sciendo

STUDIES IN LOGIC, GRAMMAR AND RHETORIC 67 (80) 2022

DOI: 10.2478/slgr-2022-0014

This work is licensed under a Creative Commons Attribution BY 4.0 License (http://creativecommons.org/licenses/by/4.0)

Michał Bitner
Warsaw University
Faculty of Law and Administration
e-mail: mwbitner@uw.edu.pl
ORCID: 0000-0002-3856-5141

Jacek Sierak
Warsaw School of Economics
Collegium of Management and Finance
e-mail: jsiera@sgh.waw.pl
ORCID: 0000-0001-8968-133X

IMPACT OF COVID-19 PANDEMIC ON PUBLIC DEBT – INTERNATIONAL PERSPECTIVE

Abstract. A direct consequence of the pandemic was the widespread occurrence, and in many OECD countries – a growing public finance imbalance. The paper presents the results of research on the dynamics and structure of public debt, its relation to GDP and to the net borrowing of the general government sector. The main purpose of the article is to show the impact of the pandemic on the size and structure of public debt in the largest EU economies, as well as in other selected OECD countries. An attempt was also made to identify factors that had a significant impact on the amount of public debt during the pandemic. The new debt was used primarily to finance net borrowing and, ultimately, to support the economy and selected social groups. However, as the article points out, the new debt to a significant extent financed the increase in liquidity in the public sector, and in some cases – a larger volume of loans granted by public sector entities and their equity investments.

Keywords: coronavirus pandemic, public finances, net borrowing, public debt.

1. Introduction

The COVID-19 pandemic has had a strong impact on all areas of economic activity: processes of production, exchange, accumulation – and changed consumer habits and the structure of consumption (Maital & Barzani, 2020, pp. 5–6, pp. 4–6, Filippini, Yeyati, 2021, pp. 6–7). Changes on the supply side undoubtedly had the most "primary" character in both chronological and causal terms. The decline in the production of goods and services was initially due to government-imposed restrictions on the gathering and movement of people, and safeguards put in place by employers to

counter the spread of the virus. The effects of the interruption, or at least the weakening of supply chains links, were also quickly felt. Reductions in material inputs necessitated the search for opportunities to reduce other expenses, starting with those associated with employing production workers. Demand-side disruptions resulted from both the actual decrease in income (Han Meyer, Sullivan, 2020, p. 3) and the increase in uncertainty affecting almost all areas of life (Baker, Bloom, Davis, & Terry, 2020, p. 7). This uncertainty also had a disruptive effect on the functioning of financial and commodity markets (Sharif, Aloui, Yarovaya, 2020, p. 8).

The pandemic reinforced and highlighted earlier negative trends in the world economy. Even before the outbreak of the COVID-19 pandemic, the growth rate of the world product was already showing a downward trend, and the growth forecasts for 2020 prepared by the IMF were repeatedly adjusted (Jędrzejowska, Wróbel, 2020, pp. 159–176). The immediate and remote health consequences of the pandemic, the increase in mortality, the costs of measures aimed at limiting the spread of the virus, the introduction of administrative restrictions on movement and the accumulation of people, which were seen as necessary – all these resulted in a drastic reduction in economic activity and, consequently, a significant deterioration in financial performance of enterprises and households' income (Nelson, Weiss, 2020, p. 1). The real decline in GDP in 2020 in the OECD was 4.4%, and in the EU – 5.7%.

These processes resulted, on the one hand, in a decrease in the revenues of the public sector[1], including those linked to the functioning of automatic economic stabilizers, and on the other hand, an increase in spending which, to the greatest extent, was a consequence of discretionary measures taken on a large scale (lists of such measures taken in individual countries are included in: IMF Policy Tracker and OECD, Country Tax Measures). These measures served not only to fight the epidemic, but first and foremost to mitigate its destructive impact on the level of population's income and profitability of doing business. Most EU countries introduced new allowances, including deferrals of payments, both for income taxes and social security contributions[2]. Direct social transfers have become a standard instrument of support[3]. According to the estimates of the European Commission, the average value of the fiscal packages in 2020 amounted to 4.2% of the EU's GDP (3.4% – direct measures on the revenue and expenditure side, including "compensations" paid to entrepreneurs and employees, 0.8% – additional tax allowances and public investments not directly related to counteracting the effects of the pandemic) – and in 2021 it is estimated at 2.4% of EU GDP (European Commission, 2020, p. 2).

A direct effect of the pandemic was the widespread occurrence, and in many OECD countries, a growing imbalance in public finances. In the simplest model of the relationship between the net borrowing and debt (Owsiak, 1999, pp. 257–258), debt serves only to finance the planned deficit. Assuming that the actual deficit (net borrowing) corresponds to the planned deficit (net borrowing), and that no other events and factors have an impact on the value of debt – the value of outstanding debt incurred in a given period corresponds to the sum of deficits (net borrowing) run in that period, minus the sum of the surpluses (net lending) run. Our study takes a realistic approach that accounts for the sometimes significant differences between the government net borrowing and new debt. However, the fundamental driver of debt growth is the public sector net borrowing in the vast majority of cases.

Since the publication of Keynes' "General Theory", there has been a fundamental consensus in the literature on the need to plan for net borrowings and thus increase debt during recessions, and to plan for net lendings that will reduce debt during periods of full use of the factors of production. Periodic deficits and prudent debt do not have a significant impact on inflation, do not threaten insolvency and do not have a significant crowding out effect (Buiter, 1985, p. 21 et seq.). However, doubts are expressed about the nature of "beneficial" deficits, based on the distinction between current account deficits and deficits only in the capital account (Musgrave, 1989, pp. 536, 553). Although the EU fiscal rules are based on the ratio of the nominal deficit to GDP, the specification of these rules in the Stability and Growth Pact, binding the euro area countries, is based on the concept of structural deficit. While the structure of debt is always the subject of a choice assuming the acceptance of specific risk levels, as regards the size of debt, the adverse effects of its growth above a certain level are commonly indicated (Krugman, 1998, pp. 2–3). Regulatory expression of such a conviction are the fiscal rules on debt, and first of all the Treaty limitation of the debt-to-GDP ratio in the EU Member States. However, if it is general accepted, that temporary deficits serve simultaneously to stimulate growth and limit the negative social effects of the economic slowdown, it is also warranted to agree to exceptional deficits in cases of exceptional disruptions of economic activity, as exemplified by the COVID pandemic.

The EU Stability and Growth Pact stipulates that in the case of an unusual event outside the control of a Member State concerned which has a major impact on the financial position of the general government or in periods of severe economic downturn for the euro area or the Union as a whole, Member States may be allowed temporarily to depart from the adjustment

path towards the medium-term budgetary objective, provided that this does not endanger fiscal sustainability in the medium term[4]. The first of the indicated circumstances (and the related effect) is referred to as the unusual event clause, the second – as the general escape clause[5]. In its communication of March 20, 2020, the European Commission confirmed that the expected sharp economic downturn caused by the pandemic constituted the rationale for the use of the general escape clause (triggering it), for the first time since it was adopted in 2011[6].

The aim of the paper is to examine the impact of the pandemic both on the size and the structure of public debt in the major EU economies as well as in other selected OECD countries. The study of changes in each macro-financial quantity requires reference to the past, so we preceded the analysis with a summary of the most important processes the public debt had underwent in the period before the pandemic. The analysis of debt during the pandemic begins with examining its dynamics and structure. As changes in the size of the debt are not only due to the need to finance net borrowing (deficit), we then considered other factors that had a significant impact on the amount of government debt during the pandemic period. This made it possible to verify the hypothesis that the main factor in debt accumulation was increased borrowing needs. The analysis concludes with a discussion of the evolution of the public debt-to-GDP ratio.

2. Methodological remarks

Our study was based on statistical data on selected phenomena and processes affecting the debt and deficit of the public (general government) sector in selected OECD countries. The source of the data covering the EU member states was the Eurostat database, while the data for 3 non-EU OECD countries were obtained from the OECD database. The time scope of the analyzes of debt development in the pandemic covers the period from the fourth quarter of 2019 to the first quarter of 2022. Data on debt dynamics were collected and presented by quarters. The summary of selected tenets of the evolution of public debt prior to the pandemic period covers the years 2007–2019, i.e. the last year before the financial and economic crisis, the time of crisis of different lengths in each country and a period of economic recovery, but also the continuation of some non-standard measures in the field of fiscal and monetary policy. Such a period of analysis made it possible, in particular, to observe changes in the size of the public debt between the financial and economic crisis and the outbreak of the

pandemic. All data relating to debt refer to the consolidated debt of the entire public sector valued according to the statistical convention, and not according to the convention of the Stability and Growth Pact. We use the term "deficit" in the sense of "net borrowing" under the national accounts nomenclature.

The study covered 7 largest EU economies: Germany, France, Italy, Spain, the Netherlands, Poland, Sweden, as well as 3 (non-EU) major OECD countries: the United States, Japan and United Kingdom. Statistical data and research results are also presented as average values for the EU-27 countries, and partly also for the euro area. Against this background, the evolution of select values in other EU and OECD countries was discussed, particularly where justified by the exceptional intensity of the analyzed processes.

The subject of the research is the dynamics and structure of public debt, the study of its relation to GDP and the analysis of the links with the public sector deficit. In the analytical work, the methods of statistical and economic analysis were used, in particular observation of phenomena, stepwise concretization, stream method and resource method. In the introductory part, on the basis of an analysis of the literature on the subject, the determinants of deficit generation and public debt, and in particular the so-called pandemic debt, are described in a synthetic way.

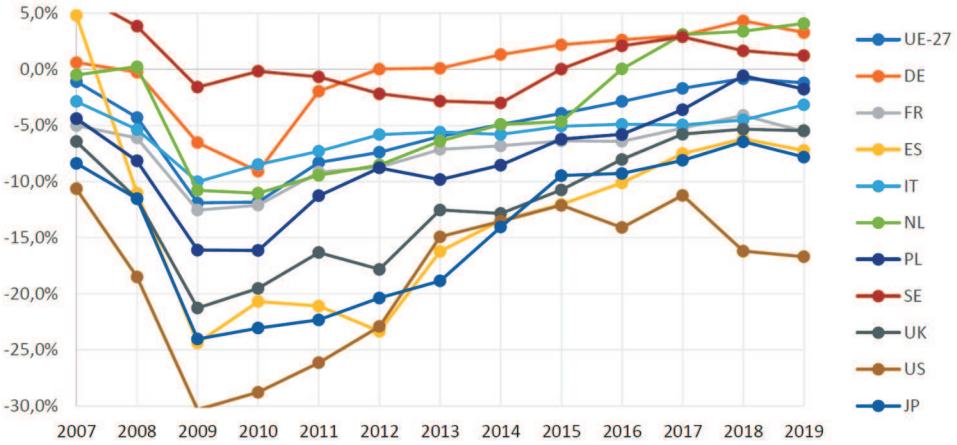
3. "Starting point" – the dynamics and structure of public debt of selected OECD countries in the run-up to the COVID-19 pandemic

In most of the countries studied, the increase in the size of public debt was related to the existing deficits (net borrowings) of the public sector. Figure 1 shows the ratio of financial result (net borrowings) to public sector expenditure in the period preceding the pandemic.

The impact on public finances of fiscal interventions taken in order to limit the effects of the economic crisis at the turn of the first and second decade is visible in all surveyed countries, however, the intensity of these interventions, measured by the ratio of deficit (net borrowing) to public expenditure, varies significantly. Across the EU, the remedial measures peaked in 2009 and 2010, while deficits gradually declined thereafter (however, in Spain, 2011 and 2012 also closed with record high deficits). Spain was characterized by a particularly intense and prolonged fiscal stimuli, where the deficit exceeded one fifth of public spending for four consecu-

Graph 1

Net borrowing to total public expenditure



Source: own elaboration – graph based on Eurostat and OECD data

tive years (interventions on a comparable scale also took place in Ireland and Greece). Sweden, like the other Nordic countries, showed a significant surplus in the public sector before the crisis, and intervention in 2008–2012 was more than restrained. Germany very quickly returned to the balance of public finances, running a significant surplus (net lending) of the general government sector from 2015 onwards. In Japan, the public sector finance gap reached a size comparable to that of the Spanish sector, except that, unlike in Spain, Japan's public finance were also in deficit in 2007. Undoubtedly, however, the intervention of the largest magnitude took place in the USA: in 2009–2011 the deficits exceeded a quarter of public expenditure, and in the following years they oscillated around 15% of expenditure.

Basically changes in the volume of public debt reflected the processes described above. Table 1 shows the percentage increases (decreases) in the size of public debt by year.

In all EU and OECD countries (except Switzerland, Colombia and Costa Rica), there was an increase in nominal public debt in the analyzed period. In the medium and long term, changes in the size of debt may be compared with the accumulated financial result of the public sector. These figures for the period 2007–2019 in selected OECD countries are presented in Table 2.

In many countries (France, Spain, the Netherlands, USA), the increase in public debt broadly matched the accumulated deficits. In some (United Kingdom) it exceeded the accumulated deficits by half, in others (Poland,

Table 1

Percentage change of public debt

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
UE-27	1,8%	7,7%	11,3%	10,1%	4,9%	4,6%	3,2%	2,4%	1,5%	1,8%	1,0%	0,9%	0,8%
DE	0,5%	4,3%	7,0%	17,5%	1,7%	3,6%	–0,7%	0,1%	–1,2%	–0,7%	–2,3%	–2,3%	–0,8%
FR	4,9%	9,4%	17,3%	5,8%	6,3%	4,7%	4,5%	3,1%	3,0%	4,2%	3,0%	2,5%	2,8%
ES	–1,9%	14,5%	29,3%	14,0%	14,5%	24,9%	10,5%	5,8%	2,7%	2,8%	3,4%	2,2%	1,2%
IT	1,2%	3,6%	5,8%	4,4%	2,8%	4,1%	4,0%	3,1%	1,7%	2,1%	1,9%	2,2%	1,2%
NL	0,8%	33,0%	0,2%	6,8%	6,0%	7,8%	3,4%	2,0%	–2,1%	–1,7%	–4,1%	–3,5%	–2,8%
PL	4,5%	13,7%	13,8%	13,3%	10,6%	3,1%	5,4%	–6,1%	5,7%	9,4%	–0,3%	2,8%	1,0%
SE	–5,1%	–0,9%	6,4%	0,1%	1,7%	1,3%	9,6%	16,8%	3,7%	0,1%	1,0%	–0,3%	–6,2%
UK	7,5%	15,5%	14,0%	6,5%	6,7%	6,6%	3,2%	4,0%	2,1%	3,6%	9,8%	2,1%	3,1%
US	5,2%	20,7%	10,9%	12,8%	7,9%	5,6%	6,4%	4,0%	4,8%	4,1%	1,7%	6,9%	3,2%
JP	–0,3%	0,0%	5,3%	5,6%	4,8%	4,3%	3,9%	3,9%	2,3%	2,3%	2,1%	1,4%	1,5%

Source: own calculations based on Eurostat and OECD data

Table 2

Increase in public debt and accumulated net borrowing of the general government sector

	1. increase in public debt over 2006–2019	2. net borrowing/net lending accumulated over 2007–2019	1/2
UE-27	4 286 570	–3 716 326	–1,15
DE	450 433	33 455	13,46
FR	1 180 836	–1 130 826	–1,04
ES	831 222	–826 378	–1,01
IT	752 670	–605 334	–1,24
NL	130 452	–136 709	–0,95
PL	540 331	–689 454	–0,78
SE	401 288	155 921	2,57
UK	1 810 549	–1 190 519	–1,52
US	17 235 085	–15 816 893	–1,09
JP	361 916 500	–420 139 400	–0,86

Source: own calculations based on Eurostat and OECD data

Japan) it was significantly lower. In most cases, these differences are due to the revaluation of debt denominated in foreign currency and to the financing of borrowing requirements with the sale of financial assets. The exceptional countries are Germany and Sweden, where public debt increased by nearly half a trillion euros and kroner, respectively, despite accumulated surpluses achieved in the period 2007–2019. The sources of differences between the size of the financial result of the public sector and the increase in debt are explained below on the example of the reports of Poland and Sweden for 2018 and 2019.

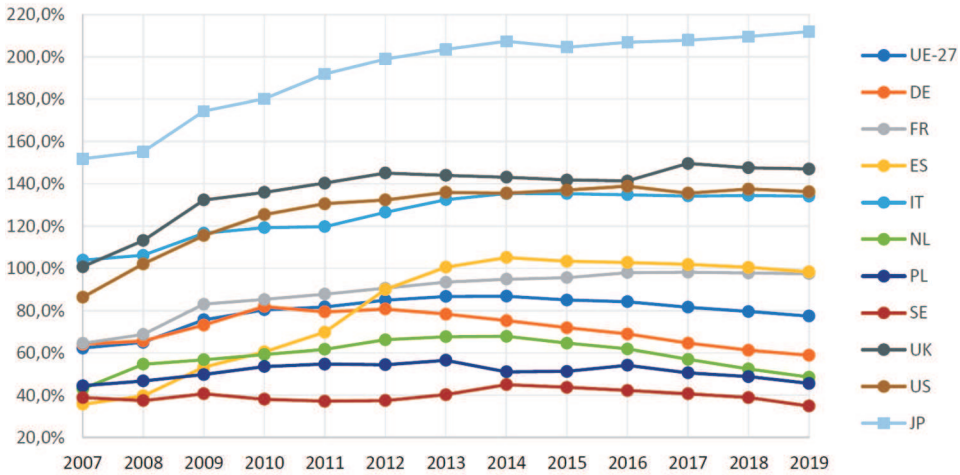
In 2018, public debt in Poland increased by almost PLN 36 billion, although the public sector deficit was only PLN 5 billion. This increase financed in particular (apart from the public sector deficit) loans granted (PLN 7.8 billion) and an increase in the stock of financial resources (deposits – PLN 16.2 billion). The revaluation of debt denominated in foreign currencies (PLN 12.9 billion) had a significant share in the increase in the value of debt. However, the increase was curbed by a strong surplus of new payables (PLN 21.3 million) over new receivables (PLN 8.1 billion). On the other hand, the public sector in Sweden closed 2019 with a surplus of over SEK 30 billion, while public debt decreased by over SEK 116 billion. The reduction of almost four times the surplus was made possible by the proceeds from the repayment of previously granted loans (SEK 47.1 billion), the sale of foreign bonds held (SEK 32.8 billion) and a much stronger increase in payables (SEK 37.5 billion + 23.3 billion SEK) than receivables (SEK 29.2 billion). A further reduction was made possible by the balance of the impact of operations on derivative instruments (SEK –35.1 billion + SEK 67.9 billion).

A commonly used measure of the significance of public debt for the public finances of a given country is its relation to GDP, although other measures may also be useful for various purposes, e.g. debt-to-revenue ratio or to current revenue of the public sector. In the EU, the relation to GDP of debt defined for the purposes of the Stability and Growth Pact, similar in size, but not identical to that defined for the purposes of international comparisons, is the second – apart from the relation of the public sector result to GDP – synthetic measure of financial system stability, the unfavorable development of which may lead to the launch of the excessive deficit procedure. The public debt-to-GDP ratio of the surveyed countries is presented in the chart below.

On the eve of the financial and then economic crisis, the size of ratio in individual countries varied strongly. Italy, United Kingdom, Greece (with a ratio of approx. 100%) and Japan (showing a particularly high level of

Graph 2

Relation of public debt to gross domestic product



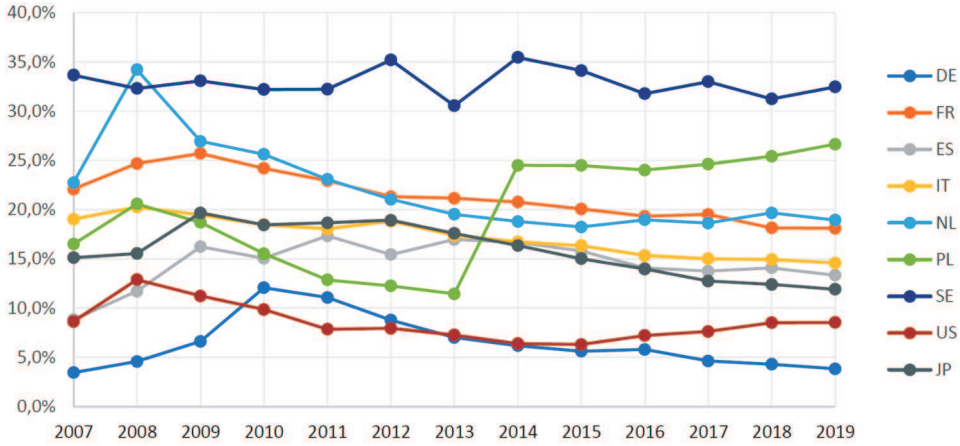
Source: own elaboration – graph based on Eurostat and OECD data

ratio – over 150%) were at one extreme, while the Baltic countries, Romania and Bulgaria were on the other, where the ratio did not exceed several percent. In the Scandinavian countries, the Czech Republic, Spain, Poland and the Netherlands, it was in the range of 25–45%, while in Germany and France it was over 64%. Crisis years deficits in all the countries surveyed (except Sweden) were financed primarily by incurring new financial liabilities, which generally led to an increase in the debt-to-GDP ratio. In Poland, the Netherlands and Germany, this increase was relatively mild, and in the last years of the period under review it gave way to a decline – to the level from before the crisis. In contrast, particularly sharp increases took place in Spain (from 36% in 2007 to 105% in 2014), the US and Japan, with the ratio stabilizing at levels reaching 130% in the US, UK and Italy, and in Japan – 210%. It should be noted, however, that while in Italy this stabilization took place in the conditions of almost economic stagnation (the average real GDP growth in 2013–2019 was only 0.37%), in the US and UK the stabilization of ratio was accompanied by a relatively high economic growth (average real GDP growth in these countries was 2.15% and 2.38%, respectively).

The time structure of public debt remains a sphere of autonomous decision-making by the relevant authorities of each country: considerable differences can be observed in this respect. The share of short-term debt in public debt is shown in Figure 2. In Sweden, the share of short-term

Graph 3

Short-term debt (percentage of general government debt)



Source: own elaboration – graph based on OECD data

debt in the debt portfolio remains "traditionally" the highest, reaching 1/3, while in Germany this share (excluding the period 2009–2013) fluctuates around 5%. In most countries, this share temporarily increased during the years of the financial and economic crisis, and then returned to the level of 2007. The exception is Poland, where a strong increase in the share of short-term debt took place in 2014, after which this share stabilized at around 25%.

In most of the countries surveyed, debt denominated in foreign currency did not play a significant role. Financial liabilities denominated in foreign currency were "traditionally" not issued by the United States, the United Kingdom, Spain and the Netherlands. In Germany and France, their share in the public debt portfolio remained negligible (not exceeding 5%). However, issues of instruments denominated in foreign currencies in those EU countries which kept their own currencies are significant. In Sweden, the share of such debt was less than 15% in 2007, rising to 19–20% in some years before falling to 14% in 2019. In Poland, the share of debt denominated in foreign currency fell from less than 1/3 in in 2007 to less than a quarter in 2019 (it is comparable to the share recorded in Hungary, twice as large as the share recorded in the Czech Republic, and several times lower than the share of debt denominated in foreign currency in Romania, Bulgaria and Croatia). If a large share of debt is denominated in a foreign currency, depreciation of the national currency, usually accompanying inflation, increases the debt service burden.

4. Public debt during the pandemic

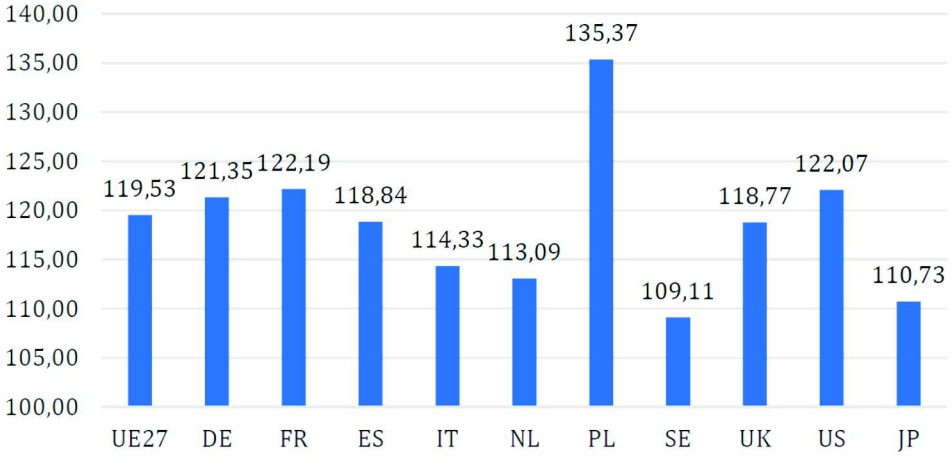
4.1. Dynamics and structure of public debt

The increasing imbalances in public finances during the pandemic had a significant impact on the size and dynamics of debt increase. This problem is particularly relevant in an environment of the rapidly rising interest rates and low economic growth.

Great importance should be attributed not only to the size of the debt itself, but above all to the dynamics of its change. In the period under examination, the average growth rate of the consolidated public debt calculated for the EU-27 was 19.5%, and for 19 countries of the Euro zone – 19.1%. In the group of ten countries covered by the study, the highest increase in debt occurred in: Poland (35.4%), France (22.3%), the United States (+ 22.1%) and Germany (21.4%). Much lower dynamics was observed in Sweden (9.1%), Japan (10.7%) and the Netherlands (13.1%). Among other EU countries, low debt growth was recorded in Greece (8.0%), Denmark (9.2%) and Portugal (10.4%). On the other hand, the highest growth took place in: Estonia (137.2%), Romania (59.1%), the Czech Republic (54.2%), Malta (54.2%) and Hungary (42.4%). Among non-European OECD countries, a significant increase in debt was characteristic of Colombia (46.1%), Canada (35.5%), Costa Rica (33.1%) and Australia (31.1%). The discussed changes in the volume of debt for the studied group of countries are presented in Figure 4, and the dynamics of individual quarters in Table 4.

Graph 4

0. Public debt dynamics – Q4 2019 – Q1 2022



Source: Own elaboration – graph based on Eurostat and OECD data

Table 3

Quarterly debt dynamic in select member states of the EU and OECD – Q4 2019 – Q1 2022

	2020Q1/ 2019Q4	2020Q2/ 2020Q1	2020Q3/ 2020Q2	2020Q4/ 2020Q3	2021Q1/ 2020Q4	2021Q2/ 2021Q1	2021Q3/ 2021Q2	2021Q4/ 2021Q3	2022Q1/ 2021Q4
UE-27	102,0	107,2	101,6	100,1	102,7	101,8	101,0	100,0	101,8
DE	102,2	108,1	103,3	99,2	101,3	102,3	101,4	101,8	100,3
FR	102,5	108,2	101,4	99,2	103,4	100,9	102,6	99,3	103,2
ES	102,9	105,3	101,3	100,3	103,5	102,3	100,5	99,6	101,9
IT	101,0	104,0	102,1	99,5	103,0	101,7	100,4	98,9	102,9
NL	102,2	109,5	99,9	98,6	101,0	101,8	98,9	101,4	99,4
PL	105,6	113,8	104,0	102,3	104,0	100,9	101,2	99,4	100,4
SE	102,8	102,1	103,0	103,8	100,4	98,6	97,5	103,8	97,1
UK	99,6	107,4	102,5	102,4	100,5	102,3	101,7	101,7	99,4
US	103,7	108,8	102,1	100,8	100,8	99,7	100,6	101,3	102,7
JP	100,2	103,6	102,7	101,3	99,8	100,5	100,2	100,4	101,7
average	102,3	107,1	102,2	100,7	101,8	101,1	100,5	100,8	100,9

Source: own calculations based on OECD data

When analyzing the quarterly debt dynamics, one should pay attention to the differences in this respect. Both in the EU-27 and in the examined group of ten countries, the highest dynamics of debt growth was characteristic for the initial period of the pandemic, in particular in the first quarter of 2020. At that time, the increase in debt was 7.2% and 7.1%, respectively. In the second and third quarters of this year, debt increased by approx. 2%, and slightly lower values were recorded in the fourth quarter (especially in countries such as: Germany, France, the Netherlands, Italy, although in some countries it still had higher increase, e.g. in Sweden +3.8%, Poland +2.3%). Successive waves of the pandemic and the ensuing actions of public authorities resulted in a renewed increase in the debt dynamics in the first quarter of 2021 – in the EU-27 by 2.7%, and in the examined group of 10 countries by almost 2%. A downward trend in growth started to become apparent in the third, and especially in the fourth quarter of 2021 (zero value for the EU-27), when four countries slightly reduced their debt (France, Spain, Italy, Poland). However, this was not a permanent phenomenon, as in the first quarter of 2022 the debt of the EU-27 rose again by 1.8%

Analysing the institutional composition of debt, it is important to note that among the EU Member States for which data are available, the share

of general government debt held by the financial institutions sector (residents) at the end of 2021 was the highest in Sweden (74%). followed by Denmark (73%), the Czech Republic (67%), Croatia (65%), the Netherlands and Italy (63% each) and Poland (60%). In contrast, the highest share of non-resident debt (foreign sector) was recorded in Cyprus (89%), Estonia (70%), Lithuania (65%) and Latvia (64%).

Significant differences between individual countries were revealed by the examination of the debt structure broken down into central and local debt. According to Eurostat data, central debt dominated in the vast majority of countries. In the first quarter of 2022, the share of local debt in the EU-27 countries amounted to 7.3%, and in the euro area to 6.8%. It was of marginal importance (below 1%) in countries such as Malta, Greece, Cyprus and Hungary, and in most countries it ranged from 1% to 5% (Spain, Lithuania, Slovenia, Ireland, Romania, Czech Republic, Croatia, Slovakia, Portugal, Bulgaria, Italy and Belgium). Higher values – in the range of 5%–10% – were characteristic for Luxembourg, Austria, Poland, Germany and France, and in the range of 10%–15%, the Netherlands, Latvia and Estonia. A separate group, with the highest share of local debt, were the Scandinavian countries – Finland 21.6%, Denmark 22.7%, Sweden 52.2% and Norway 72.7%.

When examining changes in the share of local debt in total public debt, it should be noted that in the extreme quarters of the analysed period, a downward trend was visible. In the EU-27 countries it decreased by about 0.9 percentage points, and in the euro area by 0.8 percentage points. It was most visible in Estonia (by 12.8 percentage points), Denmark (by 4.7 percentage points), Latvia (by 3.7 percentage points), the Netherlands (by 2.5 percentage points), Germany (by 2.4 percentage points) and Finland (by 2.1 percentage points). In Poland, this change amounted to 1.8 percentage points. An increase in the share of local debt in higher values was recorded only in Norway (by 3.5 percentage points), Sweden (by 1.5 percentage points) and Croatia (by 0.8 percentage points). Detailed data in this regard is presented in Table 4.

In euro area Member States, all or almost all (more than 99%) of gross general government debt was denominated in national currency. This was the case in: Belgium, Estonia, Ireland, Cyprus, Malta and Lithuania, Luxembourg, Finland, Portugal, France, Latvia, Spain, Slovakia, the Netherlands, Slovenia, Austria, Greece and Italy. Among the euro area countries, only in Germany more than 1% of the gross central government debt was not denominated in euro. Only 3 EU Member States had more than 50% of their general government debt denominated in foreign currencies at the end

Table 4

Local government debt as a percentage of public debt, Q4 2019 – Q1 2022

GEO/TIME	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	change in percentage point
European Union – 27 countries (from 2020)	8,20	8,04	7,59	7,46	7,67	7,44	7,31	7,26	7,40	7,27	–0,94
Euro area – 19 countries (from 2015)	7,62	7,51	7,10	7,00	7,15	6,97	6,84	6,79	6,90	6,79	–0,83
Belgium	5,89	5,57	5,37	5,53	5,42	5,21	5,14	5,12	5,08	5,03	–0,86
Bulgaria	5,91	5,86	5,59	4,74	4,79	4,64	4,47	4,43	4,12	4,25	–1,66
Czechia	4,71	4,41	3,77	3,94	3,90	3,42	3,22	3,49	3,27	3,14	–1,57
Denmark	27,38	26,28	20,67	18,49	19,94	19,93	19,93	19,25	22,34	22,67	–4,71
Germany (until 1990 former territory of the FRG)	11,76	11,56	10,42	10,07	10,18	10,02	9,79	9,59	9,28	9,41	–2,36
Estonia	27,79	24,95	14,88	15,18	17,36	15,55	14,69	14,28	16,32	15,03	–12,76
Ireland	2,63	2,59	2,50	2,58	2,82	2,80	2,77	2,82	2,91	2,98	0,36
Greece	0,37	0,35	0,34	0,34	0,32	0,31	0,30	0,30	0,30	0,30	–0,07
Spain	2,12	2,03	2,09	1,96	1,82	1,77	1,78	1,74	1,72	1,72	–0,40
France	10,27	10,21	9,79	9,68	10,28	10,04	10,04	9,86	10,29	10,01	–0,26
Croatia	2,45	2,45	2,59	2,67	2,95	2,91	3,01	3,14	3,33	3,27	0,82
Italy	5,30	5,23	4,97	4,92	4,90	4,74	4,60	4,57	4,58	4,45	–0,85
Cyprus	0,46	0,47	0,43	0,41	0,43	0,43	0,45	0,45	0,46	0,47	0,01
Latvia	17,02	16,81	15,06	14,69	15,45	14,76	15,02	14,79	13,93	13,34	–3,69
Lithuania	2,87	3,07	2,61	2,40	2,70	2,66	2,33	2,29	2,31	2,37	–0,51
Luxembourg	6,49	6,51	6,02	5,49	5,78	4,95	5,46	5,54	5,50	5,99	–0,50
Hungary	0,89	0,82	0,71	0,66	0,71	0,62	0,60	0,56	0,81	0,69	–0,20
Malta	0,05	0,05	0,04	0,04	0,03	0,03	0,03	0,03	0,03	0,03	–0,03
Netherlands	15,26	14,87	12,97	12,72	13,30	13,19	12,13	12,13	12,58	12,76	–2,51
Austria	6,41	6,23	5,75	6,02	6,27	5,95	5,87	5,97	6,40	6,08	–0,32
Poland	8,74	8,13	7,22	6,95	7,46	7,08	6,92	6,83	7,18	7,01	–1,73
Portugal	3,89	3,82	3,91	3,73	3,83	3,77	3,77	4,09	3,90	3,91	0,02
Romania	4,51	4,12	3,82	3,71	3,67	3,46	3,29	3,13	3,23	3,06	–1,45
Slovenia	2,77	2,65	2,35	2,33	2,43	2,24	2,24	2,20	2,47	2,37	–0,40
Slovakia	4,31	4,16	3,59	3,62	3,92	3,90	3,67	3,63	3,60	3,56	–0,74
Finland	23,61	22,64	22,19	22,65	22,00	21,42	21,30	21,53	22,05	21,56	–2,06
Sweden	50,70	50,48	49,07	46,77	46,79	46,06	47,16	49,52	50,23	52,17	1,47
Norway	69,24	70,23	76,12	78,81	68,05	78,05	90,33	87,16	59,78	72,71	3,47

Source: own calculations based on OECD data

of 2021. These were Bulgaria (74%), Croatia (72%) and Romania (52%). These three countries are not members of the euro area and most of their foreign currency debt was denominated in euro.

4.2. Public debt and public sector deficit in the EU Member States

The general assumption is that the increase in public debt should come primarily from the public sector's deficit, and therefore, in particular, from the use of standard fiscal policy instruments to mitigate the negative impact of the pandemic on the demand and – to a limited extent – supply side. The vast majority of EU countries responded to the negative phenomena associated with the pandemic with strong increases in public spending, leading to deficits in both 2020 and 2021 (except for Denmark and Luxembourg in 2021). On the other hand, the intensity of this reaction, as measured by the ratio of the deficit to public expenditure ratio in 2020 and 2021 to the average for the period 2013–2019, was extremely varied. The heights of the respective ratios are shown in the table below:

Table 5

Net borrowing of the general government as a percentage of public expenditure

	EU-27	DE	FR	IT	ES	NE	PL	SE
2014–2019 average	–2,58%	2,79%	–5,75%	–4,74%	–9,43%	0,17%	–4,42%	0,81%
2020	–12,75%	–8,48%	–14,49%	16,13%	–19,84%	–7,77%	–14,34%	–5,08%
2021	–9,06%	–7,21%	–10,90%	13,02%	–13,58%	–5,48%	–4,23%	–0,48%

Source: own calculations based on Eurostat data

Across the EU, the scale of the fiscal response to the problems caused by the pandemic was relatively high both in 2020 and in 2021: the "fiscal gap" in 2020 was five times greater than the average for 2014–2019, while in 2021 it was three and half this average. Compared to the 2014–2020 average "gap", the reaction was particularly strong in Germany: while this average is positive and therefore represents a surplus, the gap was 8.5% in the first year of the pandemic. Of the note is trace size of the "gap' in Sweden in the second year of the pandemic. On the other hand, in the second year of the pandemic, Poland returned to the "standard" size of the "gap" reported in the period 2014–2019. When resigning from the reference to the average "gap" in the period 2014–2019, it is important to highlight the very high size of the "gap" in Spain, Italy, France and Poland in 2020, and in Italy and Spain in 2021.

While in the first year of the pandemic in the vast majority of EU countries (except Ireland, Greece and Luxembourg) the amount of public debt growth more or less exceeded the size of the public sector deficit, the reasons for the differences require an individual analysis. In 2021, the increase in public debt across the EU was in line with the deficit, but there were significant differences between countries. The summary of financial transactions and other events leading to differences between the financial result of the public sector and the change in the volume of public debt in 2020 and 2021 is presented in the tables below.

Table 6

Transition from net borrowing to the change in gross debt, 2020

	EU-27	DE	FR	IT	ES	NE	PL	SE
Net lending(–)/ Net borrowing(+)	**906 246**	**145 246**	**205 533**	**159 022**	**115 200**	**29 586**	**161 675**	**133 134**
Net acquisition(+)/disposal(–) of financial assets	434 653	134 716	102 672	20 693	10 221	17 654	145 220	102 123
Currency and deposits	278 002	83 386	75 026	12 379	14 978	5 690	74 691	55 811
Securities other than shares	–11 223	–3 506	–1 996	–2 404	871	–725	10 852	–29 477
Loans	70 223	34 740	4 052	2 705	–3 421	4 417	37 691	47 659
acqusition/increase(+)	133 824	46 466	11 514	5 654	–923	6 760	40 447	162 327
disposal/reduction(–)	–63 603	–11 726	–7 462	–2 951	–2 498	–2 343	–2 756	–114 668
Long-term loans	67 042	33 397	3 735	2 705	–3 421	4 413	37 376	42 340
acquisition/increase(+)	118 074	45 124	11 187	5 654	–923	6 103	40 070	120 491
disposal/reduction(–)	–51 034	–11 726	–7 452	–2 951	–2 498	–1 690	–2 694	–78 151
Equity and investment fund shares/units	28 428	12 382	1 157	3 278	59	–4 639	2 009	86 677
Portfolio investments, net	30 671	11 385	1 591	3 017	248	5	0	77 867
Other equity and investment fund shares/units	–2 243	997	–434	261	–189	–4 644	2 009	8 810
acquisition/increase(+)	63 555	6 032	43 943	1 323	185	354	10 855	39 629
disposal/reduction(–)	–65 798	–5 035	–44 377	–1 062	–374	–4 998	–8 846	–30 819
Financial derivatives	–17 963	3 291	777	2 217	22	–5 089	–227	–137 866
Other accounts receivable	86 763	4 400	23 250	2 520	–2 288	18 000	20 376	79 319
Other financial assets	423	24	406	–4	0	0	–172	0
Adjustments	–96 543	–4 348	–32 044	–17 200	–3 201	–6 980	–15 138	–11 446
Net incurrence(–) of liabilities in financial derivatives	12 192	0	–530	2 124	538	0	0	79 175
Net incurrence(–) of other accounts payable	–55 514	6 957	–9 889	–7 619	–1 973	–5 695	–29 581	–46 330
Net incurrence(–) of other liabilities	–15 092	0	–237	–11 711	325	0	–1 219	–22 097

	EU-27	DE	FR	IT	ES	NE	PL	SE
Issuances above(–)/below(+) nominal value	–73 479	–15 585	–30 692	–2 571	–7 110	–2 304	–4 708	–10 396
Difference between interest accrued(–) and paid(+)	28 612	8 035	8 829	1 658	5 066	778	–2 123	8 251
Redemptions/repurchase of debt above(+)/below(–) nominal value	8 956	1 833	549	1 178	0	5	0	5 723
Appreciation(+)/depreciation(–) of foreign-currency debt	–852	–5 588	0	–258	–47	236	22 365	–25 783
Changes in sector classification	254	0	0	0	0	0	128	11
Other volume changes in financial liabilities	–1 620	0	–74	0	0	0	0	0
Statistical discrepancies	–12 875	–7 267	–2 955	208	209	–34	–1 064	–9 163
Change in consolidated gross debt	**1 231 481**	**268 347**	**273 205**	**162 723**	**122 429**	**40 226**	**290 693**	**214 648**

Source: Eurostat data

Table 7

Transition from net borrowing to the change in gross debt, 2021

	EU-27	DE	FR	IT	ES	NE	PL	SE
Net lending(–)/ Net borrowing(+)	**675 772**	**132 454**	**160 906**	**128 327**	**82 819**	**21 888**	**49 008**	**12 879**
Net acquisition(+)/disposal(–) of financial assets	126 050	50 804	14 008	2 007	34 056	1 303	50 366	–108 436
Currency and deposits	61 113	16 132	1 906	–1 097	33 452	–6 061	29 470	–18 935
Securities other than shares	14 901	–1 661	3 084	1 887	630	917	10 197	36 143
Loans	11 168	9 805	–2 088	–847	–2 837	3 046	3 731	–28 909
acqusition/increase(+)	104 146	20 145	15 724	3 483	1 790	5 630	13 746	99 648
disposal/reduction(–)	–92 980	–10 340	–17 812	–4 330	–4 627	–2 584	–10 015	–128 557
Long-term loans	5 870	8 931	–2 196	–847	–2 837	3 003	3 476	–30 335
acquisition/increase(+)	95 451	19 271	15 593	3 483	1 790	5 151	22 474	76 672
disposal/reduction(–)	–89 580	–10 340	–17 789	–4 330	–4 627	–2 148	–18 998	–107 007
Equity and investment fund shares/units	11 910	11 154	–1 690	4 274	–641	167	–3 172	–5 450
Portfolio investments, net	10 006	7 714	–2 600	4 341	–103	–3	0	–6 029
Other equity and investment fund shares/units	1 906	3 440	910	–68	–537	170	–3 172	579
acquisition/increase(+)	40 212	9 670	15 861	1 780	290	660	8 613	65 006
disposal/reduction(–)	–38 307	–6 230	–14 951	–1 847	–827	–490	–11 785	–64 427
Financial derivatives	–14 928	1 927	314	1 726	206	–2 379	–205	–166 176
Other accounts receivable	42 045	13 423	12 730	–3 989	3 246	5 613	10 468	74 891

	EU-27	DE	FR	IT	ES	NE	PL	SE
Other financial assets	–160	24	–248	54	0	0	–123	0
Adjustments	–102 352	–7 626	–8 258	–25 438	–33 833	–9 912	–24 907	93 565
Net incurrence(–) of liabilities in financial derivatives	17 648	0	–533	0	227	0	0	151 054
Net incurrence(–) of other accounts payable	–89 457	–3 540	–3 542	–18 818	–28 059	–3 744	–24 625	–42 842
Net incurrence(–) of other liabilities	–18 055	0	13	–7 068	–4 555	0	–855	–24 309
Issuances above(–)/below(+) nominal value	–59 743	–15 586	–16 849	–2 417	–7 019	–6 959	–345	–11 979
Difference between interest accrued(–) and paid(+)	34 016	8 136	12 330	2 224	5 532	817	–415	8 265
Redemptions/repurchase of debt above(+)/below(–) nominal value	9 381	3 365	322	328	0	4	0	2 073
Appreciation(+)/depreciation(–) of foreign-currency debt	4 135	0	1	313	41	–30	1 333	11 303
Changes in sector classification	56	0	0	0	0	0	0	0
Other volume changes in financial liabilities	–332	0	0	0	0	0	0	0
Statistical discrepancies	–21 784	–13 947	–1 717	286	–1 590	36	–531	–1 000
Change in consolidated gross debt	**677 688**	**161 685**	**164 940**	**105 183**	**81 452**	**13 315**	**73 936**	**–2 992**

Source: Eurostat data

The public debt incurred in 2020 financed a large part of the increase in financial assets included in the currency and deposits category, i.e. cash ("spare funds"). This phenomenon can be interpreted as striving to ensure liquidity in an environment of high general uncertainty. The share of these "spare funds" borrowing, calculated for the whole EU, amounted to 22.6%, with values exceeding ¼ in Germany, France, Poland and Sweden (in Portugal, Slovenia and Slovakia – close to or over 50%, and almost 60% in Finland). It is worth noting that this kind of financial cushion was worth almost 2.5% of GDP in Germany, and in France and Poland – about 3.2% of GDP. Only Greece, Luxembourg and Malta reduced their "spare funds" (in the first two countries it allowed to incur a debt lower than the deficit). In the second year of the pandemic in many EU countries (including Hungary, Slovenia, Portugal, Romania, Finland) the phenomenon was reversed – there was a decrease in deposits. In the Netherlands, the amount of reduction exceeded the amount of the increase in 2020, in Sweden, the scale of the reduction was much smaller. On the other hand, the new public debt financed to a large extent the increase in the liquidity of the

public sector in Spain and Poland (the ratio of the increase in the value of deposits to the increase in public debt in these countries amounted to approx. 40%).

The balance of operations on debt securities issued by other entities does not usually play a significant role in financing or increasing the borrowing requirement of the public sector, it is worth noting, however, that in most of the countries surveyed, as well as in the EU as a whole, in 2020 their holdings decreased. Although the public sector in Poland (among the larger economies in the EU also in Denmark and Greece) increased investments in debt securities, this increase was not of great importance for borrowing requirement (its ratio to the increase in the amount of public debt in Poland was less than 4%, and 5.7% in Denmark; in Greece, the ratio was over 10%, but the value of investment in debt securities accounted for only 1/8 of the reduction of "spare funds". The public sector in Poland continued to increase its holdings of debt securities (by a comparable amount) also in 2021, while such investments in Sweden compensated for the decrease in exposure in the previous year.

In some countries, loans granted from public budgets or by public sector entities have a relatively significant impact on the increase in the borrowing requirement of the public sector in relation to the deficit amounts. In Germany, the Netherlands and Poland, the balance of disbursements and repayments of these loans reached a couple of per cent of the amount of the increase in debt, and in Sweden it was over 20% of this amount (even more important in Denmark – their share of financing in the new debt is almost 1/3). In each of these countries, the balance of payments in 2020 was well above the average of the previous years (for example: in Germany it was close to EUR 35 billion, while in the two previous years it was slightly negative). In 2021, there was a general stabilization of such asset holdings. Only in Sweden repayments of long-term loans exceeded the value of newly granted loans by SEK 30 billion, i.e. almost two and a half times the amount of the sector's deficit (in contrast, a fiscally significant increase in the balance of long-term loans, equivalent to 15% of the increase in public debt, was recorded by Hungary).

In the Nordic countries, and especially in Sweden, a significant role was played by the support of the sector in the form of equity investments, i.e. primarily portfolio investments, understood as the purchase of shares listed on the market by public sector entities with substantial assets. While in the two years preceding the pandemic, the balance of such operations was strongly negative (totaling almost SEK 64 billion), in 2020 net portfolio investments amounted to nearly SEK 78 billion, i.e. approx. 36% of the

amount of the increase in public debt (in Denmark, the corresponding share was 5%, and in Finland – almost 22%). In the second year of the pandemic, only Denmark saw a significant increase in equity holdings.

Changes in the scope of derivative instruments classified as financial assets and liabilities, as a rule, do not have a significant impact on the balance of turnover recorded in the financial account. Derivatives are used to mitigate various types of risks associated with incurring public debt, so it is impossible to see derivative operations as directly linked to the pandemic. These changes, calculated for the whole EU in 2020, amounted to less than EUR –6 billion (by this amount the decrease in assets exceeded the decrease in liabilities), which corresponded to –0.5% increase in the value of public debt, and in 2021 – EUR 2.7 billion (0,4% of the increase in debt). Similarly, it does not seem possible to draw conclusions based on the analysis of changes in receivables and payables arising from transactions recorded in non-financial accounts. It can be pointed out, however, that a much larger increase in payables than in receivables significantly contributed to the reduction of the growth rate of public debt in 2021 in Spain (share in the amount of increase of approx. –30%) and in Poland (approx. –20%).

It is worth noting that in non-euro area countries, revaluations had a significant impact on the value of public debt expressed in the domestic currency. The appreciation of the krona caused a decrease in the value of debt by nearly SEK 26 billion (equivalent to about 12% of the increase in public debt in 2020), while the depreciation of the zloty – an increase in the value of Polish public debt by PLN 22 billion (almost 8% of the increase in public debt in 2020).

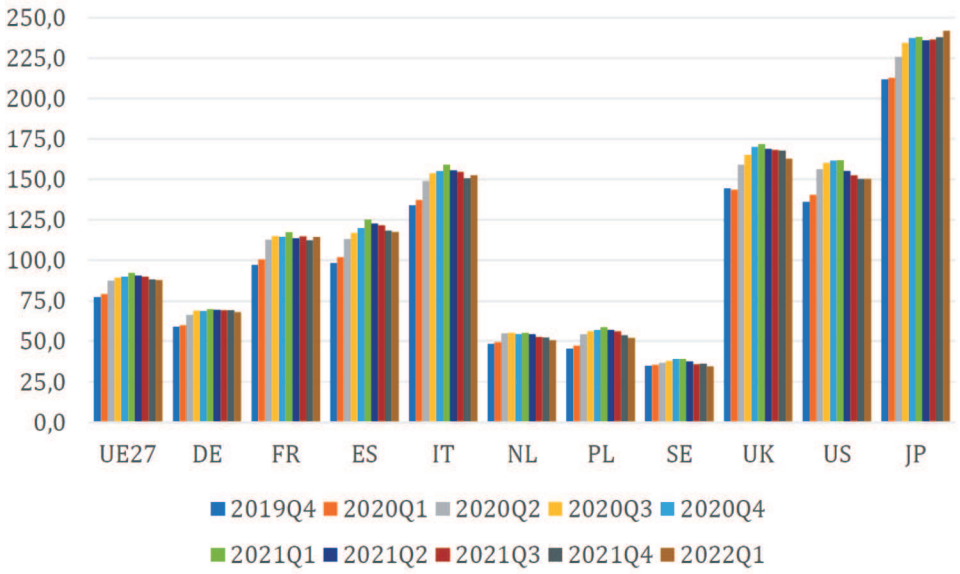
4.3. Evolution of the public debt-to-GDP ratio

In the first quarter of 2022, public debt in relation to GDP for the 27 EU countries was 87.8%, and in the Euro zone – 95.6%. In the studied group of ten countries, the highest debt-to-GDP was recorded in: Japan (241.9%) and the United Kingdom (162.9%), followed by Italy (152.6%) and the United States (150.4%). The ratio above 100% was also noted in two other countries – Spain (117.7%) and France (114.4%). On the other hand, Sweden (34.6%), the Netherlands (50.7%), Poland (52.1%) and Germany (68.2%) had the most favorable debt-to-GDP ratio.

Among other EU countries, in the first quarter of 2022, the most favorable public debt-to-GDP ratio was recorded in Estonia (17.6%), Luxembourg (22.3%), Bulgaria (22.9%), and in the group of OECD countries: Norway (36.2%), Switzerland (39.4%), Mexico (43.8%). Among the European countries, Greece was the most indebted (189.3%), but a high level of

Graph 5

Public debt to GDP ratio, Q4 2019 – Q1 2022



Source: own elaboration based on EU and OECD data

the ratio was also characteristic for Portugal (127.0%), Belgium (107.9%) and Cyprus (104.9%). The values in question for the group of 10 surveyed countries are presented in Figure 5.

Turning to the characteristics of changes in the debt-to-GDP ratio, it should be emphasized that in the analyzed time period in all countries, except Sweden (a decrease of 0.3 percentage points), in the first quarter of 2022 it was higher than in the third quarter of 2019. In the EU-27, this increase averaged 10.3 percentage points, and even higher values were recorded in the surveyed OECD countries: Japan (by 30 percentage points), the United Kingdom (by 18.4 percentage points) and the United States (by 14.2 percentage points). In Europe, the debt-to-GDP ratio increased the most in Spain (by 19.4 percentage points), Italy (by 18.5 percentage points) and France (17.0 percentage points). The lowest values, apart from Sweden, were recorded in the Netherlands (down 2.2 percentage points), Poland (down 6.5 percentage points) and Denmark (9.3 percentage points).

Among other EU countries, the debt-to-GDP ratio improved in Ireland (by 4.1 percentage points) and Denmark (by 0.8 percentage points), and there was no change in Luxembourg. On the other hand, it worsened in such

countries as: Malta (by 14.3 percentage points), Cyprus (by 13.8 percentage points), Austria (by 13.5 percentage points), Romania (by 13.1 percentage points, the Czech Republic (by 12.8 percentage points) and Hungary (by 11.9 percentage points). In OECD countries, the high increase of the analysed indicator in Canada, by 23.8 percentage points, is noteworthy. and its drop in Norway by 4.1 percentage points.

In the sample of ten EU and OECD countries, a reduction in the debt-to-GDP ratio in the first quarter of 2022 relative to the last quarter of 2021 occured in six countries – the United Kingdom by 5.1 percentage points, the Netherlands, Poland and Sweden by 1.7 percentage points, Denmark by 1.1 percentage points and Spain by percentage points. Slight increase by 0.1 percentage points was seen in the United States, with larger increases in Italy – 1.8 percentage points, France – 1.9 percentage points. and Japan – 4 percentage points. Among the other EU countries, the improvement in the value of the indicator was recorded in countries such as Greece and Lithuania (by 4 percentage points), Denmark (by 3.7 percentage points), and in the range of 2–2.5 percentage points – in Croatia, Bulgaria, Ireland, Latvia and Luxembourg. Deterioration of its value by more than 1 percentage point took place in Cyprus, Malta and Austria. Apart from the EU countries, there was an improvement in the debt-to-GDP ratio in Norway (by 6.9 percentage points), and a lower one in Colombia (by 2.6 percentage points).

In the analysed timeframe, in nine out of the ten countries studied, the highest value of the debt-to-GDP ratio characterised the first quarter of 2021 (exception: Japan – Q1 2022). In Japan, it was at the level of 232.2%, in the United Kingdom – 171.9%, in the United States – 161.9%, and in Italy – 159.3%. Values above 100% were also found in Spain and France. The lowest values were recorded in Sweden (39.2%), the Netherlands (55.2%) and Poland (58.7%). High quarterly dynamics was particularly visible in the United States (by 15.7 percentage points), the United Kingdom (up 15.6 percentage points), Japan (up 12.7 percentage points), France (up 12.3 percentage points), Italy (11.8 percentage points) and Spain (11.2 percentage points).

Comparing the data for the first quarter of 2022 and the last quarter of 2021, it can be concluded that the public debt-to-GDP ratio in the EU decreased by 0.3 percentage points to 87.8%. In the euro area, it decreased by 0.1 percentage points, from 95.7% to 95.6%. The decline in the public debt-to-GDP ratio was mainly due to the rapid economic growth. However, in nominal terms, debt continued to rise due to the need to finance programs adopted by individual countries to mitigate the economic and social impact of the pandemic.

Until a few years ago, Greece was the most problematic country in the Eurozone in terms of debt. The country's debt triggered financial interventions by the European authorities and restrictions for the Greek Government's budgetary management. Recently, particular attention has been paid to the difficult situation in Italy. For many years, the weakness of the Italian economy has been low economic growth and high public debt. High labor costs had a negative impact both on attracting investors and on the competitiveness of Italian exports. The crises of 2008–2009 and 2012–2013 were not compensated by periods of prosperity. Between 2010 and 2019, the average GDP growth rate oscillated around zero, and the unemployment rate was over 10% (over 30% among those under 30). Italy's public debt rose from 103% GDP to 134.5% GDP between 2008 and 2019. The pandemic and the related lockdown led to a recession (GDP decline of 8.9% in 2020) and an increase in public debt to 156% of GDP. In order to avoid a socio-economic catastrophe, the state was forced to subsidize employment, support companies at risk of bankruptcy, introduce special benefits for people at risk of poverty and for parents forced to care for their children at home as a result of school closures.

Spain is the second problematic EU country among the surveyed. The level of public debt in this country has been increasing since 2008, and a drastic increase was recorded with the appearance of the first wave of the pandemic (May–June 2020). The Spanish economy, highly dependent on foreign tourists, has seen a decline by as much as 10.8%. Public spending has increased significantly, and the government's priority has become measures to maintain jobs, as well as support for citizens with the lowest incomes. The Spanish Central Bank's report stresses that Spain urgently needs a public debt reduction program. The central bank authorities emphasized that this plan must be credible, feasible and its implementation by the government must become a reality. In turn, the Spanish government expects large and rapid support from the EU.

Also in Portugal, the economic impact of the pandemic has led to record levels of public debt. After years of recession, 2018 saw Portugal's highest economic growth in 20 years. In the four years since 2015, Portugal's public debt fell by 14 percentage points. up to 117.7% of GDP. The period of sustained economic growth has been halted by the COVID-19 pandemic. The weakening of economic activity, the loss of revenues from tourism (15% of GDP) and decrease in consumption in the second quarter of 2020 led to a record decline in GDP, exceeding 16.3% on an annual basis. In July 2020, the Portuguese government published a plan to revive the country's economy. It assumed, inter alia, increase in public fund-

ing for infrastructure projects. The Portuguese authorities, like Spain, see a great chance to revive economic processes in the implementation of EU support programs.

The most indebted country in relation to GDP is Japan. Already in 2010, the debt-to-GDP ratio there exceeded 200%, and by 2020 it had risen by almost another 60%. For many years, the Japanese government has deliberately pursued a policy of debt accumulation. Its aim was to increase the demand above the level of supply. Massive purchases of financial assets by the Japanese Central Bank were supposed to stimulate inflation and allow the Japanese government to increase spending. Currently, the priority of Japan's fiscal policy is to stimulate the economy in the wake of the pandemic, the goal of the government is primarily economic growth and distribution of wealth. The improvement in the condition of public finances is expected to underpin Japan's credibility.

Conclusions

Fiscal policies of the surveyed countries were strongly differentiated already in the period preceding the crisis phenomena of 2008–2012. Despite the fiscal rules in force in the EU, some euro area countries maintained a high, although usually declining, debt-to-GDP ratio. Fiscal expansion to alleviate the disturbances caused by the crisis has significantly increased this ratio in the vast majority of countries studied. Subsequently, in all of them (with the exception of the US), the debt-to-GDP ratio has been steadily declining and some of them returned to their pre-crisis equilibrium or started to generate surpluses.

The outbreak and development of the pandemic was accompanied, on the one hand, by an increase in public expenditure on health care, on the other – by large-scale discretionary measures, primarily on the expenditure side, aimed at supporting the sectors most affected by the pandemic, and ultimately reducing the decline in income of the population accompanying the slowdown in economic activity. This led to a strong increase in deficits in the first year of the pandemic, with differences in the magnitude of these increases across countries partly reflecting the sector's performance in the run-up to the pandemic. As a rule, the increase in deficits was greater, the less restrictive fiscal policy was in 2014–2019. While the ratio of deficits to government spending decreased significantly in the second year of the pandemic, in most countries ratio of deficits to GDP was comparable to the average for the 2009–2011 period.

Particularly strong debt growth took place in the first two quarters of 2020, and then in the first quarter of 2021. In many countries, in the second quarter of the first year of the pandemic, public debt increased by more than 7%. In the institutional structure of debt, the share of central government debt slightly increased, while there were no significant changes in the currency structure (however, it should be remembered that, as a rule, euro area countries do not incur debt denominated in another currency). In the first year of the pandemic, the rise in debt was generally greater than realised deficits. In many countries, new debt largely financed the increase in liquidity (the value of deposits) in the public sector, and in some countries – a higher volume of loans and equity investments undertaken by public sector units. In the second year of the pandemic, the increase in debt across the EU was broadly in line with realised sector deficits. The debt increases, combined with the weakening of economic activity in 2020, resulted in a significant deterioration of the public debt-to-GDP ratio in all countries surveyed. For the EU as a whole, the ratio increased from 77.5% in 2019 to 90% in 2020, remaining at a similar level in the second year of the pandemic. In developed non-EU OECD countries, however, the ratio reached much higher values.

From the perspective of the second half of 2022, the economic recovery observed in 2021, the reduction of deficits and the containment of the increase in the public debt-to-GDP ratio seem to be short-lived phenomena. The aftermath of the war in Ukraine, the drastic increase in energy prices and the sustained high inflation have created new challenges for fiscal and monetary policy. The expected slowdown in economic growth in 2022, and then in 2023, will not be conducive to reductions in public spending. A continuation of the upward tendencies in the public debt-to-GDP ratio initiated by the outbreak of the pandemic is therefore likely. On the other hand, prolonging the application of the general escape clause and resignation from the activation of the excessive deficit procedure abandoning the excessive deficit procedure may induce a modification of the assumptions of the Stability and Growth Pact, which is the basis for the coordination of financial policies of EU member states.

NOTES

[1] In our article, we consistently define the general government sector, understood in accordance with the national accounts convention, as the public sector, and the debt of this sector as public debt.

[2] Updated list of tax instruments used in OECD countries – see OECD, Country Tax Measures.

[3] Wage subsidies for employees at risk of losing their jobs have been introduced, inter alia, by Belgium, France, the Netherlands, Spain, Greece, Portugal and Estonia; the availability and amount of unemployment benefits increased in Germany, Austria, the Netherlands, Spain, Greece, Portugal and Sweden, and the availability and amount of sickness benefits or benefits for compulsory parental care for children staying at home – in: Estonia, France, Greece, Ireland, Germany, Poland, Portugal and Lithuania; Austria, Denmark, Ireland, Lithuania, Poland, Slovenia and Sweden used wage subsidies paid to employers. Self-employed people gained support in Denmark, France, Ireland, Greece, Spain, Germany, Poland, Lithuania and Italy. Co-financing of non-wage business costs was applied in Austria, Greece, Germany and Italy. Sectoral support for tourism and transport has been introduced in Austria, Belgium, Estonia, Hungary, Italy, Portugal and Sweden (OECD, Country Tax Measures).

[4] The provisions of art. 5 sec. 1, art. 6 sec. 3, art. 9 sec. 1 and art. 10 sec. 3 of Council Regulation (EC) 1466/97 of July 7, 1997 (OJ L 209, 2.8.1997, p. 1–5; significantly modified in 2005, especially in 2011) on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies, as well as art. 3 sec. 5 and art. 5 sec. 2 of Council Regulation (EC) 1467/97.

[5] Such terms are used especially in studies prepared by EU institutions (see Delivorias, 2020, p. 2).

[6] Communication from the Commission to the Council on the activation of the general escape clause of the Stability and Growth Pact (COM/2020/123).

BIBLIOGRAPHY

Baker S.R., Bloom N., Davis S. J., Terry S. J. (2020), COVID-Induced Economic Uncertainty, National Bureau of Economic Research Working Paper 26983.

Buiter W. H. (1985), A Guide to Public Sector Debt and Deficits, Economic Policy, vol. 1.

Delivorias A. (2020), The 'general escape clause' within the Stability and Growth Pact. Fiscal flexibility for severe economic shocks, European Parliamentary Research Service.

European Commission (2020), Communication from the Commission to the European Parliament, the Council, and the European Central Bank on the 2021 Draft Budgetary Plans: Overall Assessment (COM/2020/750).

Filippini F., Yeyati E. L. (2021), Social and economic impact of COVID-19, Brookings Global Working Paper 158.

Han J., Meyer B. D., Sullivan J. X. (2020), Income and Poverty in the COVID-19 Pandemic, NBER Working Paper 27729.

Jędrzejowska K., Wróbel A. (2020), Globalne zarządzanie gospodarcze w dobie nierówności i niepewności, Rocznik Strategiczny 2019/20.

Krugman P. (1998), Financing v. Forgiving a Debt Overhang, NBER Working Paper 2486.

Musgrave R. A., Musgrave P. B. (1989), Public Finance in Theory and Practice, McGraw Hill Book Company.

Nelson R. M., Weiss M. A., COVID-19: Role of the international financial institutions, Congressional Research Service Report R46342, https://www.everycrsreport.com/files/20200504_R46342_b2edaa0469f0ca126705472bbb05e0c00297fcee.pdf.

Owsiak S. (1999), Finanse publiczne. Teoria i Praktyka, Warszawa.

Policy Responses to COVID-19, Policy Tracker, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19

Maital S., Barzani E (2020), Global Economic Impact of COVID-19: A Summary of Research, Samuel Neaman Institute for National Policy Research.

OECD, Country Tax Measures During the COVID-19 Pandemic, https://www.oecd.org/tax/tax-policy.

Reinhart C. M., Rogoff K. S. (2010), Growth in a Time of Debt. American Economic Review: Papers & Proceedings 100 (May 2010).

Sharif A., Alouib C., Yarovaya L. (2020), COVID-19 Pandemic, Oil Prices, Stock Market, Geopolitical Risk and Policy Uncertainty Nexus in the US Economy: Fresh Evidence from the Waveletbased Approach, International Review of Financial Analysis, vol. 70.