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1

Climate Politics Transformed

This book argues that the politics of climate change are transforming as the world warms. Climate change used to be an abstract scientific idea. No longer. People now feel the effects of global warming in their daily lives, and businesses see it in their balance sheets. Extreme heat, rising seas, and wildfires are causing severe damage to parts of the world. But this damage isn't uniform. Some places are much more vulnerable than others.

Global warming's economic effects, however, have played only a limited role in theories about how people, businesses, and governments respond to climate change. Since climate change's worst perils appear far in the future, scholars have explicitly or implicitly assumed that vulnerability explains little of today's climate politics. Instead, there are two dominant ways of thinking about climate politics.

The first approach emphasizes the collective action challenges posed by climate change. Cutting greenhouse gases benefits everyone whether or not they reduce their own emissions. Because mitigation is costly and the gains are shared, there are incentives to free-ride on the efforts of others.¹ This framework is intentionally abstract, so different assumptions about actors' costs, time horizons, and international institutions generate distinct predictions about cooperation. Vulnerability matters only indirectly, as it shapes the size and timing of mitigation benefits, but because those benefits are typically discounted, exposure to climate harm rarely anchors the model's political predictions.

A prominent political cleavage in this account is the Global North-South divide. Industrialized states worry that ambitious mitigation will let developing nations emit freely, while many emerging economies argue that the North created most past emissions and should bear greater costs.²

1. Barrett 2003; Keohane and Victor 2016; Ostrom 2009; Sandler 1997; Stavins 2011.

2. Hurrell and Sengupta 2012; Roberts and Parks 2007.

The second perspective centers climate politics on domestic distributive conflict. Stopping climate change requires transforming economies away from fossil fuels toward cleaner technologies. This transition creates new low-carbon industries while threatening incumbent fossil fuel firms. The resulting political fault line pits these incumbents, who resist mitigation, against green businesses allied with environmentalists that push for action.³ Most such analyses treat climate-vulnerable groups as peripheral, reasoning that the distant nature of climate harm keeps them poorly organized and politically weak.⁴

These two perspectives are not mutually exclusive, but they share a striking feature: both downplay climate vulnerability as a driver of politics. This assumption is understandable, given the abundant evidence that voters, businesses, and governments are often short-sighted. Yet the result is ironic. In much of the climate politics literature, the changing climate itself plays little direct role in explaining political conflict.

Climate change in the twenty-first century is no longer an abstract, distant threat. Extreme weather and disasters now disrupt lives and businesses in ways people can see and increasingly attribute to global warming. Crops have become harder to grow, heat stress has caused premature deaths, and heavy rainfall has destroyed homes. Our calculations indicate that in 1990 only 18 percent of the world's population endured at least three months of unusually high temperatures, long enough to mark a sustained seasonal shift. By 2020 that share had risen to 60 percent, and nearly one-third of people spent more than half the year in this kind of abnormal heat.

Despite unifying rhetoric that “we’re all in the same boat,” climate change has a profoundly unequal toll. Some communities suffer heat waves, floods, and fires, whereas others are more insulated from climate hazards. They’re farther inland and colder, so rising temperatures don’t impose the same harm as they do in warm and coastal places. Regions differ in their vulnerability to global warming, which is a function of exposure to climatic perils and sensitivity to these shocks.⁵ We call this variation in vulnerability climate change’s economic geography.

We argue that climate change is creating new *fault lines* in domestic and world politics defined by who is harmed most by higher temperatures. We

3. Aklin and Urpelainen 2013; Harrison and Sundstrom 2007; Meckling 2011; Mildenberger 2020; Stokes 2020. For work integrating climate vulnerability into distributive politics, see Colgan et al. (2021). Chapter 2 demonstrates how geography structures asset vulnerability.

4. Green 2025; Hale 2024.

5. IPCC 2023.

contend that this vulnerability increasingly shapes the policy preferences of people, businesses, and governments about how to respond to climate change. As these actors experience costly climate shocks, they will become more likely to see climate change as proximate and harmful, shifting their incentives to act. This book shows that accurately accounting for global warming's unequal damages leads to new, and sometimes counterintuitive, predictions that challenge dominant assumptions in climate politics.

The Political Economy of Climate Change

We aim to develop a parsimonious theory of when people, businesses, and governments act to avoid harm from climate change. These actors each contribute to carbon pollution, yet their behavior is also interdependent: public preferences shape politicians' incentives to act; government policy and regulation shape the risks and opportunities businesses face; and firms' investments and lobbying influence political decision-making and public expectations. We advance a unified theory that integrates political economy and political behavior models to account for these dynamics across actors.

Political actors can pursue three types of strategies to reduce future climate damage: mitigation, adaptation, and geoengineering. Each involves distinct trade-offs, but all share the goal of limiting societal harm from global warming. We outline the logic of each for theoretical completeness, although our empirical tests focus primarily on mitigation, given its centrality to avoiding extreme climate damage and the relative tractability of measuring it.

Mitigation involves a massive transition from fossil fuel energy sources to low-carbon technologies. Making this transition by one estimate demands \$275 trillion in investment between 2021 and 2050, or 7.5 percent of annual global GDP.⁶ Markets alone won't deliver this shift because economic transactions don't fully internalize pollution's costs and innovation's benefits. Governments must intervene to correct these failures; they can tax carbon, subsidize low-carbon power such as solar, wind, or nuclear, and set regulations to speed the shift from fossil fuels to cleaner energy. These policies often provoke political resistance from consumers facing higher electricity prices, coal miners confronting job threats, and oil companies seeing profits decline.⁷ Even willing governments may lack fiscal or bureaucratic capacity to mitigate, constrained by limited technology access and narrow

6. McKinsey and Company 2022.

7. Colantone et al. 2024; Egli et al. 2022; Gazmararian 2025a; Gazmararian and Krashinsky 2024; Heddesheimer et al. 2025; Stokes 2016; Stutzmann 2025; Voeten 2025.

tax bases.⁸ While cleaner energy brings near-term gains like breathable air and secure energy supplies, the climate benefits arrive later and are shared globally.

Adaptation refers actions by individuals, businesses, and governments to cope with climate change's adverse impacts. It includes measures such as installing air-conditioning, elevating coastal structures, hardening wildfire-prone areas, and migrating to less vulnerable places. These efforts are costly. Indonesia, for example, plans to spend over \$80 billion on a sea wall along Java's northern coast. Unlike mitigation, which yields both local and global benefits, adaptation's gains are almost entirely local. Yet adaptation is no cure-all. Its effectiveness is constrained, especially if global emissions remain high and climate impacts intensify; social and physical limits mean it cannot fully substitute for mitigation.⁹ Effective climate strategy therefore requires both mitigation to reduce future risks and adaptation to manage damages that cannot be avoided.

Geoengineering is a last-resort strategy to address climate change through deliberate, large-scale interventions in the Earth's climate system.¹⁰ Early weather modification, such as US cloud seeding during the Vietnam War and China's efforts to prevent rain at the 2008 Olympics, foreshadowed more ambitious ideas like injecting reflective aerosols into the stratosphere to cool the planet. This "solar radiation management" is one of the main methods to cool the planet by reflecting sunlight back into space. Once dismissed as science fiction, geoengineering now attracts serious study in both public and private sectors, prompting debates about its governance.¹¹ Yet, unlike mitigation or adaptation, it remains fraught with scientific uncertainty and geopolitical risk, since interventions in one region could disrupt weather elsewhere. Although such projects remain too limited for systematic empirical analysis, we examine public willingness to fund them in chapter 7. As climate mitigation stalls, vulnerable actors may feel increasing pressure to pursue geoengineering.

In our theory, political actors weigh the costs and benefits of adopting strategies to limit climate damage. If they do not expect significant harm from inaction, mitigation, adaptation, and geoengineering become far less attractive. Other motives, such as reducing local air pollution or building infrastructure, can spur some decarbonization or adaptation even when they are unrelated to climate change, but these near-term gains are typically

8. Gazmararian and Tingley 2026.

9. Burke et al. 2024; Callahan 2025; IPCC 2023.

10. Keith 2000.

11. Horton and Koremenos 2020.

modest compared with future climate damages. Recent estimates suggest that unchecked climate change could reduce global GDP by several percent per year by the end of the century, with losses unevenly distributed across regions.¹² We argue that climate vulnerability can be a powerful incentive to pursue these strategies, but only if actors recognize and value the benefits of avoided harm.

Our theory has two parts to understand how political actors calculate the costs and benefits of responding to climate change. The first component is a macroeconomic model of climate change's economic geography. The macro model describes how much climate change affects different places and, thus, how much actors in each location stand to gain from avoiding climate damage, all else equal.

The second component is a micro-founded model of how people, groups, and organizations update their beliefs from experience. The micro model explains how political actors begin to prioritize climate change as they feel the effects of global warming. Integrating this behavioral model relaxes the common assumption in political economy that actors are fully informed about how issues affect their self-interest.¹³ It provides psychological micro-foundations for learning by recognizing that people process and weight information differently depending on its source and character. Learning is essential for explaining the adoption of new strategies as actors update their beliefs about climate risks over time.

The goal of theory is explanation, not mere description. Our macro and micro models therefore make simplifying assumptions, abstracting away from factors some might deem important, such as norms and ideas. Some assumptions, like how the costs and benefits of global warming are distributed, also depend on projections and unavoidable simplifications. These choices are open to criticism, but the key test is not whether any single premise is true. Assumptions should be judged by their explanatory power. Researchers could build more elaborate models to refine our hypotheses, but unless changing an assumption yields contradictory predictions with stronger empirical support, such exercises add little beyond complexity. The strength of a parsimonious theory lies in its clarity. Even if parts of our framework prove wrong, we aim for it to serve as a generative paradigm for studying climate politics, one that sharpens debate and guides inquiry as scholars expand or challenge our account of geography-induced preferences and learning from experience.

12. Cruz and Rossi-Hansberg 2024.

13. Lake 2009.

Climate Change's Economic Geography

Climate change's economic geography is the first component of our theory. It describes how badly each region will be affected by global warming. This degree of damage then determines how much it is in the self-interest of a person, business, or government to support strategies to avoid future climate damage such as mitigation. All else equal, the more climate-vulnerable a location is, the more the political actors there would benefit from limiting warming.

Researchers now have a deeper understanding of how global warming affects the economy, thanks to advances in geosciences and economics. Improved data, methods, and computing power have enabled scientists to assess how temperature changes shape local economies.¹⁴ Chapter 2 details how researchers make these projections using integrated assessment models. These models are integrated because they combine knowledge of how human activities affect emissions, how emissions affect temperature, and how climate change influences the economy. The earliest models, though path-breaking, were crude. The latest models have made progress and can capture dynamics, such as how humans respond to higher temperatures through migration, trade, and innovation. While aspects of the future are inherently uncertain, these projections provide scenarios grounded in theory and evidence, offering a principled way to reason about how global warming affects politics.

To map global warming's economic geography, we leverage a model developed by economists José-Luis Cruz and Esteban Rossi-Hansberg. What's novel about their approach is that it considers global warming's economic effects across space. They divide the entire world into 17,048 grids, and they assess the effects of long-run temperature changes in each location.

This local scale matters because global warming is fundamentally a spatial phenomenon. An increase in temperature in a warm, tropical area will have a distinct effect on the economy compared to the same change in a temperate, cool region. Past models often treated the relationship between temperature and the economy as identical worldwide, which understated the magnitude of damage in the most vulnerable places.

This spatial variation leads us to focus on geography as the primary force shaping political actors' preferences over responses to global warming. Our approach is relatively unusual in international political economy, where many theories explain interests through other lenses. Scholars have derived preferences by looking at whether actors own land, supply labor, or hold

14. Dell et al. 2014; Desmet and Rossi-Hansberg 2024; Hsiang 2016.

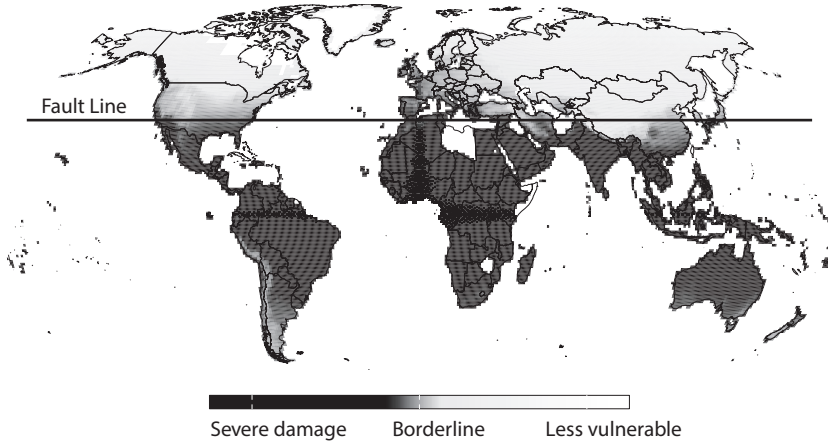


FIGURE 1.1. Uneven economic effects of global warming projected for 2050.

Notes: Shading shows projected percent change in gross domestic product (GDP) relative to a no-climate-change baseline. Darker gray indicates more severe damages, while lighter gray indicates potential net gains. Projections range from a 3.6% GDP decline to a 2.3% increase across grid cells for simulation year 2050. Areas in white (e.g., Afghanistan, Libya) lack projections because underlying data are unavailable.

Source: Cruz and Rossi-Hansberg (2024).

capital, or by emphasizing the competitiveness of firms in global markets.¹⁵ While vulnerability can also differ within a place depending on industry or occupation, we argue that location itself is the dominant source of exposure. Taking those additional differences into account might add nuance, but it would not alter our central claims.

The macroeconomic model shows that climate change's economic geography is profoundly unequal. Figure 1.1 depicts global warming's projected effects on gross domestic product in each grid cell by the mid-twenty-first century. Dark gray indicates intense damages, meaning a location will be strictly worse off because of climate change, whereas the lightest gray indicates places that face more limited damages and potential net benefits. In between these two zones are borderline areas.

Almost the entire Southern Hemisphere and tropical areas above the equator are projected to suffer intense losses, as indicated by the dark gray shading. These are the damage zones.

15. Recent advances have incorporated geography into trade models (Flaherty 2023; Scheve and Serlin 2025).

Locations, however, start to become less vulnerable above around 35 degrees latitude north, a line cutting through China and the United States. We call these places borderline regions.

Approximately above this 35th parallel, damage is projected to be limited compared to southern regions. In the northernmost temperate areas, higher temperatures could bring net economic benefits to Canada, Russia, and the Scandinavian nations. Chapter 2 explains why net benefits could occur in currently cool places, as global warming spurs a massive reallocation of people, trade, and investment away from the damage zones to relatively safer regions. This doesn't mean global warming is painless there nor without risks, but it serves to underscore how climate change redistributes economic activity. Global warming has unequal effects depending on geography.

The 35th parallel is our climate fault line. It is a fuzzy boundary that marks the broad divide between regions projected to suffer significant damage from rising temperatures and those likely to face more limited harm and, in some cases, potential net benefits. The line is only an approximation; parts of southern Europe above it will still experience losses, while parts of China below it may fare relatively better. In our analyses we therefore rely on more precise damage indicators, yet the fault line remains a useful conceptual guide. This climate fault line cuts across old divides between Global North and South, East and West, democracies and autocracies.

The climate fault line implies a new distributive politics defined by vulnerability to global warming. Climate change's economic effects are substantial. People, businesses, and governments in damage zones face considerable perils such as the loss of life, property damage, and stunted economic growth. It's in the self-interest of political actors below the fault line, all else equal, to support strategies to reduce climate damage. In contrast, people, businesses, and governments above the fault line have less to gain from policies such as those to cut greenhouse gas emissions and could even stand to lose, given the high costs of mitigation.

Learning About Climate Change from Experience

Geography isn't destiny. Climate vulnerability isn't likely to influence the preferences and behavior of political actors until they believe that global warming is a proximate threat. Beliefs matter.

The micro component of our theory explains how people and organizations update their beliefs about when global warming happens and how it affects them. Experience is the best teacher. Scientific information warning people about climate risks often goes unheeded, and this is not surprising, given how humans are wired to think about risks. Abstract, analytical

information is more challenging for people to process than vivid, visceral information from experience.¹⁶

As people feel global warming's effects through climate shocks, we expect these experiences to catalyze belief change. We define climate shocks as extreme weather and disasters whose frequency or intensity is amplified by global warming. In vulnerable locations, these events such as wildfires are particularly severe, sudden, and devastating. These climatic disturbances make global warming feel more proximate and clarify for people and businesses how they will be affected in terms of where they live and operate. As its physical impacts mount, climate change will weigh more heavily on present-day decisions. Yet how political actors respond depends on their vulnerability. The greater their expected future damage, the stronger their incentive to bear the costs of adaptation and mitigation.

The macroeconomic model implies that climate shocks don't have uniform effects on beliefs. For people and businesses in vulnerable places, extreme weather is harmful, destroying homes and factories. The same heat anomaly in a less vulnerable location isn't as destructive. Residents of currently cool places may even welcome milder winters.¹⁷ We hypothesize that belief updating from differential experiences is a cause of diverging views about climate change's urgency and mitigation policy support across the climate fault line.

Explaining the Florida Paradox

Our belief-updating model helps explain the Florida Paradox. At first glance, Florida is an anomaly. It's muggy and in the firing line of hurricanes. Despite these risks, there is a common impression that political leaders there have resisted climate policy. This paradox applies not just to Florida but also to other democratic and vulnerable places such as Australia.

Inaction is logical in the short run, especially in places where other immediate concerns outweigh the costs of adaptation or mitigation. Why would a Floridian in 1990 care about the ocean being a foot higher in 2040? The distant future impacts of global warming initially provide room for people, even those who believe in climate science, to not support costly policies that address climate risks.

In the long run, people and businesses will pay a price if they maintain incorrect climate beliefs. Those in vulnerable places will find it prohibitively expensive to insure their homes against flood and fire risks. Floridians have already begun to realize the cost of living in damage zones as insurers raise

16. Slovic et al. 2002; Weber 2006.

17. Egan and Mullin 2016.

rates and, in the extreme, flee these markets. Chapter 2 discusses mounting evidence that after people suffer climate shocks, they react with more concern and support for mitigation policy, including Florida Republicans. The available evidence shows that people follow their self-interest when issues have clear material stakes. Through experience with costly climate shocks, beliefs are likely to converge toward climate reality.

How Political Actors Respond to Global Warming

Our book examines individuals, firms, and governments. Each plays an important but often distinct role in addressing climate change. We explore the relationship between public attitudes and governments to some extent, but we do not examine all the potential interactions among these actors, which likely have their own dynamics.

Our theory's macro- and micro-foundations interact to generate hypotheses about how political actors respond to global warming. Experience with damages wrought by climate change causes people, businesses, and governments in vulnerable locations to view the problem as more proximate and costly. These updated beliefs lead vulnerable political actors to become more supportive of strategies to reduce climate change damages, including mitigation to stop climate change and adaptation to live with its effects.

A natural question is whether political actors can try to escape their fate by moving above the fault line. For people and businesses, this is possible but costly. The economic models we use assume some of this movement and shifting investment, and we explore exit options when we analyze companies in chapter 4. But for governments, relocating a sovereign country is usually not possible, although some island nations are pondering this. Global warming's economic geography is not destiny, as our theory highlights the role of behavioral and institutional forces, but it does impose powerful material constraints on political actors.

INDIVIDUALS

We first study people. The actions of individuals and their households affect not only carbon emissions but also politicians and policy through their political activities, such as voting and protesting.

We hypothesize that individuals in damage zones are more likely to support mitigation after climate shocks, whereas residents in resilient locations oppose it. In countries split by the fault line, such as the United States, climate change is more polarizing as voters have diverging incentives to pay for mitigation. Contrary to the claim that people in developing countries are

disregarding climate change to prioritize economic growth, we anticipate that people in these countries are increasingly concerned about climate change because it is a severe material threat to development.

BUSINESSES

We next examine businesses. Firms affect carbon emissions directly through their operations, as well as through political strategies to influence public policy such as lobbying.

We hypothesize that businesses in damage zones, compared to those in less vulnerable places, will be more likely to react to climate shocks with economic and political strategies to reduce climate damage. Economic strategies include relocating out of harm's way or installing air-conditioning in factories. Political strategies include lobbying the government for mitigation and protection from climate shocks. Although firms face collective action barriers to lobbying, the geographic concentration of climate vulnerability and the potential private benefits from influencing policy content could facilitate political mobilization.

New coalitions of vulnerable firms could form as climate change's effects increasingly manifest. The interests of these vulnerable businesses will conflict with those of carbon-intensive companies and those in more resilient locations. Lobbying over mitigation policies may no longer be just a conflict between the fossil fuel industrial complex and green companies but also between companies harmed by climate change and those less affected.

GOVERNMENTS

Finally, we examine governments at different levels. It is politicians who determine mitigation and adaptation policy after being influenced by the public, firms, and other countries. And it is domestic political processes that produce national policies upon which international cooperation ultimately rests.

We expect that countries and cities below the fault line respond to climate shocks with mitigation policies, unlike those above the 35th parallel, which will be less likely to react.¹⁸ This hypothesis challenges common ideas about which governments are climate policy leaders. Our theory implies that many developing countries, normally thought of as climate laggards, will be more likely to respond to global warming with both adaptation and mitigation policies if they are in damage zones.

18. Chapter 6 explains why we focus on policies rather than GHG emissions for empirical reasons since the latter are a product of many forces outside the direct control of governments.

If mitigation happens above the fault line, it will occur less out of fear of climate damage than in spite of it. Actions to reduce carbon pollution have benefits unrelated to avoiding future warming. Governments may pursue renewable energy sources to reduce air pollution, lead an emerging industry, or bolster energy independence. In our increasingly conflict-ridden world, it pays for governments not to depend on any single source of energy and certainly not on any single provider of power. Europe's past dependence on Russia for oil and gas and its rising use of American gas are risky and costly bets in a turbulent world. The incentives our theory emphasizes are related to damage from climate change. Holding other motivations constant, we expect that governments that are more climate-vulnerable will have greater incentives for mitigation policy.

INSTITUTIONS

Institutions explain how changing public and business preferences aggregate to influence the policy output of governments. The societal groups that can set and advance the agenda often have their preferences reflected in public policy. Politicians in democratic countries are more responsive to public and business demands because of the threat of losing elections. Voters in democracies, because of press freedom, also have more information to understand how global warming is causing extreme weather. In contrast, climate shocks in vulnerable places with weak institutions could undermine the government's capacity to pass mitigation policies despite a strong interest in slowing temperature increases.

New Global and Domestic Political Cleavages

Our theory does not depict a world of inaction. Rather, it explains how unilateral climate policies can arise despite the collective action problem: as actors reassess the benefits of avoiding climate damage, some may choose to act on their own. Yet, even if the collective action problem disappeared, the unequal distribution of climate impacts would still make cooperation difficult. Because global warming remains a global public good, individual efforts cannot solve the problem; even as political actors grow more willing to cooperate, they will not fully internalize the worldwide benefits of mitigation. The central challenge, then, is persuading or pressuring governments above the fault line to act. This struggle over the planet's thermostat is how the climate fault line shapes both domestic and world politics.

The staggering scale of warming's unequal economic effects suggests that climate change could create new political cleavages. Global warming

represents a profound disruption, akin to earlier historical transformations that reshaped political coalitions. The creation of nation-states, the Industrial Revolution, and globalization all carved new lines of conflict—between church and state, urban and rural interests, workers and capitalists.¹⁹ Climate change is distinctly double-edged. The problem itself produces uneven physical and economic harm, and the policies required to limit greenhouse gas emissions create their own winners and losers. Regardless of whether humanity ultimately succeeds in limiting warming, the global economy will be transformed. Like the Industrial Revolution, climate change holds the potential to reshape political coalitions within and across countries.

Within countries, political conflict will be sharpest in regions that sit along the climate fault line. In the United States, for example, coastal and southern areas face severe future damage, while many inland and northern regions are comparatively less vulnerable. Today's coalitions do not fully map onto climate risk, partly because short-term interests, such as the Gulf Coast's dependence on fossil fuels, still dominate. Yet, as climate shocks accumulate, parties may update their platforms or voters may shift allegiances. The distributive stakes are high for both adaptation and mitigation. Federal adaptation policy would in effect transfer resources from safer areas to more vulnerable ones, while mitigation would impose costs on all while delivering unevenly shared benefits. Few voters currently cast their ballots on the basis of climate change, but as warming brings tangible economic losses to vulnerable regions, it could become a salient electoral issue there. Domestic politics could become more contentious in countries fractured by the climate fault line.

The climate fault line cuts across traditional cleavages in international relations: autocracies versus democracies, East versus West, and Global South versus North. China, Russia, and the United States, for example, have conflicting security interests but are more similar in how global warming affects them. Australia is more climate-vulnerable than its wealth implies, which aligns the country more with the Global South than the North. If governments across the fault line cannot agree on how to stop climate change, this disagreement could spill over to affect cooperation on other issues such as security, human rights, and trade. Political actors may attempt to smooth over these tensions by negotiating a settlement, as chapter 7 discusses, but distributive costs and enforcement barriers will complicate bargaining.

Political science research on climate change has long emphasized the role of international institutions and strategies to overcome collective-action problems. Our theory suggests that support for such cooperation is most

19. Lipset and Rokkan 1967; Polanyi 1944; Rogowski 1987.

likely to arise from countries below the climate fault line. Consider climate clubs. In these arrangements, participating states commit to reducing emissions, sharing clean technologies, and sanctioning laggards. Clubs are usually imagined as being led by wealthy nations such as the United States and the European Union.²⁰ Our argument, however, implies that climate-vulnerable states below the 35th parallel may be more natural leaders in creating more durable climate clubs—and that their motivations extend beyond pure protectionism.

The extent to which global warming creates new political cleavages will depend on the distributive effects of higher temperatures. Consider two extremes of a continuum. On one end, global warming may create winners and losers in an absolute sense. As the world warms, some countries gain and others lose. It is a zero-sum game between the two camps. On the other end, climate change becomes an existential catastrophe. Everyone loses badly. In between is a world where everyone loses, but there are relative gains and losses; some countries and groups lose much more than others. The location on the continuum determines whether political actors view global warming as a zero-sum game or a coordination problem, or in between as a bargaining game. Our model focuses more on the world in between the two extremes. Chapter 8 explores how these scenarios affect our predictions. Current economic models project that damages below the fault line are substantially greater than those above the 35th parallel, suggesting that intense political cleavages could form.

Our argument also reframes how we understand mitigation in northern countries: it is primarily the consequence of self-interest rather than concern about future climate damage. Many view West Europeans as climate policy leaders, for instance. Our theory implies that such climate policies above the fault line are driven more by immediate economic benefits, such as clean technology leadership, protectionism, and energy security needs, rather than concerns about climate vulnerability. Many EU initiatives are designed to bolster European industry, including recent carbon tariffs that tax the emissions embedded in imports to the benefit of domestic European manufacturers. Other measures aim to reduce dependence on fossil fuels, particularly when supplies come from hostile or unreliable partners such as Russia.

Governments above the fault line that pursued climate policy have also faced significant political risks. People and firms have begun to realize that the high costs of mitigation may not be worth it for areas not facing the gravest climate damages, although there are reasons to act other than vulnerability. Governments in Germany, France, and the Netherlands—and

20. Barrett 2003; Nordhaus 2015; Victor 2011.

the EU generally—have rolled back or softened policies in response to public backlash. French farmers blocked roads with their tractors in response to EU environmental regulations, and frustrated motorists took to the streets in the “yellow vests” movement against higher fuel prices. Populist parties across Europe have incorporated opposition to mitigation into their platforms. Climate policy in Europe is more fragile than it appears since the incentives are more complex.

These predictions worry us, but they are the logical conclusion of how people, businesses, and politicians behave if they follow their material interests. We don’t condone or condemn this behavior but seek to understand it. Developing a deeper understanding of climate politics requires a clear model of the incentives, information, and institutions that structure political interactions. We hope for global cooperation on climate change solutions but don’t expect this. Considerations of ethics and justice are essential and could mitigate the political cleavages that we foresee, but the underlying problem is a conflict of interest about the Earth’s temperature.

Evidence, Findings, and Implications

We argue and find that climate change is already affecting politics. As global temperatures have risen, people worldwide have witnessed extreme weather that used to be unthinkable. While today’s climate disturbances are not as severe as they will be in the future, we can still test our hypotheses by examining how people, businesses, and governments have responded thus far. If their behavior is consistent with the theory, that would increase confidence in our predictions that climate change is creating political cleavages that could deepen in the future.

We bring together models from economics, geosciences, and political science to test how climate change affects politics. Most of our analyses focus on differences in how political actors respond to climate shocks depending on their vulnerability. We emphasize these differential responses rather than absolute levels of climate action for two main reasons. First, shocks offer clearer leverage for identifying cause and effect because absolute levels of climate policy reflect many influences. Second, shocks align directly with our theory, which centers on how actors learn from experience. Our analyses necessarily capture how actors respond to a given shock while holding many other things constant, but because they are derived from a theory of the underlying incentives and strategic interactions, they provide meaningful insight into how larger political patterns are likely to unfold.

Chapter 3 explores how the public’s climate attitudes and policy preferences respond to climate shocks. We draw on three unique data sources. First,

we leverage surveys of 148,712 people across 137 countries, unlike past research examining individual countries. This granular analysis allows us to capture how people have experienced different climate shocks and vulnerability based on their location. Second, we analyze a panel of 9,500 Americans interviewed three times over five years to see how their support for mitigation policy changes before and after climate shocks. Third, we fielded original surveys of the national public in twenty-five countries above and below the fault line employing questions designed to credibly measure mitigation and adaptation policy support.

Our analysis of the public finds that only people in damage zones respond to climate shocks by viewing global warming as an immediate risk. This concern about global warming translates into support for mitigation policies among people in vulnerable locations that have suffered climate shocks. Finally, residents of countries below the fault line are more willing to pay for mitigation and adaptation, whereas publics to the north are more likely to oppose political candidates that spend more on adaptation or mitigation.

Chapter 4 examines how businesses react to climate change. We use data on the 2.6 million establishments of nearly 7,000 companies to create a firm-level climate vulnerability measure spanning more than twenty years. We find that after vulnerable firms suffer extreme heat events, they lobby more on climate policy. There is no evidence of economic adaptation through exit, such as moving business establishments like factories out of harm's way. Less vulnerable companies that could benefit from higher temperatures do not lobby more after climate shocks. These results show that vulnerability from geographic location, rather than assets, industry, or sector, increasingly shapes how companies are responding to climate change.

The findings in chapters 3 and 4 indicate that political leaders in vulnerable locations could anticipate demands for adaptation and mitigation after climate shocks. The preferences of these actors are the precursors to policy, as they signal willingness to pay climate policy costs and also directly influence the policymaking process. Our next analyses focus on mitigation policies, which remain challenging to measure but are relatively easier to track systematically than adaptation, where it is often difficult to define and classify what counts as adaptation.

Chapter 5 examines the mitigation activities of nearly 1.5 million local governments, mainly cities, which researchers often neglect despite accounting for more than two-thirds of global emissions. We find that local governments are diverging in how they react to climate shocks. Vulnerable cities respond to extreme heat by disclosing emissions reduction actions to a transnational organization. This responsiveness appears only in democratic countries, where institutions provide authority and control to subnational governments. Less

vulnerable cities and those in autocratic countries do not react to heat waves with mitigation policy and could become less likely to act.

Chapter 6 turns to national governments. We examine three decades of climate policymaking across 155 countries. We find that governments in more vulnerable locations are more likely to respond to climate-related disasters by passing mitigation policies than those facing uncertain damages or possible net gains. Mitigation policy is most responsive to climate shocks in democracies, where leaders anticipate accountability and information flows more freely. This result lends support to our argument that leaders are responding to the changing policy preferences of people and businesses.

We also leverage experiments embedded in our surveys of twenty-five countries to test assumptions behind why politicians in damage zones respond to climate shocks with mitigation. We use these experiments to study counterfactual public opinion that would be hard to observe otherwise. One analysis examines whether voters below the climate fault line would hold their political leaders accountable after a climate shock, depending on whether they had mitigated emissions. The evidence suggests that politicians are prudent in responding to climate-related disasters with mitigation policies; the public is less likely to vote for political candidates who fail to mitigate—even when these policies increase household energy costs.

Chapter 7 explores how global warming affects international relations. It begins with the observation that the fault line reorients historical allies and adversaries. China and the United States, for example, are on the same side of the climate fault line, making them potential allies in resisting emissions mitigation. The United States and Russia are also more aligned on climate change. Below the fault line, a new bloc of climate-vulnerable countries may be coalescing, and it includes relatively more wealthy actors like Australia and Singapore.

The chapter then analyzes seven strategies that climate-vulnerable countries could employ to influence climate change cooperation by governments above the 35th parallel. These strategies include coercion, persuasion, side payments, strategic interdependence, supply-side economics, international institutions—and if all else fails, geoengineering. We explore the logic and trade-offs of each approach, along with the conditions for bargains to emerge across the climate divide.

We then use our surveys to explore how these foreign policy strategies could unfold. Survey takers below the fault line are given scenarios varying whether northern nations have mitigated to see what policy responses southern publics would support. Simultaneously, respondents above the fault line are asked how they would react to different foreign policies initiated by climate-vulnerable nations. We find that the public in vulnerable countries

would support their leaders using economic coercion and compensation to convince less vulnerable governments to mitigate. Yet, these strategies have little effect on the public's willingness to cut emissions in countries above the fault line. These results suggest that a stand-off between countries on different sides of the climate fault line will ensue as Earth bakes.

Our findings imply that global warming's physical effects are already structuring politics. As the world increasingly feels climate change's effects, the politics surrounding the issue has begun to transform—and could evolve even more drastically as the fault line deepens. This book explains what our future might hold and why. We hope our predictions are wrong, but they are the resulting conclusions when accounting for global warming's economic geography.

(continued...)

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