



COVID-19 led to a decline in climate and environmental concern: evidence from UK panel data

Liam F. Beiser-McGrath¹

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Abstract

A key question in understanding barriers to climate and environmental policy is whether changing economic conditions weaken individuals' support for climate and environmental action. The large body of literature examining this question, however, has come to contradictory results, with studies measuring changes within individuals typically finding no such effect (e.g. Mildenberger and Leiserowitz, *Env Polit* 26(5):801–824 2017). In this letter, I use the outbreak of the COVID-19 pandemic to provide a stringent test of how economic shocks affect concern for climate change and the environment. Using panel data from the UK, that was collected just before (November 2019) and just after (June 2020) the outbreak of COVID-19, I find that the pandemic caused individuals to significantly deprioritise climate change and the environment in absolute terms, and the environment relative to the economy. These effects significantly vary depending upon individuals' employment trajectories, concerns about the cost of living, and ideological preferences, but do not significantly vary by individuals' prior vote choice. The findings suggest that in times of severe economic distress, unlike smaller economic downturns, climate change and the environment is deprioritised. This has implications for our understanding of the political feasibility of climate and environmental action, when individuals are faced with harsh economic conditions.

Keywords Climate change · Environment · Economic downturns · COVID-19 · Public opinion · Economy-environment trade-off

1 Introduction

Whether economic conditions impact climate and environmental attitudes, is a long-standing debate both within policy circles and the scientific literature. A large body of research (Kahn and Kotchen 2011; Scruggs and Benegal 2012; Shum 2012; Brulle et al. 2012) argues that economic downturns lead to a decline in concern for climate change and the environment. This is also reflected in policy circles (Kitcher 2010;

✉ Liam F. Beiser-McGrath
liam@liambeisermcgrath.com

¹ Department of Social Policy, London School of Economics and Political Science, London, UK

Howell 2013) that in times of economic stress there is less demand for climate and environmental policy action. Yet in spite of this received wisdom, there is weak empirical evidence for this link between economic downturns and declining climate and environmental attitudes at the individual level (Kachi et al. 2015; Mildemberger and Leiserowitz 2017; Bakaki and Bernauer 2018). However, these studies examine economic downturns that may not be significant enough in magnitude to meaningfully push individuals to shift their priorities of the climate and the environment.

The recent COVID-19 outbreak, therefore, is an ideal test of whether economic downturns can in fact depress the importance of climate change and the environment for individuals. First, the immediate responses to the COVID-19 pandemic led to significant economic downturns, across broad sectors of the economy, affecting both low- and high-status occupations, that could not be anticipated by individuals. Second, the pandemic, and subsequent economic consequences, were orthogonal to environmental conditions and policies, allowing for a better identified examination of how changes in the economy affect climate and environmental attitudes. This contrasts with economic decline that is a result of the transition of the economy away from fossil fuels extraction and use (e.g. Fullerton 2011; Arndt et al. 2022).

To examine this question, this letter utilises panel data from the British Election Study in order to examine whether the COVID-19 pandemic caused individuals to change their environmental attitudes. Comparing individuals' attitudes just prior to (November 2019) and after (June 2020) the start of the pandemic and associated lockdowns, I find a significant deprioritisation of the climate and environment, both in terms of absolute importance and importance relative to the economy (in the case of the environment). These effects significantly vary depending upon individuals' employment trajectories and concerns about the cost of living and ideological predispositions, but do not vary by individuals prior vote choice.

2 Methods

To examine the effect of COVID-19 upon environmental attitudes, I draw upon Waves 17 and Wave 20 of the British Election Study Internet Panel (Fieldhouse et al. 2020). These waves are chosen as they are the only ones that include one of the outcomes of interest (economy vs. environment trade-off) in close proximity to the onset of the pandemic, and are just before and after the outbreak of COVID-19. Wave 17 was fielded from 1st to 12th November 2019, while Wave 20 was fielded from the 3rd to 21st of June 2020.

As discussed by Mildemberger and Leiserowitz (2017), the use of panel data offers stronger identification of the effect between economic shocks and environmental attitudes, as unobserved heterogeneity can be accounted for with the use of respondent fixed effects.

I focus on three different outcomes of interest, which measure differing forms of climate and environmental concern. The first outcome is a question that measures individuals' priority for environmental action relative to the economy. Specifically, respondents are asked *"Some believe that protecting the environment should have priority even if that reduces economic growth. Others believe that economic growth should have priority even if that hinders protecting the environment. What is your*

opinion?”. Responses are measured on a 0 to 10 scale, with 0 indicating full prioritisation of the economy and 10 indicating full prioritisation of the environment. The second and third outcome questions are based upon individuals answers to what they consider their Most Important Issue (MII). The second outcome measures both climate and environmental concern, by coding a value of 1 if either climate, climate change, global warming, or the environment are listed as their most important issue, and 0 otherwise. The third outcome focuses only on climate concern, by only coding a value of 1 for those who list climate, climate change, or global warming as their most important issue.

The estimating equation is:

$$\text{Outcome}_{i,t} = \alpha_i + \beta \text{COVID-19}_t + X_{i,t} \Gamma + \epsilon_{i,t} \quad (1)$$

where α_i are respondent fixed effects, and $X_{i,t}$ are a set of time-varying respondent characteristics used for covariate adjustment. Specifically, we adjust for household income and left-right position. Within the sample, other important characteristics such as age (year of birth), ethnicity, and gender are not time-varying, and thus are absorbed by the respondent fixed effects. This specification can be seen as a before-after analysis (e.g. Beiser-McGrath et al. 2022), which relies on the assumption that there was no other factor that caused a change in climate and environmental concern at the same time as COVID-19. Table 1 in the main text also presents the results without covariate adjustment, to demonstrate that inferences are not sensitive to this specification choice.

3 Results

As displayed in Table 1, we find that the COVID-19 pandemic caused individuals to deprioritise the climate and environment when compared to the economy. We find that this effect is consistent, even after adjusting for covariates. This provides evidence that the COVID-19 pandemic caused individuals’ climate and environmental concern to decrease, with a resulting deprioritisation of the environment compared to the economy and individuals decreasing their likelihood to list climate change and/or the environment as their most important issue.

To investigate the drivers of this effect, we distinguish between material and ideological mechanisms. First, we examine whether the effect depends upon individuals’ objective and subjective economic conditions. To examine objective economic conditions, we estimate how the effect of COVID-19 varies according to individuals’ employment pre- and post- the COVID-19 outbreak. This is coupled with an analysis of how individuals’ subjective perceptions of their ability to meet their costs of living changes in the pre- and post-COVID-19 outbreak period. Second, we examine whether ideological predispositions, measured by left-right ideology and vote choice in the 2019 general election, moderates the effect of the COVID-19 pandemic.

Figure 1 displays how the effect of the COVID-19 outbreak upon the economy-environment trade-off depends upon individuals’ employment trajectories. For those who were employed before the outbreak of the COVID-19 pandemic, there is a consistent substantive reprioritisation of the environment compared to the economy. Notably, this effect is most precisely estimated, and statistically significant, for those individuals who retained employment.

Table 1 Effect of COVID-19 on climate and environmental attitudes

	Env. vs. Econ.	Env. vs. Econ.	MII (Clim. + Env.)	MII (Clim. + Env.)	MII (Climate)	MII (Climate)
COVID-19	-0.255*** (0.017)	-0.278*** (0.022)	-0.008*** (0.001)	-0.011*** (0.001)	-0.005*** (0.001)	-0.007*** (0.001)
Respondent Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Covariate Adjustment	No	Yes	No	Yes	No	Yes
Num.Obs.	60 915	38 578	65 834	39 606	65 834	39 606

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

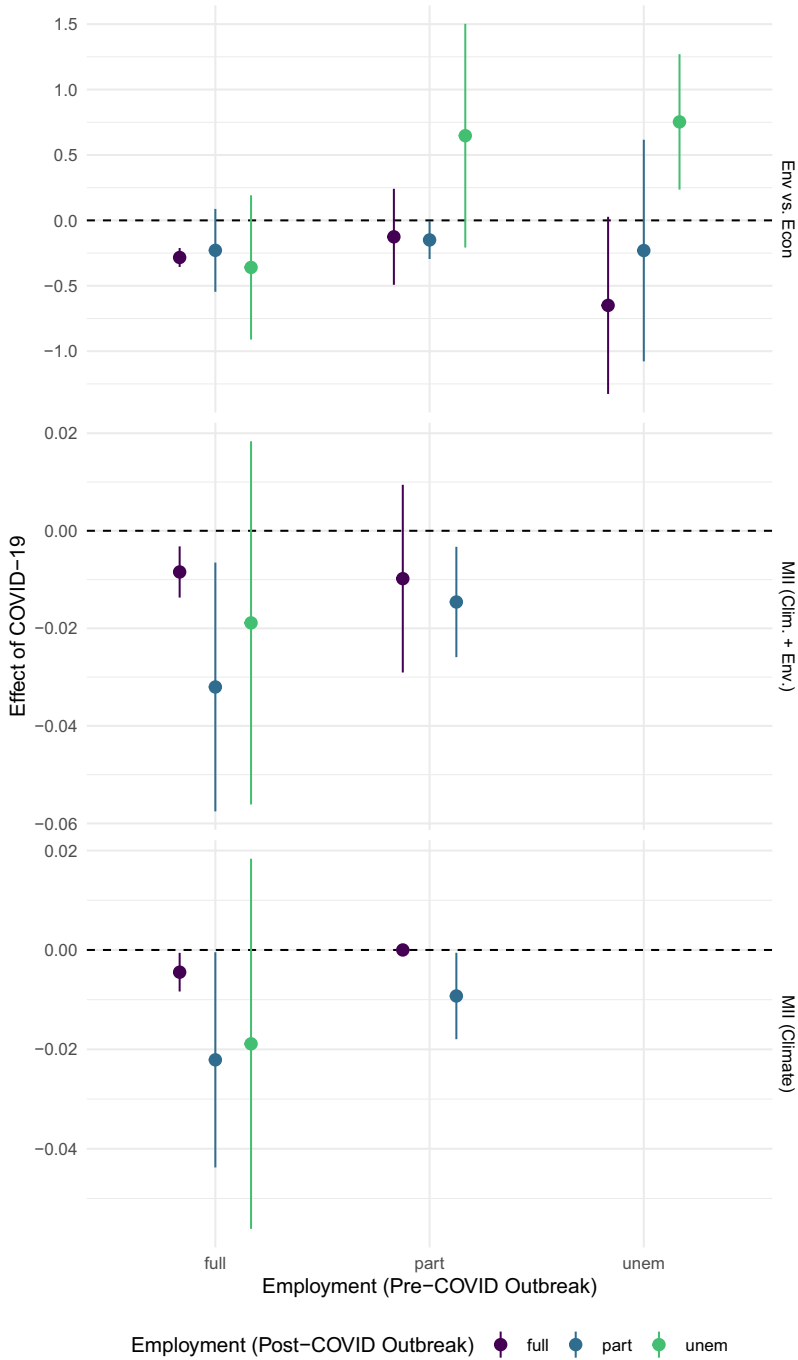


Fig. 1 The effect of COVID-19 depends upon individuals' employment trajectories. The x-axis indicates individuals' pre-pandemic employment status (fully employed, part-time employed, or unemployed). The colour of the points indicates individuals' post-outbreak employment status. Lines indicate 95% confidence intervals. Missing points indicate groups where the outcome does not vary

Interestingly, there is significant heterogeneity amongst those individuals who were unemployed before the COVID-19 pandemic. Individuals who gained employment after the COVID-19 outbreak significantly deprioritise the environment compared to the economy. In contrast, those who remained unemployed increase their prioritisation of the environment over the economy. This is reinforced by the fact that no individual unemployed before the pandemic in our sample ever considered climate change and/or the environment their most important issue (hence the inability to estimate a heterogeneous effect for these groups). Taken together, this suggests that prioritisation of the economy over the environment is driven by those who wish to retain their economic position, akin to loss aversion, rather than those who are materially worse off but remain so.

This is reinforced by Fig. 2, which examines how individuals' changes in their perceived ability to meet their costs of living moderates the effect of the COVID-19 pandemic. There are strong negative effects for those who were not concerned about meeting living costs before the pandemic, which subsequently became highly concerned about having enough money to meet these costs. In comparison, those who were concerned about the cost of living pre-pandemic, significantly deprioritise the environment regardless of their subsequent cost of living concerns. Turning to the effects for absolute priorities of climate change and/or the environment, we see that there are broadly consistent effects across all groups that are not statistically significantly different from one other.

We now turn to examining whether the effect of the COVID-19 pandemic is moderated by individuals' ideological predispositions, in the form of their position on the left-right scale. Figure 3 displays how the effect of the COVID-19 pandemic varies by individuals' ideology in terms of the left-right scale. We find that centre and right-wing individuals have more negative effects than left-wing voters when considering the environment-economy trade-off, this pattern is the opposite when examining the absolute importance of climate change and/or the environment as an issue. This suggests that the pandemic led to a significant absolute deprioritisation of climate change and the environment amongst those initially predisposed to climate and environmental action. In contrast, centre- and right-wing voters likely deprioritise the environment due to a greater relative concern about the economy, given lower pre-existing levels of climate and environment sentiment.¹

In summary, we find strong evidence that the outbreak of COVID-19 causes individuals to decrease their concern for the environment, relative to the economy. This effect is driven by individuals' differential material conditions as a result of the pandemic, whether that be employment trajectories or cost of living perceptions. We also find an interesting divergence of effects when examining individuals' ideological predispositions. While we find that centre and right-wing individuals have more negative effects than left-wing voters when considering the environment-economy trade-off, this pattern is the opposite when examining the absolute importance of climate change and/or the environment as an issue.

¹ Figure 4 in the Appendix conducts a similar analysis for prior vote choice, and finds that the effect of the pandemic upon absolute importance of climate change and the environment is primarily driven by Labour and Liberal Democrat voters, while there are consistent negative effects across voters when examining the environment-economy trade-off.

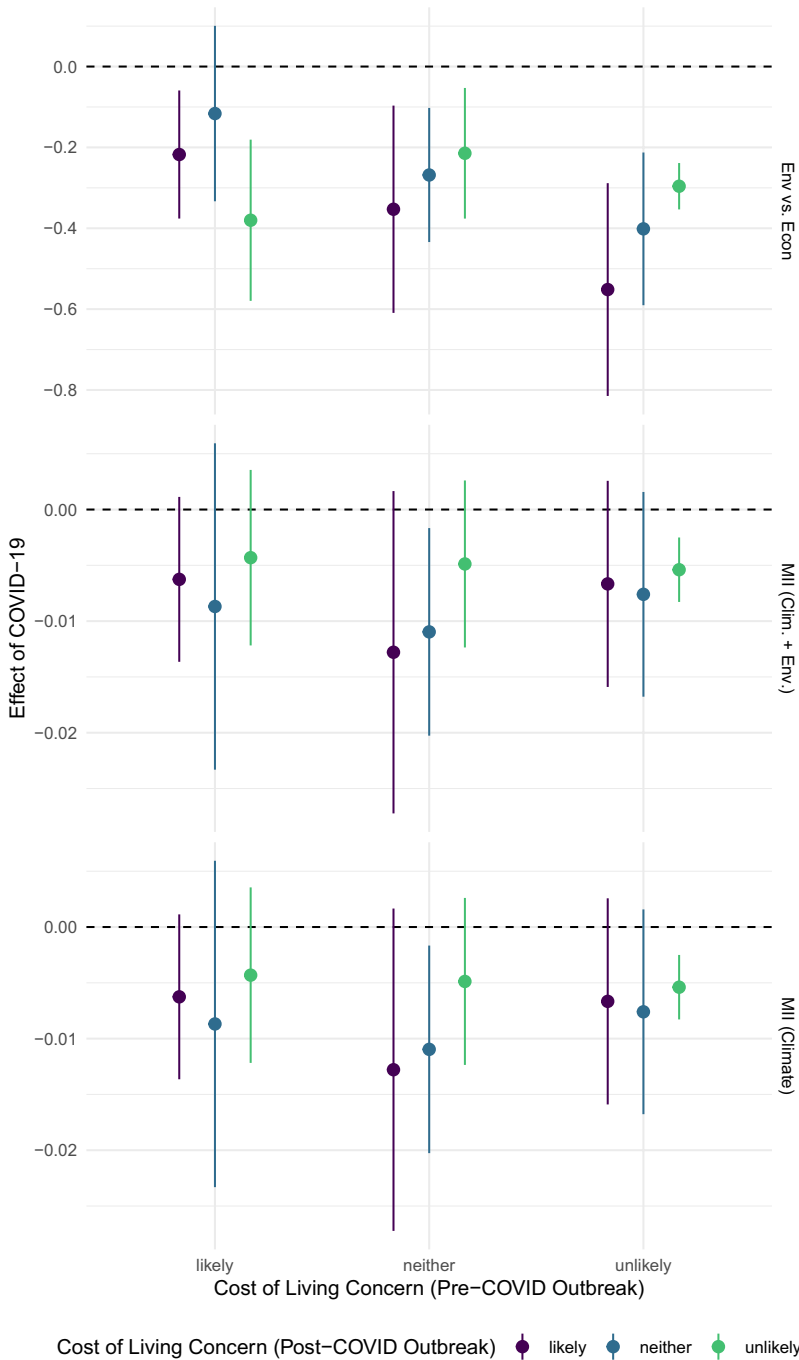


Fig. 2 The effect of COVID-19 depends upon individuals' concern about cost of living. The x-axis indicates individuals' pre-pandemic perceptions about ability to meet cost of living (likely, neither likely nor unlikely, or unlikely). The colour of the points indicate individuals' post-outbreak ability to meet cost of living. Lines indicate 95% confidence intervals

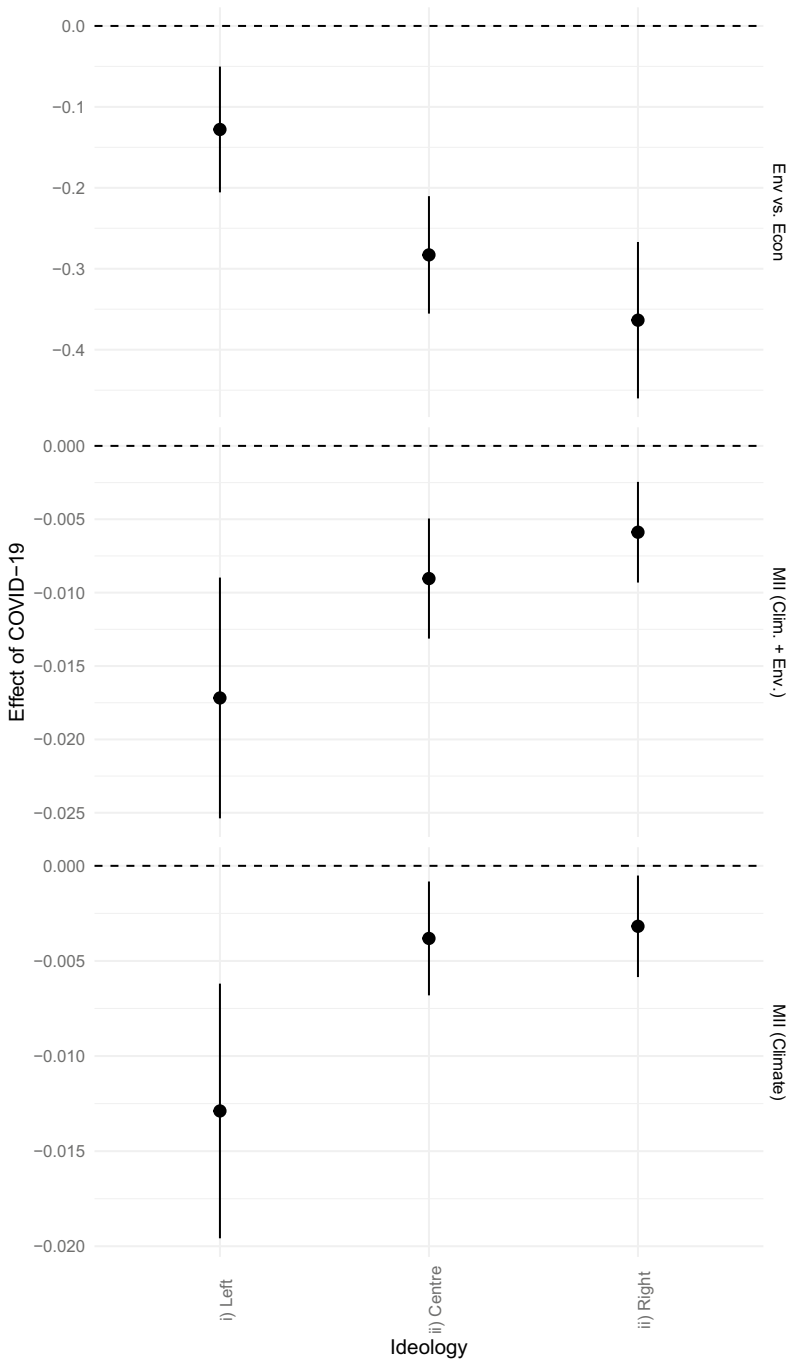


Fig. 3 The effect of COVID-19 varies by political ideology. The x-axis indicates individuals' political ideology according to the left-right scale, categorised into being left-, centre-, or right-wing. Lines indicate 95% confidence intervals

4 Conclusion

The onset of the COVID-19 pandemic, and associated policy responses, led to significant economic downturns in the short run that affected broad segments of the economy. While recent literature suggests that economic downturns do not harm climate and environmental support amongst individuals (Kachi et al. 2015; Mildemberger and Leiserowitz 2017; Bakaki and Bernauer 2018), this letter provides evidence that the onset of the pandemic subsequently led individuals to deprioritise climate change and the environment as an issue both in absolute terms and when considering environmental action relative to the economy.

These results suggest that climate and environmental support is more sensitive to economic downturns than previously thought, so long as the economic impact is sufficiently large. As a result it cannot be taken for granted that support for climate and environmental action is robust to the broader economic context that individuals operate in. This is particularly the case given that the effects of the COVID-19 outbreak on individuals' environmental support are found to be driven both by the material circumstances of individuals and their ideological predispositions. Future research could examine how COVID-19 and its economic impacts at the regional and macro level also affect the public's climate and environmental concern.

More broadly, the results reinforce the emerging body of research that emphasises the importance of linking climate, environment, and economic policy together in order to ensure stable and high levels of public support for environmental policy. Previous research has found that redistributing revenue from carbon pricing (Kotchen et al. 2017; Beiser-McGrath and Bernauer 2019; Dolšak et al. 2020) and the pairing of social and climate policies (Bergquist et al. 2020) can significantly increase improve policy support through a focus on individuals' standards of living and compensating affected parties. With the rise in commodity prices and household energy, and associated concerns about cost of living and energy insecurity, in 2022, this will continue to be an important dimension for ensuring broad-based acceptance and support for climate and environmental policy.

Appendix

Figure 4 displays how effects vary by prior vote choice (2019 election). We find consistent negative effects across all political parties for the environment vs. economy trade-off, apart from the Scottish National Party. In contrast, the effects for climate change and environment issue importance is largely driven by supporters from the two major centre/left parties (Labour and the Liberal Democrats). This suggests that ideological aspects play a role for those who are not particularly committed in favour or opposition to the environment.

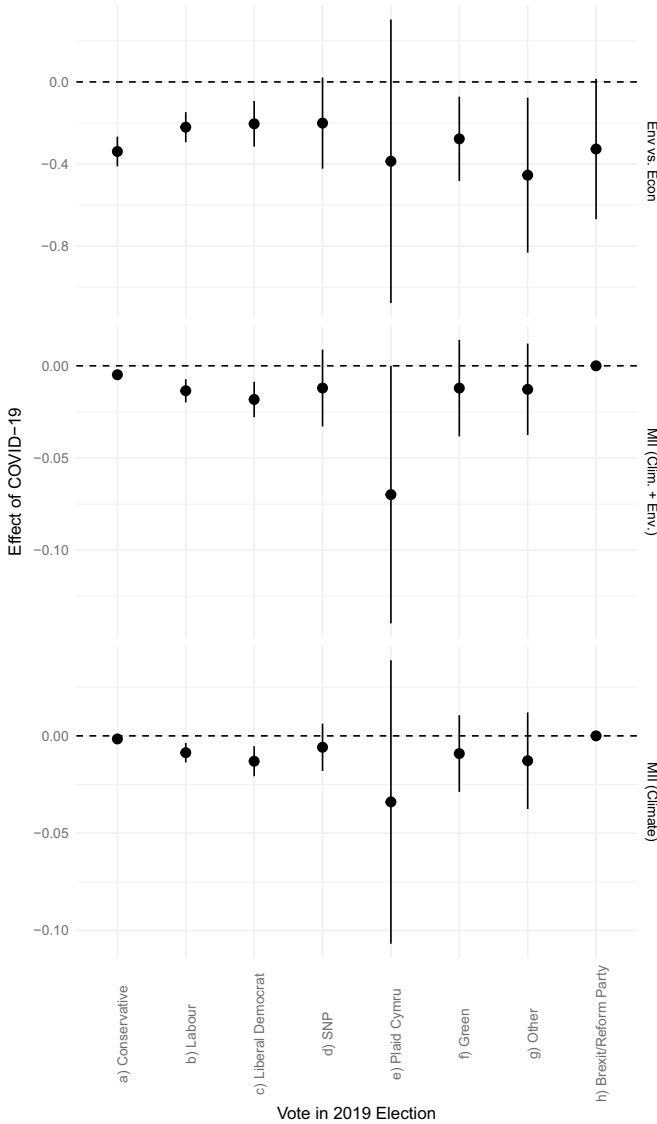


Fig. 4 The effect of COVID-19 is broadly consistent across prior vote choice. The x-axis indicates individuals' vote choice in the 2019 election. Lines indicate 95% confidence intervals

Author contribution Liam F. Beiser-McGrath designed the study, analysed the data, and wrote the paper.

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Data availability The data used for this letter are publicly available at the British Election Study website: <https://www.britishelectionstudy.com/data-objects/panel-study-data/>. Full replication data and code will be available upon publication at <https://doi.org/10.7910/DVN/J8FWMA>.

Declarations

Ethics approval This article does not contain any studies with human or animal participants performed by any of the authors.

Consent to participate Not applicable

Consent for publication Not applicable

Competing interests The author declares no competing interests.

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