteriorates and the economic situation in the partner country improves at the same time, the reduction in domestic demand could be replaced by exports. Similarly, the reduction in domestic production would be mitigated, and exports would act as a stabilizer of the economic situation. In turn, the increase in domestic demand could be met by production capacity released as a result of weakening exports. Then the risk of economic overheating or the pressure on price increases would be limited (Lubiński, 2004). R. Stefański (2008) indicates that the substitution of exports and internal demand cannot sufficiently replace the countercyclical function of monetary policy. Certainly, in the case of economic synchronicity in partner countries, fluctuations in aggregate demand are even stronger, so the countercyclical function of the common monetary policy becomes even more important.

Secondly, the endogeneity theory proposed by J. Frankel and A. Rose (1998) may be the second argument limiting the importance of business cycle synchronicity as a necessary condition for candidates for monetary union. Joining the monetary union leads to profound structural changes, deepens trade, smoothes the flow of labor and capital, and is a factor that increases economic connections between member countries. Even if countries were not an optimal currency area at the time of joining the monetary union, business cycles are synchronized during its duration. According to the endogeneity theory, the very fact of the administrative merger of countries into a single-currency area triggers a process that automatically creates an optimal currency area.

4. Research methodology

Every business cycle consists of two basic elements: turning points and phases. Turning points are elements that start individual phases – they determine the starting and ending moments of phases and enable the examination of other features of oscillations. Turning points can be divided into two groups:

- upper turning points, marking the end of the successful economic phase and at the same time the beginning of the downward phase,
- lower turning points, determining the moment when the period of low activity ends and the economy enters the period of economic recovery.

Assuming that each business cycle is a certain time interval lying between two turning points that are identical in nature, it can be said by analogy that the cycle phase is a certain period occurring between successive, different turning points (Stock, 1979). Accordingly,

the business cycle is composed of two parts: the economic growth phase (located between the lower and upper turning points) and the economic decline phase (located between the upper and lower turning points). The specification of individual phases is determined by the adopted definition and the method used to isolate individual turning moments.

An important morphological feature characterizing entire business cycles, but also their phases, is the length of the cycles. The length is assumed to be determined by the periods occurring between each turning point. Typically, the length of the business cycle phase is identical to the time interval lying between two consecutive (different in nature) extremes of the examined time series. If the turning points of the oscillation are defined by the intersections of the estimated trend line with the empirical values, then the length of the phase is equal to the period determined by the two successive turning points so defined. The length of the business cycle is equal to the duration of two separate phases, i.e. the growth phase and the decline phase (Barczyk, Lubiński, 2009; Barczyk, 2004).

Bearing in mind that economic processes take place in cycles with a non-uniform structure, the analysis of the synchronization of business cycles involves the comparison of individual previously isolated components. Due to the fact that economic reality is very complicated, determining empirical trends is not an easy task. The main reason is the variability of long-term growth paths over time.

It is necessary to decompose the series and isolate the components of the cycle. For this purpose, appropriate statistical tests or filters are used to isolate the desired components according to: frequency, duration or amplitude of fluctuations. The use of filters called: defiltration, filtration, series decomposition, detrending also allows for reducing non-stationary variables to a stationary form and can therefore be considered as preparing data for further analysis (Domańska, 2013). Filtration as a transformation aims to isolate certain components of the process, such as the trend, seasonal fluctuations and the irregular component (Bruzda, 2008).

For the purposes of analyzing the international synchronization of business cycles, the cointegration of time series is examined, representing a given category of variables across the analyzed economies (e.g. quarterly GDP data, monthly industrial production in various countries or e.g. in the euro zone and its individual members). Therefore, the area of multi-equation models and the study of cointegration between equations describing economic dependencies and processes in different countries is noticed here (Domańska, 2013; Beck, 2017).

The group of indicators enabling the identification of turning points of business cycles and the analysis of their most important features included quarterly gross domestic product dynamics indexes (where the corresponding quarter of the previous year = 100).

The first stage of preparing data for further procedures was the elimination of seasonal and random fluctuations, smoothing the chronological series with repeatedly selected moving averages using deseasonalization using the TRAMO-SEATS procedure. A series containing the

combined effect of the trend and the cycle was adopted for further analysis. In order to isolate cyclical fluctuations, the concept of the growth cycle was used, which is based on the analysis of the dynamics of changes in the growth rates of a selected variable and the examination of fluctuations in aggregate activity around the trend.

Assuming that the examined series contain a unit root and are therefore non-stationary (Kruszka, 2009), it was assumed that the cyclical component of the variable is the difference between its current value and the trend value (weighted average of past, present and future observations). Therefore, a stochastic trend was isolated in the form of a development trend using the Hodrick-Prescott filter. Thus, fluctuations were separated into two components: trend and cyclical component.

The most important limitation of the mentioned filter is the required minimum length of the time series that is subjected to such filtering. The recommended minimum number of observations is 32 (Mills, 2003). The time series used in the analysis meet the formal requirements for the use of the Hodrick-Prescott filter (the empirical analysis was based on 92 observations). As a result of filtering, a number of values were obtained showing the long-term development tendency in the form of isolated business fluctuations which are the basis for further analyses.

In the analysis of the course of business cycles, practical assumptions regarding deviation cycles resulting from previous theoretical considerations were adopted. It was assumed that modern cycles consist of two elements: turning points (up and down) and phases (up and down). The upper (lower) turning point occurs when the value of a series element from which random, seasonal changes and development trends have been removed reaches the maximum (minimum) in relation to the estimated trend line. Turning points must occur alternately (Barczyk et al., 2010). It was assumed that the minimum length of the phase is 3 quarters. This means that the minimum cycle length may be 6 quarters. Analyzing the length of individual cycles, it was also assumed that the quarter in which the upper turning point occurs will be included in the upward phase, and the period in which the lower turning point is identified will belong to the downward phase. Coherence coefficients determining the strength of concurrency between two selected time series were also estimated. The degree of synchronization of economic oscillations was assessed using recursive correlation with a rolling window.

The study is based on 92 observations for each studied region. Countries belonging to the European Union were adopted as individual regions. The processes of synchronization of economic fluctuations in the analyzed countries were examined in relation to the fluctuations occurring in the group of 27 EU countries treated as a whole. Therefore, the time series for changes in gross domestic product for the 27 Member States of the European Union (EU27) was adopted as the reference series. The research was conducted for the years 2000-2022, and their selection was related to access to comparable and reliable quarterly GDP data. In the empirical study of the synchronization of business cycle fluctuations, it was assumed that the indicator reflecting changes in general economic activity would be the quarterly time series

of GDP downloaded from the OECD database (available to all surveyed entities on a quarterly basis). The created indicators are dynamics indexes in relation to the same period (quarter) in the previous year. The use of this data in the analysis is due to the fact that the GDP series largely characterize the most important aspects of the economic process (informing about both changes in demand and market supply). Moreover, they are estimated using unified principles on an international scale, therefore the created indicators can be considered fully comparable. Moreover, the turning points determined on the basis of the constructed indicators are highly real, as GDP is included in the group of simultaneous indicators.

5. Research results

Analyzing the course of business fluctuations for the GDP series in the period from the first quarter of 2000 to the fourth quarter of 2022, significant disproportions can be observed between the EU27 reference cycle and its individual EU countries (figure 1).

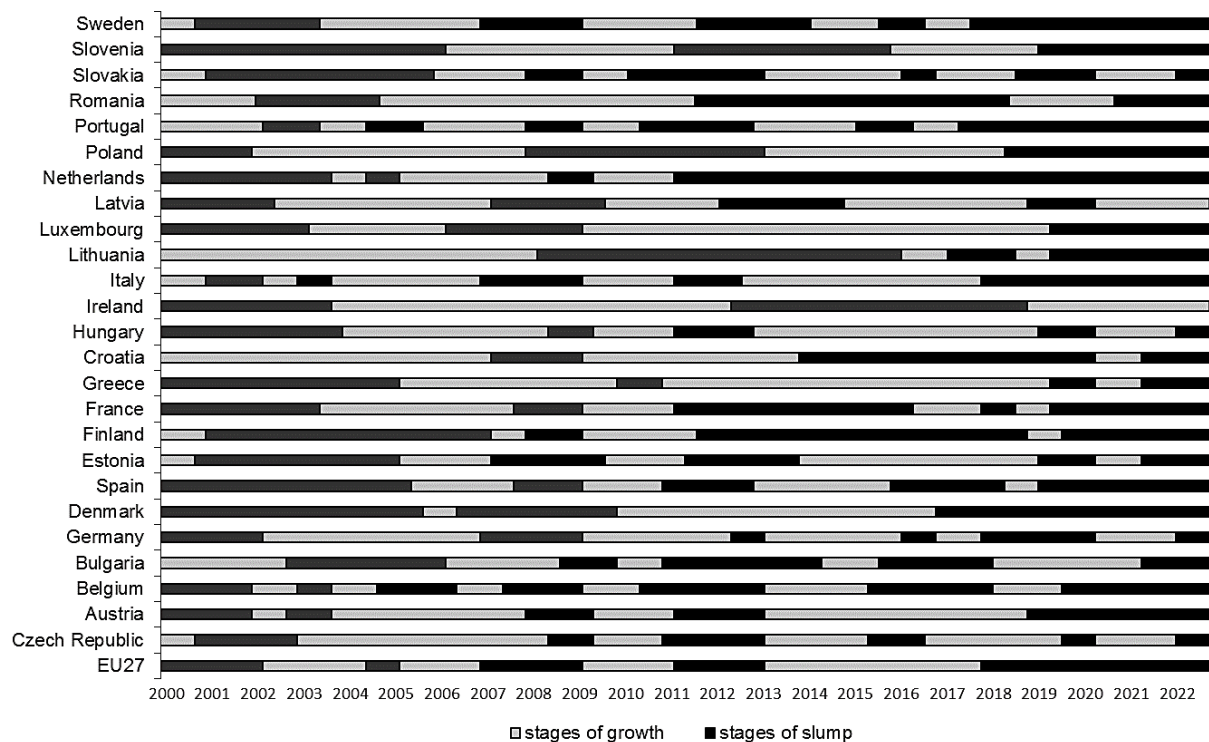


Figure 1. The indication of the stages of slump and the stages of growth in the period between the first quarter of 2000 and the fourth quarter of 2022.

Source: own compilation based on the research conducted.

For the time series of gross domestic product for the EU27 as a whole, nine phases were distinguished, and their sequence allowed us to distinguish three full business cycles. The length of the distinguished business cycles for the EU as a whole ranged from 12 to 16 quarters. The first of the separate business cycles lasted from the second quarter of 2002 to the

first quarter of 2005 and was a cycle with a predominant growth phase. The second separate cycle, started in the second quarter of 2005 and ended in the first quarter of 2009, was characterized by a shorter growth phase. It can be assumed that it was a consequence of the economic collapse caused by the global financial crisis. The last, third cycle falling between the second quarter of 2009 and the first quarter of 2013 was consistent with the second cycle in terms of their duration (16 quarters). The phases of growth and decline during this period were identical. In the second quarter of 2013, there was a turnaround that started the last - and at the same time the longest - business cycle in this series. The growth phase of this initiated cycle lasted as many as 19 quarters until the end of 2017. The observations show that the subsequent phase of economic decline that started in 2018 was still ongoing at the time the research was completed (i.e. October 2023). Therefore, these two longest phases cannot formally be considered a full closed business cycle.

Similarities in the number of separate business cycles in the analyzed period were observed in Austria, Spain, Finland, France, Romania and Hungary. Among these regions, Austria, Romania and Hungary dominated the growth phases.

The Czech Republic, Belgium, Slovakia and Portugal are the regions with the highest number of cycles observed in the period under study. In the group of these countries, 5 full cycles were distinguished, which largely consisted of short phases. In turn, particularly long cycles (9 years and longer) occurred in Croatia, Greece, Finland, Romania, Lithuania, Poland, Slovenia and Luxembourg. Poland, Slovenia, Luxembourg, Denmark and Ireland can be considered an interesting case – during the long 23-year research period, only one full business cycle was distinguished among these regions. The first four of them recorded 5 phases, while Ireland had only 4 phases. Luxembourg is also the region with the longest economic phase, lasting 41 quarters – from the second quarter of 2009 to the second quarter of 2019, the country was in a period of economic growth.

It may be important that most of the surveyed countries were in the beginning phase of economic decline at the time the study was completed. The only exceptions were Ireland and Latvia.

Based on so many entities studied, it would be a difficult task to assess the synchronization of cycles solely on the basis of designated turning points, separate growth/decrease phases, as well as entire cycles. Of course, a graphical presentation of successive moments of growth and decline can be a useful tool and a significant facilitation for comparing several dozen economies with each other, but it is not a reliable instrument for assessing the degree of synchronization of individual regions' cycles with the reference series.

After separating the turning points and phases of business cycles, the next part of the analyzes attempted to determine the degree of their synchronization. In these analyses, it was assumed that the convergence of cycles occurring in the individual studied regions would be determined in relation to the EU27 reference cycle. The coherence coefficient was used as a measure of the fit of the time series data for the two groups. Also, as part of the simultaneous

and time-shifted correlation analysis, the strength of the correlation of cyclical changes in two groups was measured: for a given region and for the reference series.

In order to capture the direction of changes in synchronization in individual regions with the reference cycle, the technique of calculating correlation coefficients within rolling windows was used.

Table 1.

The level of convergence of business cycles on the level of provinces with the business cycle of EU27 as a whole in the period of the first quarter of 2000 and the fourth quarter of 2022

Country	The level of convergence	Country	The level of convergence
Italy	0,97812	Sweden	0,88051
France	0,96013	Croatia	0,87233
Netherlands	0,95973	Poland	0,83365
Belgium	0,95442	Slovakia	0,81079
Spain	0,94391	Finland	0,79942
Austria	0,94028	Bulgaria	0,77143
Germany	0,93239	Estonia	0,67784
Hungary	0,92646	Greece	0,67055
Czech Republic	0,92635	Luxembourg	0,65087
Slovenia	0,91827	Latvia	0,62640
Portugal	0,91147	Lithuania	0,62525
Denmark	0,89194	Romania	0,60759
		Ireland	0,49564

Source: own compilation based on a research conducted.

By examining the degree of synchronization of the EU27 business cycle with its individual regions in the period of the first quarter of 2000 and the fourth quarter of 2022, it can be concluded that the level of cycle covariation was on average positive (table 1). The table arranges European regions based on the criterion of the degree of synchronization. More than 70% of the studied regions were characterized by a convergence coefficient above 0.70.

Due to the number of surveyed entities, they were selected and two groups of regions were graphically presented. The first group consists of four regions whose cycle shows the greatest convergence over time with the EU27 reference business cycle (figure 2). The recursive correlation coefficient of these entities is very similar and ranges from 0.95442 to 0.97812. During the period under review, the highest degree of synchronization with the business cycle of the EU as a whole concerned Italy. Next, significant synchronization of the cycles of European regions with the reference cycle characterized France and the Netherlands. A slightly lower rate concerned Belgium, followed by Spain, Austria and Germany. The great convergence in the course of economic activity of these countries may, to a large extent, result from the greatest importance of these regions in generating the GDP of the European Union. It can be assumed that these are regions with great economic potential. The high synchronization coefficient of these regions may indicate their greater resistance to possible economic shocks.

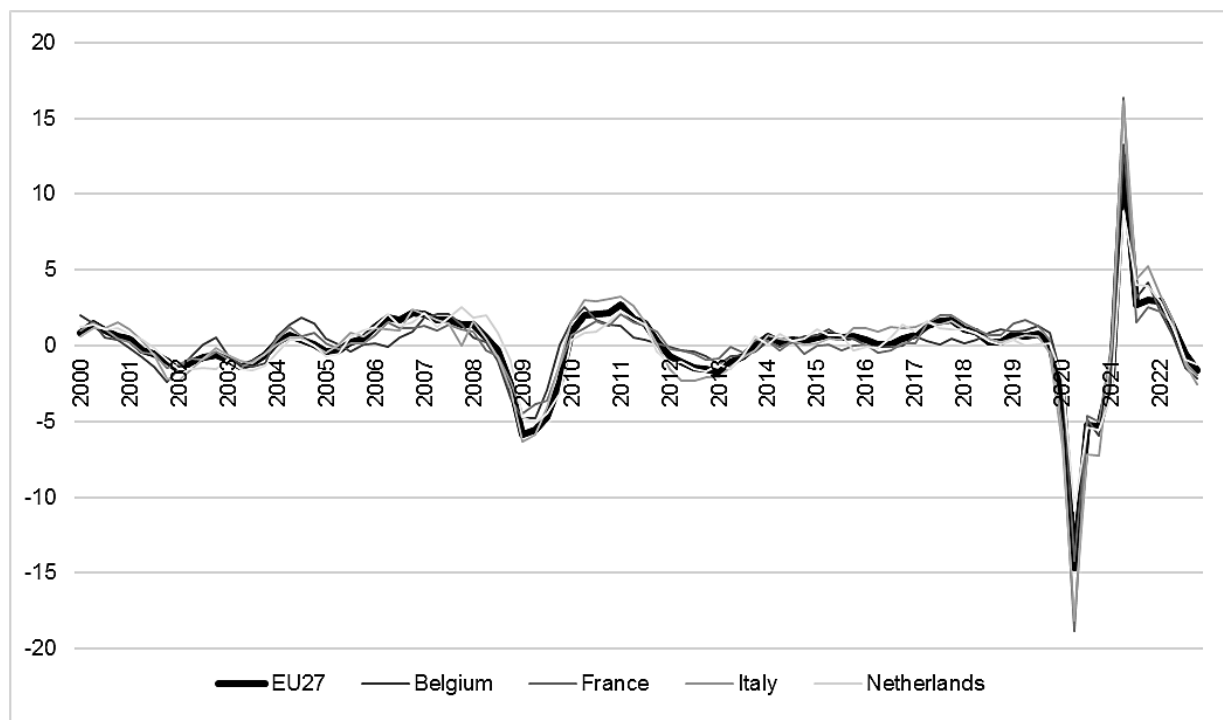


Figure 2. The progression of cyclical fluctuations for a time series of the GDP in the period of the first quarter of 2000 until the fourth quarter of 2022 for EU27 and the regions of the lowest coefficient of synchronisation.

Source: own compilation based on the research conducted.

The second group consists of four regions that are least correlated with the EU27 reference cycle (figure 3). This group (sorted from the lowest coefficient) includes Ireland, Romania, Lithuania and Latvia. The correlation coefficients of these regions ranged from 0.49564 to 0.62640. Despite the low coherence coefficient, the graph clearly shows a similar course of the business climate index in the period 2008-2011, but the changes in economic activity in these series are characterized by varying intensity. This direction of changes was certainly influenced by the global economic crisis. Lithuania and Latvia faced the greatest economic collapse. However, the correlation coefficient with the reference series that differs the most concerns Ireland – the asymmetry in the course of this cycle mainly concerned the period 2014-2017.

We can talk about the relative convergence of the fluctuations of these regions with the reference cycle from the first quarter of 2020 to the end of the analyzed period. This should be considered a very interesting phenomenon, because the beginning of 2020 is inextricably linked with the outbreak of the pandemic in the world and in Europe. The results show that the Covid-19 pandemic may have had a positive impact on the synchronization of business cycles in Europe.

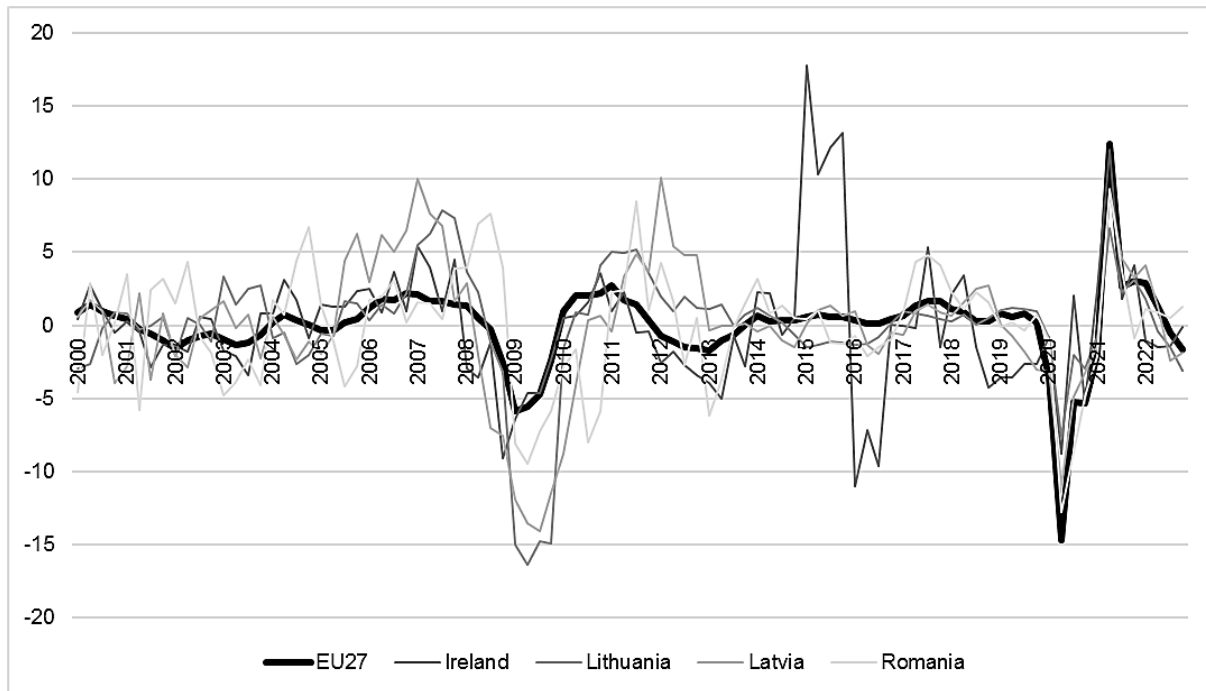


Figure 3. The progression of cyclical fluctuations for a time series of the GDP in the period of the first quarter of 2000 until the fourth quarter of 2022 for EU27 and the regions of the highest coefficient of synchronisation.

Source: own compilation based on the research conducted.

The Covid-19 pandemic may have a positive impact on the synchronization of economic fluctuations both in the short and long term. The 2020 epidemic outbreak, like the 2008 financial crisis, can be considered a large adverse symmetric shock that ensured a simultaneous slowdown of all European economies. Covid-19 has contributed to increased synchronization in the short term. The phase in which different countries cope with the effects of the pandemic may, in turn, usher in a gradual decline in synchronization, as was observed in the wake of the 2008 crisis (Beck, 2021, 2022).

6. Conclusions

Cyclical fluctuations have been and are an inherent element of the functioning of both developed and developing countries. The convergence of economic processes in various countries is a clear effect of globalization processes, including the mutual influence of national economies and the joint impact of shocks, both positive and crisis-related.

The variability of business cycles creates the need to monitor economic indicators not only at the level of the European Union as a whole, but also at the level of its members. This is important for conducting regional policy stimulating balanced development. Knowledge of the specific nature of economic oscillations enables appropriate responses to changes in the

level of economic activity in the regions. Differences in the economic situation in individual regions may result, to a large extent, from delays and accelerations occurring in the economy (Spychała, 2020).

When assessing the course of economic fluctuations of the European Union economy as a whole and the economic fluctuations of the Member States in the period from the first quarter of 2000 to the fourth quarter of 2022, it can be concluded that this course is not uniform. This differentiation results largely from the specific development of individual regions. Over the analyzed 23 years, the initial research period was characterized by relatively small changes in business cycles. The period until 2005 marks the moment immediately after the largest enlargement of the European Union. After this time, the degree of convergence increased rapidly and then remained at a similar level or began to gradually decrease. Similarly, in the first decade of the monetary union, business cycle fluctuations among euro area countries were relatively synchronized and of similar magnitude. This compliance disappeared during the financial turmoil of 2008 and the subsequent European debt crisis, when key flaws in the eurozone architecture came to light. The decline in the convergence of the studied series has become more pronounced since the middle of the debt crisis in 2010-2011. Since then, business cycle disturbances in Europe have been decreasing. In turn, the outbreak of the Covid-19 epidemic has caused synchronization on a record scale, but the increase in convergence is also accompanied by an increase in the diversification of the GDP growth rate. The Covid-19 crisis has provided some momentum towards deeper fiscal integration in the EU. To support those more affected by the epidemic, EU Member States have agreed a series of new financial measures, which represent a significant step towards a stronger framework for cross-country fiscal support in response to the crisis (Gori, 2022). The Covid-19 pandemic may have a positive impact on the synchronization of business cycles in Europe in both the short and long term.

Interpretations resulting from theoretical and empirical analyzes may be of significant practical importance and constitute the basis for defining the goals and tools of stabilization policy in the European Union. Proper use of existing analytical tools is a prerequisite for understanding the mechanism of cyclical fluctuations. The use of appropriate instruments in a given phase of the business cycle could prevent unfavorable phenomena in the region's economy or help stimulate its development.

The issue of differences in the effects of economic changes at the level of individual EU Member States seems to be important in economic practice. The considerations undertaken, the research conducted, and the results obtained may therefore constitute a starting point for undertaking more extended analyzes in this direction, including: considering the most important factors determining the synchronization of business cycles throughout the European Union.

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