

The Electoral Consequences of Pandemic Mortality: Ideological Shifts in Peru’s Presidential Elections*

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Abstract

Using district-level data from Peruvian presidential elections, we examine how local exposure to COVID-19 mortality shaped voting in 2021. We decompose each district’s electorate into votes for left, center, and right party blocs, classifying parties by the economic stance of their published platforms. Relative to their voting in earlier elections, districts with higher COVID-19 mortality in the months preceding the election moved away from parties of the market-oriented right and toward the left and center. Falsification tests reveal no evidence of differential pre-pandemic trends, and the decline of the right and rise of the left are robust to regional trends, alternative mortality measures, and alternative party classifications. Harder-hit districts experienced significant declines in household income and expenditure, and their residents were more likely to view Peru’s income distribution as unfair, while turnout did not respond. The evidence is consistent with pandemic-induced economic hardship eroding support for parties defending the market status quo and raising demand for redistribution.

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1 Introduction

The COVID-19 pandemic was among the most severe public health emergencies and income shocks in recent history. A crisis of this scale can affect elections in various ways: it exposed failures of public health capacity that invite voters to punish the politicians they blame, and it caused a sudden collapse in employment, income, and consumption that can raise demand for insurance, redistribution, and a stronger safety net. Between February 2020 and February 2022, at least 130 countries and territories held national elections or referendums despite the pandemic ([International IDEA, 2022](#)); voters across much of the world therefore went to the polls in the immediate wake of the largest simultaneous health and income shock in living memory. Most research on pandemics (including COVID-19) and elections examines whether voters punish incumbents or stay home. Much less is known about whether local pandemic severity changes the ideological composition of the vote — what voters ask of government, rather than whom they blame — and this gap is widest for developing countries, where health systems and safety nets are least able to cushion the shock.

In this paper, we test whether within-district changes in voting across presidential elections are related to district-level COVID-19 mortality in Peru, the country with the world’s highest pandemic death toll relative to its population ([Our World in Data, 2025](#)). We merge Peru’s revised official COVID-19 death registry with district-level results from the first round of the 2011, 2016, and 2021 presidential elections, and we decompose each district’s electorate into votes for parties of the left, the center, and the right. Parties are classified by large language models’ reading of the economic stance of their mandatory published platforms (*planes de gobierno*), a coding we validate against (human) expert placements. A difference-in-differences design links within-district changes in each share across elections to cross-district variation in mortality in the months leading up to the 2021 vote. Election-year fixed effects absorb Peru’s nationwide political swing, so the estimates capture whether votes in harder-hit districts moved differently from less-affected districts.

Ex ante, the direction of the effect of a pandemic on voting outcomes is ambiguous. Bereavement and fear may heighten demand for order, reduce willingness to participate in elections, or generate dissatisfaction with any political option associated with the state, and government failures in handling the pandemic may provoke retrospective punishment. At the same time, accompanying pandemic losses of employment, income, and consumption expose households to risks that private savings and informal networks may not absorb. Adverse income shocks increase support for redistribution and social insurance ([Bean and Papadakis, 1998](#); [Cusack et al., 2006](#); [Iversen and Soskice, 2001](#); [Rehm, 2009, 2011](#); [Margalit, 2013](#)), and left-leaning parties, which are typically more supportive of redistribution, tend to benefit

from negative economic shocks in terms of vote shares (Alt et al., 2019; Wright, 2012; Che et al., 2022). Through this channel, a pandemic may alter not only which candidate voters prefer but also the balance they seek among markets, public insurance, and redistribution.

These channels have different empirical implications. Accountability can move votes away from whoever governed during the crisis, or toward political outsiders, without a systematic ideological shift. Fear of contagion can change turnout and the composition of valid ballots even if preferences remain fixed. A shift in the demand for redistribution instead predicts that harder-hit places move away from parties defending market outcomes, experience larger material losses, and express greater dissatisfaction with the income distribution. Peru allows us to examine these implications separately: immediate presidential re-election is prohibited (so there is no incumbent candidate on the ballot), eighteen parties spanning the ideological spectrum competed in 2021, and administrative, household survey, and public opinion data allow us to distinguish ideological shifts from changes in participation and from anti-establishment voting. Pervasive informality and thin safety nets also mean that the health shock was a largely uninsured income shock, which gives the redistributive channel its traction.

We find that districts that experienced more COVID-19 deaths in the three months before the 2021 election moved away from right-leaning parties. A one-standard-deviation increase in mortality lowers the right’s share of the electorate by 1.5 percentage points, about a tenth of its 2021 level. Roughly a third of those votes go to the left, about half to parties whose platforms take centrist or ambiguous economic position, and the remainder to cast ballots that were blank or null; absenteeism does not respond. Falsification tests reveal no evidence that harder-hit districts were already moving between blocs before the pandemic: placebo estimates from pre-pandemic elections that assign realized 2021 mortality to the 2016 election are small and statistically insignificant. The erosion of the right and the gain of the left survive regional trends and region-by-year fixed effects, longer mortality windows, excess-mortality estimates, winsorizing, alternative denominators, and the human expert-based party classification.

Turning to mechanisms, we find that districts with more deaths experienced significantly larger declines in household income and expenditure and that individuals (interviewed several months before the election) were more likely to describe Peru’s income distribution as unfair. On the other hand, mortality did not change who voted: absenteeism is unrelated to mortality, and the modest rise in blank and null ballots accounts for only a small fraction of the right’s loss. Nor is the pattern consistent with anti-establishment sentiments: the right’s losses come from both outsider and established candidates and from Fujimori dynasty parties and the rest of the right equally, the left’s gains accrue to established rather

than outsider candidates, and the parties of the governments that managed the pandemic were not punished. Together, the evidence is consistent with pandemic-induced economic hardship eroding support for parties defending the market status quo and raising demand for redistribution.

There is a growing literature on the effects of epidemics on voting behavior. One strand emphasizes accountability: COVID-19 exposure generally reduced support for incumbents (Baccini et al., 2021; Warshaw et al., 2020; Herrera et al., 2020; Gutiérrez et al., 2022), though early pandemic shocks and lockdowns sometimes produced “rally-around-the-flag” effects (Fernandez-Navia et al., 2021; Leininger and Schaub, 2020; Bordignon et al., 2021; Giommoni and Loumeau, 2020). A second strand asks whether disease exposure shifts the ideological content of the vote, and here the studies closest to ours are Campante et al. (2024) and Fernandez-Navia et al. (2021).¹ Campante et al. show that anxiety over the 2014 Ebola scare in the United States, an episode with four diagnosed cases and no disruption to daily life, lowered the Democratic vote share and turnout. The effect ran through immigration attitudes rather than a broader ideological shift, and in a two-party system, a loss for one party is a gain for the other by construction. Fernandez-Navia et al. study a Basque regional election held in July 2020 and focus on turnout but also find a gain for Basque-nationalist parties, which they attribute to in-group voting under perceived threat. Both papers isolate the electoral consequences of fear; neither observes the economic losses that exposure imposed or classifies parties by their general ideology. A third strand documents effects on turnout (Noury et al., 2021; Picchio and Santolini, 2021; Vázquez Carrero et al., 2020; Chirwa et al., 2022; Constantino et al., 2021).² None of these designs recovers where votes came from and where they went, which is our question.

We contribute to this literature in three ways. First, we provide — to our knowledge — the first evidence that pandemic mortality shifted the ideological composition of the vote in a developing country; the quasi-experimental evidence on the electoral consequences of

¹Survey experiments fielded during the first wave complement this evidence by documenting shifts in stated attitudes toward technocracy, strong leadership, institutional trust, and welfare spending (Amat et al., 2020; Daniele et al., 2020). They identify the effect of making the crisis salient on survey responses rather than the effect of realized exposure on ballots cast, and they cannot tie responses to local mortality or income loss.

²Evidence from outside high-income democracies is sparse and concerns participation, evaluations of government, and party-system fragmentation rather than the ideological composition of the vote (Ayifah and Ayifah, 2023; Alidu, 2023; Chirwa et al., 2022; Mpabe Bodjongo, 2024; Mpabe Bodjongo and Bobbo, 2025; Gómez Díaz and Gómez Díaz, 2024; Castro Cornejo, 2026). Closest to us, Depetris-Chauvin and González (2026) find that vaccination in Chile raised turnout and moved votes from incumbents to challengers without changing left- or right-wing vote shares; we study exposure to the pandemic’s human and economic toll rather than to a specific pandemic policy.

COVID-19 comes almost entirely from high-income democracies with stable party systems. Second, we bring validated mortality data and a within-district design to a question mostly studied with cross-sectional comparisons, and a complete decomposition of the electorate in which the destinations of the votes that leave a bloc are observed rather than inferred from a summary index. Third, our setting allows us to separate shifts in voters’ policy preferences from the incumbent-punishment and accountability channels that dominate the existing literature. Peruvian presidents cannot run for immediate re-election, so no incumbent appears on the ballot,³ and objective attributes of the parties and candidates let us test the anti-establishment interpretation directly.

2 Context

2.1 Political parties and presidential elections in Peru

Peru elects its president by popular vote every five years. All candidates compete in a first round; if none receives a majority, the two leading candidates advance to a runoff. Presidents cannot seek consecutive re-election, so none of the elections in our sample includes an incumbent presidential candidate. Voting is compulsory through age 70, and the independent *Oficina Nacional de Procesos Electorales* (ONPE) administers the election.

The party system is highly fragmented and weakly institutionalized. Parties frequently emerge as vehicles for individual candidates, change alliances and leadership between elections, and provide voters with fewer stable partisan anchors than parties in many established democracies. *Fujimorismo* is an important exception: Keiko Fujimori carried the movement founded by her father (Albert Fujimori) into the runoff in each election in our 2011–2021 study period ([Andrews-Lee, 2020](#)).

The three elections span substantial ideological change. In 2011, the left-wing candidate Ollanta Humala led the first round with 32% of the vote, followed by Fujimori with 24%; Humala later won the runoff. In 2016, Fujimori led a field of fifteen candidates with roughly 40%, while the center-right Pedro Pablo Kuczynski placed second and narrowly won the runoff. The 2021 field expanded to eighteen candidates, none of whom received 20% of the first-round vote. Pedro Castillo, a rural teacher running on a strongly left-wing

³Ruling parties may nominate a successor, which in principle leaves room for incumbency effects. In practice, Peruvian parties have been extremely weak since the collapse of the party system in the 1990s ([Tanaka, 2005](#); [Levitsky and Cameron, 2003](#)), and none of the parties that won the presidency in 2001, 2006, 2011, and 2016 fielded a presidential candidate in the subsequent election.

platform, led with 18.9%, followed by Fujimori with 13.4% ([Peruvian National Elections Commission](#)). Castillo went on to win the runoff by an extremely narrow margin, and his party is considered the most left-wing political platform to achieve the presidency in Peru’s history ([The Economist](#), 2021).

2.2 Peru’s experience in the COVID-19 pandemic

By July 2022, Peru had recorded the world’s highest cumulative confirmed COVID-19 mortality relative to population (Appendix Figure [A1](#)). The first case was reported on March 6, 2020, and monthly deaths reached 18,282 in July 2020. A second, even more severe wave coincided with the 2021 election: 23,574 deaths were recorded in April 2021, the month of the first-round vote.

Peru responded quickly but struggled to make its policies effective. On March 15, 2020, it became the first Latin American country to impose a nationwide lockdown, closing borders and nonessential businesses and imposing a curfew ([Nugent](#), 2020). Yet chronic underinvestment left the health system with limited testing and intensive-care capacity, while weak coordination constrained implementation outside Lima ([Milet and Bravo](#), 2021; [Cabana et al.](#), 2021). The same policies imposed severe economic costs. Cash transfers were difficult to deliver to households without access to financial institutions, and many workers could not comply with mobility restrictions because informal, day-to-day earnings accounted for a large share of household income ([Jaramillo and Ñopo](#), 2020; [Nugent](#), 2020). Peru’s GDP contracted by 11% in 2020, its sharpest decline since 1989, and roughly six million workers lost their jobs during the initial shutdown ([Ferreira Marques](#), 2021; [Instituto Peruano de Economía](#), 2020). The combination of exceptionally high mortality, limited social protection, and a large economic shock makes Peru an ideal setting in which to study whether pandemic hardship shaped voting behavior.

3 Data

3.1 COVID-19 Deaths

Our main exposure measure comes from Peru’s revised official COVID-19 death registry. Limited testing and overwhelmed health facilities produced substantial undercounting early in the pandemic ([Sempé et al.](#), 2021; [Aizenman et al.](#), 2022; [Islam et al.](#), 2021). In April 2021, the Ministry of Health convened a special task force that broadened the criteria for classifying a death as COVID-19-related; applying those criteria increased the official national toll through the end of the review period from roughly 68,000 to 181,000. The revised registry

records each death’s date and district of residence. We aggregate deaths by district and week, divide by district population from the 2007 Census, and define the baseline exposure as cumulative deaths per 100 inhabitants during the three months before the April 11, 2021 election. Exposure is zero in the 2011 and 2016 elections. Appendix Section B documents the registry and reclassification criteria.

We validate the revised registry against district-level excess mortality estimated from 2017–2021 records of nonviolent deaths in the National Digital Death Registry (SINADEF). The official and excess-mortality series track one another closely at the national level ($\rho = 0.996$) and after removing district means ($\rho = 0.93$). Appendix Figure A2 and Appendix Section B present the construction and comparisons. We therefore use revised official deaths in the main analysis and replace them with estimated excess deaths in a robustness check.

3.2 Voting Data

We scraped district-level first-round results for the 2011, 2016, and 2021 presidential elections from the [Peruvian National Elections Commission](#). The records report votes by party, registered voters, absenteeism, and blank and null ballots. Polling booths are assigned from the district address on each citizen’s national identification record. We exclude overseas voting centers because the analysis relates votes to mortality in the voter’s registered district. Appendix Figure A3 illustrates the underlying ONPE records, and Appendix Section B provides further detail.

3.3 Party Blocs and the Decomposition of the Electorate

Peru’s parties are short-lived vehicles whose ideological placement must be established election by election. We classify every party on the ballot by the economic stance of the *plan de gobierno* it filed with the electoral authority (required by law), large language models given the full text of each plan and instructed to code its position on redistribution and the role of the state in the economy as left (redistribution, an active state), right (markets, a limited state), or ambiguous/neutral (economic content without a dominant direction).⁴ For brevity we label the third group *center*, but we stress that it collects platforms with both centrist statements as well as those with an ambiguous economic stance. In 2021 the right comprises Fuerza Popular, Renovación Popular, Avanza País, and three smaller parties;

⁴The prompt, coding rules, and the classification of every party appear in Appendix C and Appendix Table A1. Two models run with the same prompt and materials produced identical classifications.

the left Perú Libre, Juntos por el Perú, and Acción Popular, among others; and the center Podemos, Victoria Nacional, and Partido Morado.⁵ The classification covers every party except a residual “other” category in 2011 that accounts for 0.5 percent of valid votes. To confirm the validity of these classifications, we also group parties by the Peru-specific expert left–right placements of the Comparative Study of Electoral Systems (CSES), which range from 0 (most left) to 10 (most right) ([Comparative Study of Electoral Systems, 2022](#)): left at 3 or below, center between 4 and 6, and right at 7 or above. However, by design, the CSES roster is limited to the largest parties and covers only 99, 96, and 87 percent of first-round votes in 2011, 2016, and 2021.⁶ Thus, we regard the LLM-based party classifications as our preferred measures because of their wider coverage, particularly in the 2021 election. Nonetheless, at the district-election level, the two classifications yield nearly identical left and right shares (correlations of 0.96 and 0.98 across the 5,502 district-elections in our sample) and differ mainly in which parties count as centrist (0.82).

Our outcomes decompose each district’s electorate into five shares that sum to one: votes for the left, center, and right blocs, absent voters, and blank or null ballots, each divided by the number of registered voters who either voted for a classified party or did not cast a valid vote. Votes for unclassified parties are excluded from the denominator so that the shares add up; because the platform classification leaves almost no votes unclassified, dividing by all registered voters instead gives the same estimates (Section 4.1). Because the shares exhaust the electorate, the five regression coefficients sum to zero, and the results show where votes moved rather than only whether a summary measure changed.

3.4 Data for Mechanisms

The mechanisms analysis uses two additional sources. The 2011, 2016, and 2021 *Encuesta Nacional de Hogares* (ENAH) provides real household income and expenditure per capita ([Instituto Nacional de Estadística e Informática, 2018](#)); we link households to mortality by district of residence. The 2011, 2016, and 2020 Peru Latinobarómetro surveys measure

⁵The model codes Acción Popular’s 2021 platform (9.1 percent of valid votes) as left on economic grounds — a tax reform aimed at redistribution, a wealth tax, a universal pension pillar, merger control — although Peru specialists usually describe the party as centrist more generally; Appendix C.1 reproduces the evidence used to make this classification. Moving the party to the center bloc, or treating it as unclassifiable, leaves the right-bloc estimate unchanged and lowers the left-bloc estimate from 0.048 to 0.035 and 0.031, both significant (Appendix Table A3).

⁶The CSES country-expert placements are limited to a fixed roster selected by the national collaborator team ([The Comparative Study of Electoral Systems \(CSES\), 2023](#)); parties are scored separately in each election.

whether respondents consider the prevailing income distribution very fair, fair, unfair, or very unfair ([Corporación Latinobarómetro, 2020](#)); we match surveyed cities to districts and link respondents to mortality in the three months leading up to the 2020 survey. To test the anti-establishment interpretation, we code objective attributes of every party and candidate: whether the presidential candidate had previously held elected office, whether the party belongs to Fujimorismo, and whether it was associated with the governments in office during the pandemic. Appendix Section [B](#) describes outcomes, controls, timing, geographic matching, sample coverage, and coding rules.

3.5 Baseline District Characteristics

The regressions allow election-year effects to vary with five predetermined district characteristics: registered voters and inhabitants per doctor in 2011, and the share of the population aged 65 or older, the female share, and altitude from the 2007 Census. These capture the size of the electorate, baseline access to health care, the age structure that governs COVID-19 fatality risk, and the geography of the pandemic, which spared much of the highlands. We deliberately include no contemporaneous controls: local income/economic activity, program coverage, even the number of registered voters in 2021 are themselves potential outcomes of the pandemic, and conditioning on them would absorb part of the effect we seek to measure.

3.6 Estimation Sample

The sample comprises the 1,834 districts observed in all three elections with complete baseline characteristics, or 5,502 district-election observations. Appendix Table [A2](#) presents year-specific summary statistics. During the three months immediately preceding the election, the average district experienced 0.10 deaths per 100 inhabitants (standard deviation 0.11). The table also documents the national swing that our design nets out: between 2016 and 2021 the right bloc’s share of the electorate fell from 33 to 16 percent in the average district, the left rose from 22 to 30 percent, and absenteeism rose from 24 to 34 percent.^{[7](#)}

⁷Note that the share age 65 and older, the share female, and altitude are measured in the 2007 Census and thus do not vary over time. Both they - and baseline (2011) population per doctor - are included only as baseline values interacted with election year fixed effects.

4 Empirical Strategy and Results

We use a difference-in-differences specification that relates within-district changes in each component of the electorate to cross-district variation in the severity of the pandemic:

$$Y_{dt}^k = \beta^k Mortality_{dt} + \sum_{\tau} \delta_{\tau}^k (V_d \times \mathbf{1}[t = \tau]) + \phi_t^k + \alpha_d^k + \varepsilon_{dt}^k. \quad (1)$$

Here, Y_{dt}^k is share k of the electorate (left, center, right, absent, or blank/null) in district d and election year $t \in \{2011, 2016, 2021\}$. $Mortality_{dt}$ is cumulative COVID-19 deaths per 100 inhabitants in the three months preceding the election; it equals zero in 2011 and 2016. District fixed effects α_d absorb persistent local differences, election-year fixed effects ϕ_t absorb national shocks, and the interactions of the baseline characteristics V_d with election indicators allow districts with different initial conditions to follow different paths across elections. Standard errors are clustered by district. We estimate the equation separately for each share; to test whether two blocs responded differently, we also estimate the shares jointly in a stacked regression whose standard errors account for the covariance across outcomes.

Because mortality varies only in the pandemic election, β^k is identified by whether changes in a district’s shares between 2016 and 2021 are systematically related to its pre-election mortality; the 2011 election provides an earlier observation with which to assess whether harder-hit districts were already on different trajectories. Peru as a whole moved sharply away from the right between 2016 and 2021, but this national swing is absorbed by the election-year fixed effects; β^k captures whether districts with more pre-election mortality moved farther than districts with less, relative to their own prior voting. The baseline mortality measure sums deaths during the twelve weeks immediately preceding the election, isolating the acute second wave (the mortality voters experienced closest to the campaign), while preserving substantial cross-district variation; Section 4.1 shows that the results are robust to longer windows. The key identifying assumption is that, conditional on the fixed effects and the baseline interactions, districts with high and low COVID-19 mortality would have followed similar voting paths in the absence of the pandemic; we assess this assumption directly with a falsification exercise below.

Figure 1 shows the raw pattern. Each panel plots the change in a bloc’s share of the electorate between 2016 and 2021 against 2021 mortality, in bins of districts. The right bloc fell more, and the center and left rose more, in high-mortality districts; the gradients are not driven by a handful of outlying districts, and they are the same whether parties are grouped by the platform classification (Panel A) or by the expert placements (Panel B).

Table 1 presents the main results. Districts that experienced higher COVID-19 mortality

in the three months before the election moved away from the right bloc and toward the left and the center: per death per 100 inhabitants, the right bloc’s share of the electorate falls by 0.137, while the left and center shares rise by 0.048 and 0.065, all significant at the 1 percent level. The stacked regression confirms that the right moved differently from both other blocs (right minus left -0.185 , right minus center -0.202), while the difference between the left and center gains is small and insignificant. A one-standard-deviation increase in pre-election mortality (0.11 deaths per 100 inhabitants) is thus associated with a 1.5-percentage-point decline in the right bloc’s share of the electorate — about a tenth of its 2021 level — and the average district’s exposure (0.10 deaths per 100) with a decline of 1.4 points. Because the five shares sum to one, the destinations of these votes are observed: roughly a third go to the left, half to the center, and the rest to blank and null ballots (Section 5.2).

These estimates capture only the local, differential component of the pandemic’s electoral impact. Any effect common to all districts (such as the nationwide economic collapse, generalized fear, the tone of the campaign) is absorbed by the election-year fixed effects, so they understate the pandemic’s total effect. Even so, the wedge that one standard deviation of local mortality opens in the right bloc’s share, 1.5 points of the electorate, is roughly 9 percent of the bloc’s 18-point national collapse between 2016 and 2021 (Appendix Table A2) and close to half the national margin by which Castillo led Fujimori in the first round (about 3 points of the electorate). The full margin corresponds roughly to the mortality difference between a district with no deaths, as in nearly a quarter of the sample, and one at the 90th percentile (0.25 deaths per 100 inhabitants).

Panel B of Table 1 reports the falsification exercise. We assign each district’s realized 2021 mortality to its 2016 observation, set mortality to zero in 2011, and re-estimate Equation 1 on the two pre-pandemic elections. The placebo coefficients are small and statistically insignificant for all three blocs (0.019, 0.009, and 0.010, against 0.048, 0.065, and -0.137 in Panel A), as are their differences. Districts that would later experience more severe mortality were not already moving between blocs between 2011 and 2016.

4.1 Robustness checks

Appendix Table A3 and Appendix Figure A4 re-estimate the three bloc equations under fifteen alternative specifications, in three groups. The first adds department or province linear trends or department-by-year or province-by-year fixed effects, which absorb any election-specific shock common to districts within the same region, including differences in pandemic management. Both the right bloc’s loss and the left bloc’s gain are evident throughout. The center’s gain, however, disappears once any regional trend is included.

Thus, the exodus from the right and the gain of the left are the most robust findings; votes going to the center are not pinned down under these more demanding specifications (with less residual identifying variation).

The second group varies the mortality measure. Cumulative deaths over the six, nine, and twelve months before the election yield right-bloc coefficients that larger in magnitude when deaths are measured closer to the election, consistent with more recent mortality being especially salient to voters. Replacing official deaths with estimated excess mortality gives similar results. Winsorizing 2021 mortality at its 95th percentile makes all three coefficients larger rather than smaller, so the estimates are not driven by the tail of the mortality distribution.

The third group changes the party classification and the denominator. Moving Acción Popular to the center bloc, or removing it, leaves the right-bloc estimate unchanged. Dividing every share by all registered voters, so that votes for unclassified parties remain in the denominator, reproduces the main estimates exactly. Grouping parties by the CSES expert scores instead of the platform classification gives very similar results to the LLM-based classifications. The exodus from the right is therefore visible whether parties are classified by what they proposed or by how experts placed them.

5 Mechanisms and Alternative Explanations

We next examine three channels through which COVID-19 mortality could have produced these patterns: economic hardship that eroded support for parties defending market outcomes and raised support for redistribution; changes in who participated in the election; and anti-establishment sentiment rather than ideology.

5.1 Economic hardship and distributive grievances

The economic hardship channel has two observable implications: districts with more mortality should experience larger material losses, and, if those losses raised the demand for redistribution, residents of harder-hit districts should express more critical views of the prevailing distribution of income. The ENAHO household data speak to the first implication and the Latinobarómetro survey to the second.

We estimate household-level analogues of Equation 1, regressing real income and expenditure per capita (in levels and in logs, winsorized at the 1st and 99th percentiles within survey year) on cumulative COVID-19 deaths per 100 inhabitants in the household's district. The regressions include district and survey-year fixed effects and the survey-year

interactions with the baseline district characteristics; in addition, we control for household size and the age, sex, marital status, education, and mother tongue of the household head. Standard errors are clustered at the district level, and the sample contains 93,956 households in 1,546 districts. Table 2 shows that districts with higher COVID-19 mortality experienced significantly lower real income and expenditure per capita. The log specifications imply that a one-standard-deviation increase in pre-election mortality reduced household income per capita by about 4 percent and expenditure per capita by about 5 percent, or roughly 300 and 200 soles per person per year at the sample means. That expenditure (which reflects consumption after households draw on savings, credit, or informal support) fell by as much as income indicates that households in harder-hit districts were unable to smooth the shock.

If this hardship raised demand for redistribution, residents of harder-hit districts should also have revised their views about the distribution of economic resources. We test this prediction using the 2011, 2016, and 2020 Latinobarómetro rounds, where the outcome is respondents’ assessment of the fairness of Peru’s income distribution on a four-point scale ranging from “very fair” (1) to “very unfair” (4). Because the 2020 round was fielded in November 2020, roughly five months before the election, we measure exposure as reported deaths per 100 inhabitants in the respondent’s district over the twelve complete weeks preceding fieldwork (zero in the pre-pandemic rounds), so these beliefs were measured before ballots were cast. The regressions mirror the household specification, with respondent controls for age, sex, education, and mother tongue; the sample contains 3,448 respondents in 64 districts, so the estimates are less precise.

Table 3 shows that residents of districts with higher COVID-19 mortality became significantly more likely to perceive Peru’s income distribution as unfair. On the four-point scale (column 1), a one-standard-deviation increase in mortality raises perceived unfairness by about 0.09 points. The threshold specifications in columns 2 to 4 show where on the scale respondents move: 84 percent already describe the distribution as “unfair” or “very unfair,” so mortality has no detectable effect at the lowest threshold, where nearly all responses lie; it raises the share answering “unfair” or “very unfair” by about 4 percentage points per standard deviation, and the share choosing “very unfair” by about 5 percentage points, an increase of one-fifth relative to the 22 percent of respondents who select the most critical judgment. High-mortality districts did not so much create newly dissatisfied respondents as intensify existing dissatisfaction. Though the survey question elicits assessments of the fairness of the *prevailing* income distribution rather than preferences over redistributive policy; the two are closely related: perceived unfairness is a central determinant of support for redistribution (Fong, 2001; Alesina and Angeletos, 2005).

5.2 Participation and protest ballots

We next consider whether COVID-19 mortality changed the composition of the electorate. Fear of contagion may have kept voters home; deaths mechanically increase measured absence, because the 2021 roster closed in April 2020 and includes people who had since died; and dissatisfied voters may have cast blank or null ballots. Absenteeism rose sharply nationwide in 2021, but this common change is absorbed by the election-year fixed effects; the question is whether mortality explains which districts changed more. Table 4 completes the decomposition. The share of absent voters is unrelated to mortality (-0.013 , standard error 0.013), so differential turnout cannot explain the reallocation of votes across blocs. Blank and null ballots do rise with mortality (0.037 , significant at the 1 percent level), by about 0.4 percentage points per standard deviation on a base of 16 percent. This response is consistent with a protest component, i.e., voters who abandoned the right without finding an acceptable alternative. However, these potential “protest votes” account for only about a quarter of the votes that left the right bloc. Whatever anti-system component exists in the response to mortality, it does not account for the movement from the right to the left.

5.3 Ideology or anti-establishment sentiment?

The exodus from the right is consistent with a rejection of market economics, but in 2016 the right bloc was also the political establishment: Fuerza Popular, Kuczynski’s coalition, and the APRA–PPC alliance. Therefore, the same pattern could reflect punishment of the political class more generally. Appendix Table A4 splits each bloc into the votes for parties whose presidential candidate had never held any elected office (*outsiders*) and the rest. If mortality had fueled anti-establishment sentiment, the right’s losses should fall on established candidates and the gains should accrue to outsiders. Neither holds. The right’s loss falls on outsider and established candidates alike, and the left’s gain sits entirely in its established cell, while the outsider left lost ground in harder-hit districts. When counting only former national elected officeholders as establishment, the conclusion is the same: the outsider right loses less than the established right, and the outsider left gains nothing. Two further tests point the same way. The exodus is not specific to Fujimorismo, the most polarizing force in Peruvian politics: Keiko Fujimori’s party and the rest of the right bloc lose support similarly (Appendix Table A5). And the parties associated with the governments that managed the pandemic were not punished: their combined 2021 share is, if anything, higher where mortality was greater (Appendix Table A6). Whatever moved votes in high-mortality districts, it was neither a preference for outsiders nor a settling of accounts with those who governed the pandemic.

6 Conclusion

We provide empirical evidence on the effect of COVID-19 mortality on voting behavior in a developing country: Peru. Districts that experienced higher COVID-19 mortality in the months before the first round of the 2021 presidential election moved away from parties of the market-oriented right, relative to their own voting in 2011 and 2016, and toward the left, center, and parties more of an ambiguous economic stance. The erosion of the right and gain for the left are strongest for deaths occurring closest to the election, survive regional trends, alternative mortality measures, and alternative party classifications, and are not driven by pre-existing trends.

Our mechanism analysis points to an economic channel. Districts with higher COVID-19 mortality experienced significant declines in household income and expenditure, and their residents were more likely to describe Peru’s income distribution as unfair. By contrast, mortality did not affect turnout, the votes that left the right were not captured by political outsiders or withheld from the parties that governed the pandemic, and Fujimorismo lost no more than the rest of the right. The evidence is consistent with pandemic-induced economic hardship reducing support for parties defending the market status quo and increasing demand for redistribution.

These findings have implications beyond the Peruvian case. Because there was no incumbent candidate on the ballot and the fragmented first-round field spanned the left–right spectrum, the result cannot be reduced to an incumbent losing support: aggregate shocks can move votes along the ideological spectrum by changing what voters demand from the state, not only by changing whom they blame. The stakes are illustrated by Peru itself: amid the world’s highest COVID-19 death toll relative to population, Castillo’s left-wing platform led a fragmented first round in which Fujimori’s party edged the third place candidate out of the runoff by about one point of the electorate. The pandemic’s electoral imprint ran through livelihoods: COVID-19 mortality eroded incomes, deepened residents’ sense that the distribution of resources was unfair, and moved votes away from the parties of the market. Where health systems and social protection fall short, the resulting hardship finds political expression; the ballot box, in the end, registered what the safety net could not absorb.

Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work the authors used Claude (Anthropic) to edit and condense the text. After using this tool, the authors reviewed and edited the content take full responsibility for the content of the published article.

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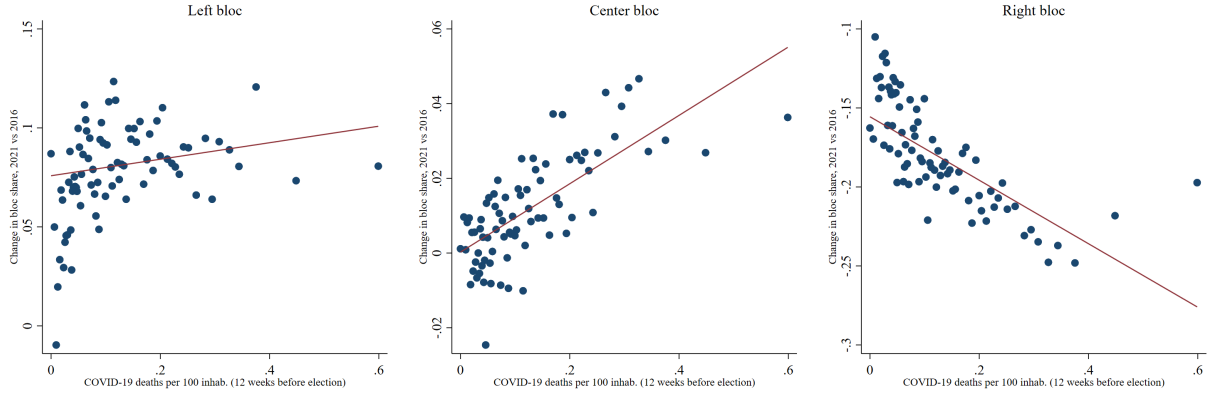
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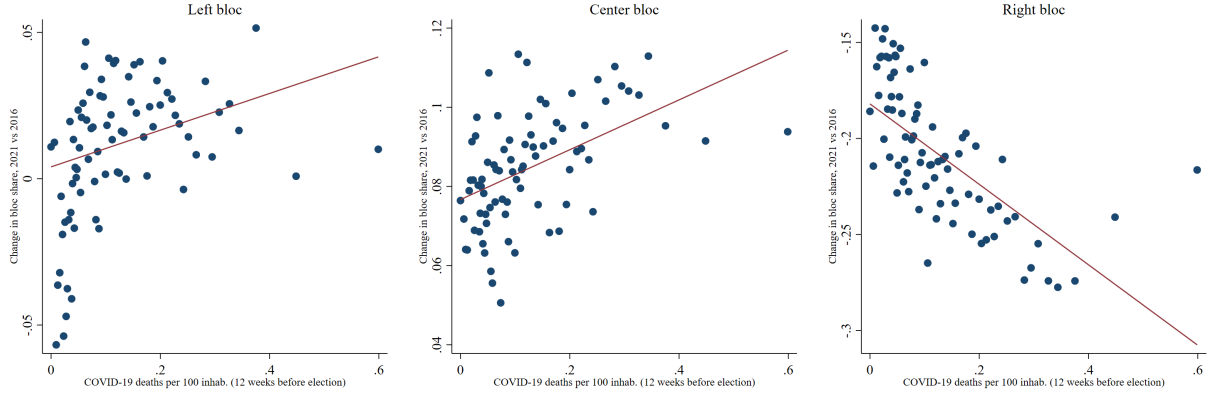
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Figures and Tables

Figure 1: Change in Bloc Shares Between the 2016 and 2021 Elections and COVID-19 Mortality



(a) LLM classification of the *planes de gobierno* (main scheme)



(b) CSES expert left-right scores

Notes: Each plot is a binned scatter of the change between the 2016 and 2021 elections in a bloc's share of the electorate against reported COVID-19 deaths per 100 district inhabitants in the twelve weeks before the April 2021 election, for the 1,834 districts of the estimation sample of Table 1: districts are sorted into quantile bins of mortality (100 requested; districts with identical mortality cannot be split, leaving 79 distinct bins), each marker is the mean of the two variables within a bin, and the line is the OLS fit on the underlying district data. In Panel A, party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. In Panel B, CSES blocs group parties by their CSES expert left-right score (0 = left, 10 = right): left ≤ 3 , *center* 4–6, right ≥ 7 (again *center* is a label of convenience). Each share is divided by the number of registered voters who either voted for a party classified under the scheme or did not cast a valid vote (absent, blank, or null); votes for parties without a classification are excluded (LLM: 0.5 percent of valid votes in 2011 and none in 2016 and 2021; CSES: 0.8, 3.5 and 13.4 percent in 2011, 2016 and 2021). The three bloc shares plus the absent-voter and blank/null shares sum to one.

Table 1: COVID-19 Mortality and Voting for Left, Center and Right Party Blocs

	Dep. var.: bloc share of the electorate		
	Left bloc (1)	Center bloc (2)	Right bloc (3)
<i>Panel A. Main specification, 2011, 2016 and 2021 elections</i>			
COVID-19 deaths per 100 inhab. (3 months)	0.048*** (0.013)	0.065*** (0.013)	-0.137*** (0.016)
Mean of dep. var.	0.266	0.070	0.244
Observations	5,502	5,502	5,502
Difference: right – left		-0.185*** (0.024)	
Difference: right – center		-0.202*** (0.025)	
Difference: center – left		0.017 (0.022)	
<i>Panel B. Falsification: 2021 mortality assigned to the 2016 election, 2011 and 2016 elections only</i>			
2021 COVID-19 deaths per 100 inhab. (3 months), assigned to 2016	0.019 (0.016)	0.009 (0.017)	0.010 (0.015)
Mean of dep. var.	0.251	0.080	0.289
Observations	3,668	3,668	3,668
Difference: right – left		-0.009 (0.026)	
Difference: right – center		0.000 (0.027)	
Difference: center – left		-0.009 (0.029)	

Notes: Each column is a separate regression of the indicated bloc's share of the electorate on reported COVID-19 deaths per 100 district inhabitants during the three months before the election (zero in 2011 and 2016). Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. Each share is divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null); votes for parties without a classification (0.5 percent of valid votes in 2011 and none in 2016 and 2021) are excluded. The three bloc shares plus the absent-voter and blank/null shares sum to one, so the five coefficients sum to zero. Panel A uses the 2011, 2016 and 2021 elections. Panel B restricts the sample to the 2011 and 2016 elections and assigns each district's 2021 three-month mortality to the 2016 election (zero in 2011), so its coefficients test whether districts that would later experience high mortality were already trending toward or away from a bloc before the pandemic. The *Difference* rows report the difference between two bloc coefficients, with standard errors from a stacked regression in which the three bloc shares are estimated jointly with outcome-specific fixed effects and controls and district-clustered standard errors (point estimates are identical to the column estimates). All regressions absorb district and election-year fixed effects and include election-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1.

Table 2: COVID-19 Mortality and Household Income and Expenditure (ENAH0)

	Income per capita (1)	Log income per capita (2)	Expenditure per capita (3)	Log expenditure per capita (4)
COVID-19 deaths per 100 inhab. (3 months)	-1451.235* (787.117)	-0.375*** (0.099)	-1279.469*** (309.300)	-0.431*** (0.087)
Observations	93,956	93,956	93,956	93,956
No. of districts	1,546	1,546	1,546	1,546
Mean of dep. var.	6906.391	8.491	3976.969	7.970

Notes: Household-level data from the 2011, 2016 and 2021 rounds of the ENAH0. Dependent variables are household income and expenditure per capita, in levels (constant 2007 soles) and in logs, winsorized at the 1st and 99th percentiles within survey year. The independent variable is reported COVID-19 deaths per 100 inhabitants in the household's district during the three months before the April 2021 election (zero in the 2011 and 2016 rounds). All regressions control for household size and the age, sex, marital status, education and mother tongue of the household head, and absorb district and survey-year fixed effects and survey-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude). Standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: COVID-19 Mortality and Perceived Unfairness of the Income Distribution (Latinobarómetro)

	Dep. var.: perceived fairness of the income distribution			
	Fairness scale 1 = very fair 4 = very unfair (1)	Fair, unfair or very unfair $Y \geq 2$ (2)	Unfair or very unfair $Y \geq 3$ (3)	Very unfair $Y = 4$ (4)
COVID deaths/100 pop. (3 mo.)	0.825** (0.357)	0.062 (0.045)	0.327* (0.181)	0.436* (0.242)
Observations	3,448	3,448	3,448	3,448
No. of districts	64	64	64	64
Mean of dep. var.	3.038	0.978	0.838	0.222

Notes: Respondent-level data from the 2011, 2016 and 2020 Peru rounds of the Latinobarómetro. Respondents rate the fairness of the income distribution from 1 (very fair) to 4 (very unfair); column 1 uses the four-point scale and columns 2–4 are linear probability models for the indicated thresholds. The independent variable is reported COVID-19 deaths per 100 inhabitants in the respondent's district during the twelve complete weeks before the 2020 fieldwork (ISO weeks 2020w32–2020w43), zero in the 2011 and 2016 rounds. All regressions control for the respondent's age, sex, education and mother tongue, and absorb district and survey-round fixed effects and survey-round fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude). Standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1.

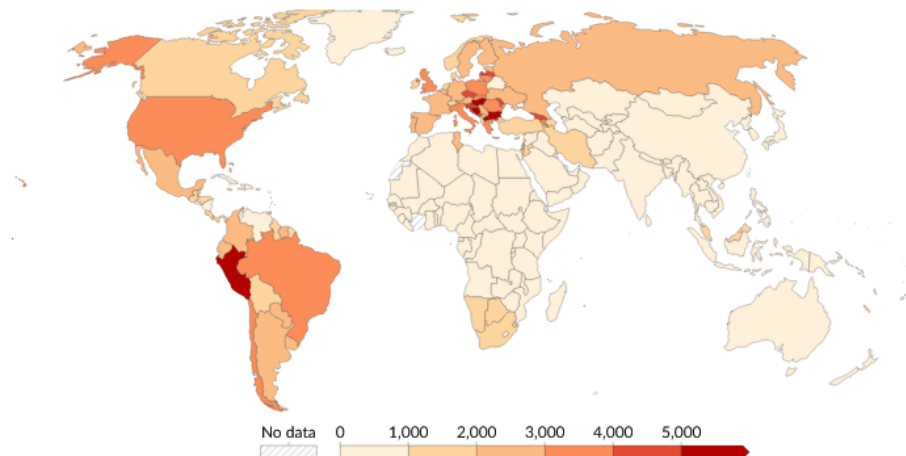
Table 4: COVID-19 Mortality, Absent Voters and Blank and Null Ballots

	Dep. var.: share of the electorate	
	Absent voters	Blank + null ballots
	(1)	(2)
COVID-19 deaths per 100 inhab. (3 months)	-0.013 (0.013)	0.037*** (0.007)
Mean of dep. var.	0.261	0.159
Observations	5,502	5,502

Notes: Each column is a separate regression of the indicated share of the electorate on reported COVID-19 deaths per 100 district inhabitants during the three months before the election (zero in 2011 and 2016). Absent voters are registered voters who did not turn out; blank and null ballots are ballots cast without a valid vote for a party. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table. Together with the three party-bloc shares in Table 1, the five shares sum to one, so the five coefficients sum to zero. All regressions absorb district and election-year fixed effects and include election-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by district. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

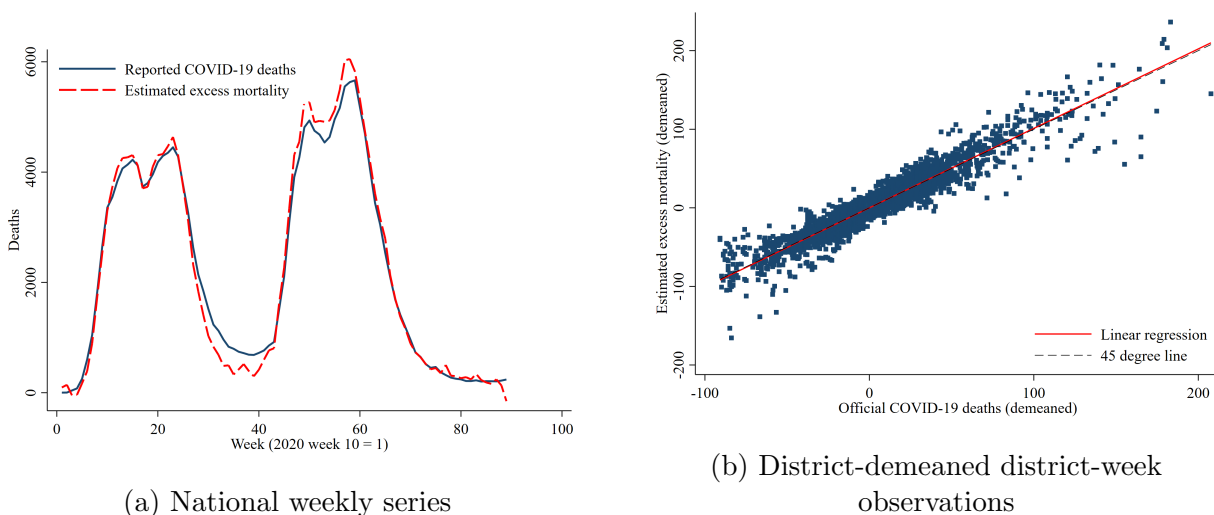
A Additional Figures and Tables

Figure A1: COVID: Confirmed Deaths per Million People (as of July 24, 2022)



Source: [Our World in Data \(2025\)](#), based on data from the World Health Organization. The map shows the cumulative number of confirmed deaths since January 1, 2020 relative to the population.

Figure A2: Official COVID-19 Deaths and Estimated Excess Mortality



Notes: Excess mortality is the difference between observed non-violent deaths in the SINADEF death registry and the deaths predicted for each district-week from pre-pandemic (2017–2019) mortality; official deaths are Peru’s revised registry of confirmed COVID-19 deaths. Panel (a) sums both series over districts by ISO week from week 10 of 2020 (the first pandemic week) onward; the two national series have a correlation of 0.996. Panel (b) plots, for each district-week (170,170 observations in 1,870 districts, 2020 week 10 to 2021 week 48), estimated excess mortality against official deaths after removing district means; the solid line is the OLS fit and the dashed line the 45-degree line; the correlation is 0.93. The excess-deaths row of Appendix Table [A3](#) uses the district sums of excess mortality over the twelve weeks before the 2021 election.

Figure A3: Examples of Election Records Published by ONPE

ACTAS PROCESADAS: 100.000 % ACTAS CONTABILIZADAS: 100.000 % ACTUALIZADO EL 31/05/2021 A LAS 16:29 h				
TOTAL DE VOTOS				
ORGANIZACIONES POLITICAS	TOTAL	% VÁLIDOS	% EMITIDOS	
 PARTIDO NACIONALISTA PERUANO	230,831	1.603%	1.303%	
 EL FRENTE AMPLIO POR JUSTICIA, VIDA Y LIBERTAD	66,300	0.453%	0.369%	
 PARTIDO MORADO	326,608	2.261%	1.838%	
 PERU PATRIA SEGURA	55,644	0.386%	0.314%	
 VICTORIA NACIONAL	814,516	5.656%	4.588%	
 ACCIÓN POPULAR	1,306,288	9.071%	7.374%	
 ALIANZA PAÍS - PARTIDO DE INTEGRACIÓN SOCIAL	1,674,201	11.626%	9.451%	
 PODEMOS PERÚ	812,721	5.644%	4.588%	
 JUNTOS POR EL PERÚ	1,132,577	7.865%	6.384%	
 PARTIDO POPULAR CRISTIANO - PPC	286,447	1.989%	1.617%	
 FUERZA POPULAR	1,930,762	13.407%	10.900%	
 UNIÓN POR EL PERÚ	101,267	0.703%	0.572%	
 RENOVACIÓN POPULAR	1,692,279	11.751%	9.552%	
 RENACIMIENTO UNIDO NACIONAL	89,376	0.621%	0.505%	
 PARTIDO DEMOCRÁTICO SOMOS PERÚ	240,234	1.668%	1.568%	
 PARTIDO POLÍTICO NACIONAL PERÚ LIBRE	2,724,752	18.921%	15.382%	
 DEMOCRACIA DIRECTA	50,802	0.353%	0.287%	
 ALIANZA PARA EL PROGRESO	887,025	6.021%	4.895%	
TOTAL DE VOTOS VÁLIDOS	14,405,830	100.000%	81.296%	
VOTOS EN BLANCO	2,190,059		12.364%	
VOTOS NULOS	1,123,027		6.340%	
TOTAL DE VOTOS EMITIDOS	17,713,716		100.000%	

(a) District-level vote tally by political party in 2021

ONPE
ELECCIONES GENERALES Y PARLAMENTO ANDINO 2021
ELECCIÓN DE PRESIDENTE Y VICEPRESIDENTES DE LA REPÚBLICA
ACTA ELECTORAL → TOTAL DE ELECTORES HÁBILES 300

MESA DE SUFRAGIO Nº: 041578
DEPARTAMENTO: LIMA PROVINCIA: LIMA DISTRITO: MAGDALENA DEL MAR

C ACTA DE ESCRUTINIO
Siendo las 09:01 pm del 11 de abril de 2021, se inició el ACTO DE ESCRUTINIO.
MUY IMPORTANTE Escriba con números legibles como estos: 0123456789

ORGANIZACIONES POLITICAS	TOTAL DE VOTOS
1 PARTIDO NACIONALISTA PERUANO	2
2 EL FRENTE AMPLIO POR JUSTICIA, VIDA Y LIBERTAD	0
3 PARTIDO MORADO	25
4 PERU PATRIA SEGURA	0
5 VICTORIA NACIONAL	20
6 ACCIÓN POPULAR	9
7 ALIANZA PAÍS - PARTIDO DE INTEGRACIÓN SOCIAL	46
8 PODEMOS PERÚ	3
9 JUNTOS POR EL PERÚ	27
10 PARTIDO POPULAR CRISTIANO - PPC	16
11 FUERZA POPULAR	19
12 UNIÓN POR EL PERÚ	0
13 RENOVACIÓN POPULAR	44
14 RENACIMIENTO UNIDO NACIONAL	11
15 PARTIDO DEMOCRÁTICO SOMOS PERÚ	3
16 PARTIDO POLÍTICO NACIONAL PERÚ LIBRE	0
17 DEMOCRACIA DIRECTA	1
18 ALIANZA PARA EL PROGRESO	2
VOTOS EN BLANCO	8
VOTOS NULOS	5
VOTOS IMPUGNADOS	0
TOTAL DE VOTOS EMITIDOS	230

OBSERVACIONES →

Siendo las 08:00 pm finalizó el ACTO DE ESCRUTINIO.

FIRMA, NOMBRES, APELLIDOS Y DNI DE MIEMBROS DE MESA (OBLIGATORIO)

NOMBRES: [Firma] APELLIDOS: [Firma] DNI: [Firma]
 NOMBRES: [Firma] APELLIDOS: [Firma] DNI: [Firma]
 NOMBRES: [Firma] APELLIDOS: [Firma] DNI: [Firma]

FIRMA Y CUIDOS DE REVISORES

(b) Example of a scanned polling-booth record

Note: Panel (a) displays an example of the district-level party vote tallies published by the [Peruvian National Elections Commission](#). Panel (b) displays a scanned polling-booth record from the same source.

Table A1: Parties on the First-Round Ballot and Their Classification

Party or alliance	Presidential candidate	Valid votes (%)	LLM bloc (economic)	LLM confidence	CSES score
<i>2011 election</i>					
Gana Perú	Ollanta Humala Tasso	32.1	Left	High	3
Fuerza 2011	Keiko Fujimori Higuchi	23.4	Right	High	9
Alianza por el Gran Cambio	Pedro Pablo Kuczynski Godard	18.3	Right	High	7
Perú Posible	Alejandro Toledo Manrique	15.6	Center	Medium	5
Alianza Solidaridad Nacional	Luis Castaneda Lossio	9.8	Right	Medium	6
Other (Adelante; Fonavistas del Perú; Fuerza Nacional)	three minor tickets	0.5	–	–	–
Partido Despertar Nacional	Ricardo Noriega Salaverri	0.1	Left	High	–
JUSTE (Justicia, Tecnología, Ecología)	Humberto Pinazo Bella	0.1	Left	High	–
Fuerza Social (Partido Descentralista)	Manuel Rodríguez Cuadros	0.1	Left	High	–
<i>2016 election</i>					
Fuerza Popular	Keiko Fujimori Higuchi	39.8	Right	High	9
Peruanos Por el Kambio (PPK)	Pedro Pablo Kuczynski Godard	21.0	Right	Medium	8
Frente Amplio por Justicia, Vida y Libertad	Veronika Mendoza Frisch	18.8	Left	High	2
Partido Acción Popular	Alfredo Barnechea García	6.9	Center	Medium	6
Alianza Popular (APRA–PPC)	Alan García Pérez	5.8	Right	Medium	8
Partido Democracia Directa	Gregorio Santos Guerrero	4.1	Left	High	1
Perú Posible	Alejandro Toledo Manrique	1.3	Center	Medium	–
Progreso y Obras (Frente Esperanza)	Luis Fernando Olivera Vega	1.3	Right	Medium	–
Partido Político Progresando Perú	Miguel Hilario Escobar	0.5	Center	Medium	–
Partido Político ORDEN	Antero Flores-Araoz Esparza	0.4	Right	Medium	–
<i>2021 election</i>					
Perú Libre	Jose Pedro Castillo Terrones	19.1	Left	High	1
Fuerza Popular	Keiko Fujimori Higuchi	13.4	Right	High	8
Renovación Popular	Rafael Lopez Aliaga Cazorla	11.6	Right	Medium	9
Avanza País	Hernando de Soto Polar	11.6	Right	Medium	9
Acción Popular	Yonhy Lescano Ancieta	9.1	Left	Medium	5
Juntos por el Perú	Veronika Mendoza Frisch	7.8	Left	High	2
Alianza para el Progreso (APP)	Cesar Acuna Peralta	6.1	Right	High	6
Podemos Perú	Daniel Urresti Elera	5.7	Center	Medium	6
Victoria Nacional	George Forsyth Sommer	5.6	Center	Medium	–
Partido Morado	Julio Guzman Caceres	2.2	Center	High	5
Partido Popular Cristiano (PPC)	Alberto Beingolea Delgado	2.0	Right	High	–
Partido Democrático Somos Perú	Daniel Salaverri Villa	1.7	Right	Medium	–
Partido Nacionalista Peruano	Ollanta Humala Tasso	1.6	Left	Medium	–
Partido Político Unión por el Perú	Jose Alejandro Vega Antonio	0.7	Center	Medium	–
Renacimiento Unido Nacional (RUNA)	Ciro Alfredo Galvez Herrera	0.6	Center	Medium	–
El Frente Amplio por Justicia, Vida y Libertad	Marco Antonio Arana Zegarra	0.5	Left	High	–
Perú Patria Segura	Rafael Santos Normand	0.4	Center	Medium	–
Democracia Directa	Andres Avelino Alcantara Paredes	0.4	Left	High	–

Notes: All parties and alliances with first-round votes in the district-level ONPE results used in the paper, ordered by their national share of valid votes within each election (computed over the districts in the data). *LLM bloc* is the classification of the economic stance of the party's *plan de gobierno* by a large language model (Appendix C): left, right, or ambiguous/neutral, which we label *center*; it is the grouping used in all bloc regressions. *LLM confidence* is the model's self-reported confidence (H = high, M = medium, L = low). *CSES score* is the Peru-specific expert left–right placement (0 = most left, 10 = most right) from the Comparative Study of Electoral Systems macro reports, available only for the parties the CSES collaborators placed; the CSES blocs used in the robustness checks are left ≤ 3 , center 4–6, right ≥ 7 . In 2011 the residual category *Other* (Adelante, Fonavistas del Perú, Fuerza Nacional; 0.5 percent of valid votes) has no plan on file and is the only group of votes without an LLM classification. Four 2016 tickets that withdrew or were excluded before election day (Solidaridad Nacional–UPP, Perú Nación, Perú Libertario, Partido Humanista) received no votes and are omitted.

Table A2: Summary Statistics

	2011	2016	2021
COVID-19 deaths per 100 inhabitants (3 months)	0.000 (0.000)	0.000 (0.000)	0.100 (0.111)
Left-bloc share of the electorate	0.286 (0.137)	0.216 (0.125)	0.297 (0.126)
Center-bloc share of the electorate	0.119 (0.092)	0.040 (0.034)	0.050 (0.033)
Right-bloc share of the electorate	0.247 (0.136)	0.331 (0.153)	0.155 (0.100)
Absent-voter share of the electorate	0.205 (0.080)	0.240 (0.094)	0.337 (0.105)
Blank and null ballot share of the electorate	0.143 (0.054)	0.172 (0.048)	0.161 (0.044)
Registered voters	10,464.1 (33,275.0)	11,929.0 (37,887.9)	13,107.3 (41,921.8)
Population per doctor (department)	1,243.5 (666.0)	930.9 (497.6)	782.0 (430.3)
Share of population age 65 or older	0.079 (0.041)	0.079 (0.041)	0.079 (0.041)
Share female	0.494 (0.032)	0.494 (0.032)	0.494 (0.032)
Altitude (meters)	2,250.4 (1,383.6)	2,250.4 (1,383.6)	2,250.4 (1,383.6)
Number of districts	1,834	1,834	1,834

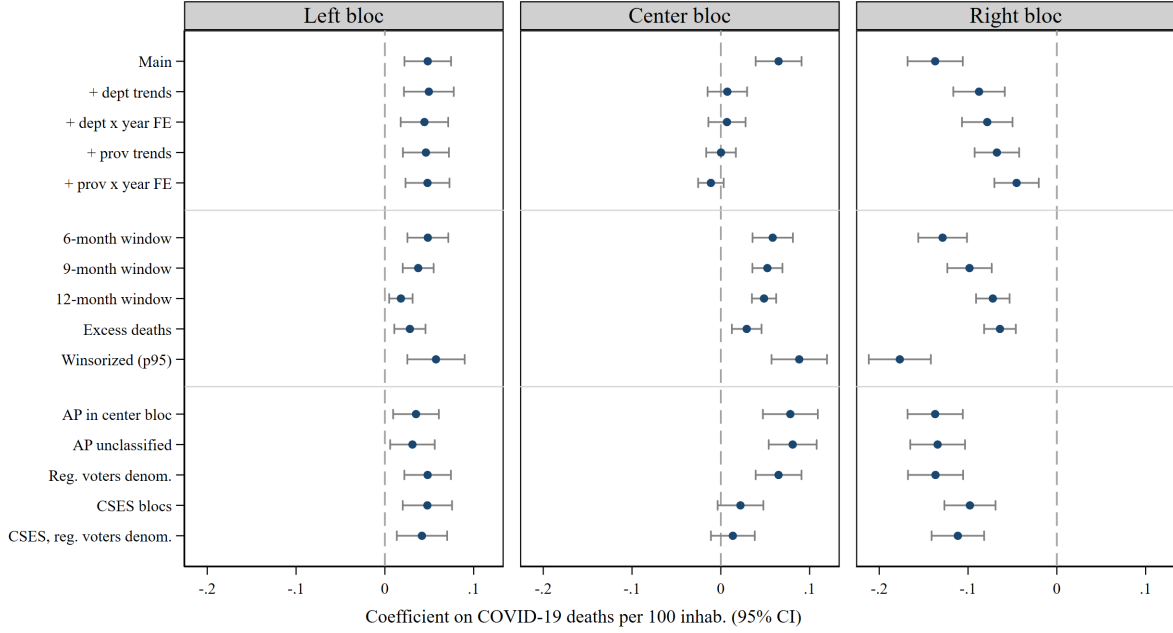
Notes: Means, with standard deviations in parentheses, over the estimation sample of Table 1 (districts observed in all three elections with non-missing baseline characteristics). COVID-19 deaths are reported deaths per 100 district inhabitants in the twelve weeks before the April 2021 election and are zero by construction in 2011 and 2016. Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table. The five shares sum to one. Registered voters, absent voters and ballots are from ONPE first-round results; population per doctor is measured at the department level in 2011; the share age 65 or older, the share female and altitude are from the 2007 Census and INEI.

Table A3: Robustness of the Party-Bloc Results

	Dep. var.: share of the electorate			
	Left bloc (1)	Center bloc (2)	Right bloc (3)	Observations
<i>Regional trends and fixed effects</i>				
Main specification	0.048*** (0.013)	0.065*** (0.013)	-0.137*** (0.016)	5,502
+ Department linear trends	0.050*** (0.014)	0.007 (0.011)	-0.088*** (0.015)	5,502
+ Department $\times$ year FE	0.045*** (0.014)	0.007 (0.011)	-0.078*** (0.015)	5,502
+ Province linear trends	0.046*** (0.013)	0.000 (0.009)	-0.068*** (0.013)	5,502
+ Province $\times$ year FE	0.048*** (0.013)	-0.011 (0.007)	-0.045*** (0.013)	5,499
<i>Mortality measure</i>				
6-month mortality window	0.048*** (0.012)	0.058*** (0.012)	-0.129*** (0.014)	5,502
9-month mortality window	0.038*** (0.009)	0.052*** (0.009)	-0.098*** (0.013)	5,502
12-month mortality window	0.018*** (0.007)	0.049*** (0.007)	-0.072*** (0.010)	5,502
Excess deaths instead of reported deaths (3 months)	0.028*** (0.009)	0.029*** (0.009)	-0.064*** (0.009)	5,490
2021 mortality winsorized at the 95th percentile	0.058*** (0.016)	0.088*** (0.016)	-0.177*** (0.018)	5,502
<i>Party classification and denominator</i>				
Acción Popular moved to the center bloc	0.035*** (0.013)	0.078*** (0.016)	-0.137*** (0.016)	5,502
Acción Popular treated as unclassifiable	0.031** (0.013)	0.081*** (0.014)	-0.134*** (0.016)	5,502
All registered voters as the denominator	0.048*** (0.013)	0.065*** (0.013)	-0.137*** (0.016)	5,502
CSES party classification	0.048*** (0.014)	0.022* (0.013)	-0.098*** (0.015)	5,502
CSES classification, all registered voters as the denominator	0.042*** (0.014)	0.014 (0.013)	-0.111*** (0.015)	5,502

Notes: Each cell is the coefficient on COVID-19 mortality (deaths per 100 inhabitants; three-month window unless stated) from a separate regression of the column share on mortality, with district-clustered standard errors in parentheses; each row is one departure from the main specification of Table 1, which is repeated in the first row. Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. Each share is divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null); votes for parties without a classification (0.5 percent of valid votes in 2011 and none in 2016 and 2021) are excluded. The three bloc shares plus the absent-voter and blank/null shares sum to one, so the five coefficients sum to zero. Rows 2–5 add linear trends by department (25) or province (196 INEI provinces), or department-by-year or province-by-year fixed effects. Rows 6–8 replace the three-month mortality window with cumulative deaths over the 6, 9 and 12 months before the election; row 9 uses estimated excess deaths instead of reported COVID-19 deaths (Appendix Figure A2); row 10 caps 2021 mortality at its 95th percentile in the estimation sample (0.318 deaths per 100; the 2021 distribution has mean 0.100 and maximum 0.739). Rows 11–12 change the treatment of Acción Popular, which the LLM codes as left in 2021 (Lescano; 9.1 percent of valid votes) and as center in 2016 (Barnechea; 6.9 percent): row 11 assigns the party to the center bloc in both years (which changes only 2021), and row 12 removes its votes from the numerators and the denominator, as for other unclassifiable parties. Row 13 divides every share by all registered voters, so that votes for unclassifiable parties stay in the denominator. Rows 14–15 replace the LLM classification with CSES expert left–right scores (left ≤ 3 , center 4–6, right ≥ 7); parties without a CSES placement (0.8, 3.5 and 13.4 percent of valid votes in 2011, 2016 and 2021) are excluded from the denominator in row 14 and kept in it in row 15. The number of observations is smaller in row 5 because singleton province-year groups are dropped and in row 9 because excess deaths cannot be estimated for four districts. All regressions absorb district and election-year fixed effects and include election-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by district. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure A4: Robustness of the Party-Bloc Results: Coefficient Plot



Notes: Each marker is the coefficient on COVID-19 mortality (deaths per 100 inhabitants) from a separate regression of the bloc's share of the electorate on mortality, with a 95 percent confidence interval based on district-clustered standard errors. The rows are the specifications of Appendix Table A3, in the same order and groups: the main specification of Table 1 and regional trends or region-by-year fixed effects (top group), alternative mortality measures (middle group), and alternative party classifications and denominators (bottom group: Acción Popular moved to the center bloc or treated as unclassifiable, all registered voters as the denominator, and CSES expert scores instead of the LLM classification with either denominator). Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table.

Table A4: COVID-19 Mortality and the Vote for Outsider and Established Candidates Within Each Bloc

	Left bloc		Center bloc		Right bloc	
	Outsider	Established	Outsider	Established	Outsider	Established
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A. Outsider = candidate never held any elected office (primary definition)</i>						
COVID-19 deaths per 100 inhab. (3 months)	-0.026*	0.074***	0.011***	0.054***	-0.079***	-0.058***
	(0.014)	(0.014)	(0.002)	(0.013)	(0.011)	(0.014)
Mean of dep. var.	0.154	0.113	0.004	0.065	0.044	0.200
Observations	5,502	5,502	5,502	5,502	5,502	5,502
<i>Panel B. Outsider = candidate never held national elected office</i>						
COVID-19 deaths per 100 inhab. (3 months)	0.004	0.044***	0.040***	0.025*	-0.049***	-0.088***
	(0.014)	(0.012)	(0.005)	(0.013)	(0.009)	(0.014)
Mean of dep. var.	0.167	0.099	0.011	0.059	0.064	0.181
Observations	5,502	5,502	5,502	5,502	5,502	5,502

Notes: Each cell is a separate regression of the indicated share of the electorate on reported COVID-19 deaths per 100 district inhabitants during the three months before the election (zero in 2011 and 2016). Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. Within each bloc, votes are split by whether the party's presidential candidate had held elected office before the election. Panel A: outsider = never held any elected public office (2021: Castillo, Alcántara, Guzmán, Gálvez, de Soto; 2016: Kuczynski, Hilario; 2011: Humala, Kuczynski, Noriega, Pinazo, Rodríguez Cuadros). Panel B: outsider = never held national elected office, so candidates with only subnational office join the outsider cells (2021: López Aliaga, Forsyth, Santos; 2016: Gregorio Santos; 2011: Castañeda). Kuczynski is coded an outsider because he had never held elected office before 2016, although he had served as minister and prime minister. Within each panel the two cells of a bloc sum to the bloc's share in Table 1. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table. All regressions absorb district and election-year fixed effects and include election-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1.

Table A5: Fujimorismo Versus the Rest of the Right Bloc

	Dep. var.: share of the electorate	
	Fujimorismo	Other right-bloc
	(Fuerza 2011 / Fuerza Popular)	parties
	(1)	(2)
COVID-19 deaths per 100 inhab. (3 months)	-0.075***	-0.062***
	(0.014)	(0.010)
Mean of dep. var.	0.158	0.086
Observations	5,502	5,502

Notes: Each column is a separate regression of the indicated share of the electorate on reported COVID-19 deaths per 100 district inhabitants during the three months before the election (zero in 2011 and 2016). Column 1 is Keiko Fujimori's vehicle in all three elections (Fuerza 2011 in 2011, Fuerza Popular in 2016 and 2021). Column 2 is the remainder of the right bloc: Alianza por el Gran Cambio and Solidaridad Nacional in 2011; PPK, Alianza Popular (APRA-PPC), Frente Esperanza and Orden in 2016; Renovación Popular, Avanza País, APP, PPC and Somos Perú in 2021. Party blocs follow the LLM coding of the economic stance of each party's *plan de gobierno* as left, right, or ambiguous/neutral; for brevity we label the ambiguous/neutral group *center*, although it collects platforms without a clear economic stance rather than centrist ones. The two columns sum to the right-bloc share of Table 1. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table. All regressions absorb district and election-year fixed effects and include election-year fixed effects interacted with baseline district characteristics (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1.

Table A6: Parties of the Pandemic-Era Governments and COVID-19 Mortality, 2021

	Dep. var.: 2021 share of the electorate	
	Broad definition (Partido Morado, Acción Popular, Somos Perú)	Narrow definition (Partido Morado)
	(1)	(2)
COVID-19 deaths per 100 inhab. (3 months)	0.022** (0.011)	0.009*** (0.002)
Mean of dep. var. (2021)	0.071	0.006
Observations	1,834	1,834

Notes: Each column is a separate regression of the group's 2021 share of the electorate on reported COVID-19 deaths per 100 district inhabitants during the three months before the election, in the 2021 cross-section of the estimation sample of Table 1, controlling for the baseline district characteristics in levels (2011 registered voters, 2011 population per doctor, and the 2007 Census share age 65 or older, share female, and altitude); standard errors clustered by province (196 clusters). Broad definition: Partido Morado (Francisco Sagasti's party, in government November 2020 – July 2021), Acción Popular (Manuel Merino's party, November 2020) and Somos Perú (whose 2021 congressional list was headed by Martín Vizcarra, President 2018–20); narrow definition: Partido Morado only. These parties had no presidential ticket before 2021, and the parties of the preceding governments were not on the 2011 and 2016 ballots, so the three-election panel regression yields numerically the same coefficient as this cross-section; the estimates describe the allocation of the 2021 vote conditional on baseline characteristics rather than a change relative to earlier elections. Shares are divided by the number of registered voters who either voted for an LLM-classified party or did not cast a valid vote (absent, blank, or null), the denominator of the main table. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B Additional Data Information

B.1 COVID-19 Mortality Data and Reclassification

Limited testing and overwhelmed health facilities caused Peru’s original official statistics to undercount COVID-19 deaths severely. Excess-mortality estimates indicate that 32,300 people died because of COVID-19 during the first 100 days of the pandemic, while the contemporaneous official toll was 8,600 ([Arela-Bobadilla, 2020](#)). In April 2021, the Ministry of Health established a special task force of epidemiologists and public-health experts to review medical records and broaden the definition of a COVID-19 death. Applying the new definition increased the national count through the end of the task force’s review period from roughly 68,000 to 181,000. At the April 11, 2021 election cutoff used in our analysis, the revised registry contained approximately 153,000 deaths.

The task force classified a death as SARS-CoV-2-related when the medical record met at least one of seven criteria ([Government of Peru, 2021](#)):

- **Viral criterion:** death within 60 days of a positive polymerase chain reaction (PCR) or antigen test.
- **Serology criterion:** death within 60 days of a positive IgM or IgM/IgG antibody test.
- **Radiology criterion:** an X-ray, computed tomography scan, or MRI showing pneumonia consistent with SARS-CoV-2.
- **Epidemiological nexus:** household residence with, or close contact with, someone who died from COVID-19.
- **Epidemiological surveillance criterion:** confirmation following an investigation by the National Epidemiological Network (RENACE).
- **Clinical criterion:** medical-record evidence of clinical signs consistent with COVID-19.
- **Death-certificate criterion:** COVID-19 recorded as a confirmed cause on the death certificate. This was the original, narrower criterion.

Our analysis uses the revised individual death records, including the date of death and district of residence. We aggregate deaths to the district-week level and scale them by district population in the 2007 Census. The baseline measure sums the twelve complete weeks before the April 11, 2021 first-round election and multiplies the resulting ratio by 100.

B.2 Excess-Mortality Validation

We estimate excess mortality from anonymized 2017–2021 records in the *Sistema Informático Nacional de Defunciones* (SINADEF). The records identify the date, district, and whether each death resulted from a violent or nonviolent cause. We exclude violent deaths (which are, by definition, not directly related to COVID-19) and, following [Karlinsky and Kobak \(2021\)](#), use 2017–2019 observations to estimate the following model separately for each district d :

$$D_{dyw} = \alpha_d + \mu_{dw} + \tau_d Year_y + \varepsilon_{dyw}, \quad (B1)$$

where D_{dyw} is the number of nonviolent deaths in ISO week w of year y , μ_{dw} denotes district-specific calendar-week effects, and τ_d is a district-specific linear year trend. We predict weekly deaths for 2020–2021 and define excess mortality as observed minus predicted nonviolent deaths.

Appendix Figure [A2](#) compares these estimates with revised official COVID-19 deaths. The national weekly series have a correlation of 0.996. After removing district means, official and estimated excess deaths have a correlation of 0.93. Excess mortality remains imperfect: it may include indirect pandemic deaths, exclude reductions in other causes such as accidents, and contain substantial sampling noise in small districts. For this reason, the main analysis uses revised official deaths and Appendix Table [A3](#) uses excess mortality as a robustness measure.

B.3 Election Data and Party Classification

ONPE reports party vote totals, registered voters, absent voters, blank ballots, and null or spoiled ballots for each polling booth. Citizens ages 18–70 are required to vote, and ONPE assigns booths using the address on each citizen’s national identification record. We aggregate the first-round returns to the district level and exclude overseas voting centers. In 2021, approximately 997,000 registered voters listed overseas addresses, but only about 227,000 cast a ballot.

The voter roster closes roughly one year before an election. The 2021 roster therefore closed in April 2020 and includes people who subsequently died as well as those who chose not to vote. National voter-weighted absenteeism was 16.3% in 2011, 18.2% in 2016, and 29.9% in 2021 ([Hidalgo and Boyco, 2021](#)); the higher values in Appendix Table [A2](#) are unweighted means across districts. We analyze mortality and participation directly in Table [4](#).

Appendix Table [A1](#) lists every party on the ballot with its candidate, share of valid votes,

LLM classification, and CSES score. The LLM classification is described in Appendix C. The CSES macro data provide Peru-specific expert placements of each party from 0 (most left) to 10 (most right). Experts at the Pontifical Catholic University of Peru evaluate parties separately in each election, allowing scores to change with alliances or leadership; no party in our data receives a score of 4, so the CSES blocs (left at 3 or below, center between 4 and 6, right at 7 or above) coincide with a division into scores of 1–3, 5–6, and 7–9. Each bloc share divides the bloc’s votes by the number of registered voters who either voted for a party classified under the scheme or did not cast a valid vote (absent, blank, or null), so that the five shares sum to one within a scheme. Under the LLM classification, the excluded votes are 0.5 percent of valid votes in 2011 and none in 2016 and 2021; under the CSES placements they are 0.8, 3.5, and 13.4 percent.

B.4 Party and Candidate Attributes

For the analysis of Section 5.3 we coded objective attributes of all 48 party-elections from electoral records and biographical sources. A candidate is an *outsider* under the primary definition if he or she had never held elected office at any level (president, vice-president, Congress, regional president, mayor, or councillor) before the election; appointed office does not count. The rule matters for Pedro Pablo Kuczynski (Alianza por el Gran Cambio in 2011, Peruanos por el Kambio in 2016), who had served as Minister of Energy and Mines (1980–82), Minister of Economy and Finance (2001–02, 2004–05), and Prime Minister (2005–06) but had never held elected office before winning the presidency in 2016; we classify him as an outsider candidate because voters had never elected him to anything, although his vehicles are coded as established parties. The alternative definition counts only national elected office (Congress, the presidency, or the vice-presidency), so that candidates with subnational experience only — Rafael López Aliaga (Lima councillor), George Forsyth (mayor of La Victoria), and Rafael Santos (mayor of Pueblo Libre) in 2021, Gregorio Santos (regional president) in 2016, and Luis Castañeda (mayor of Lima) in 2011 — join the outsider cells. *Fujimorismo* denotes Keiko Fujimori’s vehicle in each election (Fuerza 2011 in 2011, Fuerza Popular in 2016 and 2021). The *pandemic-era government parties* are Partido Morado (Francisco Sagasti, President November 2020–July 2021), Acción Popular (Manuel Merino, November 2020), and, under a broad definition, Somos Perú, whose 2021 congressional list was headed by Martín Vizcarra (President 2018–2020); the narrow definition keeps only Partido Morado. Because these parties fielded no presidential ticket before 2021, their shares are estimated in the 2021 cross-section, conditional on the baseline characteristics, with standard errors clustered by province.

B.5 ENAHO Household Data

The nationally representative ENAHO is collected annually by Peru’s national statistical agency ([Instituto Nacional de Estadística e Informática, 2018](#)). We use the 2011, 2016, and 2021 rounds. Outcomes are total net household income and total expenditure, expressed in constant 2007 soles using the World Bank GDP deflator ([World Bank, 2025](#)) and divided by household size. Per-capita values are winsorized at the 1st and 99th percentiles within survey year, and logs are taken of the winsorized values. Household controls include household size and the age, sex, marital status, education, and mother tongue of the household head. We merge households to mortality by district of residence. The estimation sample contains 93,956 households in 1,546 districts.

B.6 Latinobarómetro Data

We use the Peru samples from the 2011, 2016, and 2020 Latinobarómetro surveys ([Corporación Latinobarómetro, 2020](#)). The 2020 round was fielded in November, roughly five months before the election. Each round asks respondents to classify the prevailing income distribution as very fair, fair, unfair, or very unfair.⁸ The regressions control for age, sex, education, and mother tongue.

Latinobarómetro reports region and city rather than district. We match each city to its containing district and assign district mortality during the twelve complete weeks before 2020 fieldwork. Metropolitan Lima, which the survey does not subdivide, is treated as one location. The final sample contains 3,448 respondents in 64 districts and is more urban than the election sample.

B.7 Baseline District Characteristics

The five characteristics interacted with election-year indicators are the number of registered voters in the 2011 election (ONPE); inhabitants per doctor in 2011, measured at the department level (INEI, [Peruvian National Statistics Institute, 2022](#)); and the share of residents aged 65 or older, the female population share, and altitude from the 2007 Census and INEI’s district directory ([Instituto Nacional de Estadística e Informática, 2007](#)). All are measured before the pandemic and, with the exception of the 2011 electorate, before the first

⁸The 2011 and 2016 questionnaires ask, “How fair do you think income distribution is in (country)?” The 2020 questionnaire asks, “How fair is the distribution of income in (country)?” All rounds use the same four response categories.

election in the sample. Earlier versions of this analysis also adjusted for contemporaneous district conditions (human-development components, health-insurance coverage, Pension 65 coverage, and nighttime lights); because several of these are measured during the pandemic and are plausibly affected by it, the present specification omits them.

C LLM Coding of Parties’ Economic Positions

Using LLMs, we classify each *plan de gobierno* filed with the Jurado Nacional de Elecciones for the 2011, 2016, and 2021 presidential elections (Tuesta Soldevilla, 2011; Despertar Nacional, 2011; Partido Descentralista Fuerza Social, 2011; Partido Justicia, Tecnología, Ecología, 2011; Gestión, 2016; El Peruano, 2021) into one of four categories: Left (0), Right (1), Ambiguous/Neutral (2), and No information (99). The full coding prompt is reproduced below.

Dimension. We code the economic dimension alone (the party’s stated position on redistribution and the role of the state in the economy), as this is the focus of our paper.

Ambiguity versus missing information. We separate documents that mix left and right content without a dominant direction (code 2) from documents that provide no economic content to assess (code 99), and treat only the latter as missing. This is in the spirit of Benoit et al. (2026), who instruct large language models to return an explicit missing code when a text states no position, and argue that this is the principal safeguard against a model that will otherwise produce a classification when forced to. No plan on file received code 99; the ambiguous/neutral group is what we label *center* in the text.

Coding rules. Two rules govern the weighting of evidence. First, terms such as *desarrollo*, *justicia social*, and *bien común* are treated as non-informative unless attached to a concrete mechanism: these are valence appeals, on which all competitors take the same side, and carry no positional content (Stokes, 1963). Benoit et al. (2026) document the corresponding empirical pattern, showing that on dimensions where nearly all manifestos take the favorable side, textual variance collapses and agreement with expert benchmarks falls sharply. Second, specific and verifiable commitments outweigh general aspirations, and central or repeated proposals outweigh marginal mentions.

LLM Models. We ran the same prompt with the same input materials on both Claude Fable 5 and ChatGPT Codex 5.5. Both platforms produced identical classifications for each party-year.

LLM Prompt: Classifying the Economic Left–Right Orientation of Peruvian Government Plans

Context: You are a political economy analyst. Your task is to classify Peruvian political parties' positions on the ECONOMIC left-right spectrum based on their government plans ("planes de gobierno") from the 2011, 2016, and 2021 presidential elections. Focus only on the economic dimension – the party's stance on redistribution and the role of the state in the economy. Ignore social, cultural, or moral issues unless they carry a direct economic-redistributive implication.

Peru has a multitude of political parties. These parties are short-lived and provide electoral vehicles for their leaders. In terms of their economic focus, they range from the "left" (stronger role for the state in the economy, more active intervention of the state in the economy, with emphasis on redistribution, social welfare, and reducing inequality) to the "right" (pro-market economics, support for private enterprise, reduced participation of the state in the economy and a preference for order and security).

Your task: Review the attached government plan and categorize the party's overall position on redistribution and its position within the left-right economic spectrum.

Categorization Scheme

- Left (code 0): Favors redistribution and an active economic role for the state. Signals include progressive taxation, expanded social spending, state ownership or control of key sectors, market regulation, price controls, and strong labor/worker protections.
- Right (code 1): Favors free markets and a limited economic role for the state. Signals include lower taxes, private ownership and privatization, deregulation, fiscal restraint, openness to trade and investment, and a pro-business orientation.
- Ambiguous/Neutral (code 2): The document addresses economic or redistributive issues, but with no clear or consistent orientation. This applies when it mixes left and right economic positions without a dominant direction, or when its economic proposals are programmatically ambiguous. Documents with no economic content at all belong in code 99, not here.
- No information (code 99): The document provides no basis for an economic classification. This applies when it does not address economic or redistributive

issues at all, focuses entirely on non-economic topics, or is too sparse, generic, or incomplete to assess.

Instructions

- Search the attached document for economic left-leaning language (redistribucion, nacionalizacion, estatizacion, soberania economica, revision de concesiones, subsidios, transferencias sociales, gasto social, control de precios, derechos laborales, estabilidad laboral, sindicatos) and right-leaning language (libre mercado, libre competencia, inversion privada, privatizacion, desregulacion, disciplina fiscal, reduccion del gasto publico, apertura comercial, sobrecostos laborales, flexibilidad laboral). Read the surrounding context; do not code from keywords alone. Use only the attached document – do not consult or rely on outside sources, and do not use prior knowledge of the party, its candidate, or what it did in office.
- Extract relevant quotes in Spanish, tagged as [Left], [Right], or [Ambiguous/Neutral], and record the page number of each quote as it appears in the document. Where the document contains them, extract at least three quotes per side. If the document has no usable pagination, record the section heading instead and write "(n.p.)" in place of the page number. Do not guess a page number.
- Assess the balance of passages by number and by substantive weight. Weight each quote by:
 - Concreteness – a specific mechanism (a named tax, subsidy, transfer, privatization, or nationalization) outweighs a general aspiration.
 - Centrality – a proposal located in the plan's economic core, or repeated across sections, outweighs a passing mention.
- Assign the category based on the predominant stance.
- Rate confidence: High / Medium / Low.

Output Format

PARTY: [Name]

ELECTION YEAR: [2011 / 2016 / 2021]

CATEGORY: [Left / Right / Ambiguous-Neutral / No information]

CODE: [0 / 1 / 2 / 99]

CONFIDENCE: [High / Medium / Low]

EVIDENCE: - [Left] Quote 1: "[exact text]" (page X) - [Right] Quote 2: "[exact text]" (n.p., section: [heading]) [...]

BALANCE: [X left / Y right / Z neutral]

JUSTIFICATION: [2-4 sentences explaining the categorization and balance of evidence. Name the specific mechanisms that drove the classification.]

Key Coding Rules

- Base the categorization **ONLY** on explicit textual content in the attached document, and focus on economic policies. Do not use outside knowledge of the party, its candidate, or its record in office.
- Most plans contain some right and left elements. Code based on overall balance and emphasis.
- Some terms, such as "desarrollo", "justicia social", "bien comun", "inclusion", "desarrollo integral" – sound left-leaning but appear in nearly every government plan regardless of orientation; these should push toward NEUTRAL/NO INFORMATION, not LEFT, unless attached to a concrete mechanism (a tax, a subsidy, a nationalization).
- Generic platitudes don't count. Ignore vague statements without specific economic focus.
- Distinguish code 2 from code 99: code 2 = the document HAS economic content but no dominant direction; code 99 = the document has NO economic content on which to base a classification.

INPUT: PDFs containing the complete government plans of the political parties that participated in the 2011, 2016, and 2021 Peruvian presidential elections.

YEAR 2011: For the Partido Descentralista Fuerza Social, the input was converted from PDF to Word because it could not be analyzed in PDF format.

C.1 The Classification of Acción Popular in 2021

Acción Popular is usually described as a centrist party, and the CSES experts place its 2021 ticket (Yonhy Lescano) at 5 on the 0–10 scale. The model nonetheless codes its 2021 *plan de gobierno* as left on economic grounds, with medium confidence, on the basis of the following passages (page numbers refer to the plan as filed):

Evidence recorded by the model for Acción Popular, 2021 (balance: 7 left / 3 right / 0 neutral)

- Left** “Es necesaria también una reforma tributaria que nos permita alcanzar una real justicia social en la redistribución de los escasos recursos que administra el Estado.” (p. 8)
- Left** “Inclusive se sugiere crear un impuesto a la riqueza, que nos parece pertinente, porque en el Perú hay mucha desigualdad.” (p. 22)
- Left** “También se propone una Pensión Universal de S/ 150 mensuales... bajo un modelo de reparto, que sería el pilar solidario obligatorio.” (p. 22)
- Left** “Desarrollar mecanismos de financiamiento solidarios y progresivos (pro-equidad), con subsidio del Estado focalizado en los pobres... para lograr el aseguramiento universal.” (p. 12)
- Left** “Acción Popular... fue el primer partido que presentó un Proyecto de Ley para el control previo de las fusiones empresariales... a fin de evitar los monopolios u oligopolios.” (p. 16)
- Left** “Ahora se tiene que desglobalizar la economía en el Perú, priorizando y fortaleciendo el aparato productivo nacional en todo sentido.” (p. 14)
- Left** “Es pertinente evaluar las exoneraciones tributarias que le restan recursos al país.” (p. 16)
- Right** “AP tomará medidas y retornará a los niveles de endeudamiento público a menos del 26% del PBI... porque un país endeudado no tiene futuro.” (p. 14)
- Right** “Debemos tener presente que el Estado no tiene ni tendrá capacidad para generar empleo productivo y que esta se soportará en la iniciativa privada principalmente en el sector de PYMES.” (p. 10)
- Right** “Implementar un nuevo modelo económico bajo los cimientos de una real economía social de mercado.” (p. 6)

Justification recorded by the model. “The plan’s concrete economic proposals are predominantly state-interventionist and redistributive: a tax reform explicitly aimed at redistributive social justice, sympathy for a wealth tax, a universal solidarity pension pillar under a pay-as-you-go model, solidaristic-progressive health financing with state subsidies for the poor, prior merger control against monopolies, evaluation of tax exonerations, and a call to ‘de-globalize’ and strengthen the national productive apparatus, with openness to a new constitution. These coexist with genuine right-leaning elements — fiscal discipline (returning debt below 26% of GDP, rebuilding fiscal savings), a social-market-economy frame, and the statement that only private initiative can generate employment — so the direction is clear but partly mixed: Left with Medium confidence.”

The party's 2016 plan (Alfredo Barnechea) is coded ambiguous/neutral, with four left-leaning and five right-leaning passages, and in 2011 the party did not field its own candidate. Appendix Table [A3](#) shows that moving the 2021 ticket to the center bloc, or removing it from the classification, leaves the right-bloc estimate unchanged and lowers the left-bloc estimate from 0.048 to 0.035 and 0.031, both significant at the 5 percent level or better.

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