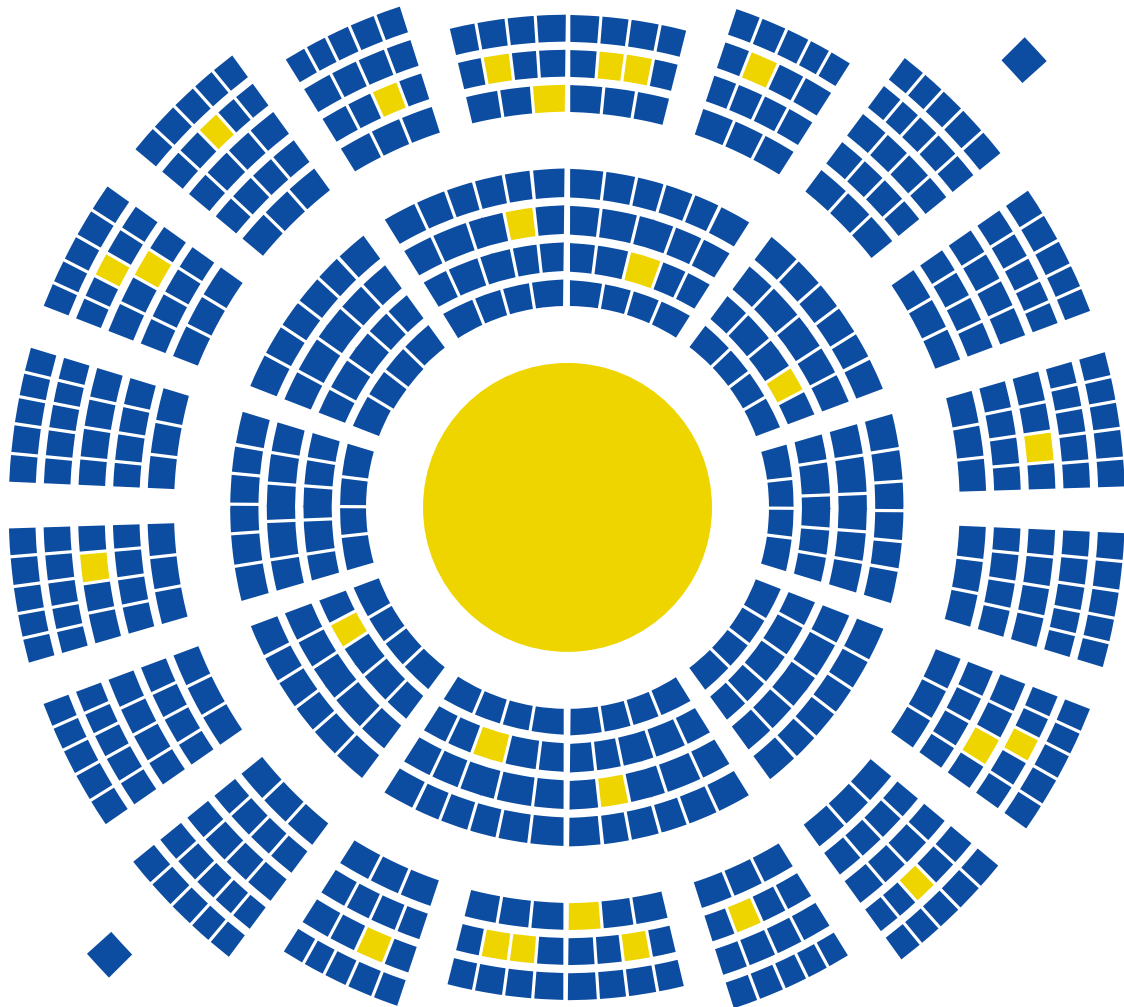# THE POLITICAL ECONOMY OF FEDERALISM AND MULTILEVEL POLITICS IN TURBULENT TIMES

EDITED BY: Amuitz Garmendia Madariaga, Anwen Elias and Sandra León
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THE POLITICAL ECONOMY OF FEDERALISM AND MULTILEVEL POLITICS IN TURBULENT TIMES

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Editorial: The political economy of federalism and multilevel politics in turbulent times

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Editorial on the Research Topic
The political economy of federalism and multilevel politics in turbulent
times

Three events have shaken governance in advanced democracies in the twenty-first century: the 2008 financial crisis, subsequently leading to the so-called "Great Recession" in a majority of European countries; the increase in political polarization due to the breakthrough or growth of radical parties across Western democracies; and the COVID-19 pandemic. These events have had a particular impact on the operation of federal and decentralized systems. The economic crisis enhanced the tensions between the redistributive role of the central government and the political autonomy of sub-central units. The strengthening of populist parties in some sub-state units has changed regional party systems as well as federal electoral dynamics. Moreover, the COVID-19 pandemic has presented a daunting challenge for intergovernmental coordination.

Federalism and decentralization have often been advocated around the world on the promise of better governance, economic efficiency and the appeasement of ethnic conflict. Yet, evidence regarding the performance of these regimes is increasingly mixed; in fact, in some cases, federal arrangements have resulted in, for instance, poor fiscal management, the reinforcement of centrifugal forces or decreased accountability. Our original Research Topic aimed to explore federalism and multilevel politics in light of the crises noted above. Do institutional conditions moderate political actors' territorial demands in the event of a negative shock? Have federal countries managed the COVID-19 crisis better than unitary ones? Has polarization moderated accountability processes during the pandemic? What accounts for the disproportionate effect of the pandemic among low-income classes? In responding to these questions, the resulting Research Topic provides new insights into key political challenges that many democratic states face today such as the operation of accountability; the expansion of inequality; the relationship between territorial structures and government effectiveness; or the emergence of centrifugal territorial demands. The Research Topic brings together five

excellent and timely contributions: four of them present original research, whilst a fifth is a book review in a case study of interest.

The first paper, by Shvetsova et al., examines the relationship between the stringency of the public health measures taken as a response to the COVID-19 crisis and the territorial structure in 73 countries. The question here is whether federations under-perform compared to unitary countries given the potential space for the existence of co-ordination problems between the multiple levels of government in the former. This is a particularly relevant question since, as the same authors had previously argued (Shvetsova et al., 2020), the multiplication of decision-making nodes in federations could make these regimes overall more responsive to the onset of a new threat. Shvetsova et al.'s findings seem to confirm their previous intuition: they do not find significant performance differences between federations and non-federations, and they show how several context-induced political characteristics (type of government system, timing of an election, degree of parliamentary fragmentation, etc.) might be behind the unequal involvement of central and sub-central governments across federations.

The following two contributions examine two different angles of the consequences of the COVID-19 pandemic for multilevel governments: inequality and polarization. On the former, the paper by Rogers et al. is concerned with the geographic heterogeneity of the coronavirus and its generalized disproportionate effect among low-income classes. By focusing on the Mexican federation and using highly sophisticated individual-level movement data collected from personal electronic devices in five cities, the paper investigates whether the pandemic has changed individual risk behavior. Their results suggest that it is in high-income and high-education neighborhoods where individuals' behavior changed more after the imposed federal lockdown, reducing relatively more individual exposure to risk. However, the existing inter-territorial variation in behavior and outcomes suggests states' policy autonomy had an impact in the management of the crisis.

The paper by Beramendi and Rodden focuses on the relationship between accountability and polarization in the context of the coronavirus in federal democracies. Motivated by the paradoxical electoral resilience of those incumbents in localities that were hit particularly hard by the pandemic, the authors build a theoretical framework explaining the role of pre-existing polarization on competence-based retrospective voting to empirically explore its effects on the adoption of mitigation policies—proxied through mortality rates. The preliminary evidence from a cross-county analysis in the United States shows that the lowest death rates were found in politically competitive suburban areas. The study suggests that in polarized societies the incentives to perform diligently decline because the electoral costs of co-operation are higher. All of these

results add nuance to the varying effect of polarization in multilevel democracies.

Amat and Rodon's contribution looks at a previous crisis, namely the Great Recession, to understand the institutional roots of political actors' territorial demands. The authors argue that parties will have incentives to adopt more extreme territorial positions when the constitutional rigidity of a country is low. Under these circumstances, in the event of a negative shock, minority groups will not have an institutional guarantee that the majority group will not use its status to challenge or overturn the territorial agreement, which will in turn lead the former to develop more centrifugal political positions. The study confirms these expectations using a dataset covering around 500 political parties' position in 28 European countries between 1999 and 2019, that is, pre- and post-crisis. The article also lays the groundwork for future work to examine the political role of territorial institutions in the event of a crisis.

The last of the contributions in this e-Book is a review by Anwen Elias of *Caroline Gray's Territorial Politics and the Party System in Spain: Continuity and Change since the Financial Crisis* published in 2020 by Routledge London. According to Elias, the Caroline Gray's provides an in-depth study of how the "territorial dimension of competition has become a distinctive feature of how the impact of the financial crisis played out." In doing so, it successfully provides important new insights into the intersection between economic, political and territorial dynamics in the aftermath of the Great Recession in Spain.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Shvetsova, O., Zhirnov, A., VanDusky-Allen, J., Adeel, A. B., Catalano, M., Catalano, O., et al. (2020). Institutional origins of protective COVID-19 public health policy responses: Informational and authority redundancies and policy stringency. *J. Polit. Inst. Polit. Econ.* 1, 585–613.

Inequality in Risk-Taking: Evidence From Location Tracking in Mexican Cities During COVID 19

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Among the many striking features of the COVID 19 pandemic is the geographic heterogeneity of its incidence and its disproportionate effects on low income people. We examine links between individual risk and COVID 19 outcomes in the federal context in Mexico characterized by high socioeconomic and political heterogeneity. Using highly detailed individual mobility data for five Mexican cities, we document the relationship between local income and education factors and the behaviors associated with COVID 19 risk after the national lockdown: staying home, going to work, and going other places. While low income people are disproportionately likely to contract COVID 19 and die from illnesses associated with COVID 19 in Mexico, we find very mixed evidence that people living in low income urban census blocs are engaging in observably riskier behaviors. Both before and after the national lockdown, people in low income locations spend more time at home and less time going other places, suggesting a lower overall risk of contracting the virus based on voluntary movement. However, people in low income and less educated places appear to shift their movement less in response to Mexico's national lockdown. Less educated people, in particular, show much less change in their movement patterns in response to the lockdown. At the same time, we find enormous variance between cities and in some cities such as Mexico City and Ecatepec people in low income places changed their behavior more after the lockdown. Understanding the reasons for these income and education differences in outcomes is crucial for policy responses–whether the government should focus on educating individuals about their behavior, or whether the response requires a much more difficult overhaul of societal protections.

Keywords: Mexico, COVID 19, location tracking, federalism, risk

1 INTRODUCTION

COVID 19 has laid bare the critical importance of inequality in the lives of citizens in the Americas. In the large federations of the region, the United States, Argentina, Brazil, and Mexico, it is the nations' working classes and economically vulnerable populations that have disproportionately suffered in the pandemic, economically and physically. Interestingly, it has not been the poorest countries of the world that have had the most difficulty managing the pandemic (at least so far), it has been economically unequal countries, particularly high inequality federal systems, that have experienced elevated case levels and case fatality rates.

In this paper we focus on the social drivers of COVID 19 risk in Mexico's largest cities. Most attention to COVID 19 risk has emphasized the role of individual behaviors–whether people are exposing themselves to risk unnecessarily. In these assessments, it may be individual decision-making that is driving income- and education-based variation in COVID 19 outcomes, i.e., that poorer and less educated individuals are putting themselves at greater risk. We examine this proposition using highly detailed measures of peoples' movement, which is a critical predictor of COVID 19 risk, based on their smart device location. The safest behavior in the pandemic is to stay at home without outside contacts, but we know that people will leave home some of the time, whether for work, errands, or recreation. We examine whether income and education were associated with people's movement: whether they stayed home, went to work, or went other locations. We treat going to "other" non-home and non-work locations as "voluntary" movement that is a reasonable indicator of risk-taking in the pandemic.[1] If we find that low income or less educated people are not more likely to engage in risky behaviors, then their disproportionate cases and case fatality rate may be driven by other, likely structural, factors that make low income people with less health care access more vulnerable.

We focus on income and education for several reasons. Low income people have been disproportionate victims of the pandemic, both in terms of illness and death, and in terms of economic insecurity and hardship. Some attribute this higher incidence among low income people to behavior and information differences–they claim that low income people are less educated about the virus and therefore engage in riskier behaviors that make them more likely to be exposed (Weill et al., 2020). A significant body of research has argued that low income people, due to income uncertainty, liquidity constraints, or associated low levels of education, are more likely to engage in risky behaviors and lack self control (Jalan and Ravallion, 2001; Banerjee and Mullainathan, 2008; Tanaka et al., 2010; Dupas and Robinson, 2013). Others argue that low income people, through no fault of their own, are more likely to be exposed because they are more commonly essential workers and because they are more likely to live in multi-generation households in which younger family members can spread it to more vulnerable older residents (Cevik et al., 2020). In the latter case, it is structural issues related to income, especially inequality in work and living conditions, that mainly drive COVID 19 risk. In the context of COVID 19, it is important to understand whether low income and low education populations are at greater risk because of risky behaviors or more structural issues related to inequality.

We use highly anonymized and privacy enhanced data on individual mobility to examine whether people were more likely to stay at home, go to work, or go other places after the national lockdown in Mexico's five largest non-border cities, defined as the "largest cities in Mexico by fixed population," according to the

2010 Mexican National Census.[2] The home, work, and "other" location structure of our data is novel, and a contribution to existing research on COVID 19 risk. We focus on differences across urban census blocs, depending on income and education, to see whether people were more likely to shift their behavior in response to the lockdown. Across the full time period of our sample and during the national lockdown, we find that low income people, and to a lesser extent less educated people, spend more time at home and less time outside the home other than work. Thus, the overall risk of contracting the virus is not clearly explained by the locations of individuals depending on income and education. On the other hand, individuals in lower income and especially less educated places shifted their movement less in response to the lockdown. Our clearest finding is that less educated people adapted their movement behavior less after the lockdown. This result suggests at least some risk-taking behavior might be explained by lack of information about the virus or ways to slow its spread. However, we find enormous variation by city in the predictors of changes in movement–in some cities low income and less educated people changed their behavior significantly more than individuals in more affluent locations.

In our sample of large cities–Ecatepec (Mexico State), Guadalajara (Jalisco), León (Guanajuato), Mexico City (Federal District), and Puebla (Puebla)–we expect some differences in outcomes based on differences in economic development, economic structure, and quality of health service provision. In Mexico City, for example, the economy is driven primarily by the service sector–especially finance, technology, education, tourism, and construction. Much of Mexico City's middle income and affluent population could shift to work from home during the pandemic, making them more likely to spend the majority of their time at home. Puebla, in contrast, is one of Mexico's most industrialized states. Residents in Puebla are much more likely to be involved in industrial production, meaning they would continue to go to work during the pandemic. Thus the patterns of COVID 19 exposure are expected to differ across place, in addition to across income levels. Yet we can also hold many features in common in this urban sample, especially travel distance, urban density, and housing occupancy.

The role of federalism in the pandemic response, which has been highlighted in the US case, should be even more pronounced in a highly unequal federation such as Mexico in which the states functionally exist at different levels of economic development (Rogers, 2021). Mexico's cities have different contexts when facing the virus, in terms of the governments' and health care systems' capacity to contain and respond to spread, as well as distinct economic contexts that may lead to greater risk among

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[1]Of course our measurement of movement is not precise. We do not know the underlying reasons for the movement to discern whether it is necessary. We also cannot tell whether people are being safe in those settings, such as wearing a mask. Our "other place" measure is thus a proxy for risk taking, not a direct measure.

[2]Of course, the definition of cities is variable, and other city definitions may lead to a different sample. For example, some may wish to exclude Ecatepec because it may be considered part of the larger urban agglomeration of Mexico City. We do not have obvious reasons to suspect that our results would differ significantly if we substituted different cities for the ones included. We exclude large border cities such as Tijuana and Ciudad Juarez that have a lot of cross-transit to the United States, because we cannot track their movement when they go to the United States.

relatively low income populations in some places and relatively high income populations in others. Mexico's states and cities also have policy autonomy to shape citizens' behavior, possibly leading to heterogeneity in outcomes driven by politics (Giraudy et al., 2020).

On the political aspects of our analysis, discussed primarily in the Discussion Section, we emphasize the crucial role of the government in establishing and enforcing public health measures for public safety. These public health measures are most important for the most vulnerable in society, low income people with inadequate health care access and financial insecurity. Mexico also has large informal labor markets that make enforcement of policies targeted at individuals harder to enforce (Hummel, 2017). We document that individual behaviors across income groups in Mexico have not differed consistently in Mexico's cities during the pandemic, yet low income people are being diagnosed with COVID 19 and dying at high rates in all places. The difference in outcomes must at least in part be driven by inequality in living and work conditions and health care access and quality across the income spectrum, variables strongly affected by policy decentralization and economic heterogeneity associated with federal systems.

In comparison to most existing research using smart device location data to identify COVID 19 risk factors, we focus on a smaller, more comparable unit of analysis. For example, Goodman-Bacon and Marcus (2020) and Wright et al. (2020) use the US County level of analysis due to the availability of COVID 19 data only at the county level.[3] We use the smaller Mexican urban census bloc in order to see movement patterns at a finer level of disaggregation. Unlike other scholars that focus exclusively on time spent at home as a measure of COVID 19 risk (Huang et al., 2020), we examine the full range of movement–home, work, and other locations. This allows us to examine "voluntary" risk associated with going places other than home, and "involuntary" risk associated with going to work. We also focus exclusively on high density, urban areas that are broadly comparable in their structures. One challenge of existing research is that the heterogeneity within and between different localities (e.g., US counties) is also associated with differences in travel patterns (Zang et al., 2020). For example, more rural localities will have more movement to pick up groceries due to travel distance.

2 THE INCOME DYNAMICS OF CORONAVIRUS IN MEXICO

Mexico is an important case to examine because of its poor outcomes in the pandemic–the country has seen a much higher level of cases and deaths than would be expected based on its level of income (Agren, 2020; Flannery, 2020). The pandemic in Mexico is severe, with high case fatality rate particularly

among the nation's low income population that relies on the public health system (Díaz-Cayeros, 2020). In Ecatepec, the state of Mexico's largest city and one of the cities with the most coronavirus cases in the country, families are protesting at hospitals to demand news of sick relatives and return of the bodies of COVID 19 victims (Ramirez, 2020). Public hospital employees through the country have protested in the streets over the lack of personal protective equipment and supplies to treat patients (Agren, 2020).

The situations of COVID 19 patients in Mexico vary considerably depending on income, and related quality of health care coverage (Díaz-Cayeros, 2020). While the Mexican government has not released individual income data to match to COVID 19 cases or fatalities, we are able to learn a lot about the composition of cases based on where they are found–which municipality and, especially, which hospital system. In Mexico, while most people have access to some type of government-provided health care, the quality of those health care systems differs dramatically.

In **Figure 1**, we show how outcomes have differed between individuals across health care provider systems in Mexico using data drawn from Díaz-Cayeros (2020). Those with income to seek private care, as shown in the orange line, have considerably lower case fatality rates (across all age groups) of COVID 19 related illness throughout the crisis. By August, case fatality rates in private health care systems were between 1 and 2%, somewhat higher than the US rate in August but similar to the level seen in the United States during the early days of the pandemic in March and April. In comparison, those treated by the Institute for Social Security (IMSS),[4] shown with the green line, or those treated in the State's Employees' Social Security and Social Services Institute (ISSSTE), shown in red,[5] are more likely to be of modest income compared to those treated in private hospitals. The case fatality outcomes in these health care establishments are stark in comparison to private outcomes–at their respective peaks, care in IMSS or ISSSTE clinics was associated with 3.3–3.4 times greater likelihood of dying. At the end of the data panel in August, the differences remained stark. 13% of cases at IMSS and 7% of cases were dying at ISSSTE, in comparison to around 1% of cases in private care. Importantly, the case fatality rate, in comparison to the case rate, is driven more by structural factors related to health and quality of health care that depend on income.

2.1 Mexico's National Lockdown

Mexico's national lockdown provides an interesting opportunity to examine changes in movement in Mexico. The national government of Mexico declared a health emergency on Monday, March 23rd. Mexico shut down all but necessary economic activity after President Lopez Obrador had come under intense criticism and bucked the regional trend by resisting calls to impose a lockdown much earlier (AFP, 2021).

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[3]See Jay et al. (2020), Weill et al. (2020) for examples of research using the US Census bloc as the geographic unit of analysis.

[4]In Spanish, Instituto Mexicano del Seguro Social.
[5]Instituto de Seguridad y Social Services de los Trabajadores del Estado.
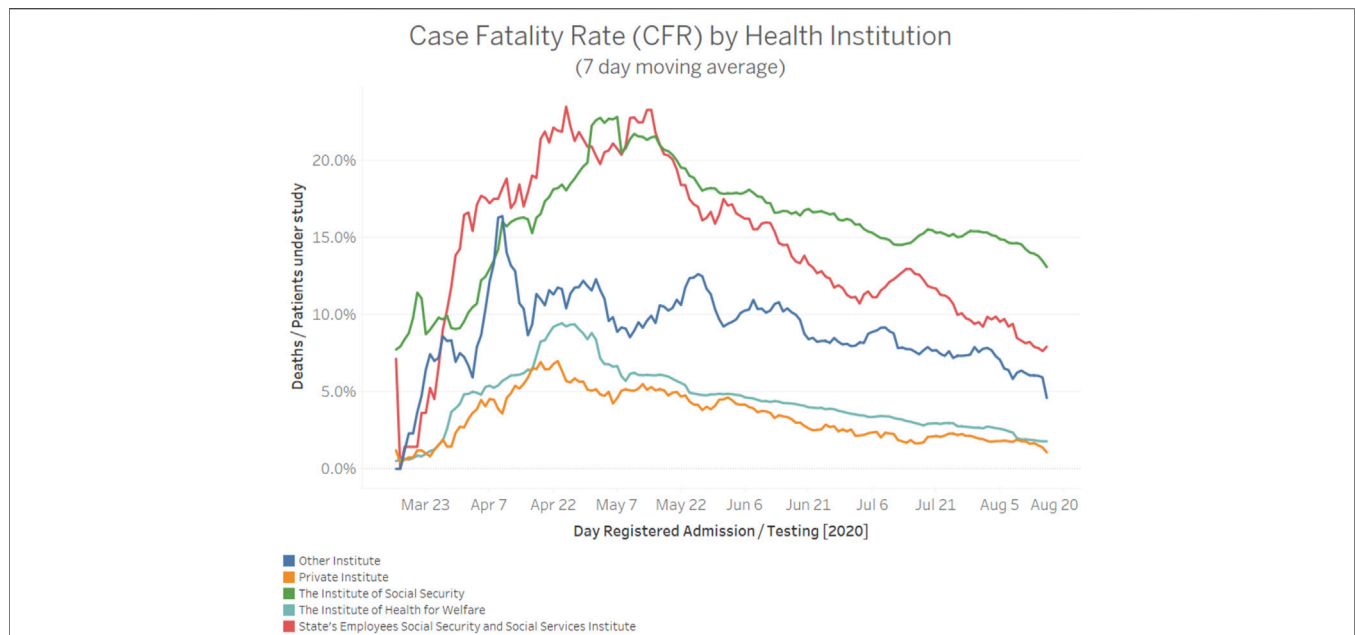
FIGURE 1 | Case fatality rate, by health care provider. *Notes*: Data extracted from Díaz-Cayeros (2020).
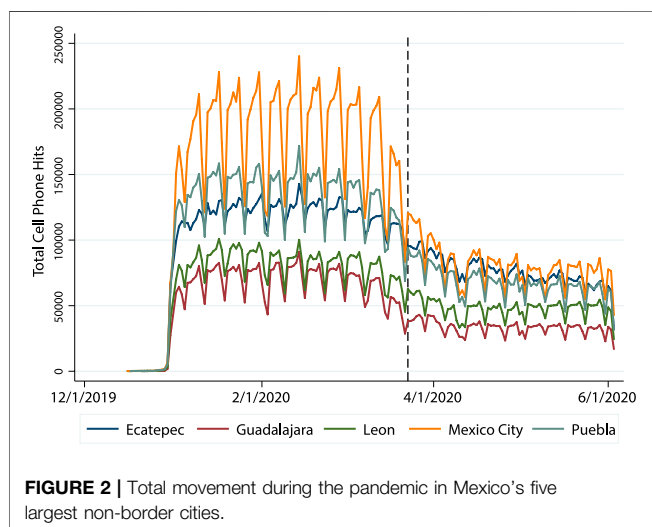
FIGURE 2 | Total movement during the pandemic in Mexico's five largest non-border cities.

The lockdown measures to fight the virus included a reduction of the number of people who can gather to 50 and an extension of a previously announced suspension of non-essential activities. Deputy Health Minister Hugo López-Gatell emphasized that the measures apply strictly to people older than 60 years old, those who have hypertension, diabetes or are pregnant, regardless of whether their jobs are considered essential (Reuters, 2020). These measures did not include sanctions for noncompliance, and were not a "lockdown" in the same way as, for example, Italy's enforced prohibitions on movement during the Spring 2020 surge in that country. The quasi-voluntary nature of Mexico's lockdown enables us to better see differences in behavioral response based on socio-demographic

characteristics than if lockdown had been strict and uniformly enforced.

Figure 2 plots the change in movement before and after the national lockdown on March 23rd in our sample of Mexican cities.[6] All five cities saw movement decline in response to the national lockdown, denoted with the dashed vertical line. However, we can see considerable variation in the speed and the extent of the behavioral response in these cities, with movement in Mexico City declining very rapidly and movement in León, for example, declining much slower and much less.

While all cities were, in theory, equally subject to this restriction of movement, our main observation across our movement indicators is a high level of variation across places. This common national policy provides us with a clear research design to examine changes in behavior according to a common "shock." The challenges to a federal nation of addressing a national problem such as COVID 19 speak both the extent of location-based inequality in federal systems, and to the difficulties of coherent national policy-making.

3 EMPIRICAL EXPECTATIONS

The existing literature on COVID 19 and population movement is largely drawn from high income countries. Given the economic structure of high income countries, more affluent individuals working in service sector professions have been able to work from

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[6]The consistent dips in the data for each city are weekends, when cell phone hit data is much lower than during the week (Calabrese et al., 2011).

home more during the pandemic, and thus are able to stay home more than lower income people requiring in person work. In a country like Mexico with large variation in economic structure across places, we might not see such a straightforward pattern of behavior. While high income people in highly developed Mexico City might be able to work from home, we may see relatively high income people working in the industrial sector in Puebla that go to work during the pandemic. We cannot take for granted that the patterns of behavior seen in high income countries will be the same in middle income countries, or that places within the nation will show similar patterns of behavior to each other. Thus we examine our full sample of five cities as a whole, and then look at each city one by one.

Our empirical expectations are shown below. We work from a premise of how the mix of individuals' locations (home, work, other) is generally related to income and education. Overall, higher income people stay home less and go other places more because they can better afford to recreate, this suggests richer and poorer people (living in richer and poorer places, respectively) will start from different baseline movement. Higher income people have more expendable income to afford restaurants, movies, the gym, shopping, and similar out of the home activities. Higher income people should thus show a lower share of their overall time at home and a higher percentage of their time outside of the home, not at work, than poorer people. This expectation sets our baseline understanding of risk profiles and behavioral change among income groups. Overall, we expect that lower income people stay at home more and go out less, thus they engage in "safer" behavior, at least in the pre-COVID 19 period.

We expect to see behavioral change that reflects income and education level after Mexico's national lockdown. Given the anticipated higher level of outside-the-home behavior among high income people, we expect them to have a much larger behavioral adaptation to the lockdown order. We should see the rich at home more and other places less after the lockdown in comparison to their previous movement. We also expect less educated people to shift their behavior less in response to the national lockdown, and more educated people shift their behavior more. This will reflect their pre-existing levels of movement, their ability to stay home for work, as well as their knowledge about the danger of the pandemic and how to reduce the spread of the virus.

Empirical Expectations

(1) We expect individuals in low income census blocs to change their behavior less in response to the pandemic. Those living in richer areas are expected to shift more to staying at home, and shift away from going to places other than work or home.

(2) We expect people in less educated census blocs to change their behavior less in response to the pandemic. Those in more educated areas will stay at home more and go to other places less.

Mexico's sub-national areas have different contexts when facing the virus, in terms of the governments' and health care systems' capacity to contain and respond to spread, as well as distinct economic foundations that may lead to greater risk among relatively low income populations in some places and relatively high income populations in others. Mexico's states and cities also have policy autonomy to shape citizens' behavior, possibly leading to heterogeneity in outcomes driven by politics (Giraudy et al., 2020). Across all variables, we anticipate different relationships in the variables by city. We discuss above that large, developing nations such as Mexico show large variation in economic development and economic structure from place to place. We expect these economic differences to translate to differences in home conditions, work location and propensity, and likelihood to spend time out of the home.

4 EXPLAINING THE MOBILITY DATA

Our analysis relies on de-identified and privacy enhanced data collected from individual personal electronic devices (PED) that opted in to share location data anonymously for research purposes. For each anonymous individual in our dataset, we identify their home and work areas, represented by privacy-preserving 360,000 square meter grids, and locations they visit not at work or home using PED hits. Our analysis links individuals to their home census bloc, to see what share of time they spend at home, work, or in other locations. In comparison to other research using mobility data, our data base is disaggregated to a finer geographic level. Most existing research focuses on mobility overall, not where people go. We can use our data to see where they are spending their time to better assess risk, whether involuntary (work) or potentially voluntary (other).

The use of PED data in research has developed in parallel with call record data (CDR). As opposed to CDR data, which collects information about a location without depending on the transmission of communications (calls and/or texts), PED data gathers locational data from global navigation satellite systems (GNSSs) in smart devices such as cell phones, smart phones, or smart tablets (HRW, 2019). For each device with location-based services enabled, multiple pings are collected each day tagging the anonymous device as well as its location and time.

Data on human mobility can be used in many multidisciplinary applications such as natural disasters, public health, credit fraud, and human rights violations (Thompson and Warzel, 2019). Companies like LocationSmart, Foursquare or Cuebiq sell offline location analytics for businesses to provide consumer insights and marketing. Organizations like UNICEF and the World Bank also leverage this locational data for real-time humanitarian response (Daddi, 2019).

In response to COVID-19, PED data is being used to track mobility, transmission and success of social distancing guidelines. Liautaud et al. (2020) leveraged PED data to correlate a decrease in mobility with fever incidences from thermometers connected to smartphones (2020). The research demonstrates how social distancing can reduce the transmission of the virus and possibly identify potential outbreaks in the future.

FIGURE 3 | Example of mobility data construction in Mexico. *Notes*: The simulated path of one unique ID in the Mexican state of Guerrero. Lighter colors indicate locational points from earlier in the day. This number of pings in one day is unusual, but illustrative of the spatiotemporal richness of the data.
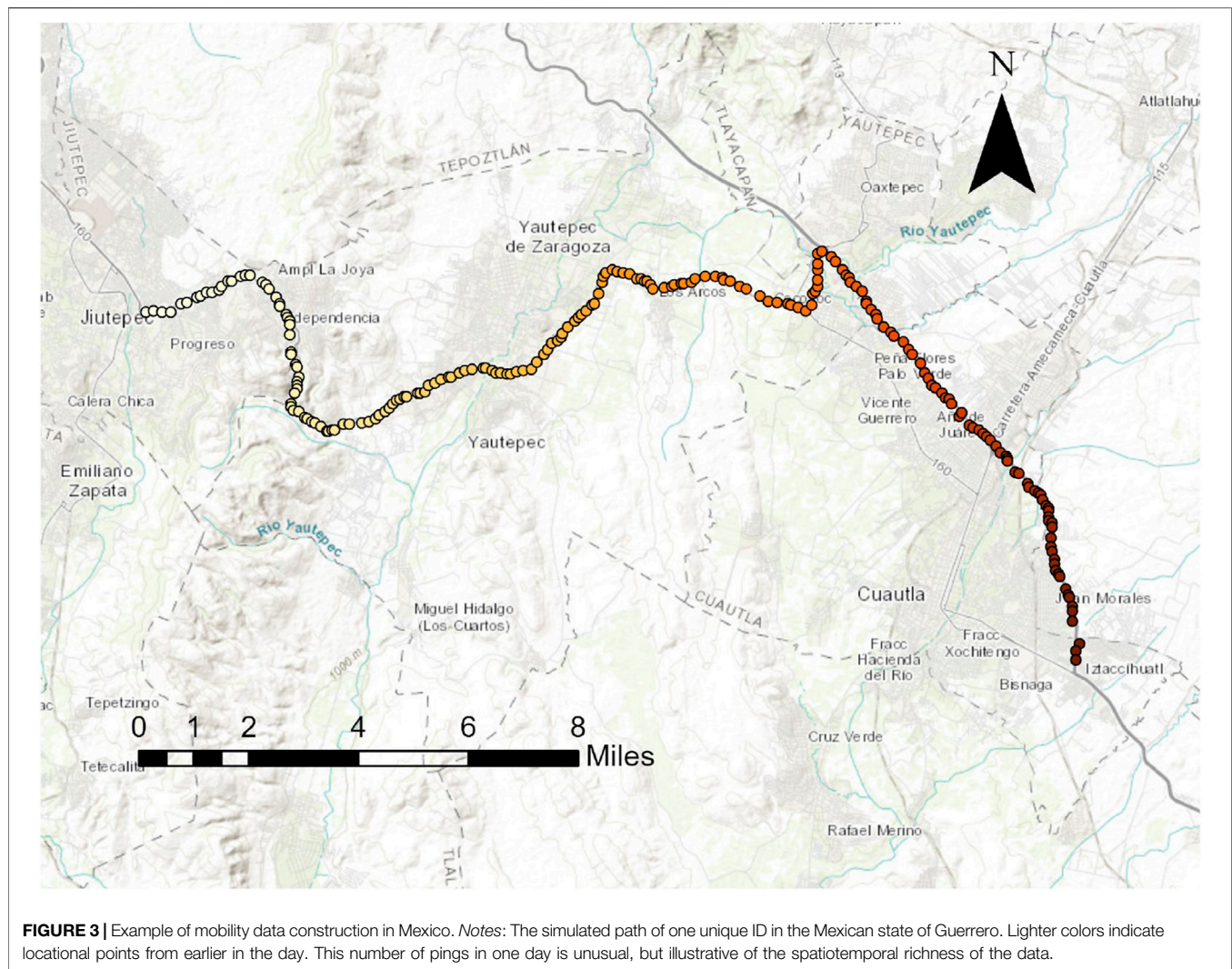
4.1 Description of the Movement Data

The location analytics company Cuebiq Inc., provided us access to Mexico's pseudonymization and privacy-enhanced PED locational data between January 1 and June 3, 2020. All data is collected with informed consent from anonymous users who opted-in to share their data for research purposes through a GDPR compliant framework. Data is collected in both online and offline mode, so if the connection is lost with the proximate cellular towers, locations would still be recorded and included later. Individual devices are pseudonymized based on their International Mobile Equipment Identity (IMEI). Their locations can be plotted for one day indicating patterns like travel over time, such as **Figure 3**, below, showing simulated movement for an individual. All data can also be aggregated indicating trends such as decreased movement in a municipality over time (such as **Figure 2** above). The locational data is collected by the individual applications' location services using a variety of methods to collect the IMEI's location, including, but not limited to GNSS, cell tower triangulation, and bluetooth or WiFi triangulation.

The PED data used in this study contains eight different columns: ID, device type, noise type, latitude, longitude, distance from previous data point, timestamp, and accuracy. With potential privacy information in PED data, Cuebiq applies procedures to ensure privacy and different layers of protection for all users. For this data set, data is de-identified by hashing and encrypting the ID, adding noise of 600 m for home locations and adding noise between 20 and 100 m for all other locations.

In addition, some pre-identified locations have additional privacy methodologies applied. Home and work locations are randomized within census blocks, allowing for estimation of demographics without actually revealing these locations of the users; sensitive Points of Interest (POIs), such as primary schools, sexual/reproductive health clinics, places of worship, etc. are removed from the data set completely; and Whitelisted POIs (commercial and public points of interest) are left unchanged.

The dataset was housed in a physically secured computing research facility, behind firewalls, and was conducted on this remote server logging in with personal laptops.

4.2 Data Preparation and Processing
4.2.1 Database Preparation
Due to the 43.5 GB of raw PED data, we employed PostgreSQL as the suitable program for structured, robust, and tabular data. The preparation of the data consisted of:

(1) Converting the raw data into a readable CSV file by running a Python conversion script. This code unzipped the raw data files, inserted the corresponding column names, and then saved the data into a new CSV file. Each day of data for the 154 days consisted of more than a hundred CSV files depending on the amount of data for that day.
(2) Loading the unzipped, clean CSV files into the database using a custom scripted Python algorithm. Utilizing the pyscopg2 Anaconda package, the script connected to the PostgreSQL database, iterated through the CSV files, and then imported the data into one table. It took approximately 13 h to load 1,625,171,991 rows that represented 154 days of data.

4.2.2 Preprocessing
The remaining preprocessing steps were completed in pgAdmin4, a database management client for PostgreSQL, using custom scripted SQL queries. In order to improve code runtime and discard noise in the dataset, we developed and implemented spatial preprocessing queries to only include PED data within the five studied cities: Mexico City, Ecatepec, Puebla, Guadalajara, and León. To do this, the latitude and longitude of the center of each of these cities were found by cross referencing Google Earth with the 2016 persons per square kilometer estimate (Frye et al., 2018). The radius was also found by selecting a buffer size that captured the majority of the population. This reduced the dataset significantly from 1.6 billion rows and 827,653 unique IDs to approximately 131 million rows and 350,993 unique IDs—a total reduction of 92%. Running this preprocessing algorithm took 14 h on a PowerEdge R530 Server with two Intel Xeon E5-2695 2.1 GHz processors.

4.3 Limits to the Data
As discussed above, these movement data are only proxies for risk and they will mischaracterize some individuals in the data. We cannot know whether that movement goes along with other precautions, such as wearing masks and physical distancing. We also cannot know in all cases whether travel to "other" locations represents increased risk. However, these data provide much more information about risk in comparison to related research focused only on whether people stay at home.

Another drawback of this study is the length of the dataset. Since the data spans approximately 6 months—using a dataset with larger temporal range will likely improve the results of the pattern of life analysis used to correctly identify residents, including those who may be traveling, working temporarily elsewhere, or only using their smartphones intermittently. Using the approach described here, 1–3% of each locality's 2010 population were tracked as residents (INEGI, 2020).

It is also likely that the sample of Mexico's population included in this study systematically underrepresents poor individuals. While in 2019 49.5% of Mexico's population owned a smartphone

(Newzoo, 2018), those who are wealthier are more likely to 1) be able to afford location-enabled PEDs and 2) keep location-based services engaged during the day although they cost money for internet usage. Thus, as discussed below, we examine cell phone behavior as the share of home, work, and other usage of those observed because overall counts of tower hits would overrepresent the movement of the rich.

5 MOBILITY DATA OUTPUT

5.1 Geographic Unit
After the PED data for each of the five cities were extracted and put into separate tables, the data was further granulated by identifying the urban census tracts (cve_ageb) in which each point was located. The urban census tract is the smallest spatial scale available with current economic data, which made it the best choice for our analysis.[7] These census tracts were obtained from the University of California Berkeley's Library Geodata database. We used a total of five shapefiles, corresponding to the five Mexican states in which the cities were located. These included the state of Mexico for Ecatepec, Mexico City for Mexico City, Puebla for the city of Puebla, Jalisco for Guadalaraja, and Guanajuato for the city of León. These shapefiles were uploaded to the PostgreSQL database using the PostGIS 2.5 extension.

The urban census tract is not the most commonly used level of geographic analysis in Mexico but it is the finest level of geography available with corresponding census data. Municipalities are a much more common unit of analysis in subnational studies of Mexico, but they are also very large agglomerations, in many cases, and vary considerably in their geographic size, population, and population density. For example, the entirety of the city of León is one municipality. We do not focus on the municipal level of analysis because we could not see much variation in movement, and we would have an enormous mix of income within those municipalities. A municipal analysis would be akin to a county-level analysis in the United States, which is too large a unit of geography to meaningfully disaggregate income.

6 MATERIALS AND METHODS

6.1 Work Flow
This section details the high-level overview of the process of identifying each unique ID's home area and work area.[8] All of the following analyses were executed using custom SQL queries in pgAdmin4. Each of the five experimental cities were spatially joined with their respective shapefiles, allowing for a spatial reference for each PED data point. More specifically, this

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[7]Our results may be different if studied at different units of analysis (Lee and Rogers, 2019). We chose the urban census tract to reduce sociodemographic heterogeneity within our units.

[8]Our workflow is shown in a diagram in our **Supplementary Appendix**.

showed which census tract each PED point was on a specific day and hour. Then, each unique ID's PED data was counted and grouped by each census tract. This effectively ranked, in descending order, every ID's frequency in the different census tracts, where each data point belonging to the ID was found. From this, the ID's home area was determined as the census tract with the highest number of hits and the work area as the second highest number of hits. All other census tracts were considered as "other," or areas that were not the ID's home or work place. Once each ID had an identified home and work census tract, all data points for each ID were tagged and grouped as "homecount," "workcount," or "other" and ordered by date and census tract.

6.2 Structure of the Dependent Variables

In our main analysis, we examine the mix of citizens' behavior. We focus on the level and change in the share of time people are spending at home, at work, or outside of home or work. This helps us to address the likelihood that personal electronic device hits are more common among higher income people because they are more likely to have smart devices.[9] We do not expect a consistent bias in where (home, work, other) those with smart devices are more likely to have their movements appear in the data depending on their location.

6.3 Description of Independent Variables

Our main independent variables intend to capture relative income, relative levels of education, healthcare access, and internet access across the census blocs we examine. All independent variables were collected from Mexico's statistical agency, Instituto Nacional de Estadística y Geografía (INEGI). The most complete data at the urban census tract level in Mexico comes from the most recent census conducted in 2010. While ideally we would have access to more recent data, these are the most complete data at this level of analysis, and we do not expect major shifts in the relative income profiles of the census tracts in a ten year period. Details of our main variables are shown in Section 1 of our **Supplementary Appendix**.

Our measures are proxy variables, not direct indicators of income of the areas. In our **Supplemenatry Appendix** we also show results based on direct measures of income from the 2012 income survey. We find broadly similar results in this analysis. We do not feature these results in our main text because the urban coverage is much lower than the proxies available from the 2010 census. Unfortunately, INEGI no longer provides census data linked to the urban census tract, making it impossible for us to use more recent income surveys.

Our main income proxy is the number of residents per room in a household. This is a useful measure of both income and COVID 19 risk, in terms of likelihood of in-home exposure. Broadly speaking, if homes have more residents per room, we except those are lower income households on a per capita basis. We also measure education levels in the census bloc with the per capita population above the age of 15 that has not completed

primary education. Additionally, we control for the per capita population without access to healthcare and per capita internet access.

Figure 4 shows our general coverage of these variables for which we have cell phone data and measures of our independent variables in one of our focus cities, Mexico City. We can see considerable variation across census blocs in terms of income (household residents per room) and education levels within the city. We can also see from the map that income and education correlate, as expected, at a level of $p = 0.67$. While one may worry about high correlations among our variables, we show in our **Supplementary Appendix** that our results are not changed by dropping either our income or our education proxy from the analysis.

6.4 Regression Models

We use a simple regression model to show how socioeconomic variables predict our movement dependent variables [home (% total), work (% total), and other (% total)], controlling for other independent variables. In our base models, we examine overall predictors of movement.

$$M_{i,t} = \alpha + \beta L_i + \beta I_i + \beta E_i + \mu_i + \gamma' \mathbf{X_i} + \varepsilon_{i,t} \qquad (1)$$

where i indexes each census bloc, t indexes each date. M_i is one of our measures of share of PED hits, by location (home, work, other), by individuals with a home in that census bloc. L_i is a binary variable to represent the time before and after the national lockdown on March 23rd. I_i is our measure of income (household residents per room). E_i is our measure of education (percent without completed primary education). μ_i is city and date fixed effects, respectively. $\mathbf{X_i}$ is a vector of controls for observable characteristics: access to healthcare (percent without any health care access), internet access (percent with internet access), total PED hits (logged), and average pre-lockdown levels of movement. $\varepsilon_{i,g}$ is a random error term. All standard errors are robust.

We control in the model for other potential factors impacting movement during the pandemic besides income and education: access to healthcare and internet access. We also control for the total level of PED hits in that census bloc to adjust for potential bias in the data generating process in the smart device data, which may come disproportionately from some areas with high PED usage. In models in **Supplementary Appendix Section 4**, we explicitly control for average pre-lockdown levels of home, work, and other movement.

To examine changes in response to the national lockdown, we focus on an interaction terms between income (and education) and the binary variable for the national lockdown. This interaction term captures the difference in behavior before and after the lockdown.

$$M_{i,t} = \alpha + \beta L_i + \beta I_i + \beta L_i {}^* I_i + \gamma' \mathbf{X_i} + \varepsilon_{i,t} \qquad (2)$$

In our **Supplementary Appendix**, we show variations of our models to demonstrate robustness in our results. We show models with and without interaction terms and by city. We show our models using dependent variables structured as hit

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[9]We also examine total counts across home, work, and other in our **Supplementary Appendix**.
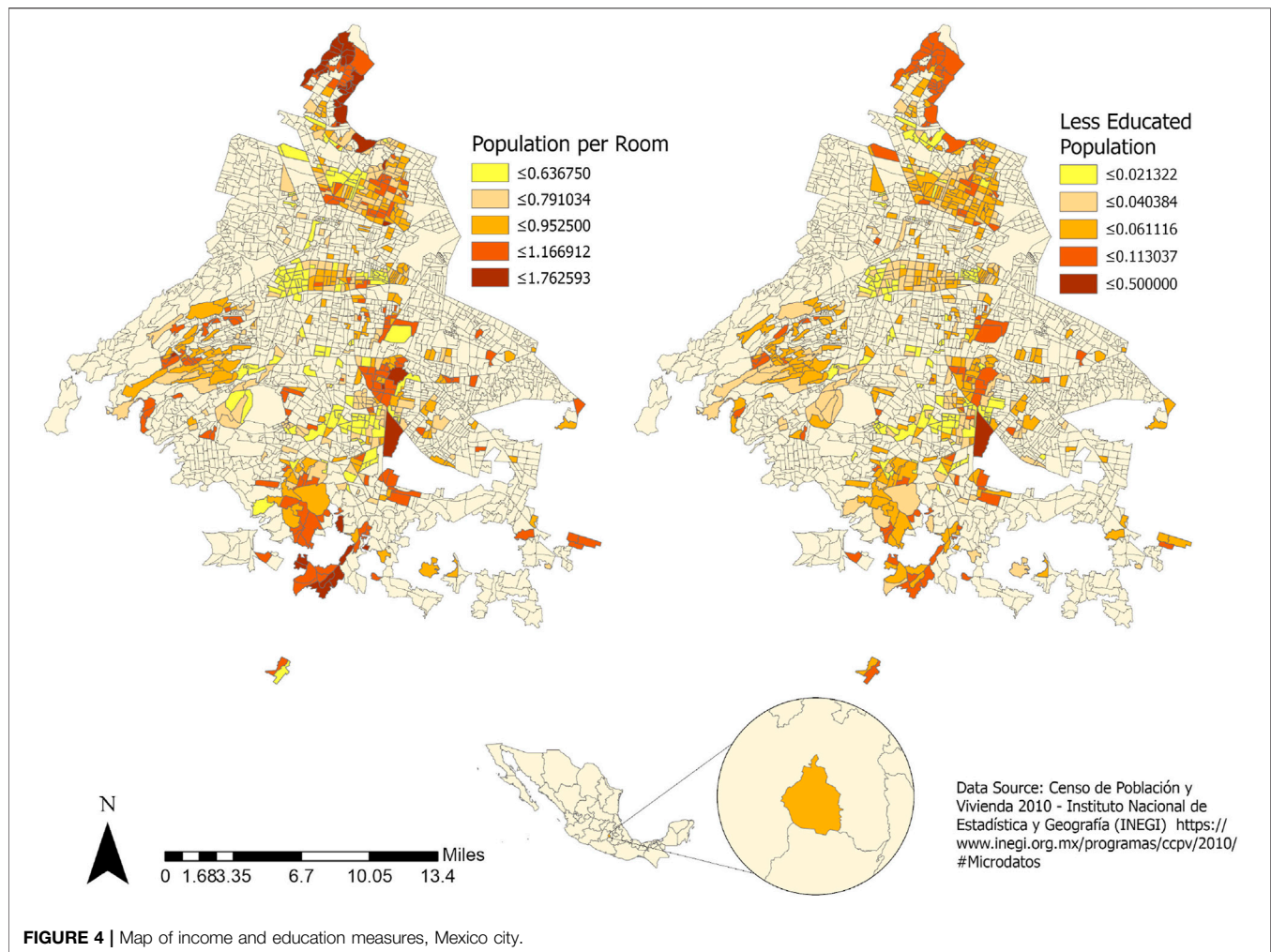
FIGURE 4 | Map of income and education measures, Mexico city.

counts rather than hit shares. We do not think this is the best data approach, given the expected correlation between income and PED hits. However, we show results with this construct and find supportive results. We also show our models with a direct measure of household income taken from income surveys. The geographic coverage of these direct income samples are much smaller, so we do not use them in our main analysis. Our results are generally consistent in models with these direct income measures.

7 RESULTS

7.1 Overall Movement

Figure 5 provides a snapshot of the general relationship between our main independent variables and our movement measures for the entire period of our study (January 1, 2020–June 1, 2020). Overall, we see that individuals living in low income census blocs (a higher value of household residents per room) of the cities are at home more and less in other places. This corresponds with the idea that leaving home, whether to eat, shop, or recreate, is expensive, and therefore more affluent people are able to do it

more. Thus, our analysis in the next section focuses not on whether rich or poor people stayed home or left the home more overall, but whether they change their behavior more in response to the national lockdown. Given that low income places were more likely to be home and less likely to be other places in general, they do not have as much room for change in their behavior compared to richer people. This is important to keep in context when we see larger behavioral change among people in richer locations.

We also see that in places with a higher percentage of less educated people, people are more likely to be at work and less likely to be somewhere other and than home or work. Interestingly, places with a high percentage of uninsured people are less likely to have people at home and more likely to be outside of the home. We do not see a strong relationship between movement and internet access in general, but we view this as an important control variable given the nature of our data. Regarding location specific dynamics, relative to Ecatepec (the base category), people in Guadalajara, León, and Mexico City are less likely to be home and more likely to be somewhere other than home or work. Puebla has a very similar movement profile to Ecatepec.
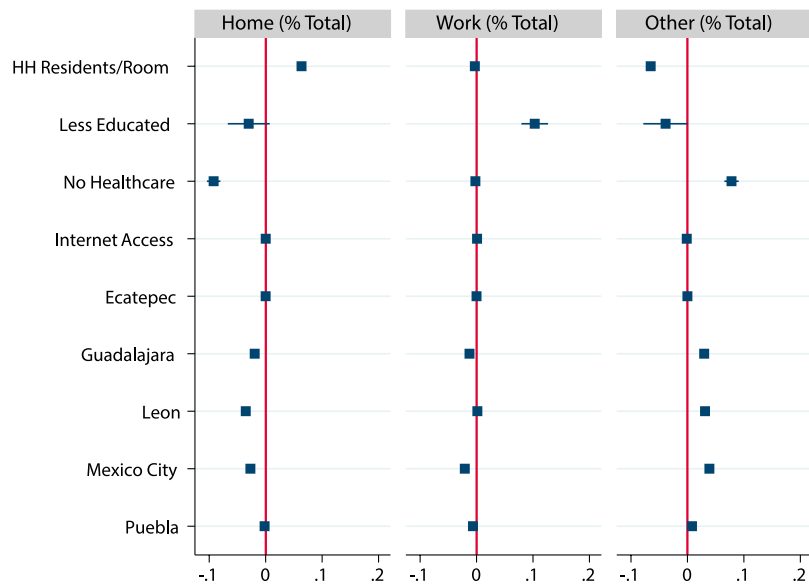
FIGURE 5 | Overall movement, January 1–June 1, 2020.
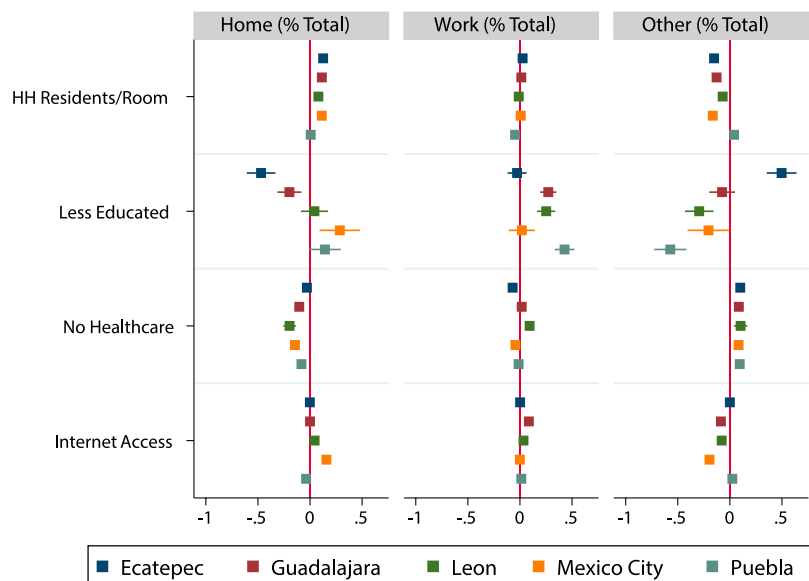
FIGURE 6 | Overall movement, after national lockdown.

These dynamics are reinforced when we focus only on movement after Mexico's national lockdown on March 23rd in **Figure 6**. Generally speaking, low income people are more likely to spend a larger percentage of their time at home after the lockdown, with the exception of Puebla. They are also less likely to be outside of their home or work. We do not see a difference between rich and poor places in terms of spending their time at work after the national lockdown. Overall, therefore, poorer areas of the city are more likely to be in the place considered

safe–home–and less likely to be engaged in "voluntary" risk outside of the home. The analysis of change in behavior, below, therefore does not capture overall risk profiles, which might be lower in the poor areas than the richer areas in general.

With regard to education, we see considerable variation from city to city. While less educated places are more likely to see people spending time at home in Mexico City and Puebla, they are less likely to be home in Ecatepec and Guadalajara after the national lockdown. In all cities except Ecatepec, residents of low
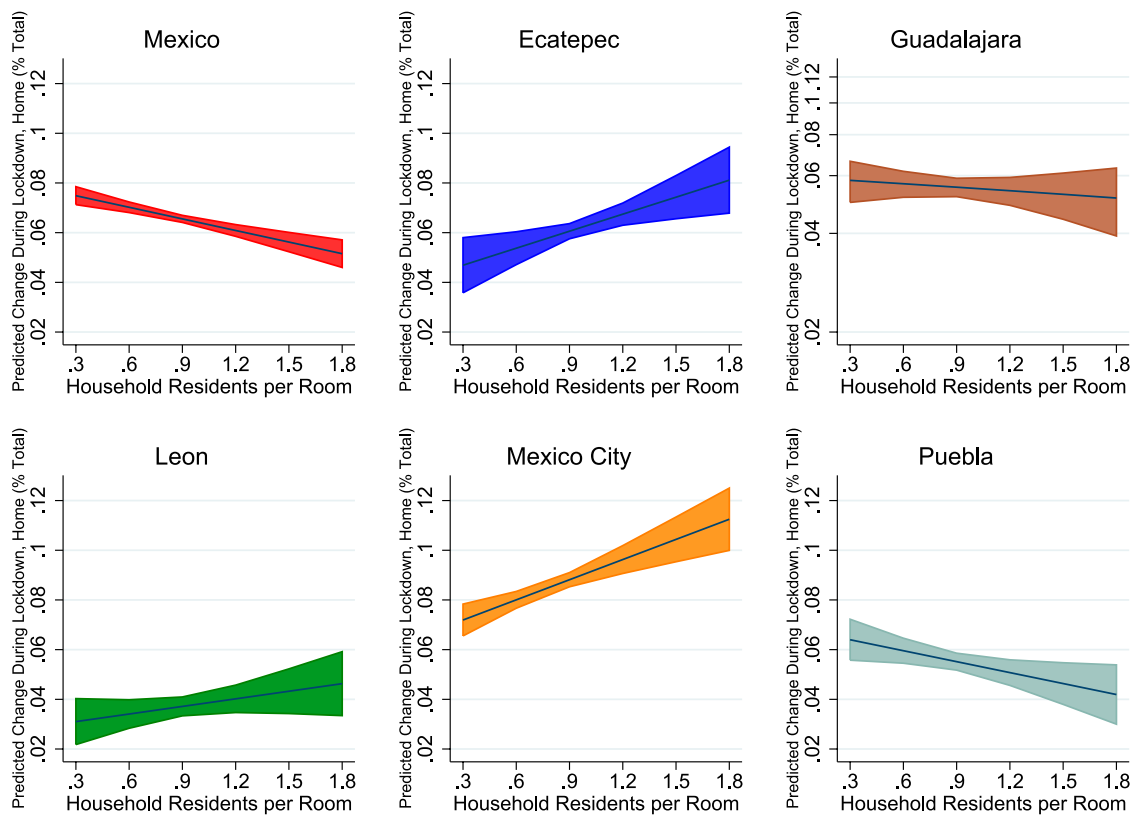
FIGURE 7 | Effect of national lockdown on home share, by income. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the *p* < 0.01 level for the full sample ("Mexico"), Ecatepec, and Puebla.

education places are less likely to be outside of home or work. In all places with a difference across education, individuals from less educated places are more likely to be at work after the national lockdown.

7.2 Change in Movement: Staying at Home

As we move into our analysis of changes in movement it is important to keep in mind the base level of risk that we see across individuals in different locations. While, as we will see, the rich areas of the city saw greater behavior change in response to the national lockdown, they are starting with a higher level of movement. Despite this, we see very mixed evidence from city to city in propensity to change individual risk profiles depending on income.

Figure 7 shows the dynamics we see after the initiation of the national lockdown. We modeled this regression analysis as an interaction term, in which the conditional effect shows the change in movement before and after the lockdown, as a function of income. For presentation purposes we show conditional effects plots in the main text and show the full results for all of our regression analysis in our **Supplementary Appendix**.

To begin, the values along the *y* axis (reflecting estimated increases in time spent at home after the national lockdown), vary considerably across places, with Mexico City seeing much bigger increases in staying at home across all income groups than

Guadalajara, León, or Puebla. Across our full sample (the plot labeled "Mexico"), controlling for city and date fixed effects, we find that individuals living in higher income census blocs increased their time at home more than individuals living lower income census blocs. Going from the richest to the poorest bloc meant increasing time at home to 7% from around 5%. This is not a large substantive effect, even if it is statistically significant. When we examine the specific cities, we see considerable variance in the relationship between our income proxy and change in the share of time spent at home.

Importantly, we see very different patterns in Ecatepec and León than in Mexico as a whole, Guadalajara, and Puebla. Mexico City had much higher behavior change in general, and lower income people changed their behavior more during the lockdown, with lower income census blocs spending a significantly higher percentage of their time at home. Overall it is difficult to characterize these different income areas as being more or less likely to stay at home in response to the national lockdown, and we see significant variation across the nation.

The change in behavior by education, shown in **Figure 8**, is more coherent than that by income. Overall and in each city, people in less educated census blocs adjusted their behavior less after the national lockdown. This relationship is relatively stark everywhere except León and Mexico City. In Mexico City, where a much smaller percentage of people are less educated, we
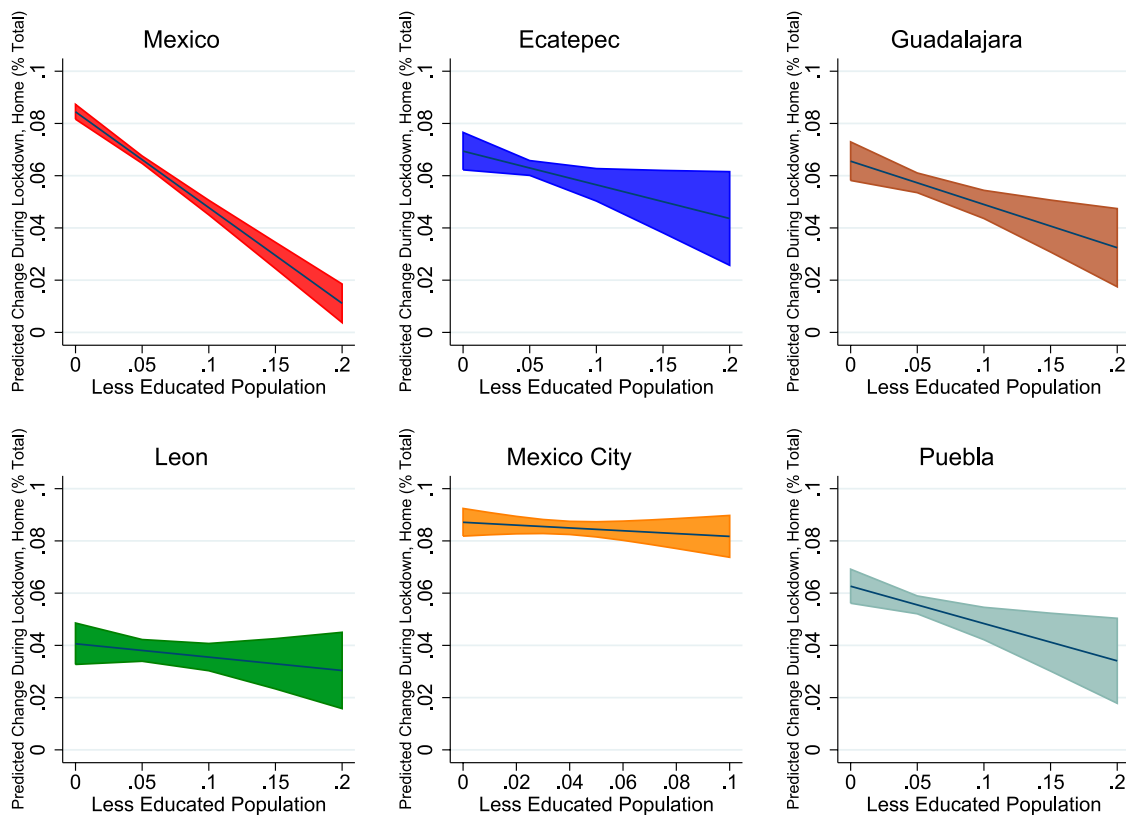
FIGURE 8 | Effect of national lockdown on home share, by education. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the *p* < 0.01 level for the full sample ("Mexico"), Ecatepec, Guadalajara, Mexico City, and Puebla.

nonetheless see a statistically significant difference depending on whether 0–10% of adults in that census bloc had not completed primary education.

7.3 Change in Movement: Going to Work

One of the attributes that predicts COVID 19 exposure in the United States is whether an individual needs to leave their home for work. We show changes in work share in **Figure 9**. Overall in our sample of Mexican cities, we do not find strong income drivers for whether people went to work during the pandemic. Moreover, we see a small increase in relative share of PED hits at work. This increase in work share reflects the considerable drop in share of time spent "other" places, because the share of time sums to 100%. Generally speaking, people from lower income census blocs spent a smaller share of their time at work than high income people did after the national lockdown. This difference is small, an increase of 2% among residents of high income census blocs, and an increase of about 1% in low income census blocs. However, several cities saw those living in low income places increasing their work share of time more than affluent areas. This was the case in León, for example, which saw no change in work share for residents of high income areas, but an increase of 2% for those from low income areas.

With regards to education, shown in **Figure 10**, we find almost no difference by education in share of hits from individuals' work sites. In our full sample of five cities, residents of high income census blocs increased the share of PED hits at work by about 2% and those from low income census blocs increased their work share by around 1%. In all cities except León, residents from high income areas increased their share of hits at work after the national lockdown. The difference in all places, however, in minuscule (shown in the size of the values on the *y* axis) across the education spectrum. Accordingly, it is not easy to attribute COVID 19 outcomes to differences in behavioral change by education group in going to work in the five studied Mexican cities. We see very little association between changes in work share of movement hits by education group.

7.4 Change in Movement: Going Other Places

Once we have identified where an individual lives and where an individual works, we can see what percentage of movement reflects "voluntary" trips outside of the home. We recognize that not all trips made to other places are voluntary if they reflect purchasing food or seeking medical care, so it is

FIGURE 9 | Effect of national lockdown on work share, by income. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the *p* < 0.01 level for the full sample ("Mexico"), Guadalajara, León, and Mexico City.
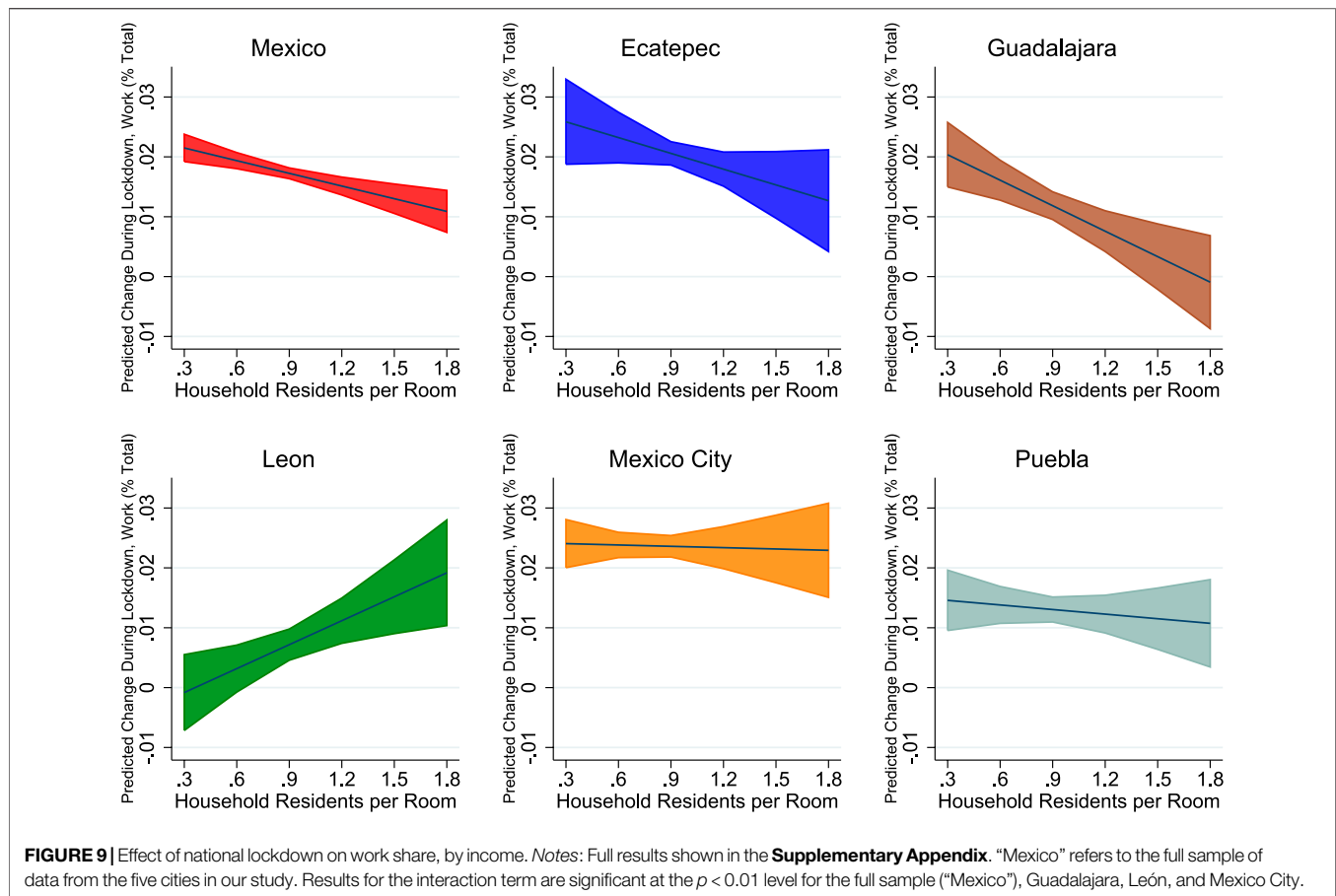
certainly an imperfect measure of risk. Nonetheless, it is our best indicator of behavior likely to be associated with COVID 19 risk-taking.

We see in **Figure 11** that in general (controlling for city and date fixed effects) individuals in low income census blocs reduced their trips to other places less than did people in richer places, at least in the pooled sample of all five cities. While residents in the highest income census blocs reduced their movements to other locations around 10% in comparison with pre-lockdown levels, in the lowest income census blocs individuals reduced their movement by around 8% on average. This is a statistically significant difference based on the coefficient of the interaction term shown in the **Supplementary Appendix**, but it is not a particularly large substantive difference. Moreover, this result varied considerably from place to place. In Ecatepec, León, and Mexico City, people in lower income areas reduced their trips to other places more than people in higher income areas. In Mexico City, for example, individuals in the lowest income census blocs reduced their movement to other places by 14%, while those in the highest income blocs reduced their trips by about 10%. In Guadalajara and Puebla we see that people from less affluent census blocs reduced their movement to other places less than people from higher income census blocs, but the difference is relatively small, from 5% in the low income blocs to 7% in the high income blocs.

The movement to other places is clearer as a function of education, shown in **Figure 12**. This result, showing individuals in less educated census blocs did not change their behavior as much as those in more educated areas is consistent with research from the United States at the Census bloc level (Jay et al., 2020; Weill et al., 2020). More educated locations reduced their share of time spent in "other" locations across our full sample, and in four out of five cities. This difference was substantial–individuals in highly educated areas reduced movement to other places around 10%, while those in the least educated census blocs reduced movement only around 3%. However, the differences were not remarkable in places such as Mexico City or León. In Ecatepec, in contrast, education is a stronger predictor, with those from less educated areas reducing their travel to other locations less (around 5%) than those in more educated census blocs (around 10%).

8 DISCUSSION AND IMPLICATIONS

This paper examines variation in individual risk behavior of people at different levels of income during the COVID 19 pandemic across cities in Mexico. We focus, in particular, on the variation in changes in behavior across those cities after the common national lockdown in Mexico on March 23, 2020. We
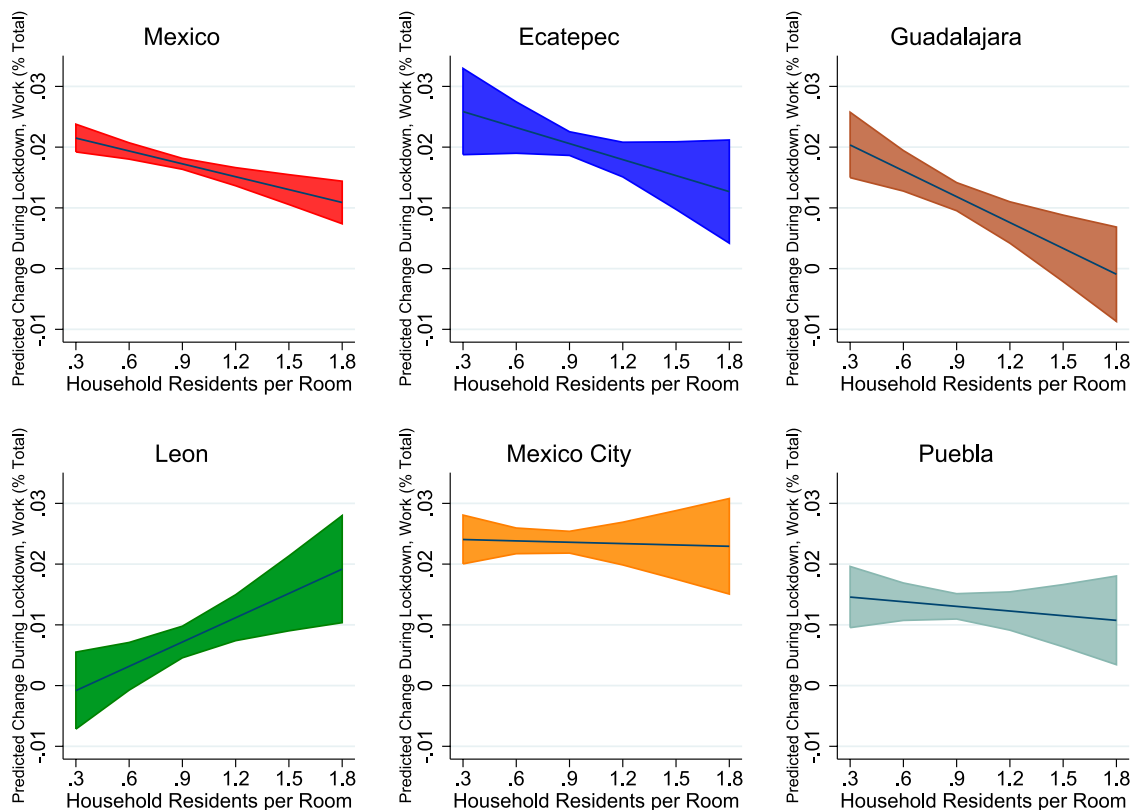
FIGURE 10 | Effect of national lockdown on work share, by education. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the $p < 0.01$ level for the full sample ("Mexico"), Ecatepec, León, and Mexico City.

find in general that lower income people spend more time at home and less time in non-work places outside the home than do affluent people. This is the case before and during the pandemic. Overall, therefore, we might expect lower income people would have less COVID 19 risk based on their individual movement. Our results show some degree of "regression to the mean"–that high income and more educated people spent less time at home and more time in "other" places prior to the lockdown, meaning they had more room to change their behavior toward staying at home and away from going to other locations after the lockdown. Our results thus contrasts with related work in the United States that focuses exclusively on changes in movement, rather than levels, to implicate low income people for putting themselves more at risk of COVID 19 exposure. Of course the pandemic in Mexico, as in the United States, is affecting poor people in greater numbers, despite these differences.

When we examine change in movement before and after the pandemic, however, we see in particular that less educated people changed their behavior less in response to the national lockdown. This finding is consistent with related research from the United States linking lower levels of education to increased risk of exposure to the coronavirus. These findings (especially for home share and "other" share of PED hits) suggest that

education is an important factor for people to be aware of the risks of the pandemic and ways to slow the virus spread.

Importantly, we see considerable variation across places in the changes in movement. Across the board citizens changed their behavior much more in (especially) Mexico City and Ecatepec than in León and Puebla. While low income residents in Guadalajara and Puebla were less likely to spend more time at home after the national lockdown, in Ecatepec and León people in low income areas increased their share of time at home relative to people living in affluent areas. In Mexico City we find very little difference between high and low income places in their increased propensity to stay home.

We find minimal income differences in the propensity to go to work across our five cities, based on either income or education. The city to city variation in share of hits at work was larger than within-city income differences. People in Mexico City, regardless of income, were less likely to go to work after the national lockdown than people in the other five cities. We see essentially no education effect on changes in share of hits at individuals' workplaces after the lockdown.

The percentage of time spent away from home, but not at work, is the clearest indicator of "voluntary" COVID 19 risk. Overall and during the pandemic, low income people spend less
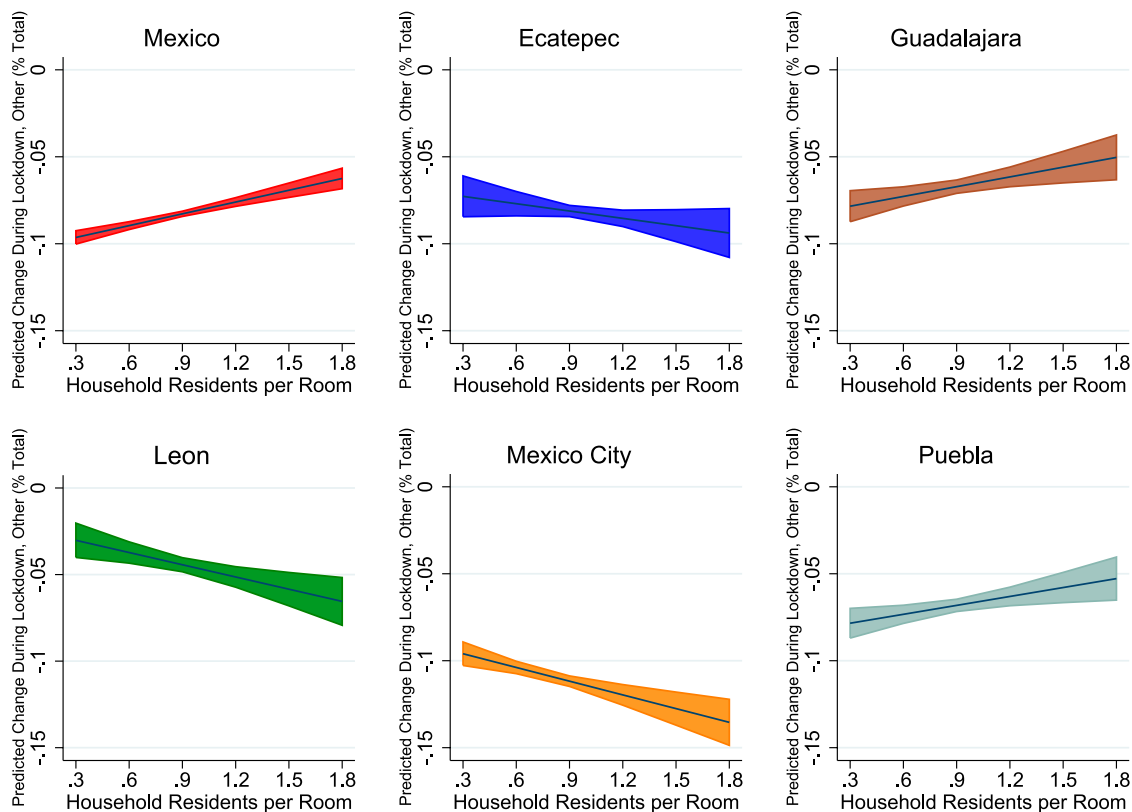
FIGURE 11 | Effect of national lockdown on other share, by income. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the *p* < 0.01 level for the full sample ("Mexico"), Ecatepec, Guadalajara, León, Mexico City, and Puebla.

time at "other" places. In Mexico City, León, and Ecatepec, individuals in low income census blocs reduced the percentage of time they spent in those other places even more. In Puebla and Guadalajara, they reduced their time spent in other places less than those in affluent areas. People in low education census blocs did not reduce their movement to other places as much as those in higher education blocs. These differences across locations suggest that interventions to stop the spread may need to be tailored to the locality.

Our paper offers contributions to the existing literature on COVID 19 and federalism. Overall we find a great deal of variation in behaviors and outcomes across the federal territory in the five examined cities. We find that low income people adapted their behavior more by staying home more and going other places less in more affluent and educated cities such as Mexico City. We see the opposite in less affluent and educated cities such as Puebla. Variation of behavior among people across cities may point to heterogeneity in not only the sociodemographic circumstances of individuals across the territory that might affect their risk profiles but also the governance across locations that impact behavior and healthcare outcomes. We discuss some of these linkages in the next section.

8.1 Implications for Federalism and Public Policy

This article is part of a compilation of research examining federalism in turbulent times. The COVID 19 crisis certainly qualifies as turbulent times across the world, and specifically and particularly in Mexico. Federalism is characterized by policy differentiation between states and national governments. The justification for federalism in these nations is their policy adaptiveness and responsiveness, given the varied conditions within national borders. It is quite reasonable to believe that policy needs are different for highly developed, affluent metropolitan area vs. more rural or industrialized areas. In theory, federalism provides options to tailor policies to these different circumstances, enabling Mexico to address its challenges of urban agglomeration in Mexico City while at the same time lifting people of out poverty and offering high quality employment to enhance the local economy in less developed areas (Tiebout, 1956; Smith and Revell, 2016). Federalism may also allow for local accountability, whereby citizens across the nation hold politicians accountable for their local outcomes (Oates, 1999).

Federalism's most notable effect on policy-making and policy outcomes, whether positive or negative, is to cause spatial

FIGURE 12 | Effect of national lockdown on other share, by education. *Notes*: Full results shown in the **Supplementary Appendix**. "Mexico" refers to the full sample of data from the five cities in our study. Results for the interaction term are significant at the *p* < 0.01 level for the full sample ("Mexico"), Ecatepec, Guadalajara, León, Mexico City, and Puebla.
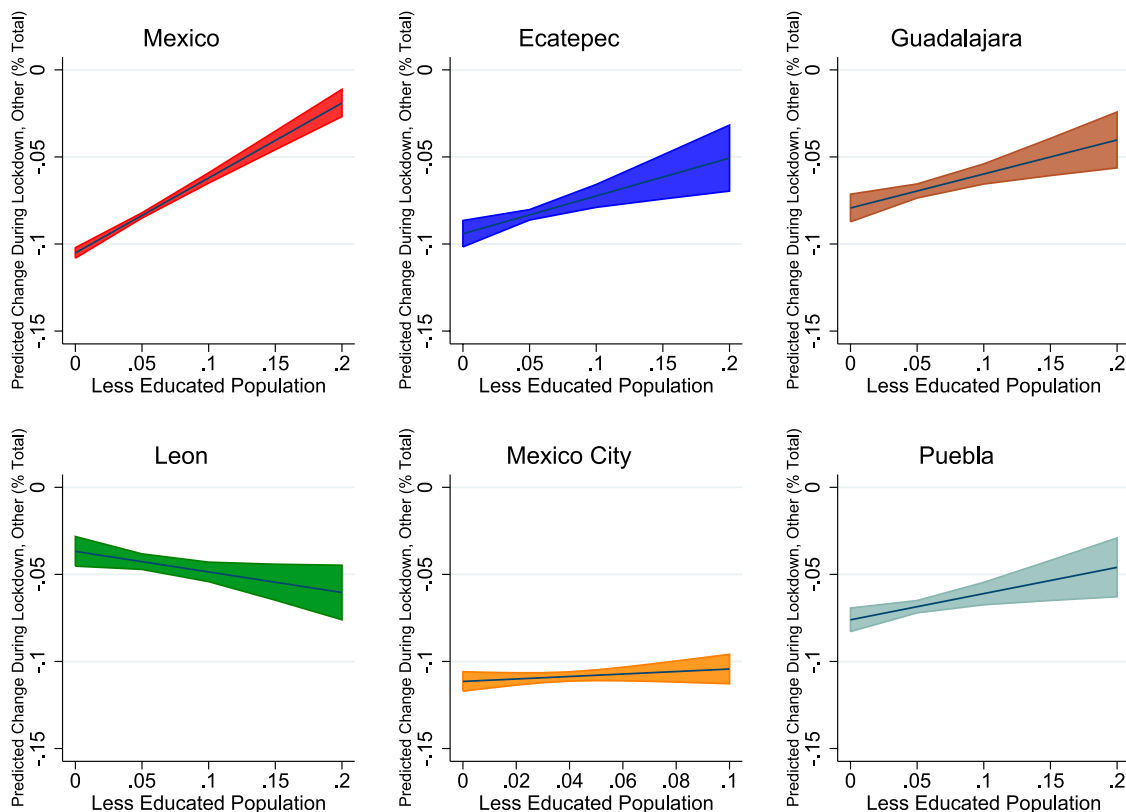
variance in both policies and outcomes (Holahan et al., 2003; Greer and Jacobson, 2010). Mexico has seen wide variance in COVID 19 cases, and as we have shown, behavior in citizens during the pandemic. On the policy side, federalized health care systems vary tremendously by geographic jurisdiction, even when the economic and social conditions across those areas is similar (Birn, 1999; Michener, 2018). Federalism is associated with considerably higher spatial inequality in income and productivity across subnational regions, particularly in the developing world. Federalism is also associated with weaker welfare states and higher variation in access to and quality of healthcare programs (Rogers, 2021). Federalism thus likely means variation in incidence and response to COVID 19 that ultimately hurts low income people and low income places (Niedzwiecki, 2018). Our results suggest that structures of inequality and poverty, and government failures to equilibrate living conditions, may be driving worse outcomes for low income people in Mexico.

Federalism appears to be a particularly challenging institutional form when facing crisis. One of the purposes of federalism is to slow down policy-making, whether to preserve status quo policies or to make policy-making more deliberative (Tsebelis et al., 2002). Federalism has been shown to be a clear barrier to quick efforts to address crisis situations (Wibbels, 2005;

Conlan, 2006; Wallack and Srinivasan, 2006). COVID 19 is clearly a crisis situation, and one that federal governments characterized by high interpersonal and interregional inequality have, in particular, struggled to adequately address.

Pandemics require national coordination and intergovernmental cooperation given that individuals (and the virus within those individuals) cross administrative borders. While the local contexts have differed throughout the pandemic as COVID 19 spread has moved from place to place, local policymakers throughout the nation have struggled to adapt to changing circumstances and citizens' pressure to loosen restrictions. Federal nations such as Mexico may have struggled in particular due to national politicians' incentives to shift decision-making on unpopular policies (such as movement-restricting lockdowns) to the sub-national level, without corresponding resources or support to enforce those policies (Ward and Rodríguez, 1999; Diaz-Cayeros, 2006). This blame shifting is common in Latin American federations, where mandates are pressed upon already cash-strapped sub-national governments, leading to unsuccessful policy implementation (Falleti, 2010; Rogers, 2014). The feeble lock down effort at the national level left policy action on COVID to states and cities, with corresponding variation in outcomes as those places took different approaches.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

MR wrote the majority of the manuscript and ran some of the data analysis. YZ conducted the majority of the data analysis. AM accessed the movement data and directed the extraction and

cleaning of the movement data and wrote **Section 4**. MP organized and cleaned the movement data, and created the GIS maps and wrote **Section 4**. ML organized and cleaned the movement data.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2021.631826/full#supplementary-material

REFERENCES

AFP (2021). Mexico Begins Reopening after Two-Month Lockdown. URL Available at: *https://medicalxpress.com/news/2020-06-mexico-reopening-two-month-lockdown.html* (Accessed July 20, 2020).

Agren, D. (2020). Coronavirus Crisis Deepens Mexico's Misery. URL Available at: *https://www.usatoday.com/story/news/world/2020/04/14/covid-19-coronavirus-crisis-deepens-mexicos-misery/2985920001/* (Accessed July 20, 2020).

Banerjee, A. V., and Mullainathan, S. (2008). Limited Attention and Income Distribution. *Am. Econ. Rev.* 98 (2), 489–493. doi:10.1257/aer.98.2.489

Birn, A.-E. (1999). Federalist Flirtations: The Politics and Execution of Health Services Decentralization for the Uninsured Population in Mexico, 1985-1995. *J. Public Health Pol.* 20 (1), 81–108. doi:10.2307/3343260

Calabrese, F., Di Lorenzo, G., Liu, L., and Ratti, C. (2011). Estimating Origin-Destination Flows Using Opportunistically Collected mobile Phone Location Data from One Million Users in Boston Metropolitan Area. *IEEE Pervasive Comput.* 10, 36–44. doi:10.1109/mprv.2011.41

Cevik, M., Marcus, J., Buckee, C., and Smith, T. (2020). SARS-CoV-2 Transmission Dynamics Should Inform Policy. Technical report. URL Available at SSRN: *https://ssrn.com/abstract=3692807, month = 09* (Accessed September 14, 2020)

Conlan, T. (2006). From Cooperative to Opportunistic Federalism: Reflections on the Half-century Anniversary of the Commission on Intergovernmental Relations. *Public Adm. Rev.* 66 (5), 663–676. doi:10.1111/j.1540-6210.2006.00631.x

Daddi, B. (2019). Cuebiq's Data for Good Program Provides UNICEF with High-Precision Human Mobility Data for Real-Time Response to Humanitarian. URL Available at: *https://www.bloomberg.com/press-releases/2019-09-10/cuebiq-s-data-for-good-program-provides-unicef-with-high-precision-human-mobility-data-for-real-time-response-to-humanitarian* (Accessed April 15, 2020).

Diaz-Cayeros, A. (2006). *Federalism, Fiscal Authority, and Centralization in Latin America*. New York: Cambridge University Press.

Díaz-Cayeros, A. (2020). State Capacity and Mexico's COVID 19 Response. Available at howpublished =: https://medium.com/@adiazcayeros/state-capacity-and-mexicos-covid-19-response-3696295312f1 (Accessed 09 22, 2020).

Dupas, P., and Robinson, J. (2013). Why Don't the Poor Save More? Evidence from Health Savings Experiments. *Am. Econ. Rev.* 103 (4), 1138–1171. doi:10.1257/aer.103.4.1138

Falleti, T. G. (2010). *Decentralization and Subnational Politics in Latin America*. New York: Cambridge University Press.

Flannery, N. P. (2020). Why Are So Many People Dying of Covid-19 in Mexico? URL Available at: *https://www.forbes.com/sites/nathanielparishflannery/2020/09/03/why-are-so-many-people-dying-of-covid-19-in-mexico/?sh=67fdc62118e7* (Accessed October 1, 2020).

Frye, C., Nordstrand, E., Wright, D. J., Terborgh, C., and Foust, J. (2018). Using Classified and Unclassified Land Cover Data to Estimate the Footprint of Human Settlement. *Data Sci. J.* 17, 20. doi:10.5334/dsj-2018-020

Giraudy, A., Snyder, R., and Rios, E. (2020). *Federalism and COVID Responses*. Technical report. Washington, DC and Providence: American University and Brown University.

Goodman-Bacon, A., and Marcus, J. (2020). Using Difference-In-Differences to Identify Causal Effects of Covid-19 Policies. DIW Berlin Discussion Paper No. 1870. Available at: https://ssrn.com/abstract=3603970.

Greer, S. L., and Jacobson, P. D. (2010). Health Care Reform and Federalism. *J. Health Polit. Pol. L.* 35 (2), 203–226. doi:10.1215/03616878-2009-050

Holahan, J., Weil, A., and Wiener, J. M. (2003). *Federalism and Health Policy*. Washington, DC: The Urban Insitute.

Human Rights Watch (HRW) (2019). Mobile Location Data and COVID 19: Q & A. Technical report. Available at: https://www.hrw.org/news/2020/05/13/mobile-location-data-and-covid-19-qa# (Accessed April 15, 2020).

Huang, X., Li, Z., Lu, J., Wang, S., Wei, H., and Chen, B. (2020). Time-series Clustering for home Dwell Time during COVID-19: what Can We Learn from it? *medRxiv*. doi:10.1101/2020.09.27.20202671

Hummel, C. (2017). Disobedient Markets: Street Vendors, Enforcement, and State Intervention in Collective Action. *Comp. Polit. Stud.* 50 (11), 1524–1555. doi:10.1177/0010414016679177

INEGI (2020). Censo de Población y Vivienda 2010. URL Available at: *https://www.inegi.org.mx/programas/ccpv/2010/default.html#Microdatos* (Accessed September 15, 2020).

Jalan, J., and Ravallion, M. (2001). Behavioral Responses to Risk in Rural China. *J. Dev. Econ.* 66 (1), 23–49. doi:10.1016/s0304-3878(01)00154-7

Jay, J., Bor, J., Nsoesie, E. O., Lipson, S. K., Jones, D. K., Galea, S., et al. (2020). Neighbourhood Income and Physical Distancing during the COVID-19 Pandemic in the United States. *Nat. Hum. Behav.* 4 (12), 1294–1302. doi:10.1038/s41562-020-00998-2

Lee, D. W., and Rogers, M. (2019). Measuring Geographic Distribution for Political Research. *Polit. Anal.* 27 (3), 263–280. doi:10.1017/pan.2019.14

Liautaud, P., Huybers, P., and Santillana, M. (2020). Fever and Mobility Data Indicate Social Distancing Has Reduced Incidence of Communicable Disease in the United States. URL AVailabel at: *https://arxiv.org/pdf/2004.09911.pdf* (Accessed October 15, 2020).

Michener, J. (2018). *Fragmented Democracy: Medicaid, Federalism, and Unequal Politics*. New York: Cambridge University Press.

Newzoo (2018). Global Mobile Market Report: Insights into the World's 3 Billion Smartphone Users. Technical report.

Niedzwiecki, S. (2018). *Uneven Social Policies: The Politics of Subnational Variation in Latin America*. New York: Cambridge University Press.

Oates, W. E. (1999). An Essay on Fiscal Federalism. *J. Econ. Lit.* 37 (3), 1120–1149. doi:10.1257/jel.37.3.1120

Ramirez, R. (2020). Mexican Families Protest at Hospital Hit by Coronavirus. url Available at= https://www.reuters.com/article/us-health-coronavirus-mexico-hospital/mexican-families-protest-at-hospital-hit-by-coronavirus-idUSKBN22E0TB (Accessed 09 22, 2020).

Reuters (2020). Mexico Declares Health Emergency as Coronavirus Death Toll Rises. URL Available at: *https://www.reuters.com/article/us-health-coronavirus-mexico/mexico-declares-health-emergency-as-coronavirus-death-toll-rises-idUSKBN21I05K* (Accessed October 20, 2020).

Rogers, M. (2021). Federalism and the Welfare State in Latin America. *Reg. Fed. Stud.* 31, 163–184. doi:10.1080/13597566.2020.1749841

Rogers, M. Z. (2014). Taxing with Dictators and Democrats: Regime Effects, Transfers and Revenue in Argentina's Provinces. *J. Polit. Latin America* 6 (1), 3–44. doi:10.1177/1866802x1400600101

Smith, H. J. M., and Revell, K. D. (2016). Micro-incentives and Municipal Behavior: Political Decentralization and Fiscal Federalism in Argentina and Mexico. *World Dev.* 77, 231–248. doi:10.1016/j.worlddev.2015.08.018

Tanaka, T., Camerer, C. F., and Nguyen, Q. (2010). Risk and Time Preferences: Linking Experimental and Household Survey Data from Vietnam. *Am. Econ. Rev.* 100 (1), 557–571. doi:10.1257/aer.100.1.557

Thompson, S. A., and Warzel, C. (2019). Twelve Million Phones, One Dataset, Zero Privacy. URL Available at: *https://www.nytimes.com/interactive/2019/12/19/opinion/location-tracking-cell-phone.html* (Accessed April 25, 2020).

Tiebout, C. M. (1956). A Pure Theory of Local Expenditures. *J. Polit. economy* 64 (5), 416–424. doi:10.1086/257839

Tsebelis, G., et al. (2002). *Veto Players: How Political Institutions Work*. Princeton: Princeton University Press.

Wallack, J., and Srinivasan, T. N. (2006). *Federalism and Economic Reform: International Perspectives*. New York: Cambridge University Press.

Ward, P. M., and Rodríguez, V. E. (1999). New Federalism, Intra-governmental Relations and Co-governance in Mexico. *J. Lat. Am. Stud.* 31, 673–710. doi:10.1017/s0022216x99005404

Weill, J. A., Stigler, M., Deschenes, O., and Springborn, M. R. (2020). Social Distancing Responses to COVID-19 Emergency Declarations Strongly Differentiated by Income. *Proc. Natl. Acad. Sci. USA* 117 (33), 19658–19660. doi:10.1073/pnas.2009412117

Wibbels, E. (2005). *Federalism and the Market: Intergovernmental Conflict and Economic Reform in the Developing World*. New York: Cambridge University Press.

Wright, A. L., Sonin, K., Driscoll, J., and Wilson, J. (2020). "Poverty and Economic Dislocation Reduce Compliance with Covid-19 Shelter-In-Place Protocols," in University of Chicago, Becker Friedman Institute for Economics Working Paper (2020-40).

Zang, E., West, J. S., Kim, N., and Pao, C. (2020). US Regional Disparities in Physical Distancing: Evaluating Racial and Socioeconomic Divides during the COVID-19 Pandemic. *SocArXiv*. doi:10.31235/osf.io/e6msz

Federal Institutions and Strategic Policy Responses to COVID-19 Pandemic

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This essay examines the policy response of the federal and regional governments in federations to the COVID-19 crisis. We theorize that the COVID-19 policy response in federations is an outcome of strategic interaction among the federal and regional incumbents in the shadow of their varying accountability for health and the repercussions from the disruptive consequences of public health measures. Using the data from the COVID-19 Public Health Protective Policy Index Project, we study how the variables suggested by our theory correlate with the overall stringency of public health measures in federations as well as the contribution of the federal government to the making of these policies. Our results suggest that the public health measures taken in federations are at least as stringent as those in non-federations, and there is a cluster of federations on which a bulk of crisis policy making is carried by subnational governments. We find that the contribution of the federal government is, on average, higher in parliamentary systems; it appears to decline with the proximity of the next election in presidential republics, and to increase with the fragmentation of the legislative party system in parliamentary systems. Our analysis also suggests that when the federal government carries a significant share of responsibility for healthcare provision, it also tends to play a higher role in taking non-medical steps in response to the pandemic.

Keywords: federalism, political institutions, public health, COVID-19, health institutions

INTRODUCTION

From the early days of the COVID-19 pandemic, scholarly consensus has been that public health policies help mitigate the spread of the disease (Hsiang et al., 2020; Pueyo 2020). Did federal institutional design foster strategic incentives for political incumbents to adopt strong public health pandemic policies? In this essay we answer this question as a qualified "Maybe." We base our conclusions on worldwide evidence of national and subnational public health policy responses during the onset period of the pandemic, in the winter-spring 2020 (Centers for Disease Control and Prevention 2016). Here within we offer a theoretical framework for why governments of different

levels behave differently in a crisis in differently designed federations and use data on pandemic policy-making to examine the response of federal and subnational incumbents.

During the onset of the COVID-19 pandemic, federal institutions and federal political processes served to both constrain and incentivize politicians' responses to this crisis. While federations on average adopted more stringent policies than unitary states (Shvetsova et al., 2020b), there was substantial variation across federations (e.g., VanDusky-Allen et al., 2020). The research has argued that federations have a greater supply of policy actors capable of generating the pandemic policy response; because these (redundant) actors can independently generate responses at national and subnational levels, such systems have the capacity to supply the necessary policy response faster (Shvetsova et al., 2020b). Yet the capacity for policy agents to act does not immediately imply the incumbents' willingness to act. Indeed, strategic calculus may push them to the contrary. This is where our present argument is situated: which governments in a federation were willing to adopt the costly and painful public health policies to mitigate a pandemic? Which governments acted, and which effectively opted to "sit it out"? Did the federal institutional design influence pandemic policies insofar as where they were adopted (federally or subnationally) and how stringent they were overall?

Politicians' response to a crisis involves the strategic choice that the incumbents in federations face in regard to whether to respond to the crisis by making a policy or to avoid taking responsibility. Forced to balance the ultimate health outcomes and the disruptive side-effects of public health measures, as both affect their own election prospects, elected officials, we assume, have carefully considered which policies to adopt or not adopt. As they were making these choices, they also tried to anticipate what the other policymakers were doing at the same time (Seabright 1996; Gersen 2010 p. 326). A public health policy action at one level spared the political incumbents at another level of government the possible costs of making the actual policies and the repercussions of a higher number of pandemic casualties.

We adopt the theoretical premise that expectations of popular (electoral) accountability underpin the strategic choices of the political incumbents at different levels of government. We theorize that the fear of possible repercussions from the adverse immediate effects of the public health measures, as well as the responsibility for health outcomes, depend on a host of institutional and political factors. We explore these factors both theoretically and empirically further in the paper.

Electoral accountability in general is considered to reflect retrospective judgment of the performance of government by the electorate. Voters simply look back at the election time to punish or reward the incumbent on the most significant issue areas. The pandemic-time accountability is harder to define because the issue dimensions and lines of division in the electorate are distinct from previous experience. Some guidance is offered by the literature on incumbent accountability in crisis management. First, evidence shows that voters view the negative outcomes of external shocks as at least in part the responsibility of the political incumbents. Electorates punish incumbents for disasters and catastrophes beyond their control such as weather events (Gasper and Reeves 2011), floods (Heersink et al., 2017), forest fires (Lazarev et al., 2014), earthquakes and tsunamis (Carlin et al., 2014), draughts and even shark attacks (Achen and Bartels, 2004) etc. The likelihood of the incumbent's political survival decreases as the deaths in disasters and catastrophes increase (Flores and Smith 2013).[1] What the literature does not tell us (due to the lack of evidence to draw meaningful comparisons), is whether this documented punishment holds incumbents accountable for the acts of nature, or for the shortcomings in their mitigation policies (as in: the pain of the disaster could have been less with better policy response), or even for the immediate hardships inflicted on the voters while implementing appropriate and necessary policy responses (e.g., Healy and Malhotra 2009). Any and all of these theoretical mechanisms can be the culprit.

Since federalism creates a particularly strong "clarity of responsibility problem," it has been pointed out that the politicians can leverage this confusion inherent to the federal institutional arrangements and oftentimes evade responsibility for their actions (Powell and Whitten, 1993; Anderson, 2006; Hobolt et al., 2013). However, voters seem to hold appropriate actors accountable when issues on stake are salient and information regarding the responsible level is readily available (Arceneaux, 2006; Malhotra and Kuo, 2008; Leon, 2011). There is evidence that voters navigate the basics of institutional constraints and some financial fundamentals as they attribute responsibility to a specific level of government (Gasper and Reeves, 2011).

In the current pandemic we start seeing statistical and anecdotal evidence of targeted accountability both for the disruptive effects and for the health outcomes, as well as that accountability being channeled toward appropriate political incumbents. For example, in the early weeks of 2021, California Governor Gavin Newsom faced a threat of being recalled by California voters. The recall initiative was citing the slow roll out of vaccines in California compared to other states coupled with concerns of constrained economic activity, thus both the disruption and health-related grievances. Recall threat to Newsom was viewed as serious, despite his 50 percent approval rating and a pandemic year's worth of praise from national and state leaders, including then President Donald Trump (Reston 2021). Leaders in the times of crizes situations understand that current circumstance, policymaking, and crisis decision-making can outweigh ideology and past accomplishments with the voters, and even the federal design itself can be brought into question (Leon and Garmendia Madariaga 2020).

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[1]Some argue that voters do not act as rational principals in these circumstances as their judgments are clouded by attribution bias wrongfully attributing the financial and human toll to their incumbents in "blind retrospection" (Achen and Bartles, 2004). For social psychologists, voters inflict undue costs on the incumbents: their decisions are marred by cognitive biases (Tversky and Kahneman 1974), are inclined to oversample negative information (Rozin and Royzman 2001), and have clouded judgment due to negative emotional response to the catastrophe (Malhotra and Kuo 2009). While these may contribute to the variance, we here are looking for the politicians' anticipation of rationality-based accountability.

There is more than one way in which the constituents are affected by the mitigation policies. First, such measures of course help reduce the transmission of communicable diseases, minimizing their damage to the human health from the virus and to the health care infrastructure from the magnitude of the virus spread. But in addition and adversely, such measures intrude into the daily activities of the residents: they reduce opportunities for trade and provision of services, change how people work and interact, disrupt the existing relations. Among other things, the mitigation policies aimed to slow the spread of the virus have carried heavy economic costs: dramatic slowing down of economic activity, reduced or negative growth, an increase in unemployment, and potentially a drastic economic restructuring.

Here we take as a sustained hypothesis that the political incumbents expect to incur the costs of the voters responding both to the pain of the policies themselves and to the horror of the final pandemic tally, conditionally on their pre-pandemic institutional role. We label the former as disruption electoral costs since they emerge primality from the disruption in the routine activities imposed by the public health measures. We label the electoral punishment for the negative health outcomes as "health" electoral costs. The incumbent can increase her utility both by avoiding policies that cause disruption and by making policies that keep people safe. It is of course immediately apparent that there is a tension between the policy decisions that could lead to these two objectives.

Decentralized policy making offered a hope for the incumbents at different levels that someone else could make the first painful step. As a result, as much as the incumbents might have valued the preservation of the public health, they had incentives to avoid taking the lead on imposing public health restrictions, waiting for the other governments to act. If an incumbent could avoid issuing stringent COVID-19 policies while benefitting from the stringent policies issued by the other level of government, she would generally prefer to do so. This is generally a possibility in federations, and only occasionally so in unitary states (Hollander 2010; Dardanelli et al., 2019; Adeel et al., 2020; Paquet and Schertzer 2020).

In this essay, we identify and discuss two facets of the incentives engendered by the federal institutional design that could drive governments' strategies in public health policy responses to the pandemic. The first is the factors that concentrate or diffuse the electoral costs of adopting stringent mitigation policies for the national executives, including proximity of elections, political fragmentation of the decision-making bodies, and presidentialism. More concentrated accountability gives the incumbents a stronger motivation to avoid taking politically risky steps. The second is the institutions that determine which levels of government and to what extent are responsible for protecting population health. Whenever the federal government shares in the responsibility for healthcare with subnational governments, it may expect to be blamed for poor health outcomes caused by the uncontrolled health crisis.

In what follows, we address each of these in turn by comparing the public health policies of federal and unitary states as well as across the federations during the onset period of the pandemic,

between January 24, 2020 and april 24, 2020 (Centers for Disease Control and Prevention 2016). As our dependent variables we use the overall stringency of the public health restrictions imposed by april 24, 2021 (Shvetsova et al., 2020a) as well as the ratio of the stringency of the policies created by the federal government to the overall stringency of the restrictions imposed by the federal and subnational governments. Given the small number of observations and the observational nature of the data, our analyses can provide only suggestive evidence.

We start in the next section by defining and comparing the stringency of COVID-19 mitigation policies between federal and unitary states. This comparison establishes that federations did not under-perform as compared to unitary nations despite the coordination problem between the levels of government.[2] We also show that more of the protective policy stringency can be attributed to subnational incumbents in federations than in unitary states. Following that and from *Variation in Policy Responses Among Federal States* on, we focus on federations only. In *Variation in Policy Responses Among Federal States*, we explore the effects of the political factors on the hesitance of the federal level to engage in painful policy making and introduce the institutional determinants of stronger accountability for health during the pandemic. In *Institution in Healthcare and Variation in Policy Responses*, we introduce the compound indicators capturing the variation of health-specific institutions in federations that affect the respective assignment of accountability for the health outcomes to governments at different levels. There we analyze the impact of institutions that structure governments' involvement in health care on the strategic options that are available to political incumbents in crisis policy-making. *Conclusion* summarizes our observations and concludes.

COVID-19 POLICY RESPONSE IN FEDERATIONS VERSUS UNITARY STATES

As a first step in our inquiry, we compare federations' performance in COVID-19 mitigation policy-making against the backdrop of the more globally numerous unitary states. Did the efforts invested by the incumbent differ between federations and non-federations, and more generally, between the more and less centralized polities? How much of such variation was attributable to the subnational governments supplying stringent public health policies?

The data that we use are publicly available as the Dataset on the Institutional Origins of COVID-19 Public Health Protective Policies (Shvetsova et al., 2020a). The data records and codes in multiple categories and on ordinal scales the COVID-19 mitigation policies adopted by national and subnational governments around the world. The fifteen public health categories include the initiation of a state of emergency, self-

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[2]Arguably, the very multiplicity and duplication of their decision nodes of policy making made federations as decision systems more responsive to the onset of this new threat (Shvetsova et al., 2020b)

FIGURE 1 | Average total PPI as of April 24, 2020 and decentralization.
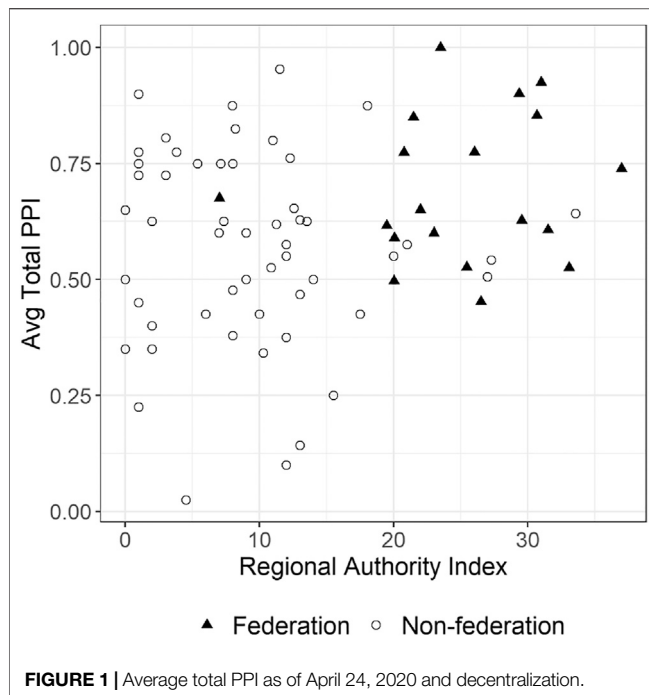
isolation and quarantine, border closures, limits on social gatherings, closings of schools, entertainment venues, restaurants, non-essential businesses, government offices, and public transportation systems, work from home requirements, lockdowns and curfews, and mandatory wearing of protective equipment. Note that between and within the policy categories, there is variation on their potential to stop the spread of coronavirus. To account for this variation, more restrictive policies are weighed more heavily in the index.[3] The resulting Protective Policy Indices (PPIs) capture the extent to which the totality of the imposed measures tightens the channels through which the virus can be transmitted. They range between 0 and 1, where 0 refers to the absence of any restrictions, and one refers to the most severe restrictions along all the dimensions of transmission control, viz. complete closure of intra-state and interstate borders, closure of all non-essential businesses, ban on any gatherings, the mandates to the residents to stay at home, etc.

PPI measures in the dataset are calculated daily for each subnational unit as 1) based on federally issued policies only, 2) based on sub-nationally issued policies only, and 3) based on the most stringent policy level (either from federal or from subnational policies) in each of the constituent policy categories (Total PPI). For the purposes of the cross-national comparisons, we here are taking the national averages of PPIs for the subnational units, weighed by the units' population shares: *National*, *Average Subnational*, and *Average Total PPIs*. The dataset covers 73 countries at national and subnational levels between January 24, 2020 and April 24, 2020. These 73 countries

contain over 1,660 subnational units, each supplying daily PPI values. Nineteen countries in the dataset are federations as defined by their constitutions. The 19 federations among themselves contain 462 subnational units (the list of countries and included subnational units can be found in **Supplementary Appendices S2, S3**).

In what follows, we focus on the stringency of public health policies reached on April 24, 2020. This day marked roughly the endpoint of the period of non-decreasing public health response to COVID-19 pandemic worldwide. Thus, we will consider the stringency of public health policies on this day as indicative of how far individual governments were willing to go to protect public health when confronted with a global health emergency.

In **Figure 1** we show the Average Total PPI for 73 countries as of April 24. The Figure distinguishes between the nations that are unitary according to their constitutions (hollow circles) and federal nations (filled triangles). At the same time, Average Total PPI in **Figure 1** is plotted against the level of decentralization as measured by the Regional Authority Index (Hooghe et al., 2016) for unitary and federal states alike. Neither the countries that are federal by constitution, nor those scoring higher on the decentralization scale were behind in their achieved policy stringency. If anything, **Figure 1** suggests that decentralization and federalism were associated with stronger overall public health pandemic response.

Figure 2 shows the distributions of the Average Total PPI, National PPI, and Average Regional PPI across countries broken down into federations and non-federations.

The subsample of federations as a whole did better on the Average Total and the Average Regional PPIs. The Average Total PPI for federations was 0.69 while for non-federations it was 0.56. But it is the variation in the federal subsample that draws the eye. The distributions of the National and Average Subnational PPI among federations exhibit clear bi-modality: in addition to a cluster of cases in which the central government takes almost all responsibility for making public health policies, federations include a cluster of cases in which the subnational governments take over a large share of responsibility for public health policy-making. Thus, federations achieved same or better overall public health protection *via* a pattern of government action different from that in unitary states (i.e., the Average Subnational PPI for federations is 0.28 while for non-federations it is 0.02). In federations the policies made at the subnational level may have compensated for the lack of the policies made at the national level and/or might make national level policy-making unnecessary. The other observation is that the combinations of policy strategies of national and subnational governments differed within the federal subsample. Whether this was influenced by their institutional design, and if so then how, is the puzzle that we seek to address below.

VARIATION IN POLICY RESPONSES AMONG FEDERAL STATES

As in **Figures 1**, **2**, federations on average invested at least as much policy-making effort in limiting the spread of the pandemic

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[3]See the **Supplementary Appendix S1** for a complete list of the policy categories, specific policies, and their weights in the index.
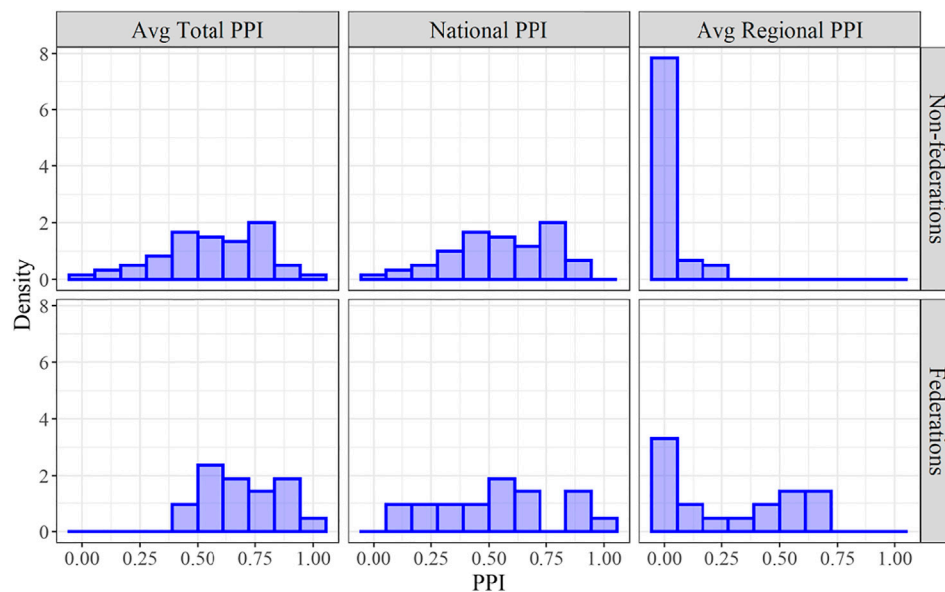
FIGURE 2 | The distributions of achieved PPI among federations and non-federations, as of April 24, 2020.
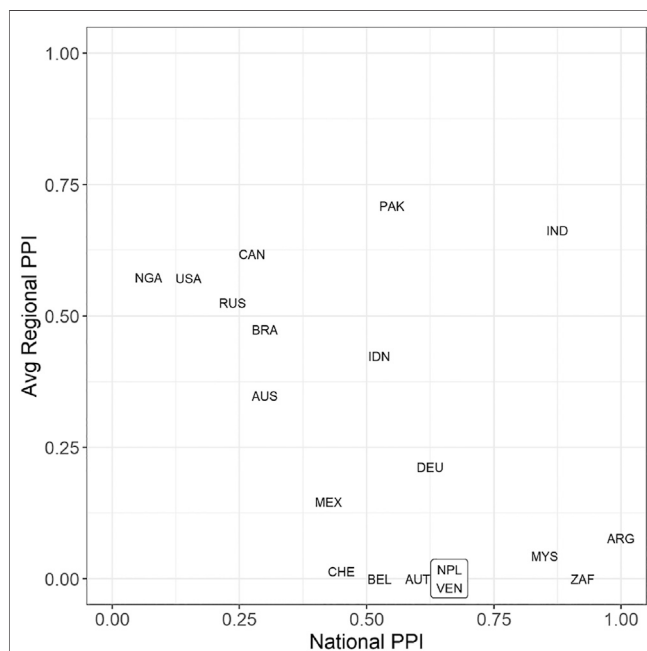
FIGURE 3 | National and Average Regional PPI as of April 24, 2020, among federations.

as did the unitary states, and this effort was on average more evenly spread between national and subnational authorities. While there was some overlap when similar policies were in place as issued by both national and subnational governments, overall, we see evidence of the substitution effect in **Figures 3**, **4** in the next section, where one level of government does what the other did not do in terms of the overall mitigation effort (the

Pearson correlation between Average Subnational PPI and National PPI is at −0.51). What we also see, however, is that the relative roles of national vs. subnational governments in COVID-19 policy-making varied drastically across federations.

Evidence of Policy Duplication

Figure 3 plots Average Subnational PPI against National PPI for all federations. Notice that the coordinates add up to more than one for several of them, reflecting the duplication of policies at the two levels of government. Still, there is a visual effect of a negative diagonal in **Figure 3**, combined with more concentration of observations in the upper left and lower right corners.[4] Thus we have an indication that many federations have somehow converged to a combination of strategies of the two levels of government where either one of them or the other emerged as the COVID-19 mitigation leader.

The plot in **Figure 4** shows the ratio of Average Regional to Average Total PPIs as plotted against the ratio of National Average Total PPIs. These statistics indicate, respectively, what share of the Average Total PPI would have remained had the other government level not engaged in the public health policy making. Observe that if there were no overlap in policies in place due to federal and subnational government on a given day, all observations should have been on the dotted negative diagonal. This is close to being the case in Austria, Belgium, Nepal, Nigeria, South Africa, Switzerland, and Venezuela. Pakistan, India, and Australia are in a group where the overlap in policy-

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[4]The correlation between the Average Regional and National PPIs among federations is −0.52.

FIGURE 4 | Ratios of national PPI to average total PPI and average regional to average total PPI.
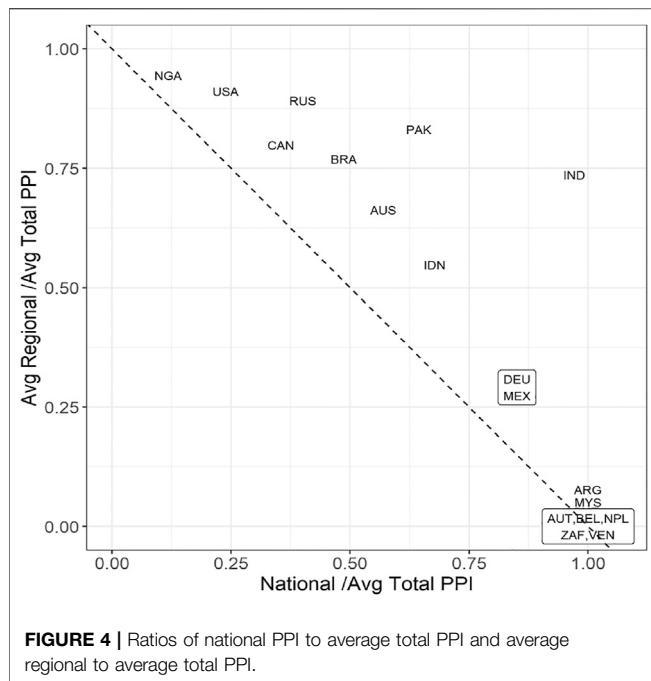
making–policy duplication at national and subnational levels—was the greatest. Most of the times this overlap resulted from the federal government issuing guidelines on specific aspects of mitigation policies and the subnational governments implementing these guidelines into public policies. Notice also that if one level of government fully abstained from COVID-19 policy-making, the resulting observation would be located in wither top-left or bottom-right vertices of the coordinate box. These calculations do not account for the policies adopted by municipal governments, which were a significant influence in large urban centers.

Two federations—Nigeria and the United States—saw the most disengaged federal governments, closely followed by Canada and Russia. Since the PPI dataset codes only actual announced policies and disregards informal recommendations and public service statements, Trudeau's cabinet in Canada ended up in this group, despite a possibly valid argument that their rhetoric at the national level had significantly influenced Canadians' protective behavior in the pandemic.

Thus, in **Figure 4** we see significant variation in the extent to which regional and federal governments share in supplying the public health measures as they existed in the federation in question. Some countries saw a bias toward federal decision-making, others toward sub-national, and there were also instances of relative parity between government levels in terms of their assumed policy responsibility for pandemic mitigation.

We hypothesize that such variation is to a large degree due to the asymmetries in the accountability of national and subnational incumbents. Such asymmetries can be defined both politically and institutionally: due to the electoral pressures and the institutionally defined responsibility for health. Here we endeavor to take a closer look at the determinants of these asymmetries.

Exploring Variation Across Federal States: The Role of Political Factors

Politicians' willingness to engage in mitigation policies depends on the balance between wanting to avoid the disruption of the pre-existing economic and social relationships and activities vs. wanting to minimize pandemic casualties. One of the characteristics affecting this balance was the relative immediacy of the disruptive effects. Even where these disruptions were less than elsewhere, in the short term the effect was inevitably negative as compared to the pre-pandemic economic and societal status-quo. Once the public health measures were adopted, changes in economic well-being were instantly measurable at both individual and societal levels (Deb et al., 2020; Desierto and Koyama 2020; Pulejo and Querubin 2020). Meanwhile, the pandemic health toll in the period under review was near-catastrophic in only a few subnational jurisdictions globally, and so credit for the health benefits was hard to claim. If our reasoning holds, the electoral costs for adopting more stringent policies would be higher for incumbents who face elections sooner rather than later, which would lead the incumbents facing immediate re-election to adopt less stringent policies than incumbents not facing impending elections.

The first parameter influencing national incumbents' expected accountability for the disruptive effects of mitigation policies is the proximity of federal elections, measured as the time (months) until the next election of the national executive (counting from April 1, 2020).[5] It turns out that only the United States was facing the impending election of the federal executive, and also very soon, in just over half a year from our benchmark April 1, 2020 date. Hence, we would expect to observe a less stringent government response to the COVID-19 crisis by the United States federal government as compared to other national governments.

Figure 5 shows the ratio of National PPI to Average Total PPI plotted against the time from April 2020 to next scheduled election that form the national executive, separately for the presidential and parliamentary federations. The remaining time until next elections is correlated with federal contribution to protective policies as dictated by our theory (Pearson's correlation coefficient is 0.54), and this association appears stronger among presidential federations: the United States, Brazil, and Nigeria have the fastest coming elections among the presidential federations, and they also have the lowest contribution of the national government to PPI. It goes without saying that it is impossible to say anything definitive given the number of observations.

The clarity of individual accountability of the federal executive could also affect the weight the executive placed on the disruption electoral costs. The executive structure and the number of parties in the federal executive are among the variables that could affect this clarity of accountability and thereby amplify or reduce the incentives to avoid taking politically risky steps. Generally speaking, given that the executive is unilaterally and directly electorally accountable in presidential systems and in single party, majority parliamentary governments but not in multiparty

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[5]**Supplementary Appendix S4** lists time to election for the federations in our sample.
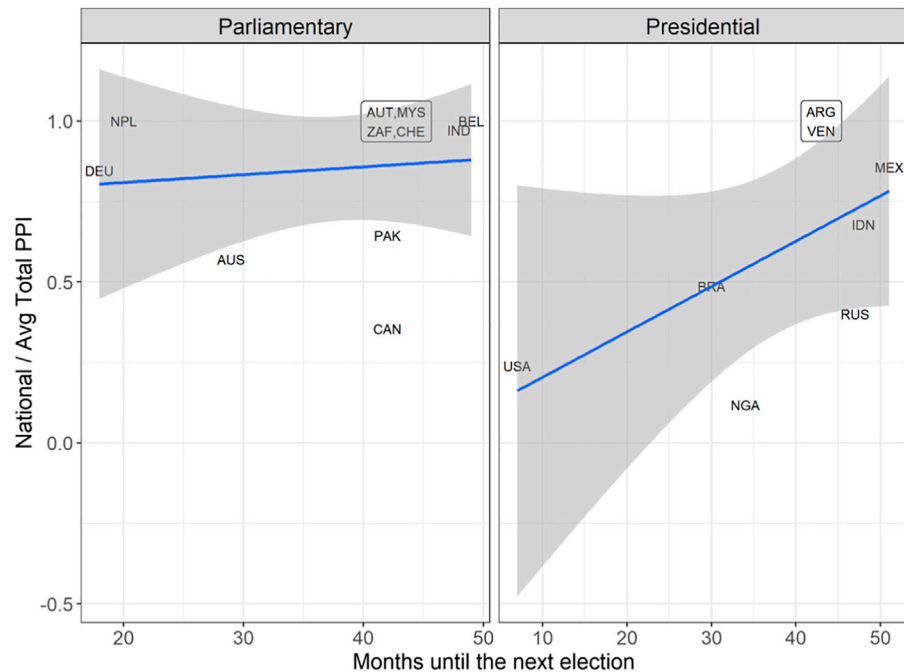
FIGURE 5 | Time until the next election and the ratio of national to average total PPI.
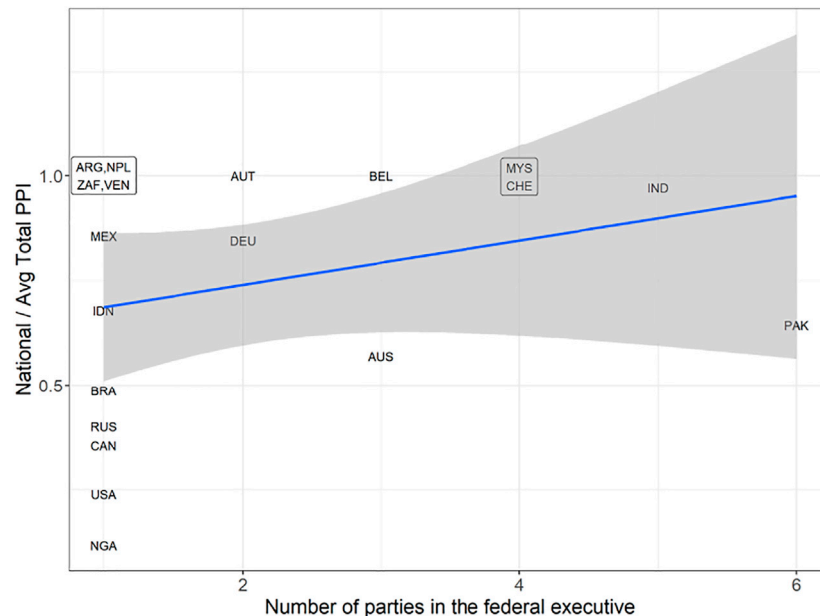
FIGURE 6 | Multipartism in the federal executive and the ratio of national to average total PPI.

parliamentary systems, presidents and prime ministers of single party, majority governments have more of a disincentive to take on policymaking on a politically risky issue than prime ministers of multiparty governments (Strom, 2000; Carey 2009). Presidentialism in particular focuses the electoral costs of risky policymaking on an

incumbent, thus the policy effectiveness of presidentialism (Shugart and Carey 1992) can turn into policy hesitancy where there is a very real fear that policymaking might go poorly.

It would make sense then to expect the national level in federations with presidential and single party, majority executives
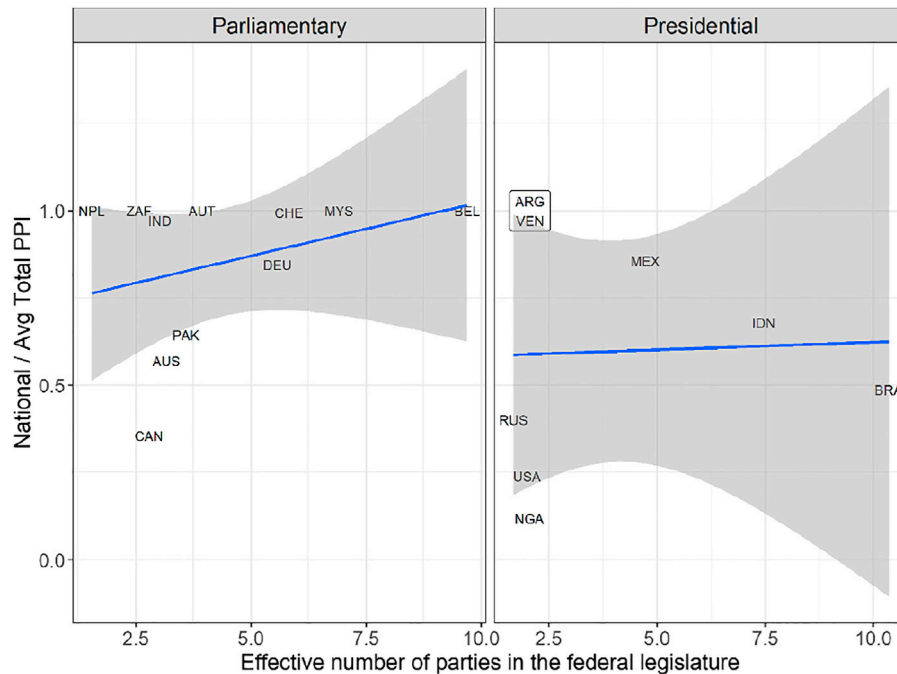
FIGURE 7 | Parliamentary fragmentation and the ratio of federal to average total PPI.

to take a less active role in addressing the crisis. They should prefer that sub-national governments assumed full accountability if possible. The Russian vignette from the pandemic onset period illustrates how presidents in federal systems can place the burden of policymaking on subnational policymakers during a crisis. As COVID-19 was spreading through the country, President Putin personally granted everyone in the country a two-week paid vacation. He then blamed the inevitable spike in cases on regional governments not having implemented strong enough mitigation measures.

Evidence for our sample does not contradict this reasoning as **Figure 6** illustrates. It plots the same variable, ratio of stringency of federally adopted policies to stringency of all policies (Ratio of National to Average Total PPIs) against the number of parties in the national executive. There is no conclusive evidence that diffusion of individual accountability makes national incumbents more willing to take a lead in pandemic mitigation. Future research with expanded sample will be needed to explore the possibility.

Figure 7 further investigates the potential effect of the multipartism in the lower legislative chamber (as measured by the effective number of legislative parties) on the National to Average Total PPI ratio. Because we would expect Cabinets to further share accountability with the parliamentary floor, while in presidents' case the fragmented legislature only further stresses their personal accountability for policies, it is not a surprise that this latest effect appears to be distinctly different in the two constitutional systems. There is a modest positive correlation between the ENLP and the National to Average Total PPI ratio for the parliamentary federations (Pearson's correlation coefficient is 0.32 for this subsample). There is no similar effect for presidential federations.

In **Supplementary Appendix S5** we also report the association between the block partisanship of the national head of the executive branch (parties grouped in binary blocks as defined by Bartolini and Mair (2007) and the stringency of national policies. While the theoretical connection remains unclear, it appears that Left incumbents produced more stringent national policies than their Right counterparts.

INSTITUTION IN HEALTHCARE AND VARIATION IN POLICY RESPONSES

In the normal course of things, the inclination to wait for the other level of government to act first in the risky areas of concurrent or unassigned/residual jurisdictions is resolved through the federal process, *via* the mechanism of "federal balancing". Some scholars of federalism view the entire *de facto* division of responsibilities between the national and subnational incumbents, beyond the formal jurisdictional delineation, as an ever-shifting outcome of federal bargaining and balancing (Riker 1964; Filippov et al., 2004). While the constitution roughly outlines who does what in a federation, in addition to what it says, there are infinitely many specifics of the allocation of responsibilities and powers, which are being continuously renegotiated by the incumbents in the careful interactions within and across governments and extra-governmental organizations. The drastically reduced time and information for navigating and negotiating pandemic policy-making roles has distorted the flow of federal balancing, where incumbents had freedom to strategically choose whether to act on pandemic mitigation or not.

Health Care Institutions and Government Accountability for Health Outcomes

We believe that the institutional asymmetries in assigning the "duty of care" for the health of the public to one level of government rather than the other enabled some of them to remain relatively passive, while others had to act. If the federal government is not assigned any substantial responsibility for health outcomes, regional governments would be less likely to expect a strong federal action, and so would be forced to act on their own in introducing public health policies.

The balance of accountability across the levels of government in a federation for the ultimate health outcome depends on how institutions link political incumbents to healthcare—on the arrangements for provision and organization of healthcare prior to the onset of the COVID-19 public health crisis. Another influence on the prospective pattern of accountability were the status-quo healthcare practices beyond institutional prescriptions, which reflected, among other things, the role of non-governmental (e.g., private but also other) actors in health. These institutional and process variables, we posit, have jointly determined whether political incumbents 1) were to be accountable for the pandemic health outcomes at all, and if so, the expected magnitude of that accountability, and 2) which among them were to feel the brunt of that accountability.

We will consider that the level or levels of government that act as the "doctor to the public," so to speak, will be perceived accountable for the health outcomes of the pandemic. An incumbent in this institutionally defined role would have positive incentives to attempt to improve the health outcomes through the making of public health policies (or, in other words, she would face a higher cost from non-acting). The institutions and the processes by which healthcare is organized and delivered in a federation, then, can serve as a proxy for the federal balance of accountability in health (Riker 1964; Filippov et al., 2004; Benz and Sonniksen 2017; Mershon and Shvetsova 2019).

Operationalization of the Institutional Environment in Health as Decision Space

Is healthcare provided by the government? Does government pay medical professionals to care for the patients? Does it financially underwrite individual medical needs? From the many institutions or rules that describe health sector organization in our federations, we build just two indicators in order to assess the respective degree or accountability for health of the federal and subnational governments. Which level of government is the "doctor" is captured by the *Federal Government's Accountability for Health*—the extent to which the federal level of government takes over the accountability for health from the subnational governments.[6] Meanwhile, how much the population relies on the government as a "doctor", *Government*

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[6]We omit here the discussion of another institutional indicator, Primary government level in care provision. In our federal sample there is no variation in this variable and the subnational level is the main level for primary care. See **Supplementary Appendix S6** for the operationalization of this indicator and country information.

share, will depend on the government market share in the healthcare sector at large (as opposed to the responsibility of the private sector and medical professionals). Where it is available for the federations in our sample, we construct these two indicators using a number of decision-space statutory, financial, and process parameters and the existing literature on decision space in health pioneered by Bossert (1998). Where such literature is not available, we apply the decision-space method and provide original coding (See **Supplementary Appendix Table S4.1** in **Supplementary Appendix S4**).

Accountability of the *Federal* Incumbent for the Health Outcome

In every federation in our sample, insofar as governments deliver healthcare at all, this is done at the subnational level or below. Nowhere among the federations does the national government lead in health care delivery. Because this does not vary in our current sample, to operationalize the federal-subnational balance of authority over health (Mershon and Shvetsova 2019) and thus the governments' respective accountability for health outcomes, is reduced to ascertaining the expected federal incumbent accountability for pandemic health. Since the sub-national incumbent is always accountable, the *Federal Government's Accountability for Health* variable gives us the information about whether or not the subnational level can expect help form the federal level in crisis policy-making, or maybe even can fully defer such policy making "up".

We operationalize the *Federal Government's Accountability for Health* variable by weighing in two decision-space components that each might imply federal government's residual accountability: whether it has an explicit constitutional mandate to protect health, and whether it plays a *de facto* dominant role among governments in financing government health efforts, i.e., *via* transfers to subnational governments (see the details in **Supplementary Appendix S6**). We code *Federal Government's Accountability for Health* as High where the constitution tasks the federal government with preserving health and the federal government plays a high role in the government health financing (over 50 percent of all government health spending, see **Supplementary Appendix S6**). We code it as Low if there is no such constitutional assignment and the federal role in government health financing is low, and we code it in the middle category for the other two contingencies.

We suspect that the division of responsibility for health between the federal and subnational levels outside of the pandemic may affect which government level would lead in the pandemic public health response. Where *Federal Government's Accountability for Health* is low, we expect to see less to be done by the federal level, and policy-making takes place mostly at the sub national level.

Governments' Role in Health Vis-A-Vis Non-governmental and Private Actors: Magnitude of Governments' Expected Accountability

How stringent will be the policies that governments create to protect the public from health losses? We conjecture that the

policy stringency will go up with the increase of the health "market share" controlled by the government. If the previous sub-section addressed the question of which levels of government have the greater "duty of care", here the question is: Does the government have the "duty of care" on health at all? To what extent is health viewed by the public as the responsibility of governments—what is the "magnitude" of government accountability in health? Is there a firm expectation of any government's accountability for the ultimate health outcome in the federation?

While much of the world will find such a question strange, it is not so long ago that health was considered a private matter everywhere, and indeed where the government involvement in health provision is low, we can conjecture, it might still be seen as such today by a large portion of the population. Furthermore, many advanced industrial democracies have empowered separate organizations (e.g., sickness funds) with characteristics of legislatively regulated non-profits, to run their healthcare. The fact that the revenue is received by those funds *via* legally mandated contributions does not make those contributions into fiscal revenue or adds them to government budgets. The operation of these public healthcare organizations is thus extra governmental and is not a daily responsibility of countries' respective governments. The perception of the government responsibility for the health outcomes may be low when the sickness fund acts as the "doctor to the public" or when most of health care access is privately managed, in weakly regulated insurance markets or out of pocket.

Conjecturing that the combined "market share" of governments of all levels in health can be taken as a proxy for whether the public will look to the government for pandemic protection, we code the binary *Government Role* in care variable, based on the share of government expenditures (in all levels of government) in total health expenditures in a federation (see **Supplementary Appendix Table S4.1**). Notice, that these are government expenditures only, and not public expenditures as often reported, since those might include sickness funds budgets. The expectation is that the extent of government role in health as opposed to the role of public non-government agencies (e.g., sickness funds) and private actors will affect the stringency. Where governments play a larger role in healthcare, more stringent policies should be introduced than where governments play a smaller role.

Patterns of Accountability and Government Origins and Stringency of COVID-19 Policies

The indicators that we thus obtain capture a federation's specific balance of accountability on health as well as the overall intensity of governments' combined role in health and thus presumably the magnitude of their accountability on the issue[7]. **Figure 8** shows the breakdown of our sample according to these variables, and **Figure 9** summarizes our expectations for the combination of these variables.

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[7]This economic policy coding roughly corresponds to the main for Bartolini and Mair (2007 p. 46), class cleavage conceptualization of party blocks for Europe.

In **Figure 10**, we use Average Total PPI and the ratio of National PPI to Average Total PPI to test our expectations about the leadership of the national and subnational level incumbents in the adoption of public health measures and their overall strength. Here, again, we rely on the policies initiated by the end of April. By then, the cross-national differences in threat levels have diminished, as the cases of COVID were present everywhere in our sample at that time.

Figure 10 divides our sample into four panes, each pane corresponding to a quadrant in **Figures 9**, **10**. Each pane presents a scatterplot with two variables: total PPI and the national contribution to total PPI, with the values on each of these dependent variables plotted across the main predictor of that variable. To see if the national contribution to total PPI depends on *Federal Government's Accountability for Health*, we need to compare the positions of countries along the vertical axis between the panes on the left and the panes on the right. To see if Average Total PPI depends on Government Role, we need to compare the positions of countries along the horizontal axis between the top and bottom panels.

The chart offers support to our expectation linking the *Federal Government's Accountability for Health* to the ratio of national to total PPI. On average, the values of our dependent variable are higher in the left panes than in the right panes. With the exception of Brazil, Russia, and Nigeria, federations with a relatively high values of *Federal Government's Accountability for Health* have seen high contributions of the federal government to the public health policies. With the exception of Switzerland, the systems with a lower *Federal Government's Accountability for Health* have seen lower contributions of the federal government to the public health policies.

Note that all four exceptions have lower than average stringency of the overall response and this might be one of the reasons for us to downweigh these observations in the comparisons of the federal contribution to the total PPI. We could also speculate that the short-term electoral incentives also contribute to the unexpectedly low contribution of Brazil's, Nigeria's, and Russia's federal governments and the unexpectedly high contribution of the Swiss federal government to the COVID-19 policy making. Brazil, Nigeria, and Russia are presidential federations with a large share of responsibility vested in the president, which inflates the short-term risks of pandemic response faced by the federal executive. Switzerland is a parliamentary federation with a politically fragmented federal legislature and fragmented executive.

Our expectation regarding the overall level of protection does not seem to hold. For it to hold, we should have observed the countries in the top panels further to the right than the countries in the bottom panels.

CONCLUSION

In this essay, we sought to explore whether political incumbents' strategies in mitigating the health emergency of the COVID-19 pandemic were influenced in federations by the constitutional/electoral and health-related political institutions. Specifically, we developed conjectures about the institutional variables conducive

		Federal Government's Accountability for Health			
		HIGH	MEDIUM HIGH	MEDIUM LOW	LOW
Government role in healthcare financing	HIGH	**South Africa Mexico Malaysia**	**Argentina Brazil Russia**	Australia	Canada
	LOW	**Nepal Nigeria**	**Austria Belgium India Indonesia Venezuela**	Germany United States	Pakistan Switzerland

FIGURE 8 | The role of governments in healthcare provision in federations.

		Federal Government's Accountability for Health	
		Relatively high	Relatively low
Government role in healthcare financing	HIGH	Federal government is more active; Overall response stringency is high Fed/tot PPI is HIGH. Tot PPI is HIGH	Subnational is the most active level of government; Overall response stringency is high Fed/tot PPI is LOW. Tot PPI is HIGH
	LOW	Federal government is more active; Overall response stringency is low Fed/tot PPI is HIGH. Tot PPI is LOW	Subnational is the most active level of government; Overall response stringency is low Fed/tot PPI is LOW. Tot PPI is LOW

FIGURE 9 | Institutionally defined pattern of accountability and expected policy stringency.
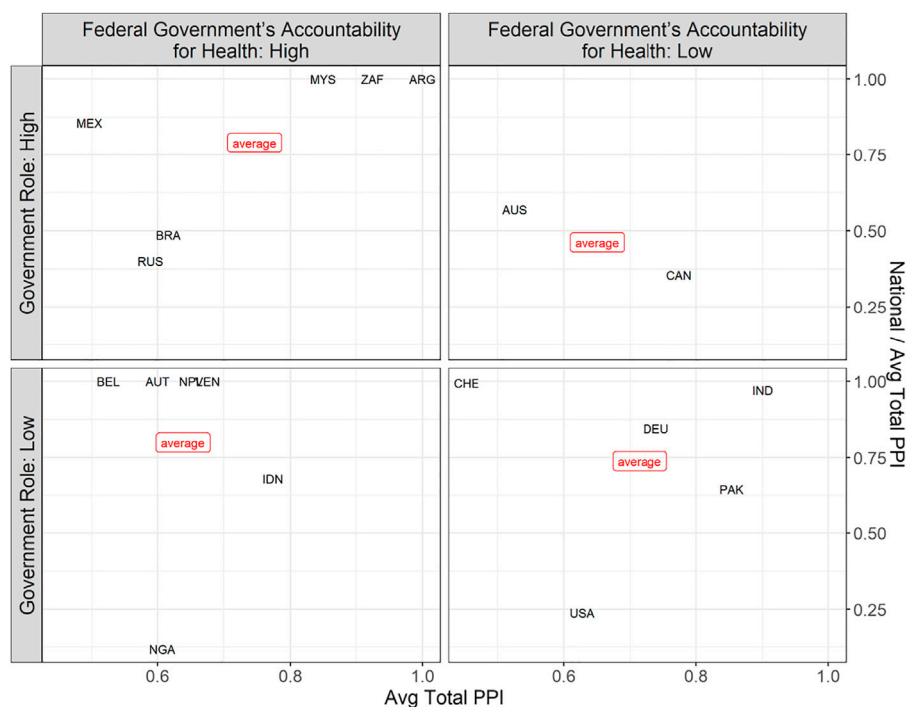
FIGURE 10 | Measures of PPI and the government role in health and federal government's accountability for health.

to more stringent public health policies and about institutional determinants of greater involvement of the federal government in pandemic public health policies. Below are the main take-away points from our exploratory analysis:

- Federalism and decentralization did not diminish the stringency of the overall government pandemic response; if anything, early response in federations was more, not less stringent
- Multiple levels of government contributed to the policy response to COVID-19 infection in federations
- There was substantial overlap—policy duplication—at national and subnational levels
- There is a substantial variation in the federal sample, approaching bi-modality, in terms of the relative policy efforts of national vs. subnational incumbents, which we conjecture requires an institutional explanation
- Presidential national executives were possibly more averse to stringent policy-making closer to the date of the next election
- Diffusion of executive accountability, such as in a multiparty executive and with more fragmented parliaments possibly increased the willingness to engage in more stringent policy response to the virus
- National incumbents with Left block-partisanship were associated with more stringent mitigation policy-making than national incumbents with Right block-partisanship
- Institutional accountability for health variables, which we construct form decision-space in healthcare indicators, are potentially useful predictors of policy engagement across government levels
- Whether accountability for health would revert to the federal government in a case of subnational mismanagement correlates with the degree of involvement of the federal incumbent in COVID-19 mitigation policy-making
- Government market share in healthcare does not seem to affect the overall mitigation policy stringency (Total PPI) in the current sample of 19 federations.

Future research and more data would allow us to further validate or qualify these admittedly preliminary observations. In-depth country studies will explore the richness and complexity that transpired in pandemic policy-making in these nations. Here we can conclude that, depending on their institutional design, federations approach crisis management very differently. When federal and subnational incumbents share the responsibility for crisis response and yet each of them has incentives to avoid making difficult decisions, the overall strength of the public health response depends on whether the incumbents at different levels of government succeed in coordinating to an equilibrium where at least one of them provides the necessary policies. Our evidence shows that by and large the coordination among the federal and subnational government in federations did not fail, and the incumbents in federations collectively managed to provide at least as much protection to their citizens as the incumbents in unitary states, though the balance of federal vs. subnational policy contributions varied. The leadership of the federal government depended on its overall role in the provision of health-care, as well as the relative lack of immediate retribution of the disruptive consequences of public health measures.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

All authors contributed to data collection, data analysis, and writing.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpos.2021.631363/full#supplementary-material

REFERENCES

Achen, C. H., and Bartels, L. M. (2004). *Blind Retrospection: Electoral Responses to Drought, Flu, and Shark Attacks*. Estudio/Working Paper 2004/199.

Adeel, A. B., Catalano, M., Catalano, O., Gibson, G., Muftuoglu, E., Riggs, T., et al. (2020). COVID-19 Policy Response and the Rise of the Sub-national Governments. *Can. Public Pol.* 46 (4), 565–584. doi:10.3138/cpp.2020-101

Anderson, C. D. (2006). Economic Voting and Multilevel Governance: A Comparative Individual-Level Analysis. *Am. J. Polit. Sci.* 50 (2), 449–463. doi:10.1111/j.1540-5907.2006.00194.x

Anifalaje, A. A. (2009). Decentralisation and Health Systems Performance in Developing Countries. *Int. J. Healthc. Deliv. Reform Initiatives (Ijhdri)* 1 (1), 25–47. doi:10.4018/jhdri.2009010103

Arceneaux, K. (2006). The Federal Face of Voting: Are Elected Officials Held Accountable for the Functions Relevant to Their Office?. *Polit. Psychol.* 27 (5), 731–754. doi:10.1111/j.1467-9221.2006.00530.x

Bachner, F., Bobek, J., Habimana, K., Ladurner, J., Leuschutz, L., Ostermann, H., et al. (2018). *Austria: Health System Review*.

Balarajan, Y., Selvaraj, S., and Subramanian, S. (2011). Health Care and Equity in India. *The Lancet* 377 (9764), 505–515. doi:10.1016/s0140-6736(10)61894-6

Bartolini, S., and Mair, P. (2007). *Identity, Competition and Electoral Availability: The Stabilisation of European Electorates 1885-1985*. ECPR Press.

Benz, A., and Sonnicksen, J. (2017). Patterns of Federal Democracy: Tensions, Friction, or Balance between Two Government Dimensions. *Eur. Pol. Sci. Rev.* 9 (1), 3–25. doi:10.1017/s1755773915000259

Bossert, T. (1998). Analyzing the Decentralization of Health Systems in Developing Countries: Decision Space, Innovation and Performance. *Soc. Sci. Med.* 47 (10), 1513–1527. doi:10.1016/s0277-9536(98)00234-2

Carey, J. M. (2009). *Legislative Voting and Accountability*. Cambridge: Cambridge University Press. doi:10.1017/cbo9780511810077

Carlin, R. E., Love, G. J., and Zechmeister, E. J. (2014). Natural Disaster and Democratic Legitimacy. *Polit. Res. Q.* 67 (1), 3–15. doi:10.1177/1065912913495592

Centers for Disease Control and Prevention (2016). *The Continuum of Pandemic Phase.*" National Center for Immunization and Respiratory Diseases (NCIRD). Available at: https://www.cdc.gov/flu/pandemic-resources/planning-preparedness/global-planning.html.

Chee, H. L. (2008). Ownership, Control, and Contention: Challenges for the Future of Healthcare in Malaysia. *Soc. Sci. Med.* 66 (10), 2145–2156. doi:10.1016/j.socscimed.2008.01.036

Chua, H. T., and Cheah, J. C. H. (2012). June. Financing Universal Coverage in Malaysia: a Case Study. *BMC public health* 12 (No. 1), 1–7. doi:10.1186/1471-2458-12-s1-s7

Danishevski, K., Balabanova, D., Mckee, M., and Atkinson, S. (2006). The Fragmentary Federation: Experiences with the Decentralized Health System in Russia. *Health Pol. Plann.* 21 (3), 183–194. doi:10.1093/heapol/czl002

Dardanelli, P., Kincaid, J., Fenna, A., Kaiser, A., Lecours, A., Singh, A. K., et al. (2019). Dynamic De/centralization in Federations: Comparative Conclusions. *Publius: J. Federalism* 49 (1), 194–219. doi:10.1093/publius/pjy037

Daryanani, S. (2017). *When Populism Takes over the Delivery of Health Care: Venezuela, 11*. ecancermedicalscience. doi:10.3332/ecancer.2017.ed73

Deb, Pragyan., Furceri, Davide., Ostry, Jonathan. D., and Tawk, Nour. (202017 June 2020). *The Economic Effects of COVID-19 Containment Measures*. VoxEU. Available at https://voxeu.org/article/economic-effects-covid-19-containment-measures.

Desierto, Desiree., and Koyama, Mark. (2020). Health vs. Economy: Politically Optimal Pandemic Policy. Available at doi:10.2139/ssrn.3661650

Filippov, Mikhail., Peter, Ordeshook., and Shvetsova, Olga. (2004). *Designing Federalism: A Theory of Self-Sustainable Federal Institutions*. Cambridge: Cambridge University Press. doi:10.1017/cbo9780511610875

Flores, A. Q., and Smith, A. (2013). Leader Survival and Natural Disasters. *Br. J. Polit. Sci.* 43 (4), 821–843.

Gasper, J. T., and Reeves, A. (2011). Make it Rain? Retrospection and the Attentive Electorate in the Context of Natural Disasters. *Am. J. Polit. Sci.* 55 (2), 340–355. doi:10.1111/j.1540-5907.2010.00503.x

Gerkens, S., and Merkur, S. (2010). Belgium: Health System Review. *Health Syst. Transit.* 12 (5), 1–xxv.

Gersen, J. E. (2010). *Unbundled powers. Virginia Law Review*, 301–358.

G. P. Marchildon and T. J. Bossert (2018). in *Federalism and Decentralization in Health Care: A Decision Space Approach* (University of Toronto Press).

Gupta, I. (2020). India., in International Health System Profiles. Roosa Tikkanen, Robin Osborn, Elias Mossialos, Ana Djordjevic.*The Commonwealth Fund*. Editor George. A. Wharton. Available at https://www.commonwealthfund.org/international-health-policy-center/countries/india.

Healy, A., and Malhotra, N. (2009). Myopic Voters and Natural Disaster Policy. *Am. Polit. Sci. Rev.* 103 (3), 387–406. doi:10.1017/s0003055409990104

Heersink, B., Peterson, B. D., and Jenkins, J. A. (2017). Disasters and Elections: Estimating the Net Effect of Damage and Relief in Historical Perspective. *Polit. Anal.* 25 (2), 260–268. doi:10.1017/pan.2017.7

Hobolt, S., Tilley, J., and Banducci, S. (2013). Clarity of Responsibility: How Government Cohesion Conditions Performance Voting. *Eur. J. Polit. Res.* 52 (2), 164–187. doi:10.1111/j.1475-6765.2012.02072.x

Hollander, R. (2010). Rethinking Overlap and Duplication: Federalism and Environmental Assessment in Australia. *Publius: J. Federalism* 40 (1), 136–170. doi:10.1093/publius/pjp028

Hooghe, L., Marks, G., Schakel, A. H., Chapman Osterkatz, S., Niedzwiecki, S., and Shair-Rosenfield, S. (2016). *Measuring Regional Authority: A Postfunctionalist Theory of Governance, I*. Oxford: Oxford University Press.

Hsiang, S., Allen, D., Annan-Phan, S., Bell, K., Bolliger, I., Chong, T., et al. (2020). The Effect of Large-Scale Anti-contagion Policies on the COVID-19 Pandemic. *Nature* 584, 262–267. doi:10.1038/s41586-020-2404-8

Lazarev, E., Sobolev, A., Soboleva, I. V., and Sokolov, B. (2014). Trial by Fire: a Natural Disaster's Impact on Support for the Authorities in Rural Russia. *World Pol.* 66 (4), 641–668. doi:10.1017/s0043887114000215

León, S., and Garmendia Madariaga, A. (2020). Popular Reactions to External Threats in Federations. Working Paper. September.

León, S. (2012). How Do Citizens Attribute Responsibility in Multilevel States? Learning, Biases and Asymmetric Federalism. Evidence from Spain. *Elect. Stud.* 31 (1), 120–130. doi:10.1016/j.electstud.2011.09.003

León, S. (2011). Who Is Responsible for what? Clarity of Responsibilities in Multilevel States: The Case of Spain. *Eur. J. Polit. Res.* 50 (1), 80–109. doi:10.1111/j.1475-6765.2010.01921.x

Lührmann, A., Düpont, N., Higashijima, M., Berker Kavasoglu, Y., Marquardt, K.L., Bernhard, M., et al. (2020). *Codebook Varieties of Party Identity and Organization (V–Party) V1*. Varieties of Democracy (V–Dem) Project. doi:10.23696/vpartydsv1

Malhotra, N., and Kuo, A. G. (2008). Attributing Blame: The Public's Response to Hurricane Katrina. *J. Polit.* 70 (1), 120–135. doi:10.1017/s0022381607080097

Malhotra, N., and Kuo, A. G. (2009). Emotions as Moderators of Information Cue Use. *Am. Polit. Res.* 37 (2), 301–326. doi:10.1177/1532673x08328002

Marten, R., McIntyre, D., Travassos, C., Shishkin, S., Longde, W., Reddy, S., et al. (2014). An Assessment of Progress towards Universal Health Coverage in Brazil, Russia, India, China, and South Africa (BRICS). *The Lancet* 384 (9960), 2164–2171. doi:10.1016/s0140-6736(14)60075-1

Meng, Q., Yang, H., Chen, W., Sun, Q., and Liu, X. (2015). People's Republic of China Health System Review. *Health Syst. Transit.* 5 (7).

Mershon, C., and Shvetsova, O. (2019). Traditional Authority and Bargaining for Legitimacy in Dual Legitimacy Systems. *J. Mod. Afr. Stud.* 57 (2), 273–296. doi:10.1017/s0022278x19000065

Miharti, S., Holzhacker, R. L., and Wittek, R. (2016). "Decentralization and Primary Health Care Innovations in Indonesia," in *Decentralization and Governance in Indonesia. Development and Governance*. Editors R. Holzhacker, R. Wittek, and J. Woltjer (Cham: Springer), 2, 53–78. doi:10.1007/978-3-319-22434-3_3

Palacios, A., Espinola, N., and Rojas-Roque, C. (2020). Need and Inequality in the Use of Health Care Services in a Fragmented and Decentralized Health System: Evidence for Argentina. *Int. J. equity Health* 19 (1), 1–14. doi:10.1186/s12939-020-01168-6

Paquet, M., and Schertzer, R. (2020). COVID-19 as a Complex Intergovernmental Problem. *Can. J. Pol. Sci.* 53, 343–347. doi:10.1017/S0008423920000281

Popovich, L., Potapchik, E., Shishkin, S., Richardson, E., Vacroux, A., Mathivet, B., et al. (2011). *Russian Federation: Health System Review*.

Powell, G. B., Jr, and Whitten, G. D. (1993). A Cross-National Analysis of Economic Voting: Taking Account of the Political Context. *Am. J. Polit. Sci.* 37 (2), 391–414. doi:10.2307/2111378

Pueyo, T. (2020). "Coronavirus: Why You Must Act Now. Politicians, Community Leaders and Business Leaders: what Should You Do and when." *Medium*. Available at https://medium.com/@tomaspueyo/coronavirus-act-today-or-people-will-die-f4d3d9cd99ca March 10, 2020.

Pulejo, Massimo., and Querubin, Pablo. (2020). Electoral Concerns Reduce Restrictive Measures during the COVID-19 Pandemic. NBER Working Paper No. 27498. Available at https://www.nber.org/papers/w27498. doi:10.3386/w27498

Rakmawati, T., Hinchcliff, R., and Pardosi, J. F. (2019). District-level Impacts of Health System Decentralization in Indonesia: A Systematic Review. *Int. J. Health Plann. Mgmt* 34 (2), e1026–e1053. doi:10.1002/hpm.2768

Reston, M. (2021). "Newsom Faces Intensifying Recall Threat as Pandemic Frustrations Grow in California." *CNN Politics*. Available at https://www.cnn.com/2021/02/06/politics/gavin-newsom-recall-california-pandemic-frustrations/index.html February 6. Last Accessed February 21, 2021).

Riker, William. (1964). *Federalism: Origin, Operation, Significance*. Boston: Little Brown & Co. doi:10.4271/640472

Robinson, F., Teo, R., and Mohd Zali, S. M. I. R. (2020). *COVID-19 Healthcare Management in Sabah*. Bjms, 1. doi:10.51200/bjms.vi.2607

Rozin, P., and Royzman, E. B. (2001). Negativity Bias, Negativity Dominance, and Contagion. *Pers Soc. Psychol. Rev.* 5 (4), 296–320. doi:10.1207/s15327957pspr0504_2

Schokkaert, E., Van de Voorde, C., Crainich, D., De Maeseneer, J., De Spiegelaere, M., Dormont, B., et al. (2011). *Belgium's Healthcare System* Should the Communities/Regions Take It Over.

Seabright, P. (1996). Accountability and Decentralisation in Government: An Incomplete Contracts Model. *Eur. Econ. Rev.* 40 (1), 61–89. doi:10.1016/0014-2921(95)00055-0

Seshadri, S. R., Parab, S., Kotte, S., Latha, N., and Subbiah, K. (2016). Decentralization and Decision Space in the Health Sector: a Case Study from Karnataka, India. *Health Policy Plan.* 31 (2), 171–181. doi:10.1093/heapol/czv034

Shugart, M. S., and Carey, J. M. (1992). *Presidents and Assemblies: Constitutional Design and Electoral Dynamics*. Cambridge University Press. doi:10.1017/cbo9781139173988

Shvetsova, O., Adeel, A. B., Catalano, M., Catalano, O., Giannelli, F., Muftuoglu, E., et al. (2020a). *Institutional Origins of Protective COVID-19 Policies Dataset V. 1.3*. Binghamton University COVID-19 Policy Response Laboratory. Available at https://orb.binghamton.edu/working_paper_series/7/.

Shvetsova, O., Zhirnov, A., VanDusky-Allen, J., Adeel, A. B., Catalano, M., Catalano, O., et al. (2020b). Institutional Origins of Protective COVID-19 Public Health Policy Responses: Informational and Authority Redundancies and Policy Stringency. *Pip* 1 (4), 585–613. doi:10.1561/113.00000023

Singh, N. (2008). Decentralization and Public Delivery of Health Care Services in India. *Health Aff.* 27 (4), 991–1001.

Sparrow, R., Budiyati, S., Yumna, A., Warda, N., Suryahadi, A., and Bedi, A. S. (2017). Sub-national Health Care Financing Reforms in Indonesia. *Health Policy Plan.* 32 (1), 91–101. doi:10.1093/heapol/czw101

Strom, K. (2000). Delegation and Accountability in Parliamentary Democracies. *Eur. J. Polit. Res* 37 (3), 261–289. doi:10.1111/1475-6765.00513

Suryanto, S., Plummer, V., and Boyle, M. (2016). Financing Healthcare in Indonesia. *Apjhm* 11 (2), 33–38. doi:10.24083/apjhm.v11i2.185

Tversky, A., and Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science* 185 (4157), 1124–1131. doi:10.1126/science.185.4157.1124

VanDusky-Allen, J., Shvetsova, O., and Zhirnov, A. (2020). *COVID-19 Policy Response in Argentina, Brazil, and Mexico: Three Different National-Subnational Approaches*. Duck of Minerva. July 2, 2020.

Negative Shocks and Political Parties' Territorial Demands: The Institutional Roots of Party Competition

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Why do political parties set an extreme or a more moderate position on the territorial dimension? Despite previous works have paid recent interest on the dynamics of the political competition on the territorial dimension, we know much less about the factors that lead to a centrifugal or a centripetal party competition on the same dimension. In this article, we offer a new way of understanding it: we argue that parties' policy position on the decentralization continuum not only depends on the level of territorial decentralization, but also on the credibility of the institutional agreement established through the country's constitutional rigidity. If the original territorial pact does not guarantee that the majority group will have its "hands tied" so that it does not reverse the territorial agreement, political parties will have incentives to adopt more extreme positions on the territorial dimension. We test this argument with a dataset covering around 460 political parties clustered in 28 European countries from 1999 to 2019 and by exploiting the fact that the 2008 economic crisis unleashed a shock on the territorial design. Our results confirm our expectations. We show that both the federal deal and the credibility of the institutional arrangement through constitutional rigidity are necessary conditions to appease parties' demands on the territorial dimension. Our results have important implications for our understanding of how institutions shape political competition along the territorial dimension.

Keywords: economic shocks, commitment problem, political parties, decentralization, institutions

1 INTRODUCTION

Under what conditions political parties, regional and national, are in favour or against decentralization? Do institutions play a role in explaining why some regional and national political parties often set a policy position on the extreme of the territorial continuum, and others set a more moderate one? The conditions under which a country's institutional design affects the behaviour of regional parties' has been a traditional topic in the political science literature. Over the last decades, the field has spent a great amount of energy in understanding whether, and to what direction, state-wide or regional political parties polarize or converge on the traditional left-right dimension and what type of institutions trigger such dynamics. However, we know much less about what factors lead regional parties to adopt a more extreme or moderate position on the centralization-decentralization dimension—the territorial dimension. In this article we focus on the exploration of the joint effect of two key factors, namely the interplay between countries' institutional characteristics and negative economic shocks.

This article aims at making a contribution to the literature on party competition by putting forward a new way of understanding why political parties decide to (de)emphasize their position on

the territorial dimension. In a nutshell, our argument can be summarized in the following way: in contexts where a majority and a minority group coexist, the country's institutions may be designed in different ways.[1] For instance, a country can decide to distribute the power as much as possible (advanced federalism) or concentrate it on a single or a few poles (complete centralization). The particular form it takes is set in the territorial agreement (agreed by the parts or imposed by one/some of them). The territorial pact between the majority and the minority group can be framed as a commitment device that helps to tackle the commitment problem: on one hand, the majority group does not want to empty state institutions from governing capacity and, on the other, the minority group aim at acquiring a certain degree of self- and shared-government. Moreover, in our view, the minority group also seeks another important condition: the existence of a guarantee that devolved powers are going to be protected. In other words, the minority knows that any future change put forward by the majority group concerning the territorial design of the state might act against the minority's group preference. If there are no guarantees, the 'tyranny of the majority' is likely to prevail (Abizadeh, 2021). In turn, the majority group wishes to reach a stable agreement that seals off territorial demands, especially any secessionist attempt.

In line with this logic, and if we want to understand party competition on the territorial dimension, our argument posits that we crucially need to consider two factors: first, the existence of a federal arrangement–a relatively large degree of self-government and shared-government–, and, second, the flexibility/rigidity of the constitutional design. Previous works have mainly considered that decentralization is enough to appease the need of some regional parties to compete over the territorial dimension. We complement this idea by arguing that both conditions are necessary: if the original territorial pact does not guarantee that the majority group will have its "hands tied", political parties–regional and national–will still have incentives to adopt more extreme positions on the territorial dimension.

We test our argument by studying the position on the territorial dimension of state and regional parties over time and in different EU countries–and therefore different institutional realities. More precisely, our argument is examined by narrowing down our focus to how the 2008 financial crisis triggered different levels of territorial tension in different institutional contexts. Indeed, economic shocks to the system represent a strain to a country's territorial organization. One of the reasons is that negative economic shocks accentuate the fragility (or robustness) of the existing institutional configurations, providing incentives to political parties to compete over different territorial configurations. Another one is that, under times of crisis, central-regional elites tend to blame each other for the economic situation and they often want to centralize/decentralize powers as a result. In other words, our

empirical expectation is that, given the existence of a shock, in countries that have satisfactorily dealt with the territorial commitment problem (federal pact and constitutional rigidity), the political competition on the territorial dimension will tend to be a more moderate one. In contrast, in contexts where these two conditions are not present, the position of political parties on the territorial dimension will be more extreme.

Overall, this article offers a new way of understanding why parties compete over the territorial dimension by bringing together different approaches from the literature on political competition and the role of political institutions that have only been considered separately. Our analysis shows two key findings. First, political parties, and especially regional parties, adopt more extreme positions on the territorial decentralization dimension when negative economic shock occur and the institutional bases to canalize the commitment problem between the majority and the minority group are not satisfactorily settled. In other words, economic shocks seem to trigger a centrifugal dynamic on parties' territorial dimension when the territorial commitment problem has not been satisfactorily channelled. However, if the institutional bases are such that the commitment problem has been largely channelled, economic shocks have the opposite effects, whereby moderating the territorial demands of regional parties and paving the way for a much more centripetal party competition on the territorial dimension. Second, our findings also show there are also important spillovers of the commitment problem on other relevant dimensions of party competition. Regional parties are also more likely to adopt more extreme positions on the nationalism and the immigration dimension when negative shocks take place and the institutional configuration has not been sealed in a way that satisfactorily deals with the commitment problem.

2 THEORY

As the U.S. Founding Fathers observed, the relationship between the minority and the majority groups constitutes one of the pillars of the federal agreement and, ultimately, of the quality of the democratic systems (Coby, 2016). Previous research taking an institutionalist approach has extensively studied the dynamics of both the minority and the majority group under different institutional settings and national realities (Brubaker, 1994; Hechter and Okamoto, 2001; Garbaye, 2002). Similarly, early works in political science already strove to understand what type of institutional designs favour stable democracies, especially in societies deeply divided into distinct ethnic, religious, racial, or regional segments. For instance, in his seminal work, Lijphart (1999) noted that democracy in plural societies with segmental cleavages (*consociational democracies*) tend to have big coalitions, a large degree of federalism and mutual veto power. Under such systems, as the classical consociational explanation highlights, political parties tend to compromise, reach broad agreements and have little incentives to polarize their policy positions.

This dynamic is perhaps most evident when there is a concentrated minority group with different cultural traits than

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[1]For the sake of simplicity, we mainly refer to the existence of a majority and a minority group, although this is a stylized example to develop our theoretical intuitions. Majority and minority groups can vary in number and size (Amat and Rodon, 2021), but the logic explained here still applies

the majority one (Bednar, 2011). Under such a scenario, it is common to observe that the minority group will tend to seek a certain degree of political decentralization or even secession (Sorens, 2012; Sambanis and Milanovic, 2014). These demands will bring the State to a dilemma, the answer to which have varied across countries: while some countries facing territorial challenges have been more likely to decentralize as a way to appease these demands, others are hesitant towards such measures as they believe a greater autonomy does not necessarily decrease secessionist sentiment and may even increase some forms of territorial demands.[2] In fact, political science has produced diverse findings as to what is the most optimal strategy to appease territorial demands (Lublin, 2012). All in all, both approaches converge in one important aspect: if the institutional design does not satisfactorily address the territorial demands, political parties will have incentives to use the territorial dimension–often known as the second dimension of political competition–for electoral purposes. Or, in other words, both stands assume that a certain degree of political decentralization is a necessary and sufficient condition to satisfactorily deal with territorial demands. The discussion in most works mainly revolve around the optimal degree of decentralization and the potential benefits or negative consequences it triggers.

As advanced before, our main contention is that the condition of a territorial agreement–the federal pact–is not sufficient to understand why in some contexts political parties have more extreme positions on the territorial dimension than in others. During the bargaining stage over the optimal level of decentralization, we contend that the notion of guarantee is a key component that gives credibility to the agreement. In fact, the interaction between the minority and the majority group can be understood as a commitment problem. These problems essentially derive from the inability of parties to write binding long-term contracts. In such situations, actors cannot achieve their goals because of an inability to make credible promises (or threats). In our case, the majority group wants to reach an agreement that makes the system stable and not subjected to continued negotiations over decentralization by the minority group. In turn, the minority group, besides an optimal level of decentralization, needs a guarantee that the majority group will not use its majority status to challenge or overturn the territorial agreement. If such guarantee does not exist, any change in preferences by the majority group–for instance, a new incumbent party with a pro-centralization position–may lead to a change in the territorial set-up against the will of the minority group. Closely related to this argument (Abizadeh, 2021),

discusses and shows how under majoritarianism persistent minorities can suffer from unequal access to political power.

We argue that, only when both conditions are present, political parties will set moderate positions on the territorial dimension. If the level of self-government is high and the rigidity of the system is also high, both the majority and the minority group will have a commitment device that will eventually appease parties' territorial demands. Using the classical concepts put forward by (Hirschman, 1970), when there is a relatively large degree of political autonomy *and* constitutional rigidity, both the minority group and the majority group are loyal to each other and exercise the "voice" within the confines of the system. If the territorial decentralization is not coupled with rigidity, or the system is rigid without territorial decentralization, political formations are more likely to "voice" their demands and even attempt to exercise the "exit" of the political system. In fact, secession can be understood as the last straw of the process: some groups may want to secede not only because they want higher levels of territorial decentralization, but because, given a certain degree of power granted to them, the system does not protect their political autonomy. Under such condition, they have power, but it is not clear whether they will be able to keep it. Ultimately, if the level of territorial decentralization is high, but the majority group–using its majority status–can over-rule it at any time, the outcome will be unstable and political parties will have incentives to have extreme positions on the territorial dimension.

Thus, our argument brings to the study of political competition in multi-level politics the notion of institutional rigidity. As previous works have highlighted, political competition in two-dimensional contexts is more complex than in uni-dimensional ones and political parties often use the second dimension of competition–the territorial one–as a tool to compete against their rivals and hence build electoral support (Sorens, 2009; Elias et al., 2015). To date the more general party competition literature has paid surprisingly little attention to the dynamics of the territorial dimension as a second dimension, despite its potential impact on party strategies and the consequences for patterns of party competition (Librecht et al., 2009; Elias, 2015; Massetti and Toubeau, 2020). Once again, up until now, it was assumed, often by default, that the level of political decentralization was generally sufficient in order to understand political parties position on the decentralization dimension. We complement existing explanations by bringing to the fore, together with the level of political decentralization in the original territorial pact, the need to theoretically consider the degree of flexibility/rigidity of the institutional structure in order to comprehend parties' policy position on the territorial dimension.

The rigidity or flexibility of the constitution has been a prominent topic in the sub-field of comparative political institutions. According to Arend Lijphart, constitutional rigidity is one of a complex set of variables shaping the character and performance of different patterns of democracy, particularly the federal-unitary dimension (Lijphart, 1999). As put forward in Tsebeli's work (2002), institutional design is a key factor that shapes party competition and political (in)stability, with both factors affecting each other. In a way, the rigidity or

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[2]The menu of options is not restricted to centralization-decentralization. Countries can also engage in repression or set policies that dilute, over the mid/long-run, cultural differences between the minority and the majority group (Cook, 2003; Green, 2020; King and Samii, 2020). Yet, although not absent, these strategies follow different dynamics in the European countries analyzed in this article. More in general, and to know more about the relationship between party competition and decentralization, see (Brancati, 2006; Brancati, 2008; Toubeau and Wagner, 2015; Meguid, 2015; Massetti and Schakel, 2016; Massetti and Toubeau, 2020).

flexibility of the system can be understood as an underlying condition under which players (and potential veto players) interact (Tsebelis, 1995). Indeed, we know from previous research (Lutz, 1994) that the degree of constitutional rigidity is strongly associated with the frequency of constitutional changes that a country experiences.

Despite the causes and consequences of the rigidity/flexibility of the constitution have been studied before, their direct connection to party competition has only recently been highlighted. For instance, as developed by Sánchez-Cuenca (2010), the rigidity of a constitution is a crucial tool that can enhance the credibility of the original agreement–the initial territorial commitment. And, recently, using a veto player approach, Tsebelis (2021) has shown constitutional rigidity sets the ground for political competition over constitutional amendments, but also over other institutional aspects, such as the importance of judicial courts or other institutional features. Similarly, in a case study of several federal countries, Benz (2013) argues that the flexibility/rigidity of the constitution amendment process is a key aspect in balancing the interest of the federal vis-a-vis those of the regional governments. Thus, our empirical expectation is that political parties set a more moderate position on the territorial dimension under high federalism and high constitutional rigidity. Conversely, they will have more extreme positions when neither one of these two conditions is present.

If this logic explained above is correct, we should especially observe it in the presence of external economic shocks to the system. In other words, we argue that all else equal the interplay between constitutional rigidity and the level of federalism will unfold when a contextual shock reveals the limits of the system. This strain is most apparent in the event of an economic crisis. As shown by previous works, economic crises bring about a shock to the system in many domains. For instance, institutions need to decide, under situations of economic scarcity, whether to change territorial distributive mechanisms and how to tackle the likely increase in inter-regional inequality (Beramendi and Rogers, 2020). Or, in some contexts, and in order to receive support or extra funding, regional governments have been forced to accept significant cuts and greater control or supervision of their budgets (Pino and Pavolini, 2015). As shown by Beramendi and Rogers, (2020), decentralization mediates the link between redistributive effort and inequality, with potential effects on the political system. In addition, economic crises are often associated with a destabilizing effect of the party system and the salience of the territorial dimension often increases (Hernandez and Kriesi, 2016; Kyvelou and Marava, 2017; Hutter et al., 2018; Rodon, 2020). Thus, economic shocks can also provide incentives to political parties to move to the extreme their position on the territorial dimension (Amat, 2012; Basta, 2017; Rodon, 2020). Hence, when an economic crisis occurs, the territorial model is very often put into question for both parties and voters (Kyvelou and Marava, 2017; Wibbels, 2000; Bolgherini, 2014). As the Covid pandemic has illustrated (Kettl, 2020), crises increase the salience of many territorial questions, such as whether all territories are contributing equally to the common budget or even common effort in

FIGURE 1 | Distribution of political parties' positions on the decentralization dimension.
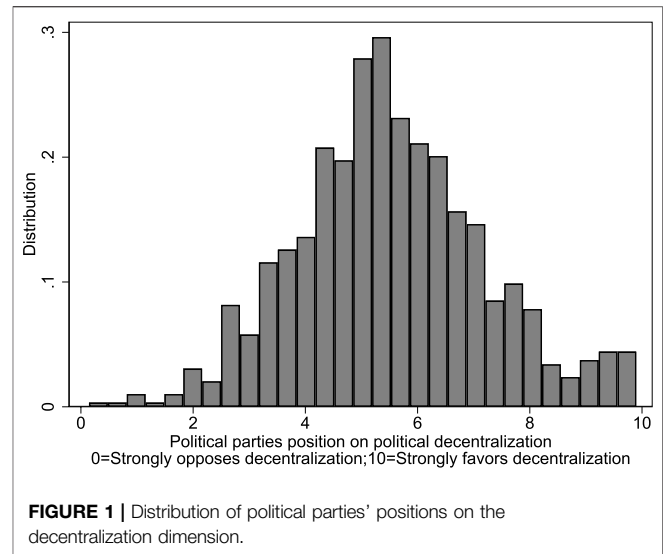
terms of restrictions, how the decisions should be taken or whether the current territorial model enables institutions to take effective decisions. Therefore, it is particularly in times of economic crisis when we should observe that parties in countries that have not satisfactorily dealt with the territorial debate–both in terms of a federal arrangement and constitutional rigidity–are more polarized along the territorial dimension. Specifically, we expect that regional parties should be especially prone to adopt more extreme positions in times of negative economic shocks when the institutional configuration does not solve the commitment problem between the majority and the minority group. Formally, we can specify our main hypotheses in the following way:

Hypothesis 1:

Economic shocks should trigger regional political parties demands' for political decentralization when the commitment problem is not institutionally channeled.

Hypothesis 2:

Economic shocks should appease regional parties demands' for political decentralization when the commitment problem is sealed.

3 DATA

To test our theoretical expectations, we compiled a new dataset from different sources. This dataset identifies political parties' position on the decentralization dimension, together with other party-level characteristics. In addition, we complement this information with country-level information on the other important concepts, namely a country's level of federalism and the rigidity/flexibility of its constitution.

Our dependent variable is a party's position on the territorial/ political decentralization dimension. The information comes from the Chapel Hill Expert Survey (1999–2019), a popular

source for parties' positions on different issues, including territorial decentralization. The Chapel Hill Expert Survey (Bakker, 2020) is coded by experts that provide evaluations on more than 200 political parties across all EU member states. **Figure 1** shows the distribution of political parties position on the decentralization dimension. A low value means that a political party strongly opposes political decentralization (0 is the minimum). A high value means that a political party strongly favors political decentralization (10 is the maximum). The average in our working sample is 5.5 (std equals 1.7). In the dataset, the parties with the highest values are ERC, EA, and Amaiur, all Spanish regional parties for which political decentralization is a core aspect of their ideological stands.

We operationalize the concepts of federal arrangement, constitutional rigidity and economic shocks as follows. First, in order to capture the degree of federalism or decentralization, we use Lijphart's dataset (Lijphart, 1999). The dataset captures each country's degree of federalism using Lijphart's 5-point scale index. This indicator measures the distribution of power between different levels of government, ranging from 1 (unitary) to 5 (federal). As it is known, the index correlates well with other measures of federalism used in the literature (Vatter, 2009). Second, constitutional rigidity is measured using the index of constitutional rigidity recently developed by (Tsebelis, 2021). The index departs from the idea that constitutions are an institutional outcome that originate from the interaction between institutions and different players with varying degrees of vetoing capacity. In other words, it takes into account the interaction between the institutions specified in the amendment provisions of the constitution and the preferences of the relevant actors. In other words, the index is calculated by summing the approval thresholds of different elected institutions. Hence, this approach combines the idea of veto players, which are required by the founders of the constitution, with the qualified majorities included to protect it. For all countries, the formula includes the threshold that must be reached for approval in any popularly elected body that must approve a constitutional amendment. In our dataset, the index ranges from 0.5 to 1.5. Finally, the economic shocked is captured by a dummy that distinguishes the period after the 2008 financial crisis and otherwise. The 2008 economic crisis is a perfect example of economic turmoil that unleashed a shock on institutions and political parties.

Besides using the position of political parties on the territorial dimension, in the second part of our empirical analysis we also employ three different outcomes exploring other dimensions of party competition. We once again rely on the Chapel Hill Expert Survey (Bakker, 2020). The reason is that we expect our mechanism to have spillovers into other second dimensions of party competition. In other words, given the institutional nature of our argument, it is likely that political parties may have electoral incentives to moderate or accentuate their positions not only on the political decentralization dimension but also on other relevant dimensions of party competition in order to mobilize their voters. For example, if a negative economic shock occurs in countries in which the commitment problem between the majority and the minority groups has not been settled, regional parties may have electoral incentives to move to the extreme their positions on the immigration policy dimension, as well as on the values and the authoritarian dimension.

Accordingly, we explore the spillover effects of our argument into the following alternative second dimensions. First, we consider the GALTAN dimension. The green-alternative-libertarian-traditional-authoritarian-nationalist (GALTAN) dimension has been shown to structure political competition and constitutes an alternative to the traditional left-right dimension (Hooghe et al., 2002). The indicator ranges from 0 to 10, with low values being parties that have a green/alternative/libertarian position and 10 being parties that have a traditional/authoritarian/nationalist position. Second, we employ an indicator that captures a party's policy position on the immigration dimension. The scale ranges from 0 to 10 with low values being a party that takes on a pro-immigration stance and high values a party that has an anti-immigration policy position. Third, we also use a party's position on the European Union integration dimension. The variable ranges from 1 to 7, with low values being anti-EU positions and high values being pro-EU positions.

4 EMPIRICAL SPECIFICATION

According to the theory we have developed, our empirical strategy is based on the following models. Our dataset considers political parties' positions over time with observations at the party-country-year level:

$$Y_{jit} = \beta_1 Post_t + \beta_2 Post_t \times FederalismIndex_i + \beta_3 Post_t \times ConstitutionalRigidity_i + \beta_4 Post_t \times FederalismIndex_i \times ConstitutionalRigidity_i + \delta X_{jt} + \gamma PartyFEs_j + \mu_t + \epsilon_{ij}$$

We are interested in estimating how negative economic shocks modify political party j in country i at time t position in the territorial dimension depending on the severity of the commitment problem. To do so, we interact the institutional variables with the economic shock dummy (the post 2008 dummy). Estimations always include party fixed effects. As such, the models exploit within parties' position variation over time and, therefore, the main effects of the institutional variables without time variation fall down on the estimation equation. The main parameter of interest is the one that captures the triple difference: β_4 captures how shocks accentuate or moderate parties positions on the decentralization dimension depending on both the federalism index and the degree of constitutional rigidity.

The inclusion of party FEs is crucial in this estimation strategy since party fixed effects control for the characteristics of parties and countries that remain constant over time and therefore remove all the observed and unobserved differences across parties and countries that are fixed (e.g., other institutional features). Also, all models include the following time varying party-level X_{jt} controls: 1) party's position on the left-right scale, 2) party's position on the GALTAN dimension, 3) the percentage of votes obtained by parties, and 4) a dummy that adjusts for

Economic shocks and party positions on the territorial dimension, Party FEs.

Party positions	(1) All Parties	(2) Regionalist Parties	(3) Excluding Regionalist
Post 2008 crisis	−1.366*	−6.083**	−0.612
	(0.777)	(2.312)	(0.842)
Post 2008 crisis X Federalism Index	0.690**	2.736**	0.357
	(0.320)	(1.268)	(0.347)
Post 2008 crisis X Constitutional Rigidity	1.788**	8.340**	0.963
	(0.878)	(3.897)	(0.911)
Post 2008 crisis X Federalism Index X Constitutional Rigidity	−0.713*	−3.543*	−0.365
	(0.375)	(2.038)	(0.388)
Party Level Controls	Yes	Yes	Yes
Party Positions	Yes	Yes	Yes
Time Trends	Yes	Yes	Yes
Party FEs	Yes	Yes	Yes
Mean Dep. Var	5.650	8.406	5.235
Number of parties	178	21	158
N	459	60	399

Standard errors clustered at the regional level in parentheses.
Party level Controls: Vote share, Incumb.
Party Positions: left-right, gal/tan.
Time Trends: Year.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

whether the party is the incumbent or otherwise. Finally, the models also include a linear time trend μ_t. The standard errors are, in all cases, clustered at the party-level. All in all, our dataset

considers around 460 political parties clustered in 28 European countries from 1999 to 2019.

5 RESULTS

This section illustrates our main results. **Table 1** shows our main models. Model 1 includes all political parties, Model 2 runs the same model only considering regional parties, and Model 3 excludes regional parties. Our coefficient of interest comes from the interaction between the post 2008 dummy, and the indices of federalism and constitutional rigidity. As it can be seen in the table, the coefficient is negative and statistically significant on the main model and on the model including only regional parties, but it does not reach significance levels in the third model, when we exclude regional parties. The negative and statistically significant coefficient means that political parties, and especially regional political parties, moderate their demands on political decentralization when an economic shock occurs and the commitment problem is sealed (i.e., with a federal deal and enough constitutional rigidity to make the deal credible). However, if any of the two institutional conditionals fails, regional parties escalate their demands when economic shocks occur.

In order to better visualize our empirical test, we next plot the marginal effects of the economic shock on parties' position on the territorial dimension as a function of the index of federalism and constitutional rigidity (**Figure 2**). Recall that our argument is that parties will set a moderate position on the territorial dimension when they perceive the territorial accommodation has been satisfactorily dealt with–a relatively high degree of federalism/ territorial decentralization–and when the constitutional structure
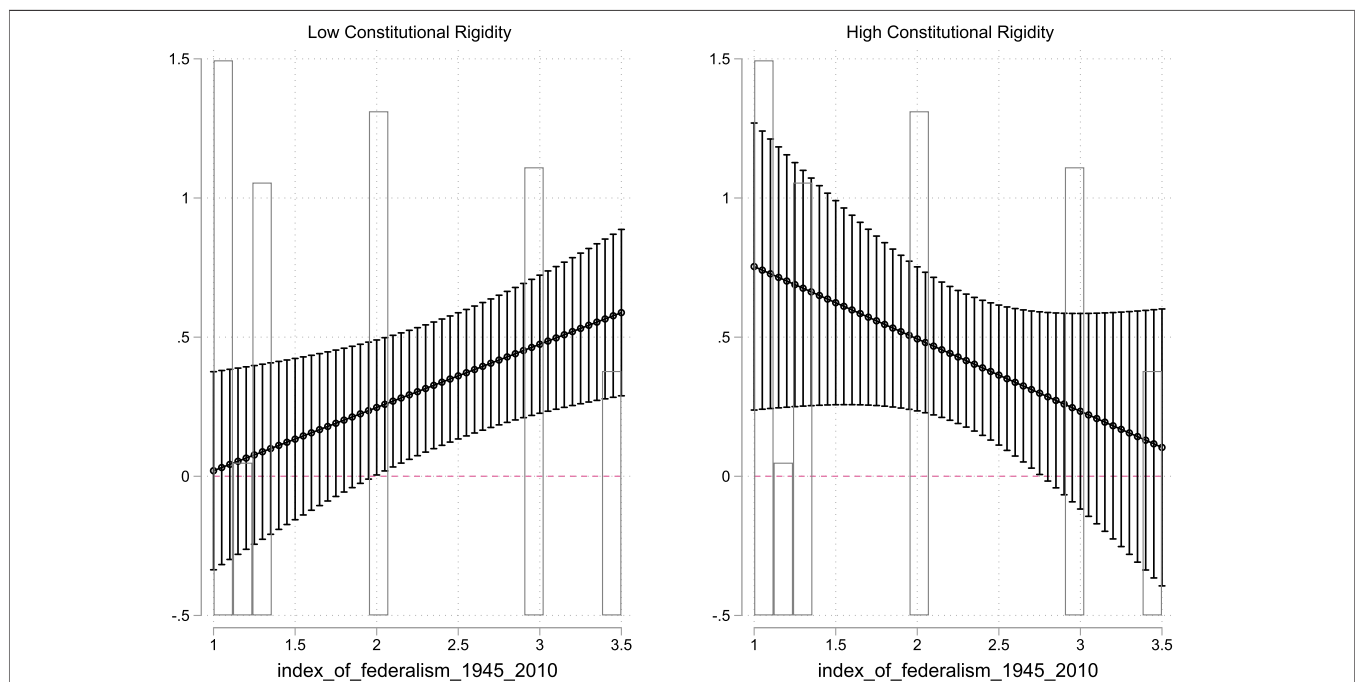
FIGURE 2 | Marginal effect of 2008 shock on parties' positions conditional on institutions.
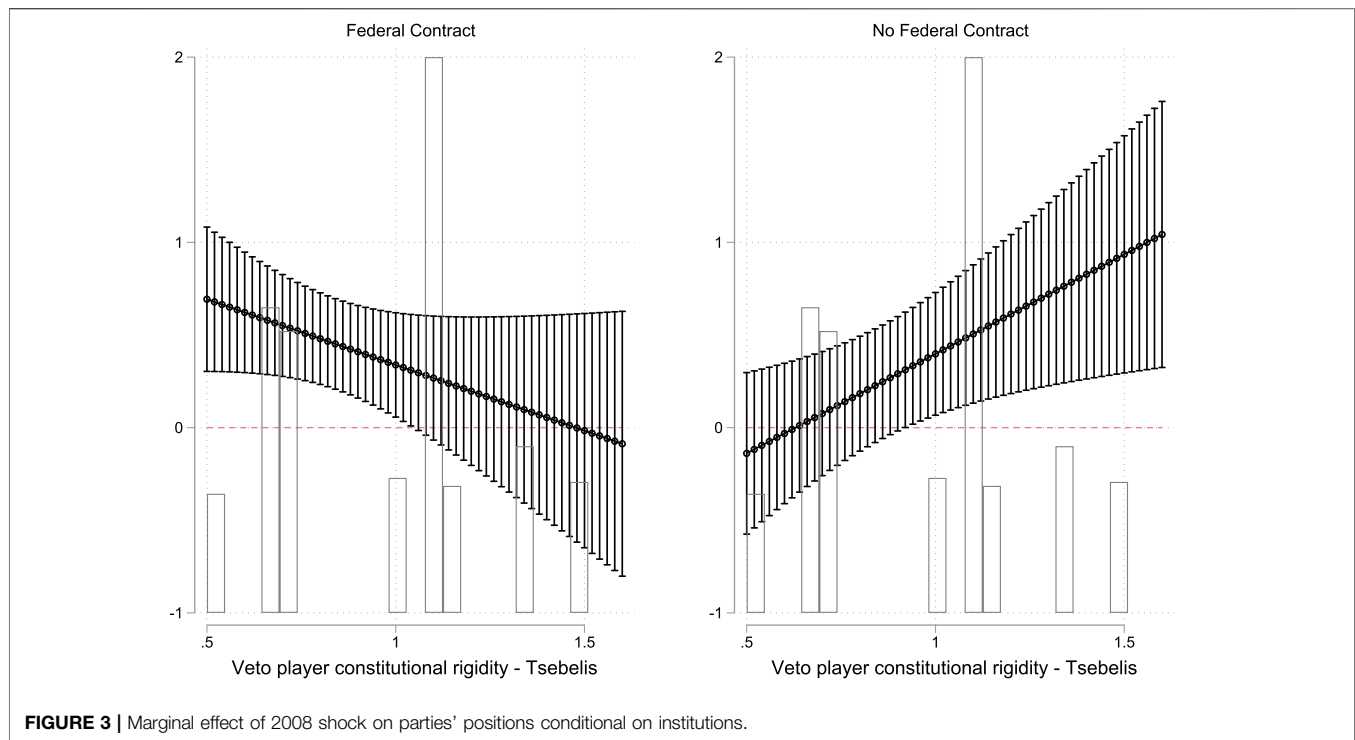
FIGURE 3 | Marginal effect of 2008 shock on parties' positions conditional on institutions.

is rigid (i.e., guarantees are provided). If either one of the conditions is absent, parties will have incentives to exhibit a more extreme position on the territorial dimension. In other words, the territorial agreement–which grants territorial decentralization–needs to be accompanied by a system that ensures it cannot be easily amended by the majority group.

This is what we observe in **Figure 2**. To illustrate the results, we plot the marginal effect of the 2008 shock conditional on Lijphart's index of federalism (Lijphart, 1999) under two scenarios: low constitutional rigidity (0.648) and high constitutional rigidity (1.33). The right-panel precisely shows the 2008 economic shock had a greater effect on parties' policy position on the territorial dimension on those political systems that had high constitutional rigidity, but the absence of a federal contract. Instead, in countries where there is a federal agreement and a high level of constitutional rigidity, the economic shock did not push political parties to move their position on the territorial dimension to the extreme–the effect becomes statistically non-significant. Interestingly, in the left-hand figure we observe that the slope of the marginal effect reverses, whereby confirming our theoretical intuition that both conditions are necessary for a system to attenuate party competition along the territorial dimension. Indeed, a low constitutional rigidity in countries with high levels of federalism is associated with more extreme policy positions on the territorial dimension. The magnitude of the marginal effects of the negative economic shock, captured by the post 2008 dummy, on parties' positions on the political decentralization dimension is sizeable and, at the same time, very much conditioned by the institutional variables. To put the

magnitude of the effects in perspective, it is worthwhile noticing that in **Figure 2**, under high constitutional rigidity and with low values in the index of federalism variable, the negative shock is associated with a 0.75 increase in political parties' demands for political decentralization–which is roughly equivalent to one half of the standard deviation of the dependent variable. Similarly, in the left-hand side panel of **Figure 2** we observe that the positive effect of the negative economic shock on parties' demands for decentralization is well above 0.5 when the index of federalism is high, but the constitutional rigidity is low. Therefore, the results largely confirm our theoretical expectation that the two dimensions of the institutional configuration (the federal deal and the credibility of the agreement through constitutional rigidity) are both necessary conditions to moderate the territorial claims of political parties–and neither of them alone is a sufficient condition to alleviate the positive effects of economic shocks on the escalation of decentralization demands.

Another way of examining the relationship between the three factors is looking at **Figure 3**. Based once again on the results presented in **Table 1**, this figure now plots the marginal effect of economic shocks on parties' position on the territorial dimension conditional on Tsebelis's index of constitutional rigidity (Tsebelis, 2021) and under two scenarios: with a federal contract (federalism index takes value 3.5) and without a federal contract (federalism index takes value 1). The results are similar than the ones presented before. Starting with the left-hand panel, we observe that economic shocks in federal contexts are associated with more extreme positions on the territorial dimension if the system is not rigid enough. Conversely, countries that were able to agree a federal arrangement together with a relatively high degree of constitutional

rigidity do not experience territorial conflict under situations of economic distress.

The right-hand panel shows that having a high constitutional rigidity and the absence of a federal contract is a particularly bad equilibrium for party competition on the territorial dimension. Under such scenario, shocks are associated with more extreme positions on the territorial debate. And this is specially the case for regional parties. The reason being, according to our theory, that if there is no federal contract and the system is very rigid, the minority group (represented by regional parties) is likely to perceive that the road to decentralization is an arduous and an uncertain one and may feel it has little options left to obtain territorial decentralization concessions.

This figure, together with the results presented in **Figure 2**, are in line with our theoretical argument: the territorial dimension follows a centripetal configuration in countries that have both a federal arrangement with relatively high levels of decentralization and a system that is rigid–meaning that there are effective guarantees that increase the credibility of the federal deal. Therefore, both institutional conditions are necessary. If any is absent, party competition along the territorial dimension follows a centrifugal dynamic, as parties have incentives to extreme their territorial demands. The lesson that follows is that negative economic shocks act as a triggering device that accentuate either the centripetal or the centrifugal dynamics depending on the institutional accommodation of the commitment problem.

Moreover, as **Table 1** illustrates when comparing Model 2 and Model 3, this dynamic is essentially restricted to regional parties. As representative of the minority group, regional parties are arguably those affected by the sub-optimal configuration of the territorial agreement. In other words, and in line with our theoretical expectations, it is precisely when we observe the absence of a federal pact or a rigid constitution that regional parties have incentives to set a more extreme position on the territorial dimension. In contrast, other party types, as representative in a way or another of the majority group, do not have such strong incentives.

It is true, however, that future work should further explore the reaction of nationwide parties, or simply put, parties that represent the national majority groups. One interesting scenario, that we do not fully explore here, would be a scenario of political polarization in which both parties escalate their demands on the territorial dimension of party competition in opposite directions when economic shocks accentuate preexisting commitment problems: regional parties claiming further decentralization and some nation-wide parties escalating their re-centralization demands. In fact, recent experiences–for instance, in Spain–of significant escalation of political polarization on the territorial dimension suggest that the institutional roots of polarization are important and deserve further investigation.

Having established that a sub-optimal institutional configurations (i.e. the inability to have resolved the commitment problem between the majority and the minority groups) are associated with higher levels of party competition on the territorial dimension when negative economic shocks occur, we next examine whether the same logic applies to other potentially relevant dimensions of political competition. The

TABLE 2 | Shocks and regionalist parties' positions in other dimensions, party FEs.

	(1) GAL/TAN	(2) Immigration Policy	(3) EU Position
Post 2008 crisis	−2.142**	−4.697***	−1.048
	(0.783)	(0.837)	(0.706)
Post 2008 crisis X Federalism Index	1.789***	1.431**	0.781*
	(0.462)	(0.543)	(0.450)
Post 2008 crisis X Constitutional Rigidity	3.758***	5.967***	1.601
	(1.003)	(0.963)	(0.976)
Post 2008 crisis X Federalism Index X Constitutional Rigidity	−2.889***	−1.833**	−1.146*
	(0.649)	(0.680)	(0.653)
Party Level Controls	Yes	Yes	Yes
Party Positions	Yes	Yes	Yes
Time Trends	Yes	Yes	Yes
Party FEs	Yes	Yes	Yes
Mean Dep. Var	4.910	5.061	5.236
Number of parties	26	20	26
N	91	59	91

Standard errors clustered at the regional level in parentheses.
Party level Controls: Vote share, Incumb.
Party Positions: left-right.
Time Trends: Year.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

expectation being that regionalist parties might also have incentives to prime other second dimensions of party competition that are related to the territorial dimension as a response to economic shocks when they find the institutional accommodation unsatisfactory. But again, we aim to explore such parties' differential responses to economic shocks focusing on changes in parties' positions over time—and therefore we also include party FEs. As a result, we run the same models than before but, in this case, we use as an outcome a party's policy position on the GALTAN dimension, on the immigration dimension and on the EU dimension. The analysis is in this case restricted to regional parties. Results are displayed in **Table 2**.

There are good reasons to explore how negative economic shocks polarize or moderate the positions of regional parties on other second dimensions of party competition–such as the nationalism dimension or the immigration dimension. First, regional parties may have electoral incentives to accentuate their positions on the broad nationalism dimension (or immigration views) when economic shocks occur and there is not a satisfactory institutional accommodation of persistent minority groups (Abizadeh, 2021). Thus, when a shock occurs, they might have incentives to change their position on several dimensions, not only on the territorial one. If this is the case, we should establish that economic shocks can trigger significant spillovers across several dimensions of party competition–and that such electoral spillovers fueled by negative economic shocks share the same institutional roots, the ones based on the lack of institutional accommodation of regional minority groups. Second, more in general, it is important to identify how party

competition is shaped by institutional variables such as the federal agreement and the constitutional rigidity.

The analysis shows that, in the presence of an economic shock, and when the territorial configuration is satisfactorily resolved (federal arrangement and credible guarantees), regional political parties display a more moderate position on the GALTAN and the immigration dimension. In other words, in countries with a sub-optimal institutional territorial configuration, regional political parties also adopt more extreme positions on both dimensions when negative economic shocks occur. Therefore, it seems that the consequences of a sub-optimal territorial agreement spill over to other dimensions beyond the territorial one. In contrast, results in model 3 show a different picture. Although the interaction is only significant at the 90% level, the coefficient indicates that regional parties are less pro-EU in countries that experience a shock but have an optimal territorial arrangement. This might be due to several factors. One might be that, under economic distress, regional parties perceive the EU solution is going to be channelled through state institutions, circumventing regional ones, whereby bringing a less pro-EU policy position. Another explanation could lie on a sincere change in preferences towards the EU project. Future work will need to further explore both mechanisms–or others.

All in all, our empirical results suggest that the way in which institutions channel the commitment problem between the majority and the minority group is a very important determinant of the dynamics of political parties' positions on the territorial dimension. Crucially, our results illustrate that the effects of negative economic shocks on political parties' decentralization demands are very much conditioned by the institutional bases. Economic shocks are very much associated with the escalation of political demands by regional parties when institutions fail to accommodate the commitment problem. Thus, economic shocks are triggering devices of centrifugal dynamics, whereby bringing an escalation of political parties' territorial demands. However, the opposite seems to be also true, since negative economic shocks are also associated with an appeasement of the territorial claims by regional parties when the country's institutional roots provide a response to the commitment problem. In other words, a satisfactory institutional accommodation of minority groups seems to be associated with a centripetal party competition dynamic when economic shocks happen.

6 MECHANISMS AND ROBUSTNESS

We now complete the empirical analysis with additional tests to explore the mechanisms with detail as well as some additional robustness checks. First, since our argument and theoretical mechanism focus on regionalist parties, we now run models only including regionalist parties. This is important since we have shown in the baseline models that it is mainly the regionalist parties the ones driving the results. In addition, in order to test the mechanism more directly, we introduce two important modifications to our baseline models. First, we substitute the post 2008 variable for a new dummy variable that directly

captures negative economic growth. The no growth dummy takes on a value of 1 for those years in which a given country suffered a negative GDP growth and 0 otherwise. Second, we substitute the Lijphart's federalism index by alternative measures of political decentralization and regional authority, namely the Regional Authority Index (RAI) (Marks et al., 2008). Specifically, we employ the aggregated measures of Regional Authority and Self Rule at the country level.

In **Table 3** we run alternative specifications that are similar to our baseline models but this time using the negative growth dummy and the aggregate Regional Authority Index (RAI) (Marks et al., 2008). Note that we follow the same empirical specification as in our baseline models and therefore all columns in **Table 4** include party FEs. Essentially this means that, as before, we analyze changes occurring within parties and over time. The main difference with respect to our baseline models is that now the RAI variable is time-varying. Column 1) in **Table 3** does not include Year FEs, but columns 2) and 3) include Year FEs. Importantly, the measure of constitutional rigidity is the same as before (Tsebelis, 2021). All models in **Table 3** include a control for parties' position on the left-right dimension. Finally, columns 2) and 3) in **Table 3** include standard party-level controls: a party's vote share and a dummy for incumbent parties. The standard errors are in all cases clustered at the party-level.

In **Table 3** we are mainly interested in the coefficient that interacts negative growth, RAI and the constitutional rigidity variable. This coefficient is negative and significant across columns (1), 2) and 3) in **Table 3**. This essentially means that regionalist parties are more likely to hold less extreme positions on the territorial dimension when there is an economic recession (negative economic growth), if the Regional Authority Index is high and, at the same time, constitutional rigidity is also high. However, negative economic growth coupled only with high RAI or high constitutional rigidity makes regionalist parties more likely to escalate their territorial demands. Note that the coefficients for the interaction terms between no GDP growth and RAI and no GDP growth and constitutional rigidity are both positive and significant. In other words, neither RAI nor constitutional rigidity are sufficient institutional conditions on their own to appease the demands of regionalist parties in times of economic crisis. Instead, both of them are necessary institutional conditions to appease the demands of regionalist parties when economic shocks happen. Therefore, with this alternative specification our main results hold: they are very much confirmed both when using the negative growth dummy (instead of the post 2008 one) dummy and the RAI index (instead of Lijphart's federalism index).

In **Table 4** we run similar models but this time using the aggregated measure of Self Rule at the country level instead of the RAI measure (Marks et al., 2008). Given that the proposed theoretical mechanism has to do with the ability of regional minority groups to self-govern without interference by national majority groups, the aggregate measures of Self Rule seems an adequate proxy tackling the degree of self-government by regional identity minority groups. The econometric specification is the same one as before: the models in columns

TABLE 3 | Regionalist parties only, party FEs.

	(1) Territorial Dimension	(2) Territorial Dimension	(3) Territorial Dimension
RAI	0.939***	0.996***	0.786***
	(0.157)	(0.172)	(0.214)
RAI X Constitutional Rigidity	−0.950***	−1.071***	−0.852***
	(0.145)	(0.162)	(0.201)
No GDP growth	−24.694**	−30.310***	−53.096***
	(10.662)	(10.588)	(17.339)
No GDP growth X RAI	2.425**	3.082**	5.487***
	(1.097)	(1.118)	(1.836)
No GDP growth X Constitutional Rigidity	21.023**	25.998**	46.460***
	(9.727)	(9.670)	(15.648)
No GDP growth X RAI X Constitutional Rigidity	−2.142**	−2.741**	−4.911***
	(0.996)	(1.019)	(1.662)
Party Positions	Yes	Yes	Yes
Party Level Controls	No	Yes	Yes
Year FEs	No	No	Yes
Mean Dep. Var	8.302	8.281	8.281
R^2	0.261	0.413	0.478
Number of parties	29	26	26
N	78	75	75

Standard errors clustered at the party level in parentheses.
Party Positions: left-right.
Party level Controls: Vote share, Incumb.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE 4 | Regionalists parties only, party FEs.

	(1) Territorial Dimension	(2) Territorial Dimension	(3) Territorial Dimension
Self Rule	0.909***	1.010***	0.816***
	(0.148)	(0.163)	(0.207)
Self Rule X Constitutional Rigidity	−0.923***	−1.085***	−0.882***
	(0.136)	(0.154)	(0.196)
No GDP growth	−27.661**	−33.328***	−56.113***
	(10.838)	(10.546)	(17.708)
No GDP growth X Self Rule	2.734**	3.395***	5.799***
	(1.115)	(1.114)	(1.875)
No GDP growth X Constitutional Rigidity	23.570**	28.587***	49.001***
	(9.863)	(9.615)	(15.939)
No GDP growth X Self Rule X Constitutional Rigidity	−2.406**	−3.009***	−5.173***
	(1.010)	(1.014)	(1.693)
Party Positions	Yes	Yes	Yes
Party Level Controls	No	Yes	Yes
Year FEs	No	No	Yes
Mean Dep. Var	8.302	8.281	8.281
R^2	0.261	0.424	0.486
Number of parties	29	26	26
N	78	75	75

Standard errors clustered at the party level in parentheses.
Party Positions: left-right.
Party level Controls: Vote share, Incumb.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

1), 2) and 3) include all party FEs and incorporate gradually Year FEs as well as party-level controls (vote shares and an incumbent dummy). All columns in **Table 4** control for regionalist parties' positions on the left-right scale. Standard errors are clustered at the party-level.

Again, we are mainly interested in the coefficient for the interaction between no growth, Self Rule and constitutional rigidity. As expected, this coefficient is again negative and significant in all columns in **Table 4**. This means that when there is an economic shock, regionalist parties are less likely to hold extreme territorial positions when the aggregate levels of Self Rule are high and the levels of constitutional rigidity are high. This is very much coherent with the theoretical argument we have discussed. In times of economic crisis, with negative economic growth, regionalist parties are systematically less likely to escalate their demands when the commitment problem is institutionally sealed in a credible way. In other words, Self Rule and constitutional rigidity are both necessary conditions to appease regionalist parties in bad times.

Note, however, that in **Table 4** a different picture is also depicted. It shows the estimated coefficients for the interaction terms between no GDP growth and Self Rule and no GDP Growth and constitutional rigidity are positive and significant. This means that in times of economic crisis, neither Self Rule nor constitutional rigidity are sufficient conditions for regionalist parties to deescalate their demands. If economic shocks occur with only high Self Rule or, alternatively, with high constitutional rigidity, then economic crisis systematically polarize the demands of regionalist parties. We believe that this is very much coherent with the theoretical argument we have put forward, which mainly emphasize the institutional roots of party competition and the importance of the institutional commitment problem.

To check the stability of our results, in alternative specifications not shown here we run the exact same models as in **Table 3** and **Table 4** but plugging in country FEs instead of party FEs. These alternative specifications are of course less demanding, since they do not account for time-unvarying political parties' characteristics. However, the inclusion of country FEs instead of party FEs is useful to explore the variation across political parties instead of only looking at changes within parties over time. After all, our argument is essentially about parties' differential responses to economic shocks depending on alternative institutional configurations. And importantly, the country FEs also control for observed and unobserved differences across countries that remain fixed over time. For example, controlling for alternative institutional variables that might be related to alternative institutional mechanisms. In any case, the inclusion of country FEs instead of party FEs does not modify the main results. The results remain virtually the same when we estimate the same models with the negative GDP growth dummy and the RAI and Self Rule measures. As such, the results seem to be very robust to alternative specifications.

Finally, we replicate our initial baseline models but this time employing an alternative measure of constitutional rigidity. Instead of using the recently developed measure of constitutional rigidity by Tsebelis (2021) that uses a veto-

TABLE 5 | Economic shocks and parties' positions, country FEs.

Party positions	(1) All Parties	(2) Regionalist Parties	(3) Excluding Regionalist
Post 2008 crisis	−1.790	−34.761**	−1.780
	(1.391)	(15.176)	(1.390)
Post 2008 crisis X Federalism Index	1.618**	26.937**	1.569**
	(0.778)	(12.320)	(0.778)
Post 2008 crisis X Constitutional Rigidity	0.865	13.049**	0.646
	(0.561)	(5.580)	(0.552)
Post 2008 crisis X Federalism Index X Constitutional Rigidity	−0.617**	−9.416**	−0.541*
	(0.289)	(4.266)	(0.287)
Party Level Controls	Yes	Yes	Yes
Party Positions	Yes	Yes	Yes
Time Trends	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes
Party FEs	No	No	No
Mean Dep. Var	5.650	8.406	5.235
Number of parties	178	21	158
N	459	60	399

Standard errors clustered at the regional level in parentheses.
Party level Controls: Vote share, Incumb.
Party Positions: left-right, gal/tan.
Time Trends: Year.
* p < 0.10, ** p < 0.05, *** p < 0.01.

player approach, here we employ the classical country-level measure of constitutional rigidity by Lijphart (1999). The latter considers rigidity in a different fashion, namely focusing on the qualified majorities required for amendment process. In **Table 5** we estimate somewhat less restrictive models by imposing country fixed effects. Given that the rigidity measure in Lijphart (1999) has more limited variation, the use of country FE is justified. **Table 5** presents the analysis. As it can be seen, results are substantially the same than in our baseline models with party FEs. As before, the results seem to be driven by the behaviour of regionalist parties. Therefore, with this last specification our main results also hold: they are very much confirmed when using this alternative measure of constitutional rigidity.

7 CONCLUSION

This article puts forward a new way of understanding party competition. More concretely, we offer a complementary explanation of why political parties set a more moderate or extreme policy position on the centralization-decentralization dimension in democratic societies. Against the backdrop in the literature that decentralization is essentially the only way of dealing with territorial demands by political parties, we argue that, for a territorial agreement to appease parties' territorial demands, it needs to be accompanied by a credibility tool, namely the rigidity of the institutions. Crucially, the minority group also wants guarantees that the majority group will not circumvent the agreement. Both decentralization and the rigidity of the political

system change the incentives political parties have to set more (or less) extreme policy positions on the territorial dimension.

By exploiting the fact that the 2008 economic crisis put a strain on the territorial institutional design, our empirical analysis confirmed our theoretical expectations. We observe that in countries where there is a federal agreement and a high level of constitutional rigidity, the 2008 economic shock did not push political parties to set an extreme position on the territorial dimension. Conversely, a low constitutional rigidity in countries with high levels of federalism is associated with more extreme policy positions on the territorial dimension. In addition, our analysis shows that sub-optimal institutional designs also spill over to other regional parties' dimensions, such as the broad nationalism dimension, the immigration or the EU integration dimension. In a nutshell, our empirical analysis confirms that both the federal deal and the credibility of the institutional agreement through constitutional rigidity are necessary conditions to appease the territorial conflict. None of them, however, is a sufficient condition to appease the territorial demands of regionalist parties in times of crisis.

Overall, the implications of our argument, validated with the data, are important for our understanding of the territorial conflict in democratic societies. From an academic point of view, it suggests that, in order to understand party competition on the territorial dimension, or political competition in societies with groups seeking territorial concessions, explanations need to go beyond the centralization-decentralization logic. In other words, decentralizing power to a minority group may not be enough to appease the territorial demands. As we have shown, if the system is flexible, the majority group is tempted to roll back concessions and the minority group persistently fears re-centralization policies. From a policy point of view, our results point to the need to implement measures that go beyond decentralizing power in order to effectively accommodate regional groups within the system.

An important corollary of our argument and results is that there might be a non-linear relationship between levels of decentralization and salience of territorial conflicts, since we have shown that institutional guarantees for regional minority groups also play a fundamental role. This is in line with recent works, such as (Gibilisco, 2021), that have emphasized the commitment problem between majority and minority groups as a source of non-liner territorial conflicts in multinational states. Recent political developments in countries such as Spain illustrate that the lack of guarantees for regional minority groups is a likely source of territorial conflicts–even when the levels of economic and political decentralization are at medium or high levels.

Departing from our findings, future works can take a dynamic perspective and analyze whether particular reforms strengthening the rigidity of the system lead to more or less polarization on the territorial dimension. In addition, they can also dig deeper on whether the interplay between decentralization and constitutional rigidity occurs in other crisis, such as corruption or political scandals. Finally, research in the future can bring in the dimensions of self-rule and shared-rule and analyze whether both of them play (or not) a similar role. Overall, and regardless of future approaches, we hope we have convincingly shown that, if one wants to understand party competition along the territorial dimension, he/she needs to go beyond the decentralization logic and additionally consider the institutional devices giving credibility to the territorial agreement.

DATA AVAILABILITY STATEMENT

Publicly available datasets were analyzed in this study. This data can be found here: https://www.chesdata.eu/.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

REFERENCES

Abizadeh, A. (2021). Counter-Majoritarian Democracy: Persistent Minorities, Federalism, and the Power of Numbers. *Am. Polit. Sci. Rev.* 115, 1–15. doi:10.1017/s0003055421000198

Amat, F. (2012). Party Competition and Preferences for Inter-regional Redistribution in Spain. *South Eur. Soc. Polit.* 17 (3), 449–465. doi:10.1080/13608746.2012.701897

Amat, F., and Rodon, T. (2021). Institutional Commitment Problems and Regional Autonomy: The Catalan Case. *Polit. Governance* 9 (4).

Bakker, R. (2020). "Liesbet Hooghe Seth Jolly Gary Marks Jonathan Polk Jan Rovny Marco Steenbergen and Milada Anna Vachudova,". Version 1.0 in *1999 2019 Chapel Hill Expert Survey Trend File.* Available on chesdata.eu.

Basta, K. (2017). The State between Minority and Majority Nationalism: Decentralization, Symbolic Recognition, and Secessionist Crises in Spain and Canada. *Publius: J. Federalism* 48 (1), 51–75. doi:10.1093/publius/pjx048

Bednar, J. (2011). The Political Science of Federalism. *Annu. Rev. L. Soc. Sci.* 7 (1), 269–288. doi:10.1146/annurev-lawsocsci-102510-105522

Benz, A. (2013). Balancing Rigidity and Flexibility: Constitutional Dynamics in Federal Systems. *West Eur. Polit.* 36 (4), 726–749. doi:10.1080/01402382.2013.783346

Beramendi, P., and Rogers, M. (2020). Fiscal Decentralization and the Distributive Incidence of the Great Recession. *Reg. Stud.* 54 (7), 881–896. doi:10.1080/00343404.2019.1652895

Bolgherini, S. (2014). Can Austerity Lead to Recentralisation? Italian Local Government during the Economic Crisis. *South Eur. Soc. Polit.* 19 (2), 193–214. doi:10.1080/13608746.2014.895086

Brancati, D. (2006). *Decentralization: Fueling the Fire or Dampening the Flames of Ethnic Conflict and Secessionism.* International Organization 60 (3), 651–685.

Brancati, D. (2008). The Origins and Strengths of Regional Parties. *Br. J. Polit. Sci.* 38, 135–159. doi:10.1017/s0007123408000070

Brubaker, R. (1994). Nationhood and the National Question in the Soviet Union and post-Soviet Eurasia: An Institutionalist Account. *Theor. Soc.* 23 (1), 47–78. doi:10.1007/bf00993673

Coby, J. P. (2016). The Long Road toward a More Perfect Union: Majority Rule and Minority Rights at the Constitutional Convention. *Am. Polit. Thought* 5 (1), 26–54. doi:10.1086/684558

Cook, T. E. (2003). *Separation, Assimilation, or Accommodation: Contrasting Ethnic Minority Policies: Contrasting Ethnic Minority Policies.* Westport, CT: ABC-CLIO.

Del Pino, E., and Pavolini, E. (2015). Decentralisation at a Time of Harsh Austerity: Multilevel Governance and the Welfare State in Spain and Italy Facing the Crisis. *Eur. J. Soc. Security* 17 (2), 246–270. doi:10.1177/138826271501700206

Elias, A. (2015). Catalan Independence and the Challenge of Credibility: The Causes and Consequences of Catalan Nationalist Parties' Strategic Behavior. *Nationalism Ethnic Polit.* 21 (1), 83–103. doi:10.1080/13537113.2015.1003490

Elias, A., Szöcsik, E., and Zuber, C. I. (2015). Position, Selective Emphasis and Framing. *Party Polit.* 21 (6), 839–850. doi:10.1177/1354068815597572

Garbaye, R. (2002). Ethnic Minority Participation in British and French Cities: a Historical-Institutionalist Perspective. *Int. J. Urban Reg. Res.* 26 (3), 555–570. doi:10.1111/1468-2427.00398

Gibilisco, M. (2021). Decentralization, Repression, and Gambling for Unity. *J. Polit.* 83 (4), 1353–1368. doi:10.1086/711626

Green, E. (2020). Ethnicity, National Identity and the State: Evidence from Sub-saharan Africa. *Br. J. Polit. Sci.* 50 (2), 757–779. doi:10.1017/s0007123417000783

Hechter, M., and Okamoto, D. (2001). Political Consequences of Minority Group Formation. *Annu. Rev. Polit. Sci.* 4 (1), 189–215. doi:10.1146/annurev.polisci.4.1.189

Hernández, E., and Kriesi, H. (2016). The Electoral Consequences of the Financial and Economic Crisis in Europe. *Eur. J. Polit. Res.* 55 (2), 203–224. doi:10.1111/1475-6765.12122

Hirschman, A. O. (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States,* 25. Harvard University Press.

Hooghe, L., Marks, G., and WilsonWilson, C. J. (2002). Does Left/right Structure Party Positions on European Integration. *Comp. Polit. Stud.* 35 (8), 965–989. doi:10.1177/001041402236310

Hutter, S., Kriesi, H., and Vidal, G. (2018). Old versus New Politics. *Party Polit.* 24 (1), 10–22. doi:10.1177/1354068817694503

Kettl, D. F. (2020). States Divided: The Implications of American Federalism for COVID-19. *Public Admin Rev.* 80 (4), 595–602. doi:10.1111/puar.13243

King, E., and Samii, C. (2020). *Diversity, Violence, and Recognition.* Incorporated: Oxford University Press.

Kyvelou, S. S., and Marava, N. (2017). *From Centralism to Decentralization and Back to Recentralization Due to the Economic Crisis: Findings and Lessons Learnt from the Greek Experience.* Cham: Springer International Publishing, 297–326. doi:10.1007/978-3-319-32437-1_12 From Centralism to Decentralization and Back to Recentralization Due to the Economic Crisis: Findings and Lessons Learnt from the Greek Experience.

Librecht, L., Maddens, B., Swenden, W., and Fabre, E. (2009). Issue Salience in Regional Party Manifestos in Spain. *Eur. J. Polit. Res.* 48 (1), 58–79.

Lijphart, A. (1999). *Patterns of Democracy.* EBSCO ebook academic collection Yale University Press.

Lublin, D. (2012). Dispersing Authority or Deepening Divisions? Decentralization and Ethnoregional Party Success. *J. Polit.* 74 (4), 1079–1093. doi:10.1017/s0022381612000667

Lutz, D. S. (1994). Toward a Theory of Constitutional Amendment. *Am. Polit. Sci. Rev.* 88 (2), 355–370. doi:10.2307/2944709

Marks, G., Hooghe, L., Arjan, H., and Schakel, A. H. (2008). Patterns of Regional Authority. *Reg. Fed. Stud.* 18 (2-3), 167–181. doi:10.1080/13597560801979506

Massetti, E., and Toubeau, S. (2020). *The Party Politics of Territorial Reforms in Europe.* Oxford, United Kingdom: Routledge.

Massetti, E., and Schakel, A. H. (2016). Between Autonomy and Secession. *Party Polit.* 22 (1), 59–79. doi:10.1177/1354068813511380

Meguid, B. M. (2015). Multi-level Elections and Party Fortunes: The Electoral Impact of Decentralization in Western Europe. *Comp. Polit.* 47 (4), 379–398. doi:10.5129/001041515816103266

Rodon, T. (2020). The Spanish Electoral Cycle of 2019: a Tale of Two Countries. *West Eur. Polit.* 43 (7), 1490–1512. doi:10.1080/01402382.2020.1761689

Sambanis, N., and Milanovic, B. (2014). Explaining Regional Autonomy Differences in Decentralized Countries. *Comp. Polit. Stud.* 47 (13), 1830–1855. doi:10.1177/0010414013520524

Sánchez-Cuenca, I. (2010). *Más Democracia, Menos Liberalismo.* Madrid, Spain: Katz Editores.

Sorens, J. (2012). *Secessionism: Identity, Interest, and Strategy.* Kingston, Canada: McGill-Queen's University Press.

Sorens, J. (2009). The Partisan Logic of Decentralization in Europe. *Reg. Fed. Stud.* 19 (2), 255–272. doi:10.1080/13597560902753537

Toubeau, S., and Wagner, M. (2015). Explaining Party Positions on Decentralization. *Br. J. Polit. Sci.* 45 (1), 97–119. doi:10.1017/s0007123413000239

Tsebelis, A. R. C. P. P. S. G., Tsebelis, G., and Foundation, R. S. (2002). *Veto Players: How Political Institutions Work.* EBSCO ebook academic collection Princeton University Press.

Tsebelis, G. (2021). Constitutional Rigidity Matters: A Veto Players Approach. *Br. J. Polit. Sci.*, 1–20. doi:10.1017/s0007123420000411

Tsebelis, G. (1995). Decision Making in Political Systems: Veto Players in Presidentialism, Parliamentarism, Multicameralism and Multipartyism. *Br. J. Polit. Sci* 25 (3), 289–325. doi:10.1017/s0007123400007225

Vatter, A. (2009). Lijphart Expanded: Three Dimensions of Democracy in Advanced OECD Countries. *Eur. Pol. Sci. Rev.* 1 (1), 125–154. doi:10.1017/s1755773909000071

Wibbels, E. (2000). Federalism and the Politics of Macroeconomic Policy and Performance. *Am. J. Polit. Sci.* 44 (4), 687–702. doi:10.2307/2669275

Polarization and Accountability in Covid Times

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We analyze the relationship between accountability and polarization in the context of the COVID crisis. We make three points. First, when voters perceive the out-party to be ideologically extreme, they are less likely to hold incumbents accountable for poor outcomes via competence-based evaluations. Knowing this, even in the context of major crises, incumbents face weaker incentives to take politically costly measures that would minimize deaths. Second, there is a partisan asymmetry whereby the additional government intrusion associated with effective COVID response can be more politically costly for the right than for the left, because it undercuts the ideological distinctiveness that drives the base-mobilization strategy of the right. Third, this asymmetry generates incentives for politicization of COVID mitigation policies that ultimately lead to partisan differences in mitigation behavior and outcomes. To illustrate this logic, we provide preliminary evidence that COVID death rates are higher in more polarized democracies, and that in one of the most polarized democracies—the United States—COVID deaths have become increasingly correlated with partisanship.

Keywords: polarization, pandemics, policy responses, elections, accountability, democracy, crises

1 INTRODUCTION

In the 2020 United States presidential election, neither the incumbent presidential candidate nor his political party performed especially poorly in states or counties with higher death rates from COVID-19. On the contrary, in the 100 counties with the highest cumulative COVID death rate on Election Day, on average, Donald Trump's support increased by four percentage points over 2016. In the 500 counties with the highest death rates, his support increased by over one percentage point on average.[1] Joseph Biden's electoral gains were concentrated not in the urban counties that suffered in the first waves of the pandemic or the rural counties that suffered in the deadly third wave, but rather, in the suburban counties that never experienced high death rates. Meanwhile, governors of states with very high COVID death rates have maintained surprisingly high approval ratings, and have even been celebrated as candidates for higher office. Presiding over an unusually high pandemic death rate is evidently not a career-killer for American elected officials.

Consider also the case of Spain. Isabel Diaz Ayuso, leader of the regional government in Madrid, secured her election on May 2021. Despite presiding over catastrophic outcomes in nursing homes,

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[1]We merge county-level election data from the MIT Election Lab with COVID death rates compiled by the New York Times, and rank the counties by cumulative COVID death rates on Election Day, and calculate the population-weighted average change in two-party vote shares among counties ranked in the top 100 and 500

difficulties in health policy management, and one the highest comparative death counts in Spain, she secured a massive electoral victory against a fragmented left.

These patterns are puzzling from the perspective of democratic accountability theory. The provision of basic security, the protection of life in the face of a major health risk, is perhaps the most basic responsibility for rulers. People dying in larger numbers constitutes an easily observable fact, as do differences in death rates across different countries or localities. Failures to limit contact with infected individuals, supply nursing homes or hospitals, or provide procedures and funding to allow schools and hospitals to cope with the consequences of the pandemic worsen outcomes and are, in principle, attributable to incumbents. And yet, in some countries we observe limited electoral punishment or even political gains in areas with high death rates.

This essay explores the possibility that the lack of obvious widespread retrospective voting based on local COVID data is quite understandable in the face of partisan and geographic political polarization. Moreover, we consider the possibility that incumbent politicians in polarized democracies know that they are unlikely to be held accountable for deaths, and as a result, face weak incentives to minimize them. In contrast, incumbent officials in less polarized democracies run a greater risk of being held accountable for deaths, and face stronger incentives to minimize them.

It is too early to draw conclusions about cross-country or cross-locality determinants of policies related to COVID-19, adherence to those policies, or rates of infection or death. The spread of the virus, and government responses, have changed rapidly since the virus emerged, and some of the most important sources of cross-national and within-country variation in rates of infection and death are largely outside the realm of politics and policy. Explanations that look promising today will be proven wrong in a matter of weeks or months. Nevertheless, some relatively stable patterns are emerging, and it is perhaps not too early to begin the tentative process of exploring the political conditions that have shaped governments' reactions to the virus and conditioned their success or failure. First, some have argued that on average, non-democratic countries have reacted more quickly (Cheibub et al., 2020) and more stringently (Frey et al., 2020) than democracies, and have experienced fewer deaths. According to Cheibub, Hong and Przeworski (2020), there is a trade-off between the minimization of deaths and the preservation of rights—for example, rights to associate, worship, move freely, and pursue economic opportunities—and dictatorships are less constrained by the need to protect those rights. Accordingly, democracies might tolerate more deaths in order to preserve these rights.

Yet as pointed out by Cheibub, Hong and Przeworski (2020), there is considerable heterogeneity in reactions and outcomes among democracies that remains unexplained. This essay explores the notion that elected officials in democracies worry, at least in part, about being punished by voters for deaths. By exploring the conditions under which incumbents are most concerned about electoral penalties for deaths, perhaps we can gain insight into their incentives to promulgate and enforce

policies that prevent them. Our analysis assumes high levels of state capacity, an important factor moderating COVID responses (Bosancianu et al., 2020).

We draw upon a very simple political economy setup in which voters' evaluations of incumbents depend upon their assessments of 1) competence and 2) ideology. In polarized democracies, a large number of voters view the out-party as ideologically far away, and they experience large utility losses when the out-party is in power. Such voters are less likely to rely on retrospective evaluations of competence when forming their evaluations of incumbents. Conversely, in a less polarized democracy, when most voters perceive the parties as ideologically proximate, retrospective evaluations can become crucial. As a result, incumbents in more polarized democracies face weaker incentives to worry about retrospective evaluations, and can continue to focus on ideology even as death rates climb.

In polarized democracies, the trade-off between saving lives and preserving rights or economic prosperity can also map onto preexisting ideological conflicts in pernicious ways. It is tempting for parties of the left to use COVID as an opportunity to further their agenda and please their core supporters. It is tempting for parties of the right to mobilize their core supporters by portraying public health efforts as attacks on their rights or efforts to expand redistribution under false pretenses. If this framing is successful, voters cannot agree on deaths as a valid performance metric. Knowing this, incumbents on the right and left face weak incentives to worry about this metric.

Next, we explore some additional conditions under which incumbents in polarized democracies are less likely to be sensitive to death rates. First, it is easier to escape blame for deaths when members of the out-party control relevant higher- or lower-level offices with authority over public health. Faced with the vexing trade-off between saving lives and protecting rights and livelihoods, perhaps the ideal scenario for an incumbent is to avoid difficult decisions and blame others for both deaths and shutdowns. Second, we highlight the role of viral and political geography in polarized democracies. It is especially tempting for incumbents to avoid hard decisions if deaths are geographically concentrated in areas where the most ideological—and hence least retrospective—voters are concentrated. Incumbents would be most likely to worry about deaths if they were concentrated in pivotal areas with large densities of ideological moderates. However, we discuss examples, including the United States, where this has not been the case. Finally, we explore a dynamic by which, in highly polarized democracies where disease response has been politicized, deaths can come to be increasingly concentrated in the core support areas of the right, where COVID mitigation measures have come to be seen through a lens of ideology rather than competence.

We provide some preliminary and tentative evidence in favor of these subtly different claims about polarization. First, we show that COVID death rates have been higher in democracies where voters view the out-party or parties as more ideologically distant from themselves. Second, we show that death rates have been higher in democracies where supporters of the government and opposition are most dissonant in their assessments of the government's COVID response. Third, using data from U.S.

counties, we demonstrate a growing concentration of COVID deaths in the most overwhelmingly Republican areas.

2 BASIC SETUP: THE TRADE-OFF BETWEEN COMPETENCE AND IDEOLOGY

Let us consider the utility of a representative voter j, with an ideal point of x_j on a single, over-arching dimension of politics. The voter's utility for incumbent candidate i is determined by v_i, the perceived competence of incumbent candidate i, as well as the distance between the voter's ideal point, x_j, and the perceived platform of the incumbent candidate, x_i:

$$u_j(x_i, v_i) = v_i - a(x_j - x_i)^2$$

where $a > 0$ scales the relative importance of ideology versus competence for the voter. Voter utility for candidate c, the challenger, is determined in the same way:

$$u_j(x_c, v_c) = v_c - a(x_j - x_c)^2$$

We are interested in understanding the role of perceived competence of the incumbent: v_i. Voters face a well-known problem in collecting unbiased information about incumbent performance, but there is considerable evidence that under some conditions voters react to performance indicators like macroeconomic aggregates, student test scores, property values, or public health outcomes. Negative voter reaction to poor performance is the route through which voters might induce strong, public-spirited efforts by elected officials and generate disincentives for theft or corruption on the part of officials.

Specifically, during a pandemic in which best practices and ideal policy responses are unknown and rapidly evolving, voters might use death rates—especially compared with neighboring or similarly situated countries, provinces, states, or cities, as unvarnished indicators of incumbent competence in combating the pandemic. As with macroeconomic and other indicators, the signal-to-noise ratio indicating the value of death rates as a performance indicator might be low, since a great deal of variance is driven by factors, including hospital infrastructure, the density of living arrangements, contact with travelers, and the emergence of virus variants, that are beyond the immediate control of the incumbent. Nevertheless, inducing fear of punishment for observable poor performance is probably the best accountability mechanism available to voters. Incumbents might fear that sufficiently low values of v_i relative to v_c will sink their reelection prospects, inducing them to work in the common interest.

In the context of a pandemic, there is no need to resort to the demanding informational assumptions implicit in the economic voting literature (Duch et al., 2008). Despite the noise, the competence metric is simple: are incumbents capable of containing and preventing deaths? Given the prominent media presence of political leaders guiding interventions, we can assume that the two conditions Achen et al. (2017) required for retrospective voting to be feasible apply: 1) voters can plausibly discern a connection between government's actions

and outcomes; and 2) the effects of policy decisions are likely to be intense, immediate, and lasting. So even if voters are fundamentally myopic, the possibility of establishing a link between experiences and incumbents' policies remains (see Achen et al. (2017), pages 304–306).

Ideology, however, can easily undermine this accountability mechanism in a number of ways. If we fix x_i and x_c, as a voter becomes ideologically further away from her perceived x_i, her distaste for the incumbent grows, and performance indicators become less important in driving her utility. The same is true for candidate c, the potential replacement for candidate i. As voters who are ideologically aligned with the incumbent become more ideologically extreme relative to their perception of x_c, they also care more about ideology and less about competence. In this setup, it is easy to see how political polarization might undermine an incumbent's incentives to minimize deaths from a pandemic using a basic political economy approach to elections.

In the simplest case, imagine that there are just two parties, i and c, and every voter is perfectly ideologically aligned with one of the parties in the sense that her preferences are identical to either x_i or x_c, and these two clumps of voters and politicians are at $-z$ and z. As z grows, the importance of perceived competence, v_i and v_c, diminishes, because the ideological distaste of having the other side in office grows. That is to say, as a party system becomes more ideologically polarized, competence-based voting becomes less important. More realistically, the distribution of ideal points among voters is not bimodal, and there are individuals in the middle of the distribution who are closer to the point of indifference between their perception of x_i and x_c. For these "moderates," perceived competence is a more important part of their utility function. Another way to think about party system polarization is that these individuals become fewer in number.

Note that in this framework, x_i and x_c are *perceived* platforms. Thus, polarization need not be conceived as a process in which voters actually become more extreme in their objective views about, say, taxation or abortion. Rather, it can be understood as a process in which voters come to perceive the out-party as increasingly far from themselves. Cox and Rodden (2021) provide a model in which perceptions of x_i and x_c emerge from strategic messages sent by the parties about the out-party's platform on an issue-by-issue basis, exploiting voters' negativity bias by selectively informing them of the out-party's position on the issues they care most about, or on issues on which the voter is furthers from the out-party's platform. In this way, over time, voters can come to see the parties as increasingly extreme—and distasteful—even if voter ideology does not change.

3 PARTISAN POLARIZATION AND INCUMBENT INCENTIVES: CHANNELS AND CONTEXT

This logic is relatively clear, but it is perhaps too simplistic in its distinction between ideology and competence. As Cheibub, Hong and Przeworski (2020) point out, democracies must wrestle with the trade-off between saving lives and protecting rights in ways

that authoritarian regimes must not. A problem in democracies is that party message-makers face incentives to map the complex trade-offs associated with virus response onto pre-COVID ideological battles. Well-meaning policy proposals by the out-party that are aimed at saving lives can easily be portrayed as extremist power-grabs crafted with the sole purpose of trampling on the rights of members of the in-party. In other words, COVID response becomes yet another opportunity for party elites to mobilize core supporters by increasing their perceived ideological distance to the out-party, which minimizes the role of competence assessments.

But the problem might go well beyond ideology squeezing out competence. Ideology can also cause voters to disagree about the appropriate metric for evaluating v_i in a way that is correlated with ideology. Ferejohn (1986) points out that when the electorate is sufficiently heterogeneous, voters are unable to agree on a metric for evaluating competence, and it is not possible to hold incumbents accountable. In this case, those who are ideologically closer to one party might determine that the preservation of jobs and economic activity is the appropriate metric, while supporters of the opposite party might focus on deaths. Moreover, the literature on motivated reasoning explains how highly ideological voters might interpret the same information very differently through a partisan lens (Lavine et al., 2012; Acharya et al., 2018). Above all, supporters of the incumbent can be convinced of any number of reasons to absolve her of responsibility for climbing death rates—especially in a setting where the link between government policy choices and death rates is indeed quite tenuous. Even further, some highly partisan supporters of the incumbent might even become convinced that death rates are fabricated or exaggerated.

All of this suggests several different mechanisms through which incumbents in more polarized democracies seek to escape blame for deaths. Voters might agree that a climbing death rate is a signal of poor performance, but ideology trumps competence for too many voters. And the incumbent's supporters and detractors might disagree about whether the death rate is indeed something worthy of punishment. We argue that the relationship between polarization and party competition makes these outcomes particularly likely. We focus on three channels: 1) partisan asymmetries when it comes to policy responses to pandemics; 2) how polarization shapes political risks in the crafting of responses to the pandemic; and 3) the moderating role of federalism and political geography.

3.1 Policy Responses and Ideological Asymmetry

Deaths and job losses are two of the most important metrics being used in assessing how countries have responded to the COVID pandemic. Since the virus is transmitted through air in close contact, early in the pandemic, a consensus emerged among public health experts around the importance of imposing restrictions on people's movements, both internationally and domestically. At the peak of the pandemic, prior to the development of vaccines, such restrictions implied the effective closure of any economic activity that required interpersonal contact. Public and private services, such as education or tourism, travel, any form of production or distribution requiring close contact, were either halted or severely restricted.

As a result, most advanced economies suffered significant GDP contractions and unemployment surges. For incumbents, the dilemma became how to prevent the economy from utter collapse without adding to the death toll. If one thinks of the position adopted by politicians as a continuum going from very lax to very extreme restrictions on economic activity, there is significant variance across countries and localities. Some societies, like Sweden or some US states like Texas or Georgia, opted for limiting restrictions at the expense of the spread of the disease; others, like Australia, responded much more aggressively at times. Virtually all changed their strategies over time as the pandemic evolved, and many attempted to vary their regulations across cities or regions according to the severity of the outbreak.

Regardless of the specific restrictions adopted by each incumbent, early in the pandemic, before the development of vaccines, government responses to COVID involved an unusual amount of public intervention in the economy and society. Countries around the world adopted massive transfers to subnational units, firms, and workers so that they could navigate the economic disruptions caused by the pandemic. Leaders also spearheaded significant investments in physical and technical infrastructures, and the *ad hoc* regulation of production in key strategic sectors. The resort to the National Defense Act, along with massive public subsidies, in the process of vaccine production in the USA is one of the most prominent examples among many such interventions. Governments also became highly involved, often in new and controversial ways, in attempting to regulate the behavior of businesses and individuals. Sometimes leaders invoked emergency powers with questionable constitutional grounding.

Whether trying to save lives or jobs, a cross-country consensus emerged that a competent COVID response required a significant increase in government regulation, from restrictions on movements and indoor gatherings to the requirements to wear a mask, as well as with a stronger presence of the state in the economy (massive subsidies, higher taxes, higher deficits). This creates an interesting partisan asymmetry: more regulation and a stronger fiscal effort are, arguably, the natural environment for left parties trying to consolidate their bases of support. These are policies that, for the left, work *towards* the base. These policies are consistent with the party's long-standing rhetoric, and core and potential voters will perceive them as the natural response to the crisis without much of a second thought.

By contrast, these policy initiatives work *against* the long-standing rhetoric and deeply held beliefs of the partisan base for the right, both in terms of regulatory restrictions and budgetary efforts. This is true not only of voters with libertarian views, who would see both enhanced regulations and excessive tax-and-spend efforts with a critical eye, but also of more conventional conservative voters who are willing to accept behavioral restrictions on moral grounds (say, on abortion rights) but are fundamentally skeptical of government as a hungry Leviathan that is predisposed to devour the output of people's hard labor.

This asymmetry implies that for a certain kind of anti-government incumbent, a response to the pandemic based solely on competence is an uphill battle against its own core constituency.[2] For politicians on the right, to adopt the emerging bundle of consensus COVID mitigation policies in 2020 was to run the risk of being perceived as moving to the left.

To the extent that COVID mitigation policies came to be mapped onto preexisting ideological battles, this happened prior to the development of vaccines or even the emergence of a public health consensus about the importance of masking. It happened during the phase of business shutdowns and expensive relief packages. Our claim is not that anti-vaccine or anti-mask sentiment somehow flows in a coherent way from the bundle of ideas promoted by parties of the right. Indeed, concerns about civil liberties and fear of government overreach have sometimes been emphasized by parties of the left, and parties of the right often emphasize personal responsibility. Moreover, the political base of the right in many countries strongly supports using the authority of the state to compel individuals to comply with the dictates of "law and order," and one can easily imagine an alternative scenario in which parties of the right embraced a strong government role in regulating behavior, while parties of the left focused on concerns about civil liberties. We do not dispute this. Our claim is that in the crucial early phase of the pandemic, when the ideological mapping of COVID mitigation took shape, the consensus mitigation policies involved severe restrictions on religious institutions, private enterprise, and even family gatherings. These restrictions were quite different in kind from a "law and order" agenda associated with the protection of private property and exchange, and they were extremely unpopular among some core voters of the right. We also recognize the presence of libertarians on the left who are wary of government overreach, but it is important to note that shutdowns were accompanied by massive progressive public efforts to socialize health and economic risks via government programs and transfers that the left could only dream about in normal times.

In sum, to the extent that incumbents and challengers had incentives to map COVID mitigation policies onto existing ideological conflicts, it was parties of the right who had the strongest electoral incentives to develop a narrative of skepticism in the early days of the pandemic. Once the resonance of that narrative had been demonstrated, it made strategic sense to extend it to vaccines and masks.

3.2 Political Risk in Polarized Versus Non Polarized Contexts

The calculus of elites depends primarily on the expected responses by voters. These responses are likely to differ in polarized versus non-polarized environments. Arguably, the very definition of polarization implies that competence weighs less than ideology in voters' performance assessments. A non-

polarized environment is one in which $|x_i - x_c|$ is relatively small and the weight of $v_i - v_c$ in voters' assessments is larger. By contrast, polarization implies both that the distance in terms of ideology between the incumbent and the challenger grows larger and that the importance of ideological consideration relative to competence evaluations is also stronger.

This distinction matters because of the political risks incumbents and challengers face in relation to their core and potential supporters as they engage with the policy responses to the pandemic. Politicians competing in elections want to maximize the size of their coalition by, ideally, both attracting moderates and independents and minimizing the losses through the de-mobilization of core supporters. Our argument suggests that the simultaneous pursuit of both goals is limited by the partisan asymmetry in COVID policy responses and the baseline level of polarization.

To see this, consider first the case of incumbents in a non polarized context in the early days of the pandemic. If the incumbent is on the left, a death-minimizing COVID policy works *towards* the base. Her expectation will be that the new regulations and expenditures that constitute a competent policy platform will help mobilize the core supporters of the left while attracting moderates if death rates are suppressed. A basic problem is that left-wing incumbents might be tempted to provide extra goodies to their base that are poorly targeted toward COVID relief. However, a large density of potential competence-based voters will place limits on her incentives to do so. Given low levels of polarization in perceived platforms, the opposition has an incentive to appear as competent by showing a more collaborative profile. Expected demobilization by core voters due to their decreasing ideological distinctiveness is small relative to the offsetting concern that intransigence will enhance the incumbent's competence advantage. In a less polarized democracy, it is important for parties to retain the chance to keep attracting competence-based voters in subsequent contests.

If the incumbent is on the right, the consensus package of COVID measures work *against* its base. A risk is that vigorous government intervention will demobilize the base by minimizing the perceived ideological distance to the out-party. In a less polarized democracy, perceived incompetence is a bigger electoral threat, and incumbents have incentives to present the combination of restrictions and subsidies as *the only plausible* response. They will also seek agreement and collaboration across the aisle to share the political costs of the measures. Much like the right in the case of a left incumbent, the main party of the left has incentives to cooperate and appear as a reliable partner when the national interest is at stake. If anything, the left will face incentives to push for a larger and more generous policy package. In either scenario, ideological differences are downplayed and the debate tends toward social responsibility and institutional efficiency in responding to the crisis. In a nutshell, both parties perceive a danger that voters will punish the adoption of extreme ideological positions that undermine the incumbent.

The calculus changes in highly polarized democracies. First consider a left-wing incumbent. As in a less polarized democracy, she can mobilize her base, and enhance voters' perceptions of

ideological distance from the party of the right, with a package of increased regulation and spending. Again, the temptation to sneak non-COVID-related goodies into the relief package is strong, but the countervailing fear of punishment by neutral, competence-based voters is weaker. In the United States, for instance, Democratic elites were quite clear in advertising to their core supporters that the American Rescue Plan went far beyond COVID relief, going so far as to promote it as "one of the most progressive pieces of legislation in American history."[3] For their part, the right-wing opposition faces little incentive to cooperate because they fear the demobilization of core supporters and expect no gains from sharing in policy responses that work against their base's ideological priors. By assenting to expansive new regulations and expenditures, parties of the right run the risk of undermining their base-mobilization strategy. If their electoral success depends in large part on core supporters who view the left as ideologically distasteful, it makes little sense to dull the parties' perceived ideological distinctiveness. On the contrary, both parties face incentives to enhance it. As a result, when in opposition in a polarized democracy, the right faces incentives to criticize excessive intervention, challenge spending as a gift to left-leaning interest groups and inefficient redistribution through the back door, accusing left incumbents of trampling on individual rights and turning the cure into a bigger problem than the disease itself.

In the case of right wing incumbents in polarized contexts, the incentives are for weaker restrictions and regulations and lower spending levels. In turn, we expect the left opposition to be combative in denouncing the limits of the response, blaming the incumbents for deaths, and taking every opportunity to demonstrate its ideological distinctiveness.

3.3 Institutional Context: Federalism and Political Geography

Depending on the precise electoral rules and vertical structure of authority, in a polarized democracy, our framework suggests some complex ways in which the geographic distribution of ideology and pandemic deaths might shape voter perceptions, politicians' incentives, and the effectiveness of COVID response. First of all, in most countries, COVID did not emerge at the same time in all geographic regions. It often emerged in one or a handful of regions, for instance Northern Italy or Southern Germany, or the cities of New York, Detroit, and New Orleans in the United States. As a result, in the initial wave, COVID typically came to be viewed as a region-specific problem. In a polarized democracy, if COVID cases are initially concentrated in the geographic base of the left party, this only magnifies the pernicious logic of polarization described above. The party of the left has even stronger incentives to call for government intervention, and whether it is the incumbent or opposition, an anti-government party of the right has even less incentive to yield to expensive and intrusive policies that are perceived only to benefit the core supporters of the left. The party

of the right faces strong incentives to resist COVID mitigation policies, or to insist that they are the responsibility of lower-level governments that are controlled by officials belonging to the party of the left.

The problem does not disappear if COVID emerges in the geographic bailiwick of the right. Imagine that voters only take into consideration local rather than national death rates when assessing v_i. If deaths are concentrated in regions where $(x_j - x_i)$ is large—that is to say, regions where voters perceive the incumbent to be ideologically far away—the incumbent understands that assessments of v_i will not matter: relatively few voters are sufficiently moderate to pay attention to competence. Perhaps counter-intuitively, this framework also suggests that if polarization is sufficiently intense, even a concentration of deaths in the incumbent's core support regions might also not induce punishment, since most voters view the out-party challenger as too distasteful. Deaths are most likely to induce punishment when they occur in regions with large densities of voters who are closer to the point of ideological indifference between the candidates.

This claim is plausible regardless of whether the incumbent in question is a national-level government for whom voters' retrospective assessments are driven by regional information, or whether the incumbent is a state or provincial official. In a polarized setting, even a lower-level government with substantial authority over public health and high death rates might avoid punishment if he or she presides over an electorate that is dominated by ideological extremists.

This logic of polarization can apply to incumbents on both the left and right. Without paying a political price, left incumbents might push for expensive and expansive programs that are poorly targeted and ultimately ineffective, even while failing to invest in the safety of nursing homes. On the right, once COVID skepticism has been politicized, basic COVID mitigation policies—even including mask-wearing and vaccines—can come to be seen as nefarious leftist schemes. In decentralized systems, local officials can brandish their ideological distance from the out-party by undermining or circumventing regulations by higher-level governments. In a polarized democracy, electoral punishment for high COVID death rates is unlikely in either the core support areas of the left or right, but rather, in areas with large densities of swing voters.

Multi-layered authority also adds additional complexity. A basic problem with divided authority—whether through coalition government, executive-legislative division, or federalism—is that it might undermine accountability by making it difficult for voters to make assessments about v_i. The incumbent chief executive can often credibly blame coalition partners, recalcitrant legislators, or lower-level governments for poor performance indicators. In the case of COVID, this problem is especially pronounced when voters were already polarized, the lives-versus-rights trade-off has been effectively politicized by party message-makers, and authority over public health is divided between layers of government. When lower-level governments have significant relevant policy authority and many of those in areas with high death rates are controlled by the party or coalition that is in opposition at the higher level, incumbents at the higher level face

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[3]Quote by Jen Psaki, White House Press Secretary, March 8, 2021 Press Briefing

incentives to avoid costly policy interventions, allowing it to credibly blame lower-level officials not only for transgressions of rights, but also for deaths.

In democracies where the average voter believes the ideologically non-proximate party or parties to be far away from themselves, we anticipate that competence should be less important in driving voter utility, and as a result, incumbents should be less concerned about punishment and reward for observable performance indicators. In any democracy, as COVID deaths emerge and become publicized, incumbents will begin to worry that deaths will reflect badly on their performance. However, the expected translation of deaths into loss of future electoral support should be weaker in more polarized democracies where voters view the out-party as more ideologically distasteful.

Furthermore, the politicization of COVID mitigation policies can ultimately lead to within-country geographic variation in the implementation of those policies. In extremely polarized democracies, where base-mobilization strategies are dominant, early skepticism among ideologues about heavy-handed governmental intervention can morph into skepticism about ostensibly non-ideological mitigation tools like masks, vaccinations, and treatments. If this happens, we can anticipate a correlation between partisanship and death rates. We turn now to a preliminary assessment of these expectations.

4 PRELIMINARY EVIDENCE

4.1 Cross-Country Patterns in Polarization and Covid Deaths

Let us first probe the plausibility of the claim that COVID death rates are higher in countries where the average voter views the out-party (or parties) as ideologically distasteful. Our framework maps nicely onto observable indicators of $(x_j - x_i)$ and $(x_j - x_c)$ in democracies. A common survey item asks respondents to place themselves and the parties on a common one-dimensional ideological scale. For each respondent, we can measure the perceived ideological distance between themselves and each party. In the Comparative Study of Electoral Systems (CSES), respondents are asked to place themselves, as well as each of the parties, on a numerical ideological scale. For each respondent, we leave aside the party that is perceived as most ideologically proximate, and we focus on the non-proximate parties. We calculate the perceived absolute distance to each of the non-proximate parties. We then calculate, for each respondent, the weighted average distance to the non-proximate parties, where the weights are the parties' vote shares. In a two-party system like the United States, this is simply the perceived ideological distance to the out-party. That is to say, for people who see themselves as closer to the Democrats, we calculate the perceived absolute distance to the Republicans, and vice-versa for those who see themselves as closer to the Democrats. In a multi-party system like Germany, for someone who feels closest to the Christian Democrats, we calculate the absolute distance to each of the other parties, and take a weighted average, where the weights are the vote shares in the most recent election. We then calculate a

country-wide average of this quantity. We plot this country-wide average on the horizontal axis, and a measure of excess mortality from the beginning of the pandemic until September of 2021, as assembled by The Economist, on the vertical axis. This plot is limited to countries covered by both the two most recent waves of the CSES and the excess mortality data.

Given the diverse unmeasured cross-country correlates of excess mortality, this type of analysis is provisional at best, but excess mortality has indeed been somewhat higher in countries where voters view the out-party or parties as most ideological distant. For instance, by this measure, the United States and Portugal are the most ideologically polarized countries covered by the CSES, and among OECD countries, they have experienced some of the worst public health outcomes during the pandemic, along with Mexico and the UK—two other highly polarized democracies. There is also a cluster of relatively less polarized democracies that have experienced substantially lower levels of excess mortality, including Australia, South Korea, and a number of multi-party democracies in Northern Europe.

The correlation is far from perfect, and should be approached with considerable skepticism, but it is at least consistent with the notion that when voters view the out-parties as extremely distasteful, politicians face weaker incentives to pursue death-minimizing policies.

In the discussion above, we have also suggested a subtly different way in which polarization might matter. In a polarized democracy, mitigation measures might be politicized such that voters for the government and the opposition cannot agree that deaths are, in fact, a useful performance measure. Even if death rates climb, in a polarized democracy, supporters of the government party or coalition might reject the notion that deaths can be blamed on the incumbent, or might be more likely to interpret calls for mask-wearing, social distancing, and shutdowns as unwarranted attacks by the out-party on their rights.

In a recent survey, the Pew Research Center asked respondents in 14 countries about the performance of their government in managing the COVID crisis. Not surprisingly, supporters of the governing party or coalition were more likely to report that the government was doing a "good job in managing the outbreak" than those who supported an opposition party. However, the size of this gap varied a good deal across countries. On the horizontal axis in **Figure 2**, we plot the difference in positive assessments of the government's COVID response between supporters of the government and opposition. On the vertical axis, once again, we plot the excess mortality rate.

Figure 2 demonstrates that mortality was elevated in several of the countries with the most pronounced partisan polarization in perceptions of the government's performance during the pandemic—such as the United States, Spain, and the UK. In contrast, mortality has been lower in countries like Australia, Denmark, and Canada, where supporters of the government and opposition largely agreed on the government's response.

This correlation is difficult to interpret, however. It is plausible that the horizontal axis captures a relevant underlying aspect of polarization, and public health outcomes are better in countries where voters are capable of dispassionately assessing the competence of the government, regardless of ideology. It is just as plausible, however, that high death rates are

exogenous—driven by factors like weather or the nature of exposure to the virus—and they cause voters to polarize along party lines in their perceptions of government performance. In other words, perhaps it is easier to agree about the government's performance when the relevant indicator is clearly positive, as in Australia.

These caveats aside, the relationship between polarization, partisan biased evaluations, and excess deaths is likely part of the explanation why incumbents presiding over relatively high incidence of casualties seem to pay little attention to political costs. Exploiting a sample of 153 European regions, Charron, Lapuente and Rodriguez-Pose (2020) document a strong link between differences in trust between pro and anti-government supporters and the adoption of pro-healthy behavior. In addition, they also provide evidence of a link, in line with the intuitions developed in this essay, that mass political polarization undermines the political feasibility of unpopular yet necessary interventions, thus leading to higher levels of excess mortality. Their paper points to an interesting distinction between elite and mass polarization. While the latter seems to matter consistently, the role of the former appears less robust. An important question, however, concerns the hierarchy between the behavior of elites, mass attitudes and behavior, and the feasibility of political coalitions in which at least one of the partners must accept or propose policies that are foreign to their ideological rhetoric.

Differences across institutional contexts are likely important. For instance, incumbents facing re-election are less likely to implement policies perceived to have negative economic implications (Pulejo and Querubín, 2021). The dynamics of COVID response are surely different in multi-party systems than in systems with two dominant parties. And as mentioned above, federalism and political geography can provide institutional means for policy obstruction, blame-shifting, and tailoring of platforms for local audiences, with significant implications for people's behavior (Testa et al., 2021).

4.2 The United States: Cross-County Variation in COVID Deaths

As can be seen in the figures above, the United States is, by several measures, the most polarized among the advanced industrial democracies. Many Americans view the out-party with extreme distaste. These hostile attitudes are not randomly distributed in geographic space. Urban Americans are overwhelmingly Democratic, and on average, view the Republican Party as extremely ideologically distant. On average, rural Americans view the Democratic party as extremely ideologically distant, while suburban areas often contain more ideological moderates.

Figures 1, 2 also demonstrate that the United States has experienced relatively high excess mortality. In a less polarized democracy with a large number of competence-oriented voters, we might expect to see clear evidence of electoral punishment, especially in the areas that registered the highest death rates. We have merged county-level data on COVID deaths[4], population

and several additional demographic variables[5], and presidential election results from 2016 to 2020. As can be seen in **Figure 3**, there is a small *positive* relationship between cumulative COVID deaths per 100,000 people as of November 3, 2020 and the change in Donald Trump's share of the two-party vote from 2016 to 2020. That is to say, Donald Trump's support held steady, and in many cases he *gained* support, in the counties with the highest death rates.[6] Many of these counties were in rural areas that were already part of the base of the Republican Party in 2016. Trump's largest losses were in educated suburban areas that are typically relatively competitive but lean Republican—areas that experienced some of the lowest COVID death rates. Quite plausibly, these are the counties with the largest densities of competence-based voters.

The simple bivariate plot in **Figure 3** cannot be taken as definitive evidence against COVID-based retrospective voting. In fact, using similar data, (Baccini et al., 2020) present models with many control variables, including economic outcomes and COVID mitigation behaviors, along with an instrumental variables strategy involving meat-processing facilities. In their analysis, the positive coefficient that can be seen in the bivariate plot evidently flips, which they interpret as evidence of retrospective voting based on local death rates. Moreover, on the eve of the 2020 election, research by Warshaw, Vavreck and Baxter-King (2020) indicated that survey respondents in states and counties where death rates had recently increased reported lower approval of President Trump and greater likelihood of voting for Biden.

Our view is that the role of COVID in shaping the 2020 U.S. general election is still quite poorly understood. Our key intuition is that retrospective voting based on COVID deaths is more likely to take place among individuals who are relatively ideologically indifferent between the two parties. To the extent that these individuals disproportionately reside in suburban areas where death rates are low, and there are fewer such individuals in the rural areas where death rates have been highest, we do not anticipate a simple correlation between local death rates and loss of support for the incumbent, and we do not see one. However, more empirical research along these lines is needed.
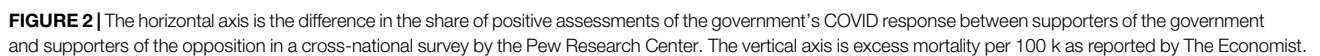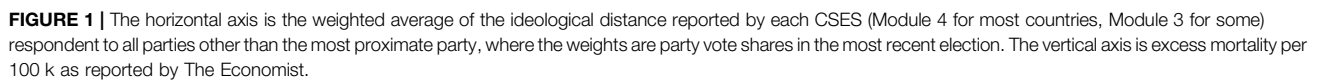
It is clear that COVID mitigation policies in the United States were politicized along the lines sketched out above. As the virus emerged initially in large, overwhelmingly Democratic cities, Republican officials were hostile to a wide range of COVID mitigation policies that were viewed largely as cynical power-grabs by Democratic officials. Studies like (Corder et al., 2020) show that COVID mitigation policies at the state level followed a partisan logic. With some notable exceptions, states controlled by Republican governors and legislatures were slower to adopt a variety of COVID mitigation strategies, and quicker to drop them once implemented. Some Republican governors attempted to prevent Democratic county and city officials from implementing their own

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[4]https://github.com/nytimes/covid-19-data

[5]source: American Community Survey
[6]There is also a modest positive bivariate correlation between the increase in deaths per capita from May 20—the beginning of the second wave—to November 3. The same is true if other dates are selected

FIGURE 1 | The horizontal axis is the weighted average of the ideological distance reported by each CSES (Module 4 for most countries, Module 3 for some) respondent to all parties other than the most proximate party, where the weights are party vote shares in the most recent election. The vertical axis is excess mortality per 100 k as reported by The Economist.

FIGURE 2 | The horizontal axis is the difference in the share of positive assessments of the government's COVID response between supporters of the government and supporters of the opposition in a cross-national survey by the Pew Research Center. The vertical axis is excess mortality per 100 k as reported by The Economist.

restrictions and mask policies. In states controlled by Democratic governors, many Republican county-level officials worked to undermine or ignore state-level policies.

Partisan differences across geographic space can be discerned not only in the policies adopted and implemented by officials, but in the behavior of citizens. A number of studies have demonstrated that mask-wearing, social distancing, and stay-at-home orders were taken less seriously in Republican-dominated areas (Grossman et al., 2020). Some studies indicate that cross-sectional differences in behavior have less to do with government mandates, and more to do with voluntary

choices of individuals (Berry et al., 2021). If a significant portion of partisan differences in behavior is driven by choices of individuals rather than government policies, this only drives home the depth of ideological polarization in the United States. It appears that even measures like mask-wearing, social distancing, and ultimately vaccination have come to be viewed by some Americans as ideological statements.

If some of these behaviors are indeed effective at preventing the spread of the virus, and large partisan differences in these behaviors emerged over the course of the pandemic, one might anticipate a growing correlation between county-level
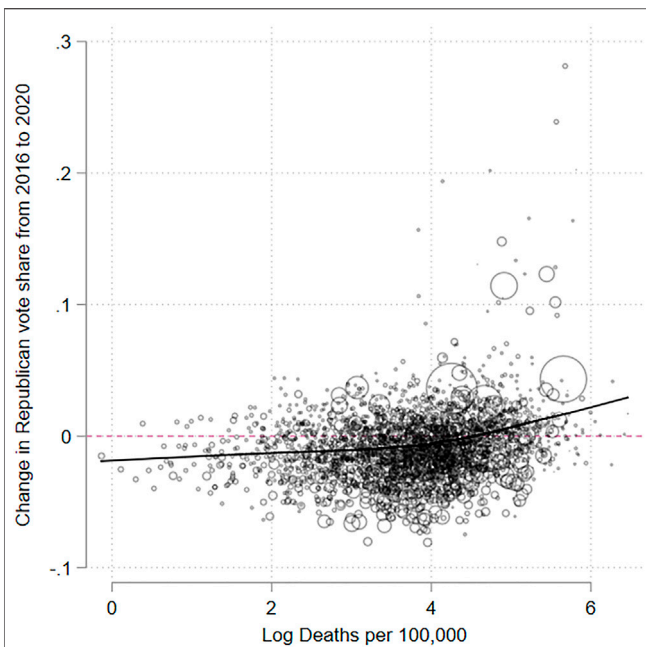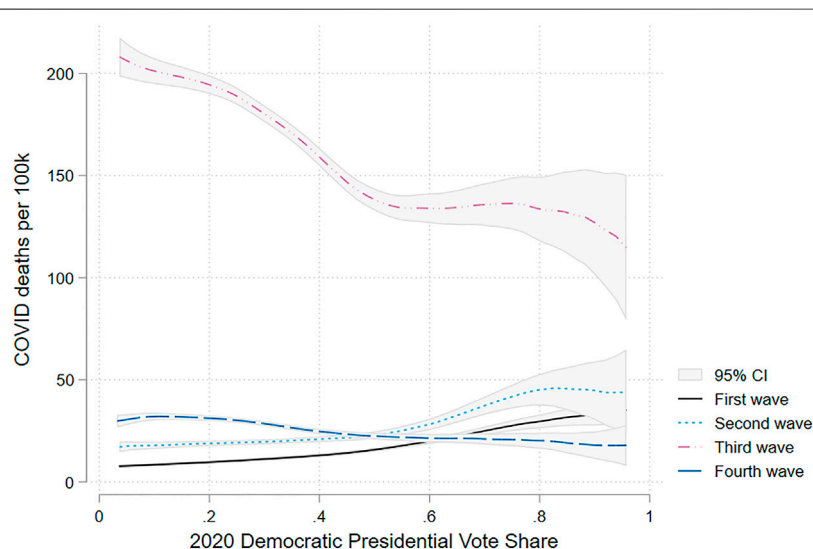
FIGURE 3 | The horizontal axis is the log of the cumulative death rate on Election Day in 2020. The vertical axis is the change in Donald Trump's share of the two-party vote from 2016 to 2020. A positive number indicates an increase in vote share. The size of the data marker corresponds to the population of the county.

partisanship and death rates. **Figure 4** uses a local polynomial to plot the 2020 county-level Democratic presidential vote share on the horizontal axis, and COVID deaths per 100,000 people on the vertical axis. It examines each wave separately, considering the first wave to have ended at the end of May 2020, and the second

wave to have ended on August 31, 2020. The lengthy and deadly third wave was from September 1, 2020 to June 30, 2021. Finally, we consider separately the most recent spike in cases, from July 1, 2021 to December 20, 2021.

From the initial outbreak in early 2020 to the temporary lull in COVID cases in September 2020—the period covered by the first two waves—the virus was largely concentrated in the Democratic, urban areas where the virus initially began to spread after early contacts from international travelers. Note that the local polynomial plots for the first two waves are relatively flat until around 0.5, and then begin to increase quickly as the Democratic vote share grows. In the first wave, an increase of 10 percentage points in the Democratic vote share was associated with an increase of roughly 5 deaths per 100,000 people. In the second wave, the graph flattened a bit as the virus started to spread to some rural areas, but the vast majority of deaths were still occurring in very Democratic counties. It was during these initial waves that COVID mitigation strategies came to be thoroughly politicized.

But after opposition to COVID mitigation strategies had been adopted as a base-mobilization strategy for a good number of Republican candidates and officials, in the deadly third wave, the geography of the virus completely changed. As public health experts had predicted, the virus spread to rural, Republican areas—places with older, less healthy populations and poor public health infrastructure. Death rates in many rural areas have been quite high, in many cases far surpassing New York City's experience in the first wave. The local polynomial plot for the third wave is relatively flat—albeit with relatively high death rates—throughout the range of Democratic districts, and deaths per 100,000 increase dramatically as the Republican vote share increases. During this period, a ten percentage-

FIGURE 4 | The horizontal axis is the Democratic presidential vote share, averaged between 2016 and 2020. The vertical axis is the COVID death rate per 100 k. The first wave is from the beginning of the pandemic until May 31, 2020. The second wave is from June 1, 2020 to August 31, 2020. The third wave is from September 1, 2020 until June 30, 2021. The fourth wave is from July 1, 2021 to the time of writing (October 23, 2021).

point increase in the Republican vote share was associated with an additional 16 deaths per 100,000. Even during the 6-month period covered by the fourth wave in **Figure 4**, there is a statistically significant relationship between the Republican vote share and the death rate. Cumulative deaths per 100,000 as of December 2021 are dominated by the third wave, such that overall, a 10 percentage-point increase in the county-level Republican vote share is associated with around 10 additional deaths per capita.

Given the very poor health of rural Americans, the lack of health infrastructure, and the different virus strains emerging at different times and places, **Figure 4** by no means indicates a causal role for relatively lax enforcement and mitigation behavior rooted in ideology. We leave this vexing causal inference problem for future work, but it is clearly the case that the geographic incidence of the virus has shifted from urban, Democratic areas to rural, Republican areas, ultimately producing higher death rates in the latter. Overall, the lowest death rates were experienced in politically competitive suburban counties. Relatively high death rates are witnessed in rural, Republican areas of states not only with COVID-skeptic leadership, like South Dakota and Texas, but also in states with Democratic governors and more restrictive statewide policies, like Kansas, Kentucky, Michigan, and Illinois. This is consistent with the claim that some types of statewide mandates are of limited value, given wide local leeway in enforcement and compliance. It is also consistent with the claim that high rural death rates during the third and fourth waves of COVID in the United States were driven in large part by structural factors like lack of immunity from prior infection, obesity, and poor hospitals rather than politics. Nevertheless, the combination of strong ideological attachment, low vaccination rates, opposition to mitigation behavior, and high death rates in rural America is difficult to ignore.

Future research might examine whether correlations between partisanship, population density, and death rates are also present in less polarized democracies where vaccines, masks, and social distancing have been less politicized. We anticipate that the correlation between partisanship and death rates seen in the United States is relatively rare—a product of its unusual level of political polarization.

5 CONCLUDING REMARKS

This essay has taken a first look at the relationship between political polarization, democratic accountability, and the success of governments in combating COVID-19. Our analysis was motivated by the political resilience of incumbents in areas hit particularly hard by the pandemic. Our central argument points to a partisan asymmetry in the nature of COVID policy responses. Both regulatory restrictions and fiscal expansions provide a more natural terrain for left parties, who are accustomed to mobilizing their base with a related set of policies. The right, in contrast, had to argue *against its base* when endorsing policies that

became a pressing need during the hardest times of the pandemic. In polarized societies, the expected political costs of moves toward compromise prevent cooperation, and facilitate a direct mapping of COVID mitigation policies onto preexisting ideological conflicts, which can expand even to ostensibly non-ideological areas like vaccines and masks. Politicians in polarized societies have grown accustomed to strategies of base mobilization, and have few reasons to worry about proving their competence via indicators like low death rates. Rather than presenting an opportunity to demonstrate competence, in a polarized society, a pandemic like COVID can create new opportunities for the parties to push their preexisting ideological agendas and exploit new ways to demonize the out-party.

We have provided very preliminary cross-national evidence that death rates have been higher in more polarized countries, but considerable refinement is needed for this type of analysis to be credible. We have also demonstrated that COVID has gone from a disease disproportionately affecting Democratic urban areas to one disproportionately affecting Republican rural areas in the United States. This is consistent with our account of the dynamics of polarization, but again, far more refined analysis is needed.

Rather than providing answers, this essay is meant to provide a framework to provoke further theoretical and empirical inquiry. It points to several lines of work to further explore the connection between accountability and polarization. One approach might be to examine pre-pandemic disagreements between supporters of the government and opposition about economic performance in a series of countries. Perhaps in polarized societies, supporters of different parties were unable to agree about performance metrics prior to the pandemic, and it is possible to find other types of evidence that competence-based voting is squeezed out in polarized societies. Moreover, we anticipate that competence-based retrospective voting is more common in less polarized democracies, and that as a result, incumbents face stronger incentives to produce favorable performance indicators.

We have also hypothesized that the politicization of COVID mitigation policies, and the emergence of a correlation between partisanship and death rates, is a function of pre-existing polarization.

Another interesting possibility is the claim that ideological moderates, or more precisely, individuals whose distaste for the out-party is relatively low, are more likely than ideologues to engage in performance-based retrospective voting. If such individuals are clustered in space, aggregate evidence of retrospective, performance-based voting will perhaps only be discernible in specific areas.

Finally, one additional avenue worthy of exploration points to the institutional organization of democracies: voters in multi-party democracies may be less likely to view the main out-parties as extremely distant than are voters in strict two-party systems. In turn, this might reduce incentives for politicization of COVID response and associated demonization of out-parties, ultimately providing incumbents in multi-party democracies with stronger incentives to perform well.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material. Further inquiries can be directed to the corresponding author.

REFERENCES

Acharya, A., Blackwell, M., and Sen, M. (2018). Explaining Preferences from Behavior: A Cognitive Dissonance Approach. *J. Polit.* 80 (2), 400–411. doi:10.1086/694541

Achen, C., Bartels, L., Achen, C. H., and Bartels, L. M. (2017). *Democracy for Realists*. Princeton University Press.

Baccini, L., Abel, B., and Weymouth, S. (2020). The COVID-19 Pandemic and the 2020 US Presidential Election. *J. Popul. Econ.* (34), 739–767.

Berry, C. R., Fowler, A., Glazer, T., Handel-Meyer, S., and MacMillen, A. (2021). Evaluating the Effects of Shelter-In-Place Policies during the COVID-19 Pandemic. *Proc. Natl. Acad. Sci. U S A.* 118 (15). doi:10.1073/pnas.2019706118

Bosancianu, C., Kim, Y., Hilbig, H., Humphreys, M., Sampada, K. C., Lieber, N., et al. (2020). Political and Social Correlates of Covid-19 Mortality."

Charron, N., Lapuente, V., and Rodriguez-Pose, A. (2020). Uncooperative Society, Uncooperative Politics or Both? How Trust, Polarization and Populism Explain Excess Mortality for COVID-19 across European Regions. *QOG Working Pap.*

Cheibub, J. A., Ji Yeon, J. H., and Adam, P. 2020. Rights and Deaths: Government Reactions to the Pandemic. Available at SSRN 3645410.

Corder, J. K., Mingus, M. S., and Blinova, D. (2020). Factors Motivating the Timing of COVID-19 Shelter in Place Orders by U.S. Governors. *Pol. Des. Pract.* 3 (3), 334–349. doi:10.1080/25741292.2020.1825156

Cox, G. W., and Rodden, J. A. (2021). "Demonization," in *Research Group on Political Institutions and Economic Policy (PIEP)* (Harvard University).

Duch, R. M., and Stevenson, R. T. (2008). *The Economic Vote: How Political and Economic Institutions Condition Election Results*. Cambridge University Press.

Ferejohn, J. (1986). Incumbent Performance and Electoral Control. *Public choice* 50 (1), 5–25. doi:10.1007/bf00124924

Frey, C. B., Chen, C., and Presidente, G. (2020). Democracy, Culture, and Contagion: Political Regimes and Countries Responsiveness to Covid-19. *Covid Econ.* 18.

Grossman, G., Kim, S., Rexer, J. M., and Thirumurthy, H. (2020). Political Partisanship Influences Behavioral Responses to Governors' Recommendations for COVID-19 Prevention in the United States. *Proc. Natl. Acad. Sci. U S A.* 117 (39), 24144–24153. doi:10.1073/pnas.2007835117

Lavine, H. G., Johnston, C. D., and Steenbergen, M. R. (2012). *The Ambivalent Partisan: How Critical Loyalty Promotes Democracy*. Oxford University Press.

Pulejo, M., and Querubín, P. (2021). Electoral Concerns Reduce Restrictive Measures during the COVID-19 Pandemic. *J. Public Econ.* 198, 104387. doi:10.1016/j.jpubeco.2021.104387

Testa, P. F., Snyder, R., Rios, E., Moncada, E., Giraudy, A., and Bennouna, C. (2021). *Who Stays at Home? the Politics of Social Distancing in Brazil, Mexico, and the United States during the COVID-19 Pandemic*. Forthcoming: Journal of Health Politics, Policy and Law.

Warshaw, C., Vavreck, L., and Baxter-King, R. (2020). Fatalities from COVID-19 Are Reducing Americans' Support for Republicans at Every Level of Federal Office. *Sci. Adv.* 6 (44). doi:10.1126/sciadv.abd8564

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Caroline Gray, Territorial politics and the party system in Spain: Continuity and change since the financial crisis. London: Routledge, 2020

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With the growth of secessionist mobilization in Catalonia in recent years, there has been a parallel expansion in the scholarly work that has sought to document and explain this trend. This is also the starting point of Caroline Gray's book, *Territorial Politics and the Party System in Spain: Continuity and Change since the Financial Crisis*. The book's introduction thus begins by noting the centrality of the Catalan independence drive to the campaigning for the April 2019 Spanish general election, and asks the following question: "How had Spain reached the stage where national politics and party campaigns for a general election… were so heavily dominated by political developments in one part of the state?" (p. 2).

In posing such a question, Gray seeks to locate the Catalan question in the broader context of territorial politics in Spain. This in itself is an important contribution to an academic literature that has too often neglected the broader multi-level political context in which the issue of Catalan independence has evolved. Gray's work is also, however, broader in its ambition than this, in two key respects. Firstly, whilst recent developments in Catalonia are inevitably a key focus, so too are territorial dynamics and tensions elsewhere in Spain (specifically in the Basque Country, as well as in relation to left- and right-wing Spanish state-wide parties). This is, then, a study of the complex multi-level dynamics of territorial politics in the Spanish pluri-national state. Secondly, these territorial dynamics and tensions are explored in relation to the financial crisis that hit Spain hard from 2008 onwards; in this respect, the book aims to "investigate in what ways, and to what extent, the territorial dimension of politics has impacted on the dynamics of party system continuity and change in Spain in the decade following the financial crisis, with a particular focus on party behavior" (p. 3). Such a focus is very welcome given the paucity of scholarly work to date that has considered the impact of the financial crisis on territorial politics in pluri-national states.

The book starts, in Chapter One, by summarizing the nature of the Spanish party system and governance in Spain from the first pro-Franco democratic elections in 1977 until the 2015 Spanish general election. The latter is presented as a critical election in this narrative, resulting in a major transformation in the Spanish political and party system due to the electoral success of new challenger parties. Specifically, the chapter argues that the emergence of *Podemos* ("We Can") on the left, and *Ciudadanos* (Citizens) on the

right, can be attributed to the economic and political consequences of the 2008 financial crisis. This paves the way, in Chapter Two, for an analysis of this Spanish experience from a broader European (and especially South European) perspective. Doing so reveals both the similarities and differences of political and party system transformation in Spain, and Gray's central argument here is that the territorial dimension is a distinctive feature of how the impact of the financial crisis played out in this case: "Spain…stands out from its Southern European neighbors due to the salience of the territorial dimension in the period of post-crisis party restructuring" (37).

The following four empirical chapters document this territorial dimension to multi-level politics in Spain in the post-crisis period. These consider, respectively, the regional level of politics in Catalonia and then the Basque Country, followed by an analysis of left- and right-wing state-wide parties. One of the most impressive features of this analysis is the masterful way in which Gray presents the complexity of the party dynamics within the two regions under consideration, between different state-wide parties, as well as across different territorial levels. The argument developed from these different perspectives has several strands to it. Firstly, it is shown convincingly that the financial crisis coincided with, and aggravated, territorial tensions that were already there. Secondly, it is argued that the extent to which the financial crisis impacted on multi-level politics also depended on the agency of political actors, and the extent to which they framed the crisis's economic and political consequences in territorial terms. Thirdly, political parties' responses are shown to reflect, in turn, the different regional and state-wide political and electoral contexts in which they operated.

In developing these arguments through an in-depth empirical analysis of regional and state-wide political actors, Gray accounts for the different ways in which territorial politics has intersected with left-right and other issue cleavages in post-crisis Spain. The result is a compelling account of why Basque and Catalan nationalist parties have pursued different territorial strategies in the last decades, and why different state-wide parties have adopted different positions on and paid varying degrees of attention to territorial issues.

If there are limitations to this analysis, they are 2-fold. Firstly, the empirical work presented here is underpinned by an impressive number of in-depth interviews, over 50 with politicians and other relevant actors in Madrid Basque Country and Catalonia. However, references to these interviews in the text itself are few and far between; doing so would have enhanced the richness of the discussion through the direct testimony of those involved. Secondly, the book arguably does not fully capture the "territorial dimension" to Spanish politics in all

its manifestations. Despite stating at the outset its intention to explore "all aspects related to Spain's decentralized territorial model" (p. 3), the focus on the main political parties in two regions and at the state level misses out on other important dynamics (for example, the role of civil society organizations in Catalonia, and the regional branches of state-wide parties in other parts of Spain). One might reasonably respond that the account presented in Gray's book is already complicated enough; and yet, the fact remains that in practice territorial dynamics are indeed very complicated and involve a broader range of actors across the state's territory (and not just in the regions where territorial tensions have been most salient). Reflecting this reality remains a challenge for scholars of territorial politics in Spain and beyond. Our understanding of territorial dynamics in pluri-national and multi-level contexts will inevitably be limited until a more comprehensive conceptual and empirical approach is adopted.

These limitations do not detract from the overall quality and importance of Gray's study. The book is essential reading for anyone interested in understanding the politics of contemporary Spain, as well as for scholars of territorial politics, political parties and party system change. The book successfully provides important new insights into the intersection between economic, political and territorial dynamics in pluri-national states. In doing so, it sets the research agenda for future work to further explore the complex ways in which these issues play out within and across territorial levels, in Spain and elsewhere.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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