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WP6: Legitimate crisis governance and economic sustainability

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Table of contents

Abstract

The outbreak of the Covid-19 pandemic was not only a public health crisis of unprecedented proportions in recent times, it also triggered an economic and social crisis whose consequences will be felt in our societies and economies for years. The decision-making and implementation of the social, economic and fiscal measures in response to the pandemic challenged the economic and fiscal sustainability of states. and simultaneously has raised valid questions about the legitimacy of Covid-19-crisis management. Such concerns are particularly relevant for multilevel systems where (at least) two levels of government are responsible for these areas and decision-making is characterised by either divided or shared powers. This paper reviews existing studies, indexes and databases dealing with the design and effects of the social, fiscal and economic measures in multilevel systems. It addresses general issues around crisis management in multilevel systems general in terms as well as in relation to the social, economic and fiscal measures introduced during the pandemic. The paper also focuses on the role of domestic and transnational governance arrangements in dealing with Covid-19. The review provides an important source to examine policy responses in the context of our study of the legitimacy of social, economic and fiscal measures in multilevel systems.

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1. Introduction

The outbreak of the Covid-19 pandemic was not only a public health crisis of unprecedented proportions in recent times, it also triggered an economic and social crisis whose consequences will be felt in our societies and economies for years. Within an extremely short period of time, governments across Europe have introduced a variety of social, fiscal and economic measures to protect their citizens and support their economies.

These measures aimed at maintaining household disposable income, ensuring cash flows for firms and freezing financial obligations. Yet, governments‘ responses to the health, economic and social risks of the pandemic varied tremendously in terms of timing, breadth and scope (Weder di Mauro, 2021). For instance, Mexico, Spain and Portugal were strongly affected by workplace closures, yet adopted the lowest scale of measures. In turn, New Zealand, Japan and Greece introduced more comprehensive social, fiscal and economic packages despite experiencing less extensive business closures (Schiller et al., 2021). Shi et al. (2022) examined the main similarities and differences between the fiscal strategies to manage the Covid-19 crisis in China, South Korea, the United States and Italy between April 2020 and December 2021. Barisic and Kovac (2022) concluded that among EU Member States measures were generally effective in the short-term. Ginter (2021) analyzed the impact of political and institutional factors on the stringency of the restrictive measures and the magnitude of economic packages of EU Member States. Economic and fiscal measures were relatively homogeneous across the EU. All governments focused on common goals, which were jointly decided, to foster economic recovery, but they used different strategies and measures depending on the economic sectors affected.

While most governments adopted a ‘whatever-it-takes’ approach, others pursued more selective policies. In either case, responding to the pandemic not only challenged the economic sustainability of states, but the decision-making, implementation and impact of the social, economic and fiscal measures also raised questions about the legitimacy of the Covid-19 crisis management. Such concerns are particularly relevant for multilevel systems where (at least) two levels of government are responsible for these areas and decision-making is characterised by different levels of divided or shared powers. Assessing the legitimacy of crisis governance (responses during the crisis and in its aftermath) requires considering both the output dimension (e.g., if measures did not lead to asymmetric burdens among the different levels of government) and the input dimension related to the decision-making process (e.g., the extent to which different levels of government coordinated their measures).

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2. Methodology and data

To lay the grounds for such analysis, this paper reviews existing studies, indexes and databases dealing with the design and effects of social, fiscal and economic measures in multilevel systems. The review is based on the results of three electronic databases (Web of Science, Scopus and International Political Science Abstracts) and focused on relevant literature published between February 2020 and December 2022. English search terms were used related to social, fiscal and economic measures in multilevel government systems.[1] The systematic search resulted in 130 items in the Web of Science, 117 items in Scopus and 16 items International Political Science Abstracts. We subsequently used the reference managing software Zotero to identify and remove any duplications and ended up with a total of 140 studies. A preliminary screening of the titles and abstracts of those studies provided us with 50 articles that met our research criteria. In addition, search engines (such as Google and Google Scholar) were used to identify sources that were not published in journals (e.g., monographs and book chapters). The body of literature was then analyzed in regard to the empirical evidence about the impact of multilevel governance (MLG) on crisis management both in general terms and more specifically in relation to the management of the Covid-19 pandemic. The literature on social, fiscal and economic measures was reviewed in a comparative perspective, but accounted for specific case studies.

The following will primarily examine the Covid-19 responses within European countries, yet also consider studies of non-European countries that offer interesting methodological insights. Our literature review will also provide an overview of databases relevant to examine the social, fiscal and economic responses in different countries. As policy responses to and the impact of the pandemic continue to unfold, and many studies are set to be published, this review only offers a preliminary overview. Nevertheless, its insights will provide an essential basis for analysing the legitimacy of social, economic and fiscal measures during the Covid-19 crisis.

[1] **Keywords for Web of Science:**
"social measurement" OR "Social measures" OR "fiscal measures" OR "fiscal measurement" OR "economic measurement" OR "economic measures" (Topic) and covid 19 (Topic) and Article or Review Article (Document Types) and Business Economics or Government Law or Sociology or Public Administration or Social Sciences Other Topics or International Relations or History or Social Issues (Research Areas)
Keywords for Scopus:
#1 TITLE-ABS-KEY (covid-19); #2 (TITLE-ABS-KEY ("social measurement" OR "Social measures" OR "fiscal measures" OR "fiscal measurement" OR "economic measurement" OR "economic measures"); #3 #1 AND #2 AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "ch") OR LIMIT-TO (DOCTYPE, "re"))
Keywords for International Political Science Abstracts:
#1 COVID-19; #2 social measurement OR Social measures OR fiscal measures OR economic measurement OR economic measures; #1 AND #2

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3. Multilevel governance and crisis management

The 'classic' literature on fiscal federalism suggests that, in the absence of large inter-territorial spillovers, inequalities and economies of scale, public policies should be designed and implemented by the lowest possible level of government. This is based on the idea that the provision of services is closer to citizens' needs, if social, economic and fiscal policy is tailored at the subnational level (Oates, 1952; Musgrave, 1959; Buchanan, 1965). This can increase commitment and ownership. The benefits of decentralized policymaking are potentially even greater when the social and economic needs of jurisdictions diverge horizontally across territorial units (Tiebout, 1956). Yet, subnational units are not always the optimal providers of public policy, especially when spillovers, inequalities or economies of scale are high (Prud'homme, 1994). First, territorial disparities regarding wealth and fiscal capacity can lead to disruptive competitions when citizens move to places with better public services (Buchanan, 1965; Boadway and Shah, 2009). Second, the benefits of tailoring social, fiscal and economic measures to local needs can be outweighed by the economies of scale, for instance, when the centralized provision of services reduces the overall costs (Oates, 1972). Third, public policies of one territorial unit may produce spillover effects/externalities that affect other units negatively.

Recent empirical research has found that, in times of crisis, it is not the level of fiscal decentralization per se, but the design of the fiscal arrangement that can constrain the effectiveness of macroeconomic interventions (De Mello, 2000; Lago-Peñas et al., 2020; Wichowska, 2021). For example, Lago-Peñas et al. (2019) have argued that if vertical fiscal imbalances remain low and fiscal rules effectively limit budget deficits, a decentralized framework can improve macroeconomic performance. Responsibilities in crisis management are usually not assigned to one specific government level but are shared between the different tiers of government. According to the Committee of the Regions, during the pandemic, regions and local entities implemented almost one third of public spending and more than half of social, fiscal and economic investments in the EU as a whole. Disregarding the expertise and resources of local and regional authorities can thus undermine the effectiveness of the recovery from the pandemic and worsen the living conditions of socio-economically disadvantaged people and places (CoR. 2021). However, since governments tend to predominantly consider the costs and benefits of public policy for their own citizens, positive or negative effects of measures outside of their jurisdictions play a minor role in their decision-making.[2]

Subnational governments are usually the first ones to react to an external shock. They provide essential public services, including healthcare, social welfare and education and can immediately assist their population on site (Herrero-Alcalde et al., 2020). Because the different levels can work as laboratories allowing multiple actors to try out different strategies for coping with common challenges, a multilevel approach bears great potential for innovative solutions to overcome a crisis (Ayala et al, 2021; Besley and Case, 1995). According to the so-called 'yardstick-competition-model', subnational governments observe their neighbours and adopt policies to their respective situations (Case and Rosen, 1993; Allers and Elhorst, 2005; Besley and Case, 1995). Since unsuccessful policies are less likely to be copied by others, within a decentralized setting the social, financial and economic costs of policy failures are minimized (Kropp and Schnabel, 2021). A novel crisis such as the Covid-19 pandemic presented an obvious occasion for countries, regions and municipalities to look out for the most successful strategies to deal with the social and economic implications.

In the following, we will present the findings of existing studies about the relation between the decision-making and consequences of different types of crises and the allocation of social, economic and fiscal powers in multilevel systems.

Centralized and decentralized crisis responses

Several strands of literature have looked at the impact of extreme shocks on multilevel systems. A wide range of studies suggested that the wide scope of extreme events and the spillover effects of countermeasures trigger centralization trends (Cabrera-Castellanos and Lozano-Cortés, 2008; Martinez-Vazquez and Smoke, 2011; Bos, 2012; Bordo and James, 2009; Arnold et al., 2020; Canavire-Bacarreza et al., 2011). An important insight is that the effects of external shocks vary according to the specific nature of the crisis. Recent systemic shocks, such as the economic and financial crisis of 2008-2014, natural disasters triggered by climate change, internal armed conflicts and, of course, the Covid-19 pandemic, show that both the prevention and the consequences of crises have profound spillover effects on territories located next to each other.

[2] Fiscal competition among horizontal levels of government is a specific type of interjurisdictional interdependence. When subnational governments reduce their own taxes in order to attract economic factors to their respective territories, other jurisdictions getting involved in a race to the bottom leading towards a general reduction of subnational tax revenues. This would then force subnational governments to cut down on public services (Bordignon et al., 2003; Johnson, 2014; Redoano, 2003; Solé-Ollé, 2003; 2006).

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Depending on the nature of a crisis and the policy responses, externalities impose a massive challenge for policy-makers (Cadaval et al., 2022), whose decisions will not only affect their own jurisdiction but also neighbouring jurisdictions.

In the case of economic crises, Canavire-Bacarreza et al. (2021) and Bos (2012) presented cross-country evidence for a (temporary) recentralization. The vertical distribution of revenue seems to be much more resilient than the distribution of expenditure. According to Braun and Trein (2014) the global economic and financial crisis led to three kinds of coordination problems in federal countries: shirking in the use of federal government grants, rent-seeking in equalisation payments, and over-borrowing and over-spending. While shirking remained limited to few cases, rent-seeking and over-borrowing and over-spending led to a reduction of solidarity among subnational governments and to stricter regulations of the fiscal discretion for the constituent members of a federation. Cadaval et al. (2022) found that economic downturns increase, albeit only slightly and temporarily, the share of central expenditure, while central revenue shares are not influenced by economic shocks. Arnold et al. (2020) confirmed that the economic and financial crisis did not lead to revenue centralization, neither in unitary nor federal states. Hence, if there is centralization, it usually concerns expenditures rather than revenues. The evidence is less clear with regard to the effects of health crises on multilevel dynamics. While Bloom et al. (2022) and Steyler (2022) observed centralizing effects, Mello and Tovar (2022) found a decentralization and a rise in subnational expenditures (not revenues) during the Covid-19 pandemic.

In terms of natural disasters, Mello and Tovar (2022) presented empirical evidence for more decentralization, whereas Cadaval et al. (2022) observed the opposite effect based on changes in the Regional Authority Index. Tselios (2021) further argued that the specific impact of natural disasters on subnational powers depends, among other elements, on the previous level of decentralization.

Finally, Alexseev (2001) and Malyarenko and Wolf (2021) suggested that countries might increase subnational powers as an answer to an internal armed conflict. Cadaval et al. (2022) also argued that internal military conflicts tend to increase the level of decentralization, once the endogeneity of this variable is acknowledged. Nevertheless, Martinez-Vazquez (2003) and Brancati (2014) pointed to the possibility of a “solvent effect” of fiscal decentralization.

Coordinated crisis response

In order to deal with crises effectively and in a cost-efficiently manner, a number of studies recommended a coordinated provision of public policies among different levels of government (King, 1984). Due to the globalization of commercial and financial flows, macroeconomic shocks

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tend to have an international scope, which is why decentralized uncoordinated solutions to a crisis may not be able to deliver the desired results (Treisman, 1999; De Mello, 2000; Ter-Minassian, 2009; Martinez-Vazquez et al., 2017). As cross-border mobility and commercial flows produce common problems for the societies and economies of neighbouring territories, uncoordinated measures are less promising in easing the consequences of a crisis across different territories. In this context, the OECD recommended activating or reorienting existing forums that bring together national and subnational governments to minimise the risk of a fragmented crisis response and to mitigate the impact of the crisis on regions and municipalities (OECD, 2020).

The review of different studies suggests that, while there are compelling advantages for decentralized approaches, the complexity of formal multilevel frameworks, especially the need to coordinate among governments, presents an obstacle to effective crisis management (Caravita et al., 2021). Rawlings (2006) and Benz and Papadopoulos (2006) highlighted that multilevel governance increases the complexity of decision-making, blurs responsibility and accountability for outcomes, creates joint decision-making traps which limit the room for manoeuvre, and requires additional capacities to resolve conflicts (see Papadopoulos and Piattoni, 2019; Peters and Pierre, 2004; Scharpf, 1988). For Paquet and Schertzer (2020) and Navarro and Velasco (2022), federal systems struggled to take fast and consistent decisions during the Covid-19 pandemic.

4. Multilevel governance and social, fiscal and economic measures during the Covid-19 pandemic

Social, economic and fiscal measures refer to the use of government spending and tax policies to influence social and economic conditions. Social measures include income subsidies, freezing of financial obligations (e.g., stopping loan repayments), social security deferrals or subsidies, debt repayment holiday, preventing services from being cut (e.g., social services, education, libraries, sport facilities, waste management, water supply), or banning evictions, and support for specific target groups (e.g., households). Examples of economic measures are loans or credit guarantees for companies, furlough schemes as well as support for specific target groups (e.g., SMEs). Fiscal measures are often tax-based (e.g., lowering tax rates, deferring tax payments, providing tax credits) and mostly aim at maintaining corporate and household liquidity, employment and investment.

The scale of these measures was massive during the Covid-19 pandemic (Feyen et al., 2021)**.** Several studies provided cross-country comparisons and explained the rationales for the different means to mitigate the impact of the Covid-19 crisis. Because the main shock concerned the real

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economy, fiscal and economic measures made up some of the earliest and most extensive responses (Baldwin, 2020). Considering that crises tend to cause reductions in consumption, investment and credit transactions, according to most authors, without substantial, timely and stimulating interventions, the economic downturn would have been greatly amplified (Gourinchas, 2020). Therefore, it was imperative to ensure that the health crisis would not turn into a systemic economic crisis with long-lasting damages for labour and financial markets (Bofinger et al., 2020). At the beginning of the pandemic, Bianchi et al. (2020) suggested to enact emergency budgets with a ceiling for the debt-to-GDP ratio. While this would increase aggregate spending, raise the inflation rate and reduce real interest rates, it was crucial that the monetary and fiscal policy authorities would adopt an above-normal inflation target. Guerrieri et al. (2020) underlined the need to combine an expansionary monetary policy with social insurance programs for the employment sectors hit most by the pandemic.

In most decentralized countries, subnational governments are responsible for the provision of health care and social assistance. Even in unitary states, subnational authorities, particularly local authorities, played a vital role in addressing the consequences of the pandemic. Hence, subnational spending and revenues faced extraordinary pressures (Capano and Lippi, 2021), leading the OECD (2020) to raise serious concerns about the fiscal impact of the crisis on subnational governments. In many countries, subnational governments have a broad mandate linked to significant financial and human resources to deliver key public services (Chattopadhyay et al., 2022). Still, they faced the pandemic under an asymmetric framework, in which national treasuries were largely in control of financial planning (Maher et al., 2020). In light of these developments, the crisis underlined the need for further fiscal powers for regional and local government to support the economic recovery (Warner, 2021).

Governance and institutional arrangements

Official responses to the crisis mobilised the resources in virtually all policy domains and involved a wide range of actors in different policy areas. The OECD (2022) therefore recommended that clearly defined leadership and established risk management frameworks provided efficient and effective reactions to the pandemic. With regard to multilevel governance, first evaluations underlined the importance of clear responsibilities and mandates as well as the need to streamline structures to avoid overlapping roles in crisis management and to ensure a high level of representation from relevant agencies. Intragovernmental coordination among government institutions and agencies was vital to ensure a coherent response. Almost half of OECD countries set up protocols to clarify the responsibilities for crisis management among stakeholders and introduced new institutional arrangements to ensure a coordinated response (OECD, 2022).

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At the national level, good governance facilitated "effective organization, timely interventions and the application of the required resources of the state to combating the disease", as Cameron (2021) suggested. The timing varied across different states. Askim and Bergström (2022) highlighted that in Norway and Sweden "general governance capacity [was] negatively associated with the speed of countries' policy response to COVID-19 (…) Leaders in high capability contexts were overly confident that a preprogrammed government response would contain the virus". Benmelech and Tzur-Ilan (2020) found that during the first months of the Covid-19 crisis, high-income countries, especially those with high credit ratings, announced substantially larger social, fiscal and economic packages. While tax measures were a common response to the crisis in the short-term, medium and longer-term questions about future effects of the pandemic on international tax policy have remained (Collier et al., 2020).

Looking at the initial social, economic and fiscal responses, central governments played an extraordinary role in maintaining the stability of their economies and societies. Their measures were unprecedented and included regulatory decisions, spending powers and contingency funds. While central governments have the legal and financial capacities to engage in counter-cyclical spending, the usage of the instruments depended on the exiting arrangements at different levels of government to implement emergency policies and policy programs dealing with unemployment, health insurance and social assistance for in-need households (Rocco et al., 2020). The publications "Comparative Federalism and Covid-19" (Steytler, 2022) and "Federalism and the Response to COVID-19" (Chattopadhyay et al., 2022) examined measures to manage health, socio-economic welfare and employment in federal and quasi-federal countries during the pandemic. According to both studies, the effectiveness of fiscal and economic responses depended on the type of federal aid to federated states and/or local governments (either enhanced equalisation payments, block grants or conditional/tied grants) and the mechanisms of accountability established to oversee public expenditure. Steytler points out that federal governments decreased regular transfers to subnational governments, such as block grants. Without the ability to increase or create new taxes, subnational governments became increasingly dependent on transfers, which they received mostly as special grants earmarked for Covid-19-related expenses. However, the scope for subnational borrowing was slightly opened in Brazil, or Spain.

At an international level, responses across the EU, the International Monetary Fund/World Bank and the World Health Organization were rather fragmented and lacked consistency (Van Hecke et al., 2021). According to Feyen et al. (2021), members of an economic or monetary union were able to coordinate their policies faster and more frequently, while pressures on foreign exchange markets, political settings and fiscal and containment policies only played a limited role in determining governments' actions. In the Euro area, a pandemic emergency purchase program (PEPP) was adopted, through which the European Central Bank (ECB) temporarily bought existing public debt of its members on the secondary markets (Schweigl, 2022). This was not only

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politically controversial, but also a risk for the ECB credibility as a guarantor of stable inflation rates and moral behaviour. However, morally, the ECB's measures were justified by extraordinary circumstances (Della Posta and Morroni, 2022). For Della Posta and Morroni (2022), the ECB's anti-inflationary credibility was a strong concern, as in the case of unexpected shocks, no credibility can be gained by policies that are not credible themselves.

Baneliene (2022), Altiparmakis et al. (2021) and Truchlewski et al. (2021) underlined that the EU multilevel emergency policy allowed for a multifaceted crisis response. According to Truchlewski et al. (2021) the crisis became a dual crisis running at two speeds. The public health dimension demanded rapid, comparatively uncontroversial EU executive actions, while the economic dimension played out in the opposite, with lengthy, often public-facing deliberations and shared decision-making over a very contentious issue. Covid-19 also tested the capacities of the EU, and the institutional reforms in response to the pandemic were particularly controversial among Member States. Schomaker et al. (2021) synthetized the EU's early reactions to the first wave of the Covid-19 outbreak, including the setup of a new European Investment Bank Guarantee Fund, measures funded by the EU budget 2020 (Coronavirus Response Investment Initiative, Coronavirus Response Investment Initiative Plus) and the support program to mitigate Unemployment Risks in an Emergency. Large economic measures were implemented through the recovery plan Next Generation EU (NGEU) and the MFF 2021-2027, which have important implications for budgetary decisions (Kölling, 2022). This is particularly the case for the cohesion policy, which requires Member States to collaborate with subnational governments. Simultaneous coordination of three levels of government, across different policy areas, has often proved difficult in the EU. Although the European Commission pursues an integrated approach to policy making, sectoral fragmentation of policies has not been eliminated due to Member States' internal arrangements and conflicts. Some studies indicated that the involvement of the subnational level in some Member States slowed down implementation processes and that a hierarchical approach focusing on national governments could solve implementation problems (Crescenzi et al., 2021; Delgado, 2021; Moreno, 2020). Because a priority of NGEU was the rapid implementation of programmes according to the set agenda (Crescenzi et al., 2021), the national recovery and resilience plans were not bound to produce multilevel agreements. Subnational governments had no say in the design of the reforms and measures adopted by national governments, even though their legislative and administrative competences were affected (Civitarese Matteucci, 2021; Scheller, 2022; CoR, 2022). To grasp the complex new governance structures surrounding NGEU, scholars suggested the term "coordinative Europeanization" (Ladi and Wolff, 2021). Unlike coercive and top-down forms of Europeanization, for Schramm et al. (2022), "coordinative Europeanization'' implies the need for consultation between Member States as well as between the EU and national arenas to develop and implement feasible policy solutions.

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5. Relevant databases and indexes

The following presents the most meaningful databases and indexes on the public policies that were implemented around the world to fight the Covid-19 pandemic. A good starting point is the "Global Directory for COVID Policy Trackers and Surveys"[3] (known as the "Oxford Supertracker"), which contains over several hundreds of policy trackers, surveys, data sets and systematic collections related to Covid-19 across different areas, countries and types of data.

Among these trackers, the "Oxford Covid-19 Government Response Tracker"[4] (OxCGRT) provides a systematic set of cross-national, longitudinal measures of government responses between 1 January 2020 and the end of 2022. OxCGRT collects information on policy measures of national and, for some countries, subnational governments' policies and interventions across a standardized series of indicators. The different policy responses cover more than 180 countries and are coded into 21 live indicators (and 3 retired indicators). These policies are recorded on a scale from 0 to 100 to reflect the extent of government action, and scores are aggregated into a suite of four policy indices: overall government response index, containment and health index, stringency index and economic support index. OxCGRT relies on individual contributors to interpret various policies within each domain, in order to assign a code that best fits each indicator (Hale et al., 2021). However, this dataset records only the number and degree of government policies without information on their specific design and without measuring how well policies are implemented or enforced. Neither does it evaluate the degree of compliance with policies. OxCGRT data should therefore be considered as one among several key elements to understand the entire picture of governments' policies (Hale et al., 2021).

The "Policy Responses to Covid-19"[5] database of the IMF summarizes the key economic responses governments of 197 countries. It distinguishes between three groups of policies: fiscal, monetary and macro-financial policies. The tracker does not reflect all government policies and does not account for economic and social measures, which differed across countries in their breadth and scope.

Although not updated anymore, the "Covid-19 Economic Stimulus Packages Database", which is based on the IMF Covid-19 Policy Tracker, offers interesting methodological insights. Elgin et al. (2020) use six policy variables for 166 countries which are classified under three categories: fiscal policy, monetary policy and balance of payment/exchange rate policy. The fiscal policy package includes all the adopted fiscal measures and is coded as a percentage of GDP. The monetary policy

[3] https://supertracker.spi.ox.ac.uk/
[4] https://www.bsg.ox.ac.uk/research/covid-19-government-response-tracker
[5] https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19

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category includes three variables: interest rate cuts by the monetary policy authority (coded as a percentage of the ongoing rate as of 1 February 2020); the size of the macro-financial package (coded as a percentage of GDP); and other monetary policy measures (coded as a dummy variable taking the value of 1, if there are such measures, and otherwise as 0). Elgin et al. (2020**)** have found that the economic stimulus was larger in countries with higher Covid-19 infections, older median ages and higher GPD-per-capita. Whereas countries with a relatively large shadow economy have adopted a smaller fiscal policy package (Elgin, 2022), countries with fiscally federal (or decentralized) governments have adopted larger fiscal and macro-financial policy packages (in terms of share of GDP) (Elgin et al., 2023). However, there are no significant differences in monetary-policy responses between centralized and decentralized countries.

The IMF "Fiscal Monitor Database"[6] also summarizes the key fiscal measures of governments but on a more detailed level. It includes Covid-19 related measures since January 2020. The database categorizes different types of fiscal support (for example, increases in government expenditures and reductions in tax revenues) that have different implications for public finances in the near term and beyond. The Covid-19 Financial Assistance and Debt Service Relief includes the IMF's Covid-19 financial assistance and debt service relief for member countries from March 2020 through March of 2022.

The "OECD Country Policy Tracker"[7] compiles data, analysis and recommendations on emerging health, economic and societal crisis. The OECD Covid Action Map focuses, among others, on fiscal and monetary measures. The country-specific policy tracker considers the budgetary implications of Covid-19 responses, parliamentary approval for additional borrowing, temporary reduction in salaries and the use of national savings funds to inject liquidity into the economy (Capano et al., 2020). An evaluation of economic and financial support and social policies (see "First lessons from government evaluations of COVID-19 responses[8]) demonstrates that there is less evidence for the effectiveness of tax-based support than for expenditure-based measures (OECD, 2022).

The World Bank's "Covid-19 Finance Sector Related Policy Responses"[9] records the financial sector policies in response to the pandemic in over 150 countries, including advanced and developing economies.

[6] https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19
[7] https://www.oecd.org/coronavirus/en/data-insights/oecd-country-policy-tracker
[8] Key insight 6: Involving civil society, the private sector and local actors increases the transparency of decisions and facilitates the implementation of crisis management. https://www.oecd.org/coronavirus/policy-responses/first-lessons-from-government-evaluations-of-covid-19-responses-a-synthesis-483507d6/
[9] https://datacatalog.worldbank.org/search/dataset/0037999

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The "Global Database on Central Banks' Monetary Responses to Covid-19"[10] collects data across 39 economies (Cantú et al., 2021) It distinguishes between interest rate measures, reserve policies, lending operations, asset purchase programmes and foreign exchange operations. For each instrument, the database provides additional information such as maturity, eligible counterparties, types of assets and the availability of fiscal backup.

The "CoronaNet–Covid-19 Government Response Database"[11] uses data for 189 countries gathered through 76,380 country-day observations between 1 January 2020 to 15 January 2021. The data is categorized according to: type of policy; national versus subnational enforcement; people and geographic region targeted by the policy; and the time frame of implementation. Counts are tabulated according to types of interventions for two variables: cumulative number of policies (of that type) implemented and the number of countries which have implemented it. It also shows the average value in the degree of enforcement (Cheng et al., 2020).

"Covid-19 and the world of work"[12] by the International Organization of Labour (ILO) collects measures to stimulate the economy and employment in 188 countries and territories (last update June 2022). Policy responses are presented for individual countries across four pillars: stimulating the economy and jobs (active fiscal policy, accommodative monetary policy, lending and financial support to specific sectors including the health sector); supporting enterprises, employment and incomes (extend of social protection for all; implementation of employment retention measures; provision of financial/tax and other relief for enterprises); protecting workers in the workplace (adapting work arrangements, prevention of discrimination and exclusion, provision of health access for all, expanding access to paid leave); and using social dialogue between government, workers and employers to find solutions (strengthening the capacity and resilience of employers' and workers' organizations, strengthening the capacity of governments, strengthening social dialogue, collective bargaining and labour relations institutions and processes).

The SGI 2021 Special Study of 29 OECD and EU countries provides a systematic comparison of Covid-19 crisis resilience (Schiller et al., 2021). The study assesses the appropriateness of national recovery packages in terms of their timeliness, scope and accuracy. In order to evaluate the sustainability of the economic responses, country experts analyze whether stimulating policies aimed at a sustainable and coherent transformation of the economy. For this purpose, they consider change in public debt and a wide range of fiscal measures, such as subsidies, transfers, tax deferrals, cash payments, corporate tax cuts, income tax measures, reductions in value-added taxes and excise duties.

[10] https://www.bis.org/publ/work934.htm
[11] https://www.coronanet-project.org/download.html?
[12] https://www.ilo.org/global/topics/coronavirus/regional-country/country-responses/lang--en/index.htm

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6. Conclusions

During the Covid-19 crisis, governments from different levels took a wide range of social, economic and fiscal measures covering subsides, transfers, tax deferrals, tax cuts and cash payments. These measures challenged the economic sustainability and decision-making in multilevel systems. When adopting these measures, governments faced a trade-off between current and future investments and welfare provision. As they continue to unfold with unknown consequences and the number of corresponding analyses continues to grow, this review has only offered a preliminary overview. First evaluations focused on the relevance and efficiency of policies, and some assessed the intermediate effects of responses. While they agree that it is too early to fully evaluate their impact, preventing a lasting economic downturn emerged as a major priority of most governments. Among EU Members States, the objectives were fairly homogeneous and early measures generally effective, though relying on different strategies. Subnational governments took a key role in providing social, economic and financial assistance, which strained their public budgets severely and raised demands to strengthen their fiscal position.

We can draw some lessons from the existing literature and first evaluations. Besides fast interventions and established risk management frameworks, clear responsibilities and mandates as well as strong internal communication and cooperation mechanisms among agencies and governments have been crucial not only for the adoption of effective public health measures but also for the making and implementation of social, economic and fiscal measures.

Decentralization can lead to tailor-made, inclusive and effective policies based on local expertise and resources. Yet, uncoordinated measures can also produce inconsistent, potentially disruptive outcomes across governments. Even though multilevel governance increases the complexity of decision-making, blurs accountabilities and may slow down policy responses, multilevel coordination and cooperation can be expected to offer enhanced legitimacy of crisis governance in terms of both the output dimension as well as the input dimension.

With this in mind, this review has revealed the need to improve our knowledge of the impact of multilevel governance on the making and implementation of social, economic and fiscal measures. Due to the high number of crises, organisations and academics have moved on and most relevant databases and directories are no longer updated. Nevertheless, they provide great sources to further examine policy responses in the context of our planned study on the legitimacy of social, economic and fiscal measures in multilevel systems.

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WP6: Legitimate crisis governance and economic sustainability

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Table of contents

1. Conceptual frameworks and definitions

Decentralization, multilevel governance and crisis management

Because MLG is a widely used concept with many different connotations, it is important to adopt a definition for the specific scope of WP6. In the context of our work package MLG refers to *polities with a clear dispersion of self-rule and formal or informal intergovernmental cooperation mechanisms*.

To examine the relationship between adopted measures and multilevel systems during the Covid-19 pandemic, we need to consider which level of government has the 'right to act' (legislative self-rule); which level of governments is responsible for policy implementation (administrative self-rule); and whether problem-solving powers are integrated and concentrated by joint political institutions (shared rule) (Trein et al., 2019, p. 345). Self-rule and decentralization (in its static meaning) are synonyms and denote the autonomy of subnational governments vis-à-vis the central government. The extent to which subnational governments enjoy adequate resources and authority over revenues and expenditures is another important factor to consider in multilevel systems (Cheema and Rondinelli, 2007, pp. 6-7).

The existence of multiple levels is not the same as multi-level governance (Blom-Hansen, 2005, p. 628). Legal, institutional and constitutional conditions and tensions remain crucial determinants for the practical operation of MLG (Jeffery, 2000, p. 3) and set structural limits to an interlocking of multilevel politics (cf. Benz and Eberlin, 1999, p. 332). Empowering territorial governance is not necessarily accompanied by a decrease of central authority but may create additional functions and competences (Pasquier, 2021, p. 60). The central government can also set up mechanisms to control and coordinate subnational activities (Jensen et al. 2014, 1249). For instance, central governments may have the authority to use additional resources to finance policies in areas that exceed their legislative authority (Watts, 1999).

Whether decision-making is centralized or decentralized and whether governments act in a unilateral or coordinated manner to combat the pandemic can be expected to influence the efficiency and effectiveness of crisis management. The pandemic itself may change multilevel governance. For instance, there may be shifts of power downwards from central governments to subnational governments, or upwards from subnational governments to central governments. Moreover, the pandemic may trigger the creation or reform of cooperation mechanisms to foster collaboration of governments in areas where joint action is needed or desirable. Depending on the allocation of relevant powers, centralized unilateral and coordinated decisions limit intergovernmental competition and help avoid contradictory policy responses. Decentralized coordinated approaches enhance the responsiveness to local circumstances (Hegele and Schnabel, 2021, pp. 1053 et seq.). According to Utz (2020, p. 2), both inclusive coordination and empowering “those authorities that are capable of efficacious crisis responses” ensures “the democratic quality of Covid-19 responses”.

Shared rule increases the capacities to pursue common objectives and coordinate decentralized jurisdictions (Benz, 2013, p. 73). Institutional incentives are crucial to effectively deal with conflicts and interdependencies (Bolleyer and Thorlakson, 2012, pp. 566-567), which is why we need to account for the integrated links and governance arrangements that facilitate shared rule (Elazar, 1987, p. 13; Burgess, 2006, p. 138; McEwen and Petersohn, 2015, p. 192; Hooghe et al., 2016; Behnke, 2018, p. 36). While cooperation can take place in bicameral legislatures (typically in federations), intergovernmental arrangements, such as intergovernmental councils, also promote cooperation and are widely used to coordinate policymaking (Broschek, 2011, p. 545; Hueglin, 2013, p. 39; Behnke, 2018, p. 38). If multilevel systems have a functional division of powers, the central level passes laws that are subsequently implemented by the subnational units (Broschek, 2011, p. 545; Poirier and Saunders, 2015, p. 446; Bolleyer, 2018, pp. 47-48).

The Regional Authority Index systematically examined the level of shared rule by looking at direct regional participation in *law-making* and veto powers; shared *executive control* over the implementation of policies; *fiscal control* over the distribution of tax revenues across the whole state; *borrowing control* over national and regional borrowing levels; and impact on *constitutional reform* (Hooghe et al., 2008, p. 131-135; Hooghe et al., 2016, pp. 26-29). In addition to the formal rules and provisions, a substantial share of interactions between governments are informal (cf. Benz, 2009, p. 51; Hueglin and Fenna 2010, p. 50; Benz and Broschek, 2013, p. 7; McEwen et al., 2015, p. 16). This is why wider intergovernmental relations have become increasingly important to coordinate public policies in multilevel systems (cf. Agranoff, 2004; Hueglin and Fenna, 2010,

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p. 50; Benz and Broschek, 2013, p. 7; Poirier and Saunders, 2015, p. 442; Hooghe et al., 2016; Behnke and Mueller, 2017, p. 508; Hamilton and Stenberg, 2018, p. 1).

Our project looks at self-rule and shared rule, focusing on the division of powers and interactions among different layers of government within a country. Within the overarching research question, our research in WP6 focuses on what constitutes legitimate crisis management in a multi-level system in Europe. To this end, we will assess the impact of MLG institutions on social measures, fiscal and economic incentives. The countries we will examine are all members of supra- or international organizations, which adds another layer and creates additional opportunities and constraints for multilevel governance, which we will also take into account.

Legitimate crisis governance in multilevel systems

We define the Covid-19 pandemic as a crisis, not just in terms of public health, but in terms of its social, economic and fiscal repercussions, potentially challenging the legitimacy of governance. Due to extraordinary circumstances, such as the need for speedy decisions and the uncertainty of the impact of specific decisions and future developments, the decision-making and implementation of crisis management usually does not follow the normal rules of procedure (Boin et al., 2016). In liberal democracies, any crisis response by governments, in addition to being effective in dealing with the crises, needs to be legitimate.

If we want to understand who has the legitimate authority to take response measures during a crisis, we need to examine how political legitimacy is recognised and justified (cf. Bekkers and Edwards, 2007, p. 37). For this we will analyze input- and output-oriented (cf. Easton, 1965; Scharpf, 1999) as well as throughput legitimacy of political decisions.

Input legitimacy of multilevel governance focuses on who authorises, participates and is represented in the governance process (Piattoni, 2010, p. 192). Political legitimacy is higher under inclusive modes of governance and is more compromised in exclusive arrangements (Weiler, 2012, p. 828). We assume subnational, national and supranational governments to be authorised by democratically elected subnational legislatures to represent the interests of their jurisdictions. Including subnational governments with administrative and legislative powers can increase commitment and ownership and thereby enhance the legitimacy of decisions that affect their jurisdictions. Depending on the scope of policy areas that are decentralized (Schimmelfennig et al., 2015, p. 766), empowering subnational legislatures and executives provides citizens with new opportunities to participate in subnational elections and policy-making for their territorial jurisdictions. At the same time, governments need to find ways to manage common problems, externalities and overlaps of competences (McEwen and Petersohn, 2015, p. 193-195). Multilevel governance frameworks are not directly legitimised but 'borrow' their legitimacy from elected institutions at different levels, such as national parliaments, regional assemblies or municipal councils (Piattoni 2010, p. 198). This potentially strengthens democratic legitimacy but also slows down decision-making and may be a source of conflicts between governments (Watts, 2008, p. 117; Behnke, 2015).

Rather than assuming that decentralization and shared rule are normatively desirable or enjoy greater political legitimacy than centralized and unilateral decision-making, we refer to multilevel governance as an input-orientated variable to understand where and how social, economic and fiscal measures were passed and implemented. In addition to considering the legislative, administrative and fiscal powers relevant for the analysed measures, we also examine the extent to which governments sought or refused to coordinate their social, economic and fiscal crisis management. For this purpose, we focus on the *process* of coordination and joint decision-making, including communication, information exchange and negotiations between governments (cf. Schnabel and Hegele, 2021, p. 539-541).

To study whether or not governments acted in accordance with the constitutional, institutional and legal provisions of their respective multilevel systems, we will examine the **throughput legitimacy** of policy-making. Throughput legitimacy describes looks inside the 'black box' of governance to examine whether procedures are applied fairly, impartially and equally for all (*with* the people), or whether incompetence, corruption, bias or exclusion undermine public trust in a political system "contaminating perceptions of the legitimacy of the politics (input) and the policies (output)." (Schmidt, 2020, p. 25; see also Rohstein, 2009, p. 325). Throughput legitimacy is not a substitute but complements input legitimacy (the need to respond to citizens' need) and output legitimacy (good performance and effective policies) (Schmidt, 2020, p. 54). For Schmidt (2020, pp. 40 et seq.), throughput legitimacy depends on administrations' efficacy (efficient governance or competent management); accountability (public justification of actions); transparency (public access to information about decision-making processes); openness (engagement with concerned members of the public); and inclusiveness (ensuring fairness and balance of interest representation). In order to analyze throughput legitimacy, we look at the competence, accountability, transparency and fairness in the process of crisis management. We examine whether policy measures followed or beached existing legal and fiscal regulations, addressed fair structural issues without discriminating against specific regions, and provided transparent communication, clear criteria for evaluation, democratic accountability and judicial review.

The legitimacy of democratic systems of governance is contingent on their ability to fulfil the needs and interests of their jurisdictions, and to respond to timely and successfully to social and economic problems (Bekkers and Edwards, 2007, p. 45; Schmidt, 2020, pp. 31-33; Piattoni 2010, p. 213). Therefore, we focus on the **output legitimacy** of the investigated social, economic and fiscal measures. Output legitimacy is examined against the effectiveness of measures to mitigate the social, economic and fiscal consequences of the pandemic. For instance, if unilateral actions fail to solve social, economic and fiscal problems, their output legitimacy is reduced (Utz, 2020, p. 8). Cooperation between governments can strengthen the output legitimacy for policies that cut across jurisdictions and territorial layers (Bekkers and Edwards, 2007, p. 47). If governments coordinate their actions, they can help to avoid contradictions, duplications and inconsistencies of government measures across jurisdictions (cf. Hegele and Schnabel, 2021, pp. 1056-1057). Yet, MLG increases the complexity of decision-making and can create joint decision-traps that constrain political actions or lead to suboptimal consensus (Benz and Papadopoulos, 2006; Papadopoulos and Piattoni, 2019). The efficacy of measures depends on the scope of the examined policy problem in relation to the allocation of authority, the regulatory multilevel frameworks and on normative and institutional incentives to coordinate policies (cf. Piattoni, 2010, pp. 217-218). This concerns not only the prioritisation of objectives, choice of adequate measures and procedures, distribution of tasks (input orientation), but also raises questions about the distributions of the benefits and costs of political decisions (Sternberg, 2015, p. 621). Hence, we also examine whether the adopted measures were aligned, sustainable and whether the financial burden was distributed equally, both horizontally and vertically.

Social, fiscal and economic measures

Our analysis will compare specific social, fiscal and economic measures passed by governments to mitigate the impact of the Covid-19 pandemic. In the following paragraphs, we will define the social, economic and fiscal measures, which this work package seeks to analyze in the context of multilevel crisis management during the pandemic.

Social measures are typically cash transfers to improve the economic situation of households/individuals or to prevent poverty (e.g., safety net programs). An example are child benefits which governments can increase during a crisis to assist families. Social measures can also be debt/contract relief to stop financial obligations for households (e.g., preventing services like water from being cut, or banning evictions).

Economic measures are measures such as loan and credit guarantees. They provide financial support to companies to stabilize the economy. Economic measures can also be furlough schemes or debt/contract relief to stop financial obligations for companies and the self-employed.

Fiscal measures are measures such as tax cuts or exemptions that governments use to stabilize the economy. A decrease in personal income tax, for example, aims at increasing consumption, which in turn can have a stimulating effect on the economy. Similarly, a reduction in the tax burden of the corporate sector can stimulate investment.

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As part of our study, we will map the allocation of competences across national and subnational governments with regard to legislation and implementation of a) social measures, b) economic measures and c) fiscal measures during the Covid-19 pandemic.

3. Quantitative data collection and analysis

According to our theoretical framework and in line with T6.2 we will evaluate firstly the implementation of social, economic and fiscal policies during the Covid-19 pandemic, we apply econometric and impact evaluation techniques and identify the most relevant factors informing these measures.

Our first dependent variable is based on the "Oxford Covid-19 Government Response Tracker", which provides a wide range of indicators to evaluate the intensity of measures (stringency index). Because these indexes are ordinal in nature, we will be working with a discrete (non-continuous) dependent variable. Therefore, analyzing the drivers of the anti-Covid measures requires using a non-linear probabilistic model such as a multinomial ordered logit technique.[1][2] These kinds of models solve the non-linearity problem of discrete dependent variables, because their outcomes provide the probability that a specific characteristic of a unit (in our case a country) affects the outcome (in our case, the size of the measures adopted to fight the impact of the Covid-19 crisis).

The Logit and Probit models assume that there is an unobservable latent variable which is the one that is truly connected with the change in the regressors. As compared to binomial, multinomial logit models estimate as many equations as groups exist, and the resulting coefficients inform about the increase of probability of an outcome as compared to the reference group. The model as such estimates the following density function:

$$P_{ij} = \frac{e^{\beta_{0j}+\beta_{1j}x_{i2}+\beta_{2j}x_{i2+\cdots+}\beta_{kj}x_{ik}}}{1+\sum_{j=1}^{J-1} e^{\beta_{0j}+\beta_{1j}x_{i1}+\beta_{2j}x_{i2}+\cdots+\beta_{kj}x_{ik}}} \qquad [1]$$

where *j* denotes groups, *i* refers to territories (countries in our group of study), and x_1 to x_k represents the different covariates that will be used as potential explanatory factors.

[1] The use of a linear model with discrete variables suffers important drawbacks, except when all the regressors are also discrete. First, it does not guarantee that the probability is bound within the [0, 1] interval. Second the estimated coefficients do not have minimum variance, and therefore they are not efficient. Third, the random disturbance cannot be assumed to follow a normal distribution (no homokedasticity). Fourth, the determination coefficient (R^2) displays a questionable value, smaller than the real one.

[2] The reason for using an ordered and not ordinary multinomial model is that our stringency index (dependent variable) provides more than two possible outcomes and different values represent different intensities of anti-Covid measures.

Once the model is estimated, the interpretation of the coefficients is different from the usual interpretation of linear models. Within probabilistic models, the coefficients do not directly quantify the change in the probability after a unitary increase of an independent variable. This information depends on the specific value of the density function and is given by the odds ratio and the marginal effects.[3] Nevertheless, the sign of the estimated coefficient indicates the positive or negative impact of the change in probability.

As potential explanatory factors of the measures adopted in each country, we will be using the following:

Macroeconomic conditions are evaluated through GDP levels and growth rates, unemployment rates, poverty rates, and the sectoral distribution of the economic activity (Eurostat).

Public budget constraints on the implementation of anti-Covid measures are assessed against government's deficit/surplus and debt (Eurostat, IMF database).

Governance/institutional arrangements cover variables regarding governments' ideology and quality of governance. In order to capture the impact of MLG on the size of the public response to the pandemic, we will use the Regional Authority Index (Hooge et al., 2008; 2016) and the indexes examining the share of subnational expenditure/revenue (IMF, OECD).

Effects of the severity of the pandemic–account for the number of Covid-19 cases and deaths (Oxford Covid-19 Government Response Tracker).

A **stringency index** of the lockdown measure provides an additional factor to explain the economic and social effects of the pandemic (Oxford Covid-19 Government Response Tracker).

The data set aims at a balanced panel of 31 units observed across the first three years of the pandemic. Our analysis will cover 31 European countries during 2020, 2021 and 2022. The Oxford tracker presents information update on a daily basis which allows us a detailed analysis of the development of the anti-Covid measures. Yet, many explanatory variables can only be obtained on a yearly or quarterly basis, which reduces the number of observations.

[3] When the odds ratio equals 1, the independent variable does not have an impact on the endogenous. If the odds ratio is larger than 1, the independent variable increases the probability of the outcome, given the change in the independent variable. If the odds ratio is smaller than 1, the independent variable decreases the probability of the outcome, given the change in the independent variable.

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In order to further analyze the explanatory factors of the size of the social, economic, fiscal and social measures adopted by each country, we will run an analysis similar to the previous one but based on a different endogenous variable: **change in public spending**. Separate estimations will be run in order to capture different social, economic and fiscal measures: direct aid to families, direct aid to companies, social expenditure, debt relief for families or companies, tax deferrals, etc. (Eurostat).

The dependent variable is expressed in nominal per capita Euros. Therefore, we rely on a continuous variable that allows to use the classical regression linear model. We will use the following econometric approaches:

The fixed effects panel data model allows the study of the impact of independent variables, assuming the existence of unobservable heterogeneity among units (in our case, countries) that are constant over time:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \cdots + \beta_k Xk_{it} + \omega_{it} + \varepsilon_{it} \qquad [2]$$

where $i=1,\ldots,n$ represents countries under study; $t=1,\ldots,T$ represents the number of periods; Y_{it} is our dependent variable (change in expenditure or resources); $X1_{it} \ldots . Xk_{it}$ represent the potential explanatory variables; $\beta_0 \ldots \beta_k$are the parameters to be estimated; ω_{it} is an unobservable independent variable that is constant over time and determines a different intercept for each country; and ε_{it} is the error term.

As in the previous multinomial ordered logit estimations, the explanatory variables include a vector of economic, financial and governance/institutional arrangements (multilevel institutions as provided the Regional Authority Index r the share of subnational expenditure/revenue). The development of the health crisis (infection and death rates) and the intensity of the lockdown will provide control variables.

Budgetary variables are usually characterized by strong inertia, making static econometric approaches unsuitable to capture the dependence of the endogenous variable from on previous periods (Lago et al., 2018; Ayala et al., 2021). In order to address the autoregressive behavior of our dependent variable, a dynamic panel data model will be used. Specifically, we will be using a panel corrected standard errors model:

$$Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 X1_{it} + \cdots + \beta_k Xk_{it} + \mu_i + \delta_t + \varepsilon_{it} \qquad [3]$$

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where Y_{it-1} represents the lagged dependent variable, μ_i expresses the unobservable heterogeneity, δ_t are the temporal effects, $\varepsilon_{it}$is the error term, and the rest of the parameters and variables have been previously explained in [2].

The corrected standard error model estimates a composite error term that includes both and autoregressive vector (the inertia we want to capture) and the usual random walk:

$$\varepsilon_{it} = \alpha_1 Y_{it-1} + \vartheta_{it} \qquad [4]$$

The explanatory variables in this model are the same as for the static approach, although, due to the nature of the dynamic model, we are expecting a lower significance and impact of those variables with a low variance.

Furthermore, we will focus on the impact of MLG on the timing of the adoption of measures. To that end we will use different dependent variables to measure the adoption of different policy measures. Following Toshkov et al. (2022), for each of these variables, two different measures will be calculated:

a) The cumulative number of confirmed COVID-19 cases at the time of policy adoption.

b) The number of days between the first confirmed COVID-19 case and policy adoption.

In addition, we also consider an additional measure aimed at assessing the capacity of the countries to maintain selected policy measures, such as lockdowns:

c) The duration (in days) of the adopted measured relative to the number of confirmed COVID-19 cases.

Our dependent variables will be obtained mostly from the “Oxford Covid-19 Government Response Tracker” database. Following the classification of areas in the database (Hale et al., 2021), we will operationalize, for example income support, according to the above logic.

Our explanatory variables include institutional settings of the countries under analysis as well as an array of social and economic factors acting as controls. The Regional Authority Index provides one of our key explanatory variables (Hooghe et al., 2008; 2016) to measure the self-rule and shared rule exercised by regional governments, as well as other alternatives measures of power decentralization. Another important variable is the quality of government, which we will measure using the Worldwide Governance Indicators (Kaufmann et al., 2010). We are also interested in the effect of legitimacy on the acceptance of the measures adopted and, for that reason, we will include trust in political institutions as an explanatory variable. Sources for these variables include the

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European Social Survey (ESS) and the World Value Survey (WVS). Other political variables include the Effective Number of Parties (ENP), the distinction between majority and minority governments and the ideology of the government.

We will also include controls for health policy, such as health expenditure per capita, or beds and doctors per capita. Socio-economic controls will include GDP per capita or aging of the population, among other potential variables related to the adoption of specific measures.

We consider two methods to analyze the data depending on the nature of the dependent variable. For variables measuring the cumulative number of confirmed cases at the time of the policy adoption we will use multiple regression models, since the dependent variable is continuous.

For the other two types of dependent variables (measuring either the number of days between the first confirmed case and policy adoption and the duration of the adopted measure) we will use Cox proportional hazards models (Box-Steffensmeier and Jones, 2004; Cox, 1972). In the Cox proportional hazards models, the dependent variable is the hazard of the occurrence of an event at time *t*. The hazard is assumed to be:

$$h(t \mid X_i) = h_0(t)\exp\left(\beta_1 x_{i1} + \cdots + \beta_k x_{ik}\right)$$

This equation is the hazard function for country *i* at time *t*, which depends on a vector of explanatory covariates (X_i) and a vector of parameters (β) to be estimated by maximum likelihood. $h_0(t)$ is the baseline hazard and it is not directly estimated. By assumption, the Cox model implies proportional hazards, which means that every country has the same hazard function but a unique scaling factor.

The original Cox model is meant for events that occur only once. However, some of measures were adopted more than once in some countries. Fortunately, there are different alternative parametrizations of the Cox model that allow to model repeated events as outcomes by using clustered variances.

Furthermore, some of the adopted policies admitted different forms of implementation or had different levels of stringency. In these cases, the competing risks models extend the Cox model to allow for multiple possible events, as one country can make a transition into one of several states (Box-Steffensmeier and Jones, 2004). If we assume there are *J*, *j* = 1, 2, … possible policy states that a country can experience, the equation becomes:

$$h_j(t \mid X_i) = h_j(t)\exp\left(\beta_{1j} x_{i1} + \cdots + \beta_{kj} x_{ik}\right)$$

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where the subscript j refers to the jth outcome. The latter model will allow us to model the adoption of different policy strategies as a function of multilevel governance arrangements.

4. Qualitative data collection and analysis

In addition to the quantitative analysis, we will conduct qualitative cases studies which allows for in-depth examination of the legitimacy of crisis management with regard to social, fiscal, and economic measures. To facilitate comparison, WP6 will develop a coding scheme in close cooperation with WP1. To develop the coding scheme:

1. We will select a sample of social, fiscal and economic measures (April 2023). We will prioritize measures that a) were adopted in all (or at least most) countries, and b) have, in all or most countries, a multilevel dimension (i.e., are not under the exclusive jurisdiction of central governments).

2. Based on first results of our quantitative analysis, we will select relevant cases and prepare draft country profiles that describe the allocation of competences across national and subnational governments (legislative and administrative powers) concerning social, fiscal and economic measures prior the outbreak of the COVID-19 crisis (May 2023).

3. Next we will fine-tune our coding scheme a questionnaire to obtain information from other project partners (June 2023).

4. We will collect data on the allocation of powers concerning social, fiscal, and economic measures during and after the Covid-19 pandemic for the countries in our sample, according to the coding scheme and the questionnaire. We will carefully map the decision-making and implementation processes to shed light on the multilevel dynamics (July 2023 to May 2024).

5. We will analyze the country profiles and decision-making and implementation of social, fiscal and economic measures during the COVID-19 crisis (June 2024).

6. Using our definition of legitimacy above and operationalization below, we will analyze the impact of multilevel governance on the legitimacy of crisis management (June 2025).

Coding MLG, throughout and output legitimacy

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In order to analyse a range of specific social, economic and fiscal measures (see above) across different multilevel systems, we developed the following preliminary coding scheme. During the process of analysis, individual codes may change or new codes may emerge.

A. Input-orientation (MLG)

We will establish whether subnational governments have legislative, administrative and fiscal authority over the examined policy measures in relation to social, economic and fiscal policy (see above).

Self-rule		
Legislative authority	*Administrative authority*	*Fiscal authority*
0 none	0 none	0 none
1 concurrent	1 concurrent	1 concurrent
2 exclusive	2 exclusive	2 exclusive

Shared rule will be measured by whether subnational governments can co-legislate or participate in forums for intergovernmental coordination.

Shared rule	
Law-making	*Intergovernmental coordination*
0 no	0 none
1 non-binding	1 joint objectives~~declarations~~
2 binding	2 joint instruments~~statements~~
	3 joint agreements/regulations~~resolutions~~
	~~4 agreements~~

B. Throughput legitimacy

We will examine the justification of measures, clear evaluation criteria, parliamentary control, access to information about decision-making processes, as well as to the balance of territorial interests. For instance, evidence of mishandling, corruption and territorial discrimination would classify as poor.

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Accountability and transparency	
Policy-making	*Policy implementation*
0 poor	0 poor
1 medium	1 medium
2 strong	2 strong

The legality of measures depends on whether governments adhered to legally binding rules and institutions, were subject to judicial review, or whether they acted unilaterally outside of their jurisdiction. In addition to following the rule of law, this also accounts for the objective and proportionality of measures.

Legality of measures	
Policy-making	*Policy implementation*
0 none legal	0 none legal
1 semi-legal	1 semi-legal
2 legal	2 legal

C. Output legitimacy

To analyse the output legitimacy of a specific measure, we will define the scope (target population, objective) and costs of government actions.

Intensity of measures	
Scope	*Cost*
0 no	0 no
1 low	1 low
2 medium	2 medium
3 high	3 high

This is examined against the effectiveness of measures to mitigate harmful and disruptive social, economic and fiscal consequences of the pandemic. The effectiveness of measures depends on the proportionality of the measures and procedure, the achievement of the desired objective, and the sustainability of the outcome in relation to future developments (e.g., rising or decreasing budgetary deficits, addressing structural problems).

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Effectiveness of measures		
Proportionality	*Achievement*	*Sustainability*
0 no	0 no	0 no
1 medium	1 medium	1 medium
2 high	2 high	2 high

Lastly, we consider the investigated measure in relation to their territorial impact. This allows to reflect on the output legitimacy of measures in relation to the input national and subnational government (MLG). We distinguish between the horizontal application of measures to see whether there were strong differences across subnational jurisdictions, and the vertical alignment of the adopted measure by central and decentralized authorities. We also look at the vertical distribution of costs and benefits between different levels of governments.

Territorial impact of measures		
Horizontal differentiation	*Vertical alignment*	*Cost-benefits distribution*
0 no	0 no	0 central bias
1 medium	1 medium	1 balanced
2 high	2 high	2 subnational bias

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