Acta Sci. Pol.
Oeconomia 23 (3) 2024, 5–18
ISSN 1644-0757 eISSN 2450-047X DOI: 10.22630/ASPE.2024.23.3.9
acta_oeconomia.sggw.pl

ORIGINAL PAPER

Received: 10.02.2024
Accepted: 18.09.2024

FISCAL RESPONSE IN COVID-19 CRISIS – CASE OF THE EUROZONE

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ABSTRACT

Aim: The paper makes two important contributions to the fiscal policy literature during the COVID-19 pandemic, analyzing the way Eurozone countries responded with fiscal expansion or restriction as a means to manage the pandemic crisis. This research investigates the national governments' fiscal policies introduced to manage the COVID-19 pandemic within economic, political and institutional contexts, focusing on European countries that are part of the Eurozone. It demonstrates similarities and heterogeneity in three dimensions of fiscal policy responses to COVID-19 (the size of fiscal spending, the type and targets of fiscal policy responses) across 19 Eurozone countries, in the period effective from the pandemic until January 2022. **Methods:** A Cross-Country Analysis and Statistical Analysis in 19 Eurozone Countries was applied. **Results:** Eurozone countries with strong economies (Germany, France) implemented fiscal expansion directly to cope with the pandemic while weaker economies (Estonia, Spain) responded late. Additionally, the business sector was supported first, instead of the health sector, by governments. **Conclusions:** The paper makes two important contributions to the fiscal policy literature during the COVID-19 pandemic. The original contribution of this research is that it is one of the first comparative analysis studies to focus on the European region regarding national fiscal policy responses to the COVID-19 pandemic. Existing studies on COVID-19 policy responses have primarily focused on public health measures.

Key words: fiscal policy, COVID-19, cross-country; comparative analysis, Eurozone

JEL codes: E42, E52, E63, F15, F42, O38, P5

INTRODUCTION

The new form of crisis that most governments had to face, the COVID-19 pandemic, created a new burden for many countries around the world, including the European ones. There is not much evidence in the literature on how pandemic-type crises, such as COVID-19, can affect short-term output dynamics [Barišić and Kovač 2022]. Additionally, the political, economic and institutional systems were challenged by this new form of crisis. All the past crises, as well as the new one (the pandemic), highlight the importance of the national fiscal policy response in boosting employment levels, raising the living standards of people and maintaining social capital and economic development [Cottarelli et al. 2014]. In tandem, it is argued that fiscal policy should be assigned a crucial role that is more systematically beneficial to respond in times of crisis. For example, as Kominek and Stiglitz [2022] state, a well-tailored fiscal policy response of modestly increasing taxes on high-earners and delaying non-urgent fiscal expenditures would be more efficacious than locating the crisis response only within monetary policy tools. Each country needs to adopt fiscal policies that are appropriate to its unique contexts and circumstances. The European Commission rescinded its strict

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rules on state aid (March 2020), allowing EU member states to channel needed funds through aid schemes to help them face the COVID-19 crisis [Anderson et al. 2020], although, concerns have since been raised that richer, less indebted member countries have the fiscal capacity to help their businesses more [Anderson et al. 2020], which is exactly the case in Eurozone countries (see Fig. 1). The primary goal of this research paper is to make a timely cross-country comparison of Eurozone countries on their fiscal policy responses to the COVID-19 pandemic. Given the important economic links between Eurozone countries, one of the key factors for ensuring that a fiscal stimulus is effective will be for it to occur in a coordinated manner [Alvaro 2020]. It is widely documented that a fiscal stimulus in one euro area country generates positive externalities in the rest of Europe's economies [Dabla-Norris et al. 2017].

Our main research questions are the following:

- What kinds of fiscal policies were introduced by Eurozone countries in response to the COVID-19 crisis?
- How did governments' fiscal policy responses vary across Eurozone countries?

Geared toward answering these specific research questions, we used a Eurozone comparative perspective to analyze 19 countries' fiscal policies for the whole period of the COVID-19 outbreak, to provide a view of the different ways these countries managed the crisis, emphasizing the fiscal policies, perspectives, sectors and stages. The COVID-19 crisis, in fiscal terms, was comparable with a war, taking into account that the budgetary cost in some countries, like in the United States, was nearly equivalent to what they spent on war production in 1943 [Gillian 2019]. Additionally, we wanted to check if the Eurozone fiscal response to the COVID-19 crisis followed the results of the worldwide cross-country comparison of Chen et al. [2021].

The paper makes two important contributions to the fiscal policy literature during the COVID-19 pandemic. One primary contribution of this research is that it is one of the first studies on the comparative analysis that focus on European region regarding national fiscal policy responses to the COVID-19 pandemic. Existing studies on COVID-19 policy responses have primarily focused on public health measures [e.g. Ferguson et al. 2020, Flaxman et al. 2020, Chen et al. 2021].

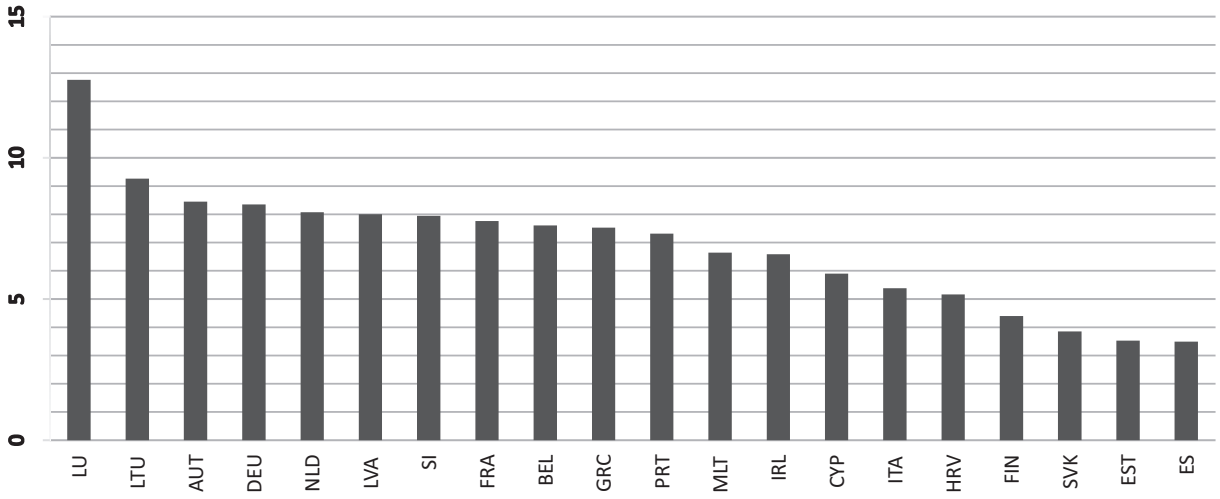

Fig. 1. Eurozone Fiscal Spending in the Pandemic [% of GDP]

Notes: The figure reports estimates of additional discretionary fiscal spending and foregone revenue during 2020 as a share of GDP. These numbers are calculated as the sum of "health", "non-health" and "accelerated" spending above the line categories. The abbreviations mean: LU – Luxembourg, LTU – Lithuania, AUT – Austria, DEU – Germany, NLD –Netherlands, LVA –Latvia, SI – Slovenia, FRA – France, BEL – Belgium, GRC – Greece, PRT – Portugal, MLT – Malta, IRL – Irland, CYP – Cyprus, ITA – Italy, HRV – Croatia, FIN – Finland, SVK – Slovakia, EST – Estonia, ES – Spain.

Source: IMF Fiscal Policy Database.

However, there has been little research using a cross-country comparative study of national fiscal policies during the COVID-19 pandemic, including the paper on which we based our study. Secondly, this study proposes a three-dimensional theoretical scheme [the size of fiscal policy spending, fiscal policy targets and fiscal policy tools] to inform and compare fiscal policy making and decisions when dealing with an extreme crisis such as COVID-19. On the other hand, some researchers analyzed both macro and micro levels of fiscal response in the pandemic crisis, with the aim of evaluating policy making success or failure and the spillover effect in firms [Gourinchas et al. 2021]. Overall, when analyzing the characteristics and the policy focus of the countries in fiscal spending in specific sectors (e.g. health or business sector), with the intention of expanding their fiscal abilities, it is useful to check the effectiveness of these policies or to confirm the possible waste of public money. As Romer [2021] stated, in the paradigm of the United States, it seems that the fiscal response to the pandemic was largely ineffective and wasteful, as it concentrated the response in sectors that were not overly important for the economy.

SCHEME AND METHOD OF COMPARATIVE POLICY ANALYSIS

This study advances an ad hoc three-dimensional scheme to guide a comparative analysis of fiscal policy responses to COVID-19. This scheme is consolidated in Table 1. The first dimension comprehends the size of the COVID-19-related fiscal spending. Moving forward, the rest of the dimensions outline the fiscal policy adoption.

Almost every country's economy has been affected

Table 1. Scheme of comparative policy analysis of fiscal responses to COVID-19

Dimensions	Policy focus of each dimension	Key indicators/sectors/tools
First dimension	Size of fiscal policy spending	Total COVID-19-related fiscal policy spending (2019 US dollars)
		Total COVID-19-related fiscal policy spending as a share of GDP (%)
Second dimension	Fiscal policy targets	Health sector
		Business sector
Third dimension	Fiscal policy tools	Direct government spending[1]
		Direct government cash transfers[2]
		Debt and contract relief[3]
		Tax benefits, cuts & exemption[4]
		Tax deferral & social security contribution delay[5]
		Government credit assistance (loans & loan guarantees)[6]
		Government subsidies to business[7]

[1] Government direct spending refers to the direct spending on goods and services purchased by governments [such as medical supplies and equipment].
[2] Direct government cash transfers mean government cash payments for poor families and unemployment insurance payments. In these cases, governments are not doing the actual spending.
[3] Debt contract and relief means the government is freezing financial obligations during the COVID-19 pandemic, such as stopping loan repayments, preventing services like water from stopping supplies.
[4] Tax benefits, cuts and exemptions indicate offering tax benefits and cuts for people or businesses and adding tax exemptions.
[5] Tax deferral and social security contribution delay involves extending tax filing and payment deadlines and delaying business social security payments.
[6] Government credit assistance includes loan guarantees to support businesses.
[7] Government subsidies for business refers to government cash subsidies for the business sector.

Source: [Chen et al. 2021].

by the spread of the coronavirus [Chen et al. 2021]. The IMF's fiscal policy tracker [2020] conveys that some Eurozone countries took unprecedented fiscal actions with expansive fiscal spending (Germany, France) to cope with the pandemic and economic downturn, while other Eurozone countries with smaller economic capacity [Estonia, Spain] had very limited fiscal policy responses and related public spending. There is a strong discussion among policymakers, central banks and political leaders, that economies with heavy debts should not, also cannot, stimulate fiscal expansionary policy, in any case, due to their diminished economic capacity [Kannan

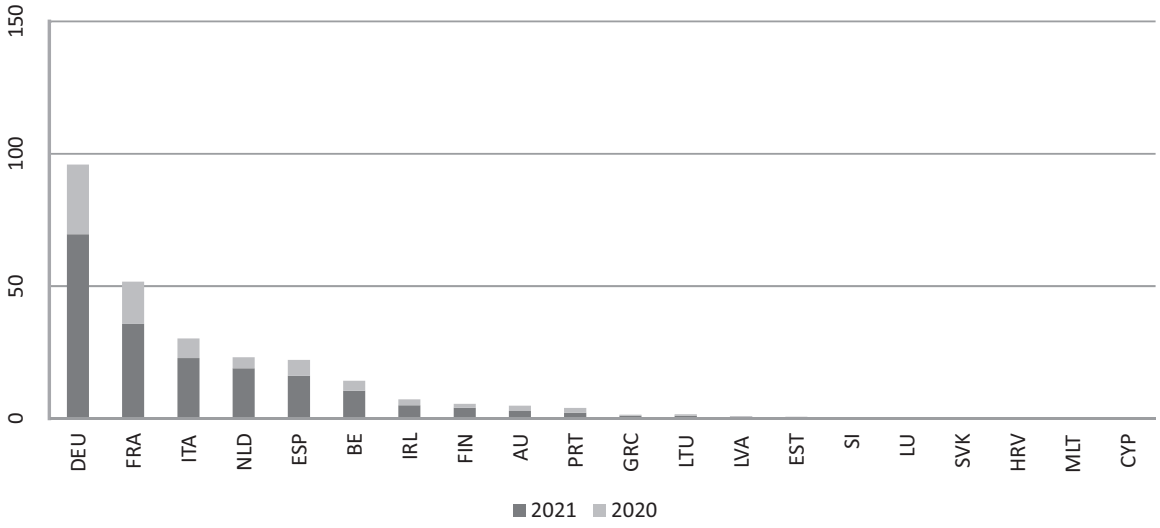

Fig. 2. Fiscal Spending on Health Sector in Eurozone

Note: The figure reports estimates of total direct government spending in USD billion during 2020 and 2021. These numbers are calculated as the sum of "health" above the line categories. Abbreviations of country names as in Figure 1.

Source: IMF Fiscal Policy Database.

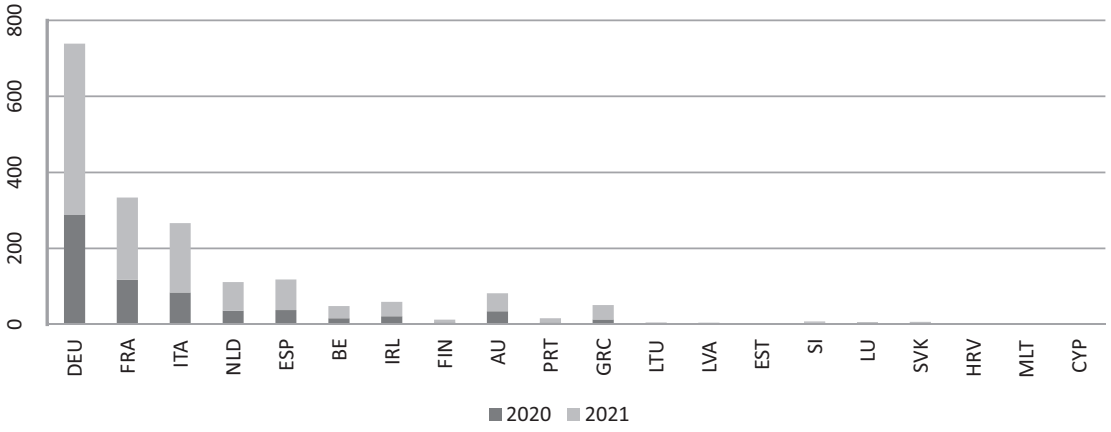

Fig. 3. Fiscal Spending in Non-Health Sector in Eurozone

Note: The figure reports estimates of total direct government spending in USD billion during 2020 and 2021. These numbers are calculated as the sum of "non-health" above the line categories. Abbreviations of country names as in Figure 1.

Source: IMF Fiscal Policy Database.

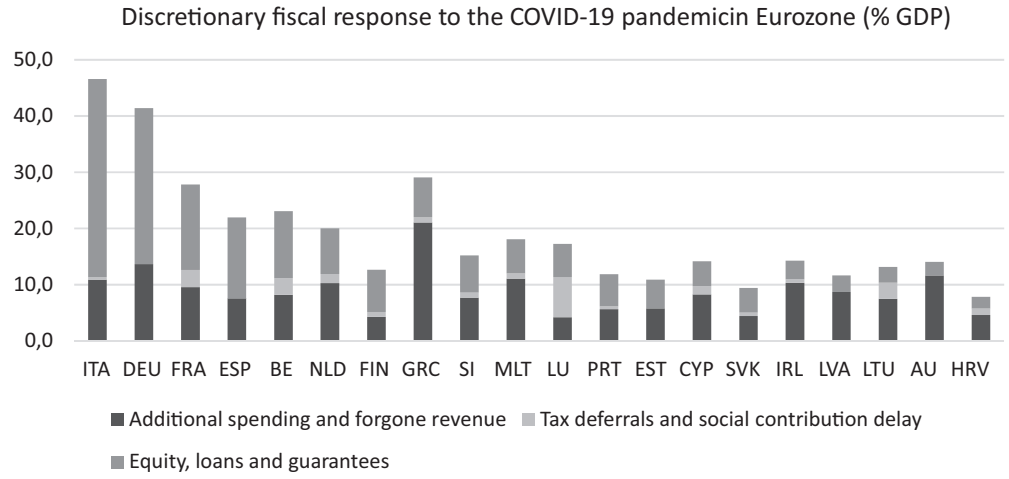

Fig. 4. Discretionary fiscal response to the COVID-19 pandemic in Eurozone [% GDP]

Note: Estimates as of 5 June 2021. Percentages of GDP are based on the July 2021 World Economic Outlook Update. Abbreviations of country names as in Figure 1.

Source: IMF, Database of Country Fiscal Measures in Response to the COVID-19 Pandemic.

et al. 2009, Nickel and Tudyka 2013]. Eichengreen [2020] argues that in the fight against the COVID-19 pandemic, "all appropriate tools" implies "no matter the debt" while the importance of fiscal policy is to underline the importance, instead of monetary policy, of facing the COVID-19 crisis, instead of monetary policy, to face the COVID-19 crisis [Eichengreen 2022].

In general, countries spent money to deal with the COVID-19 pandemic. It would also have been desirable to reallocate some fiscal spending to relax supply constraints in specific sectors [i.e. firms] to reduce future inflation [Korinek and Stiglitz 2022]. In the same line of thinking, Krugman [2020] strongly proposed the adoption of a sustained, productive program of stimulus in place, instead of implementing short-term measures every time a crisis unfolds.

The second dimension is comprised of the targets of fiscal policy responses. Fiscal policies were originated to assist different sectors across countries [OECD 2020]. At first stage, COVID-19 consisted of a health crisis, but then the problem affected the global economy, as financial assistance was needed to help the affected private firms, households, individuals, etc. The third dimension of our scheme shed light on the adopted fiscal policy tools. Governments reacted to the pandemic using a broad variety of fiscal policy tools [Cavallo and Cai 2020]. The function of fiscal policies mainly focused on transposing taxes and fiscal spending. The key tools adopted for the third dimension were recommended by OECD [2020] and IMF [2020].

Fiscal policy measures taken by governments globally to mitigate the negative effects of the pandemic tried to mitigate the economic shock after the outbreak of the pandemic and the shutdown of economies. Policymakers, political leaders and economists reached their decisions aiming to protect employment, contain the fall in private consumption and support disposable income [Anastasatou and Anyfantaki 2023]. Each country was affected differently by the pandemic and responded in different ways [Dimitropoulou and Theofilakou 2021]. Measures taken included direct budget-relevant measures, benefits, tax and social security contribution deferrals, job retention schemes, plus support both for businesses and households. Furthermore, fiscal measures were taken that did not impact the budget directly, such as loans, public guarantees, government loans, liquidity and capital injections to the business sector (e.g. to airline companies) [Anastasatou and Anyfantaki 2023].

There is significant cross-country heterogeneity within the Eurozone area in terms of both the amount and the composition of such measures (see Fig. 3). The International Monetary Fund (IMF) created a Fiscal Monitor [IMF 2021] to monitor fiscal policy

responses during the pandemic, where measures were classified into two categories: a) above-the-line support and b) below-the-line measures. Above-the-line measures included public spending on the health sector and on the "non-health" sector, grants, and tax and social security contributions deferrals. Following that, the second category included measures such as state-guaranteed loans, liquidity support and government guarantees. The composition of measures adopted by each Eurozone country were different. Large Eurozone economies, such as Germany, France, Italy and Spain, gave support through government loans and guarantees to a greater extent (measures below-the-line) than above-the-line support (Fig. 3). On the contrary, Greece ranked first in the above-the-line measures, with overall measures accounting for 17.5% of 2020 GDP [Anastasatou and Anyfantaki 2023].

METHODS AND DATA: A COMPARATIVE POLICY ANALYSIS PERSPECTIVE

We accumulated data about national fiscal policy responses from the International Monetary Fund's Tracker of Policy Responses to COVID-19. Additionally, each country's economic, social, political and institutional background was outlined from the World Bank Open Data and Eurostat. Data regarding the COVID-19 cases and deaths were gathered from the University of Oxford's COVID-19 Government Response Tracker and from the COVID-19 Dashboard at John Hopkins University. We limited our data to the 19 countries that participate in Eurozone because we wanted to demarcate the characteristics of this specific area and to draw attention to the long pathway that the European Union has to follow to achieve European Integration. It should be mentioned that the creation of the Economic and Monetary Union of the European Union was a big step toward European integration but a lot still remains to be done regarding the absence of a Common Fiscal Policy in the European Union. Furthermore, the sample size in this study covers the whole population of the Eurozone and represents a broad variation in income levels, economic circumstances, geographical variation, government composition, political structure, and fiscal capacities, highlighting the gravity of the COVID-19 outbreak. The study period was limited to between January 2020 (when the official outbreak of COVID-19 infected all Eurozone countries) and January 2022 (when the crisis was mostly over and effectively managed).

MIXTURE OF FISCAL POLICY RESPONSES TO COVID-19 AMONG EUROZONE COUNTRIES

Figure 4 depicts an ascending trend of the COVID-19 infection rate in the Eurozone area in 2020 and a bigger one in 2021. Additionally, the COVID-19 death rate was rising, but compared to the infection rate, the death rate was meaninglessly low. The rate of fiscal spending was expected to follow the infection rate, but according to Figure 4, the fiscal capacity could not follow the health sectors' needs. So, we see that in 2021, the fiscal capacity accelerated more than in 2020, when there was the first outbreak of the COVID-19 crisis. In addition, it is depicted that Eurozone countries with strong economies more easily extended their fiscal capacity than countries with smaller economic capabilities.

More explanatory, our statistical analysis shows that, direct government spending reached its peaks in July 2020 [896.1%], October 2020 [937.4%], and February 2021 [940.5%], while the highest fiscal expansionary policy was seen in April 2021 [943.0%] for the whole period examined. Fig. 4 presents an upward trend of the COVID-19 infection rate in the Eurozone area in the first seven months of 2020. The first peak of COVID-19 infections was reached in May 2020 in the Eurozone, with a total of 1,061,000 cases. Following that, in the next few months, the numbers decreased until August 2020, when the cases started increasing faster, reaching the highest peak in January 2022.

As for cases of death, the COVID-19 death rate peaked in June 2020, with a total of 29,846 deaths in the Eurozone. Then the death rate declined, rising again in September 2020 and reaching its highest peak two years later, in January 2022. Along with the growing number of cases, governments' fiscal spending followed, quickly increasing its capacity and reaching a peak in July 2021.

A formal pairwise correlation test was performed to show that the COVID-19 infection rate is statistically correlated with the size of the COVID-19-related

fiscal spending [0.637] at a 1% significance level. For some Eurozone countries, the line of government spending follows the rising effect of COVID-19 infection cases (Fig. 2). Along with the growing number of cases, governments' fiscal spending rose quickly, but particularly in Eurozone countries that have stronger economies, such as Germany and France, while the expansionary fiscal spending in medium-sized economies (Greece, Portugal) was low and in smaller economies (Malta, Estonia), it was found below medium.

Our statistical model that was extracted from the correlation analysis is:

$$\text{Eurozone Fiscal Spending} = \\ = 0.637 \cdot \text{COVID-19\_Infections} + u^*$$

* 1% significance level

where u – is random variable meaning that Eurozone Fiscal Spending could be affected by any other factor, which cannot be foreseen, as well as the model has been built to a normal distribution with SE 5%.

DIFFERENTIATION ON FISCAL POLICY RESPONSES TO COVID-19 ACROSS EUROZONE COUNTRIES

Elaborating the proposed three-dimensional scheme, this study executes a variation analysis of the three dimensions of fiscal policy responses to COVID-19 by taking the pandemic prevalence, political establishment, and fiscal state of affairs into account. Two-sample t-tests were performed to determine if statistical significance exists between the two types of country groups (i.e. high vs low) regarding the average dissimilarity in fiscal spending. By the same token, Table 2 displays the outcome of the two-sample t-tests for the size of public spending.

Table 2 shows the percentage distributions of fiscal policies in two dimensions – fiscal targets and tools – for the Eurozone countries. Focusing on fiscal policy targets, it was found that Eurozone countries

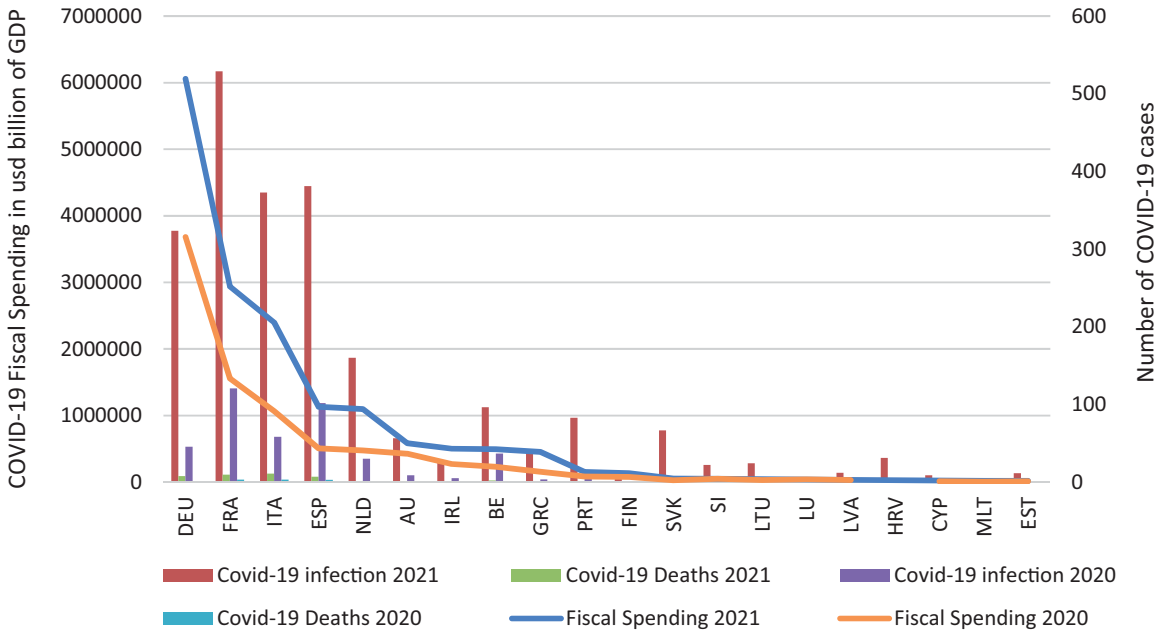

Fig. 5. Outbreak of the COVID-19 and Fiscal Spending Response in Eurozone in billion USD [2020, 2021]

Notes: The infection rate is measured by the COVID-19 cumulative cases standardized per 1 million population. The death rate is measured by dividing the COVID-19 cumulative death number by the cumulative confirmed cases. The data are the accumulative value at the end of July. Data sources: Johns Hopkins University's Coronavirus Resource Center and University of Oxford's COVID-19 Government Response Tracker

Source: Author's calculations

gave priority mostly to the business sector (43.34) over the health sector (5.74), no matter its relevance to the nature and impacts of the COVID-19 crisis. This can be explained, firstly, by the instant impact of the pandemic on the Eurozone economies, so simultaneously, the countries' fiscal policy first contributed to mitigating the negative effects on the economies. Additionally, turning our focus to fiscal policy tools, we find that debt and contract relief (103.50) was the most popular fiscal tool, with government subsidies to business (37.75) following. The smallest numbers are calculated on tax benefits (2.57), tax deferral and social contribution delay (12.70), and government credit assistance in loans and loans guarantees (5.61), where the mean is very low.

Table 2. Percentage distributions of fiscal policy targets and fiscal policy tools in Eurozone

Eurozone	Mean [billion USD]
Fiscal Policy targets	
Health Sector	5.74
Business Sector	43.34
Fiscal policy tools	
Direct government spending	49.08
Direct government cash payment	103.66
Tax benefits, cuts, and exemptions	2.57
Tax deferral and social security contribution delays	12.7
Debt contract and relief	103.5
Government credit assistance (loans & loan guarantees)	5.61
Government subsidies to business	37.75

Note: Data are cumulative values at the end of July (N = 105 observations).

Source: Author's calculations based on the University of Oxford's COVID-19 Government Response Tracker data

Chen et al. [2021] supported that there is a significant association between countries with higher income and fiscal expansion, while Wang et al. [2022] support that this is not the case, as fiscal expansion is the remedy for future economic growth, no matter the country's income level.

We can conclude that in the Eurozone economies, the focus was on fiscal response based on securing the economies from the crisis first (measures that support the private sector are higher) and then responding to the health crisis and rising expenses related to health crisis management.

PANDEMIC PREVALENCE

A higher prevalence of the pandemic is expected to have had more adverse effects on the economy and thus to have triggered stronger fiscal policy responses [Alberola et al. 2020]. This paper analyzes the short-term effects of the fiscal policy measures undertaken in the Eurozone during the COVID-19 crisis, expecting the same results as Barišić and Kovač [2022], in the short-term, and determines that the fiscal measures were generally effective.

We found that countries with a higher level of COVID-19 infection had higher fiscal spending. Specifically, Eurozone countries with a higher COVID-19 infection rate announced expansionary fiscal policies that amount to 62.5% of GDP, as compared to 19.10% in Eurozone countries with a lower infection rate. Also, the same significant differences in fiscal policy responses applied between Eurozone countries with high and low levels of COVID-19 deaths but in higher fiscal spending expansion rates (87.50% of GDP). This outcome stands in contrast to the findings of Chen et al. [2021], who showed that there were no significant differences in fiscal policy responses between countries with high and low levels of COVID-19 death rates.

Political leaders in democratic countries are more likely to expand their fiscal policy quicker in times of crisis [Chen et al. 2021]. The majority of Eurozone countries are Centralized Republics, except for Austria and Germany, which are federal, and Luxembourg and the Netherlands, which are constitutional monarchies. This study finds that the size of the fiscal spending is much higher in non-federalist countries (93.26%), according to the results of Table 3, which can be explained by the above-mentioned three different forms of constitutions (Federal Democracy, Constitutional Monarchy and Centralized Republic). To be more consistent,

this finding implies an association between federalism and fiscal policy targets of subnational governments [Chen et al. 2021]. It was expected that political leaders in democratic countries are more likely to take active fiscal actions in times of a national health crisis [Chen et al. 2021]. This study summarizes that countries with a federalist system announced fiscal spending that amounted to 75% of GDP, as compared to 93.26% in non-federal countries, which followed a pattern of more limited fiscal spending. This outcome comes in contrast to what Auerbach et al. [2020] found, that the federal government and states skyrocketed their fiscal spending in response to the COVID-19 crisis, but this was the case for the USA. Our results regarding the role of government structure come in contrast to the findings of Chen et al. [2021], the evidence of whom proved an association between the level of democracy and fiscal policy targets, as fiscal spending was much higher in highly democratic countries than in less democratic countries. Additionally, this contrast can be explained by the political and institutional differences between the USA vs Eurozone vs OECD areas; the first is a federalist union, while the second is far from a federalist union of countries and the third constitutes a mixture of different types of countries in the global economy.

Compared to Europe, the USA was more likely to offer direct cash assistance to households, whereas European governments were more likely to support the business sector with loan guarantees [Durante 2022]. As shown in Table 2, the business sector was strongly supported by governments (mean 43.44) while they gave lean aid to the health sector (mean 5.74). The size of the difference between those two sectors is very significant, in the fiscal targeting in the Eurozone.

The extent to which each country can expand its fiscal policy or not is an important factor which is interconnected with its income level. Countries with a higher income level and stronger fiscal capacity expand their public expenses quicker and easier, implementing fiscal expansionary policies, while instrumenting external funding in parallel [Alberola et al. 2020]. Regarding the economic and fiscal conditions, the income level picked as a variable where we find that low-income countries had a low level of fiscal spending in the Eurozone, which amounted to 76.40% of their GDP. In general, the capacity and space of the fiscal policy is an important factor [Chen et al. 2021]. It was expected that countries with higher income levels have stronger fiscal capacities and would mobilize resources more easily and directly, leading to fiscal expansion [Benmelech and Tzur-Ilan 2020]. The World Bank assigns the world's economies into four income groups, high, upper-middle, lower-middle, and low, but in our research, which is focused on the Eurozone area, we are using only two income level groups – high and low – to simplify our research.

Regarding the concern that richer, less indebted member countries had the fiscal capacity to help their businesses more [Anderson et al. 2020], in contrast to other weaker Eurozone countries, this was not the case in the Eurozone. Solidarity among EU countries worked, economic funds and help pacts were instituted in all Eurozone countries from the EU's common treasury, leaving aside the rule of Northern vs Southern countries. Additionally, as shown in Figures 3 and 4, the fiscal capacity in the Eurozone countries was extended relative to the outbreak of COVID-19 infections, no matter the debt capacity of each country.

Concerning the way fiscal policy tools were adjusted to the needs of each country, in the Eurozone example, direct government cash payments (103.66) and relief of debts (103.50) concerned mostly state aid to targeted sectors. Direct government spending was a fundamental tool, too, but with smaller impact (49.08). It was expected that tax benefits, deferrals and social security contribution delays would have attracted bigger attention by governments, but the mean numbers of our research make us conclude that they were not a priority in health crisis management. The mean numbers in Table 3 show that primary attention was given in helping businesses cope with the COVID-19 crisis, associated with our analysis findings, explaining the need of business sector for instant cash in order to keep their liquidity balanced and avoid unexpected bankruptcies, plus the mean of government subsidies to the business sector states this idea (37.75).

Table 3. Comparison of COVID-19 fiscal spending [%GDP] by Eurozone countries

Comparison of COVID-19 fiscal spending [%GDP] by Eurozone countries					
Dimension			**Size of fiscal spending**		
Country groups [cross-sectional data *N* = 105]			**Mean**		**Difference**
	[1]	[2]	[1]	[2]	[1]–[2]
Pandemic Prevalence			High	**Low**	
COVID-19 infections [%]	High [*n* = 19]	Low [*n* = 89]	62.50%	19.10%	43.40%
COVID-19 deaths [%]	High [*n* = 16]	Low [*n* = 89]	87.50%	19.10%	68.40%
Political institutions and government structures					
Federal	Yes [*n* = 16]	No [*n* = 89]	75.00%	93.26%	–18.26%
Economic and fiscal condition					
Income level	High [*n* = 16]	Low [*n* = 89]	75.00%	76.40%	–1.40%

Note: The data are the cumulative values at the end of July [sectional data: *N* = 105]. If a country is above the median value, the study characterizes the country as high, where there are high numbers of COVID-19 infections, deaths, government policy response index, federal government structure, and income level capacity.

Source: Author's calculations based on Data sources: Johns Hopkins University's Coronavirus Resource Center, University of Oxford's COVID-19 Government Response Tracker, IMF Fiscal Monitor, Freedom House and World Bank's Open Data.

EUROZONE AND FISCAL RESPONSE TO COVID-19 CRISIS

According to Figures 2 and 3, Germany, as expected – characterized as the strongest economy in Europe and thus in the Eurozone – was the first to follow fiscal expansionary policy, both in 2020 and in 2021. The federal government of Germany adopted three supplementary budgets to combat the COVID-19 crisis: EUR 156 billion (4.7% of GDP) in March 2020, EUR 130 billion (3.9% of GDP) in June 2020, and EUR 60 billion (1.7% of GDP) in March 2021. Measures taken include expenses for healthcare equipment, hospital capacity and R&D (vaccines), public expenditure to secure jobs and income both for the active population and unemployed people, while 50 euro billion was given as grants to small business owners and self-employees persons in accordance with tax deferrals. The stimulus package in June 2020 included a temporary VAT reduction, grants for SMEs, expanded credit guarantees for exporters and export-financing banks, and subsidies in green energy and digitalization [IMF 2021].

In addition to the federal government's fiscal package, many local governments provided support with their own measures to stimulate their economies. The new wave of infections in 2021 made the government correspond with additional fiscal measures to support families, young workers and businesses, including revenue compensation, extended access to grants, apprenticeship subsidies, public loan guarantees, tax loss carryback and additional support for the health sector.

In France, the authorities introduced four amending budget laws during March – November 2020, increasing the fiscal capacity to cope with the health crisis, valued at approx. 180 euro billion. Additionally, a handsome package of public guarantees was introduced for bank loans and credit reinsurance schemes (more than EUR 315 billion). Fiscal support measures included boosting health insurance for vulnerable people and their caregivers, spending on health supplies, social security and tax payments deferrals for companies, accelerated refunds of tax credits (i.e. VAT), wage support for workers, financial support for SMEs, self-employed persons and low-income households, deferrals for rent and utility payments for SMEs, an additional allocation for equity investments of companies in difficulty, extensions of expiring unemployment benefits, preservations of rights and benefits of disabled people and people in need, and support measures for difficult sectors such as the automotive and aerospace industries, with the aim of promoting a greener economy with new investments [IMF 2021].

Moving our interest to the wounded south of Europe, from the previous economic crisis of 2008, Greece's government implemented a fiscal package of measures valued at about 13.7% of GDP in 2020. These measures included loan guarantees, which were financed both from national and EU resources. Fiscal support measures concerned spending in the health sector for hiring additional staff in hospitals (doctors, nurses), procurement of medical supplies, bonuses for staff in health sector, cash stipends, pensions and benefit payments for vulnerable people, the unemployed and people in need, additional cash benefits for workers in business sectors that were hit hard by the crisis and the self-employed, support for SMEs, household loans, paid leave for parents with children that were not going to school, liquidity support for firm sectors that were closed because of the lockdowns, rent reductions, loan guarantees, refundable advance payments, deferrals for tax and social security contributions, VAT rate reductions for products that were critical for COVID-19 protection, and support for the sectors of research, transportation and hospitality. The extension of the COVID-19 crisis until March 2021 made the government extent its fiscal policy to about 8.5% of GDP in 2021 [IMF 2021].

Italy adopted a 25 euro billion [1.6% GDP] stimulus package on March 2020 to support the public health care system and civil protection policy. It also took measures to preserve jobs and stabilize income for workers and self-employed people. The business sector was supported with deferrals in tax and utility bill payments in the most affected municipalities, while measures to support credit supply were also taken. Italy passed the most stimulus packages to support its economy, among the economies of southern Europe. In the same manner as the previous countries, Italy also supported its health care system, workers, jobless people, vulnerable persons, families and the business sector, with the aim of kickstarting the economy from the financial spillover of the pandemic [IMF 2021].

Spain expanded its fiscal policy to the extent of 7.4% of GDP, including budget support from the contingency fund to the Ministry of Health, transfers to the regions to support the health system, additional healthcare expenses and support for R&D related to COVID-19, unemployment benefits, and support for social services, education and business sector. Likewise, self-employed persons were financially supported, seasonal employees who were affected by economic activity suspension, sick-payments for COVID-19 infections, rental assistance for vulnerable renters, state contribution to the contribution to the State Housing Plan 2018-21, social contribution deferrals, reduction of the VAT rate for surgical disposable masks, zero VAT for essential medical material, deferral of social security debts for companies in industries that were negatively affected by the COVID-19 crisis, and tax incentives and reductions (income tax, digital publications) [IMF 2021].

Estonia stimulated its economy in anticipation of the damage caused by the COVID-19 economic crisis, with packages that supported the healthcare system, workers and firms. Besides this, the stimulus package included business loans, guarantees for bank loans, liquidity support, support to local authorities, investments loans for companies and compensation for direct costs of canceled cultural and sporting events. As the second wave of COVID-19 increased, the Estonian government took more measures to support education, culture, and businesses in specifically affected regions, i.e. in Ida-Viru and Harju [IMF 2021].

Another small economy of the Eurozone, Malta, followed the same manner of fiscal measures to support its economy and mitigate the negative consequences of the health crisis, spending millions (4% of GDP) to support the healthcare sector, firms and households. Tax deferrals, income security for the unemployed and people in need, injections to the business sector to transition to teleworking experience, vouchers, cash grants, rent extensions and electricity subsidies were among the fiscal measures taken until June 2021 [IMF 2021].

Cyprus also responded to the COVID-19 crisis, but with a smaller impact (3.9% of GDP), supporting the health sector, households and businesses. Businesses were supported to maintain jobs, while a two-month deferral of VAT payments was managed and a temporary VAT cut to stimulate the hospitality sector, which plays a significant role in this country. Loan guarantees, subsidy schemes, and unemployment benefits were also among the fiscal measures adopted until April 2021 [IMF 2021].

The Slovak Republic introduced fiscal measures that included wage compensation for firms and self-employed people, subsidies for people without an income, unemployment, sickness and nursing benefits, a social security contributions delay for some months, deferral of payroll and corporate tax payments for businesses in line with the decline in revenues (>40%), rental subsidies, and higher medical spending. In addition, liquidity support was given to individuals, the self-employed and SMEs, while deferrals of loan payments were also included in the state-guarantee scheme [IMF 2021].

CONCLUSIONS

As Alberola et al. [2020] stated, high COVID-19 infection rates in accordance with high death rates negatively affected all economies worldwide. As a direct consequence, strong fiscal responses were observed by countries in pursuance of coping with the new form of crisis, a hygienic one, which also created a new chronicle of economic crisis.

In this paper, we support that Eurozone countries, which have a common characteristic – the euro – had the ability to expand public expenses, individually, while still maintaining their fiscal sovereignty, in the absence of a Fiscal Union in the EU. Additionally, in expanding public expenses, countries were expected to support citizens throughout the COVID-19 crisis, by supporting the health and business sectors, granting them tax benefits, cuts and exemptions, tax deferrals and social security contribution delays, debt reliefs, loans and loan guarantees, etc. Countries that participate in the Eurozone do not have the same income capacity level, so we aimed to investigate the hypothesis that countries with a lower GDP capacity expanded their fiscal policy conservatively. This hypothesis was proved by the statistical analysis of the data collected and analyzed (Table 3).

It is remarkable that Eurozone countries first expanded their fiscal spending, supporting the business sector during the COVID-19 crisis and only then turned their attention to the health sector. This can be explained by the fact that Eurozone countries have their foundation in the business sector; if business had failed, all other sectors would have collapsed too, through the domino effect, so they chose to secure the foundation of their economy first. The same conclusion was also drawn by other researchers analyzing a different group of countries [Chen et al. 2021]. OECD countries were found to support their business sectors by expanding their fiscal expenses first during the outbreak of the COVID-19 crisis and then their business sectors. In this way, policymakers first tried to overcome the economic crisis that followed and then deal with health crisis management.

The findings demonstrate similarities in the types and targets of fiscal policy responses, driven by the extent of COVID-19 infections as the pandemic expanded. However, different characteristics of the countries' political structures and income capacities do seem to have affected the size of the fiscal expansion accordingly. To be more specific, non-federalist countries in the Eurozone adopted expansionary fiscal spending slowly and at low rates. In terms of income capacity, low-income countries also kept their fiscal spending low. The argument of Kannan et al. [2009] is not proved, though, as we found that there was a statistical correlation between the fiscal expansion policy and COVID-19 infections in all Eurozone countries, including those that are heavily in debt (i.e. Greece).

We also found that all Eurozone countries focused on helping two basic sectors – health and business – but the most significant attention was given to the business sector, as the economy is based on it. This finding follows the argument of Korinek and Stiglitz [2022] that countries reallocated their fiscal spending in order to relax supply constraints in specific sectors (i.e. firms) to reduce future inflation.

To sum up, this study opens the dialogue about fiscal policy responses to the COVID-19 pandemic, making an important contribution to the comparative analysis about national fiscal policy making in the Eurozone area during the COVID-19 crisis.

In general, there is not one specific fiscal policy that all countries can adopt, so this research explains the practical policy implications in times of crisis. The fact that each Eurozone country made its own decisions and fiscally responded differently proves that European integration still has a long to go. Strong

economies may have adopted large fiscal stimulus packages, globally, but this is not the case for every economy, and thus, in the Eurozone area. Every country should adopt the policy that fits its own characteristics (income level, political institutions, government structure, fiscal condition, debt capacity). In the case of the Eurozone area, where countries still maintain their fiscal sovereignty, policy making happens at the state level, and this seems to have been beneficial during COVID-19 crisis, which was well-managed after all as the crisis petered out. "All appropriate tools" were applied (i.e. fiscal tools), no matter the debt of each Eurozone country, resulting in the good management of the health crisis, proving the arguments of Eichengreen [2022] to be correct.

To conclude, the need of a Common Fiscal Union is stronger than ever, following the remarks of Krugman [2020], for the adoption of a sustained, productive program of stimulus in place, regarding the fact that in the last decades, the Eurozone has been hit by many unique crises, and responded late, adopting short-term measures. In order to come closer to European Integration, in the nearest future, the creation of a European Fiscal and Tax Union is strongly recommended.

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REAKCJA FISKALNA NA KRYZYS COVID-19 – PRZYPADEK STREFY EURO

STRESZCZENIE

Cel: Artykuł wnosi dwa istotne wkłady do literatury dotyczącej polityki fiskalnej podczas pandemii COVID-19, analizując sposób, w jaki kraje strefy euro zareagowały ekspansją lub ograniczeniami fiskalnymi jako sposobem radzenia sobie z kryzysem związanym z pandemią. Zbadano, jakie polityki fiskalne rządów krajowych zostały wprowadzone w celu zarządzania pandemią COVID-19 w kontekście gospodarczym, politycznym i instytucjonalnym, koncentrując się na krajach europejskich będących częścią strefy euro. Wskazano na podobieństwa i heterogeniczność w trzech wymiarach reakcji polityki fiskalnej na COVID-19 (wielkość wydatków fiskalnych, rodzaj i cele reakcji polityki fiskalnej) w 19 krajach strefy euro w okresie od początku pandemii do stycznia 2022 roku. **Metody:** Zastosowano analizę przekrojową i analizę statystyczną w 19 krajach strefy euro. **Wyniki:** Kraje strefy euro o silnych gospodarkach (Niemcy, Francja) przeprowadziły reakcję fiskalną bezpośrednio, aby poradzić sobie ze skutkami pandemii, podczas gdy słabsze gospodarki (Estonia, Hiszpania) zareagowały późno. Ponadto rządy w pierwszej kolejności wspierały sektor biznesowy, a nie sektor zdrowia. **Wnioski:** Artykuł wnosi dwa istotne wkłady do literatury dotyczącej polityki fiskalnej w czasie pandemii COVID-19. Oryginalność tego badania polega na tym, że jest to jedno z pierwszych badań dotyczących analizy porównawczej, które skupiają się na gruncie europejskim w zakresie reakcji krajowej polityki fiskalnej na pandemię COVID-19. Istniejące badania dotyczące reakcji politycznych na COVID-19 skupiały się przede wszystkim na środkach w zakresie zdrowia publicznego.

Słowa kluczowe: polityka fiskalna, COVID-19, przekrojowe; analiza porównawcza, strefa euro