Perspective

The political cost of sanctions: Evidence from COVID-19

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ABSTRACT

We use survey data to study how trust in government and consensus for the pandemic policy response vary with the propensity for altruistic punishment in Italy, the early epicenter of the pandemic. Approval for the management of the crisis decreases with the size of the penalties that individuals would like to see enforced for lockdown violations. People supporting stronger punishment are more likely to consider the government's reaction to the pandemic as insufficient. However, after the establishment of tougher sanctions for risky behaviors, we observe a sudden flip in support for the government. Higher amounts of the desired fines become associated with a higher probability of considering the COVID policy response as too extreme, lower trust in government, and lower confidence in the truthfulness of the officially provided information. These results suggest that lockdowns entail a political cost that helps explain why democracies may adopt epidemiologically suboptimal policies.

1. Introduction

In early March 2020, Italy was the first Western democracy to impose a national lockdown, requiring the confinement of the population at home [1]. Authorities closed parks, restaurants, and non-essential shops and banned outdoor activities, including walking far from home. Citizens could only leave their houses for a handful of reasons— for example, to go to the supermarket or the pharmacy—and needed to carry a document stating why they were outside. Police officers were allowed a discretionary power to assess the residents' statements and fine € 200 for potential violations of lockdown rules. Despite these measures, Italy rapidly surpassed China as the country with the highest death toll from the novel coronavirus (SARS-CoV-2) disease, becoming the epicenter of a shifting pandemic. On March 21, the government further tightened the stay-at-home orders by shutting down all non-necessary businesses and industries. Though widely approved by public opinion, confinement measures were *de facto* the most substantial suppression of constitutional rights in the history of the Republic.

Social distancing measures can be an effective policy response to stages of exponential growth of SARS-CoV-2 contagion [2–6]. However, they come at the cost of tremendous economic losses [7–9], jeopardize

civil liberties [10,11], require the introduction of new sanctions [12,13] and threaten incumbent governments' popularity [14]. The pandemic forces policymakers to face difficult trade-offs, not only in economic and public health terms but also regarding consensus. The political sustainability of social distancing measures ultimately relies on the approval of the public [15].

We study how citizens' support for the government relates to the tightening of confinement measures in Italy, the country that first navigated the uncharted territory of lockdowns in the Western world. We use a survey that Hensel et al. [16] conducted across 58 countries to explore beliefs on how citizens and government reacted to the COVID-19 pandemic. The survey asked respondents the size of the fines they would have liked to see enforced for lockdown violations. These penalties are a measure of altruistic punishment, as they potentially concern any law-abiding citizen that usually follows the rules, bring severe individual costs, imply a voluntary deprivation of personal liberties aimed at the common good, and yield no tangible individual benefits other than public health [17]. To study the political cost of enforcement, we exploit the fact that the survey was fortuitously fielded throughout the same week in which the Italian government dramatically hiked lockdown fines. Given that authorities had caught more than 100,000 people

outside for not allowed reasons over the previous two weeks, in the evening of March 24, the Italian Prime Minister announced an increase in the fines for violating lockdown rules up to € 3,000. We first show that trust in government and confidence in the truthfulness of officially-provided information about the outbreak significantly increase with the size of fines respondents would like to see enforced for risky behaviors. Despite that, the likelihood of considering the government's reaction to the outbreak as insufficient increases with the amount of the fines. Comparing the opinions of respondents who filled in the questionnaire right before the hike in sanctions (until 6.30 p.m. of March 24) and those who did right after, we find that altruistic punishment relates to support for the government in a seemingly counterintuitive way. Right before the hike in sanctions, the degree of approval for the crisis management significantly decreases with the amount of the suggested punishment. The higher the suggested fines, the higher the probability of considering the policy response to the outbreak as insufficient. The chosen amount also has a positive and weakly significant correlation with confidence in the officially-provided information and a positive though not statistically significant association with trust in government. The day after the Prime Minister announced the hike in sanctions, instead, we observe that higher amounts of the preferred fine become significantly associated with a higher probability of considering the government's reaction as too extreme, lower trust in government, and lower confidence in the truthfulness of the official information. The flip in the sign of the measures of support for the government is striking and suggests that the new sanctions could have altered how altruistic punishers perceive the management of the crisis.

Our analysis connects to several strands of literature. Recent studies investigate the relationship between the introduction of the new norms related with the pandemic restrictions and people's willingness to sanction non-compliers. Takahashi and Tanaka [18] show with a joy-of-destruction minigame that people are willing to implement costly punishments on norm-breakers. Schunk and Wagner [19] find that the willingness to sanction non-compliers primarily depends on personal traits rather than time or risk preferences. We add to these findings by studying the relationship between the willingness to punish non-compliers and support for the government.

Previous studies have shown that the electoral outcomes of disruptive events substantially depend on the policy response of the incumbent [20,21]. Ashworth et al. [22] suggest that adverse shocks provide voters with the opportunity to learn new information about incumbents. In recent months, new work has assessed how the policy response to the pandemic affects political consensus [23–27]. Baccini et al. [28] show that COVID-19 cases negatively affected Trump's vote share in the 2020 US presidential election, suggesting that voters may have punished Trump for the management of the pandemic crisis. Several studies suggest that electoral concerns cause hesitant policy responses. Pulejo and Querubín [14] show that leaders who could run for re-election implemented less stringent restrictions when the election was closer in time. Aksoy et al. [29] consistently find that weak governments took longer to introduce a policy response to the COVID-19 outbreak. The authors also show that exposure to epidemics in "impressionable years" has a persistent negative effect on trust in political leaders and institutions. We add to these studies by documenting how support for government changes with the individual willingness to punish risky behaviors right after the establishment of heavy sanctions for non-compliers. The political implication of this result is that the tightness of law enforcement may impact the political sustainability of lockdown measures. From a behavioral perspective, we provide insights into the preferences of "altruistic punishers" in times of crisis. Consistently with intuition, our evidence suggests that support for a tight pandemic policy response increases with the willingness to bear personal sacrifices for the common good. However, we show that this relationship may change in a counterintuitive way when authorities enact stronger penalties for emergency rules violations.

More in general, our results connect to the literature exploring the

behavioral responses to the crisis [16,30–34]. Citizens' opinions about pandemic policy measures are crucial to compliance with emergency rules (e.g., [35–41]). Our results suggest that people may perceive a draconian enforcement of emergency measures as unfair, possibly resulting in a weaker willingness to comply [42].

Finally, we relate to event studies exploring the effect of leaders' speeches on citizens' attitudes and behaviors (e.g., [43]). Ajzenman et al. [44] and Allcott et al. [45] show that when leaders downplay the gravity of the pandemic in public discourses, their supporters feel encouraged not to comply with social distancing measures. Simonov et al. [46] show that lower compliance is also affected by the exposure to TV channels biased in favor of leaders who minimize contagion risk. We add to this field by documenting how the attitude towards the government changes with the willingness to altruistically punish non-compliant behaviors after the announcement of a tightening in lockdown enforcement.

The rest of the paper is organized as follows: Section 2 describes the data and provides some background. In Section 3, we present the empirical analysis and briefly discuss its results in light of the related literature. Section 4 concludes.

2. Data

We use individual data that Hensel et al. [16] collected to study how beliefs about the gravity of the pandemic and approval of the government policy response affected mental well-being across 58 countries. The questionnaire developed by Hensel et al. [16] asked respondents "Which fines should be enforced for the following risky behaviors? (I) Participation at social gatherings; (II) Going out despite exhibiting symptoms of coronavirus". We use the logarithm of the sum of the two amounts to value the punishment individuals would like to see enforced for lockdown violations. When respondents do not endorse any punishment, the value of the fine is posed equal to zero. Results do not change if we consider the two measures separately. Coefficients are reported in Tables 2 and 3 in the online Appendix. Following the literature, we consider this amount a measure of altruistic punishment [17]. The altruism lies in the fact that sanctions entail a voluntary deprivation of personal liberties for the common good, and any respondent could potentially bear their cost. On the other hand, respondents would not personally benefit from the fines other than for a potential improvement of public health in the long run. Given the unprecedented discretionary power of the police in assessing people's reasons not to stay at home during Italy's first lockdown, any compliant citizen bore the substantial risk of being sanctioned. People violating the ban on movement freedom without valid reasons were comparable to quarantined patients as potential offenders pursuant to the Italian Criminal Code (Article no. 650 of the Italian Criminal Code occurs when "anyone fails to comply with a measure imposed by the authority for reasons of justice or public safety or public order or hygiene"). Citizens could not justify their supposed misconduct with the belief that they were in one of the conditions allowing them to move. Local media reported many cases of police officers inspecting supermarket customers' shopping bags to assess whether the purchased goods were essential or not. In some cases, officers imposed the new fines based on their discretionary opinion about what goods could be deemed as essential (for example, in the province of Turin a man was fined for having bought several bottles of red wine and some pasta, see https://bit.ly/3mdWpiH).

As we report in Table 4 in the online Appendix, higher suggested fines are significantly associated with self-reported avoidance of any risky behavior. More specifically, people who declared they stayed at home, did not join social gatherings, kept a distance of at least two meters from other people, and washed their hands more frequently than before also supported higher penalties. The amount of fines also increases with first-order beliefs about the necessity of a curfew and the importance of avoiding social gatherings. Second-order beliefs about curfew and gatherings, instead, are not significantly associated with the

suggested amount. To measure support for the government, we use three questions: I) "Do you think the reaction of your country' s government to the current coronavirus outbreak is appropriate, too extreme, or not sufficient?", with answers captured in a five-point Likert scale ranging from "Much too extreme" (value 1) to "Not at all sufficient" (value 5). II) "How much do you trust your country' s government to take care of its citizens?", with answers captured in a five-point Likert scale ranging from "Strongly distrust" (value 1) to "Strongly trust" (value 5). III) "How factually truthful do you think your country' s government has been about the coronavirus outbreak?", captured in a five-point Likert scale ranging from "Very untruthful" (value 1) to "Very truthful" (value 5).

Starting on March 11, Italy established the most stringent lockdown measures in the Western world to halt the spreading of the SARS-CoV-2 contagion. Citizens were substantially confined at home except for a few reasons subject to the discretionary assessment of the police. Despite stay-at-home orders, 102,316 people were caught outside for not allowed reasons and were accordingly fined from March 11, to 23 (Source: Italian Minister of Interior, retrieved https://bit.ly/3kjaw4V). On the evening of March 24, the Italian Prime Minister announced a dramatic hike in sanctions for lockdown violations in a live-streamed address given via Facebook. Fines for violations of containment measures increased from € 206 to between € 400 and € 3,000. In addition, anyone who violated the quarantine after testing positive for COVID-19 could face a prison sentence between one to five years. The hike in sanctions made the headlines in the evening news broadcasts and the newspaper front pages on March 25, (See for example the front page of *Corriere della Sera*, the most widely circulated Italian newspaper, reported in Fig. 2 in the online Appendix). Figs. 1 and 2 illustrate online searches for the "coronavirus penalties"(sanzioni coronavirus) and for the decree of the President of the Council of Ministers (*Decreto del*

Presidente del Consiglio dei Ministri, DPCM) establishing the new fines (multe). Searches spiked on March 24, and 25, suggesting that the sanctions were a particularly salient topic on those days.

We take advantage of the fact that almost the totality of the Italian sample filled the questionnaire between March 20, and 27. There was no deadline for filing the questionnaire, and the system provided a unique ID for any individual survey attempt.

We build two specific temporal dummy variables to assess how approval for the government's action has changed with the announcement of the new, stricter rules. The first one, denominated March 24, takes value one if the respondent filled the survey on March 24 before the announcement of the hike in sanctions, from 0.00 a.m until 6.30 p.m. (when the Italian Prime Minister closed his speech). The second one, denominated March 25, takes value one if the respondent filled the survey from 6.31 p.m. of March 24, to 11.59 p.m. of March 25.

We then regress our measures of support for the government on the interaction terms between the two temporal dummies and the amount that individuals would like to see enforced for punishing noncompliance with lockdown rules. Finally, we re-weight the observations to make them representative at the country level, based on respondents" gender, age, income, and education in all regressions [47, Section F, p.32]. Summary statistics are reported in Table 5 in the online Appendix. The high value of the fines suggested by some respondents is in line with the criminal relevance of quarantine violations. According to Italian law, people leaving their home despite COVID-19 symptoms or after having tested positive at the nasal swab are subject to incarceration for one to five years and can face charges of personal injuries, manslaughter, and even unintentional slaughter.
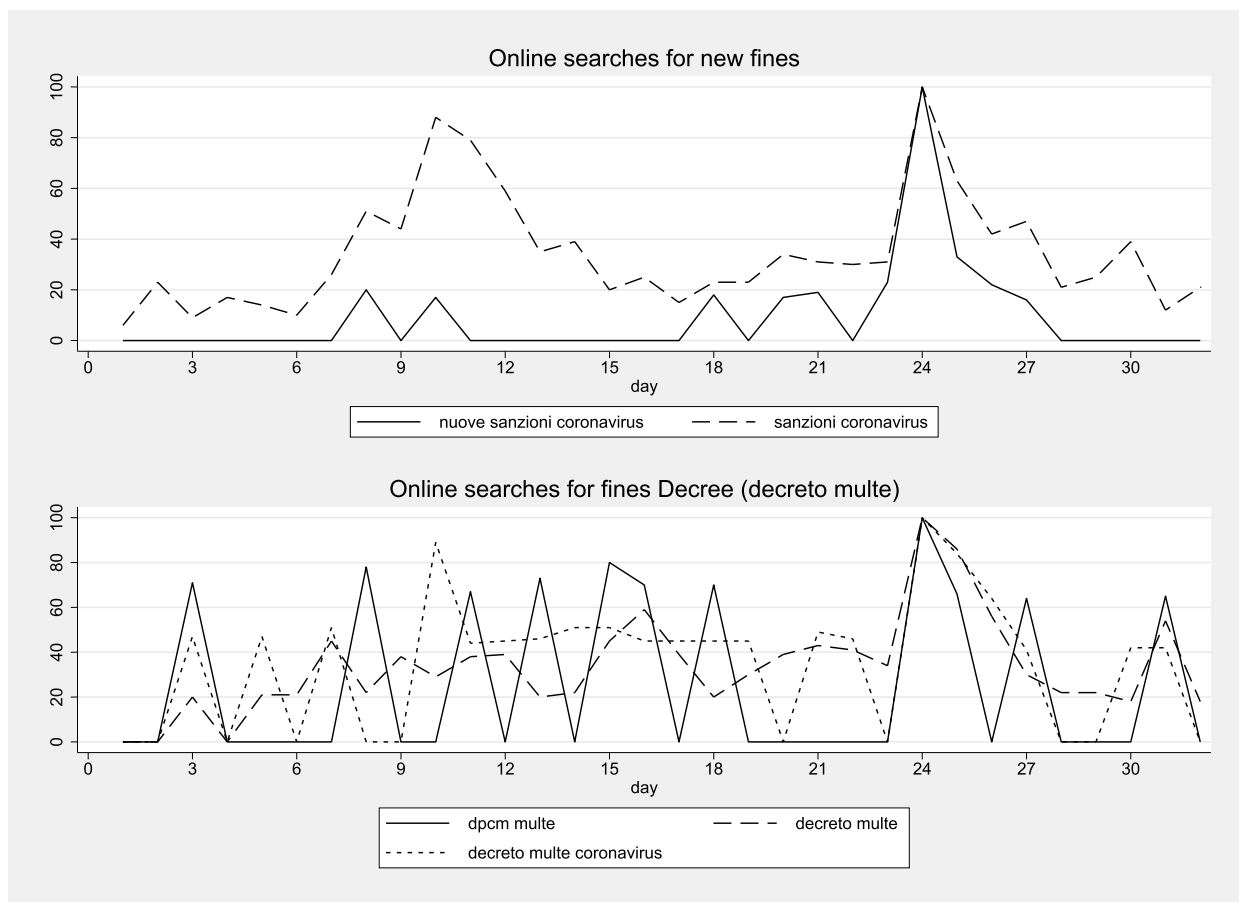

Fig. 1. Online Searches for COVID-related-fines in March 2020.

3. Results

In this section, we first show our results on the relationship between the hike in sanctions and our set of measures capturing the degree of citizens approval of the crisis management (Section 3.1). We then perform a series of robustness and placebo tests to corroborate our main analysis (Section 3.2).

3.1. Main results

Table 1 presents the results of our baseline regressions. Dependent variables are the measure of approval for the government's response to the pandemic (Column 1), trust in government (Column 2), and confidence in the truthfulness of the official information about the outbreak (Column 3). The variable *punishment* is the logarithm of the sum of the two fines individuals would like to see enforced for lockdown violations. We focus the interpretation of results on the interaction terms between the amount of the punishment and the dummy variables indicating the day in which the questionnaire was filled. In all regressions, we include a set of controls capturing socio-economic and demographic characteristics such as gender, age, marital status, education, and income, a set of dummies to control for day fixed effects, and the self-reported health of respondents. We also control for the daily number of COVID-19 ascertained cases and deaths.

Results in column (1) need to be understood in light of the coding of the outcome variable, with the lowest, central, and highest value meaning that respondents view the government's reaction as too extreme, adequate, or too weak, respectively. To correctly interpret the coefficients, we rely on ordered logit estimates showing the marginal effect for each category of the dependent variable, and on estimates where we recoded the dependent variable as reported in Tables 6 and 7 in the online Appendix. Column (1) shows that the desired punishment for lockdown breakers is positively associated with the measure capturing respondents' approval for the government's reaction. Given the ordered logit estimates, this result means that people supporting higher fines are more likely to consider the crisis management too weak. Higher desired fines are also positively and significantly associated with trust in government (Column 2) and confidence in the reliability of the institutional information about the outbreak (Column 3).

The coefficients of the interaction term between the suggested punishment and the dummy variable for March 24, are in line with this evidence. The association is positive and statistically significant ($p<0.05$) for the measure capturing approval for the government's

reaction, with categorical marginal effects suggesting that the policy response to the outbreak was considered too weak. On March 24, the punishment variable also exhibits a positive but not significant association with trust in government and a positive and weakly significant association with confidence in official information's reliability. The following day, our main coefficient of interest suddenly flips its sign. The interaction of the punishment with the dummy variable for March 25 reveals a negative and highly statistically significant ($p<0.01$) correlation with the measure of approval, with ordered logit estimates suggesting that the new policy response to the outbreak was now more likely to be considered too extreme. The magnitude of the correlation is significant and sizable. After the hike in sanctions, one standard deviation increase in the desired punishment's intensity makes respondents more likely to consider the crisis management as too extreme by 5.1 percent.

Trust in government follows a similar pattern. On average, the coefficient of the desired punishment is positive and significant at the 5 percent level. The interaction term with the dummy for March 24, is also positive, though not statistically significant. On March 25, the coefficient flips sign and strengthens its statistical significance, suggesting that the hike in sanctions also altered respondents' trust in government. The correlation with confidence in the official information's reliability also turns negative though weakly statistically significant ($p<0.10$).

3.2. Threats to identification

A possible threat to our identification strategy is represented by the possibility that the effect is driven by citizens reshaping their beliefs about the appropriate fines after the hike in sanctions. To test this possibility we first regress the desired penalties on two temporal dummies for March 24, and 25. We report the results in Table 8. Overall there is no significant correlation between the dummies and the outcome variables, suggesting that respondents' opinions about the most appropriate punishment did not change after the hike in sanctions.

We then non-parametrically assess whether the distribution of penalties proposed by respondents who filled the questionnaire on March 25, systematically differs from the distribution of the penalties suggested in the other days. In Tables 9 and 10, we report the results from a battery of tests of the equality of distributions. The distributions are not statistically different, suggesting that beliefs about the appropriate penalties were not affected by the hike in fines established by the Italian government on the evening of March 24.

Beliefs about the appropriate penalties for risky behaviors may have also changed due to respondents' self-selection after the hike in sanctions, thereby biasing our results. For example, tightening the lockdown may have induced respondents to self-select along personality traits, risk aversion, or other unobservable characteristics. To rule out the possibility that self-selection drove respondents' opinions after the hike in sanctions, we first control for the possibility that unobservable characteristics biased our results by including additional controls to our main specification. Table 11 shows that results hold after controlling for the 'Big Five' psychological traits [48], an indicator of mental distress (the PHQ-9 index), a misperception index capturing respondents' beliefs about prevailing compliance behaviors in their country [16] and a "worries index" capturing respondents' concern about the gravity of the pandemic [16]. The Big Five helps us control for specific unobservables that may generate respondents' self-selection after the hike in sanctions, such as risk and time preferences [49]. For the sake of robustness, we also interact individual demographic characteristics with the temporal dummies for March 24, and 25. Results are not markedly different when adding these controls

Then, we perform a balance test of the main observable characteristics of our sample. Table 12 shows that the characteristics of those who filled the questionnaire on March 25, are never statistically different from the rest of the sample (Panel A) and from the group that filled the questionnaire on the evening of March 24, (Panel B), except for a few

Table 1
Suggested fines and support for government.

	(1) Perceived reaction	(2) Trust	(3) Truthfulness
Punishment	0.023	0.043**	0.044**
	(0.016)	(0.021)	(0.022)
March 24, x Punishment	0.231**	0.046	0.170*
	(0.093)	(0.112)	(0.094)
March 25, x Punishment	-0.160***	-0.200***	-0.123*
	(0.060)	(0.059)	(0.066)
Constant	3.853***	2.209***	3.178***
	(0.315)	(0.511)	(0.596)
Day FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
R-squared	0.210	0.234	0.221
Observations	1,797	1,797	1,797

Notes: OLS estimates. Standard errors (in parentheses) are corrected for heteroskedasticity. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Variables/controls description in Table 14. Outcome (1): perceived reaction of the government, 1=Much too extreme [...] 5=Not at all sufficient. Outcome (2): trust in government, 1=Strongly distrust [...] 5=Strongly trust. Outcome (3): truthfulness of the government, 1=Very untruthful [...] 5=Very truthful.

minor and non-systematic exceptions. Δ balance tests in Table 12 are performed according to Chiapello [50] p-values corrected for multiple testing.

We also present the results of some placebo tests in Table 13. In the first three columns, we assess how approval for the policy response (Column 1), trust in government (Column 2), and confidence in official information (Column 3) relate to the interactions between the punishment and dummies for March 22, and 23, days before the hike in sanctions. Coefficients are systematically statistically insignificant.

The same holds when we shift the estimate to the days following the hike in sanctions. This latter result may suggest that the potential impact of the hike in sanctions disappears as the news became less salient.

Finally, we show in Figures 3, 4, and 5 results from a standard event study in which the desired amount of punishment is interacted with each day of the week from March 20, to March 27. The results are compatible with our main results.

4. Discussion

The combination of the OLS reported in Table 1 and the estimates in Tables 6 and 7 in the online Appendix imply that the likelihood of considering the government's reaction to the pandemic as insufficient increases with the punishment magnitude, both on average and right before the hike in sanctions on March 24. Right after, instead, higher amounts of the desired punishment are significantly associated with a higher probability of considering the government's reaction as too extreme. Trust in government follows a similar pattern, with a flip in the sign after the establishment of the tougher penalties. The sudden flip in the measures of support for the government is striking and suggests that the hike in sanctions could have altered how altruistic punishers perceive the policy response to the pandemic. Right before the announcement of the new penalties, news about the repeated lockdown violations widely circulated in the media, provoking a wave of resentment towards lockdown breakers. Individuals desiring more intense punishment were more likely to consider the government's reaction to the outbreak as inappropriate and insufficient. Still, they also exhibited a higher trust in government and the officially provided information. Right after, people supporting stiffer punishment were more likely to judge the COVID-19 policy response as too extreme and exhibited a significantly lower trust in government and significantly lower confidence in the official information about the outbreak. This result suggests that, when confronted with the actual possibility of being fined high amounts, those declaring themselves in favor of higher fines could rethink their opinion on the most appropriate COVID-19 policy response. In light of the extant literature on cooperation and punishment, this reaction looks less counterintuitive than it may seem. Behavioral studies show that altruistic punishers are generally more compliant and more confident in third party punishment [17,51–53], as they perceive a higher likelihood of receiving an audit than non-punishers and non-compliers [54–57]. After the government announced the hike in sanctions, the altruistic punishers in our sample - who, consistently with previous literature, were also the most compliant with lockdown rules - may have feared a more substantial likelihood of being sanctioned the new amounts, thereby developing the belief that the government's reaction was unfair. This shift in opinions may have diminished trust in institutions, ultimately weakening the social contract between citizens (altruistic punishers in particular) and the state.

Previous work suggests that the altruistic punishment exerted in controlled environments may diverge from the one that would spontaneously emerge in the field [58]. COVID-19 lockdowns offer an unprecedented chance of understanding to what degree potential altruistic punishers can bear limitations of their liberty and the risk of incurring tough penalties for the common good.

The flip in the sign of the interaction term between the amount of the punishment and the day dummies in the estimates of the other two dependent variables also offers interesting insights. The initially positive correlation between the amount of the desired fines and trust in government supports the view that people trust political institutions to the extent to which they feel represented by them. Trust in government before the hike in sanctions may thus be linked to the electoral support of the incumbent parties [59,60] and the advocacy for tighter law enforcement shared by government parties' followers [61]. The procedural justice literature suggests that citizens trust institutions to the extent to which they perceive public policy outcomes as efficient and fair as if a sort of psychological contract with authorities was in force [62]. There is ample evidence that citizens' evaluation of the performance and fairness of government institutions influences their confidence in them, especially when it comes to issues related to law enforcement [63,64]. In light of this literature, the result about trust in government may be explained by the fact that, when institutions are viewed as unfair, people tend not to trust them independently of their political orientation [59,60,65]. Unfortunately, the survey lacks information about political orientation, preventing us from studying this possible driver of respondents' opinions about the appropriate sanctions.

Overall, the exceptional amount of the new fines (from € 400 up to € 3,000), the discretionary power of police officers to assess citizens' reasons for not staying at home, and the difficulty in discriminating between free-riders and those having urgent reasons to go outside could have led altruistic punishers to perceive the new measures as unfair. According to several commentators, the strong emphasis of the official communication on the need to punish risky behaviors also gave the impression that the government wanted to shift the responsibility of the crisis on citizens (see here, for example). Finally, our results seem overall consistent with studies on the impact of electoral concerns of policymakers on the management of the outbreak. The flip in the measures of support for government associated with the hike in sanctions reminds us that enforcing a lockdown is not only economically but also politically costly, as suggested by the evidence that weaker or less stable governments have hesitated more in implementing restrictive measures against the spreading of the COVID-19 disease [14,29].

5. Conclusions

This paper explored citizens' support for the government in the wake of one of the strictest lockdowns implemented in the Western world in response to the COVID-19 pandemic. Italy offers a unique case for studying how people who want strong altruistic punishment may react to restrictions on personal liberties and a dramatic hike in sanctions aimed at improving public health. Our evidence suggests that altruistic punishers – those more concerned with the pandemic and more inclined to bear a costly punishment for the common good – significantly altered their view of the government's management of the crisis after the tightening of lockdown enforcement. In coronavirus times, policymakers face difficult trade-offs. Restrictive measures aimed at halting contagion not only cause economic losses. They can also threaten citizens' support for the government and undermine trust in institutions, perhaps weakening the effectiveness of the policy response to the crisis.

Our empirical analysis has some limitations that suggest handling results with caution. Data were collected through one wave of self-report questionnaires. Though the specific timing of the data collection was fortunate, as it occurred the same week when the government announced the hike in sanctions, the cross-sectional nature of the analysis inhibits any intention to establish causal relationships. We could not control for several possibly relevant aspects of individuals' personality, biases, and behavior that may confound the relationship between the wish for tougher sanctions and the approval for the government's action. In addition, even though our sample size was adequate, the sample was far from representative of the population. Finally, we re-weighted observations to make them representative at the country level based on respondents' gender, age, income, and education, but we cannot exclude that selection bias affected our results. Further

research is needed to understand the mechanism underlying citizen's response to the enforcement of epidemiological policies. The COVID-19 pandemic is a new phenomenon. Providing real-time evidence on its economic and societal impact also entails the use of often provisional and incomplete data. Despite these limitations, our analysis highlights the need to study lockdown surveillance and communication strategies to slacken some aspects of the trade-offs that policymakers face in contrasting the pandemic to design effective and sustainable countermeasures.

Supplementary material

Supplementary material associated with this article can be found, in the online version, at 10.1016/j.healthpol.2022.06.008

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