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Keywords: Lockdown policy; Fiscal stimulus package; COVID-19

Abstract: Lockdown policies, at the forefront to mitigate the spread of the coronavirus, have led governments to face a trade-off between health and recessionary impacts. To deal with the devastating economic impacts of the pandemic, governments around the world have announced stimulus packages. Given the fiscal burden of health-oriented policies, this study investigates the impact of lockdown policies on fiscal policy stimulus packages. Using simple cross-country OLS regression for 162 countries, this study finds that a stricter lockdown policy requires a higher stimulus package. In addition, threshold regression results indicate that a stringent policy is associated with a higher stimulus package for the countries where income distribution is relatively unequal and institutional quality is relatively lower.

1. INTRODUCTION

The COVID-19 outbreak has led to an economic downturn all around the world. As a post-crisis fiscal policy response, governments should target to increase the employment level, and living standards of their citizens and contribute the economic development by maintaining social equity (Cottarelli et al., 2014). In line with this argument, governments have adopted a wide range of policies to offset the negative impact of the lockdown on economic activity during the sparking fear caused by the coronavirus disease (Topcu and Gulal, 2020).

Given the closest nexus between the strictness of lockdown policies and decreasing economic activity, a great number of studies attempt to provide different perspectives on how lockdown policies affect the macro economy (see, for example, Busato et al., 2021; Inoue et al., 2021; König and Winkler, 2021; among others) as well as financial markets (see, for example, Topcu et al., 2021; Deng et al., 2022; Scherf et al., 2022; among others). In particular, Faria-e-Castro (2021) finds that unemployment insurance is the most effective tool to stabilize borrowers’ income among the fiscal policies. Clements and Stam (2020) also discuss that tax measures, as a part of fiscal packages, have played a crucial role in providing crisis relief for firms as well as households. Apart from this literature, this study examines the relation between lockdown policies and fiscal policy stimulus packages using a cross-country analysis. In addition, this study attempts to investigate whether income distribution and/or institutional structure play a significant role in this relationship.

The rest of the study is structured as follows: Section 2 provides the empirical model, data, methods and findings, and Section 3 gives concluding remarks.

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2 See Brodeur et al. (2021), for comprehensive literature review.
2. **EMPIRICAL SETUP**

This study empirically examines the impact of lockdown policies on fiscal policy stimulus packages in 162 countries. Lockdown policies are measured using the recently reported stringency index proposed by Hale et al. (2021). The stringency index is a composite score based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100. Note that a higher score indicates a stricter response. The fiscal package is measured by the fiscal policy stimulus package index proposed by Elgin et al. (2020) and includes all the adopted fiscal measures.\(^3\)

We conduct simple cross-country ordinary least squares regressions to estimate the impact that the lockdown policy has on the fiscal package. Regression results reported in Table 1 indicate that a 1-unit increase in lockdown policy increases the size of the fiscal package by around 0.1 units.

Table 1. Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>stringency</th>
<th>constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>0.098***</td>
<td>1.886</td>
</tr>
</tbody>
</table>

Observation: 162

*** p<0.01.

Source: Own research

Due to the heterogeneity in the sample, one can assert that the relationship is likely to vary across income levels. We, therefore, use cross-country threshold regression to see whether if there is a threshold income.\(^4\) Regression results reported in Table 2 reveal that a stricter policy requires a higher stimulus package in the countries with less than 1600 US dollars per capita income whereas no significant relationship is detected for the countries above the threshold per capita income. This result addresses that the fiscal burden of lockdown policies in developing countries is higher than in advanced countries.

Table 2. Threshold Regression Results (Income)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Lower Income</th>
<th>Higher Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>stringency</td>
<td>constant</td>
</tr>
<tr>
<td>Coefficient</td>
<td>0.045***</td>
<td>2.400***</td>
</tr>
</tbody>
</table>

Threshold Income Value: 16800.21; Observation: 160

*** p<0.01.

Source: Own research

Birdsall (2001) asserts that inequality often triggers bad economic policies - with ill effects on growth, human development, and poverty reduction. In addition, Samanta and Cerf (2009) show that an increase in income inequality leads to a need for higher government spending. Therefore, one may expect lockdown policies to require the announcement of higher stimulus packages in countries where income distribution\(^5\) is relatively unequal. Cross-country threshold regression results, reported in Table 3, indicate that a stricter lockdown policy is associated with a higher stimulus package in the countries where income inequality is relatively higher than those of the rest where Gini score is slightly less than 33.

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\(^3\) See Elgin et al. (2020), for information in detail about dataset.

\(^4\) Income is represented by real GDP per capita measured in constant 2005 US dollars and obtained from the World Bank World Development Indicators Database (2021).

\(^5\) Income distribution is represented by Gini coefficient and obtained from the Standardized World Income Inequality Database (SWIID v.6.0) released by Solt (2016).
Table 3. Threshold Regression Results (Income Inequality)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Equal Income</th>
<th>Unequal Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>stringency</td>
<td>constant</td>
</tr>
<tr>
<td>Coefficient</td>
<td>0.085</td>
<td>8.336</td>
</tr>
<tr>
<td>Threshold Gini Value</td>
<td>32.9</td>
<td>Observation: 162</td>
</tr>
</tbody>
</table>

**p<0.05.

Source: Own research

Arvin et al. (2021) find that effective fiscal policies and strong institutions are mutually related, and they are both playing a major role in procuring sustained long-term economic growth. Keefer and Knack (2007) address that public investment is dramatically higher in countries with low-quality governance. Cross-country threshold regression results, shown in Table 4, reveal that a stricter lockdown policy leads to an increase in fiscal stimulus package in the countries with relatively lower institutional quality whereas no significant impact is detected for the countries with an average institutional quality score of slightly higher than 76.

Table 4. Threshold Regression Results (Institutional Quality)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Lower Institutional Quality</th>
<th>Higher Institutional Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>stringency</td>
<td>constant</td>
</tr>
<tr>
<td>Coefficient</td>
<td>0.050***</td>
<td>2.163**</td>
</tr>
<tr>
<td>Threshold Institutional Quality Value</td>
<td>74.26</td>
<td>Observation: 161</td>
</tr>
</tbody>
</table>

***p<0.01; **p<0.05; *p<0.10.

Source: Own research

3. CONCLUSION

The coronavirus outbreak has created significant fiscal policy challenges given the fact that government revenues have fallen sharply due to declining economic activity caused by the COVID-19 pandemic. Given the tradeoff between health and recessionary impacts governments faced, this study examines the impact that lockdown policies have on fiscal policy stimulus packages using cross-country OLS estimations. Empirical results reveal that a stricter lockdown policy requires a higher stimulus package. Threshold regression results further indicate that a stringent policy is associated with a higher stimulus package for the countries with relatively unequal income distribution as well as lower institutional quality.

REFERENCES


Institutional quality is represented by worldwide governance indicators constructed by Kaufmann et al. (2010). These indicators are composed of six dimensions, namely: i) voice & accountability, ii) political stability & absence of violence/terrorism, iii) government effectiveness, iv) regulatory quality, v) rule of law, vi) control of corruption. All dimensions are measured in terms of percentile ranking from 0 to 100. The higher the score a country has, the better the assessment it has received. Institutional quality dimensions then are used to obtain an institutional quality index, calculated as the simple average of each of the percentile rankings following previous studies (see, for example: Adedoyin et al., 2021; Barbier and Burgess, 2021; among others).


The World Bank, World Development Indicators Database (2021).

