Is democracy affecting the economic policy responses to COVID-19? A cross-country analysis

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18 June 2020

Is democracy affecting the economic policy responses to COVID-19? A cross-country analysis*

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June 18, 2020

Abstract

How does democracy relate to the initial economic policy responses to Covid-19? Using a cross-country analysis, we find that countries with a higher degree of democracy have stronger economic policy responses than their peers. However, when we separate monetary and financial policies from fiscal policy, democracy is not associated with the latter when we control for the income level of a country. Finally, for countries with lower levels of labor participation, high levels of income inequality are associated with weaker policy responses.

Keywords: Covid-19, Democracy, Economic Policy
JEL Classification: E02, E52, E60, E62

*The views expressed in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the OECD. We would like to thank Natércia Fortuna (FEP and CEF.UP) for useful comments and suggestions, and António Capobianco (OECD Competition Division) for pertinent remarks. Find the last version of the paper here: `https://sites.google.com/site/joaoricardocostafilho/Research`.

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1 Introduction

The initial response to the COVID-19 pandemic in most countries has been a combination of lockdown and social distancing (Chudik et al., 2020; Toxvaer, 2020). Empirical evidence for the 1918 pandemic episode not only favors this approach from a health policy perspective, but it also seems to be the best response from an economic viewpoint (Correia et al., 1918). Due to the negative externalities from the virus associated with the consumption of (social-intensive) goods and services, an initial strong response with a progressive phase-out accommodates health system capability, contains the contagion and diminishes the negative impact on the economy (Eichenbaum et al., 2020).

The virus can be analyzed as a negative supply shock that generates a follow-up negative demand shock (Guerrieri et al., 2020). This double effect imposes an additional hurdle to policymakers and economic advisors, with no one-size-fits-all solution. First, different countries have distinct fiscal spaces and monetary architectures to respond to expected economic recession induced by this pandemic. Second, the designed polices need to take into account the existing heterogeneity within countries as there seems to be an association between the activities that were totally shut down (due to their inability of performing delivery services or implementing tele-working polices, for instance) and the vulnerability of workers within these sectors (Kaplan et al., 2020).

The roles of monetary and fiscal policies are different from the usual business-cycle smoothing. On the one hand, monetary policy is already close to (or at) the lower bound for most countries, and even in those with space to cut interest rates, its effectiveness is rather low. On the other hand, while the lack of monetary response should increase the fiscal multiplier (DeLong et al., 2012), the usual circular-income-flow reasoning does not apply when most sectors in the economy are closed (Guerrieri et al., 2020).[1]

[1]The heterogeneity in policy responses is synthesized in Elgin et al. (2020).

Against this background, it seems crucial to understand what factors might affect the size and type of policies that are currently being undertaken by governments and policymakers to smooth the negative economic shock linked with the virus. To the best of our knowledge, we develop the first cross-section analysis to understand the relationship between democracy and the responsiveness of the economic policies undertaken for 152 countries. The main results suggest that countries with a higher degree of democracy have stronger economic policy responses than their peers. However, when we separate monetary and financial policies from fiscal policy, democracy is not associated with the latter when we control for the income level of a country. Additionally, for countries with lower levels of labor participation, high levels of income inequality are associated with weaker policy responses.

The rest of the paper is organized as follows. The next section describes the data and provides some stylized facts regarding policy responses between regions and democracy levels, as well as the association with inequality and per capita GDP. Section 3 presents our econometric results and Section 4 concludes.

2 Data sources

We gathered data on economic policy responses from the COVID-19 Economic Stimulus Index (CESI) developed by Elgin et al. (2020). Information on democracy levels was retrieved from The Economist Intelligence Unit's democracy index. To control for the level of income and the size of government, we gathered data on GDP per capita (*GDPpc*) and government share over GDPpc (*GOV*) from Feenstra et al. (2015). [2] To control for labor market dynamics, we calculate a proxy for labor market participation (*PART*) as a fraction between total employment and total population (data retrieved from Feenstra et al. (2015)). Finally,

[2]Both variables are adjusted by purchasing power parity (PPP).

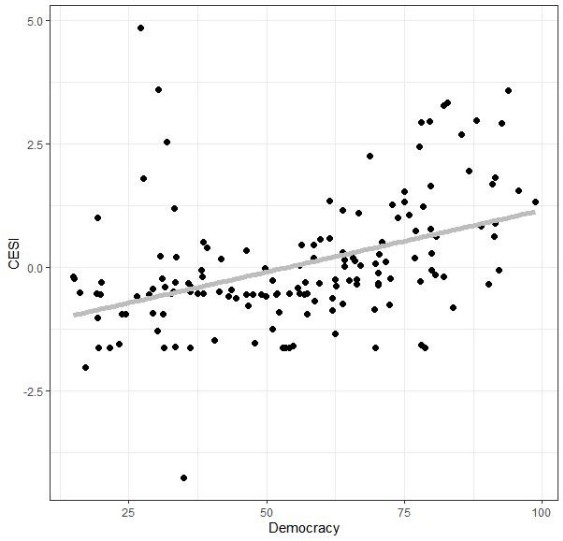
we gathered information on the Gini coefficient (*GINI*) from Solt (2019). Table 1 reports descriptive summary statistics of all economic variables.

Table 1: Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
CESI	152	0.06	1.31	−4.25	−0.57	0.58	4.85
Democracy	152	55.98	21.71	14.90	36.27	72.53	98.70
GDPpc	152	19.68	19.90	0.73	4.36	28.92	100.06
GINI	79	35.66	7.76	23.40	29.45	40.80	64.90
GOV	152	18.47	7.53	2.20	13.96	21.74	57.79
PART	152	0.43	0.10	0.19	0.37	0.49	0.87

GDPpc: Expenditure-side real GDP at chained PPPs (in mil. 2011US$); GOV and PART in percentage points.

Figure 1: Democracy and CESI - Full Sample

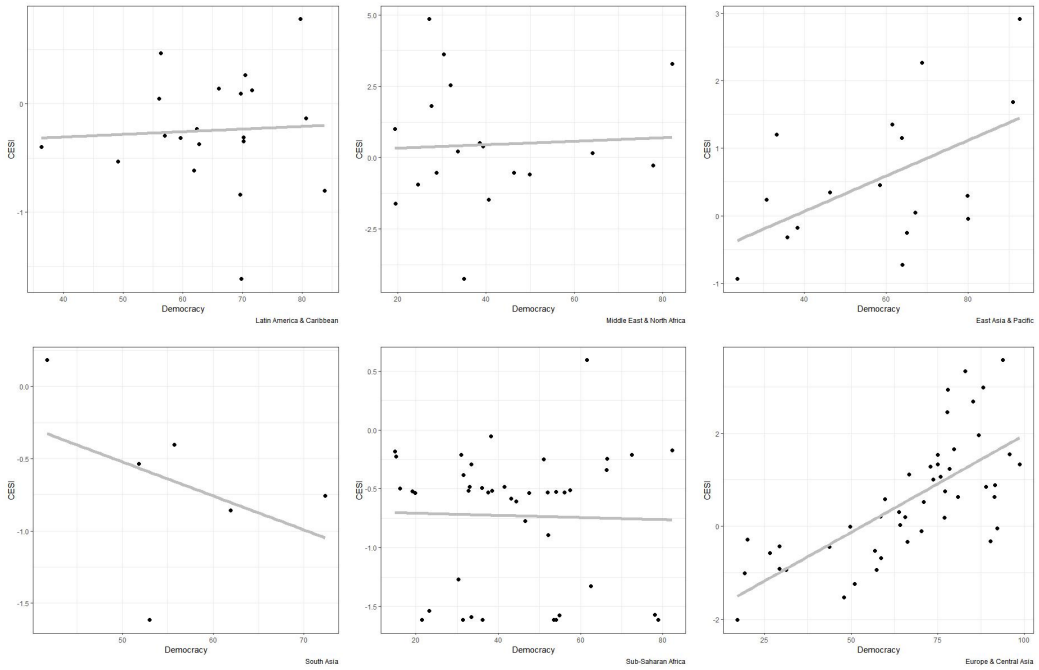


Source: The Economist Intelligence Unit's democracy index, 2018 values; CESI from Elgin et al. (2020).

The association between democracy and economic policy responses seems positive but not constant amongst regions. Using World Bank's regions definition, while there is a positive association for Europe and Central Asia, East Asia and Pacific, and South Asia (although less pronounced), there seems to be no correlation for the remaining regions (Figure 2).[3]

[3]Since for North America the sample size is rather small (only three countries), we dropped the associated scatterplot. Notwithstanding, the association is positive.

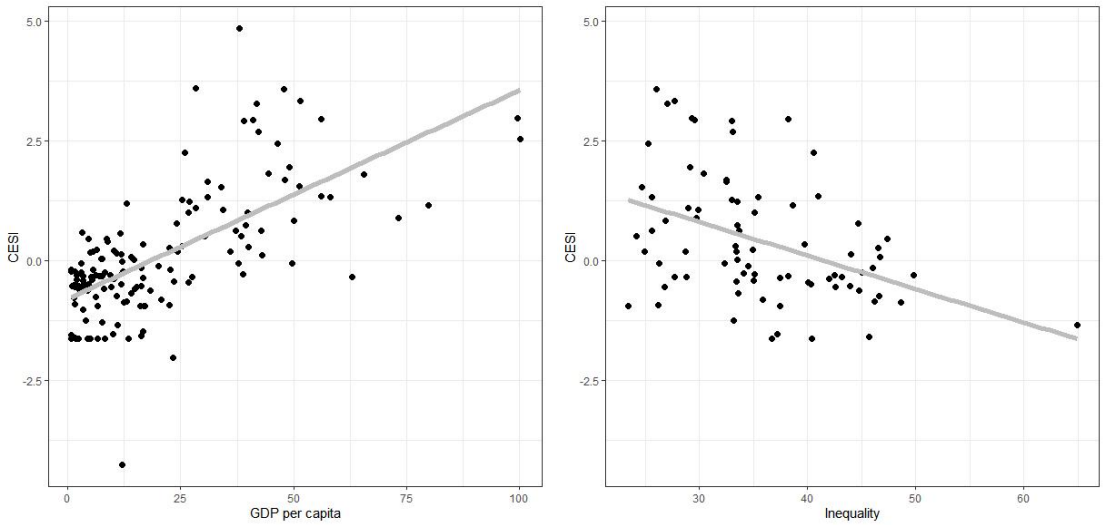
Figure 2: Democracy and CESI by region



Source: The Economist Intelligence Unit's democracy index, 2018 values; CESI from Elgin et al. (2020). World Bank's classification in 2020.

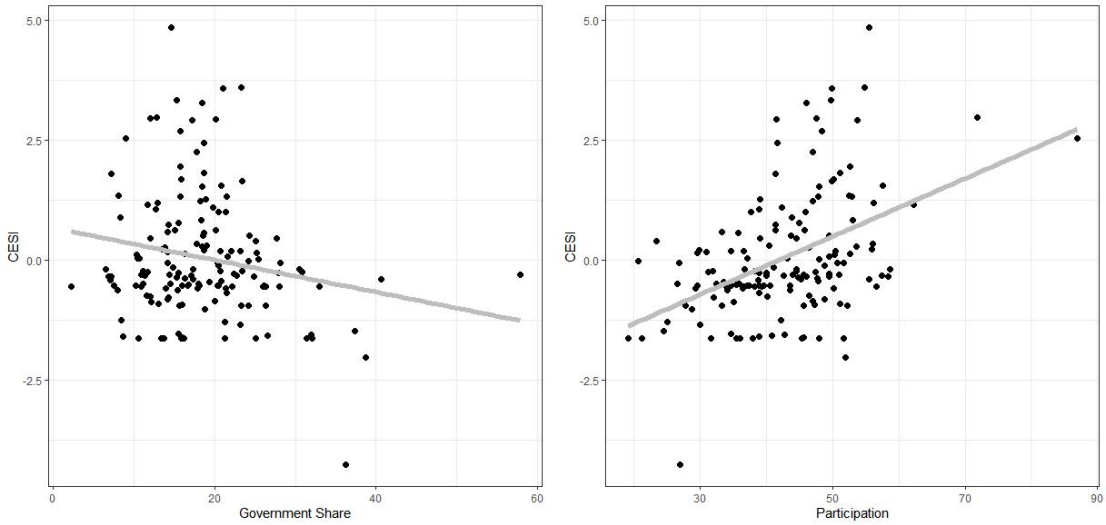
Since low-income countries and emerging market economies may be (more) constrained to implement economic policy responses, especially in the fiscal front, and high levels of inequality may limit the ability to accommodate lock-down strategies, we would expect both variables to have a strong association with the CESI. Figure 3 confirms this scenario, as countries with higher levels of per capita GDPpc and lower levels on income inequality present stronger responses. Finally, while there seems to be a negative relationship between the size of a government and the CESI, countries with higher levels of employment share seem to be reacting more strongly to this pandemic, suggesting that the size of the policy response may be influenced by the potential number of workers exposed to the economic shock (Figure 4).

Figure 3: CESI, (*GDPpc*) and inequality



Source: (*GDPpc*) (PPP adjusted) from Feenstra et al. (2015), 2017 values; CESI from Elgin et al. (2020); Inequality from Solt (2019), 2017 values.

Figure 4: CESI, government share (% GDP) and employment participation



Source: Government share (% GDP) and employment participation from Feenstra et al. (2015), 2017 values; CESI from Elgin et al. (2020).

3 Methodology and results

Following Correia (2016) and Guimaraes and Portugal (2010), we develop a cross-country analysis to examine the impact of democracy on the initial economic policy responses to Covid-19 until April 2020:

$$Y_i = \beta_j X_{ji} + \mu_r + \varepsilon_i \tag{1}$$

where Y_i corresponds to the dependent variable, X_j is a vector of independent variables, μ_r corresponds to a region fixed-effect term which takes into account specific differences across the seven geographical regions, and ε_i is the error term for the ith observation. Subscripts j and i denotes the independent variable j and country i, respectively. Equation (1) is estimated for three dependent variables: CESI; *MacroFin*, representing monetary, credit and macroprudential policies; and the *Fiscal* policy variable.[4]

Table 2 summarizes the results for the relationship between CESI and the explanatory variables. For all the considered cases, a higher democracy index contributes consistently and positively to a stronger policy response from governments. As *Democracy*, labor participation rate (*PART*) seems positively related to the size of the policy (see columns (2)-(4)). This can be interpreted as follows: countries seem to react more strongly when they have a higher level of labor participation because more protection is needed to those that might suffer the most with the Covid-19, i.e., the workers.

GDPpc also contributes positively to the policy response, in line with Elgin et al. (2020), implying that richer countries will spend relatively more. *GOV*, on the other hand, is not statistically significant across all models and, therefore, it does not contribute to explain the size of the policy measures currently being undertaken. Interestingly, the impact of income inequality seems to be intrinsi-

[4]See Elgin et al. (2020) for a full description of the variables.

cally related with the labor participation in the country (see column (5)): for low (high) levels of labor participation, an increase in inequality leads to a decrease (increase) in policy response. This means that countries seem only to take into account the level of inequality if the labor participation is sufficiently high. On the other hand, countries with lower labor participation might be able to do better, as it seems they are not taking into account inequality as a decision variable. This is particularly relevant as overall inequality might tend to increase in the medium and long run, as demonstrated by previous pandemic episodes (Furceri et al., 2020).[5]

Table 2: COVID-19 Economic Stimulus Index (CESI)

Variables	(1)	(2)	(3)	(4)	(5)
Democracy	0.022***	0.019***	0.009*	0.010*	0.026***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)
PART		0.045***	0.020*	0.021*	-0.097
		(1.072)	(1.193)	(1.214)	(6.888)
GDPpc			0.027***	0.024***	0.023**
			(0.005)	(0.006)	(0.010)
GOV				-0.021	-0.002
				(0.013)	(0.022)
GINI					-0.123*
					(0.064)
PART × GINI					0.284*
					(0.166)
Observations	152	152	152	152	79
R-squared	0.335	0.425	0.483	0.494	0.577

Dependent variable: CESI. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 3 presents the results for MacroFin. Once again, for all the cases a higher democracy index contributes systematically and positively to a stronger monetary response. A similar positive impact is also found for the labor participation rate. This suggests that central banks are directing their policies towards

[5]We also included the infection rate as a dependent variable to control for how strong a country has been affected by the pandemic. Nevertheless, due to its statistical non-significance across all estimations, it was not included in the final version of the paper.

workers by easing the access to credit to commercial banks, which, in turn, will support firms throughout the recovery. Interestingly, although *GDPpc* seems not to be correlated with the policy response, the size of the government appears to be negatively related with it. This result points towards the complementarity between fiscal and monetary policy: larger governments would have more leeway to increase their fiscal policy and, therefore, would not need to rely as much on monetary policy.

This can be also seen in Table 4, where a higher *GDPpc* contributes positively to a stronger fiscal policy. In this regard, democracy loses its statistically significance once we control GDP levels, suggesting that fiscal-policy responses do not depend on the level of democracy but only on the level of income.[6]

Table 3: Macro-financial initial policy responses to Covid-19

Variables	(1)	(2)	(3)	(4)
Democracy	0.050***	0.042**	0.036*	0.037*
	(0.016)	(0.017)	(0.019)	(0.019)
PART		0.045***	0.020*	0.021*
		(5.781)	(5.921)	(5.949)
GDPpc			0.016	0.009
			(0.026)	(0.026)
GOV				-0.049*
				(0.028)
Observations	152	152	152	152
R-squared	0.218	0.277	0.279	0.286

Dependent variable: MacroFin. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

[6]Taking into account that the variables *MacroFin* and *Fiscal* are mainly composed by 0 and 1, and that we only have information on the Gini coefficient for 79 countries, we do not report the results on the interaction between *PART* and *GINI*. Nonetheless, the impact of democracy on MacroFin (Fiscal) is still positive and statistically significant (insignificant).

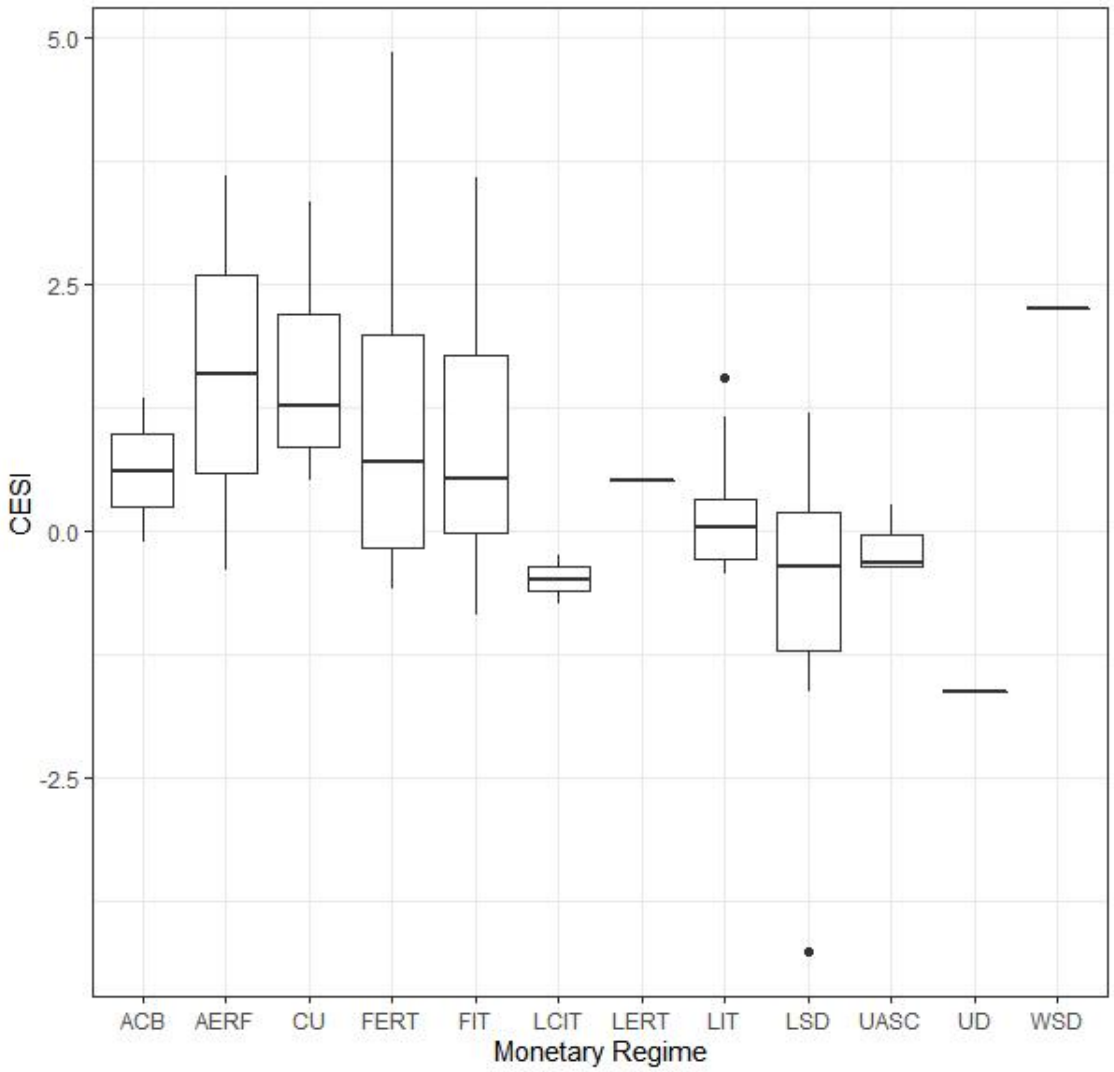
Table 4: Fiscal policy initial responses to Covid-19

Variables	(1)	(2)	(3)	(4)
Democracy	0.064***	0.056***	0.018	0.018
	(0.013)	(0.013)	(0.013)	(0.013)
PART		0.115***	0.017	0.017
		(3.913)	(2.743)	(2.759)
GDPpc			0.109***	0.107***
			(0.020)	(0.020)
GOV				-0.015
				(0.023)
Observations	152	152	152	152
R-squared	0.282	0.355	0.469	0.470

Dependent variable: Fiscal. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The results regarding the fiscal policy response to Covid-19 may be due to another constraint: the monetary regime. In Figure 5 we can see how different frameworks according to Cobham (2019) relate to the policy index from Elgin et al. (2020). Countries under an augmented exchange rate fix have the highest median level of CESI, while the lower group median (which also has a low dipsersion) is associated with loose converging inflation targeting. The highest dispersion is experienced under full exchange rate targeting.

Figure 5: Monetary framework and policy index



Data for 83 countries in our regression using CESI from Elgin et al. (2020) and monetary regimes from Cobham (2019):
ACB: Augmented currency board
AERF: Augmented exchange rate fix
CU: Currency union membership
FERT: Full exchange rate targeting
FIT: Full inflation targeting
LCIT: Loose converging inflation targeting
LIT: Loose inflation targeting
LSD: Loosely structured discretion
UASC: Use of another sovereign's currency
UD: Unstructured discretion
WSD: Well structured discretion

4 Concluding remarks

At the time we are writing this paper, countries around the world are designing their policy plans to fight the inevitable economic consequences of the COVID-19. By applying a cross-section analysis for 152 countries, we concluded that countries with higher levels of democracy seem to be responding more aggressively on the economic front. This may imply that more democratic countries seem to better understand the long-term implications of this pandemic.

However, when we separate monetary and financial policies from fiscal policy, democracy is not associated with the latter when we control for the income level of a country. This may be due to additional constraints such as the monetary framework. Take the usual perfect capital mobility flow textbook model for instance. Under a fixed exchange rate system, fiscal policy can have real impacts on output.

This raises the question of why countries under some sort of exchange rate control seem to have implemented a higher median level of economic policy responses to Covid-19 and could be addressed in future works. Furthermore, loose inflation targets are associated with the lowest group median among the analyzed frameworks. This also raises questions regarding the designs of economic institutions in response to pandemic episodes (and others) that could lead to other avenues of research.

We also found that countries with higher labor participation rates seem to react more strongly, as more protection is needed to workers and employees because they are the ones who might suffer the most. Notwithstanding, for countries with lower levels of labor participation, high levels of income inequality are associated with weaker policy responses, suggesting that those countries might need to redesign their policies to ensure that these are effectively directed to the ones in need.

References

Chudik, A., Pesaran, M. H., and Rebucc, A. (2020). Equilibrium social distance. *Covid Economics: Vetted and Real-Time Papers*, 7.

Cobham, D. (2019). A comprehensive classification of monetary policy frameworks for advanced and emerging economies. *Oxford Economic Papers*.

Correia, S. (2016). A feasible estimator for linear models with multi-way fixed effects. *Preprint at http://scorreia. com/research/hdfe.pdf*.

Correia, S., Luck, S., and Verner, E. (1918). Pandemics depress the economy, public health interventions do not: Evidence from the 1918 flu. *Public Health Interventions Do Not: Evidence from the*.

DeLong, J. B., Summers, L. H., Feldstein, M., and Ramey, V. A. (2012). Fiscal policy in a depressed economy [with comments and discussion]. *Brookings Papers on Economic Activity*, pages 233–297.

Eichenbaum, M. S., Rebelo, S., and Trabandt, M. (2020). The macroeconomics of epidemics. Technical report, National Bureau of Economic Research.

Elgin, C., Basbug, G., and Yalaman, A. (2020). Economic Policy Responses to a Pandemic: Developing the covid-19 Economic Stimulus Index. *Covid Economics: Vetted and Real-Time Papers*, 3.

Feenstra, R. C., Inklaar, R., and Timmer, M. P. (2015). The next generation of the Penn World Table. *American economic review*, 105(10):3150–82.

Furceri, D., Loungani, P., Ostry, J. D., and Pizzuto, P. (2020). Will Covid-19 affect inequality? Evidence from past pandemics. *Covid Economics: Vetted and Real-Time Papers*, 12.

Guerrieri, V., Lorenzoni, G., Straub, L., and Werning, I. (2020). Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages? Technical report, National Bureau of Economic Research.

Guimaraes, P. and Portugal, P. (2010). A simple feasible procedure to fit models with high-dimensional fixed effects. *The Stata Journal*, 10(4):628–649.

Kaplan, G., Moll, B., and Violante, G. (2020). Pandemics according to HANK. *Draft*, 31.

Solt, F. (2019). The Standardized World Income Inequality Database, Version 8.

Toxvaer, F. (2020). Voluntary and mandatory social distancing: Evidence on Covid-19 exposure rates from Chinese provinces and selected countries. *Covid Economics: Vetted and Real-Time Papers*, 7.