

[Working Paper Series: Pandemic Crisis and Democratic Governance in Asia – Part I]

South Korea's COVID-19 Pandemic Policy Optimization between Health and Economy

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Introduction¹

How have policymakers and citizens responded to the COVID-19 pandemic policy trade-off between health and the economy? Why have some nations succeeded in minimizing the trade-off between protecting lives and protecting livelihoods, but not others? Why and how has South Korea outperformed most other advanced democracies in dealing with the trade-off?²

Building on a growing literature that analyzes the trade-off between health and the economy in designing and implementing national COVID-19 policy responses (Desierto and Koyama 2020; Cheibub, Hong, and Przeworski 2020; Ginsburg and Versteeg 2020), this study attempts to answer the above questions examining the case of South Korea with comparative perspective. This research argues that contra conventional wisdom that social capital is the explanans of variation of national pandemic policy performances, social risk is much more important to facilitate large-scale collective action, which is the political foundation of voluntary civic compliance with government non-pharmaceutical interventions (NPIs) policy recommendation and ultimately successful pandemic policy optimization between health and the economy.

A simple theoretical framework of pandemic policy optimization will be introduced in the next section. The third describes a quarterly comparison of national policy responses across OECD countries in 2020. The following section provides statistical cross-country analyses on the determinants of pandemic policy optimization over time.

Pandemic Policy Optimization as Large-Scale Collective Action Problem

This section assumes that a simple theoretical framework of pandemic policy optimization is a large-scale collective action problem. How to suppress the spread of the coronavirus is a vital question for pandemic-inflicted

¹ Throughout the year, ADRN members will publish a total of three versions of the Pandemic Crisis and Democratic Governance in Asia Research to include any changes and updates in order to present timely information. The first and second part will be publicized as a working paper and the third will be publicized as a special report. This working paper is part I of the research project.

² This study answers the first and second questions and leaves the third one to next round of this research project.

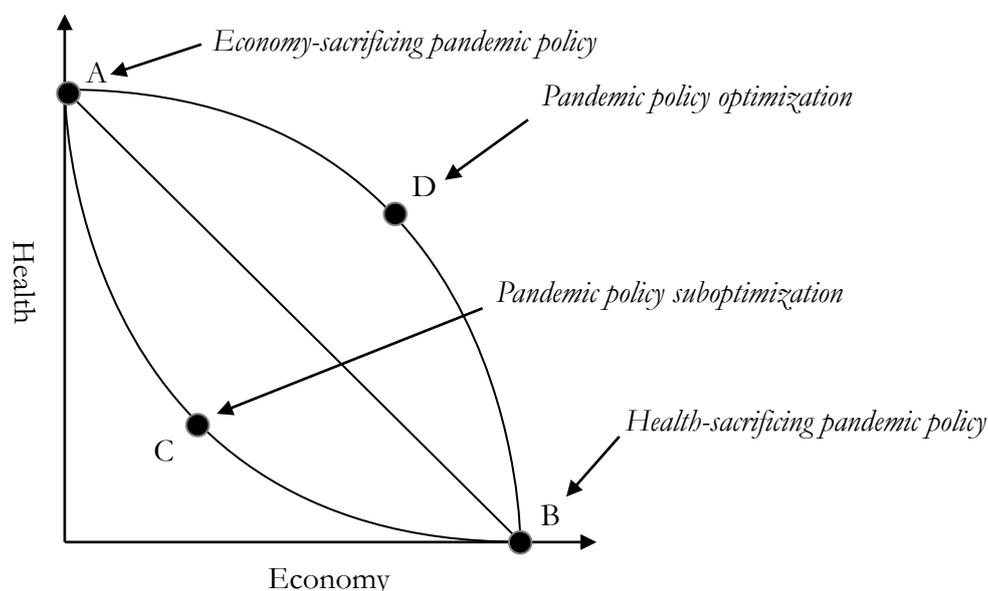
countries. A good starting point to answer this question is to analyze the effective reproduction rate (ERR), which is defined as the average number of infections that an infectious individual transmits to susceptible individuals. In the most basic standard model of epidemic, the ERR(t) as of day t is given as follows:

$$ERR(t) = N(t) \times D(t) \times P(t) \times S(t)$$

In this equation, $N(t)$ is the average number of contacts per day for an individual in the community; $D(t)$ is the average number of days that an infectious individual circulates in an infectious community; $P(t)$ is the probability that a contact between an infectious individual and a susceptible individual actually transmits the virus; and $S(t)$ is the share of the population susceptible to infections as of day t (Sachs et al. 2020: 15-19).

Each component of the equation corresponds to a specific pandemic policy profile. Figure 1 illustrates the trade-off of each pandemic policy: (1) suppressing $N(t)$ as pandemic policy is equivalent to a temporary lockdown policy which prioritizes lives at the cost of livelihoods (A in Figure 1), which results in *economy-sacrificing pandemic policy*; (2) suppressing $S(t)$ as pandemic policy is equivalent to herd immunity policy which prioritizes livelihoods at the cost of lives (B in Figure 1), which results in *health-sacrificing pandemic policy*; and (3) suppressing $D(t) \times P(t)$ as pandemic policy is equivalent to NPIs policy which attempts to balance the two.³ If the NPIs policy fails, the outcome is a negative-sum product of the health and economy (C in Figure 1), which results in *pandemic policy suboptimization*. If the NPIs policy succeeds, the outcome is a positive-sum product (D in Figure 1), which results in *pandemic policy optimization*.

Figure 1. Trade-Off Between Health and the Economy in Pandemic Policy



³ NPIs include (1) social distancing measures, with the closing of workplaces and non-essential services, closing school, banning mass gatherings, and imposing travel restrictions; (2) personal and environmental hygiene, with the use of personal protective equipment and such as face masks; and (3) testing, tracking, and tracing of infected individuals, with the confinement of affected persons and large-scale testing and quarantine policies (Sustainable Development Solutions Network and Institute for European Environmental Policy 2020: 25).

Neither the temporary lockdown policy nor the herd immunity policy is sustainable as a pandemic policy. The temporary lockdown policy is an inefficient way to suppress the pandemic due to its economic costs. The herd immunity policy is an inefficient way to suppress the pandemic due to its health costs. Since only the NPIs policy is sustainable as a pandemic policy, it is important to understand under what the conditions are for the policy to succeed.

It is crucial to note that non-NPIs policies, such as temporary lockdown or herd immunity, do not entail voluntary civic compliance with government guidelines. The temporary lockdown policy coerces the public to isolate under government enforcement. The herd immunity policy lacks any enforcement and lets the people move around freely. Neither case involves a large-scale collective action for the public to voluntarily comply with government intervention (Harring et al. 2021).

Since the NPIs policy as pandemic policy requires voluntary civic compliance, it is essential to understand under what conditions such large-scale collective action is facilitated. One of the most influential arguments hinges on the logic of social trust that is defined as “values and beliefs that help a group overcome the free-rider problem in the pursuit of socially valuable activities (Barrios et al. 2021).” It insists that the higher social trust is in a country, the more likely large-scale collective action is to be facilitated (Durante et al. 2021; Sabat et al. 2020). Another theory relies on the logic of confidence in authority (Fukuyama 2020). It claims that the more trust citizens have in the public authority, the less likely large-scale free-riding problem is to emerge (Elgar et al. 2020; Bargain and Aminjonov 2020).

Against these dominant logics of *social capital* in this field, this study suggests a contrarian approach to the question. Building on the logic of *social risk* defined as “the probability for a person to be affected by an unexpected, uncertain situation associated with loss of control over one’s personal action (Lupu 2019),” it contends that the worse the social risk is in a country, the more likely large-scale collective action is to be facilitated. Regarding the issue of large-scale collective action, whereas the logic of social capital may prevail in a time of normal politics, the logic of social risk will triumph in a time of crisis politics, a situation that “threatens significant harm to a country’s population or basic values and compels a political response under time pressure and uncertainty (Lipsy 2020).” Even the most qualified policymakers are uncertain about what policies will succeed due to the high level of threat, time constraints, and the uncertainty surrounding the pandemic, a more or less common occurrence across countries (Backus and Little 2020). The preparedness and agility of citizens against the pandemic differs across countries, depending on how long they have been exposed to and accustomed to such threat (Dryhurst et al. 2020).

To sum up, this study argues that the severer the level of social risk is in a country leads to the following: large-scale free-riding problem is less likely to emerge, voluntary civic compliance with the government’s NPIs policy becomes more likely, and pandemic policy optimization is more likely to succeed in a time of crisis politics.⁴

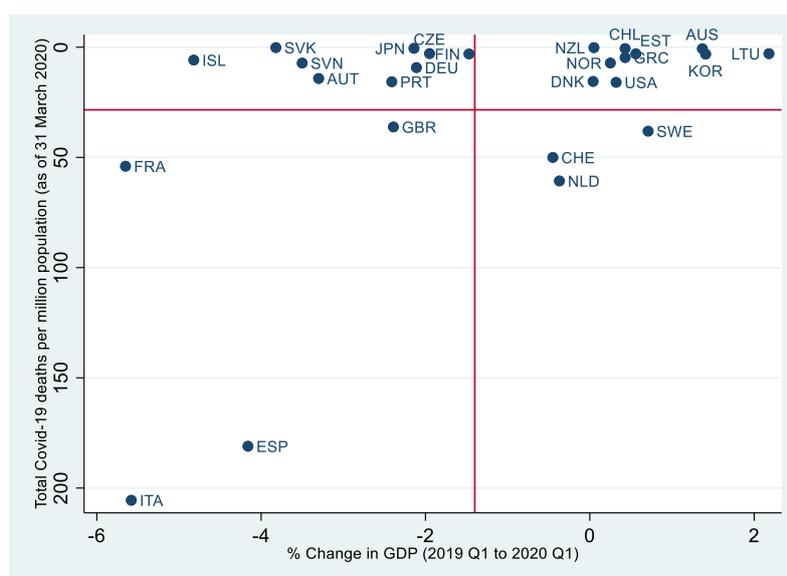
⁴ By implication, once the threat, time pressure, and uncertainty surrounding the pandemic crisis are subdued and normal politics replaces crisis politics, the logic of social capital may restore its facilitator status of large-scale collective action, which is an empirical question that this study plans to tackle in next round of this research project.

South Korea's Pandemic Policy in Comparative Perspective: A Descriptive Exploration

This section introduces several types of data to analyze the impact of social risk and social capital on pandemic policies of different countries. Considering possible causal heterogeneity between democracies and autocracies in dealing with the pandemic (Stasavage 2020; Greitens 2020), the spatial empirical scope of this study is based on advanced industrial democracies.⁵ The temporal empirical scope of this study subdivides 2020 into four quarters to increase the number of observations which raises the bar to test the theoretical hypothesis.

To capture the pandemic policy performance on the health dimension, the total COVID-19 deaths per million in each quarter of 2020 is utilized.⁶ To observe the pandemic policy performance on the economy dimension, percentage change in GDP between each quarter of 2020 to its counterpart in 2019 is employed.⁷ Compared to the alternative indicators, the aforementioned types of measuring the health and economy dimensions of the pandemic policy have the merit of being simpler and more intuitive to understand and easier to replicate.⁸

Figure 2. COVID-19 Pandemic Policy Outcomes in OECD Countries, 1st Quarter of 2020



Source: Our World in Data and OECD⁹ (accessed on January 22)

⁵ Among 37 OECD member countries, Colombia, Hungary, Mexico, Poland, and Turkey are excluded due to their democratic backsliding, which is measured by Varieties of Democracy's Liberal Democracy Index score of seven or under. In addition, Canada, Belgium, Ireland, Israel, Latvia, and Luxemburg are excluded due to the unavailability of data in the seventh wave of World Value Survey, which is the source of social capital measurement. As a result, the dataset of this study includes 26 OECD member countries, which are Australia, Austria, Chile, Czech Republic, Demark, Estonia, Finland, France, Germany, Greece, Iceland, Italy, Japan, Lithuania, Netherlands, New Zealand, Norway, Portugal, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

⁶ The data on the total Covid-19 deaths per million population is derived from Our World in Data <https://ourworldindata.org/coronavirus>.

⁷ The data on percentage change in GDP is derived from OECD Data <https://data.oecd.org/gdp/quarterly-gdp.htm#indicator-chart>.

⁸ The COVID index of Sachs et al. (2020) consists of deaths per million, effective reproduction rate, epidemic control efficiency. The Covid resilience score of Chang et al. (2021) reflects the two dimensions of COVID status, which consists of 1-month cases per 100,000, 1-month case fatality rate, total deaths per 1 million, positive test rate, and access to COVID vaccines, and quality of life, which consists of lockdown severity, community mobility, 2020 GDP growth forecast, universal healthcare coverage, and human development index.

⁹ Our World in Data <https://ourworldindata.org/coronavirus> and OECD Data <https://data.oecd.org/gdp/quarterly-gdp.htm#indicator->

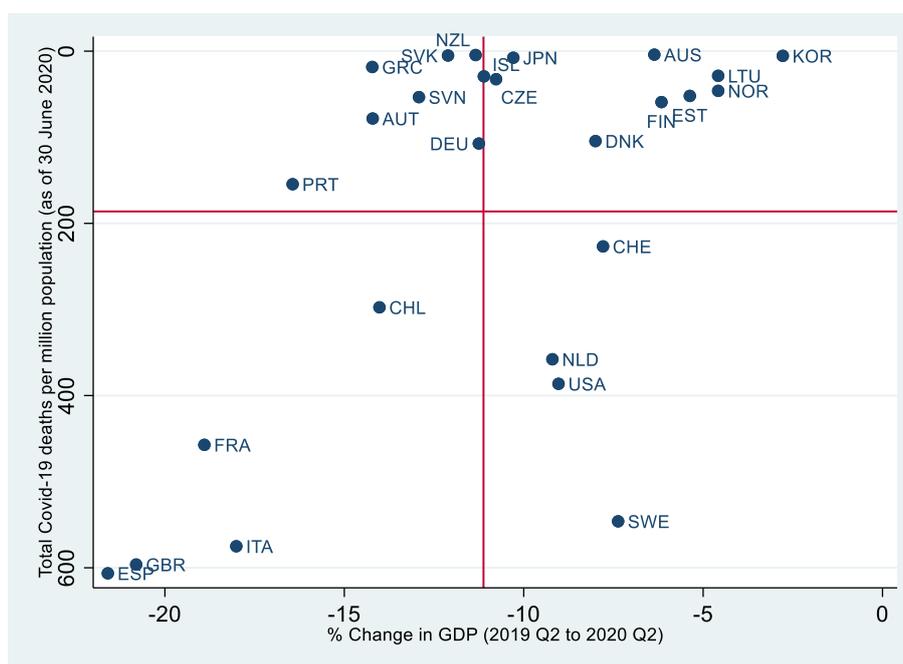
Figure 2 illustrates the outcome of COVID-19 pandemic policies in OECD countries during the first quarter of 2020. The vertical axis represents the health dimension of the pandemic policy—the total COVID-19 related deaths per million. As the smaller number in the health dimension implies a better outcome, the scale of vertical axis is reversed to run from maximum to minimum for the comfort of the reader. The horizontal axis represents the economy dimension of the pandemic policy—the percentage change in GDP compared to previous period. On each axis, a linear line is superimposed to indicate the average value of each dimension, which enables the classification of OECD countries into four different pandemic policy outcomes along the theoretical predictions elaborated in previous section: (a) *economy-sacrificing pandemic policy*; (b) *health-sacrificing pandemic policy*; (c) *pandemic policy suboptimization*; and (d) *pandemic policy optimization*.

In the first quarter of 2020, the countries that implemented an (a) *economy-sacrificing pandemic policy* are Japan (JPN; the first COVID-19 death on February 13), Germany (DEU; March 9), Austria (AUT; March 12), Slovenia (SVN; March 14), Portugal (PRT; March 17), Finland (FIN; March 21), Iceland (ISL; March 21), the Czech Republic (CZE; March 22), and the Slovak Republic (SVK; April 1),¹⁰; those who implemented a (b) *health-sacrificing policy* are Switzerland (CHE; March 5), the Netherlands (NLD; March 6), and Sweden (SWE; March 10); those who opted (c) *pandemic policy suboptimization* are France (FRA; February 15), Italy (ITA; February 21), Spain (ESP; March 3), and the United Kingdom (GBR; March 6); and those that implemented a (d) *pandemic policy optimization* include South Korea (KOR; February 20), the United States (USA; February 29), Australia (AUS; March 1), Greece (GRC; March 11), Denmark (DNK; March 14), Norway (NOR; March 14), Lithuania (LTU; March 21), Chile (CHL; March 22), Estonia (EST; March 25), and New Zealand (NZL; March 29).

The distribution of OECD countries along the two dimensions reflects the different timing of the COVID-19 outbreak. The magnitude of the impact was found to be enormously heterogeneous so it may be difficult to judge the performance of each national pandemic policy in the first quarter of 2020. Therefore, if samples are divided into two groups- one made up of “early sufferers” that experienced the first COVID-19 related death before March 10th, and another made up of “late-sufferers” that experienced their first COVID-19 related death after March 10th- then late sufferers such as New Zealand, Estonia, Chile, Lithuania, Norway, Denmark, and Greece, will have to be excluded. However, even when this exception is considered, it is noteworthy that South Korea strikingly outperformed France or Italy in optimizing pandemic policy profiles despite the fact that these countries are the early-sufferers.

chart.

¹⁰ For the Slovak Republic, the data on the total Covid-19 deaths per million in the first quarter of 2020 is taken from the record of April 1, 2020.

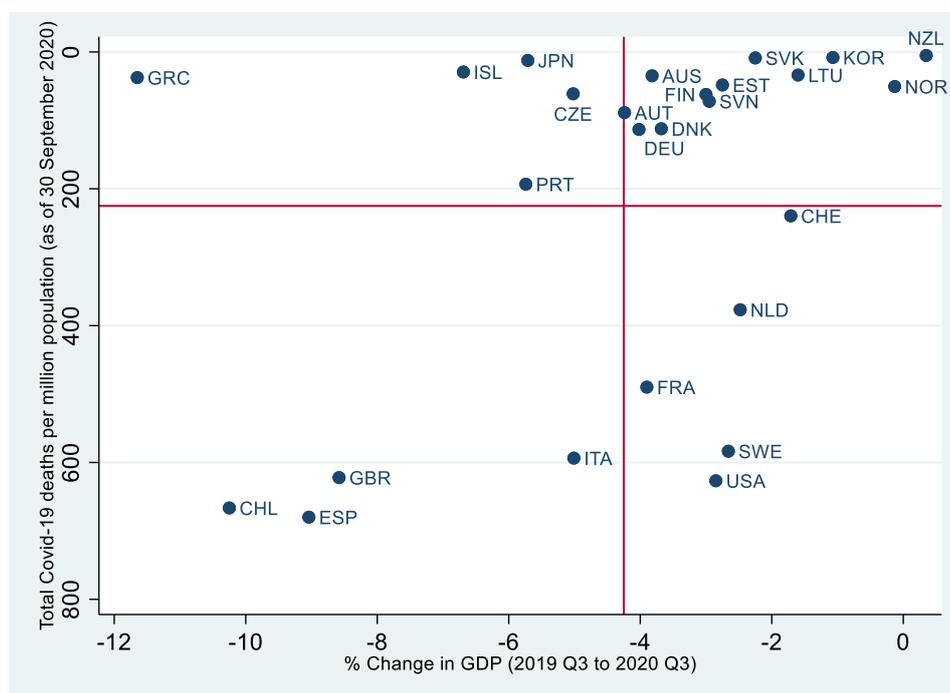
Figure 3. COVID-19 Pandemic Policy Outcomes in OECD Countries, 2nd Quarter of 2020

Sources: Our World in Data and OECD

Figure 3 indicates the pandemic policy outcomes in OECD countries during the second quarter of 2020. During this period, the severity of the pandemic on the both dimensions was magnified. In the health dimension, the sample average of the total COVID-19 deaths per million increased from 28.4 in the first quarter to 186.1 in the second quarter. In the economy dimension, the sample average of the percentage change in GDP compared to previous period noticed an increase from -1.4 in the first quarter to -11.1 in the second quarter. The growing severity of the pandemic may help identify pandemic policy over-performers due to temporal good luck and pandemic policy under-performers due to temporal bad luck.

Among those that belong to (d) *pandemic policy optimization* in the first quarter, Greece and New Zealand shifted to (a) *economy-sacrificing policy*, the United States shifted to (b) *health-sacrificing policy*, Chile shifted to (c) *pandemic policy suboptimization*, and the rest of the cases remained in the same category. Countries that belonged to (c) *pandemic policy suboptimization* and (b) *health-sacrificing policy* in the first quarter stayed in the same categories. Among those to characterized of having a (a) *economy-sacrificing policy* in the first quarter, only the Czech Republic, Finland, Iceland, and Japan shifted to (d) *pandemic policy optimization*.

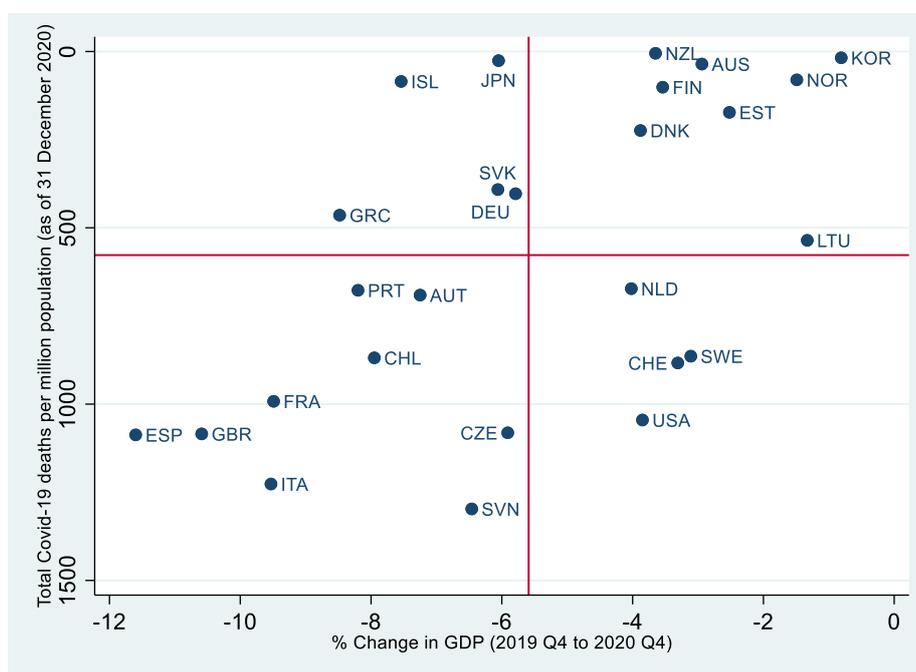
It can be argued that the national performance of the countries that shifted from (d) *pandemic policy optimization* to other categories might have overestimated and those that shifted from (a) *economy-sacrificing policy* to (d) *pandemic policy optimization* might have underestimated the initial phase of the pandemic crisis.

Figure 4. COVID-19 Pandemic Policy Outcomes in OECD Countries, 3rd Quarter of 2020Sources: Our World in Data and OECD.¹¹

The COVID-19 policy outcomes in OECD countries during the third quarter of 2020 can be observed in Figure 4. In the health dimension, the sample average of the total COVID-19 related deaths per million increased from 186.1 in the second quarter to 225.0 in the third quarter. In the economy dimension, the sample average of the percentage change in GDP compared to previous period decreased from -11.1 in the second quarter to -4.25 in the third quarter. The severity of the pandemic on the both dimensions was eased compared to that of the second quarter.

Among countries that belong to (d) *pandemic policy optimization* in the second quarter, only the Czech Republic, Iceland, and Japan shifted to (a) *economy-sacrificing policy*. In the case of (c) *pandemic policy suboptimization*, only France shifted to (b) *health-sacrificing policy* in the third quarter. Countries that shifted to (b) *health-sacrificing policy* in the second quarter did not make any changes in the third. The Slovak Republic, Slovenia, and New Zealand shifted to (d) *pandemic policy optimization* from the (a) *economy-sacrificing policy* and only Greece remained in the same category.

¹¹ Our World in Data <https://ourworldindata.org/coronavirus> and OECD Data <https://data.oecd.org/gdp/quarterly-gdp.htm#indicator-chart>.

Figure 5. COVID-19 Pandemic Policy Outcomes in OECD Countries, 4th Quarter of 2020

Sources: Our World in Data and OECD

Figure 5 illustrates COVID-19 policy outcomes in OECD countries in the fourth quarter. In the health dimension, the sample average of the total COVID-19 related deaths per million increased from 225.0 in the third quarter to 577.4 in the fourth quarter. The economy dimension experienced a decrease as the sample average of the percentage change in GDP dropped from -4.25 in the third quarter to -5.59 in the fourth quarter.¹²

In the fourth quarter, Germany and the Slovak Republic shifted to (a) *economy-sacrificing policy*, and Austria and Slovenia shifted to (c) *pandemic policy suboptimization*, instead of maintaining (d) *pandemic policy optimization* like in the third quarter. Countries that shifted to (c) *pandemic policy suboptimization* in the third quarter remained in the same category. Compared to the third quarter, of the countries that shifted to (b) *health-sacrificing policy*, only France shifted to (c) *pandemic policy suboptimization*. Among those that shifted to (a) *economy-sacrificing policy* in the third quarter, only Portugal and Czech Republic shifted to (c) *pandemic policy suboptimization*.

¹² As of January 24, 2021, the data on the percentage change in GDP compared to the previous period was unavailable for the fourth quarter of 2020. Therefore, the average of percentage change in GDP in the first, second, and third quarter is used. This estimation will be substituted with a real data when it becomes available and the calculation in this study will be updated in the next round of this research project.

Table 1. COVID-19 Pandemic Policy Outcomes in OECD Countries in 2020

	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Australia	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Austria	(a) ESP	(a) ESP	(d) PPO	(c) PPS
Chile	(d) PPO	(c) PPS	(c) PPS	(c) PPS
Czech Republic	(a) ESP	(d) PPO	(a) ESP	(c) PPS
Denmark	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Estonia	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Finland	(a) ESP	(d) PPO	(d) PPO	(d) PPO
France	(c) PPS	(c) PPS	(b) HSP	(c) PPS
Germany	(a) ESP	(a) ESP	(d) PPO	(a) ESP
Greece	(d) PPO	(a) ESP	(a) ESP	(a) ESP
Iceland	(a) ESP	(d) PPO	(a) ESP	(a) ESP
Italy	(c) PPS	(c) PPS	(c) PPS	(c) PPS
Japan	(a) ESP	(d) PPO	(a) ESP	(a) ESP
Lithuania	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Netherlands	(b) HSP	(b) HSP	(b) HSP	(b) HSP
New Zealand	(d) PPO	(a) ESP	(d) PPO	(d) PPO
Norway	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Portugal	(a) ESP	(a) ESP	(a) ESP	(c) PPS
Slovak Republic	(a) ESP	(a) ESP	(d) PPO	(a) ESP
Slovenia	(a) ESP	(a) ESP	(d) PPO	(c) PPS
South Korea	(d) PPO	(d) PPO	(d) PPO	(d) PPO
Spain	(c) PPS	(c) PPS	(c) PPS	(c) PPS
Sweden	(b) HSP	(b) HSP	(b) HSP	(b) HSP
Switzerland	(b) HSP	(b) HSP	(b) HSP	(b) HSP
United Kingdom	(c) PPS	(c) PPS	(c) PPS	(c) PPS
United States	(d) PPO	(b) HSP	(b) HSP	(b) HSP

Note: (a) *ESP* indicates *economy-sacrificing policy*; (b) *HSP* indicates *health-sacrificing policy*; (c) *PPS* indicates *pandemic policy suboptimization*; and (d) *PPO* indicates *pandemic policy optimization*.

Table 1 summarizes the COVID-19 pandemic policy outcomes in OECD countries from the first quarter to the fourth quarter. It should be noted that most of the countries tend to stay in the same categories. With an exception to the first quarter, sixteen countries maintained their categories throughout the rest of the period. It seems that the COVID-19 pandemic policy outcomes in the later periods were endogenous to the country's policy in the earlier periods. For instance, Switzerland, Netherlands, Sweden, and the United States were unable to get out of (b) *health-sacrificing policy* since the second quarter of 2020.

It is also interesting that the late-sufferers, with an exception to Chile, no other country continued to support (c) *pandemic policy suboptimization*. However, a clear divergence was evident among the early-sufferers in which some supported (d) *pandemic policy optimization* and others (c) *pandemic policy suboptimization*. Out of the early-sufferers, Italy, Spain and the United Kingdom consistently failed in optimizing pandemic policy. Australia and South Korea have consistently succeeded. Among the late-sufferers, Denmark, Norway, Lithuania, Estonia, Finland, and arguably New Zealand¹³ have consistently succeeded in optimizing pandemic policy.

South Korea's Pandemic Policy in Comparative Perspective: A Statistical Analysis

A statistical analysis of the relationships between social risk, social trust, and confidence in authorities and pandemic policy optimization will be discussed in this section. The dependent variable is the measure of COVID-19 pandemic policy optimization. It consists of the sum of the standardized score of the health and the economy dimensions per each quarter.¹⁴ For the variable of social risk, suicide rates are used as the proxy with the expectation that higher the social risk is in a country will lead to more facilitation of large-scale collective action.¹⁵ The variable of social trust is based on the percentage respondents who answered that “most people can be trusted” during the seventh wave of the World Value survey. It is expected that the higher the social trust is in a country, the more likely free-riding problem will be overcome.¹⁶ For the variable of confidence in authorities, the percentage of the respondents who chose “a great deal” and “quite a lot” to the question of how much confidence you have in the government in the seventh wave of the World Value Survey with the expectation that the higher the confidence in authorities, the more likely large-scale collective action is to be facilitated.¹⁷

In the analysis of the statistical models, three control variables are included: (1) population density with the expectation that the higher the population density, the more likely the virus will spread, and the less likely the pandemic policy optimization is to be implemented¹⁸; (2) the percentage of population ages 65 and above in the total population with the expectation that the higher the percentage of population over 65 is in a country, the more the total population is health-vulnerable, and the less likely the pandemic policy optimization is to be implemented¹⁹; and (3) the self-employment rate with the expectation that the higher the self-employment rate is in a country, the more the population is economy-vulnerable, and the less likely the pandemic policy optimization is to be implemented.²⁰

¹³ New Zealand was out of (d) *pandemic policy optimization* only in the second quarter of 2020.

¹⁴ The total COVID-19 deaths per million is standardized from the minimum of 0 to the maximum of 1 and the value is reversed because the smaller number indicates a better outcome and the percentage change in GDP in previous period is standardized from the minimum of 0 to the maximum of 1. The COVID-19 pandemic policy optimization is the sum of the two standardized values.

¹⁵ The data on suicide rates are derived from OECD Data <https://data.oecd.org/healthstat/suicide-rates.htm>.

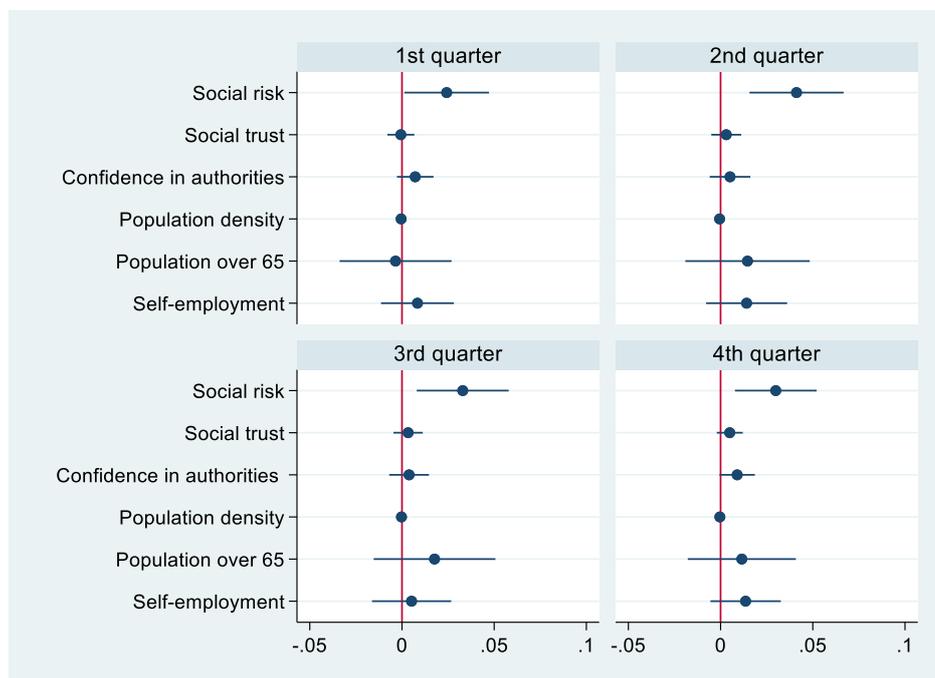
¹⁶ The data on social trust is derived from World Value Survey <http://www.worldvaluessurvey.org/WVSONline.jsp>.

¹⁷ The data on confidence in authorities is derived from World Value Survey <http://www.worldvaluessurvey.org/WVSONline.jsp>.

¹⁸ The data on population density is derived from World Bank Data <https://data.worldbank.org/indicator/EN.POP.DNST>.

¹⁹ The data on population ages 65 and above is derived from World Bank Data <https://data.worldbank.org/indicator/SP.POP.65UP.TO>.

²⁰ The data on self-employment rate is derived from OECD Data <https://data.oecd.org/emp/self-employment-rate.htm>.

Figure 6. Determinants of COVID-19 Pandemic Policy Optimization

Notes: Number of observations: 26; R-squared: 0.38 in 1st quarter model; 0.46 in 2nd quarter model; 0.41 in 3rd quarter model; and 0.57 in 4th quarter model.

An ordinary least square regression is utilized to estimate the statistical models and the results are reported in Figure 6. The first notable finding is that the results demonstrate a strong and positive correlation between social risk and pandemic policy optimization even after inclusion of the social trust variable, the confidence in the authorities variable, and other control variables. The social risk takes positive signs and highly statistically significant in 1st quarter model through 4th quarter model.

Analysis of social trust and confidence in authorities shows that contrary to conventional wisdom, they turn out to be statistically not significant. In addition, the other control variables prove to be statistically not distinguishable from zero. In fact, social risk is the only variable that has a statistically significant positive impact on pandemic policy optimization.

To sum up, the statistical analysis on the determinants of COVID-19 pandemic policy optimization confirms the theoretical prediction that the level of social risk is the most influential in explaining the performance of the COVID-19 policy, not social capital. In a time of crisis politics that is characterized by the high level of threat, time constraint, and uncertainty, the high level of preparedness and agility of citizens who are faced with a high level of social risk are the facilitators of large-scale collective action that induces voluntary civic compliance with the government NPIs policy. This was found to result in the successful optimization of the pandemic policy between health and the economy.

Conclusion

This study addresses questions of how policymakers and citizens have solved the trade-off between health and the economy during the COVID-19 pandemic and why national performances have varied in responding to the challenge among advanced industrial democracies.

Contra conventional wisdom, insists that social risk, rather than social capital such as social trust or confidence in authorities, explain the variation of national policy responses to the trade-off between lives and livelihoods. To prove its argument, this study first offers a descriptive comparison across OECD countries over quarterly periods in 2020 in order to ascertain pandemic policy over-performers and underperformers. The research then provides a statistical analysis in which the determinants of COVID-19 pandemic policy optimization are examined.

The descriptive and statistical investigations confirm the argument of this study that social risk is the main factor of large-scale collective action that accounts for variation of national pandemic policy performances.

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