

RISE OF INFLATION AND PUBLIC DEBT IN EU COUNTRIES IN 2020-2021 IN CONTEXT OF PUBLIC FINANCE SECURITY

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Purpose: The pandemic of Covid-19 virus between 2020 and 2021, brought about limitations in proper functioning of economies not seen until that moment. These constraints were accompanied by a radical increase in public spending that was supposed to be financing measures shielding various industries and sectors, which were forced to put their activity on pause. The purpose of this article is to thoroughly analyze the impact of the Covid-19 pandemic on the stability of public finance in the face of increasing government spending as well as multiple pro-inflationary factors.

Design/methodology/approach: Sound public finance is one of the most crucial challenges for the economic policy system of every country no matter the level of the liberalization of their economies. This stability is commonly regarded as the indicator of a country's financial credibility which directly affects the capital markets. It translates into confidence or lack thereof in financial securities. Fading public trust in the economy of a country calls for raising interest rates which consequently increases the cost of public debt management. The methodology used in the publication is based on the analysis statistical sources and literature reports relating to the stability of public finances of UE countries during the pandemic of Covid-19.

Findings: Undoubtedly, the most important cognitive values included in the paper are the problem of the resilience of national public finances to external shocks and their ability to stabilise them in the long term.

Practical implications, originality and value: There is no doubt that the last few years have brought some of the greatest challenges in the history of the modern world economy, such as the Covid-19 pandemic and the ongoing war in Ukraine. Both of these factors have caused lasting damage to public finances and require new, creative measures to ensure stability and national security. These topics are undoubtedly very important from an economic and scientific point of view and should be the subject of further in-depth research.

Keywords: Public finances, inflation, public debt, stability of public finances.

1. Introduction

The Covid19 pandemic has not only killed more than 7 million people worldwide and hit the foundations of the global economy, but has also significantly ruined public finances in many countries. A number of studies are available in the literature on the impact of the pandemic on public finances and price stability, but a more detailed analysis of the pandemic for EU countries is fully justified and certainly fills a research gap. An objective scientific analysis, such as that contained in this publication, is also of practical importance, particularly in the context of future prevention and stabilization measures, in the context of new global threats such as wars or supply shocks.

The outbreak of the Covid-19 pandemic disrupted a period of gradual reduction of public debt to GDP ratio that began in 2014 in countries belonging to the EU. The pandemic has also had a detrimental impact on other macroeconomic indicators. The crisis has brought unprecedented challenges to the global economy, forcing individual countries to look for completely new solutions and non-standard measures to maintain the continuity of economies and minimize their losses. Declining economic growth, a drastic deterioration in public finances, deepening current account deficits, rising unemployment and declining value of foreign trade are just some of the many problems faced by the governments around the world. To this must be added the reduction or even total cessation of economic activity in many sectors of economies, the lack of freedom of movement between countries and a significant decline in demand for certain goods and services, such as tourism, the organization of mass events and air passenger transport. This was undoubtedly an unprecedented event in the history of the world economy.

The main objective of the article is to analyse the dynamics of changes in key macroeconomic indicators related to the stability of public finances and the level of long-term interest rates. These indicators, on the one hand, belong to the so-called convergence criteria that every country joining the euro area must meet, and on the other hand they are a measure of the security limit of a country's economic policy (Caselli, Wingender, 2021). Another research problem addressed in the paper is an attempt to answer the question to what extent the measures taken had a positive impact on limiting adverse economic shocks caused by the aforementioned pandemic factors. These considerations are presented in three main points of work, including macro and microeconomic effects of the Covid-19 pandemic in EU countries, rise of public debt and inflation and their consequences on stability of public finances and conclusions and discussion presented in the summary.

Aiming to present the objective situation of the economies of the European Union countries under the conditions of the Covid-19 pandemic, the article uses a scientific methodology including statistical analysis, descriptive comparisons of macroeconomic indicators and a presentation of internal and external factors that are the direct cause of the described economic

shocks. Key macroeconomic indicators, such as public debt, inflation and long-term interest rates, were used as the benchmark, which, as mentioned earlier, are also the so-called convergence criteria. It is these indicators that are seen in the literature as key measures that guarantee an objective assessment of the state of the economy, including the security of public finances. Inflation is a measure of price stability, public debt and the related budget deficit are criteria for the stability of fiscal policy, while long-term interest rates are credibility and confidence in a given country's economy in the long run. That is why these indicators can be considered the most critical in assessing the impact of the coronavirus Covid-19 pandemic on the stability of the global economies.

2. Literature review and methodology

The literature sources used in the article mainly include official Eurostat data and other international reports. These sources make it possible to analyze changes in fundamental macroeconomic indicators, as well as to present their implications for the economy and, to a limited extent, forecast future scenarios. For instance, papers such as: "Impacts of the COVID-19 pandemic on EU industries", "How COVID-19 is changing the world: a statistical perspective Volume II"¹ or websites such as: <https://ec.europa.eu/eurostat/web/covid-19/data>, <https://www.undp.org/coronavirus/socio-economic-impact-covid-19> were used amongst others. Of course, information on the economic consequences of the pandemic can also be found in scientific publications, such as: "The research on COVID-19 and economy from 2019 to 2020: analysis from the perspective of bibliometrics" (Liu et al., 2021), "Economic And Social Impacts Of COVID 19 On National Economies From The Point Of View Of Economic Theory" (Nový, Jarý, 2020), "Firm internationalization and long-term impact of the Covid-19 pandemic" (Nagarajan, Sharma, 2020), "COVID-19 Pandemic Impact on the Exports and Imports" (Belu, 2021). There are also scientific publications that directly address the issues of food security, the quality of social standards and the threat of hunger. an example of such publication may be an article "Impacts of Covid-19 on global poverty, food security, and diets. Insights from global model scenario analysis", in which the authors refer to the following topics: 1) income losses and demand shocks, 2) food chain disruptions, 3) consumer responses such as hoarding, food waste and dietary shifts, 4) policy responses, hoarding at country level (food export bans) and fiscal stimulus (Laborde, 2020).

The statistical and scientific sources mentioned above allow to objectively assess the research problems discussed and to evaluate the formulated research hypothesis. The main hypothesis states that "Covid-19 pandemic not only affected the social and economic activity

¹ <https://unstats.un.org> › covid19-report-ccsa_vol2

of companies, but also had a significant impact on the state of public finances of individual countries.” The added value of this article is an attempt to analyse the resilience of EU countries to strong external factors and destabilising public expenditure.

3. Macro and microeconomic effects of the Covid-19 pandemic in EU countries

Only a few industries and sectors have not been affected by the restrictions caused by the Covid-19 pandemic in all countries of the world. In order to prevent the spread of the epidemic, the public authorities were forced to impose a series of restrictions, limiting or even temporarily freezing the activities of certain areas of economic and social life. Many sectors of the economy have suffered as a result of the pandemic restrictions, but the biggest losses have been in public transport, gastronomy, tourism and hospitality, and the entertainment industries. As a result, measures were needed to limit the effects of the so-called lockdown, i.e. supporting sectors of the economy at risk of bankruptcy. In order to prevent a sharp rise in unemployment and a decline in individual incomes, as well as to minimize the number of failing companies, the authorities and their subordinate institutions and other agencies decided to undertake a number of relief and protection measures which included, among others:

- suspension and, in some cases, temporary tax exemptions,
- co-financing of employees' salaries,
- temporary exemption from paying social security contributions and selected taxes,
- non-refundable loans for companies,
- parking benefits for persons performing civil law contracts.

The fight against the pandemic has become a priority in most countries of the world, including the countries of the European Union. Counteracting its effects included, above all, the struggle with the economic crisis, which occurred immediately with the outbreak of the pandemic. Among the most important actions taken by the European Union as a whole are: 1) launching economic support and social protection programmes; 2) coordinating the restrictions on population movements; 3) limiting the spread of the Covid-19 virus by using different methods of prevention; 4) introduction of universal vaccination, 5) financial and organisational support for health systems, 6) job protection, 7) direct financial support for national budgets, 8) improving solidarity between member countries to combat the effects of the pandemic more effectively, 9) strong economic support for essential industries such as food production, 10) global cooperation to combat the effects of the pandemic².

² <https://www.consilium.europa.eu/en/policies/coronavirus/10-things-against-covid-19/>

These objectives and programmes were accompanied by the appropriate financial measures and the budget for 2021-2027 amounted to €1824.3 billion³. In addition to the launch of Community programmes, national governments have also taken individual, often non-standard, action to protect businesses and individuals from the effects of job and income losses. For example, Germany has focused its programmes on ensuring stable and sustainable economic growth, with a focus on strengthening the weakest sectors, reforming the weakest parts of logistics chains, and intensifying the digital transformation⁴. The French plan focused on both reforms and investments aimed, as in the case of Germany, at strengthening the drivers of sustainable development including, in particular, strengthening the health system, reforming higher education and accelerating the digital transformation⁵.

Apart from the described examples of national plans for the recovery of economies following the shock of the Covid-19 pandemic, it should be stressed that all EU countries have implemented programmes aimed at improving the economic and social situation. National Recovery Plans have also been drawn up at Community level, which have been individually tailored to the needs of individual countries. Together with the NextGeneration EU (NGEU), the temporary recovery facility, these plans constitute the largest ever financial recovery package in the European Union⁶. A total of €1 trillion has been earmarked for actions under these plans to improve the resilience of economies to internal and external economic shocks, digital transformation and the environment. In addition, the above-mentioned Next Generation EU programme was described as a turning point for Europe, encompassing sustainable mobility, digital transformation, increasing R&D spending, creating new and innovative economic sectors, improving the quality of social services, upholding the rule of law, fighting corruption, supporting small and medium-sized businesses and a range of other actions aimed at increasing the global competitiveness of EU countries⁷.

³ <https://www.consilium.europa.eu/en/infographics/recovery-plan-mff-2021-2027/>

⁴ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/germanys-recovery-and-resilience-plan_en

⁵ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/frances-recovery-and-resilience-plan_en

⁶ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/frances-recovery-and-resilience-plan_en

⁷ https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/thematic_analysis.html?lang=en

Table 1.
Growth dynamics in EU countries in 2019-2021

| Country | 2019 | 2020 | 2021 |
|-------------|------|-------|------|
| Austria | 1,5 | -6,5 | 4,9 |
| Belgium | 2,2 | -5,4 | 6,1 |
| Bulgaria | 4,0 | -4,0 | 7,6 |
| Croatia | 3,4 | -8,6 | 13,1 |
| Cyprus | 5,5 | -4,4 | 6,6 |
| Czechia | 3 | -5,5 | 3,5 |
| Denmark | 1,5 | -2,0 | 4,9 |
| Estonia | 3,7 | -0,6 | 8 |
| Finland | 1,2 | -2,2 | 3 |
| France | 1,8 | -7,8 | 6,8 |
| Greece | 1,9 | -9,0 | 8,4 |
| Spain | 2,0 | -11,3 | 5,5 |
| Netherlands | 2,0 | -3,9 | 4,9 |
| Ireland | 5,4 | 6,2 | 13,6 |
| Lithuania | 4,6 | 0,0 | 6,0 |
| Luxembourg | 2,3 | -0,8 | 5,1 |
| Latvia | 2,6 | -2,2 | 4,1 |
| Malta | 5,9 | -8,3 | 7,1 |
| Denmark | 1,1 | -3,7 | 2,6 |
| Poland | 4,4 | -2 | 6,8 |
| Portugal | 2,7 | -8,3 | 5,5 |
| Romenia | 3,9 | -3,7 | 5,1 |
| Slovakia | 2,5 | -3,4 | 8,2 |
| Slovenia | 3,5 | -4,3 | 8,2 |
| Sweden | 2,0 | -2,2 | 5,1 |
| Hungary | 4,9 | -4,5 | 7,1 |
| Italy | 0,5 | -9 | 6,7 |

Source: Own elaboration based on: <https://ec.europa.eu/eurostat/web/hicp/data/database>, 19.01.2023.

The negative effects of these restrictions have been sensed by all EU countries, as it is shown very clearly in Table 1. Negative growth rates in 2020 can be seen year-on-year in practically all the countries of the Community. In extreme cases, these values are below or close to -10%, as was the case for Spain -11,3%, Greece and Italy -9,0%, Croatia -8,6 and Malta -8,3. Analysis of the data of the following year, i.e. 2021, shows a strong reversal of declines and a return to the path of positive values of the rate of economic growth. In this context, one might venture to argue that, despite the clearly destructive impact of pandemic factors on the functioning of economies, the introduced protection schemes have to a large extent proved to be effective in shielding entrepreneurs and jobs. However, there has been a marked deterioration in the condition of public finances and an increase in inflation, which has undoubtedly had a very negative impact on the condition of the European Community as a whole.

4. Rise of public debt and inflation in EU countries during the Covid-19 pandemic

The reference point for the macroeconomic situation with regard to public debt, inflation and long-term interest rates is the base year 2019, when neither the impact of the pandemic nor the hedging programmes in place were yet visible. The research problem raised in the paper concerns the change in the values of the aforementioned indicators in two consecutive years, i.e. 2020-2021, when the governments of all EU countries had to face the problem of slowing down or even halting the activity of many industries and sectors.

Figure 1 shows that as many as 15 of the 27 EU Member States have exceeded the fiscal criterion of the Stability and Growth Pact, seven of which have exceeded 100% of GDP. In the first three places in this respect were Greece, which reached a debt level of 206,3% at the end of 2021, Italy (150,8%) and Portugal (127,4). According to the Eurostat data, public debt in Poland amounted to 53. 8%. This figure was close to that of the Netherlands (52%) and Slovakia (63,1%). The lowest results are indicated for Estonia (18. 1%) and Bulgaria (25,1%). This was very similar in 2020, when 15 Member States experienced an increase in their debt-to-GDP ratios and 12 a decline. The largest increase was observed in Spain (+7,8 percentage points), Hungary (+6,5 percentage points), Malta (+5,7 percentage points), Austria (+5,6 percentage points) and Romania (+5,5 percentage points). Among the countries with the most considerable decline, Cyprus (-6,4 percentage points), Ireland (-3,6 percentage points), the Netherlands (-2,5 percentage points), Denmark (-2,4 percentage points), Croatia (-2,3 percentage points) and Sweden (-2,2 percentage points).

To sum up the issue of public debt, it should be emphasized that the pandemic has undoubtedly led to an increase in the debt ratio in all EU countries. We can also hypothesize that the increase in public debt, which is a consequence of the protective measures taken, was also the cause of the increase in inflation in the analysed years 2020-21.

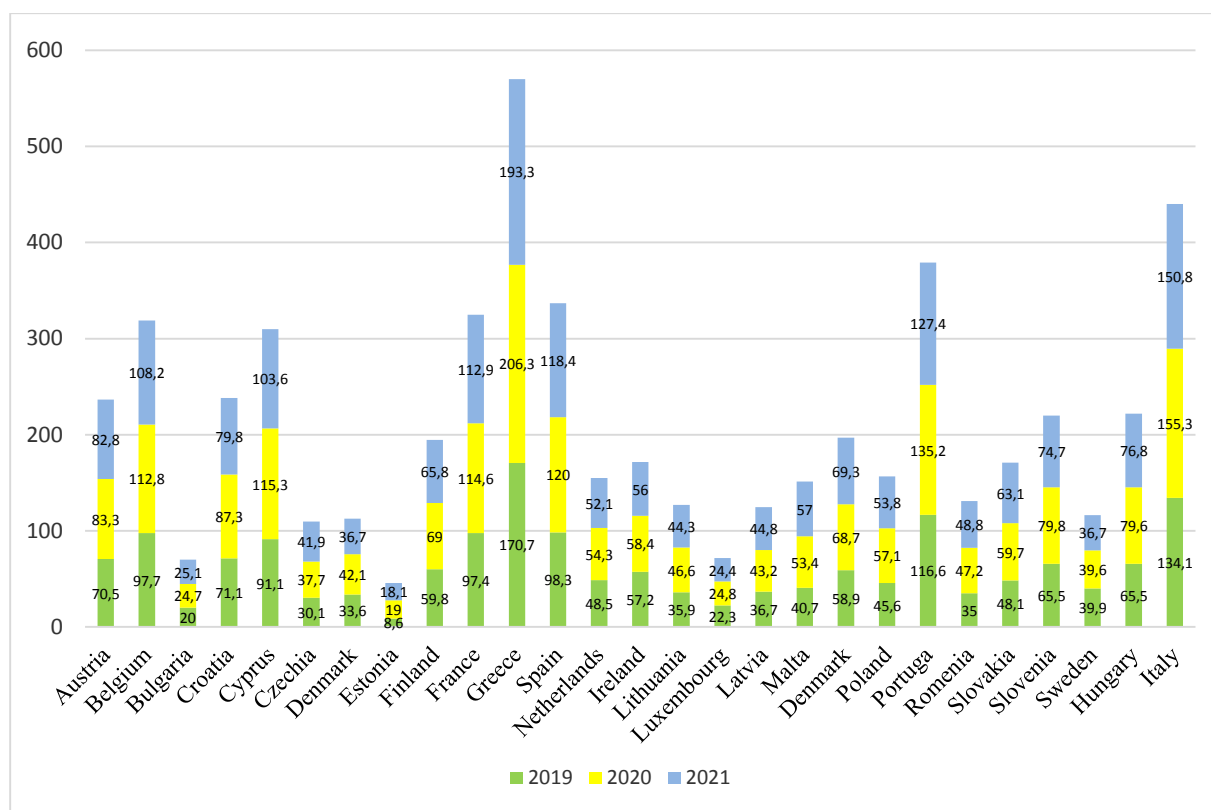


Figure 1. Public debt in the European Union in 2019-2021.

Source: own elaboration based on <https://ec.europa.eu/eurostat/web/hicp/data/database>, 20.01.2023.

Figure 2 shows that all the EU countries have experienced very high inflation over the last three years. Among the leading countries are Hungary (9,6%), Poland (5,2%) Latvia and Estonia with inflation rates of 4,5%. The lowest rate can be observed in countries such as Greece (0,6%), Finland and Portugal remaining at 0. 9%. The main factors responsible for such a sharp rise in inflation are, above all, increases in energy and food prices, which accelerated sharply in 2021. If we look at the criterion of price stability, only Croatia and Sweden had inflation rates below or well below the reference value of 4,9%. The reference value is based on the average inflation rates of the three best performing countries over the last 12 months (excluding atypical observations: Malta and Portugal): Finland, France and Greece. In the other five countries under review – Bulgaria, the Czech Republic, Hungary, Poland and Romania – inflation rates have been well above the reference value over the past 12 months, as in the case of the 2020 Convergence Report (Convergence Report, 2020).

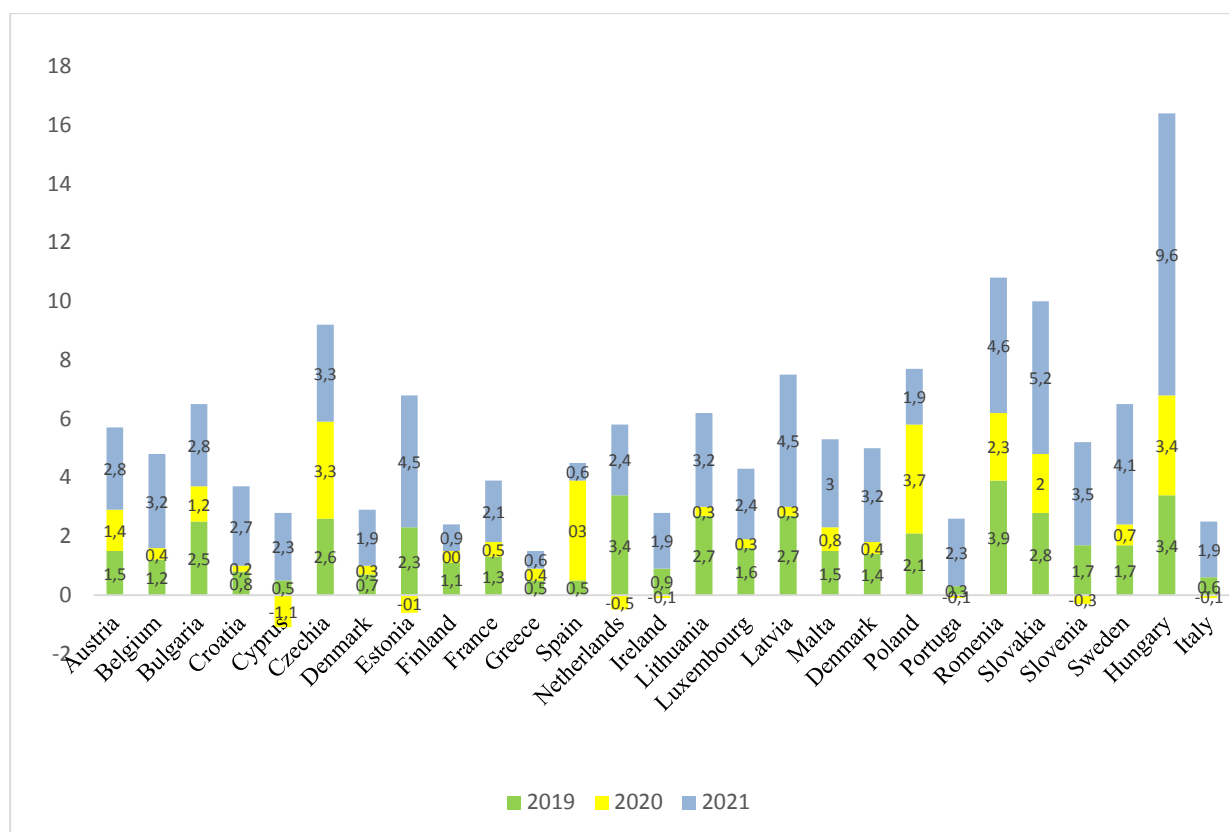


Figure 2. Inflation rates in the European Union in 2019-2021.

Source: own elaboration based on: <https://ec.europa.eu/eurostat/web/hicp/data/database>, 20.01.2023.

This information is also corroborated by the aggregate analyses contained in Table 3, where it is clearly showed that, while in 2020 price increases were not a significant problem in EU countries, in 2021 as many as 9 out of 27 countries reported inflation increases of more than 5%. This inflationary trend therefore seems to be the result of numerous financial support schemes for businesses, often implemented at the expense of an increase in public debt. This thesis is confirmed by the data from the next table, 4 which clearly shows the increase in the number of countries exceeding the 60% threshold of fiscal security in the period 2019-2021 (Malinowska-Misiąg, 2019).

Table 2.

Inflation growth dynamics 2019-2021 in EU countries

| Year | Max. 3% | 3-5% | Above 5% |
|------|---------|------|----------|
| 2019 | 15 | 4 | 0 |
| 2020 | 24 | 3 | 0 |
| 2021 | 12 | 6 | 9 |

Source: own elaboration based on <https://ec.europa.eu/eurostat/web/hicp/data/database>, 22.01.2023.

Table 3.

Public debt to GDP in EU countries in 2019, 2020, 2021

| 2019 | | 2020 | | 2021 | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| Up to 60% | Above 60% | Up to 60% | Above 60% | Up to 60% | Above 60% |
| 16 | 11 | 14 | 13 | 13 | 14 |

Source: own elaboration based on: <https://ec.europa.eu/eurostat/web/hicp/data/database>, 22.01.2023.

With regard to the long-term interest rates, the 12-month average interest rate was lowest in Bulgaria, Croatia and Sweden. The rate recorded in the Czech Republic, of 2.5%, was just below the reference value of 2.6%. In two of the countries examined, Hungary and Poland, the 12-month average long-term interest rate was above the reference value and in Romania it was significantly above the reference value. Detailed analysis of the dynamics of changes in the value of long-term interest rates between 2019 and 2021, shows that the pandemic did not visibly translate into their increase, and thus into the credibility of the debt securities issued. Generally speaking, EU countries, with a few exceptions, such as Romania, have maintained a high level of credibility on the international financial markets (Skrabacz, 2021).

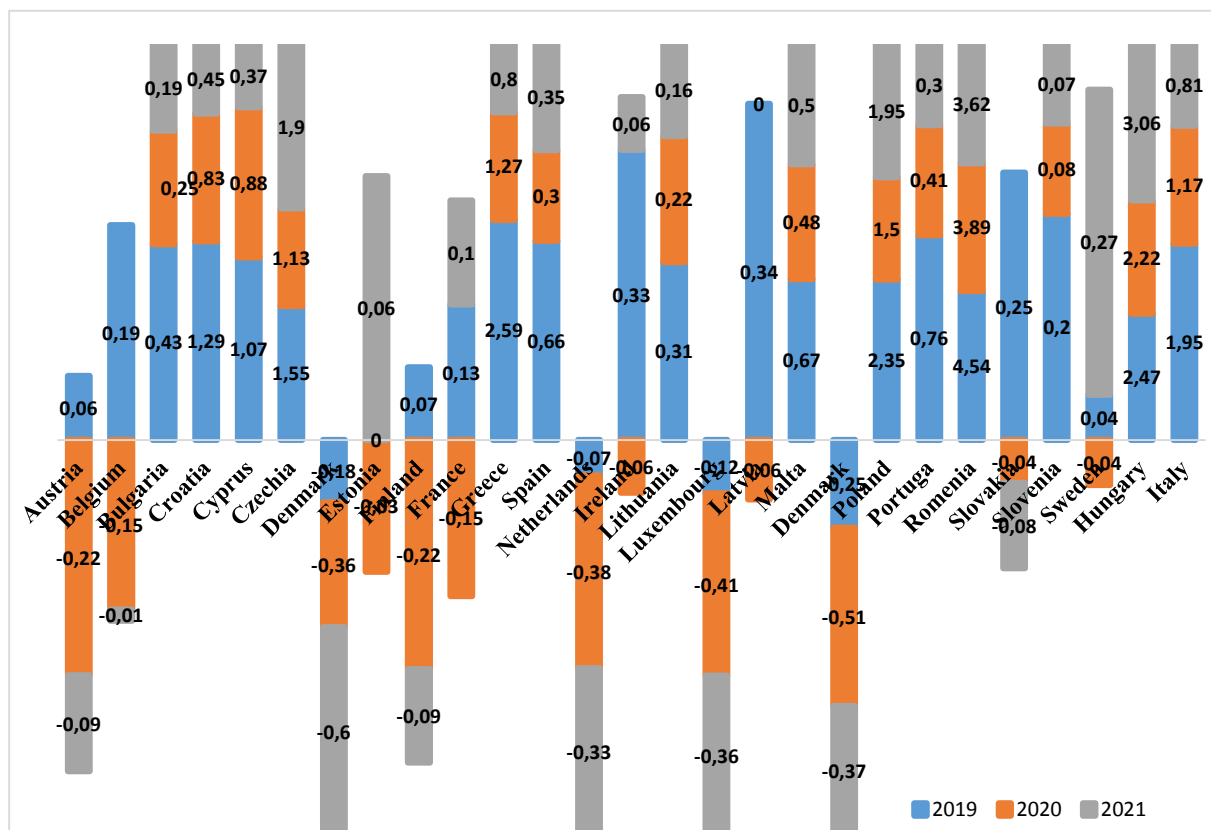


Figure 3. EU long-term interest rates 2019-2022.

Source: own elaboration based on: <https://ec.europa.eu/eurostat/web/hicp/data/database>, 20.01.2023.

5. Discussion of results and conclusions

Summing up the analysis of changes in inflation and public debt in EU countries in 2019-2021, it should be stated that the Covid-19 pandemic not only affected the social and economic activity of companies during the period mentioned, but also had a significant impact on the state of public finances of individual countries. Lower-than-planned tax revenues and the need to

spend additional resources to counter the effects of the pandemic, as well as additional financing of the healthcare system, have largely contributed to a significant increase in public debt and, consequently, to an increase in inflation. The data presented shows that in all 27 EU countries there was an increase in public debt between 2019 and 2021. The only exceptions are Ireland and Sweden, where debt increased in 2020, from 57.2% to 58.4%, and from 38.9% and 39.6%, respectively, and then declined slightly to 56% and 36.7% the following year.

The other 25 countries showed a clear upward trend. This means that the Covid-19 pandemic has worsened the state of European economies and has also put their financial stability at risk. Shielding programmes of various types cost individual countries additional funds, either from external financial markets or from additional money issuance. This has been done by the European Central Bank, as well as by the banks of countries that did not enter the eurozone. The consequence of additional money issuance is usually an increase in the level of inflation. While we do not see a visible increase in the price level in 2020, the following year in 9 out of 27 countries the increase exceeds the critical 5%. The countries with the highest inflation rates were Hungary and Poland. An analysis of the debt market, defined by long-term interest rates, shows that the European economies remain highly credible on the financial markets and that there has been no significant increase in interest rates. This means that EU countries have a high level of creditworthiness, regardless of the risks posed by the pandemic.

Based on the information in Table 1, we can see that the European economy recovered again in 2021. GDP in the euro area grew by 5.3%, and economic activity in the fourth quarter was higher than before the pandemic. Domestic demand, including in particular private consumption, was buoyed by an improvement in the labour market and an increase in household demand. On the other hand, the economy was negatively affected by persistent disruptions in global supply chains and high prices of energy raw materials. Combined with the successive waves of pandemics at the end of 2021 and the new threats that emerged at the beginning of 2022, notably the commodity supply shock caused by the war in Ukraine, the growth prospects for EU economies remain in serious doubt, and the Community as a whole and national governments face entirely new threats on an unprecedented scale. It seems that one of the biggest challenges will be the rising prices of energy raw materials and energy itself. The spectacular rise in the prices of natural gas, crude oil and other energy commodities such as hard coal, on the one hand, is accelerating the energy transition towards renewables and, on the other hand, is a very strong stimulus to inflation, posing a serious threat to the sustainability of public finances.

Undoubtedly, the most important cognitive values included in the paper are the problem of the resilience of national public finances to external shocks and their ability to stabilise them in the long term. There is no doubt that the last few years have brought some of the greatest challenges in the history of the modern world economy, such as the Covid-19 pandemic and the ongoing war in Ukraine. Both of these factors have caused lasting damage to public finances

and require new, creative measures to ensure stability and national security. These topics are undoubtedly very important from an economic and scientific point of view and should be the subject of further in-depth research.

Undoubtedly, the most important cognitive values included in the article are the problem of the resilience of national public finances to external shocks and their ability to stabilize them in the long term. In this sense, this publication fills the existing research gap in the literature and inspires further research in this area.

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