

Polish and European Union economy in 2011–2019 and under the Covid pandemic: Application of macroeconomic condition index

PAWEŁ BŁASZCZYK¹ , SEBASTIAN STĘPIEŃ^{2*}  and JAN POLCYN³ 

¹ Department of Business Activity and Economic Policy, Poznań University of Economics and Business, Poznań, Poland

² Department of Macroeconomics and Agricultural Economics, Poznań University of Economics and Business, Al. Niepodległości 10, 61-875 Poznań, Poland

³ Stanislaw Staszic State University of Applied Sciences in Pila, Pila, Poland

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ABSTRACT

A set of simple and complex indicators is used to measure the economic condition of economies, and the analysis can be conducted in a static or dynamic approach. This article proposes the author's macroeconomic condition index (MCI), which is based on the popular misery index, supplementing the unemployment and inflation rates with two variables: GDP growth rate and budget deficit. The aim of the study is to assess the macroeconomic situation of Poland against the average for the EU, using the above-mentioned measure. The time scope of the study covers the years 2011–2020, with particular emphasis on the effects of the first year of the Covid crisis. The results indicate that throughout the period the economic situation in Poland in terms of the four variables combined was relatively favourable, although less stable. A sharp downturn occurred in 2020, both domestically and on average in the EU. The main determinants of the worse condition were a decline in the GDP growth rate and an increase in the budget deficit, with relatively steady unemployment and inflation.

KEYWORDS

macroeconomic condition index, Poland, EU, Covid pandemics

JEL CLASSIFICATION INDICES

E01, E24, E31, E60, O11, H6

* Corresponding author. E-mail: Sebastian.stepien@ue.poznan.pl

1. INTRODUCTION

The world economy in the 21st century has been experiencing a number of crisis phenomena, originating in the banking, financial and business spheres, and more recently in an external phenomenon related to a pandemic. And although the coronavirus concerned the field of public health in the first place, it also negatively affected the macro variables. As a consequence, both developed and developing countries grew in an unstable manner. This is reflected in various macroeconomic simple and synthetic measures. For example, in 2020, many economies recorded negative real GDP growth, negative general level (price) growth or double-digit budget deficit-to-GDP ratios (Jackson et al. 2021).

Crisis episodes in the global economy have also left their mark on Poland. While during the financial recession of the first decade of the 21st century it was possible to avoid an absolute decline in GDP and prevent deflation, in subsequent years these symptoms appeared country. A fall in prices was recorded in 2014–2016, while a fall in real GDP took place in 2020 and was the result of a pandemic shock (OECD 2020).

The main aim of the article is to assess the macroeconomic condition in Poland against the situation in the European Union (EU) in the face of crisis conditions caused by the COVID coronavirus. Hence, the time range of the study concerns mainly 2020, but for a more complete assessment of trends, earlier years are taken into account since 2011. For research purposes, three variants of multi-factor, comprehensive macroeconomic condition index (MCI) are proposed. A misery index is the basis for the construction of the measure. In this case, it has been expanded and qualitatively adjusted so that it is more appropriate in relation to the contemporary economic circumstances. The use of the author's index is an added value of the publication and represents the applied nature of the research.

The study consists of three main parts. The first one outlines the discussion on the indicator-based macroeconomic evaluation of the economy. In particular, reference is made to synthetic indicators, including the misery index. The second part presents the methodology of the study, based on a modified version of the misery index and using the tool of multidimensional comparative analysis. Consequently, the macroeconomic condition index was constructed in several variants. The third part assesses the Polish economy against the background of the EU using the new methodological approach proposed by the authors.

2. A SYNTHETIC APPROACH TO AN INDICATOR-BASED MACROECONOMIC ASSESSMENT OF THE ECONOMY AND A MISERY INDEX

Attempts to understand the functioning of the economy are accompanied, on the one hand, by the emergence of various economic theories and, on the other hand, by the implementation of ever better methods for measuring economic performance. In this way, the theoretical aspect is combined with the empirical side of analysis. Both spheres should permeate each other so that reliable and promising solutions for economic policy can be developed. Conclusions can be formulated with reference to different perspectives, including 1) micro-, meso-, or macroeconomic scope, 2) short-, medium- or long-term, and assuming 3) a dynamic or static character (see more in Wolfe 1952).



While the first two divisions are clear, the last one requires a brief comment. The dynamic approach may be understood as research whose aim is to show the functioning of the economy within an assumed time horizon. In particular, econometric models may be used for this type of research, which show in their equations the interrelationships of various economic phenomena and quantities. The static approach, on the other hand, aims to show the state of the economy at a given moment. In particular, various economic indicators can be used for this type of research. In this study, a medium-term macroeconomic approach of 10 years was used, so it is dynamic in nature.

Central and local authorities are interested in assessing the state of the economy. The assessment may indicate whether the assumed objectives of economic policy are being achieved and, possibly, in which areas more active state intervention is necessary and which instruments should be used. It should be borne in mind that the assessment of the state of the economy affects international economic relations, both in the sphere of trade and international capital flows, including foreign direct investment. Nowadays, special attention should be paid to ratings, which, being a manifestation of a specific, synthetic assessment of the condition of an economy, influence the possibilities and cost of indebtedness of countries (Kaczmarek 2002). The condition of the economy is also an object of interest for private sector entities. For them, this information provides a basis for assessing the effectiveness and risks associated with making investment and consumption decisions. The citizens, making democratic choices, also need objective criteria for evaluating political actions (Tomidajewicz – Błaszczuk 2013). In this context, it is advisable to analyse economic performance over a longer period of time and compare it with the goals declared by governing institutions *ex ante*.

The above remarks on the assessment of the state of the economy from the perspective of different groups of recipients indicate that the selection of criteria, and in particular variables for this assessment, should reflect the objectives of economic policy. These objectives can be considered from both narrower and broader perspectives. One can even adopt a certain hierarchy of them (Horodecka 2008; Winiarski 2006). From the most commonly considered perspective, it is assumed that the objectives of economic policy should be to take care of long-term, sustainable and stable economic growth and development (Anand – Sen 2000). However, the matter is not obvious, as growth and development are defined and measured in different ways.

Economic growth is a narrower concept and refers to the expansion of material wealth (Acocella 2002). It is most often measured by an increase in one measure of aggregate output and income, such as GDP. It is in relation to GDP that economic policy objectives are mostly defined, although it is increasingly considered an imperfect measure from the perspective of development in the broadest sense (Dyran 2018). It is also important to highlight two perspectives for its control:

- long-term perspective – then we can talk about economic growth *sensu stricto*. In this perspective, the goal is to stimulate and maintain the long-term growth trend of GDP at the optimal level for a given economy. In order to achieve this goal, the economic authorities must influence the factors of economic growth, i. e. labour, capital and technology;
- short-term perspective – in order for economic growth to be realised in the long-term, it is necessary to support and in particular stabilise the GDP dynamics in the short-term. Bearing in mind the cyclical nature of the economy, it should be stimulated when the economy is weak and cooled when it is strong. The aim of such activity is not only to maintain GDP dynamics



at an appropriate level, but also to influence other macroeconomic parameters, such as the unemployment rate, price dynamics, balance of payments or budget balance.

Economic development is a broader concept than economic growth and refers to the improvement of a society's well-being (Tisdell 1988). It is a phenomenon that is difficult to measure and is not only quantitative but also qualitative in nature, encompassing social and ecological criteria in addition to economic ones (Hicks – Streeten 1979). The qualitative aspects have taken on particular importance in the context of the promotion within the objectives of contemporary economic policy and the principles of sustainable development, which acquired its original meaning in 1987 through the World Commission on Environment and Development. Its essence is "to meet the developmental aspirations of the present generation in such a way as to enable future generations to achieve the same aspirations" (WCED 1987). Over the years, the concept has been operationalized (UN 2015) to include 17 multidimensional sub-goals, such as: eradicating poverty and hunger; improving health, education and the environment; ensuring full employment; reducing income inequality; promoting balanced consumption and production; and others (Barbieri – Burgess 2019).

The specificity and complexity of the concept of development makes it difficult to point to an unequivocally homogenous, synthetic measure of this phenomenon and, consequently, it is difficult to comprehensively operationalize the economic policy objective in this respect (Lele 1991). In practice, it is of an implicit nature, hardly clearly defined. It has the character of a mission rather than a goal *sensu stricto*. Economic authorities have the task of "supporting it", "striving for it", "working towards it" rather than achieving a specific level. Nevertheless, there are examples of multifactor, synthetic measures that can illustrate the level of well-being and, at the same time, the progress of socio-economic development and, consequently, can be a point of reference in the conduct of socio-economic policy. The most popular of these is the Human Development Index (HDI) used by the United Nations Development Programme (UNDP). Kubiczek (2014) also lists other synthetic measures of socio-economic development, these include, among others:

- Measure of Economic Welfare (MEW)
- Net National Welfare (NNW)
- Index of the Economic Aspects of Welfare (EAW)
- Greening of the Gross/Net Domestic Product
- Index of Sustainable Economic Welfare (ISEW)
- Genuine Progress Indicator (GPI)

As can be seen from the above, various indicators can be used to assess an economy. They can be partial- or multifactorial, synthetic in nature. To get a broader picture of evaluation in practice, it is worth using the latter approach. The question, however, is how to select the sub-indicators for the construction of a multi-factor index and what methodology to use to integrate them in a specific way, especially taking into account the diverse macroeconomic measures.

In this context one can go back several decades and cite the methodology of the so-called *miseria index*, which consists of combining at least two variables – the inflation rate and the unemployment rate (Okun 1970; Wiseman 1992; Lechman 2009). Its higher value indicates a worsening of the economic situation, so it has a negative character. The choice of two important sub-criteria was not accidental. One variable refers to the real sphere of the economy (unemployment) and the other to the nominal (inflation). Moreover, a specific feature of such a juxtaposition is the interchangeability of both variables, in particular against the background



of cyclical economic fluctuations (an exception is the situation referred to as stagflation). In good times, the unemployment rate falls, and inflation rises. During a downturn, the situation is generally reversed. Economic authorities, given the interchangeability of the two variables and the interconnectedness of the nominal and real spheres of the economy, should aim to achieve the desired combination of these elements, thereby shaping the value of the misery index.

The misery index fits into the concept of the Phillips curve and refers to the setting of economic policy objectives using the method of variable value and constant marginal rate of substitution. Despite its imperfections (see the next subsection), this simplified method has been willingly used to assess the economy for many decades (Di Tella et al. 2001; Cohen et al. 2014). This is because the Phillips curve, showing the link between the nominal and real spheres, has for several decades determined the arrangement of economic and, above all, monetary policy objectives. This is not an immutable picture, as over the years the concept has evolved, both theoretically and empirically, in particular in relation to different concepts of inflation expectations theory (Karanassou et al. 2007; Błaszczuk 2010).¹

3. DATA AND METHODS

The assessment of the macroeconomic situation of Poland in comparison with the EU was based on the macroeconomic condition index (MCI) presented in four variants described below. The time-span of the analysis covers the period 2011–2020. The lower time bracket marks the beginning of the second decade of the 21st century (just after the international financial crisis), which is the background for the assessment of the coronavirus-induced crisis conditions in 2020. The study takes into account secondary data obtained mainly from Eurostat and the statistical office in Poland (Statistics Poland). For GDP dynamics and the ratio of the budget balance to GDP in 2020 we used the estimations as at the time of writing, the final data have not yet been made public.

At the outset of the methodology section, it should be noted that with regard to the original construction of the misery index two fundamental disclaimers can be formulated. First, the narrow and insufficient for the purposes of this paper scope of the subcomponents of the macroeconomic assessment (only two elements). Second, the treatment of all variables as negatively correlated. In the construction of the index proposed in this study an attempt was made to eliminate the indicated drawbacks.

Referring to the first objection, it should be noted that when assessing the general economic situation at the present time and appreciating the role of both contemporary monetary and fiscal policy, it is worth taking into account other macroeconomic measures, apart from the unemployment and inflation rates. Here, the indicator will be extended by the real dynamics of GDP and the size of the budget balance in relation to GDP (surplus or deficit).

Referring to the second objection, it must be borne in mind that not always all of the four examined variables can be univocally evaluated unidirectionally, they are not always negatively correlated, and in the case of GDP – correlation is not always positive. Both in theory and in the practice of economic policy, optimal (desirable) values of particular economic quantities are indicated, especially in relation to price dynamics. It can therefore be assumed that in certain

¹An extended version of the Misery Index with six components was proposed by the analysts of Merrill Lynch long time ago. (*The Economist*, January 14, 2006).



circumstances the variables under study have an optimal value different from the minimum or maximum, and that their maximum or minimum value is not assessed, but whether they have reached the desired value, e.g. the central bank's inflation target (Samarina – Apokoritis 2020), the natural rate of unemployment (NRU) or the natural non-inflationary rate of unemployment (NAIRU) (Ball – Mankiw 2002), the average GDP growth rate over the long-term, or the level of the budget deficit that allows for effective regulation of economic growth through active fiscal policy (Shen et al. 2018; Halmai 2021).

The macroeconomic assessment index proposed by us takes into account the above two major caveats with respect to the original misery index. It is therefore based on several important assumptions:

- it serves to assess the macroeconomic situation of the country in the short-term, and the data included in the analysis are annual;
- it is of quantitative, multifactor and homogeneous nature and covers four elements which have been measured in a specific way and subjected to appropriate modifications in order to obtain a coherent measure;
- it does not include qualitative aspects of economic growth, including mainly environmental elements.

As a consequence of the formulated remarks, the methodology of the macroeconomic condition index (MCI) comprises four variants. Three of them are presented using formulas 1–3. The fourth variant of the MCI was constructed using the methodology of multivariate comparative analysis (MCA).

$$\text{MCI}(1)_t = \Pi_t + \text{DEF}_t + U_t - \text{RDGDP}_t \quad (1)$$

$$\begin{aligned} \text{MCI}(2)_t = & | \Pi_t - \Pi^* | + | \text{DEF}_t - \text{DEF}^* | + | U_t - U^* | \\ & + | \text{RDGDP}_t - \text{RDGDP}^* | \end{aligned} \quad (2)$$

$$\text{MCI}(3)_t = (\text{MCI}_{\text{PL}} - \text{MCI}_{\text{EU}}) \quad (3)$$

where:

MCI – macroeconomic condition index

t – number of period (t = 1, 2, 3, ...)

RDGDP – real dynamics of the GDP

Π – general price level dynamics (rate of inflation)

DEF – budget deficit/surplus in relation to the GDP

U – unemployment rate

* nominal (optimal) values of the individual variables

The first variant of the index – the MCI(1) formula – is the simplest in construction and relates to the original misery index to the greatest extent. Inflation, deficit and unemployment were treated as negatively correlated, while GDP dynamics positively, hence the minus sign in the last case. As to interpretation, a higher value of the index indicates a worse macroeconomic situation of the economy.

In the second variant of the index – the MCI(2) formula – all variables were treated as having an optimum (desired) value different from the maximum or minimum. Their values were



expressed at current prices were compared with target (optimal) values. The MCI(2) therefore refers to the sum of the absolute values of these deviations. The same negative evaluation was given to deviations of variables above and below their nominal values. As in the first variant, a higher MCI-2 value indicates a worse macroeconomic situation. In the study, nominal variables were taken as those for Poland and the EU, respectively:

- for price dynamics: inflation target of the National Bank of Poland (2.5%) and inflation target of the European Central Bank (2%);
- for the budget balance: 3% deficit-to-GDP ratio in general government approach (this value is binding on the Member States of the EU, including as a condition for accession to the euro area);
- for unemployment rate and real GDP dynamics: average for the entire research period for Poland and the EU, respectively.

In the third variant – MCI(3) formula – an attempt was made to eliminate the impact of the external situation on the value of the examined indicator for Poland. It should be borne in mind that currently, in the conditions of intensive integration and globalization, the condition of individual national economies is strongly dependent on the external economic situation, and in a broader sense, the global economic situation. Taking into consideration the fact that Poland belongs to the EU and has strong intra-Community ties, the third option shows the relative macroeconomic situation of Poland compared to the EU. Positive values mean a worse, while the negative ones mean a better relative situation of Poland in comparison with the EU.

In the face of the variants of the index formulated above, one could raise an accusation that it consists in summing up quantities of different nature, including dissimilar scale of values. Firstly, this accusation can be refuted by noting that the study does not draw conclusions on the basis of absolute values of calculated scores, but on the basis of their dynamics and/or comparison between Poland and the EU. Secondly, it can be stated that the scale of variation of the MCI components is comparable. Third, it is possible to adjust the index using multidimensional comparative analysis, which allows for synthetic examination of complex phenomena.

In this context, a fourth MCI option was constructed. In this variant, the following assumptions and actions have been made:

- first, the variable concerning the dynamics of the general price level was treated, as in variant two, as a nominant, and the remaining variables were treated as in variant one;
- following the MCA procedure all variables were changed into positively correlated, using the differential transformation, characteristic for both the interval and quotient scale (Panek 2009); for negatively correlated and for optimum (desired) variable the formulas 4 and 5 were used respectively:

$$X^S = a - bX^D \quad (4)$$

$$X^S = - | X^N - X^0 | \quad (5)$$

where:

- X^S – positively correlated variable
- X^D – negatively correlated variable
- X^N – optimum (desired) variable



X^0 – pointwise optimal value for the desired variable

a, b – constants determined in an arbitrary manner, usually $a = 0$ or $a = \max \{X^D\}$, $b = 1$

- all variables were normalised by means of a unitisation, thus obtaining variables that are comparable and expressed in the same units; for this purpose, formula 6 was applied:

$$Z_t = (X_t - X^{\min}) / (X^{\max} - X^{\min}), Z_{t=0} \in [0, 1] \tag{6}$$

where:

Z_t – the normalised value of the variable in period t

X_t – the value of the variable in period t

X^{\max}, X^{\min} – maximum and minimum values of the variable

- the variables were summed up to obtain the MCI in option 4, which is a stimulus, i.e. a higher value indicates a better macroeconomic situation

4. RESULTS AND DISCUSSION

Figure 1 shows the estimates of the MCI in variants 1 and 2. As for the variant MCI(1), it should be noted that its value decreased between 2013 and 2018, which indicates an improvement in the macroeconomic situation in Poland. In 2019, the situation worsened slightly. In turn, in the face of a pandemic in 2020, there was a definite deterioration in the state of the economy, and the indicator had its highest value since the beginning of the second decade

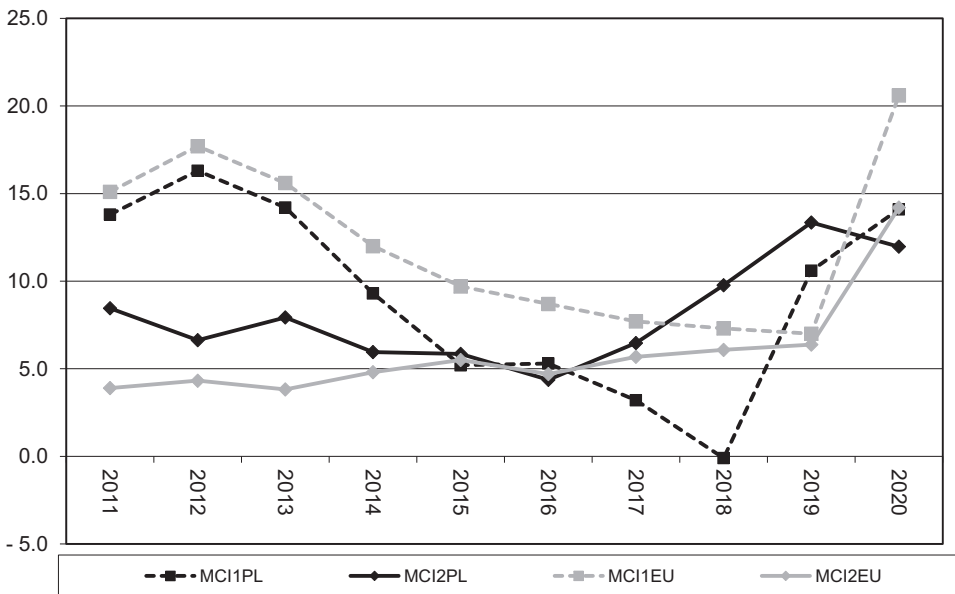


Fig. 1. Estimates of MCI(1) and MCI(2) variants for Poland (PL) and the EU in 2011–2020

Source: Own construction based on Eurostat (2021a).



of the 21st century. The main reason for this was a significant increase in the budget deficit and negative GDP dynamics. Similar trends in MCI(1) were observed for the European Union (EU). However, we can observe that throughout the period the value was lower for Poland in comparison with the EU. In Figure 2, the better situation of Poland compared to the EU is reflected in the MCI(3). This result was mainly influenced by a higher average GDP growth rate in Poland (or a lower decline in 2020) and a relatively low unemployment rate (Eurostat 2021a).

A similar assessment concerns the second variant of MCI(2), which shows the macroeconomic stability of the examined economy in relation to the expected (optimal) values of macroeconomic variables. Pandemic conditions of 2020 caused a rapid deterioration in the stability of the Polish economy (a significant increase in the value of the index). At the same time, for all years except 2015 (hence there is no bar in Figure 2 for this year), in the case of MCI(2), Poland recorded higher values compared to the EU (in Figure 2, MCI(3)' refers to the comparison of Poland with the EU). This means that, on average, the EU achieved to a greater extent the expected target values of the four macroeconomic indicators – GDP growth, budget deficit, inflation and unemployment. In other words, the actual results deviated less from the long-run optimal levels, which could imply a more stable economy. Nevertheless, the interpretation of the result must be cautious. A more detailed analysis of the MCI components indicates that the main reason for higher values for Poland in this variant refers to large deviations of the unemployment rate from its long-term average, including a significant drop in the parameter in 2010–2020 (from about 10% to just over 3%) (Statistics Poland 2021a). Paradoxically, the improvement in the labour market situation in Poland determined the higher values of the macroeconomic condition index MCI(2) relative to the EU average.

In turn, Figure 3 presents estimates of the fourth variant of MCI(4) using the multivariate comparative analysis (MCA) method. Bearing in mind the transformation of the measure to a positively correlated variable, lower values indicate a worse, and higher values – a better macroeconomic situation. In the case of Poland, after a period of upturn in 2013–2019, in 2020 we observe a decisive break in the trend resulting from the coronavirus crisis. Interestingly, the MCI(4) value for 2020 was comparable to 2013, even though the results for GDP were

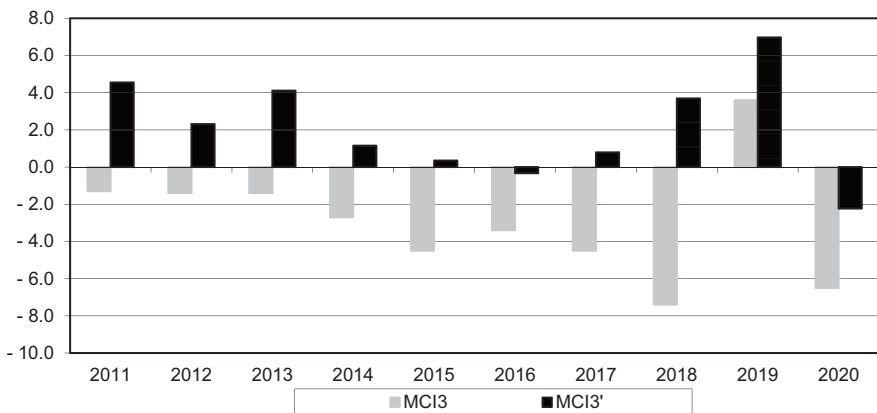


Fig. 2. Estimates of MCI(3) and MCI(3)' variants for Poland in 2011–2020 in comparison with the EU
 Source: Own construction based on Eurostat (2021a).



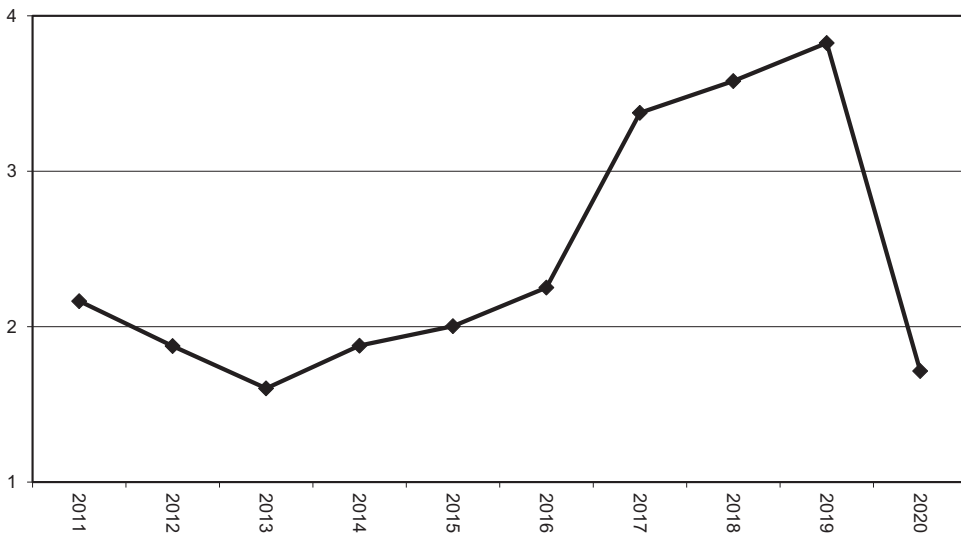


Fig. 3. Estimates of the MCI(4) variant for Poland in 2011–2020

Source: Own construction based on [Statistics Poland \(2021b\)](#).

significantly different (in 2013 the economic growth rate was 1.6%, in 2020 it was negative -2.7%). The reason for the similar level is the process of normalization of the variables, which, when they are highly volatile, slightly distorts the final results of the analysis.

The decisive and sudden deterioration of the economic situation in Poland between 2019 and 2020 can be seen in radar [Figure 4](#). The individual components of the MCI are included, but here presented separately. The graph for 2020 has a much larger area (more than double) than for 2019. After more detailed analysis it was found that the sources of the macroeconomic

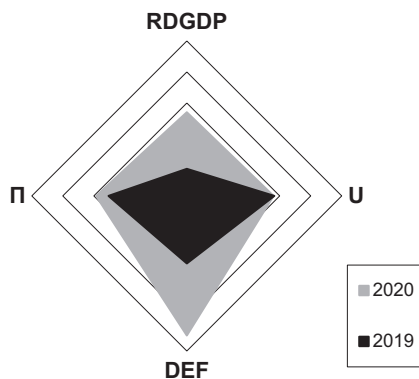


Fig. 4. The rate of inflation (Π), unemployment (U), real dynamics of the GDP (RDGDP) and budget deficit level (DEF) for Poland in 2019 and 2020

Source: Own construction based on [Statistics Poland \(2021b\)](#).



deterioration under coronavirus conditions were primarily the widening fiscal deficit and negative GDP values. In the latter case, it was an atypical situation for Poland, as it happened for the first time since the beginning of the economic transformation, more precisely since 1991.

However, the negative economic consequences of the COVID virus were universal and affected almost all countries in the world. According to the IMF's latest World Economic Outlook (2021), the pandemic recession was the deepest since the end of WWII, with a 3.5% GDP contraction in 2020 and total economic costs of the COVID at 6.7% of GDP globally (and only in the USA losses amounted to 15–20%; [Walmsley et al. 2020](#)). On a regional basis, higher declines in national income were recorded in developed countries, for example in the euro area -7.2% and in the EU as a whole -6.1% on average ([Clark 2021](#)). Also, within the EU itself, results varied from -10.8% in Spain to -0.9% in Lithuania (the exception was Ireland with a result of $+3.4\%$). Indeed, the impact of COVID-19 on individual EU economies was asymmetric ([Mlodkowski 2020](#)) and resulted from a different structure of value added at sectoral level ([Maarten de Vet et al. 2021](#)). In this sense, economies highly dependent on tourism (Spain, Italy, Greece, Portugal, Croatia) recorded above-average declines in GDP. Indeed, this was the industry most affected by the pandemic ([Lyulov et al. 2020](#)). Another sector was transport, due to restrictions on international trade and the halting of supply chains. [Kovács and Zsigmond \(2020\)](#) pointed out in this context that in comparison with Visegrad countries, Poland was less affected by the pandemic crisis due to a lower share of the car and transport industry in national income generation.

The impact of the pandemic has forced governments around the world to implement anti-crisis measures ([Karpova et al. 2020](#)). As interest rates have remained at record lows for many years, budget spending proved to be a more effective tool. Therefore, it is not surprising that the budget deficit increased significantly both in Poland (from 1.2% in Q4 2019 to 4.6% of GDP in Q3 2020) and on average in the EU (from 0.8% to 5.6%) or the euro area (from 0.8% to 5.8%) ([Eurostat 2021b](#)). Next to the GDP decline, this was the second element increasing the MCI in our analysis. The other two variables – the unemployment rate and inflation – determined the value of the macroeconomic condition index to a lesser extent in 2020. The former increased in the EU and the euro area by around 1 percentage point compared to 2019 (from 6.5% to 7.5% and 7.4% to 8.4%, respectively), the inflation rate decreased by less than 1 percentage point (from 1.4% to 0.7% and 1.2% to 0.25%, respectively) ([Eurostat 2021c](#); [O'Neil 2021](#)). In Poland, the unemployment rate increased from 5.1% to 6.1% and, in contrast to other EU countries, inflation also increased from 2.3% to 3.4%.

5. CONCLUSIONS

The paper uses a synthetic aggregate macroeconomic condition index, which applies a set of four variables to assess the economic situation of the economy. As an example, Poland was shown, whose data were compared to the average for the EU. The results proves that Poland's economic condition for 2011–2020, as measured by the MCI(1) index, was relatively more favourable, although less stable, as indicated by the MCI(2). In the latter case, however, there is a large drop in the unemployment rate, which should be assessed positively. Further analysis appears a sharp deterioration in the condition of Poland and the EU average as a result of the pandemic crisis in 2020 (increase in the value of estimated MCI indices). The main determinants of this situation



were a decline in economic growth and an increase in the budget deficit, with relatively stable unemployment and inflation. It should be remembered, however, that both the unemployment rate and inflation react with a certain lag to changes in the real sphere of the economy, hence it is crucial to assess them in the subsequent period. This can be seen, for example, in the case of inflation in Poland, which in June 2021 amounted to 4.1% year-on-year, i. e. it was almost one percentage point higher than in 2020. This makes the decision of the Polish central bank to cut interest rates in the first half of 2020 all the more surprising. It might seem that in the face of exceeding the inflation target (2.5%) and falling real interest rates (well below zero), the Monetary Policy Council should make the opposite move. Thus, Poland has joined other EU countries that operate under the constraint of very low, zero nominal interest rates (Okina – Shiratsuka 2004; Ode – Ueda 2007). Given the potential long-term effects of a pandemic, Poland has been deprived of the ability to respond with monetary policy, and fiscal policy is limited by a high budget deficit. Under these conditions, the Next Generation EU Recovery Fund may come to the rescue.

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