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UNIVERSITY OF CALIFORNIA SAN DIEGO

National Carbon Prices

A Dissertation submitted in partial satisfaction of the requirements
for the degree Doctor of Philosophy

in

Sociology

by

Daniel Driscoll

Committee in charge:

Professor Jeffrey Haydu, Co-Chair
Professor Lane Kenworthy, Co-Chair
Professor Harvey Goldman
Professor Mark Jacobsen
Professor Isaac Martin
Professor Monica Prasad

2022

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University of California San Diego

2022

DEDICATION

To my family

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Chapter 1 is a reprint of the material as it appears in *Socius*, 2021, Driscoll, Daniel. The dissertation author was the primary investigator and author of this paper.

One section of Chapter 2 has been expanded and submitted for publication of the material as it may appear in *New Political Economy*, 2022, Driscoll, Daniel. The dissertation author was the primary researcher and author of this paper.

Chapter 4 is a reprint of the material as it appears in *Social Problems*, 2022, Driscoll, Daniel. The dissertation author was the primary investigator and author of this paper.

VITA

- 2014 Bachelor of Arts in Environmental Studies, University of Redlands
- 2017 Master of Arts in Sociology, University of California San Diego
- 2022 Doctor of Philosophy in Sociology, University of California San Diego

ABSTRACT OF THE DISSERTATION

National Carbon Prices

by

Daniel Driscoll

Doctor of Philosophy in Sociology

University of California San Diego, 2022

Professor Jeffrey Haydu, Co-Chair
Professor Lane Kenworthy, Co-Chair

How and why do countries respond differently to the dilemma of pursuing global climate reform through national legislation? This dissertation project explores the socio-political foundations of national carbon price policies, which resonate with global ideals and prioritize a global challenge over national economic benefits. An investigation into carbon prices in France, the United States, and Nordic countries reveals key sites of trade-offs. In

France, this project traces the formation of their carbon tax, comparatively neoliberal by design, and the backlash from the populist Yellow Vest movement. In the United States, this project investigates the demise of a proposed carbon price, revealing how economic growth models complicate effective climate reform and empower business-elites to block regulatory reforms. In Nordic countries, this project compares the socio-politics of their relatively strong policies. All in all, this project explores the conditions under which such a law can be adopted, but it also emphasizes that enactment is not the end of the story. Rather, policies, themselves, reshape continuing political controversies over climate change. Carbon pricing thus becomes a case study in the trade-offs between global norms and national interests, highlighting the importance of national growth models, business-elite power, neoliberalism, and populist movements.

INTRODUCTION

The Fijian village of Vunidogoloa was once a natural paradise. Sitting on the idyllic Natewa Bay, it is surrounded by waterfalls, gardens, coconut trees, rich soil, and clear warm water. These natural wonders support a thriving tourism industry, profitable sugarcane agriculture, and most importantly, an ancestral home for Fijians. Today, due to global climate change, Vunidogoloa is an abandoned ghost town. Over time, due to rising sea levels, high tides drowned the village and salt deposits ruined the once fertile soil. For a settlement of roughly one hundred people, the country of Fiji spent half a million dollars to build a new town a mile up the hill (Meakins 2012; Worland 2019). According to the Fijian government, which oversees an archipelago of over three hundred islands, climate change will cause countless relocations like Vunidogoloa's in the future (Republic of Fiji 2014). Fiji is a global climate leader. The country spearheaded a coalition of island nations to push for the Paris Agreement and was the first country in the world to ratify it.

Detroit, Michigan was once an automobile manufacturing paradise. At the center of the vehicle production and home to General Motors, Ford, and Chrysler, the city boosted the American post-WWII economy significantly. The 1950 Treaty of Detroit united business and labor, offering two decades of prosperity to both sides (Oatley and Blyth 2021). Even with the city's recent production decline, linked to automation and global competition (Padnani 2013), Detroit's economy remains primarily tied to manufacturing cars. Beyond Detroit, the American economy at large was built on prosperity powered by fossil fuels. This explains why the United States has emitted more cumulative carbon emissions than any country on earth and its annual per capita emissions are nearly triple those of most countries (Hickel 2020; World Resources

Institute 2018). The United States is also the only country who, after signing the Paris Agreement, abandoned it.

All it takes is one paragraph on a Fijian ghost town and another on an American manufacturing city to begin understanding the constraints and drivers underlying national climate action. For Fiji, fighting climate change saves key growth sectors of tourism and agriculture. More importantly, decarbonization saves their history and identity from sinking into the South Pacific. For the United States, fighting climate change means obliterating key growth sectors that have historically contributed to its status as global hegemon. Decarbonization, in many ways, threatens American history and identity. For the other 193 countries in the world, fighting climate change falls somewhere on a ‘Fiji to USA’ spectrum.

How and why do countries respond differently to the dilemma of pursuing global climate reform through national legislation? The Paris Agreement allowed countries to set their own commitments to lower carbon emissions. Failing to comply with the agreement, however, has no consequence. As a result, there is great variation between national efforts. By comparing national carbon price adoption, considered by many to be the most prominent national climate solution, this book offers a roadmap to understanding what drives the variation underlying national climate action.

CO₂ Emissions: an economic problem

Unlocking energy from fossil fuels transformed human society. Coal, oil, and gas powered the industrial revolution through the post-WWII boom. All the while, poverty decreased and living standards increased globally at an astonishing speed never seen before in human history. The great global abundance that fossil fuels offered, however, came at a cost that we

have been aware of for decades; the burning of fossil fuels also emits carbon dioxide, a greenhouse gas, into the atmosphere. We are now, to put it bluntly, effectively cooking the planet. Figure 0.1 displays the relationship between carbon emissions and economic growth in the United States, highlighting a strong correlation between emissions and wealth.

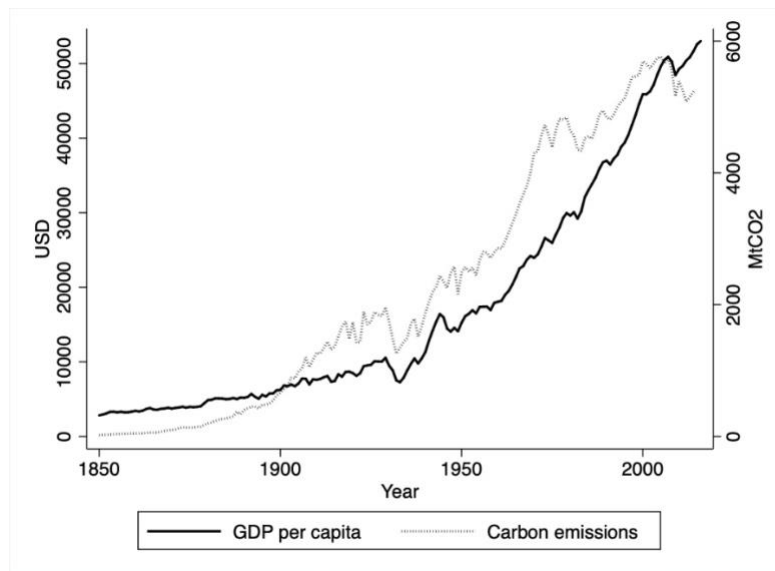


Figure 0.1 Growth and Emissions in the United States. Note: GDP per capita data is from the Maddison Project Database. Emissions data (in metric tons of CO₂) is from the World Resources Institute.

The problem is that our current socio-economic system still relies upon fossil fuels for prosperity as it did two centuries ago. Emissions are not decreasing with any significance, despite clear and present threats to human and planetary welfare. As fossil fuels continue to create wealth and prosperity, it can be difficult to imagine an alternative.

Governments are failing. They prioritize short-term growth and prosperity over significant shifts that would curb emissions. Of course, they cannot be held fully responsible. Their citizens always prioritize the economy (Scruggs and Benegal 2012) and the climate movement is currently too weak to spark a revolution necessary for transforming society (Brulle and Jenkins 2008; McAdam 2017). The prosperity offered from fossil fuels, on the other hand, is

substantial and readily accessible thanks to our history of developing it. Thus, policymakers continue to enact legislation that maintains the current economic system, which, make no mistake, while harmful to the planet and deeply flawed, remains a remarkable human achievement.

While these realities do little to inspire hope, one interesting, and perhaps pragmatic, fact remains. There is variation in how badly we've done. Some countries have implemented policies that decrease carbon emissions and others have not. Understanding what drives this variation between countries is the inspiration behind this work. Scholars have achieved great understandings of what drives variation between, for example, welfare states (Esping-Andersen 1990; Huber and Stephens 2001; Skocpol 1995) or democracies (Moore 1966; Rueschemeyer, Huber, and Stephens 1992) or economic policy (Baccaro and Pontusson 2016; Hall 1986; Hall and Soskice 2001). The same now must occur for the sake of the climate. What drives the development of and variation between effective climate policies and reforms? In this book, I examine the development of and variation between carbon prices, one of the most prominent climate policy solutions.

How do carbon prices work?

Carbon prices typically manifest in the form of either carbon taxes or emission trading systems. Both are designed to incentivize those who rely on fossil fuels, such as utility companies, manufacturers, and individuals, to utilize low-carbon or zero-carbon options and thereby decrease their emissions. Their design and intent are straightforward. When utility companies face decreased profits due to an over reliance on fossil fuels, they phase out coal. When consumers see gasoline prices rise, they tend to buy more fuel-efficient cars and drive less.

While both policies have an impact, carbon taxes and emission trading systems (ETS) diverge in several noteworthy ways. A carbon tax is a ‘pigouvian tax’ or tax which seeks to rectify a market failure or problematic market outcome by including that cost in market pricing. As markets do not naturally account for carbon emissions and climate change, economists and scientists increasingly advocate for carbon tax legislation to rectify this market failure. Carbon taxes set a price that taxes fossil fuels and emissions relative to the amount of carbon emitted per unit of energy that is produced. Because tax structures already exist in national economies, carbon taxes are relatively easy to implement, track, and enforce.

Emission trading systems are similar to carbon taxes, but diverge on the implementation, monitoring required, and sometimes political viability. To implement the policy, governments set a cap on carbon emissions and subsequently sell permits to carbon polluters at a set price. It is mandatory that polluters purchase the correct amount of permits to cover all of their emissions. Any remaining permits that emitters save with carbon efficiency improvements can be sold to polluters who have increased emissions. While this system requires more monitoring and enforcement, it is sometimes more politically viable because it allows businesses and organizations more flexibility, voters dislike the word ‘tax,’ and often the costs are more hidden from consumers (Andrew, Kaidonis, and Andrew 2010; Cooper et al. 2017; Harrison 2010; Liu 2017). Differences aside, both policies set a price on carbon emissions to create a more stable world climate—at a cost.

Why study carbon prices as a climate solution?

While carbon prices are certainly not championed by all, there are many points that make them worth studying and supporting. First, they effectively decrease CO₂ emissions both in

theory and practice. Second, by making emissions expensive, they reveal the societal actors and systems that slow or impede climate reform in general. Third, in some ways carbon prices are a proxy measure for understanding national climate action and can help us characterize national climate politics, which vary a great deal. In the following paragraphs, I outline each point.

For roughly a decade, environmental sociologists have argued that renewable energy development is not enough to curb CO₂ emissions. It neither decouples emissions from economic growth (York and McGee 2017), nor completely replaces fossil fuel energy sources (York 2012). In practice, when renewables are deployed, consumption of all energy sources rises, and societies continue to utilize much of their original fossil-fuel energy. This situation is termed ‘Jevon’s Paradox,’ named after William Stanley Jevons, an English economist who observed that increases in coal steam-engines efficiency were accompanied by increases in coal energy consumption (York and McGee 2016). To put the theory simply, as efficiency increases (more renewable energy on offer), so does consumption.

Jevon’s Paradox poses a critical problem for transitioning societies from fossil fuels because mainstream climate solutions center around renewable energy development. After confirming that renewables do not effectively displace fossil fuels, environmental sociologist York concludes that “One implication of these results is that direct suppression of fossil-fuel use (for example, by a carbon tax) is likely to be much more effective at reducing fossil-fuel use than simply expanding non-fossil-fuel energy sources” (York 2012:443). Empirical work supports this conclusion. Active suppression of fossil-fuel energy sources and carbon taxes reduce emissions at both the state (Grant, Bergstrand, and Running 2014; Grant, Jorgenson, and Longhofer 2020; Prasad and Munch 2012) and country-level (Andersson 2019; Best, Burke, and Jotzo 2020; Murray and Rivers 2015). Furthermore, the revocation of a carbon price can cause a

rise in emissions. When Australia terminated its emission trading system in 2014, carbon emissions rose (Plumer 2014). For these reasons, carbon prices are the favored policy instrument of experts (Cooper et al. 2017; Nordhaus 1994; Sandbu 2020) and are the primary policy recommendation from the latest report of the Intergovernmental Panel on Climate Change (Rogelj et al. 2018).

The policy is effective, approved by experts, and does not limit national prosperity (Driscoll 2020). It is also well-known and tried by many. What then impedes or, on the other hand, facilitates carbon price adoption? Economists can offer promising policy proposals for solving collective problems, but without proper sociological understandings of power and societal forces, we will not understand why key reforms are not implemented. Just as a hedge fund will fight against a capital gains tax, interests who stand to lose capital from increased emission costs will fight the implementation of carbon prices. Therefore, as carbon prices make CO₂ emissions expensive, their taxation reveals actors and structures that slow or impede climate reform as a whole.

Carbon prices are prominent enough that many wealthy countries have implemented, proposed, and experimented with them. In fact, many of the ‘top performing’ countries in global climate politics have enacted carbon prices.¹ Figure 0.2 displays a strong relationship between carbon price strength with a climate performance index.

¹ Since 2005, Germanwatch has been producing and updating their *Climate Change Performance Index* annually. The index evaluates countries by their emissions, renewable energy, energy use, and climate policies (Burck et al. 2020).

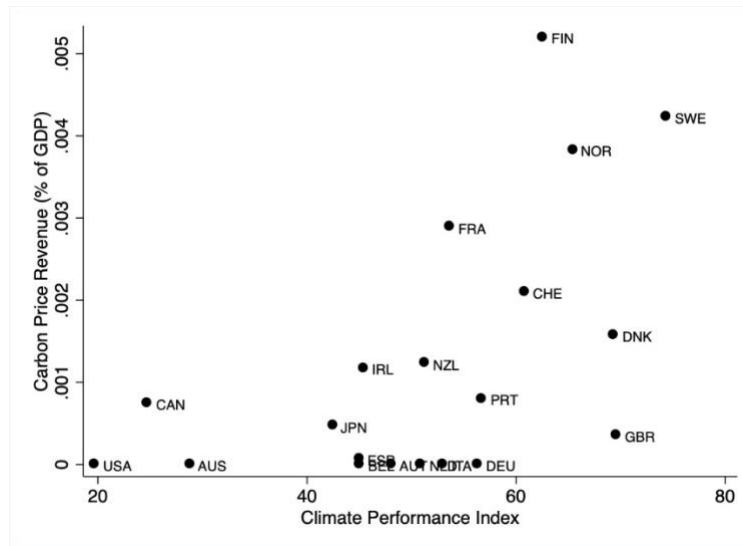


Figure 0.2 Carbon price strength and climate performance. Correlation: 0.56. Data sources: Carbon Tax Revenue (World Bank 2019); Climate Performance Index (Burck et al. 2020).

Countries who perform best on measures of climate performance generally have the strongest carbon prices. Of all the twenty wealthy democracies compared, every top performer has implemented a relatively strong carbon price as well. Carbon prices, therefore, also allow us to understand key aspects of national climate action.

Carbon prices, while promising, are often critiqued. Existing policies are nowhere near the strength that experts recommend (Ricke et al. 2018; Rogelj et al. 2018) and, as a result, most carbon prices marginally decrease emissions (Green 2021). While this causes some to argue that the policy is a waste of time, I strongly disagree. A criterion that demands ‘perfect’ policy implementation and efficacy is rarely applied to other policies. Take wealth taxes, for instance. Simply because many countries do not enact strong wealth taxes and/or those taxes are not significantly decreasing inequality does not mean the policies, themselves, are worthless. Wealth taxes, welfare policies, and other social policies hint at a world where the salience of class decreases and, when well-crafted, augment levels of equality. Carbon prices are the very same. They are simply an effective policy that has been underutilized and underpowered. Let us not

forget that other climate solutions such as expanding renewables (Jevon's Paradox) or degrowth (discussed in the final chapter) do not work either for sufficiently decreasing emissions. Carbon pricing disincentivizes emissions and, if strong, can transform economies. That alone makes them worth supporting. One can support incremental progress in the meantime, while also supporting long-term societal transformation.

Again, the inspiration behind this book is understanding what drives the development of and variation between carbon prices. In essence, it is a political sociology of a promising economic policy for solving what is perhaps the greatest problem humanity has ever faced. It is a tall order that this work simply begins and invites others to follow.

Contribution: what explains carbon price development and variation?

In addition to contributing critical substantive findings on carbon price development, this book tests hypotheses and theory from the social sciences. Like any new area of inquiry with few studies, there is a great deal of literature and theory that might explain the socio-politics of carbon pricing, a complex area of inquiry. As opposed to most domestic policies (e.g., health, education, welfare), carbon prices primarily serve an international purpose rather than a national one and require national economies to pay for a problem that exists beyond their borders. National motivation is further complicated by the fact that international agreements are non-binding and economic and climate impacts vary across countries (Cooper et al. 2017; Harrison and Sundstrom 2007, 2010). Scholars interchangeably term this situation as the 'tragedy of the commons' or the 'free-rider problem.' In essence, they refer to "the reluctance of one country to move ahead unilaterally with carbon pricing because it bears the costs while all countries benefit from a more stable global climate system" (Parry 2017:13). With these complexities in mind,

scholars acknowledge methodological and theoretical difficulties inherent in assessing and explaining the variation between state climate performance or policies (Christoff and Eckersley 2011; Purdon 2015). Below I outline four common explanations for explaining the variation between national climate action and economic policy outcomes.

World Society

States are increasingly subject to the spread international norms and values (Mann 1984; Meyer et al. 1997). National leaders and representatives are required, more and more, to balance domestic and international interests. Therefore, states may enact or reject carbon prices depending on their attention to global norms, levels of ‘international-mindedness,’ global networks, signing of climate agreements, and more. World society theorists are at the helm of this research in the comparative environmental policy field. They argue that once a model of an institution or policy exists and spreads to enough countries or is endorsed by a UN or even a multi-country pledge, it becomes a norm and therefore easier for domestic policymakers to adopt. The world society hypothesis also predicts that even a nonbonding international agreement ought to matter, precisely because the key mechanism is norms rather than an enforcement mechanism. With regard to the environment, scholars find that international norms and institutions support state-level environmental action and a decrease in carbon emissions (Frank, Hironaka, and Schofer 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017; McCall 2020; Schofer and Hironaka 2005; Shorette 2012). In fact, they argue that international institutions, NGOs, and norms can play a larger role in positive environmental and climate outcomes than domestic conditions. Therefore, understanding the relative diffusion of pro-

climate norms and values across countries may explain the variation between national climate action.

Growth models and production profiles

To maximize levels of national prosperity, the relative domestic and international economic positions of states often shape their policy choices (Gourevitch 1986). Policy makers prioritize economic growth because the benefits are undeniably numerous (Friedman 2006; Inglehart 2018; Kenworthy 2020). Since the collapse² of the Fordist growth in the late 1970s that had previously supported many post-war economies, policymakers looked elsewhere to stimulate aggregate demand (GDP). Countries attempt to drive aggregate demand in one of three ways: (1) household consumption-led growth, which refers to the stimulation of demand through wages or, more commonly, debt and credit; (2) export-led growth, which refers to the stimulation of demand through exports to other countries (i.e., relying on foreign demand); or (3) a combination of the two (Baccaro and Pontusson 2016). The growth model perspective is particularly useful because it offers a lens through which one can view how particular models for economic growth shape economic, political, and social variation and outcomes at the country level. Thus, understanding the role of CO₂ emissions and fossil fuels, which are already linked to growth, in national growth models may shed light on the variation underlying national climate action.

State institutions and regulation

A state's ability to enact and enforce regulations depend on its domestic political institutions, "understood as the path-dependent rules of the game that shape and constrain actor

² Due to union decline, deindustrialization/globalization, liberalization, and financialization.

behavior” (Amable et al. 2019:6) and inherent capacities (Meckling and Nahm 2018a, 2018b). Some scholars cite parliamentary systems (Dolsak 2001) or proportional representation (Finnegan 2019; Harrison 2010) as assisting the outcome of state climate action. These political systems support the increased presence of green or left parties, which are also linked to supporting more pro-climate outcomes (Christoff and Eckersley 2011; Harrison 2012; Tobin 2017; Vasseur 2014, 2016). Furthermore, the level of corporatism, or “the coordinated, cooperative, and systematic management of the national economy by the state, centralised unions, and employers” (Siaroff 1999) has a significant impact on the climate policymaking process in industrialized democracies. In fact, comparative research shows that because corporatist regimes can offer more policy consensus and economic stability, they also tend to support the passage of climate policy and work toward collective interests (Matthews 2001; Scruggs 1999). All in all, there is agreement that institutions remain key for state climate action and policymaking (Christoff and Eckersley 2011; Tobin 2017; Wood et al. 2020). This will be key as the regulatory regimes of states vary a great deal (Hall and Soskice 2001; Prasad 2006), particularly in their openness to business-elite influence and power (Campbell and Pedersen 2014; Hacker and Pierson 2010). Thus, variations among state institutions and regulation may also explain the variation between national climate action.

Anti-climate interests

Regulations spark the strongest opposition from those who stand to lose capital and have the greatest ability to block policy outcomes. In this case, the role of fossil fuel firm power is non-trivial in shaping climate policy outcomes (Mildenberger 2020; Stokes 2020). Firms are not alone; there is variety of actors who attempt to block climate change action and utilize key

strategies to great success. In the field of environmental sociology, these actors, together, are often referred to as the ‘Denial Countermovement.’ Scholars find they wield significant influence in the area of politics and public opinion (Dunlap and McCright 2015). The fossil fuel industry and corporations deliver substantial anti-climate lobby power (Brulle 2018) and fund climate denial groups and research (Farrell 2016). Conservative think tanks and foundations fund anti-climate groups, front groups and Astroturf campaigns, and the production of denial ideology in parties (Brulle 2014; Dunlap and McCright 2015). The Koch brothers, for example, bankrolled the populist Tea Party to include climate denial in its party platform (Dunlap, McCright, and Yarosh 2016). The conservative mainstream and social media with conservative politicians support this political project with near ideological unity (Carmichael and Brulle 2017; Dunlap and McCright 2015). Ideologically, the central claims of the denial countermovement are (1) there is shoddy evidence of anthropogenic climate change, (2) even if climate change occurs, it will result in a net positive for society, and (3) any measures that serve to fix climate change will injure society, especially economically. Scholars argue that denial movements occur in countries with “strong commitments to neoliberalism and a powerful fossil fuels industry” (Dunlap and McCright, 2015:319) and represent a form of ‘anti-reflexivity’ or blocking reforms due to their “staunch commitment to protecting the current system of economic production” (Dunlap 2014:1). In sum, understanding how anti-climate interests block policies and regulations is key for national climate action.

Analysis

The project adopts a problem solving sociological approach (Prasad 2018, 2021). It is comparative, focusing on differences, at both the macro and micro levels. It studies both

‘victims,’ ‘villains,’ and even those in between. Also, rather than simply critiquing carbon prices, it attempts to use theory-backed empirics to diagnose the problem and to provide theoretically grounded policy recommendations.

On cases and comparisons

The United States and Europe are among the top three emitters of carbon, and thus, understanding what drives the development of national carbon prices in wealthy countries is vital and, in part, motivates the selected sample of wealthy democracies in this book. Furthermore, because they are wealthy, they bear greater responsibility for their substantial carbon emissions. To this end, I compare 20 wealthy democracies: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States. I have selected these countries for their comparability and widespread use in the field of comparative political economy (Kenworthy and Hicks 2008). There is also a great deal of variation between the relative presence, timing, and efficacy of their policies. I will compare these countries throughout this work for analytic leverage.

In addition to macro-quantitative comparisons, I also conduct in-depth casework and qualitative comparisons. This was, I found, crucial for revealing factors about carbon price development identifiable only in detailed case studies. Toward these ends, in the United States, selected as a negative case, I conducted archival research detailing the demise of a proposed carbon price in 2009. I also compared U.S. states to triangulate results from twenty country comparisons. In France, selected as a positive case with the strongest carbon price for a relatively large economy, I compared time-periods of carbon price proposals to explain the development of

their carbon price. This involved both archival research, in-depth interviews with French policymakers in Paris, and data analysis. I also conducted participant observation and interviews with the Yellow Vest movement, populist backlash to the French carbon tax. Finally, I conducted comparisons between the ‘top-performing’ carbon prices in the Nordic countries of Denmark, Finland, Norway, and Sweden. Taken together, this book compares carbon price development across twenty countries, between the U.S. and France, between U.S. states, between time periods in France, and between Nordic countries. The cornucopia of comparisons is intended to understand relationships between the above explanations that may vary between institution, country, and time periods. I investigate the big picture, the ‘worst’ performer, a ‘strong’ performer that experienced contention, and the ‘top’ performers.

Looking forward

The following chapters investigate the socio-politics of carbon pricing across multiple countries and time periods. Some chapters, have a broader orientation, examining macro-level factors and their probabilistic impacts on national carbon pricing. Others look deeply into one case, tracing particular actors and policy strategies over time. Some chapters combine both approaches. The book is divided into three parts.

Part one examines the obstacles and drivers of pricing carbon. In Chapter 1, I conduct quantitative analyses of twenty wealthy democracies to identify drivers of carbon price adoption and strength. I ask whether carbon price adoption is more associated with international or domestic forces. In Chapter 2, I tell a short history of the American Clean Energy and Security Act of 2009 (a proposed carbon price) and scrutinize the United States as an illustrative case to reveal impediments to pricing carbon at the national level. I advance a framework for

understanding blocks to national carbon pricing composed of economic, institutional, and energy factors.

Part two dissects France, home to the strongest national carbon price in a non-Nordic country and home to the most contention. Chapter 3 traces the history of carbon tax proposals in France. After two failures in 2000 and 2009 to implement a policy, France finally succeeded in 2013. The policy's comparatively less progressive design is also puzzling; the majority of the carbon tax burden is on households, many carbon-intensive sectors are exempt, and most of the revenue is earmarked for corporate tax credits. What constraints or forces shaped this carbon tax? Furthermore, how was it enacted when two similar carbon tax proposals that came before were declared unconstitutional? To investigate the policy formation, I compare the three episodes of carbon tax policy proposals. Chapter 4 interrogates the impact of France's neoliberal carbon tax through the lens of the Yellow Vest populist movement. It brings to bear issues of equity and justice related to climate tax policymaking decisions as well as advancing theory on populist opposition to climate reform. For a glimpse into my participant observation with the movement, see the prologue of Chapter 4 for a short ethnographic vignette.

Part three probes the strongest existing policies and solutions. Chapter 5 investigates the comparatively strong carbon prices of Nordic countries and asks (1) what drove their development and (2) what can be learned or generalized from the Nordic experience? Chapter 6 quickly teases out key comparative points from each chapter, distilling the core of what drives national carbon pricing (hint: globalism, growth, and populism/nationalism). It also utilizes a problem-solving sociological approach to offer policy recommendations for stronger, more effective national carbon prices and global transformation.

I invite you to read this book however you like. Those who are most thorough can read it linearly, exploring drivers and blocks of carbon pricing in Part 1, scrutinizing policy contention and reactions in Part 2, and concluding with solutions in Part 3. Others with specific theoretical interests in, say, World Polity (Chapters 1 & 3), Populism (Chapter 4), Anti-fossil fuel interests (Chapters 2, 3, & 4), business-elite (Chapters 2 & 3), growth models (Chapters 2, 5, & 6), or institutions (Chapters 1, 2, 3, & 5) can zig-zag through the book. Those interested in specific regions can read about the United States (Chapter 2), France (Chapters 3 & 4), and Nordic countries (Chapter 5). Policymakers might skip to the end (Chapter 6) for comparative points, conclusions, and policy recommendations. Finally, readers hungry for stories can skip to the demise of the American carbon price (Chapter 2), the history of French carbon taxation (Chapter 3), and a short ethnographic vignette of a 24-hour period with the Yellow Vest movement in Paris (Chapter 4 prologue).

All in all, by scrutinizing a policy that many call a key solution to lowering carbon emissions, this work reveals the variation in how particular countries navigate the ethical and practical dilemmas underlying climate action. Carbon prices resonate with global ideals, prioritizing a planet-wide challenge over national economic benefits. This book explores the conditions under which such a law can be adopted, but it also emphasizes that enactment is not the end of the story. Rather, policies, themselves, reshape continuing political controversies over climate change. Carbon pricing thus becomes a case study in the trade-offs between global norms and national interests, highlighting the importance of national growth models, business-elite power, neoliberalism, and populist movements. Examining a policy that attaches national costs to global solutions brings fundamental issues to the surface--issues that all countries face today. I hope that my work not only advances scholarly understandings of the trade-offs brought

forth by carbon pricing efforts, but also encourages strategic reflection on the part of environmentalists, further debate on the part of economists and scientists, and promotes concrete action on the part of policymakers.

CHAPTER ONE: DRIVERS OF CARBON PRICE ADOPTION

The Intergovernmental Panel on Climate Change (IPCC), organized by the United Nations, brings together thousands of scientists from around the world to understand and suggest adaptations to global climate change. In their most recent report they argue that, “Policies reflecting a high price on emissions are necessary in models to achieve cost-effective 1.5 C pathways” (Rogelj et al. 2018). In other words, carbon prices are essential for decreasing emissions and bringing world temperatures to *acceptable* safe levels. As discussed in the introduction, simply expanding renewable energy is not enough; it neither decouples emissions from economic growth (York and McGee 2017), nor completely replaces fossil fuel energy sources (York 2012). Carbon prices, however, make emissions expensive and phase out fossil fuels when deployed correctly. Despite their prominence, scholars know shockingly little about what drives carbon price adoption and variation. Considering the importance of carbon pricing as a policy solution, this investigation is crucial.

What drives carbon price adoption and strength? As climate change is a global problem, do international factors such as the signing international agreements, the presence of international Environmental NGOs, or increased integration facilitate pricing carbon? Countries are not perfectly unified and are often guided by local interests; what about the role of national factors such as the nature of political institutions, attention to economic prosperity, or the power of interest groups? In this chapter, I ask whether carbon price adoption in wealthy democracies is driven more by international or domestic forces.

This chapter

Fourteen out of twenty countries in this study have enacted a carbon price. Among those countries, there is substantial variation in the timing of implementation and the strength or impact of the prices. Countless scholars have studied carbon prices and even more scholars call for their implementation, but none has studied the enactment of carbon prices specifically in more than a few countries. With sufficient data and cases available only now, this study is the first to conduct a medium-N, systematic comparative analysis of carbon price enactment. As carbon prices are currently framed as a central solution to global climate change, studying the conditions that support their enactment is crucial. Furthermore, because the United States and Europe are among the top three emitters of carbon, understanding what drives national carbon price adoption in wealthy countries is vital and, in part, this consideration motivates the selected sample of wealthy democracies.

In addition to contributing critical substantive findings on carbon price adoption, this chapter tests hypotheses from (1) world society theory (the spread of international values and norms) and (2) environmental sociology. First, studying carbon pricing is an ideal way to examine the spread of international values because a national carbon price is a domestic policy addressing a global problem. Domestic carbon prices are a useful metric for assessing whether international values drive climate action because the policy implementation involves real costs, unlike the signing of most international climate agreements. Based on the existing literature (Frank, Hironaka, and Schofer 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017; McCall 2020; Schofer and Hironaka 2005; Shorette 2012), it seems likely that the spread of international values and norms would impact carbon price adoption. Second, by making emissions expensive, carbon prices have the potential to trigger the mobilization of the climate denial countermovement (Brulle 2018; Dunlap and McCright 2015; Farrell 2016a; McCright and

Dunlap 2010) that historically blocks climate policy proposals. The movement represents what environmental sociologists term as a form of ‘anti-reflexivity,’ obstructing climate reforms due to their “staunch commitment to protecting the current system of economic production” (Dunlap 2014:1). In many ways, explaining the implementation of carbon prices represents a competition between the spread of pro-climate global values and international agreements associated with World Society theory and the power of the denial countermovement associated with Anti-reflexivity theory.

The chapter is organized as follows: First, I overview the literature-based theories to be tested and outline my analytic techniques. Second, I present my findings, detailing which theories are supported in the analyses. I find that carbon price adoption is driven by domestic conditions and strongly associated with low levels of fossil fuel energy consumption and with low veto points. Wealthy democracies enact carbon prices according to the degree to which domestic actors or costs constrain or enable enactment and implementation. Third, I argue that the global free-rider problem, posed by non-binding international climate agreements and lack of enforcement, and fossil fuel business-elite power undermine the force of international values and norms. World society scholarship should attend more to (1) whether international participation incurs substantial local costs or powerful stakeholder opposition and (2) whether the benefits of such participation are more domestically or globally distributed.

Hypotheses

As opposed to most domestic policies (e.g., health, education, welfare), carbon prices primarily serve an international purpose rather than a national one and require national economies to pay for a problem that exists beyond their borders. National motivation is further

complicated by the fact that international agreements are non-binding and economic and climate impacts vary across countries (Cooper et al. 2017; Harrison and Sundstrom 2007, 2010).

Scholars interchangeably term this situation as the ‘tragedy of the commons’ or the ‘free-rider problem.’ In essence, they refer to “the reluctance of one country to move ahead unilaterally with carbon pricing because it bears the costs while all countries benefit from a more stable global climate system” (Parry 2017:13). With these complexities in mind, scholars acknowledge methodological and theoretical difficulties inherent in assessing and explaining state climate performance or policies (Christoff and Eckersley 2011; Purdon 2015). In the literature review that follows (with some overlap with the introductory chapter), I examine the most prominent hypotheses for drivers of carbon price adoption.

States are increasingly subject to the spread international norms and values (Mann 1984). “Many features of the contemporary nation-state derive from worldwide models constructed and propagated through global cultural and associational processes” (Meyer et al. 1997:144–45). Today, all national leaders and representatives are required, more and more, to balance domestic and international interests. Therefore, states may enact or reject carbon prices depending on their attention to global norms, levels of ‘international-mindedness,’ global networks, signing of climate agreements, and more.

World society theorists are at the helm of this research in the comparative environmental policy field. They argue that once a model of an institution or policy exists and spreads to enough countries or is endorsed by a UN or even a multi-country pledge, it becomes a norm and therefore easier for domestic policymakers to adopt. The world society hypothesis also predicts that even a nonbinding international agreement ought to matter, precisely because the key mechanism is norms rather than an enforcement mechanism. Scholars have applied the theory to

a number of arenas, from education (Schofer and Meyer 2005) to gender equity (Berkovitch and Bradley 1999; Swiss 2012). With regard to the environment, scholars find that international norms and institutions support state-level environmental action and a decrease in carbon emissions (Frank et al. 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017; McCall 2020; Schofer and Hironaka 2005; Shorette 2012). In fact, they argue that international institutions, NGOs, and norms can play a larger role in positive environmental and climate outcomes than domestic conditions. To these ends, I test the role of environmental INGOs, the Kyoto protocol, and participation in the EU Emissions Trading System (ETS). Number of environmental INGOs, is often used in world society research to explain pro-environment and climate outcomes (Frank et al. 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017). Furthermore, the Kyoto Protocol is a major historical event that established agreed-upon targets for countries to lower emissions. The EU ETS, a regional agreement, establishes a carbon price for all EU countries (whether they have a national policy or not) and can either serve as motivation to further limit emissions or avoid further prices on carbon emissions. Cumulative number of prior carbon price adopters, indicating policy diffusion, is also relevant to the world society literature, and was tested, as well.

A state's ability to enact carbon prices can also depend on its domestic political institutions, "understood as the path-dependent rules of the game that shape and constrain actor behavior" (Amable et al. 2019:6) and inherent capacities (Meckling and Nahm 2018a, 2018b). Some scholars cite parliamentary systems (Dolsak 2001) or proportional representation (Finnegan 2019; Harrison 2010) as assisting the outcome of state climate action. These political systems support the increased presence of green or left parties, which are also linked to supporting more pro-climate outcomes (Christoff and Eckersley 2011; Harrison 2012; Tobin

2017; Vasseur 2014, 2016). Furthermore, the level of corporatism, or “the coordinated, cooperative, and systematic management of the national economy by the state, centralised unions, and employers” (Siaroff 1999) has a significant impact on the climate policymaking process in industrialized democracies. In fact, comparative research shows that because corporatist regimes can offer more policy consensus and economic stability, they also tend to support the passage of climate policy and work toward collective interests (Matthews 2001; Scruggs 1999). All in all, there is agreement that institutions remain key for state climate action and policymaking (Christoff and Eckersley 2011; Driscoll 2019; Tobin 2017; Wood et al. 2020). To these ends, I test the role of political institutions in three measures: veto points, left parties, and corporatism.

I utilize veto points because it is a well-travelled metric for comparing political institutions (Huber, Ragin, and Stephens 1993; Immergut 1990; Prasad 2006) and also for climate policy outcomes (Christoff and Eckersley 2011; Madden 2014). Veto points, or stages in the process of policymaking in which actors or institutions can halt or impede passage, have a significant impact on the passage of any national policy. As an index of presidentialism, bicameralism, single member district presence, federalism, referenda, and judicial review, it combines institutional dynamics that have been demonstrated in the literature to block climate policies.

States may enact or reject carbon prices depending on the domestic costs or benefits associated with energy transition to non-fossil fuel sources. States also may enact or reject carbon prices due to the mobilization or political clout of domestic fossil fuel business interests. As carbon prices are intended to transform energy structures, their passage may hinge on the political dynamics underlying energy sources within each country. Findings are sometimes

mixed on whether fossil fuel energy sources impact pro-climate state action. Dolsak (2001) and Karlas (2017) found a relationship, but Bailer and Weiler (2015) did not. Still, more and more, scholarship shows a relationship. Research at the level of the U.S. states highlights the importance of fossil fuel production for enacting renewable energy policy (Fisher 2006; Harrison 2012; Prasad and Munch 2012; Stokes 2020; Vasseur 2014, 2016).

The role of fossil fuel firm power is non-trivial in shaping climate policy outcomes. In two recent and exceptional works on comparative domestic climate policies, there is rich evidence that carbon polluters often have privileged political access and significant power in shaping policy outcomes (Mildenberger 2020; Stokes 2020). Furthermore, there is a variety of actors who attempt to block climate change action and utilize key strategies to great success. These actors, together, are often referred to as the ‘Denial Countermovement.’ Scholars find they wield significant influence in the area of politics and public opinion (Dunlap and McCright 2015). The fossil fuel industry and corporations deliver substantial anti-climate lobby power (Brulle 2018) and fund climate denial groups and research (Farrell 2016a). Conservative think tanks and foundations fund anti-climate groups, front groups and Astroturf campaigns, and the production of denial ideology in parties (Brulle 2014; Dunlap and McCright 2015). The Koch brothers, for example, bankrolled the Tea Party to include climate denial in its party platform (Dunlap, McCright, and Yarosh 2016). Individuals like contrarian scientists often receive undue media exposure (Boykoff 2008) and work to spread misinformation on climate science often to further their personal interests (Oreskes and Conway 2011). The conservative mainstream and social media with conservative politicians support this political project with near ideological unity (Carmichael and Brulle 2017; Dunlap and McCright 2015). Ideologically, the central claims of the denial countermovement are (1) there is shoddy evidence of anthropogenic climate

change, (2) even if climate change occurs, it will result in a net positive for society, and (3) any measures that serve to fix climate change will injure society, especially economically.

Scholars argue that denial movements occur in countries with “strong commitments to neoliberalism and a powerful fossil fuels industry” (Dunlap and McCright, 2015:319) and represent a form of ‘anti-reflexivity’ or blocking reforms due to their “staunch commitment to protecting the current system of economic production” (Dunlap 2014:1). In sum, this ‘Denial Countermovement’ has wielded a powerful influence at multiple levels in society. Toward these ends, I test percent fossil fuel energy consumption of total energy consumption.³ In addition to revealing national fossil fuel energy use, the variable is often considered a proxy measure for relative fossil fuel business-elite presence or influence. It even impacts public opinion on climate change (Knight 2018).

Table 1.1 displays a summary of all conditions, variable definitions, and data sources. My two main models in the results section will thus focus on international versus domestic conditions, as both sets of factors have strong support in the literature.

³ Many studies conflate the impacts of fossil fuels per GDP versus fossil fuels per energy use. CO₂ emissions per GDP is another relevant measure indicating both fossil fuels linked to growth and fossil fuel industry prominence. Are countries finding it difficult to enact carbon prices due to economic growth linked to emissions or due to their existing energy systems? Thus, I also tested carbon emissions per ppp of GDP utilizing world bank data in models, but it was not significant.

Table 1.1 Summary of Conditions, Variable Definitions, and Data Sources

Variable	Definition	Source	Hypothesized relation (+/-)
Fossil Fuel energy	Fossil fuel energy consumption (% of total)	World Bank	-
Veto points	Index of presidentialism, bicameralism, single member district presence, federalism, referenda, judicial review	Brady et al. (2014)	-
Left party	Share of seats in parliament for political parties classified as left.	Armingeon et al. (2018)	+
Corporatism	The coordinated, cooperative, and systematic management of the national economy by the state, centralised unions, and employers	Jahn (2016)	+
Environmental INGOs	International Environmental NGOs (logged)	Longhofer et al. (2016)	+
Kyoto Protocol	Dummy variable indicating years following Kyoto Protocol		+
EU ETS	Dummy variable indicating years ETS in place for EU countries		+/-

Discrete-Time Event History Analysis

I compare 20 wealthy democracies: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States. I have selected these countries for their comparability and widespread use in the field of comparative political economy (Kenworthy and Hicks 2008). Also, because they are wealthy, they bear greater responsibility for their substantial carbon emissions. Some of them have enacted carbon prices, but the timing has differed. Some still have yet to do so. I conduct discrete-time event history analysis (Allison 2014) of the twenty democracies to assess conditions present during the years that countries enacted carbon price policies. The method has been utilized by scholars to address similar macro-level policy questions (Frank et al. 2000; Kenworthy and Hicks 2008; Longhofer et al. 2016; Martin 2010; Scruggs 2003).

The event history models assess conditions under which wealthy democracies enact carbon price policies. The dichotomous dependent variable (enactment) was coded as 0 for every year a country did not enact the policy, coded as 1 the year the policy was passed (typically the year before implementation). Countries were removed from the risk set for every year following the year of passage. Due to dataset limitations, years range from the first carbon tax implemented in 1990 by Finland to Portugal's in 2015. Most policies are carbon taxes with the exception of Australia, New Zealand, and Switzerland's additional ETS. Note that the dichotomous dependent variable is broad and collapses some variation between carbon taxes and emission trading systems. Still, both policies limit emissions and price carbon (although by alternative means), typically involve the same stakeholders, and produce government revenue. Linear and quadratic control variables were utilized to account for the passage of time (see Allison 2014).

Table 1.2 displays the results of four models. The modelling strategy consists of first testing domestic conditions (Model 1), streamlining domestic conditions (Model 2), testing international values and norms (Model 3), and testing a combined model (Model 4). In Domestic Model (1), fossil fuel energy, veto points, and the linear and quadratic controls are significant. Left party strength and corporatism, however, are not significant.⁴ Both fossil fuel energy and veto points are in the expected direction—negative, indicating that they both impede the enactment of carbon taxes. In the parsimonious model (2), fossil fuel energy, veto points, and the linear and quadratic controls are significant, with the same coefficient directions as in Model 1. In International Model (3), the international variables, environmental INGOs, EU ETS, and

⁴ Based on Mildemberger's (2020) convincing argument about the role of unions in domestic climate policymaking, I tested union density (Visser 2016) as well as the interaction between union density and fossil fuel energy. Both were insignificant. This is consistent with some literature that finds mixed support on the role of unions in climate policymaking (Hampton, 2015; Räthzel and Uzzell, 2011; Snell and Fairbrother, 2010, 2011). Still, this does not mean that unions cannot be significant political players in the carbon price arena in specific contexts.

Kyoto protocol, are not significant.⁵ In Combined Model (4), fossil fuel energy and the linear and quadratic controls are significant. The added international variables, environmental INGOs, EU ETS, and Kyoto protocol, are not significant.⁶ In sum, the parsimonious model (2) consisting of a combination of fossil fuel energy and veto points best explains the enactment of a carbon price. These findings indicate that carbon price adoption is primarily driven by domestic conditions.

Table 1.2 Discrete-Time Logistic Event History Analysis (Driscoll 2021)

Explanatory Variables	Domestic Model (1)		Parsimonious Model (2)		International Model (3)		Combined Model (4)	
	<i>b</i>	exp(<i>b</i>)	<i>b</i>	exp(<i>b</i>)	<i>b</i>	exp(<i>b</i>)	<i>b</i>	exp(<i>b</i>)
Fossil fuel energy	-.055* (.024)	.95	-.058** (.023)	.94			-.048* (.024)	.95
Veto points	-.436* (.203)	.65	-.435* (.206)	.65			-.309 (.230)	.73
Left party	-.007 (.020)	.99						
Corporatism	-.608 (.624)	.54						
Environmental INGOs (logged)					.608 (.312)	1.84	.288 (.369)	1.33
Kyoto Protocol					2.137 (2.774)	8.47	1.754 (2.793)	5.78
EU ETS					.629 (.772)	1.88	.194 (.835)	1.21
Time	-.575** (.185)	.56	-.432** (.162)	.65	-.863* (.378)	.42	-.767* (.380)	.46
Time ²	.025*** (.007)	1.03	.019** (.006)	1.02	.032** (.011)	1.03	.030** (.011)	1.03
Pseudo-R ²	.271		.233		.241		.290	
Observations	379		386		376		376	

Note: Numbers in parentheses are standard errors. ETS = emission trading system; EU = European Union; INGO = international nongovernmental organization.

p* < .05. *p* < .01. ****p* < .001.

Discussion

Despite the rising salience of global climate change, why might domestic conditions be the primary driver of carbon price adoption in this sample of wealthy democracies? The analyses indicate that many countries have delayed enacting carbon prices because: (1) they are deterred by the economic costs associated with taxing high fossil fuel use, or fossil fuel actors block policy due to their significant position in the economy and energy infrastructures; and (2) their

⁵ Significance aside, an effect of international norms would be clear in analyses if, after an international climate agreement, national adoption rapidly rose across several countries.

⁶ Based on the world society literature, I tested cumulative number of prior adopters as a predictor in the international and combined model as well. In practice, the variable essentially replaced the linear time variable; also negative, but less significant at *p* < 0.1. Thus, prior adopters has a *negative* association with enactment. This result contradicts the international values and norms hypotheses.

political institutions are encumbered by veto points, which can block enactment of legislation. Clearly, signing international climate agreements versus taxing emissions entail different calculations and policy decisions.

Figure 1.1 details the domestic conditions argument by illustrating the impact of these factors on carbon price *strength*, further validating the event history analysis results. Divided into four quadrants, the figure depicts the impact of fossil fuel energy and veto points on the strength of carbon prices (revenue/GDP). In the bottom left quadrant, countries with low veto points and low fossil fuel energy clearly have an easier time enacting more powerful carbon prices. In the bottom right quadrant, it's mixed. While countries have low veto points, enacting a substantial carbon price is more challenging due to high fossil fuel dependence. In the top right quadrant, it's clear that with a combination of high fossil fuel dependence and veto points, countries have a very difficult time enacting a strong carbon price. In the top left quadrant, the case of Switzerland illustrates the fact that with low fossil fuel dependence, veto points do not necessarily preclude implementation, confirming that fossil fuel dependence plays a pivotal role in enactment.

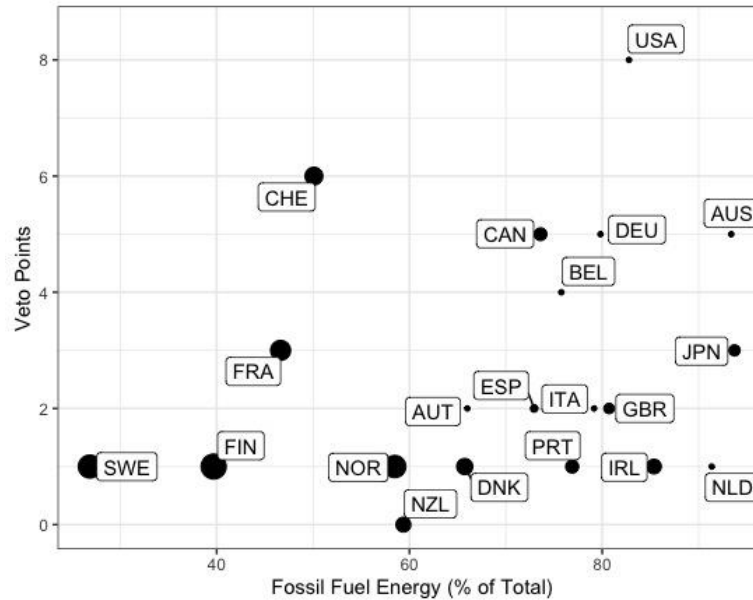


Figure 1.1 Carbon Price Revenue % of GDP with Fossil Fuel Energy and Veto Points. Note: Point size indicates strength of carbon price (revenue/GDP). Annual carbon price revenue over GDP is a useful comparative measure for assessing the impact of carbon prices. Judging a policy by carbon price or sectors covered alone can be misleading because a country can have a high price on carbon, but low coverage of sectors or vice versa. Revenue over GDP reveals a more accurate economic impact and effectiveness of the policy in curbing emissions, and it is the most useful measure available for comparing countries. Revenue data is from the World Bank Carbon Pricing Dashboard (World Bank 2019a). Fossil Fuel Energy data is from 2015, the most recent year (World Bank 2019b).

The enactment of carbon prices can be delayed or blocked by both costs associated with energy transition (Fisher 2006; Prasad and Munch 2012; Vasseur 2014, 2016) and fossil fuel business-elite power, denial, or anti-reflexivity (Dunlap and McCright 2015; McCright and Dunlap 2010; Mildenberger 2020; Stokes 2020). For some countries, enacting carbon prices is linked to energy path dependence or fossil fuel energy circumstantial luck. Some governments have made decisions that decrease their likelihood of enacting a strong carbon price. For example, energy economists assert that nuclear power can be key for transitioning to lower carbon societies and caution against phasing it out too quickly (Jenkins et al. 2018). Belgium has been phasing out its nuclear power for several years and has not enacted a carbon price. Its fossil

fuel energy use is climbing. Figure 2 displays Belgium’s decline of non-fossil fuel energy sources and nuclear with the recent rise of fossil fuel sourced energy.

A similar story holds for Japan after the Fukushima Daiichi nuclear disaster in 2011 (see Figure 1.2). Japan began to source energy from coal to replace nuclear power and as a result, fossil fuel energy and emissions climbed. Since then, Japan has reinstated some nuclear power, in part, to combat climate change (Kyodo 2019; Suzuki 2019). The Japanese carbon price, while it exists, is minimal. Japan’s high fossil fuel energy use prevents it from moving forward with higher carbon pricing and climate action. Increasing fossil fuel energy consumption can discourage pricing carbon due to the cost. In short, the spread of international values is interrupted when domestic costs to action are high.

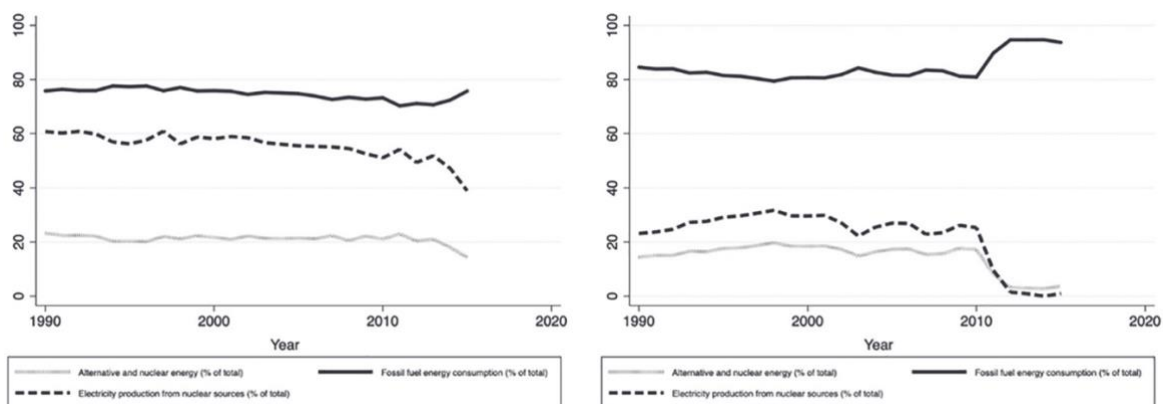


Figure 1.2 Belgian (left) and Japanese (right) Energy Use. Note: Alternative and nuclear energy indicates total carbon-free energy use (from solar to nuclear). Electricity production from nuclear sources is not a portion of total energy, but of total electricity. Data Source: World Bank

The power of fossil fuel business-elite is substantial in some cases and confirms the anti-reflexivity of the denial countermovement. In the United States, described in the following chapter, the American Clean Energy and Security Act of 2009 (a proposed carbon price) faced significant opposition from a variety of actors. The American Petroleum Institute (representing firms in the petroleum industry) sent a letter of opposition to the U.S. Congress (Jack Gerad

2009), and oil lobbying groups held rallies with free music and food, bombarding the American public with ads opposing the bill (Fahrenthold 2009). A lobbying firm hired by American Coalition for Clean Coal Electricity (representing major U.S. coal firms and utilities) even sent falsified constituent letters to members of Congress in opposition (Stephanie Strom 2009). Furthermore, the extensive and subversive role played by Koch Industries, an oil giant, and conservative think tanks in the bill's demise is catalogued in a recent book (Leonard 2019). Here we see a clear influence of think tanks (Brulle 2014; Jacques, Dunlap, and Freeman 2008), corporations (Brulle 2018; Farrell 2016a), and conservative groups (Farrell 2016b; McCright and Dunlap 2000, 2003) identified in sociological research on the denial countermovement and anti-reflexivity. Though examining how fossil fuel business-elite block carbon prices in explored in other chapters, their role is notable – particularly in political contexts where policymaking regimes receive undue influence from private organizations, wealthy individuals, and corporations (Campbell and Pedersen 2014; Hacker and Pierson 2010; Hertel-Fernandez 2019).⁷

Veto points effectively served as a broad measure of the openness of policy regimes to carbon price policy proposals and the number of ways they can be blocked. Though less powerful as a predictor of carbon price enactment, it plays an important role in case analyses.⁸ Veto points supply actors who oppose a policy with multiple opportunities to block it. In France, for instance, minority opposition has the option of sending an enacted policy to the Constitutional Council for judicial review and possible veto. Thus, proposed carbon prices were blocked twice due to minority opposition in France, until a successful third attempt to price carbon in 2013 (Rocamora 2017). Without a judicial veto point, France would have enacted

⁷ While the United States may be considered an outlier to some, event history analysis results are virtually the same without the U.S. case. Fossil fuel energy and veto points are key predictors.

⁸ An interaction term between fossil fuel energy and veto points was tested, but it was not significant.

carbon price thirteen years earlier. Likewise, the American Clean Energy and Security Act would have become law after passing the House of Representatives in 2009. The requirement for Senate approval (a veto point) meant fossil fuel groups and other actors had an additional opportunity to lobby against the policy. In the end, the policy proposal never reached the Senate floor: “10 moderate Democratic senators from coal and manufacturing states sent a letter to President Obama” opposing the bill (Washington Post 2009). All in all, veto points, which signify the openness of political institutions to policy proposals, have both empirical and theoretical support for impacting carbon price enactment. In sum, the spread of international forces is further interrupted when there are both powerful domestic interest groups and institutional barriers.

Conclusion

On April 22nd, 2016 one hundred and ninety-five nations signed the Paris Agreement. Ban Ki-Moon, then Secretary General of the United Nations, closed the signing ceremony with optimism: “Today, the governments of the world made history...a covenant with the future” (United Nations 2016). The world celebrated; it was the most successful United Nations Framework Convention on Climate Change to date and even the United States and China were signees. However, certain features of the agreement left economists and scholars of international law doubtful. Each country had targets to lower emissions, but failure to reach those targets carried no penalty or cost. The Paris Agreement was non-binding.

The Paris Agreement highlighted a circumstance that economists call the ‘free-rider problem’ or a situation that arises when the benefits of public goods are non-excludable. Imagine a metro system financed by ticket sales, but lacking any mechanism to block or penalize riders who don’t purchase tickets. The metro would soon shut down, unable to survive the externality

of benefits and low earnings. The same situation follows the Paris Agreement. Because countries are not held accountable for exceeding carbon emission targets, they can “free-ride” and take no action. They benefit from a more stable climate, at no cost, due to the emission-limiting policies of other countries (Cooper et al. 2017; Nordhaus 2015; Parry 2017). It is not surprising then, that not one wealthy democracy has achieved its ambitious targets following the Paris Agreement (Victor et al. 2017).

Clearly, signing climate agreements versus taxing emissions entail different calculations and policy decisions. Many countries are enacting carbon prices within the convenience of their domestic, especially energy, limitations (see Figure 1) *precisely* because the global free-rider problem undermines the force of international norms and values. As long as the free-rider problem exists, most countries will not move beyond ‘manageable’ or token sacrifices largely determined by interest group politics. My findings on carbon prices are consistent with scholars who find that current international forces often do little to shape significant national climate action (Christoff and Eckersley 2011; Harrison and Sundstrom 2007; Lachapelle and Paterson 2013; Victor et al. 2017).

Though it would seem probable that international climate agreements, the EU, and environmental INGOs would have an impact on carbon price adoption, it is likely that the spread of international norms is not sufficient for the enactment of domestic carbon pricing because there are powerful actors with an interest in blocking the policy (anti-reflexivity). Other arenas such as education, have more local benefits that outweigh costs. These findings are important for scholars of world society to take into account, extending previous work that argues against the direct connection between policy and practice, highlighting the importance of national contexts (Shorette 2012). In addition to climate change, it is likely that issues plagued by the free-rider

problem and politicization, such as refugee asylum (Thielemann 2018; Thielemann and Dewan 2006), are also less amenable to world society theory. Thus, future world society scholarship should attend more to (1) whether international participation incurs substantial local costs or powerful stakeholder opposition and (2) whether the benefits of such participation are more domestically or globally distributed. These allowances provide a deeper understanding of the limits of the theory for explaining the spread of international values, norms, and change.

This chapter identifies the first main factor in the book: globalism. Carbon price enactment and strength is significantly impacted by the free-rider problem, which empowers national interest groups to determine policy outcomes. No country or firm want to ‘lose out’ in a liberal global economy without rules that regulate all actors, so they continue to prioritize growth and competition over serious reform that may pose domestic challenges. This research on the enactment of carbon prices is among the first to conduct a medium-N, systematic comparative analysis of carbon prices. As this is an early quantitative study in the political economy of carbon pricing, the selected conditions and explanations are broad. The next chapter serves to go deeper and investigate forces at the country level. It will offer analytic clarity to factors that were hinted at such as fossil fuel firm power and path dependence of energy structures.

Chapter 1 is a reprint of the material as it appears in Socius, 2021, Driscoll, Daniel. The dissertation author was the primary investigator and author of this paper.

CHAPTER TWO: IMPEDIMENTS TO PRICING CARBON: LESSONS FROM THE US

The American Clean Energy and Security Act of 2009 (H.R. 2454) was the first major attempt by the United States to price carbon. In the narrative that follows, I unpack the actors that rose to oppose it and what led to its eventual demise. The reader will observe the influence of key factors from the previous chapter's analyses, namely fossil fuel energy and veto points, but also how the nature of American political institutions and growth also block pricing carbon. This narrative and the discourse from the opposition reveal how the socio-politics of pricing carbon goes beyond the macro-level predictors of the twenty-country comparison.

The proposed carbon price of 2009

U.S. House Democrats Waxman of California and Markey of Massachusetts advanced the American Clean Energy and Security Act in the spring of 2009. The legislation set a cap on national emissions beginning at a 3% reduction in 2012, rising to 83% in 2050 (Henry Waxman and Edward Markey 2009). The proposed emission reductions and economic shifts, which Representative Waxman called “decisive and historic” (John Broder 2009), did not go unnoticed. Without delay, interests mobilized to both shape and oppose the bill.

Two months before the House vote, from April 21 to 24, the House Committee on Energy and Commerce held hearings for expert and stakeholder testimonies on the bill. Then-President and CEO of the American Public Power Association (representing a significant portion of community-owned electric utilities in the U.S.), Mark Crisson, gave a testimony that established clear links between energy consumption and the U.S. ‘growth model.’ In his ‘state-of-affairs’ on the U.S. economy, he underlined the importance of household consumption for the U.S. economy: “A sharp drop in consumer spending during the second half of 2008 was largely

responsible for the downturn in economic activity.” He then connected energy prices to the economy: “Inflation - an area of mounting concern about a year ago when energy prices rose to record levels...the swing [reversal of inflation] was due in large part to a reversal in the energy price run-up” (Mark Crisson 2009:1–3). In other words, a key player in the energy sector connected rising consumer energy prices to inflation and also household consumption.

Other actors at the hearings made the case for why pricing carbon and increasing energy prices could harm the economy. The President of Duke Energy, one of the largest electric utilities in the U.S., while not opposing the bill, expressed difficulty with the energy transition:

For Duke, this is especially challenging. We are the third largest consumer of coal in the country and we emit, a little more than 100 million tons a year of carbon dioxide. In our midwestern service territory, coal accounted for more than 90% of our electricity generation, meaning those customers are particularly vulnerable to the cost increases that will occur when carbon becomes a regulated emission (The House Energy and Commerce Energy and Environment Subcommittee 2009:174).

Stakeholder connections between regulating fossil fuels and harm to household consumption due to high fossil fuel energy reliance couldn’t be more evident. At the same hearing, policy experts from conservative think tanks gave testimonies as well. A Cal State Fullerton Professor of Economics, affiliated with the libertarian Cato Institute, claimed: “This bill’s thrust is to make energy needlessly scarce, and then somehow we reach a conclusion that this action is good for the economy” (The House Energy and Commerce Energy and Environment Subcommittee 2009:537). He ignores that fact that the bill is intended to make *only* fossil fuel energy scarce and then generalizes its impact on the economy. Another policy analyst, this time from the conservative Heritage Foundation, added numbers to similar claims:

This restriction drives up energy costs, drives down income, and drives jobs away... ...we find the first two decades of a 40 year program to cut CO₂ by 70 percent will lead to \$5 trillion of lost gross domestic product, will increase energy taxes by another \$5 trillion, will lead to three million lost manufacturing jobs, and 400,000 to 800,000 fewer jobs overall, even after accounting for green job

creation (The House Energy and Commerce Energy and Environment Subcommittee 2009:264–65).

Despite a Congressional Budget Office report concluding economic impacts of the policy would be minimal and would actually reduce deficits (Congressional Budget Office 2009), the Heritage Foundation worked particularly hard to prove the legislation would harm the economy. Soon after the April hearings, they subsequently released a memo in May, estimating even higher costs to the economy. They claimed the policy was essentially, “government-set caps on energy use that damage the economy and hobble growth” (Heritage Foundation 2009a:1).

The campaign against the policy only intensified as time wore on. The American Petroleum Institute (representing hundreds of corporations in the petroleum industry) sent a letter of opposition to Congress three days before the vote. Among the many arguments against the bill, their president and CEO wrote that the, “oil and gas industry, alone directly and indirectly supports 6 million American jobs. These jobs and their economic productivity should not be jeopardized” (Jack Gerad 2009). When the House narrowly passed the bill and it moved forward to the Senate, opposition mounted. In August a lobbying firm hired by American Coalition for Clean Coal Electricity (representing major U.S. coal companies and utilities) was exposed for sending falsified letters to members of Congress in opposition to the bill (Stephanie Strom 2009). Oil lobbying groups also funded well-attended “rallies with free lunches, free concerts and speeches warning that a climate-change bill could ravage the U.S. economy” amid a flurry of TV ads, far outspending environmental NGOs (Fahrenthold 2009). Strategy targeted both politicians, who were originally bipartisan on the bill (Leonard 2019a) and the public, who largely supported the bill (Fahrenthold 2009).

With a Senate decision looming, the Heritage Foundation continued its onslaught. In early August, the foundation released a comprehensive 22-page report. On the first page, the report asserts that,

Since energy is the lifeblood of the American economy, 85 percent of which comes from CO₂ emitting fossil fuels, the Waxman–Markey bill represents an extraordinary level of economic interference by the federal government. For this reason, it is important for policymakers to have a sense of the economic impact that accompanies any environmental benefits. (Heritage Foundation 2009b:1)

The report continues to make similar claims regarding jobs and GDP as before. What is important here is that sectoral interests are working to convince policymakers that regulating and limiting fossil fuel energy, essential to growth, will ruin the economy.

There is one fossil fuel sector actor, in particular, whose influence cannot be ignored. Koch Industries, founded on the business of oil refinement (still central to its profits today), has considerable investments in the fossil fuel industry (Leonard 2019a; The U.S. Securities and Exchange Commission 2005). In fact, the company has sunk billions into oil refinement and any decrease in demand for oil could potentially lose the company trillions over many years (Leonard 2019b). As a result, despite well-orchestrated discretion at the time, the Koch effort to oppose the policy was extensive and has become more publicized today. As the second largest private company in the United States (Forbes 2019), with more revenue than “Facebook, Goldman Sachs and U.S. Steel combined” (Leonard 2019b), Koch Industries used its substantial resources and spent millions to block the policy. Their bag of tricks included condemning Republican politicians who had supported the bill, hiring protestors to hijack events, funding an ‘echo chamber’ of think tanks (including the Cato Institute and the Heritage Foundation, among many) and lobbying groups to pepper policymakers with arguments and reports condemning the policy, galvanizing the Tea Party against it, supporting sympathetic experts on government panels and

committee hearings, and organizing Republican politicians to take pledges against it (Leonard 2019a). There is little question that “Koch Industries had faced an unprecedented economic threat in the form of the Waxman-Markey bill and had played a vital role in derailing it” (Leonard 2019a).

The opposition to the American Clean Energy and Security Act was mainly sectoral. Fossil fuel firms coupled with influential private organizations and hired lobbying groups worked to make clear the connection between fossil fuel energy consumption and the U.S. economic growth model. Their arguments against the policy converged around the fossil fuel regulations harming the U.S. economy and jobs – high employment is essential to the U.S. growth model (Blyth 2020). They wielded many strategies and resources to convince both policymakers and the public that enacting the legislation would destroy the U.S. economy. How did policymakers respond? According to my expectations, because of significant instrumental power of fossil fuel firms in a deregulatory context, policymakers are vulnerable to being persuaded of the essential position of fossil fuels in the U.S. growth model. They may even parrot the ideology espoused by firms, lobbying groups, and private research organizations. In other words, due to the significant instrumental power exercised by firms, they are convinced of its arguments about the requirements for the U.S. economic growth.

The ideology of the fossil fuel centrality to the economic growth became stronger and more dominant in political discourse over time. Early on, there was some bipartisanship (Leonard 2019a), soon however, by the time the House voted, polarization had taken effect. On June 26th, when the bill was set to be voted on, opposition became nearly uniform from the Republican Party. Many policymakers, parroting think tanks and fossil fuel stakeholders, linked fossil fuel energy to economic growth and consumption: “Coal does much more than keep the

lights on in big cities across America. In my district, it covers the mortgage, puts food on the family dinner table, and keeps open the doors of small businesses” (Nick J. Rahall II 2009). They then continued with grand critiques from calling the legislation “the biggest tax increase in American history” to “the most important economic bill [in negative impact] before this House in the last 100 years.” These are astounding statements for not just a carbon price, but for any legislation. Policymakers cited the Heritage Foundation report, while critiquing the Congressional Budget Office report. Multiple Republicans associated the bill with a laundry list of problems: “economic disaster...severe job loss...[the price of] every good and service in this country is going to go up... government regulation of the very air you breathe... will not reduce emissions (U.S. Congress 2009a). After a filibuster by Republican John Boehner (Real Clear Politics 2009), the bill passed by a narrow 219-212 margin (U.S. Congress 2009b).

Before the bill had even reached the Senate, Senate Republicans began to espouse the ideology against the bill. In early June Republican Senator John Barrasso, from Wyoming, parroted many:

ACES is going to have a devastating effect on our economy...The Heritage Foundation predicts that the ACES approach could cost the economy \$9.6 trillion and more than 1 million lost jobs into the future. And these are just the raw numbers. The real potential for economic pain goes much further... Why are the American people being given this stacked deck, where all of the options hurt the economy, raise energy prices, and cost jobs? (John Barrasso 2009).

When the bill was voted on in the House, the Republican Party had reached near ideological unity; even Senate Republicans were espousing the costs to the economy and jobs, along with ideology from the Heritage Foundation. When the bill reached the Senate, however, the Democratic Party started splitting. In mid-August “10 moderate Democratic senators from coal and manufacturing states sent a letter to President Obama” opposing the bill in its current form (Washington Post 2009). In the end, the bill never made it to the Senate floor. In sum, the

instrumental power of the fossil-fuel firms shifted bipartisanship to polarization to hegemony (with Democrats defecting). Fossil fuel firms had won.

This chapter

The previous chapter outlines obstacles to pricing carbon, utilizing statistical analyses of a medium-n sample. The answer – that high fossil fuel energy and institutional veto points make pricing carbon less probable – is very broad in scope. While pricing carbon is linked to domestic conditions (political institutions and energy) more than international ones, the above narrative shows that there is certainly more to unpack that a focused case-level investigation can illuminate. I select the United States as an illustrative case to reveal in-depth impediments to pricing carbon because it perfectly fits the model of impediments in the 20-country comparison. With both high fossil fuel energy and veto points, the U.S. is less likely to adopt a carbon price than other wealthy democracies. Furthermore, the United States has emitted more cumulative carbon emissions than any country on earth and per capita emissions nearly triple those of most countries (Hickel 2020; World Resources Institute 2018). When ranked among nearly sixty comparable countries on climate change performance in the areas of emission reductions, renewable energy, energy consumption, and policy responses, the United States is in last place (Burck et al. 2020). Thus, while it fits the model (see Figure 1 in the previous chapter), it is also somewhat exceptional (exceptionally poor performing, that is) in other areas of climate action. This makes studying the nature of carbon pricing in the United States particularly revealing for understanding impediments.

The above narrative revealed how barriers to pricing carbon may go beyond factors from the twenty-country comparison. To unpack barriers further, this chapter analyses the comparative

political economic foundations of carbon pricing in the United States. It unfolds as follows. First, to follow up with the opposition's arguments regarding carbon pricing and economic growth, I investigate the economic growth regime of the United States and how it may or may not complicate taxing emissions in comparison to other countries. Second, I overview the regulatory regime of American political institutions, their roots, and how that regime enables business-elite influence in federal climate policy. Third, I combine my evaluations of both regimes to advance a framework for understanding obstacles to pricing carbon. I overview state-level carbon prices and conclude with a discussion of the future of carbon pricing in the United States.

The American Economic Regime: Growth Models and Pricing Carbon

When describing the potential harms of pricing carbon, the opposition to The American Clean Energy and Security Act invoked economic growth continually. By describing and interpreting the U.S. growth model they were empowered with ideology that was later parroted by politicians. The fossil fuel sector, think tanks, and lobbying groups all emphasized the difficulty of transitioning from a growth model so reliant on fossil fuels. The Heritage Foundation called fossil fuels the 'lifeblood' of the U.S. economy. Politicians who opposed it, were calling the policy "the most important economic bill before this House in the last 100 years" (U.S. Congress 2009b). The magnitude of that assertion is astounding for a climate policy, but perhaps unsurprising for a country with strong ties between fossil fuels and growth. What is the actual relationship between carbon emissions and growth in the United States?

The Political Economy of Growth and Emissions

Policy makers prioritize economic growth because the benefits are undeniably numerous (Friedman 2006; Inglehart 2018; Kenworthy 2020). As long as wealth is not concentrated at higher rates than GDP growth (Piketty 2014), economic growth means increases in insurance and health programs, educational levels, public favor for equality, safety, life expectancy, democratic participation, and more for societies (Friedman 2006; Inglehart 2018; Kenworthy 2020). Therefore, understanding how to decrease emissions while sustaining growth is one of the most critical and pragmatic questions to answer. Why might the characteristics of a growth regime add difficulties to pricing carbon? In what follows, I outline the relationship between economic growth and emissions and apply new insights from the field of comparative political economy for understanding how we might think about growth and climate reform (in turn, pricing carbon) together.

The relationship between economic growth and emissions has engaged environmental sociology for over forty years. Many of the questions that scholars ask can be simplified to the following: can emissions meaningfully decline in a growth-oriented capitalist world (Jorgenson and Clark 2012; Schnaiberg 1980; Frank, Hironaka, and Schofer 2000; York, Rosa, and Dietz 2003; Mol 2003; Gould, Pellow, and Schnaiberg 2008)? As carbon emissions are linked to changes in economic activity, a fundamental follow-up question asks: how do variations among national economies block or facilitate effective climate reform? This transforms the study of economic growth and capitalism to a more-accurate, multi-dimensional approach.

The study of growth has a long history in the field of comparative political economy (Aglietta 2001; Boyer 2000; Boyer and Saillard 2005; Kalecki 1943). Lucio Baccaro and Jonas Pontusson currently lead the most recent and empirically driven approach (Baccaro and

Pontusson 2016), termed ‘Growth Models.’ They assert that following the end⁹ of the wage-led growth in the 1970s, policymakers found other ways to increase aggregate demand (i.e., GDP). Today, economies increase aggregate demand by stimulating (1) household consumption (i.e., increasing demand through wages -- commonly, debt and credit); (2) exports or depending upon foreign demand; or (3) a mixture of both. The growth model perspective is essential because it reveals how different models for growth shape socio-economic and political outcomes. For instance, the nature of growth models have impacted the politics surrounding distribution and wage shifts (Baccaro and Benassi 2017) as well as the powers of central banks (Braun and Deeg 2019). As carbon emissions are highly associated with economic growth, the growth model perspective is also key for studying carbon emissions. What consequences might a particular growth model have for policies and practices that attempt to curb emissions? That investigation begins by describing the growth model itself.

The consumption-led growth model of the U.S.

Aggregate demand is driven by household consumption, at 70% of GDP (U.S. Bureau of Economic Analysis 2020). This means most of the economy is stimulated through wages, debt¹⁰, and credit, inducing American citizens to spend and consume. The global dominance of the U.S. dollar, serving as the world’s reserve currency, also drives up household consumption (Klein and Pettis 2020; Schwartz 2019). The country is the leading importer (consumer) in the world (Schwartz 2019). Buying cars, driving, heating large residential and commercial buildings, filling those buildings with goods, and more are all embedded in the global trade economy.

⁹Due to liberalization, financialization, union decline, and deindustrialization/globalization.

¹⁰ Note that with regard to household debt, the United States sits in the middle of wealthy democracies (OECD 2020).

Growth in the United States was built upon the prosperity offered by fossil fuels (Fisher 2006; Murphy and Dunlap 2012; Oatley and Blyth 2021). What is the connection between household consumption and fossil fuel energy? The majority of emissions in the United States are from electricity, buildings, and transportation (Environmental Protection Agency 2018). How does transport and energy consumption in the United States compare to the other wealthy countries in this book? Table 2.1 displays the contribution of consumption to annual GDP growth, per capita emissions, fossil fuel energy, per capita energy use, car ownership rates, gas prices, and miles driven.

Table 2.1 Comparing annual carbon consumption across wealthy democracies. Note: Data on per capita emissions, fossil fuel energy, energy use, and cars are sourced from the World Bank. Gas price data is sourced from Bloomberg and driving data is sourced from the World Resources Institute. Consumption Data are sourced from the OECD. All data is from most recent year except consumption and emissions data which are averages calculated from 1979 (the business cycle peak year for many of these countries) to 2018.

	Average contribution of Household Consumption to GDP growth	Average per capita emissions (metric tons)	Fossil Fuel Energy (% of total electricity use)	Energy use per capita (kg of oil equivalent)	Cars owned per 1000 people	Gas Price (USD)	Miles Driven
Average (without USA)	1.08	9.1	69	4032	580	5.95	3873
USA	1.88	19.03	82	6804	797	2.91	8077

Clearly, American consumption is more carbon-intensive than most counterparts. Americans consume more electricity, the majority of which is from fossil fuels. They enjoy much lower gas prices, which contributes to their driving and owning more cars. The carbon-intensity of consumption is intensified by inequality (Jorgenson et al. 2015; Knight, Schor, and

Jorgenson 2017; Lynch et al. 2019; Soener 2019). Middle classes attempt to mimic the consumption of the wealthy (Behringer and van Treeck 2019; Fligstein and Goldstein 2015), whose consumption is particularly carbon-intensive (Lynch et al. 2019). All in all, household consumption (and by default, aggregate demand) in the United States is tied to high emissions. It's not surprising, then, that the United States has emitted more CO₂ than any other country in history of the world (Hickel 2020; Ritchie 2019).

Reverse carbon pricing: subsidies and finance

The United States economy already prices carbon, but with fossil fuel subsidies and loans instead of taxing emissions. With a comparable population and GDP to the European Union, the United States spends 649 billion dollars per year in fossil fuel subsidies while the European Union spends 289 billion (David Coady et al. 2019). Why? Perhaps because, in addition to having denser cities, most European countries are exporters and are less reliant on domestic consumption to drive growth. Subsidies in the United States incentivize the consumption of carbon-intensive goods and the living of carbon intensive lifestyles. We see a similar trend in finance.

The Rainforest Action Network leads a group of NGOs that track bank lending to fossil fuel sectors (ENGO Coalition 2020). Their datasets outline annual financing from specific banks, but do not group the banks by nation. I organized the banks by nation to compare the assets that each country's banks have in fossil fuel development. Organizing banks by nation exposes a stark image. From 2016-2019, U.S. banks funded the fossil fuel sector and its development with over 1.1 trillion dollars (see Figure 2.1). That is approximately triple what the second leading nation (Canadian banks) has funded and almost equal to the funding of all other nations

collectively (1.5 trillion). This fact underlines the relatively sizeable investment that the U.S. financial sector (a central national sector) has in fossil fuels and their continued growth. One might argue that the U.S. financial sector has comparatively greater stakes in fossil fuel development because, in addition to being profitable, fossil fuels support U.S. household consumption. Though the United States is a huge economy and thus, bestowing more funds upon fossil fuel sectors than other nations makes logical sense, it is undeniable that U.S. banks have significantly more capital in fossil fuel development than banks in other countries. Furthermore, banks wield substantial political power (Culpepper and Reinke 2014).

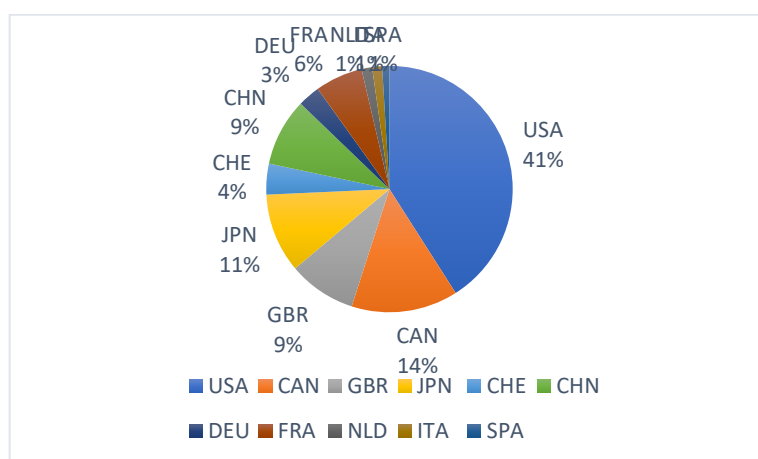


Figure 2.1 Comparing national private bank financing of fossil fuels across 11 countries, 2016-2019. Note: Data are sourced from ENGO coalition report: *Banking on Climate Change: Fossil Fuel Finance Report 2020*.

All in all, from an instrumental standpoint, the U.S. economic growth regime appears to disincentivize climate reform and attempts at decreasing emissions in a number of arenas. This has a direct relationship to pricing carbon. Many carbon prices impact energy consumption (i.e. electricity use, driving, etc.). It is no wonder that the world's largest import market is slow to make that consumption, which in turn drives its growth, more expensive. The OECD calculates effective carbon price rates (regardless of climate policies themselves) across countries, and the

United States is among the weakest when it comes to passively pricing carbon (OECD 2018). In the following section, I examine American political institutions.

The American (de)Regulatory Regime

The main opposition to The American Clean Energy and Security Act came from the fossil fuel energy sector. When the sector faced regulation and decreased profits, they mobilized and used a variety of strategies to convince both policymakers and the public that the legislation would harm the U.S. economy. They were increasingly successful over time at convincing both Republicans and key Democrats who in the beginning were less divided over the bill. The sector also functioned cleverly within the deregulatory power structures of the U.S. policymaking regime where private organizations and wealthy individuals have undue influence (Campbell and Pedersen 2014; Hacker and Pierson 2010; Hertel-Fernandez 2019; Medvetz 2012). Think tanks and lobbying groups were key recruits that shaped the character of policy knowledge and discourse on climate issues, underlining the structural importance of fossil fuel energy (Brulle 2014, 2018).

Pricing carbon requires policies that regulate carbon emissions. When compared to other wealthy democracies, how does the U.S. regulatory regime compare? Toward these ends, I utilize data on Australia, Austria, Belgium, Canada, Denmark, Finland, France Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Comparing these particular countries is well-practiced in the field of comparative political economy (Huber, Huo, and Stephens 2017; Kenworthy and Hicks 2008). Table 2.2 compares the United States with the sample average, revealing that the U.S. is more deregulatory in every category. It scores less regulatory on levels of economic regulation,

employment protections, corporate income taxes, and social spending. In short, the U.S. intervenes less in the economy and markets than most comparable wealthy countries. It also provides fewer social protections for its citizens.

Table 2.2 Comparing the U.S. with other wealthy democracies. Data sources: Economic Regulation Index (high scores indicate less regulation), Fraser Institute (2017); Employment Protection Index, OECD (2019); Tax Revenue, OECD (2015); Corporate Income Tax Rate, OECD (2020); Government Employment, OECD (2015); Social Spending, OECD (2018).

	Economic Regulation Index	Employment Protection Index	Corporate Income Tax Rate	Social Spending (% of GDP)
Average (without USA)	8.01	2.02	22.2	23.02
<i>United States</i>	<i>8.86</i>	<i>0.09</i>	<i>21</i>	<i>18.72</i>

Key comparative scholarship supports the data. The varieties of capitalism (VOC) literature categorizes the United States as a Liberal Market Economy, characterized by deregulated competitive markets (Hall and Soskice 2001). Policies enacted during the Reagan-era (1981-1989) are key for understanding this context. The deregulations were, in part, a reaction to a spate of regulations enacted in the 1960's, effective lobbying from business-elite, and addressing grievances of the popular consumer movement which argued that the government gave firms unfair advantages over consumers (Prasad 2006). Thus, the ideology supporting deregulation was both pro-business and pro-consumer, both from the right and the left respectively. Surprisingly, discourse on free markets was minimal. Furthermore, the era was transformative for fiscal policy. Taxes were cut largely in response to the anti-property tax

movement (Martin 2008) and politicians discovering the broad appeal of tax cuts (Martin and Prasad 2014; Prasad 2006). In short, the United States is very much a deregulatory context. How does this impact its policymaking regime?

Business-elite Power: US Fossil Fuel Firms

When compared to other policymaking regimes, the United States is distinctive for a policymaking knowledge regime shaped by private organizations, funded by wealthy individuals and groups (Behringer and van Treeck 2019; Campbell and Pedersen 2014; Fligstein and Goldstein 2015; Hertel-Fernandez 2019; Medvetz 2012). In short, organized interests with abundant resources increasingly shape policy (Hacker and Pierson 2010). Thus, especially in the deregulatory U.S. context, challenging existing economic policies or implementing new ones requires an understanding of power (Gourevitch 1986).

For the purposes of this work, I use the concepts of *structural* and *instrumental* power to understand the form of power, usually from firms, in shaping climate policy. Structural power typically refers to “a set of mutual dependencies between business and the state” (Culpepper 2015:391). In other words, this circumstance affords business significant influence on policy outcomes because their structural “power results from the fact that firms and capital holders control the investment decisions on which the economy depends for growth” (Culpepper 2015:396). In this sense, economic policy aligns with firms in key structural positions almost automatically (Hacker and Pierson 2002), barring some cases when some firms use their structural power strategically (Culpepper and Reinke 2014). The clearest example of fossil fuel firm structural power in a national economy is the oil sector in Norway’s export-led growth model where oil is the largest export. Because the state and oil sector are dependent upon one

another, the oil sector has exemptions from the national carbon tax policy (World Bank 2019) and recently received tax relief in the face of decreased global demand during the coronavirus pandemic (Adomaitis and Solsvik 2020).

Instrumental power, on the other hand, typically refers to lobbying, campaign donations, privileged access, and other tactics that firms utilize to actively influence policy outcomes (Braun 2018; Culpepper and Reinke 2014). Firms are forced to use these tactics because they do not have a structurally central role in the economic growth model. Instrumental power varies across firms and some are effective enough that they convince policymakers of their structural centrality, despite it being fabricated. “Being instrumentally powerful can make business appear structurally powerful. That is to say, businesses may only acquire and retain their structural power as a consequence of their possession of instrumental power” (Hindmoor and McGeechan 2013:346–47). The revelation that some firms only ‘appear’ structurally powerful is crucial for reform. It means transitioning the growth model will be less costly compared to a growth model where a firm contributes to or controls economic growth. The general instrumental power of firms can also vary with political systems and how much lobbying, campaign contributions, and capital can alter political outcomes (Hacker and Pierson 2010).

With regard to power, environmental sociology scholarship identifies key actors that utilize instrumental power to block climate change action and utilize a variety of tactics to great success in the U.S. context. These actors, together, are often referred to as the ‘Denial Countermovement,’ and scholars find that they wield significant influence in the area of politics and public opinion (Dunlap and McCright 2015). The fossil fuel industry and corporations deliver substantial anti-climate lobby power (Brulle 2018) and fund climate denial groups and research (Farrell 2016). Conservative think tanks and foundations support anti-climate

organizations, front groups and Astroturf campaigns, and the production of denial ideology in political parties (Brulle 2014; Dunlap and McCright 2015). The Koch brothers and others, for instance, persuaded the populist Tea Party to include climate denial in its platform (Dunlap, McCright, and Yarosh 2016). Individuals like contrarian scientists often receive undue media exposure (Boykoff 2008) and work to spread misinformation on climate science, often to further their personal interests (Oreskes and Conway 2011). Finally, the conservative mainstream and social media along with conservative politicians support this political project with near ideological unity (Carmichael and Brulle 2017; Dunlap and McCright 2015). The central ideological claims of the denial countermovement are (1) there is shoddy evidence of anthropogenic climate change, (2) even if climate change occurs, it will result in a net positive for society, and (3) any measures that serve to fix climate change will injure society, particularly economically. In sum, this ‘Denial Countermovement’ wields significant instrumental power at multiple levels in society.

Research on the climate denial countermovement, crucial for identifying the forces that work to block effective climate reform, also can be expanded and clarified. No work yet outlines a hierarchy of the relative influence of particular actors (i.e., politicians, media, firms, scientists, corporations, etc.). As many of the studies focus on specific actors, there is little evidence of who carries the most clout in blocking actual climate reforms. Second, research on the links between the denial movement and the economy is still in its early stage. Scholars argue that denial movements occur in countries with “strong commitments to neoliberalism and a powerful fossil fuels industry” (Dunlap and McCright 2015:319) and represent a form of ‘anti-reflexivity’ or blocking reforms due to their “staunch commitment to protecting the current system of economic production” (Dunlap 2014:1). While this theory is foundational and empirical work is developing

(McCright et al. 2013), scholars who study the denial-movement call for empirical tests, cross-national research, and refinements of theory (Dunlap 2014; Dunlap and McCright 2015). In short, specific actors and economic foundations must be identified. To sum up, the American regulatory regime is characterized by deregulation and political institutions that empower business-elite (in the case of climate politics: fossil fuel firms). They have both abundant economic influence and political opportunity.

A Framework of National Carbon Price Impediments

The United States offers scholars interested in understanding impediments to pricing carbon a rich case study with many avenues for development. Below in Figure 2.2, I outline a framework of blocks to pricing carbon. Three societal arenas are mainly responsible for complicating and/or blocking the implementation of carbon prices. Economically, a country's particular growth model may disincentive taxing particular sectors if they make contributions to growth, particularly if they are imbedded in international trade. Furthermore, high subsidies or loans to fossil fuel sectors can also serve as reverse carbon prices, further embedding a carbon-intensive economic system. With regard to institutions, if they are deregulatory in nature, offer actors ample opportunities to block reforms, and provide privileged influence to business-elite, then carbon price adoption is even less likely. Both economic and institution frameworks, in part, hinge on the energy profile of the country. Without significant fossil fuel energy and the business-elite that accompanies it, economic and institutional factors will matter less in blocking carbon price adoption. With significant fossil fuel energy and the business-elite the accompanies it, taxing carbon emissions could appear to threaten the growth model and fossil fuel firms will have opportunities to block regulations in political institutions. Note that while I have privileged

the influence of energy in the figure below, economic and institutional factors can impact one another, however it is most likely under the conditions of high fossil fuel energy.

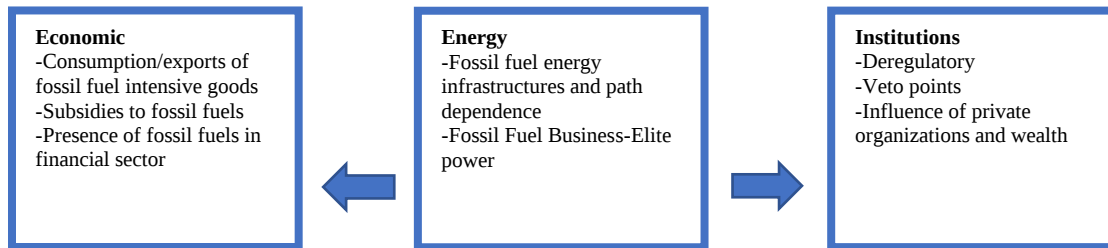


Figure 2.2 National Blocks to Pricing Carbon

The future of carbon pricing in the United States

Both this chapter and the previous one demonstrate how carbon price adoption is less probable in the United States than other countries. Furthermore, though not examined in the chapter, public awareness and support rarely make a significant difference. Public opinion on climate change sways with the economy (Scruggs and Benegal 2012), levels of fossil fuel energy use in the country (Knight 2018; Tvinnereim and Ivarsflaten 2016), and political orientations (McCright and Dunlap 2011). Furthermore, the U.S. climate movement is particularly impotent (Brulle and Jenkins 2008; McAdam 2017). Still, circumstances do change. The issue of global climate change is only increasing in salience and a progressive Democratic majority could tilt the country in that direction again. In what follows, I discuss the potential for state-level carbon prices and other climate policies in the United States.

US State Carbon Price Adoption

Carbon prices may not be completely ruled out in the United States. While attempts to enact a carbon price at the federal level have been unsuccessful, certain states have taken up the call. Is carbon price adoption at the U.S. state level, like the twenty-country comparison of the

previous chapter, also driven by the unique fossil fuel energy profiles and political institutions of each state? While few cases exist, there is an opportunity to compare adopters with non-adopters. Methodologically, comparing U.S. states offers leverage for answering this question with key aspects of national context (i.e., federal regime, national political culture, etc.) held constant.

According to the criteria of the World Bank, the states of California, Massachusetts, Virginia, and Washington have a carbon price in some form. How do they compare to the rest of the United States? Table 2.3 compares the four states with the rest of the forty-six. While the four states (save Washington) utilize an average amount of carbon intensive energy, each state is trending in a less carbon-intensive direction. California has expanded solar energy, Massachusetts and Virginia have largely phased out coal, and Washington state has relied upon hydro-electric power (Popovich and Plumer 2020). Most importantly, the rates of per capita energy use and emissions in these four states are dwarfed by the national averages. Life in all four states is not very carbon intensive compared to other states. Therefore, enacting a carbon price is cheaper for existing energy infrastructures and policy proposals trigger less opposition from utilities and other firms who would play a larger role in the energy economies of other states.

Furthermore, each state's partisan alignments also support the adoption of carbon prices. United States politicians and the public are divided on the issue of climate change along partisan lines, which have driven past vetoes (Driscoll 2019; McCright and Dunlap 2011). A strong Democratic majority facilitates policy adoption and limits the policy's exposure to veto players. California, Massachusetts, and Washington states have solid Democratic orientations and Virginia leans Democratic (Gallup 2019). All in all, there is strong evidence that the comparison of twenty countries further predicts state level action.

Table 2.3 Comparing carbon pricing in U.S. states. Notes: Averages are calculated without adopters. Carbon prices were identified from the World Bank Carbon Pricing Dashboard. Data sources: Carbon intensity of the energy supply, EIA (2017); Per capita energy in millions of BTU, EIA (2018); Per capita energy-related carbon dioxide emissions, EIA (2017); Democratic Orientation, Gallup (2018).

	CO ₂ intensive energy / total	Per capita energy use	Per capita CO ₂ emissions	Democratic Orientation
U.S. average	53	368	21	22/50
<i>California</i>	<i>50</i>	<i>202</i>	<i>9</i>	<i>Solid Dem.</i>
<i>Massachusetts</i>	<i>54</i>	<i>212</i>	<i>9</i>	<i>Solid Dem.</i>
<i>Virginia</i>	<i>49</i>	<i>283</i>	<i>12</i>	<i>Lean Dem.</i>
<i>Washington</i>	<i>35</i>	<i>276</i>	<i>11</i>	<i>Solid Dem.</i>

Beyond carbon prices, other research finds that both the presence of high fossil fuel energy use and Democratic party strength impact renewable energy policy outcomes at the level of U.S. states (Vasseur 2014, 2016). There is also strong evidence that fossil fuel business-elite and utility companies play a significant role in shaping state energy policy outcomes (Stokes 2020). The above evidence on state carbon prices, confirms these findings. Only some states with the least carbon intensive energy use and a strong presence of the Democratic Party have adopted carbon prices.

Furthermore, the case of Washington illustrates that there is disproportionate fossil fuel business-elite influence in every state. Washington state uses significantly less fossil fuel electricity than every other U.S. state save Oregon, which also utilizes a great deal of

hydroelectric power. One would expect that this circumstance supported the adoption of the carbon tax (a different policy than the above one) that was proposed in 2018. The low fossil fuel energy circumstance may have supported the initial policy proposal, but it was not sufficient for the eventual adoption of the ballot measure. Groups supporting the measure spent 5 million dollars, while the fossil fuel industry spent over 20 million dollars to defeat it (Roberts 2018). The 20 million was spent by global companies and business organizations headquartered outside of Washington State such as BP, Chevron, Phillips 66, American Fuel and Petrochemical Manufacturers, and others. The campaign to support the policy raised only a quarter of that amount and lost. This case further highlights the political power of fossil fuel capital interests. Individual states that may have a higher probability of enacting a carbon price, like Washington, do not implement policies in isolation and still operate in the American context where fossil fuel business-elite have a vested interest in preventing policy diffusion.

Other climate policies for the United States?

Some argue, and rightly so, that other policies are less politically charged and have similar impacts. Carbon taxes or emission trading schemes have broad impacts across the economy. Other policies, such as electric vehicle incentives, efficiency regulations for carbon intensive industries like steel or cement manufacturing, or building codes and energy standards for homes, are more specific and focus on particular industries or sectors of the economy. Less ambitious policies simply set goals (such as New York's zero carbon electricity target) and while they may be nonbinding, they have been shown to generate shifts to carbon-free technologies. One recent policy proposal calls for the use of monetary policy to attack climate change. In this scenario, central banks would lower interest rates and provide loans to sectors that make

sustainable transitions (Loneragan and Blyth 2020). Lagarde of the European Central Bank (ECB), has also discussed using ‘green bonds’ as well (Arnold and Khalaf 2020). All in all, there are a number of policy avenues to fight climate change from fiscal to monetary policy. A carbon price is just one piece, albeit a strong one.¹¹ The United States can take any combination of these policies in a number of progressive directions.

It is worth mentioning that the U.S. growth model does not necessarily need to shift from being a consumption-led one. High consumption can exist with low per capita emissions when energy is renewable, and the grid (including transportation) is electric. The case of comparatively lower per capita emissions in the United Kingdom is suggestive of this possibility. While there are certainly costs and time associated with transitioning growth models (Barreyre 2015), this shift does not need to transform the entire growth model – simply what fuels it.

We know that transforming the U.S. growth model to substantially decrease emissions is unquestionably necessary for the good of the world, but could the conservative critiques be correct? Is it too hard for a country so tied to fossil fuel energy consumption to transition when its very source of welfare is tied to it? Will other countries in the world be forced to unite and threaten the U.S. economy with trade wars, embargoes, border taxes, and sanctions to lower national emissions? It’s possible. However, the evidence suggests that the U.S. transition doesn’t have to be so contentious. Again, the instrumental power of fossil fuel firms indicates that while they may have clout in political institutions, they do not control economic growth (structural power) because there are viable fossil fuel alternatives. We know that fully electrifying the grid and pushing renewable energy is the fastest path toward lowering emissions (Azevedo et al.

¹¹ A thoughtfully designed carbon price is essential because without one, expanding alternative energy only adds to, rather than displacing, fossil fuel energy, with little to no reductions in emissions (York 2012). This is why most experts and economists call for it.

2020). This transition is possible with policies that are proven to lower emissions without harming growth. According to the Congressional Budget Office, the American Clean Energy and Security Act of 2009, wouldn't have harmed the U.S. economy. While carbon prices impose costs and effectively lower reliance on fossil fuels and emissions (Andersson 2019; Cooper et al. 2017), enacted carbon prices, some of them nearly 30 years old, have not compromised economic growth in wealthy democracies (Driscoll 2020). The U.S. simply suffers from many impediments to pricing carbon.

My contribution here not only outlines impediments to climate reform, it also clarifies the hierarchy of interests within the denial countermovement (Dunlap and McCright 2015). Contrarian scientists, conservative media, and conservative politicians comprise the denial countermovement; however, their influence and incentives pale in comparison to fossil fuel firms. If the fossil fuel sector is empowered by a strong connection to the consumption growth model, it may exert non-trivial instrumental power. In the United States, fossil fuel firms enlist think tanks and lobbying firms for help. Contrarian scientists, conservative media, and conservative politicians are important actors in this 'social bloc,' but far less influential. My argument correctly focuses inquiry on sectors and firms, but also the broader political-economic foundations to their instrumental power.

One section of Chapter 2 has been expanded and submitted for publication of the material as it may appear in *New Political Economy*, 2022, Driscoll, Daniel. The dissertation author was the primary researcher and author of this paper.

CHAPTER THREE: PARIS (DIS)AGREEMENT: CONSTRAINTS & DEMOCRACY

It just passed unnoticed...you talk to anybody in the streets, they won't know they have a carbon tax. The day they realize this tax exists, the government might be in trouble.

-Interview with carbon tax expert. Paris, August 2018 (two months before the Yellow Vest protests)

The French carbon tax is perhaps the most interesting national carbon tax in the world. There are a few reasons why. First, the policy is comparatively strong. The French government collects more carbon tax revenue than any other country on earth and the policy's economic impact matches the impact of the strongest carbon taxes in Nordic countries. Second, the policy is comparatively less progressive than many other carbon taxes, which is surprising for a country well known for comparatively strong state regulation and social protections. Contrary to expectations for a less neoliberal country, in France the tax burden is on households, there are abundant exemptions for corporations, and much of the revenue is earmarked for corporate tax credits to lower labor costs and increase competitiveness. Finally, the policy history is contentious and challenges hopes about the role of democratic politics in solving climate change. The deregulatory and unequal tax design led the French constitutional court to block its enactment twice until policymakers found a method to work around the veto. Years after implementation, the policy faced populist backlash from the Yellow Vest Movement that shook the country. These points make the French case particularly instructive for understanding the socio-politics of national carbon taxation.

Using the French case, this chapter attempts to shed light on two questions. (1) What constraints lead to so many countries to adopt national carbon tax policies that contain exemptions and are often deregulatory? Many carbon taxes have exemptions (Cullenward and

Victor 2020; Mildenberger 2020), but the French deregulatory and business-friendly design goes beyond most. (2) Can democratic political institutions effectively decarbonize and govern the climate? How were French policymakers able to enact the carbon tax when the same unequal design in the past was declared unconstitutional by the French judicial court? In the investigation that follows, I first discuss France and the French tax in the context of comparative institutions and policies. I then present findings from a comparison of the three episodes of carbon tax policy proposals (2000, 2009, 2014), interviews with French policymakers and carbon taxation experts, and supplemental quantitative data. I find that the policy form and implementation over time was increasingly shaped by economic integration (including European), the power of carbon-intensive firms, and policymakers refining their strategies. I conclude with discussion and suggestions for considering carbon taxes in larger economies.

BACKGROUND: FRENCH REGULATION AND CARBON TAXATION

A substantial corpus of scholarship argues that countries, economies, and political institutions are more likely to adopt progressive policies than others. Variation between welfare policies tend to cluster in liberal, corporatist-statist, or social-democratic type regimes (Esping-Andersen 1990), and economic policies tend to associate with particular models of economic growth (Baccaro and Pontusson 2016; Boyer 2005; Hassel and Palier 2021). The varieties of capitalism (VOC) literature as a whole predicts coherence in policies across types of political institutions and economies (Hall and Soskice 2001). These theories are often underpinned by path dependent arguments; policymakers and institutions remain consistent across policy actions due to the historical constraints of their economic and political systems (Pierson 2000, 2011). In short, history matters. The consensus in the literature is always that France falls into a

progressive category. From its welfare state to its economic policies, the French state intervenes and regulates markets far more than most other advanced countries and offers greater support to its citizens.

When assessed on common neoliberal policy criteria, how does France compare with other wealthy democracies? Toward these ends, I compare France with Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the United States. Comparing these particular countries is well-practiced in the field of comparative political economy (Huber, Huo, and Stephens 2017; Kenworthy and Hicks 2008). Table 3.1 compares France with the sample average, revealing that France is less neoliberal in every category and, on many dimensions, an outlier. France scores less neoliberal on levels of economic regulation, product market regulation, employment protections, tax revenues, corporate income taxes, government employment, and social spending. In short, France has a large state that intervenes more in the economy and markets than most. It also provides more public social protections for its citizens.

Table 3.1 Comparing France with other wealthy democracies. Data sources: Economic Regulation Index (high scores indicate less regulation), Fraser Institute (2017); Product Market Regulation Index, OECD (2013); Employment Protection Index, OECD (2019); Tax Revenue, OECD (2015); Corporate Income Tax Rate, OECD (2020); Government Employment, OECD (2015); Social Spending, OECD (2018).

	Economic Regulation Index	Product Market Regulation Index	Employment Protection Index	Tax Revenue (% of GDP)	Corporate Income Tax Rate	Government Employment (% of total workforce)	Social Spending (% of GDP)
Average (without France)	8.10	1.33	1.89	35.8	21.7	17.4	22.4
France	7.32	1.47	2.56	45.2	32.02	21.4	31.2

Why is France more progressive than other comparable wealthy democracies? Key scholarship finds that France's repudiation of neoliberalism has nothing to do with cultural commitments to equality. After World War II, the goal of transforming an agricultural economy to an industrial one required pragmatic state intervention to support industry without removing politically popular social protections (Hall 1986; Prasad 2005, 2006; Vail 2018). Nationalizing industry had more to do with blocking capital flight than socialist ideals (Prasad 2005), and taxation was not progressive (Morgan and Prasad 2009). Furthermore, French policymaking is well-known for its hierarchical, technocratic expertise (Campbell and Pedersen 2014; Fourcade 2009; Fourcade and Babb 2002; Prasad 2005). This closed, and slightly myopic, policymaking environment meant that policy innovations often came from within rather than from outside sources (i.e., diffusion) or individuals (e.g., Hayek). This insulation created barriers to the

penetration of neoliberal ideas that invaded the liberal market economies of the United Kingdom and the United States (Fourcade and Babb 2002; Prasad 2006). All in all, several historical factors contributed to creating a centralized state, well known for its hand in guiding growth and preserving social protections.

It is worth acknowledging that in the above frameworks used to categorize economies there are incoherent cases and contingent outcomes (Amable and Palombarini 2009; Kenworthy 2006). For instance, Italy has high taxes, but instead of going to social spending, the revenue finances the debt burden. The United Kingdom, a classic liberal market economy, has a state-run National Health Service, a byproduct of World War II. Not every case fits into clear categories, but nevertheless one would not expect France to enact a deregulatory carbon tax that primarily burdens citizens. Indeed, the earlier iterations and proposals of the policy were more progressive.

Comparing Carbon Tax Designs

Table 3.2 compares France's carbon tax with carbon taxes in both larger and smaller economies. France has the strongest non-Nordic national carbon tax. While France's GDP matches those of Canada, Japan, and the United Kingdom, its carbon tax revenue percentage of GDP dwarfs theirs and matches that of a smaller economy. Thus, the policy is strong compared to the policies of other larger countries.

Table 3.2 National GDP and Carbon Tax Revenue. Note: Annual carbon tax revenue over GDP is an effective measure for assessing the relative strength of carbon taxes (see Driscoll 2021). Revenue data, World Bank Carbon Pricing Dashboard (World Bank 2019a); GDP (PPP) in USD, (World Bank 2019b). My GDP threshold for categorizing larger versus smaller economies is one trillion USD.

	GDP (PPP)	Carbon Tax Revenue (% of GDP)
Larger Economies - CAN, JPN, GBR	3.6 trillion	0.05
France	3.4 trillion	0.29
Smaller Economies - DEN, FIN, NOR, SWE, CHE	446 billion	0.34

In addition to being comparatively strong, France’s carbon tax is also comparatively neoliberal. While some scholars decry the overuse of the term neoliberalism (Venugopal 2015), clear criteria exist for the term in the policy realm. A neoliberal policy model refers to sets of state actions that favor markets over government regulation or intervention (Tomaskovic-Devey and Lin 2011). Neoliberal policies typically prioritize business interests in the form of deregulation and privileged support. Neoliberal policies also absolve the state of its duty to support citizen’s welfare, leaving their fates to the whims of the market (Harvey 2005). In practice, they include “tax structures that favor capital accumulation over income redistribution, industrial policies that minimize the presence of the state in private industry, and retrenchment in welfare spending” (Prasad 2006:4–5).

What is a neoliberal carbon tax by the above criteria? A neoliberal carbon tax would appear as a regulation on the surface, yet when scrutinized the policy would prioritize business interests and capital accumulation over citizen welfare and redistribution. In practice, assessing whether a carbon tax is neoliberal asks two questions: (1) who is taxed and (2) how is the

revenue used? First, understanding who is taxed informs us how much fossil-fuel or carbon-intensive corporations pay (regulated emissions) versus how much households or citizens pay. Who carries more of the tax burden? Neoliberal carbon tax policies would burden households more than firms. Second, understanding revenue use informs us whether the intention underlying the policy is to reimburse households or individuals impacted by the tax, fund green innovation or transition, or privilege corporate interests. Neoliberal carbon tax policies use revenue to privilege corporate interests and capital accumulation. By these criteria, the French policy is the ‘ideal type’ of a neoliberal carbon tax. Though many other carbon tax policies also have exemptions (Cullenward and Victor 2020; World Bank 2019a), they do not privilege firms with revenue in addition to exemptions.

The French carbon tax is a pro-business, neoliberal policy in both tax burden and revenue use. First, citizens pay more than companies; households constitute 67% of the tax base whereas companies are only 33% (OFCE 2015; Rocamora 2017). Second, countless firms are exempt from taxation including transport and shipping, farmers, airlines, and those regulated under the EU Emission Trading System (ETS) (Christian de Perthuis 2013; La Tribune 2013). Carbon-intensive sectors regulated under the EU ETS include energy, iron and steel, cement, aviation, and oil refinement industries. Though the purpose of the EU ETS exemption was to avoid double taxation of ETS companies, the EU ETS itself is rife with hypocrisy, inefficiencies, and even fraud (Jevnaker and Wetttestad 2017; Wetttestad 2014). Scholars find that many firms, often those with the highest emissions, perform better and achieve higher stock returns under the ETS (Oestreich and Tsiakas 2015; Scholtens and Goot 2014). This is because carbon credits are often distributed freely and companies lobby for them to make money--a clear example of ‘regulatory capture’ when regulators are coopted by the industry that they regulate to serve industry

interests. Thus, many companies with exemptions from the carbon tax policy due to the EU ETS are, in reality, profiting.¹²

Third and finally, 75% of carbon tax revenue goes to a corporate tax credit, the CICE or *Crédit d'impôt pour la compétitivité et l'emploi*¹³ (Luc Peillon 2018; OFCE 2015; Rocamora 2017). The CICE, created under President Hollande as a pro-business tax, decreases the cost of employing individuals making less than 2.5 times minimum wage for French companies.¹⁴ In practice, this means employer tax contributions are refunded and billions are returned to French companies. Assessments of the CICE show it has increased company profits through decreasing the corporate tax rate, but has only led to marginal employment increases (Bozio, Cottet, and Malgouyres 2018; Gilles et al. 2018). This is because French firms did not shift their behavior with the new capital (Carbonnier, Rot, and Malgouyres 2016). All in all, the French carbon tax fits the criteria of a neoliberal policy. It mainly targets citizens while privileging the most carbon-intensive companies with exemptions and the opportunity to gain capital from the EU ETS and corporate tax credits. The policy clearly favors capital accumulation over the welfare of citizens.

The French carbon tax policy fares even worse when compared to other nations' carbon taxes. Canada, for instance, has a federal carbon tax and dividend policy (Nuccitelli 2018). In this system, carbon is taxed and then the revenue is disbursed equally among the country's population in routine payments. Another country, Denmark, has a high-performing carbon tax that has significantly decreased emissions (Harrison 2010). Industry is taxed, but revenue is returned to industry and earmarked for environmental innovation under government regulation

¹² Policymakers who regulate companies under the EU ETS confirmed this in interviews.

¹³ Translation: Competitiveness and Employment Tax Credit

¹⁴ French companies are often taxed at higher rates than many companies in other countries.

(Prasad 2008, 2009). In practice, this has meant significant growth in renewable energy and a decrease in emissions. Denmark is now the world leader in wind energy production and wind turbine manufacturing (Klaassen et al. 2005). In short, other more socially just models and ideas exist for taxing carbon.

POTENTIAL EXPLANATIONS

What forces might explain the French carbon tax design? What forces might explain its implementation, despite being declared unconstitutional? Here I review several potential explanations from political institutions to liberal globalization. National political institutions significantly impact most climate policy outcomes (Meckling and Nahm 2018a, 2018b). Parliamentary systems (Dolsak 2001), proportional representation (Harrison 2010), left or green parties (Harrison 2012; Tobin 2017; Vasseur 2014), and lower veto points (Driscoll 2021) all support carbon tax policy adoption. Political systems that allow corporations, the rich, and private organizations/think tanks undue influence (Campbell and Pedersen 2014; Hertel-Fernandez 2019), are less likely to regulate carbon emissions and implement carbon taxes. The power of fossil fuel business-elite is significant in shaping carbon tax adoption as well (Driscoll 2021; Harrison 2010). Carbon-intensive firms oppose any reforms or regulations that might decrease their profits (Mildenberger 2020; Stokes 2020). They form a coalition of forces that oppose the transformation of carbon-intensive economic systems (McCright and Dunlap 2010). In many cases, firms retain structural (i.e., automatic) or instrumental (i.e., lobbying) power to influence political outcomes in their favor (Culpepper 2015). Due to increasing globalization, firms can also threaten capital flight or moving operations to less regulated settings (Culpepper 2011).

The ‘free-rider problem’ significantly shapes the ability of governments to price carbon (Cooper et al. 2017; Driscoll 2021). Most governments refuse to face any costs from reducing emissions if other countries avoid transitioning or bearing costs themselves. Global liberalization, thus, along with increasing business-elite power could contribute to the form of the French carbon tax. While France is less neoliberal than most comparable countries, it still fits within a general trend of liberalization globally, however plodding (Amable, Guillaud, and Palombarini 2012; Fourcade and Babb 2002). Union centralization and strikes are declining, while the autonomy of firms from the French state is increasing (Baccaro and Howell 2011). Neoliberal reforms in France now come from both right and left parties (Amable 2016; Porcher 2018). Furthermore, business-elite power in all political systems is increasing (Hacker and Pierson 2010; Hertel-Fernandez 2019).

It is also possible that the external constraints of European Union membership constrained implementing the French carbon tax. In joining the Euro, for instance, France lost the ability to devalue its currency, key for its post-World War II growth model (Boyer and Saillard 2005). European integration also increases income inequality (Beckfield 2006) and weakens unions (Rathgeb and Tassinari 2020). It also supports the spread of neoliberal norms and ideas through the world polity of global organizations such as the International Monetary Fund (Kentikelenis and Babb 2019; Kentikelenis and Seabrooke 2017). The IMF, for instance, enforced the liberalization of countries most impacted by the Euro monetary crisis (Jones 2015; Sandbu 2017). In practice, European economic integration is often prioritized at the expense of democracy, autonomous national policymaking, strengthening welfare states, and attempts to regulate global capitalism (Höpner 2014; Höpner and Schäfer 2012; Scharpf 2010, 2015). The debt crisis, in many ways, tied the hands of French politicians and intensified their felt obligation

to maintain industry competitiveness and the Euro. As French policymakers and France (as a whole) is more pro-Europe than many other member states, understanding this context is important. The EU ETS (Emission Trading Scheme) already serves as a carbon price on energy, iron and steel, cement, aviation, and oil refinement industries. It is in the interest of many firms to avoid double taxation in order to remain competitive with other European firms.

France as a whole remains comparatively resistant to liberalization. As French policymakers, like President Macron, attempt to liberalize the French economy and cut social policies like employment protections in favor of business (Piketty 2019; Porcher and Farah 2016), coalitions of social groups continually oppose such reforms, sometimes with success (Amable 2017; Palombarin and Amable 2021). It is no surprise that the recent Yellow Vest popular movement has a strong justice-oriented ideology that opposes pro-business reforms (such as the carbon tax) and is explicitly anti-elite (Noiriel and Truong 2019). Such resistance is even less surprising in a country with a strong tradition of tax resistance (Delalande 2014; Delalande and Huret 2013; Hoffman 1956; Spire 2018). In what follows, I consider the policy narrative to see which potential explanations are most plausible.

DOCUMENTS AND DATA

To investigate the forces that shaped the development and implementation of the French carbon tax, I compare the three episodes in which carbon prices were proposed in France. Comparing time periods, in this case, is particularly instructive; in addition to offering leverage for revealing which factors proved decisive in forming the policy and its enactment, the successive efforts also offer diagnostic value as the failures shaped policymaker actions in the next iteration (Haydu 1998, 2010; Mahoney 2000; Mahoney and Barrenechea 2019).

First, I reviewed archival news sources like *Le Monde*, *Le Figaro*, and *La Tribune* along with policy briefs on French carbon taxation to create a timeline and narrative of events. The events surrounding the first two periods were well-covered in national news with roughly twenty prominent stories. Second, I investigated specific propositions and laws from the *Assemblée nationale* (National Assembly) and rulings from the *Conseil constitutionnel* (Constitutional Council). All policy documents were freely available on the official websites specific to each government body or *Légifrance*. This combination of documents rendered a general timeline along with key details and points of contention or factors related to policy outcomes. Documents were organized through tagging of specific time periods, events, factors, and actors.

Third, I interviewed eight experts at French ministries and government-funded think tanks to supplement periods when documents were silent (particularly in the last episode) and to better understand specific policymaking strategies. I did not intend to gather a representative sample of French bureaucrats; interviews were conducted mainly to complement archival data. My sampling strategy was purposive, focused on specific individuals and institutions referenced in archival documents, who often served on committees that designed the policy and/or regulatory government ministries. Interviews were conducted during the summer of 2018 and the fall of 2019. I cold-called government ministries to set up interviews, emailed specific individuals, and utilized networks through the *École des Hautes Études en Sciences Sociales*.¹⁵ Seven interviews took place in-person at government ministries or think tanks. One interview took place over the phone. Interviews typically ranged between one and two hours. My interview guide focused on the history of French carbon taxation, the interviewee's specific role, the role played by the specific institution (Ministry or think tank) in the policy history, the interviewee's

¹⁵ It was far more difficult to gain access to policymakers following the Yellow Vest protests. Of course, this is not surprising; the French carbon tax had come under scrutiny.

thoughts on fighting climate change with carbon taxes, the challenges of implementation (i.e., constraints, stakeholders, etc.), and the specific strategies for implementation in the successful 2013 period. Due to the contentious history of the policy, all individuals and institutions are de-identified.

All in all, documents and interviews complemented one another. Interviews gave light to places where documents went dark, and the documents offset interviewee bias toward appearing in the best light. In what follows, I compare the socio-politics of French carbon taxation during three episodes: 2000, 2009, and 2013. I investigate not only the forces that shaped the policies, but also the factors that led to the demise of the first two policy proposals and the adoption of the third.

A HISTORY OF FRENCH CARBON TAXATION: 2000-2014

What follows is a historical narrative of carbon taxation in France. I begin with the first two attempts to tax carbon, each facing both overlapping and novel constraints. I follow up with an analysis that compares the two time periods. I then trace the third attempt and the forces that led to a successful implementation.

The First Attempt

In the year 2000, the first attempt at a national carbon tax policy in France appeared promising. The Jospin Government, a left-wing coalition, proposed an expansion of the current pollution tax or La taxe générale sur les activités polluantes (i.e., TGAP) to include fossil fuels and other forms of energy, taxed at a rate of 260 Francs (~40 euros) per ton of carbon emitted (French National Assembly 2000). The revenue was intended to reduce a labor tax and finance

the “35-hour program,” which decreased legal workweek hours from 39 to 35 (Deroubaix and Lévêque 2006). In essence, by targeting companies and also using revenue for employment protections, the tax was more progressive than neoliberal. While these progressive propositions might have been expected to win wide support, they provoked strong opposition.

As industry and businesses are typically more cognizant of the impact of carbon price policy outcomes than the general public (Harrison 2010), it is unsurprising that they reacted first.¹⁶ Many companies from steel to cement industries (i.e., carbon intensive) threatened to move their companies overseas to avoid the tax increase. Even road transport sector workers (laborers) protested (Rocamora 2017). Legislators sought to redress stakeholder grievances and, as a result, the resistance partly shaped the final form of the policy. In the end, many companies had to make only voluntary commitments (Le Monde 2000), and there were exemptions for certain industries and forms of pollution that left significant gaps in the emissions that the policy covered (Hervé 2000; Marini 2000). Journalist Fabre Clarisse of *Le Monde* (2000) summed up the policy transformation in a sentence: “From a clear green, the policy has faded to a watery green.” In short, when faced with protests and threats, legislators diluted the impact of an initially progressive carbon tax to placate opposition and facilitate enactment. In the end, the policy became partially neoliberal, exempting the worst emitters.

As sometimes happens in the world of political dramaturgy, policy compromise leads to policy demise. Political challengers, in accordance with a constitutional amendment of 1974, collected 60 signatures from members of Parliament and brought the policy for review to the French judicial court (Conseil Constitutionnel 1974; Rocamora 2017). The *Conseil Constitutionnel* soon blocked the carbon tax from becoming law. Their rationale for its

¹⁶ Policies with specific costs and broad benefits are most likely to provoke opposition (Wilson 1980).

unconstitutionality was straightforward: the policy computes tax rates that allow for some companies that contribute more to climate change to pay less or even nothing compared to companies that contribute less to climate change. With this revelation, along with the many exemptions that omitted over half of French carbon emissions and the majority of French companies, they declared the tax was both (1) environmentally ineffective, failing to achieve its stated purpose and (2) unfair, violating the right to equal taxation under Article 13 of the Declaration of the Rights of Man and Citizen of 1789 (Conseil Constitutionnel 2000).

In short, the 2000 tax proposal was initially progressive; taxing carbon-intensive corporations and using revenue to decrease working hours. Soon, however, firms mobilized and some threatened capital flight. This triggered French politicians to liberalize the policy proposal, removing regulations and costs for many companies. In the end, the policy faced a judicial veto due to its disregard of equity and failing to achieve its intended purpose. The policy, thus, faced constraints from business-elite power in an economically integrated world. It also faced a judicial veto due to legal concerns.

The Second Attempt

After the defeat, it took several years for a second carbon tax proposal to develop. It first emerged when Nicolas Hulot, a prominent French environmental politician, urged all presidential candidates campaigning in the 2007 French election to sign an agreement that contained a number of environmental reforms, including a carbon tax (L'Obs 2006; Sophie Landrin and Arnaud Leparmentier 2010). A signee, Nicolas Sarkozy, of Les Républicains (center-right), won the election and stayed true to his commitment. Sarkozy began first by establishing Grenelle de l'environnement, an environmental summit, in which multiple

stakeholders and policymakers came together to discuss the future of French environmental policy. In their proposed reforms, the Grenelle further emphasized the necessity for a carbon tax (Laurence Caramel and Claire Guélaud 2009), and soon, committees were formed in order to design the policy.

The two main committees formed by the government were the Quinet Commission and the Rocard Panel. The Quinet Commission, led by economist Alain Quinet, was to design the carbon tax policy instrument. They proposed a graduated tax that began at 32 euros per ton of carbon emitted and rose over time (Quinet 2008). The Rocard Panel, led by socialist politician Michel Rocard, was to craft the carbon tax proposal itself. The Rocard panel confirmed the Quinet 32 euro tax and graduated rate, but also called for a new, separate tax policy (i.e., instead of incorporating it into existing taxes). They also proposed that companies that were already subject to the EU Emission Trading System would be exempt from the tax and that roughly half of the tax would be paid by households (Rocard 2009). They acknowledged that households would be differentially impacted depending upon energy and fuel use (e.g., urban vs. rural households) and would have to receive compensation, perhaps through a ‘green check’ (Rocamora 2017; Rocard 2009). Given the expertise of two committees and broad political support, the proposal seemed well on its way.

When it came time for policy entrepreneurship and communication, the policy’s advancement began to slow and was further limited by a fiscal crisis. Left politicians brought up issues of disproportionate social impacts, and right politicians warned of potential harm to business competitiveness (Puljak 2009). Furthermore, one expert I interviewed, who had been involved in the policy process at the time, acknowledged that “we organized the public

discussion poorly.”¹⁷ In an interview with *Nature*, Jean Jouzel, a member of the Rocard panel adds:

The government moved too slowly. If the tax had been implemented immediately after the consultation, before the financial crisis, it would have sailed through. This slowness — typically French — damaged the momentum. There were also many errors in communication this summer. The tax was always intended to be fiscally neutral, so that all the tax collected would be repaid to taxpayers via reductions in income tax, or in the form of a 'green cheque'. But it was widely perceived as being a new tax burden, because its fiscal neutrality had not been well explained (Butler 2009).

According to Jouzel, because the general public was uninformed regarding the ‘fiscal neutrality’ of the policy, they perceived it as another burdensome expense. This reversed the once broad public support for the policy following the Grenelle de l'environnement proposal. Now, after public discussion, two-thirds of French people opposed it (Puljak 2009).

Following the spirited public debate, the final form of the policy adopted by the French Parliament contrasted with the initial proposal advanced by the government committees. The tax rate was 17 euros per ton of carbon emitted and it was not graduated. Again, exceptions were added to maintain the competitiveness of particular industries (French Senate 2009). Following the advice of the Rocard panels, all companies regulated under the EU Emission Trading System (in energy, iron and steel, cement, aviation, and oil refinement industries) were completely exempt. Households did receive compensation dependent upon geographic location and size, though the income level of households was ignored (Rocamora 2017). This still left a little over half of the tax revenue paid for by households (Saltmarsh 2010). In sum, the policy was again altered in favor of political viability (i.e., concessions to carbon-intensive industries), and industry, rather than households, gained exceptions.

¹⁷All interviewees are either unnamed or referred to by pseudonyms.

It is not difficult to guess what happened next. Socialist opposition, with concerns about the disproportionate impact of the tax, gained 60 signatures from members of Parliament who were opposed to the policy and brought it for review to the *Conseil Constitutionnel* (Claire Guélaud 2009; Puljak 2009). The court, again, blocked the policy on grounds that are familiar to the reader. According to *la Charte de l'environnement* of 2004, they asserted that the policy was ineffective and also unfair because it contained many exemptions. This time,” the council primarily focused on exemptions for carbon emitting companies regulated under the EU ETS who, at the time, were receiving ETS carbon credits for free that were profitable (Conseil Constitutionnel 2009). Put simply, ETS companies, who were significant emitters, would not be paying any carbon price. Afterward, two *Le Monde* journalists concluded that “The government is unable to present a bill that taxes big business as required by the Constitutional Council.” (Sophie Landrin and Arnaud Leparmentier 2010). As we will see, they were right.

International circumstances coupled with priorities about ‘maintaining the competitiveness of industry’ led policymakers to oppose revising the policy. Around the same time, the 2009 United Nations Climate Change Conference ended in failure and left no binding agreement about global action on climate change. This left many French policymakers uncertain of the commitment of other countries and generally apathetic about revising the policy, despite promises to revise it (Kanter 2009; Le Monde 2009). President Sarkozy said in an interview, “We will not impose constraints on our industrialists if, at the same time, we allow imports from countries that do not respect any of the environmental rules to flood our markets” (Le Figaro 2010). François Fillon, then Prime Minister, further highlighted this point arguing that France could only enact these policies “with the other European countries, otherwise we will see our competitiveness decrease” (Sophie Landrin and Arnaud Leparmentier 2010). Industry voiced its

agreement as well. The President of the MEDEF, the largest employer federation in France, stated, “We are relieved...notably for all industry which could not bear this extra competitive handicap” (Saltmarsh 2010). All of these statements were made in the midst of union strikes and a significant political defeat for Sarkozy’s own party (Evans-Pritchard 2010). The only remaining groups and individuals frustrated about the failure of a policy outcome were Environmental NGOs and members of the two committees that designed the policy, such as Michel Rocard himself. They spoke out against the government’s decision with bitter criticism (Audrey Fournier 2010; Michel Rocard 2010), but to no avail. Little support remained, and enacting a carbon tax, once again, was tabled.

In summary, the 2009 carbon tax proposal began with a less progressive design than the previous one. Despite the fact that the EU ETS typically furnished firms with capital, companies regulated under the EU ETS (the largest emitters) would be exempt from the policy. As before, carbon intensive industries (this time non-ETS) mobilized against the policy and gained exceptions along with a lower tax rate. While there was a proposal for ‘green checks’ to households, in the end, households still paid the majority of the tax, reimbursement was not income-based, and lower income households bore the largest costs. With exemptions for firms and the tax burden on households, the policy, again, became liberalized. Issues of inequity caused the pro-climate Socialist Party to oppose the policy. Those on the right opposed it as well, arguing it would harm the international competitiveness of French firms. Furthermore, the President and Prime Minister both argued that they would not regulate French firms in the EU context of competition and a ‘race to the bottom’ between countries. The Constitutional Council blocked the policy again on familiar grounds; efficacy and fairness. The 2009 episode is again consistent with the previous episode, facing challenges from business-elite power, increased

constraints of economic integration, and a judicial veto. This time, the liberalizing effect of EU external constraints and competition is more present in the discourse. Furthermore, we see the policy proposal take an increasingly less progressive form. In 2000, the revenue was intended for labor protections. In 2009, revenue use was never finalized.

Discussion of the first two attempts

Before presenting the 2013 carbon tax policy narrative—a successful attempt at carbon tax enactment—it is worth comparing the 2000 and 2009 failures to understand what factors might have been consistent in forming and blocking the French carbon tax in both periods and reveal what lessons political actors might have gleaned in order to enact a carbon price in 2013. I will first review commonalities between the two time periods and then address salient differences.

The two policy histories share several features. First, the carbon tax policy support was bipartisan. The 2000 policy was advanced by a left government, while the 2009 policy was advanced by a right government. Opponents of the two policy initiatives arose from both the left and the right. While political parties in the United States are highly polarized around the issue of climate change in general (Driscoll 2019; McCright and Dunlap 2011), it is not so in France (Douenne and Fabre 2020). In an interview with policymakers at a government ministry, I asked about climate change partisanship in France and they answered,

There isn't a debate. Here, climate issues are not discussed anymore. It's bipartisan...we agree that we have to do something about it. The question is what we do and to what extent.

In other words, the main debate in France is *how* to fight climate change. And if one examines the French history of carbon taxation, the *how* was contested in both time periods. The policy

form was not debated along partisan lines. The most salient actor outside of the government in both 2000 and 2009 that shaped the policy were carbon-intensive industries (i.e., energy, cement, steel, etc.). They successfully lobbied for a lower tax rate and gained exemptions both times. They were able to do so by playing to the government's concern to maintain the competitiveness of French industry in a global economy by deregulating it. Households were less attentive to the policy than industry, and they paid the bulk of the revenue of both policies. While revisions to the policy regarding industry made it more politically feasible, they also made it susceptible to political opposition, which sent the policy to the judicial court. Both times the judicial court blocked the policy due to the exemptions given to industry, arguing that the policy was ineffective and unfair.¹⁸

The 2009 episode diverged in several notable ways from the 2000 episode. In 2009 the government formed two committees, composed of experts who designed the policy. Policymakers also held summits and made commitments publicly. However, at the same time, the increased policy entrepreneurship gave way to a difficult and lengthy public discussion, which the political leaders of the carbon tax mishandled. The revenue was poorly explained and unplanned in 2009, whereas in 2000 it was linked to decreased legal working hours. One expert explained in an interview that in 2009, "Once implementation began and they [the policymakers] realized that the revenues hadn't been dealt with. This came in the end and created opponents." These differences highlight the greater political effort made in 2009; however, it was riddled with communication errors.

The two episodes also diverged on discourse relating to regulation and competition. In 2000, industry concerns had more to do with the expense of the tax, whereas in 2009 there was

¹⁸ Interestingly, the main focus of the court was fairness between industries and businesses, not including households.

increased and widespread concern about maintaining the international competitiveness of French companies. I argue this occurred mostly due to increased European economic integration during the decade and the financial crisis at the end of it. The euro, for instance, was established in 1999, the year before the 2000 carbon tax proposal. Over the next decade, many other countries, mostly from Eastern Europe, joined the EU and adopted the euro. For better or worse, the economy of Europe transformed. Among the many changes beyond the common currency, most relevant are that (1) free trade was established between countries, eliminating tariffs, and (2) energy use became further integrated across borders as well, and the energy market became more standardized across countries. French policymakers who valued the competitiveness of their industry and deregulation were concerned. If other countries did not regulate the carbon emissions of their companies, then any country that does regulate carbon emissions ‘loses out’ economically. This is the classic ‘free-rider’ problem associated with nonbinding international agreements. European integration, thus, did contribute to rationale for deregulation. Still, a carbon tax was enacted in 2013 within the same constraints, what else impeded enactment in 2009?

The European debt crisis hit in 2009. “National economies lost competitiveness within the single currency, governments and households lived beyond their means, banks and other financial firms moved capital across borders and then called it back home again in a fit of panic” (Jones 2015:817). As a result, unemployment rates climbed and economic growth stagnated. While the impact and causes are long-debated, the adverse effects of the crisis were felt across Europe (Sandbu 2017). This event further tied the hands of French politicians and intensified their felt obligation to limit industry no further in light of the economic crisis during that time.

Thus, while the exemptions given to industry and a constitutional court veto were sufficient for blocking the policy in 2000, in the 2009 episode the same events occurred with the addition of complicating factors. Most prominently, French politicians emphasized maintaining the international competitiveness of industry even more than before. The two main causes I argue stemmed from (1) the free-rider problem in Europe caused by nonbinding climate agreements coupled with the equalizing, free-flowing integration of European economies and energy, and (2) the Eurozone crisis that diverted political attention from environmental issues to economic ones. It is clear that EU economic dynamics played a significantly larger role in 2009.

What were the primary lessons about obstacles to carbon tax enactment for policymakers moving forward? In both 2000 and 2009 the main block, regardless of the form the policy took, came from the *Conseil Constitutionnel* and the oppositional legislators who sent them the policy to review. This judicial veto point blocked the policy *twice*. In an interview with a policymaker, he asserted that they learned that “the court just doesn’t accept exemptions. It accepts exemptions only if you can find a justification for the common good.” It also appears that lengthy public discussions created discord and uncertainty about the policy. Another shared obstacle to the policy was the protestations of industry. Despite having low fossil fuel energy use due to relatively abundant nuclear power, French industry was surprisingly powerful in shaping the form of both policies. They secured so many exemptions that both times the final forms of the policies were considered *ineffective* and *unfair*. In sum, business-elite or industry power and the *Conseil Constitutionnel* veto power were most influential in the neoliberal form and eventual demise of the French carbon tax policies in 2000 and 2009. In 2009 the increasing demands of European and economic integration heightened the importance of industry in both how the policy was formed and whether it faced revision.

The Third Attempt

As the prominence of global climate change only increased over time, proposals for a French carbon tax were not going away. When campaigning for the presidency in 2011, Socialist François Hollande highlighted the importance of future climate change policy, though he mostly discussed policy changes at the European level (Parienté and Vaudano 2013). At the same time, the Socialist and Green parties formed an agreement for their political coalition (Europe Ecologie Les Verts 2011). A carbon tax proposal was included among the many points in the agreement. *Le Monde* cautioned that the proposed policy in this agreement had “a price twice as high as the policy in 2009 that passed with a majority, but was rejected by the Constitutional Council” (Samuel Laurent 2011). Though it might have seemed unrealistic to some reporters at *Le Monde*, with Hollande’s victory and an agreement between his party and the Greens, the policy had, for the second time, returned. The following year, in 2012, the French Government formed *Le Comité pour l’économie verte* (The Committee for the Green Economy), another team of experts, with representatives from related governmental, sectoral, non-governmental institutions. It was led by climate economist, Christian de Perthuis. A significant part of their mission was to design a new French carbon tax policy.

In 2013, two years after the agreement between the two parties, the Greens became suspicious with the lack of environmental policy proposals in France. After an annual Environmental Conference that took place in September, they demanded that the Socialist party honor their agreement to tax carbon emissions. “So that the Greens did not completely lose face” (Marie-Béatrice Baudet 2013), Hollande agreed to a ‘contribution climat énergie’ or climate energy contribution that would tax carbon emissions in the Finance Act for 2014. It was

announced that, instead enacting a new policy, the carbon tax would be added to existing energy taxes. It would function as a carbon tax, just under a previously existing name and policy umbrella.

Soon thereafter, the Green party sent a proposal to the French Parliament (French National Assembly 2013b), and *Le Comité pour l'économie verte* submitted their report. The report confirmed that taxing the carbon content of already existing energy taxes was best (i.e., on natural gas, coal, oil, petrol, and diesel) and called for a *very moderate* initial price of 7 euros (to later increase) per ton of CO₂ emitted. Just as in 2009, companies subject to the EU ETS would be exempt because this climate energy contribution would serve as a 'complement' to the EU ETS (Christian de Perthuis 2013). The report connected the low initial price to matching the current market rate of the EU ETS. They also described the importance of having no fiscal impact on fuel prices in 2014 (La Tribune 2013) and attributed this to public political promises made about no tax increases that year. The report asserted that, "Due to the crisis of political legitimacy that spans the country, coupled with an economic and social crises without precedent, it is essential that public discourse recover its credibility" (Christian de Perthuis 2013:23). Essentially, the report recognized levels of political distrust in the country and, as a result, potential backlash. Furthermore, the report recognized the potential socially regressive impacts of the tax and argued that a tax refund go to low-income households. As well, the revenue from taxes on companies would go toward the CICE (Le crédit d'impôt pour la compétitivité et l'emploi) or credit that lowered labor costs and increased competitiveness of French companies. In the fall of 2013, the report became policy and the policy became law without many significant alterations or hiccups (French National Assembly 2013a). Compared to the cases of 2000 and 2009, it sailed through. This happened despite the concern expressed by many about potential

set-backs, given past vetoes by the Constitutional Council. *La Tribune* wrote that in comparison to the 2009 policy, “The 2013 version provides for virtually the same exemptions. Isn't it facing the same fate?” (La Tribune 2013). *Le Monde* released a story in late summer 2013 titled, ‘The Carbon Tax and the Constitutional Council: a story of disillusionment.’ The article outlines the past failures to enact a policy and suggested it could happen again:

The task will be complicated for the government, which, as Mr. Martin [Minister of Ecology] pointed out, is balancing everyone's interests, while maintaining equality before the tax. A break in this principle would implicate a block of the law by the Constitutional Council, as was the case in 2009, and previously, under somewhat different conditions, in 2000 (Parienté and Vaudano 2013).

Policymakers and experts recognized this within *Le Comité pour l'économie verte* as well. Several sections of the report address the potential block and unconstitutionality. They also discuss past failures with frankness: “The introduction of a carbon base will have to take into account the experience of 2009 and the of unconstitutionality raised by the Constitutional Council” (Christian de Perthuis 2013:16). In short, not only did the policy in 2013 greatly resemble the blocked policy in 2009, many parties acknowledged the possibility that it could be blocked.

So why wasn't it blocked? The policy contained the same exemptions for corporations (including EU ETS companies), the tax burden was on households, and the majority of the revenue was returned to corporations. It was the most neoliberal of all French carbon tax proposals. Why no opposition? Why no public discussion? Why didn't the minority opposition refer the policy to the Constitutional Council who then would block it? In the following section, I will review the most relevant evidence for why the 2013 policy was enacted, despite the fact that it greatly resembled past blocked policies. As many documents are silent on what occurred, I will rely on personal interview accounts and data. I argue that the successful policy enactment in

2013 is best explained by the strategic actions of policymakers and experts who learned from the errors of 2000 and 2009. They placated industry, overcame minority opposition, and hid the tax in a larger fiscal policy to avoid the Constitutional Council veto.

Explaining successful enactment in 2013

The 2000 and 2009 carbon taxes were halted by a judicial veto. Thus, a main block to the policy in France came from the Constitutional Council veto point or stage in the policymaking process where the policy was invalidated by judicial review. In many ways, the decisions were rooted in legal path dependence: right to equal taxation, legal establishment of judicial veto, and a law allowing minority opposition to bring policies to court (Laurent 2010). This veto made a significant difference in France, so much so that it happened twice and the ‘absence of a veto’ validated the policy the third time. Without it, France would have passed both policies. When comparing time periods in France, avoiding the judicial veto seems a necessary condition for enactment. Scholars find that the presence of vetoes in political institutions can trigger a variety of creative ‘work-arounds’ to implement policies (Martin 2008; Quinn 2019). We see the same kind of strategizing in this case. Policymakers’ strategic actions become more refined and targeted as they learned from previous episodes (Haydu 1998, 2010).

In 2013, *Le Comité pour l'économie verte* recognized the necessity of bypassing the judicial veto. In their report, they reflect again on the 2009 experience and that, “This failure had deep-rooted causes that need to be addressed. Learn all the lessons” (Christian de Perthuis 2013:63). In the summer of 2018 and fall of 2019, I interviewed policymakers heavily involved in the crafting of the policy and asked them about what made the difference in enacting a carbon

tax in 2013 and how it was successful.¹⁹ They told me that they were given the task to design a policy that would be effective and become adopted. The strategies they used to craft the policy incorporated both technocratic expertise in shaping a policy and also political expertise, understanding what facilitated adoption.

One told me they spent time actively learning about enacting carbon taxation policies. First, they spoke with EU colleagues and experts in Ireland and Sweden who had enacted prices in those countries. They said, among many things, one Irish colleague said, “the first rule is to not setup a new tax, but use existing energy taxes.” Another colleague from Sweden said, “We [the Swedish] just included this carbon tax in existing taxes.” They said that these conversations shaped the form of the policy proposal and policy outcome. Other policymakers outlined to me how the policy’s design facilitated enactment. Three main aspects of its design helped: (1) using an existing energy tax, (2) having a medium trajectory or increasing the tax rate slowly, and (3) politically strategic revenue use. First, not only did revising an existing energy tax make things simpler, it functioned as a legal strategy to work around the Constitutional Council. One said:

The risk of being blocked by the court was lower, because it would have been very difficult for the court to block an existing tax which has been introduced in France a very long time ago...you never know because they are lawyers [chuckles], but I knew that the risk was much lower because I asked people in the Conseil d'État.

In other words, revising an old policy turned an *act of enactment* into an *act of revision*, making it more difficult to block. They also spoke to the Conseil d'État, which provides legal advice for French government policies, to confirm it.

¹⁹ Thankfully, some interviews were conducted before the Yellow Vest protests, which could have altered their framing of the policymaking process and the policy itself. Our interviews focused on lessons learned about enacting carbon taxes.

Second, the medium trajectory made a difference both legally and politically. Legally, it matched the market rate of the EU ETS at around 7 euros (unlike in 2009, companies regulated under the ETS were finally paying a price). This allowed actors to, as they said, “pay the same price for the same commodity,” which appeared to uphold the right of equal taxation, a past rationale for blocking.²⁰ The low initial rate also helped political communication as well: “We introduced the carbon tax at the low level - 7 euros per ton... I think it was the only way to make it possible from a political point of view. It lowers the shock of the tax.” These types of provisions help many policies live or die, unnoticed (Martin 2013). Thus, the design of the price gave it not only a legal advantage, but a political one – making it initially very light on financial structures and hidden from public reactivity.

Finally, while the communication about the use of revenue was mishandled in 2009, in 2013 it was clear. They said they initially proposed that, “70% would go to reduce the labor costs, 30% would go to compensate poor people.” The government had made political “promises to reduce labor costs for companies” to increase the CICE, but did not have the capital. Thus, policymakers decided that most of the tax revenue would go to the CICE. This turned the policy into an instrument that saved failed government promises and also helped reduce opposition from industry. One added that, “it was very difficult to convince trade unions - because most of the people in the trade unions don’t trust that you would create jobs in reducing labor costs by tying down French labor.”²¹ However, they were convinced in the end. With regard to revenue given to lower income people, policymakers initially proposed that they would be given a direct

²⁰ They added the French carbon tax trajectory has far outpaced the EU ETS, which could be problematic in the future for fairness.

²¹ Consistent with historical documents, they added those main opponents to the policy were conservative policymakers and businesses, policymakers representing areas in France with high carbon consumption or production.

payment from the tax. Soon after, however, the mechanism for their reimbursement was changed by the government into subsidies and reducing the VAT. In the end, these uses of revenue were effective for enactment. The revenue was used to handle social justice (marginally) and business competition concerns that in the two previous episodes had garnered opposition from the right and left. Finally, one policymaker mentioned a bit of “luck” helping the Hollande government implement the policy. Global energy prices went down and “the decline in the fuel price before tax was stronger than the increase of the tax.” In other words, no one noticed the carbon tax at the pump.

Besides policy design, one prominent policymaker also described many political and communication strategies used. One strategy was encouraging clear communication and consensus about the policy between policymakers from different sectors of the French government:

We sent proposals to the ministry and also to the people in-charge of the discussion in the French Senate and the French National Assembly. It was very important to give the same information to both. If you aren’t careful about having good dialogue between the parliament and the ministries, it would become quite difficult to introduce this tax.

This strategy had all policymakers with power and influence on the same page. They also worked to placate opposition that might block the policy and send it for review to the Constitutional Council. While planning the 2014 budget in September of 2013, they worked with two chairmen of budget committees. They said that:

One supported the government and the other was opposition. It was absolutely essential to have, not necessarily good support, but I would say neutrality from the opposition. Otherwise, if we had opposition from one of those two committees, I’m sure that the policy wouldn’t be discussed. It would be forwarded to the Constitutional Council and the risk of censure would be much higher... [chuckles and smiles] it’s pure politics. I learned this because we had people from

two ministries on the committee. The Ministry of Ecology and the Ministry of Finance.

Finally, they also mentioned the importance of communication and limiting public discussion, referring to the case of 2009. One told me they had been told by Swedish policymakers that, “Don’t try to discuss new taxation for a long time with all the stakeholders. In Sweden, we have a very high carbon tax, but there was no long public debate.” Efficiency and less public discussion was important to the success of carbon tax enactment in Sweden. They added, “if you increase a level of energy tax, don’t discuss too long, don’t try to reach a consensus. I reached the consensus of the global principals, but when it comes to the design of the tax: don’t talk too much, just tax...” This orientation helps explain past failures when enacting carbon taxes in France. Long public discussions slowed the enactment and contributed to the eventual veto.

In sum, in the opinion of policymakers interviewed, what mattered most to enactment was first, aspects of policy design: incorporating the carbon tax into an existing policy, having the low initial trajectory, and using the revenue to address the grievances of opposition. Second, communication also made a difference. Carbon tax advocates aimed to communicate clearly across government policy institutions, find consensus with opposition, and limit public discussion. Many, if not all, of these strategies and shifts were responses to past failures (Haydu 1998, 2010). The Committee for the Green Economy referred to those failures as “lessons.” The lessons were used to successfully enact a carbon tax. These actions were also key for implementing a carbon tax that previously had provoked strong opposition.

Limited public discussion

It is interesting to note the strategies that limited public discussion. These included (a) not implementing a new policy, (b) the fiscal neutrality of the first year of implementation, (c) slow start to the price trajectory, and (d) exemptions to business. The factors led to a relatively tranquil enactment that “went rather unnoticed” (Rocamora 2017:44) in the public eye. In the summer of 2018, two policymakers in a government ministry informed me that “people don’t know” about the carbon tax, even four years after enactment. Another French policymaker and carbon tax expert called these strategies a “trick” to enact the policy. Historical evidence supports this as little news coverage of the enactment exists compared to the other time periods, likely due to the fact that there was little to no contention. This is also supported by big data evidence. I examined Google trends (Chykina and Crabtree 2018) for the most popular search term related to carbon taxation in France: ‘taxe carbone’ over time. Figure 3.1 displays the trend over time – the data begins in 2004.

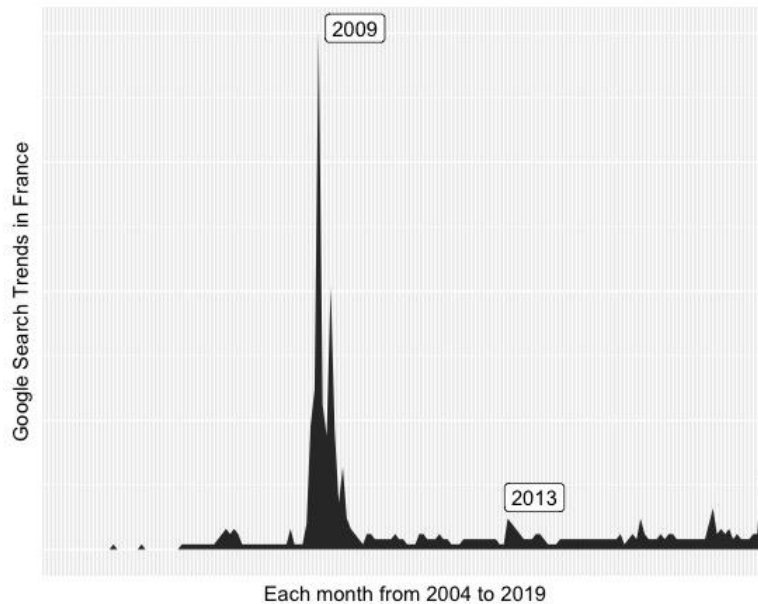


Figure 3.1 Google searches of ‘taxe carbone’ from 2004 to 2019. Note: Data sourced from Google Trends. “Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term” (Google).

The contrast between 2009 and 2013 is staggering. It is clear that public interest and awareness were quite low in 2013. This is likely due to the effective strategizing of *Le Comité pour l'économie verte* and other policymakers. Interestingly, searches during the Yellow Vest protests in the fall of 2018 (the spike at the end of the timeline) are even higher than searches at enactment.

One carbon tax policy expert in the summer of 2018 (two months before the Yellow Vest protests) captured the 2013 policymaking process in a prophetic quote:

It just passed unnoticed. They just included it in the bigger tax, and they didn't increase at first, the energy tax. It was incorporated as a component of the tax, but people didn't see it. You talk to anybody in the streets, they won't know they have a carbon tax. The day they realize this tax exists, the government might be in trouble. It's better to put up a rationale before [enacting], because it could meet strong acceptability issues. They [the Government] are not out of it yet. This debate hasn't happened, yet, so it could still launch anytime actually, because their increase of the trajectory is so high.

Table 3.3 simplifies each time period to facilitate comparison. Note that despite economic stagnation in the final two periods, carbon taxes were only blocked on legal grounds.

Table 3.3 Comparing time periods. Note: Annual GDP growth data from World Bank

	2000 proposal	2009 proposal	2013 policy
Policy design	Expanded existing pollution tax to include fossil fuels. Revenue: reduced labor tax and 35-hour workweek program.	New tax policy with majority of the tax burden is on households. Revenue: undecided.	Implemented tax into existing energy taxes in Finance Act. The majority of tax burden is on households. Initial tax rate was low to match EU ETS but augmented over time. Revenue: majority went to CICE, a tax credit for companies.
Business-elite response	Carbon intensive companies and industries lobbied against policy and were awarded exemptions.	Widespread concern about French companies remaining competitive. Among others, companies subject to EU ETS also awarded exemptions.	Policy framed to complement the EU ETS, thus ETS companies are exempt in addition to other companies.
Public reaction	Insignificant	Significant discussion and backlash attributed to poor policy entrepreneurship.	Insignificant and policymakers purposely limited public discussion.
European Union	In development EU ETS not implemented	European integration reinforced – free trade, standardized energy markets (intensified race to the bottom). Debt crisis. EU ETS companies exempt.	European integration reinforced – free trade, standardized energy markets (intensified race to the bottom). EU ETS companies exempt. Considered equal(er) taxation because they had begun to pay a carbon price.
Conseil Constitutionnel	Vetoed due to unequal taxation and exemptions.	Vetoed due to unequal taxation and exemptions. Rationale focused on exemptions to EU ETS companies who were not, at the time, paying any carbon price.	-
Partisanship	Left-wing coalition	Bipartisan	Left-wing coalition
Annual GDP growth	3.9%	-2.9%	0.58%

DISCUSSION

The French carbon tax is the strongest non-Nordic national policy but was enacted in the face of numerous challenges and constraints. It was also a comparatively less progressive carbon tax policy in a comparatively progressive country. I find that the policy form and enactment over time was increasingly shaped by economic integration (including European), the power of carbon-intensive firms, and policymakers refining their strategies.

The most prominent factor that seemed to impact the policy over time was economic integration. The increasing integration of the world economy transforms the rules of national and

regional policymaking (Rodrik 2000; Scharpf 1997, 2010). Trade-exposed sectors are especially cognizant of increased global competition with free trade. Economic integration, thus, served as a foundation to the opposition and mobilization from carbon-intensive sectors and business-elite to each carbon tax proposal. The constraints of integration were particularly evident at the European level. Beyond global integration, the free trade and integrated energy economy of Europe heightened competition between French companies and other European ones. The EU ETS, thus, armed carbon-intensive companies with a legal rationale to avoid further regulation. This reality deterred French policymakers from regulating their own carbon-intensive industries. Instead, most carbon-intensive French companies remained regulated by the notoriously faulty EU ETS market, rather than a direct tax. European integration also shaped the form and politics of enactment. In 2009 the Constitutional Council declared the carbon tax invalid because tax-exempt French companies regulated under the EU ETS were not paying a carbon price while others in France would pay the tax (i.e., unequal taxation). Later on, in 2013 policymakers cleverly designed the initial rate (2014) of the carbon tax to match the current market value of the EU ETS (7 euros). Making the carbon tax policy tax rate equal with the ETS was sufficient for the policy to appear fair, despite a tax rate trajectory that far outpaced the EU ETS. This contributed to its approval and overcoming the threat of a Constitutional Council veto.

Thus, while global/European Integration might have pushed the policy forward,²² it also protected the most polluting industries and served as the main rationale behind their exemptions. A growing literature asks whether global/European Integration enhances a race to the bottom, forcing countries to liberalize by lowering taxes and regulations on companies (Bohle 2009;

²² With regard to world or regional polity (Beckfield 2006), European integration also served as a push to fight climate change, as the European Commission sets clear targets for emission reductions. Furthermore, the policymaking strategies discussed previously came from other European countries.

Krings 2009; Kvist 2004). It certainly seems to apply to the area of carbon taxation. These points serve as a partial explanation both for why the policy passed and why it tilted in a less progressive direction. These findings also fit neatly into common recommendations for effective European reform – either strengthen policies at the European level (as the EU ETS is weaker than many domestic policies) or leave climate policymaking to member states. Upon reflection, after discussing the difficulties involved with implementing and sustaining a domestic carbon price, many French policymakers told me they favored strong European-level action.²³ In sum, while world and regional polity served as a push to enact the policy, integration also contributed to a less progressive, pro-business and market-friendly design and enactment.

Business-elite power was instrumental in shaping the form of the policy and the politics surrounding its enactment. Unlike the increasing pressures of economic integration, their influence appeared more constant over time. After lobbying in 2000 and 2009, industry was given so many exemptions that the Constitutional Court determined the policy unconstitutional on the grounds of being ineffective and violating equal taxation. In this sense, capital successfully avoided regulation. During each period firms threatened capital flight (e.g., carbon-intensive steel and cement moving operations to another, less regulatory country) and asserted the tax would compromise their competitiveness. In the third period (2013), their instrumental power became structural, and their exemptions became automatic. During the latter two episodes, many firms were able to hide behind the EU ETS, arguing they could not handle double taxation and the “competitive handicap” compared to other European firms who were not facing those regulations. Both industry leaders and policymakers agreed and, in this sense, business-elite were enabled by the EU. The power of firms in France here, in some ways, is

²³ Many of them showed support for an EU Carbon Border Tax.

surprising considering the French history of regulation. Typically firms assert more influence in policymaking regimes in liberal market economies like the United States that receive substantial lobbying from private organizations, wealthy individuals, and corporations (Campbell and Pedersen 2014; Hacker and Pierson 2010; Hertel-Fernandez 2019). It is likely that global liberalization and the threat of capital flight significantly increased firm bargaining power. Many policymakers and experts informed me that because French firms deal with so many taxes and regulations already, it was difficult to add another cost. They told me that operating businesses in France was expensive. It is likely that the amount of existing French regulations in a global context of increasing liberalization has made regulating firms any further especially difficult in contemporary France.

The policymakers that I interviewed were determined to fight climate change, bipartisan in their support, and motivated by international agreements. Two called the Paris Agreement, “The French legacy.” The world polity and spread of international environmental values and norms (Frank, Hironaka, and Schofer 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017; Schofer and Hironaka 2005) was certainly a ‘push’ for attempting to enact the carbon price. The salience of global climate change has only increased over time. The possibility of a carbon tax never left policy discourse since the first failure in 2000. The motivation to enact a policy to fight climate change, in turn, made policymakers more willing to compromise. Some policymaking strategies were also sourced from policymakers and experts in other countries, Sweden and Ireland: implementing the carbon tax into an existing policy and avoiding public discussion. Thus, world polity served as both a push to fight climate change, but also contributed to the form of the policy and its veiled process of enactment. Over each period, policymakers strategies became more refined and targeted as well.

Political institution features, such as veto points, and other previous constraints shaped the actions of policymakers. Examining the last episode of carbon taxation in 2013, particularly the interviews, reveals that policymaker strategizing and expertise were instrumental in forming the policy and enacting it, despite violations of efficacy and equal taxation. The policy was designed to appease industry and slip through the policy pipeline without a Constitutional Council veto or upsetting the public, as it had previously. Strategies were formed from discussions with experts in Europe, government ministries, and special committees. Incorporating the carbon tax into an existing policy and having the low initial trajectory both hid the policy from the public and made it difficult for the Constitutional Council to block. The exemptions and revenue use addressed the grievances of business-elite and opposition. Communication also made a difference: communicating clearly across government policy institutions, finding consensus with opposition, and limiting public discussion. Policymakers were reflexive; many, if not all, of these strategies and shifts were responses to past failures. Were the government or pro-carbon tax policymakers being intentionally unfair, pushing a policy through at the future expense of their constituents? Unlikely. It's almost certain that they were simply attempting to implement the measures they thought were needed to fight climate change and did so while constrained by a history of divisive public discussions, business interests, the EU, and the Constitutional Council. Influenced by the growing salience of climate change, they worked to get policy through by compromising with those who complained the most and had power to block it. Political scientists describe a related form of institutional change, termed 'conversion,' where existing policies and institutions are reoriented toward new tasks in times when other forms of transformation or change (i.e. enacting a new policy) are limited due to contention or blocks (Streeck and Thelen 2005). In this case, an existing policy

was ‘converted’ (the Finance Act) in lieu of implementing a new policy that faced historic difficulties. Policymakers eventually gave up implementing a new carbon tax policy and attempted more pragmatic, incremental change through an existing policy. In contexts with vetoes, a variety of strategic ‘work-arounds’ to effect change like this one are common (Martin 2008; Quinn 2019). Few could have foreseen the impact, reaction, and backlash. Still, it is worth acknowledging that without the policymaking strategizing that occurred to overcome the veto, the policy would not have been implemented.

The strategies of French policymakers exhibited here contributes to debates about whether democratic political institutions can govern the climate and effectively decarbonize (Beeson 2010; Gilley 2012; McCarthy 2019). With low veto points and fossil fuel energy levels (Driscoll 2021), France should have had an easier time enacting a carbon tax. Instead, policymakers had to resort to ‘quiet politics’ (Culpepper 2011) and act as a ‘submerged state’ (Mettler 2011) to adopt the policy. Despite enactment, the result was an ineffective carbon tax (in the grand scheme of things) that does not regulate the biggest carbon emitters in France. Perhaps, with so many other competing interests at the domestic level, democratic political institutions cannot govern an international problem like climate change and decarbonize effectively.

Conclusions

What happens when a large economy attempts to implement a comparatively strong carbon tax? It faces constraints from economic integration, carbon-intensive (some trade-exposed) firms, and policymaking regimes. Economic integration increasingly limits the abilities of policymakers to regulate firms due to increased competition internationally and regionally

(i.e., European Union). Carbon-intensive firms mobilize to avoid regulation and decreased profits. Policymaking regimes can be idiosyncratic, with characteristics like ‘veto points,’ offering opponents multiple opportunities to block a proposed policy and challenging the creativity of supporters. Each factor significantly shaped both the politics of enactment and the policy design.

While specific policymaking narratives are likely to be different in other countries, the French case does offer some general lessons. Even though globalization may push for climate reform, it also limits the independence of state governments in curbing emissions. Research on world polity often frames the spread of values and norms as a progressive movement for the environment and climate (Frank et al. 2000; Longhofer et al. 2016; Longhofer and Jorgenson 2017; Schofer and Hironaka 2005). In this case, when fighting climate change went beyond making ‘paper promises’ and instead made emissions expensive, world and regional polity had a neoliberal, pro-business impact. Thus, while environmental values spread, they coincided with pro-market, neoliberal constraints and norms. World and Regional Polity may not necessarily be progressive or modernizing forces (Beckfield 2006; Kentikelenis and Babb 2019; Kentikelenis and Seabrooke 2017). Climate reform does not always come within a progressive policy package. Neoliberal policies also can emerge in settings that are relatively left-leaning. This pro-climate reform ideology, instead, aligned with the politically dominant, pro-Europe and pro-business French policymaking regime (Amable 2017).

The French case challenges the conventional view²⁴ that particular countries, economies, and political institutions are more likely to adopt neoliberal policies than others (Esping-Andersen 1990; Hall and Soskice 2001) due to continuity and historical constraints (Pierson

²⁴ Though this view is less and less prominent.

2000, 2011). Some of the literature is too quick to generalize and this case challenges arguments that national characteristics determine policy coherence. France's carbon tax suggests that states are not so unitary and can embody quite different degrees of neoliberalism and dynamics of progressive change from one policy domain to another. Perhaps the lack of precedent and uncertainty (Beckert 2016) surrounding French climate policy (and climate policy, in general) allowed the existing policymaking regime to mold the carbon tax into a more neoliberal form that suited their inclinations. Around other political issues in France, such as pension reform, precedents and social coalitions are more fully developed.

The spread of environmental values and norms was a push, while pressure from economic integration and business-elite influence shaped the form of the policy. Policymakers then, learning from past mistakes and refining their act, implemented a policy that would normally be declared unconstitutional through what some of them termed 'trickery.' They were able to bypass safeguards; one defending equal rights of citizens (Constitutional Council) and the other (public discussion), providing citizens with an opportunity to block or revise the policy. In many cases, when the political majority is not in accord with a particular policy, governments often resort to undemocratic and subversive means (Amable 2017; Streeck 2018). The French state, like all states, has a history of awarding exemptions to corporations in economic policies and strategically compromising transparency to avoid public opposition (Hall 1986). Agency and learning can sometimes be underappreciated in studies over successive policy battles.

France also serves as a cautionary tale for future climate change fiscal reforms. Economic integration can be socially regressive and mold policies into neoliberal, pro-business ones that are ineffective. Better models exist for taxing carbon that need not be as politically charged. In larger economies, depending on their growth model, revenue can be returned to citizens or to

firms if they are earmarked for environmental innovation. It is also worth noting that policies lose credibility with the public when corporations (typically with higher emissions) are not held accountable. The French government already knows this (Bureau, Henriët, and Schubert 2019). Furthermore, no evidence supports assertions that many existing corporate taxes or regulations (Kenworthy 2008, 2018) or carbon prices (Driscoll 2020) limit economic growth. Future scholarship on carbon taxes must continue to question this ideology which is dominant in policy discourse in many arenas.

In sum, this chapter revealed the main constraints that national economies face with when pricing carbon and, by proxy, decarbonizing. At the root, global liberalization empowers firms and incentivizes national policymakers to deregulate to remain competitive. This reality helps explain the many exemptions in the French carbon tax and the carbon taxes in other countries. Furthermore, at this point, democratic political institutions cannot seem to govern an international problem like climate change and guide decarbonization effectively. French policymakers snuck through a very mediocre carbon tax. Will it remain under the radar in the long run? The next chapter fast forwards five years.

CHAPTER FOUR: THE YELLOW VEST MOVEMENT

Prologue

A Tale from the Field: The Anniversary Protest

The Yellow Vest meeting was at 7:30pm in Le Quartier.²⁵ The evening before the big day. It was pouring rain and, having forgotten to bring my umbrella, I hurried to the RER station close to where I was living in the south of Paris. I boarded the train and began the ride through the city. As the train moved past Châtelet in the center, stop by stop, wealthier people got off and poorer people got on. Long wool coats with silk scarves draped ‘just so’ became bulky jackets with whatever else added warmth. Paris is long known for its spatial inequality and the contrast between the center of Paris and the periphery is no exception. After Gare Secrète, a woman boarded the train and gave a short speech, “Please, Madames, Monsieurs, my situation is very precarious as I am from Syria. If you have any coin to give, I would be very grateful for it.” After speaking, she walked throughout the train holding out a cup for spare coins. I didn’t have coins on me, felt a pang, and avoided her eyes as she walked by. For Parisians, this situation is sometimes a daily occurrence on the metro, and no one gave her anything except for one elderly woman with a floral scarf. She dropped 50 cents into the cup. The Syrian woman bowed to her, whispered a ‘merci,’ and got off at the next stop.

I finally reached Gare Mystère. It started raining harder. I covered my phone screen with my hand to protect it from the rain while I studied google maps and tried to walk at the same time. I remembered how I first became connected to this group through rain. I had met Pierre in a downpour, while he was handing out pamphlets on Trotskyism in front of my apartment. After being handed a damp red pamphlet, we started chatting under an umbrella and I eventually told

²⁵ Note: All activists and related locations are de-identified.

him about my project. He told me he was a Yellow Vest protestor and I should come to meetings to meet others. The next day, in a commandeered classroom at the École Normale Supérieure, I met several more activists. Two were part of a larger Yellow Vest group, “Gilet Jaunes Périphérie” and invited me to today’s meeting.

I found the meeting place. It was a sort of neighborhood community center and stood out in the dark street with all of its lights on. Lining the windows were event posters to attract passersby and the doors were wide open. I entered.

The room was decorated for a party. There were about forty chairs in the center. Each chair was decorated with a pamphlet, some had ribbons and balloons. A side table against the wall was scattered with baguettes, charcuterie, cheese, chips, and cans of Perrier. In the front of the room there was a balloon-lined table that had four chairs, which I discovered later were intended for the leaders of the group. Behind the front table was the group’s banner, dominated by a caricature of Macron. He wore a maniacal glare that was offset by an absurdly large, red bulbous, clown nose.²⁶ What struck me the most about the scene, however, was the amount of people. The party was one of those parties where the effort and care that went into decorations and food dwarfed the attendance. In a glowing, carefully decorated, large room full of forty chairs and plentiful food, there were roughly fifteen people with a few young children. I quickly realized that these people tonight represented remaining ‘die-hards’ of the movement.

People milled about munching on some combination of food and were smiling and laughing in good spirits. Many of them clearly knew each other well. Pierre and Athena (someone I had met at the École Normale Supérieure meeting), saw me, walked over, and led me over to a group of activists chatting by the front table. Above the table and our heads hung a

²⁶ A clown nose is an insult in French culture.

clothesline with 13 cardboard cut-out ‘yellow vests’ with messages written on them. One read, “We want to live with dignity,” one spoke about police violence to protestors, “4400 injuries,” others spoke of Act 53, “To all the rich: run away from Paris while you still can! On the 16th of November we are coming.” Act 53 was the one-year Saturday anniversary of the Yellow Vest Movement, which had its first major protest on Saturday November 17th, 2018.

After introducing me to some people, Pierre explained to me that the Yellow Vests of La Périphérie were among remaining Yellow Vest strongholds in Paris as the movement had been on a decline since summer. Group conversation turned to the plan for tomorrow. Pierre got out his phone and showed people a map of Paris where there were planned protest groups. Athena explained there would be two main Yellow Vest gatherings in Paris. One would begin at Place de la Porte Champerret in the north and the other at Place D’Italie in the south. The two groups would meet in the center of Paris, gain momentum, and then march together on to the Bastille. If I wanted to come, I would accompany the group at Place de la Porte Champerret. My mind spun, I hadn’t planned to attend the protest. Before I could get a question out about when to meet and how to prepare, the meeting was called to order.

The four leaders each spoke briefly about how the French government had not listened to their demands and, in fact, nothing had changed. The government was repressive, corrupt, racist, closed off, and more. They each spoke of their own difficult circumstances and afterward, opened the floor for others to share. A number of people stood up to speak – hospital workers about working conditions, retirees about pensions, teachers about salaries, and more. The meeting then ended the same way it began, with food and chatter. I tracked down Athena and Pierre to get information about where to meet and for advice for how to prepare.

“Okay, what can I do to prepare for tomorrow?”

Pierre replied matter-of-factly: “Dress very warm [it would be a high of 5 degrees Celsius and windy], wear active footwear, and bring a small bag with a water bottle and an ID card if the police stop you. Some protestors wear goggles or gas masks to protests, but it gives the police an excuse to stop or arrest them. The best way to deal with tear gas is to wear a scarf around your nose and mouth. When it’s sprayed, you cover your face and run in the other direction.”

I felt a bit of anxiety creep up into my chest, “Will I be safe?”

Pierre, who had been beaten by the police, raised a corner of his mouth in a half-smile and sighed, “Yeah probably. Of all the protestors, there are a small minority who get hurt. There are were also people on the sidelines dressed in white and blue with crosses on their clothes. They are medics and will help if you need it.”

Athena added, “You’ll be with us and we know what to do.”

“What about me being a foreigner?”

Athena laughed, “Hurting an American is the last thing the police want to do.”

I smiled and put on an exaggerated American accent, “I’m looking for the Louvre?”

We chuckled. I still was a bit nervous, but after knowing Pierre and Athena for a little over a month, I did trust them.

One of the group leaders came by, Gérard, and with a silent smile gave me an extra yellow vest they had lying around. It read: “DON’T NUKE THE CLIMATE.” Apparently, it was an anti-nuclear, yellow vest of the many they had made for the Paris Climate March. Pierre laughed at the sight of it and said, “See, that’s perfect for you, the ecology guy.” Amjhed, a leader of the group who I had interviewed a couple weeks ago, came over and shook my hand with a grin. He gave his phone to Pierre and said, “Take a picture.” We both smiled and the photo was snapped. Amjhed took his phone back and showed me the photo, “See...this is a

smiling revolution.” Amjhed, an Algerian who had taken up arms against the state in the 1988 Algerian revolution, took me aside and put an arm on my shoulder, “There is us,” he said, pointing him and me, and then he pointed up to the ceiling and his look hardened, “and there is them.”

“The rich? The elite?”

“Of course.”

He then looked at me with his face set, “Our morning day will come. I don’t know when, but I know it. The sun will rise again.”

The Yellow Vest was hidden under my coat on the train home. I arrived at my apartment late and tried to sleep.

Guitar notes were echoing from a performer through the underground metro station. I was waiting for a train north to Place de la Porte Champerret, the start of Act 53. Through my hazy fatigue, I was trying to recognize the song, but there was too much noise with my train arriving. The train screeched to a stop and the doors flipped open. There was momentary peace and I recognized it with a happy jolt: “Here Comes the Sun,” by the Beatles. I wondered if it was a sign that today would be the morning day, the sunrise that Amjhed described. I got on the train.

I arrived to Place de la Porte Champerret and regained lost cell service. Athena had sent me three WhatsApp messages: (1) “We are at Pereire,” (2) “The station before Champerret,” (3) “It’s not possible to get off at Champerret.” I figured I could still look. I walked up the stairwell and saw a line of white police vans in one direction, blocking the boulevard, and a thick white

fog, which I figured could only be tear gas. There were police surrounding the metro station. Nope, it was not possible to get off at Champerret. I adjusted my shoulder bag opening to ensure my Yellow Vest remained invisible and I went back down the stairs.

I messaged Athena, “I got off at Champerret, but am now going back to Pereire.” Athena sent a photo of a café with a grey-blue sign that read “L’Absolu.” She wrote, “We are in front of this café.” I sent a thumbs up emoji. I hopped on the next metro south and got off at Pereire. Above the stairs there were clear skies and no police. Great.

I walked down a blocks heading to L’Absolu. Athena called me on WhatsApp audio.

“Are you here?”

“Yeah. I can see L’Absolu...”

My attention was briefly diverted by a group of 20 policemen in riot gear stepping lightly in formation and hugging to the wall of a building across the street, about 10 yards in front of me. Though they were outfitted menacingly: all black, body armor, face shields, batons, and guns, they looked uncomfortable, exposed on the large streets with multiple side streets at every corner. Still, I was in their trajectory.

“Sorry er Athena, hold on.”

I quickly crossed to the other side and tried to look like I was out for a stroll.

“...where are you guys?”

“We’re to the left of the café.”

I saw them and jogged over to the group of roughly 10 people dressed in street clothes, all of whom I had seen last night.²⁷ They greeted me warmly, as if this was just another day. Gérard and Amjhed gave me firm handshakes. We turned a corner to a large group of roughly

²⁷ Some were with other groups in the city. For instance, Pierre was going to Place D’Italie instead.

300 yellow vests protestors. About half were wearing their yellow vests. Many were in all black, including most of our group. The crowd was moving up the street and we joined them.

I turned to Alex, a retired teacher, “Why are we not wearing our yellow vests?”

“There’s no point. It only helps them [the police] identify you.”

“We are more flexible this way,” Athena added.

Made sense to me. We hurried up the street to join the main group. I turned to Athena,

“Are the police going to follow us?”

“Yeah, but they can’t do anything, there are too many of us. We stick together because they target you when you’re alone.” As she finished speaking, a drum beat and a chant began:

We are there. We are there.
Macron doesn’t want us.
We are there for the honor of the workers
and for our future.
We are there.

The pack started moving up the boulevard. Gérard lit a cigarette. Athena and Emily joined in on the chant. Others in our group were scattered in the mass of protestors.

Suddenly, the mass stopped moving and people ahead began yelling. The fog of tear gas began to fill the air. The police had thrown a gas grenade in the middle of the group to disperse us. It worked – people began running from it in every direction.

I smelled the vinegar-like odor of the gas before I felt the effects. Our group started running backwards and I quickly followed. Then, just as I thought maybe I wasn’t going to be badly affected, it kicked in. My face and sinuses burned. Remembering Pierre’s instructions, I wrapped my scarf around my nose and mouth. My eyes filled with searing tears and the world – sidewalk, cafes, trees became a haze. I heard people coughing and yelling. Squinting through my

scarf, I half stumbled, half followed my group down a side street that was relatively clear of gas. Relatively safe for the moment, I closed my eyes completely. I heard a voice say to me,

“Don’t rub your eyes, nose, or face. Your hands and scarf have the gas on them so it will make it worse.”

I tried to resist the urge.

Emily handed me a small bottle eye drops from her bag and I used them to immediate relief. The setting became less hazy. Tears falling down my cheeks, I finally saw our group. Some were still coughing. Many had their eyes closed, covering their nose and mouth. All had inflamed, tear-filled eyes.

After a minute, we were moving again. However, we didn’t return to the main boulevard and were using side streets instead. This decision was so automatic for the group and undiscussed that I was unaware that it was a deliberate strategy until Alex interjected, “There are so many side streets here, it’s easy, they can’t trap us.” I quick realized that we were using the side streets to bypass the gassed section of the main boulevard and join the main group up the street.

When we found them, the main group had grown in size and strength. We started marching up the street, drums beating, people chanting, whistles blowing. This time, I tried to take the picture in more. The people here looked no different from the Parisians that I had seen on the street for the 5 previous months I had lived in Paris. There were people of all races, genders, and walks of life. Ages were typically between 20 and 75 (children and the very elderly shouldn’t be exposed to tear gas). Many simply wore black or normal street clothes. About half wore their yellow vests. Many of the yellow vests were individualized with words or slogans written on them in black sharpie. One read “RIC,” supporting the referendum. Another was anti-

EU and read “FREXIT.” Some of the yellow vests were individualized to particular professions. One woman wore medical scrubs under the yellow vest that read, “Saint Dennis Hospital.” After a little while, Amjhed pulled his yellow vest out from under his black coat, leaned into Gérard and whispered, “for Algeria eh?” and threw his yellow vest on. Down the front of it was handwritten dates of Algerian governments getting overthrown. I was struck how the yellow vest as an object and symbol both affirmed the individual, but also united people under the same struggle.

I asked Amjhed what he thought about all the different yellow vests.

“So in yellow vests, there's this big family. We are so democratic that it's almost stupid. In a family, you'll find everyone: extreme left, extreme right, communist, fascist, workers, unions, unemployed, religion, there is everything.”

“Do you disagree with some of the family members?”

“Yes, I've crossed them, I've debated with them. There are some who have criticized me. But, like I said, it's a family! The problem at hand, is this government system. They have the monopoly of decisions.”

“I understand.”

We continued walking on down the middle of the boulevard. Walking alongside us on the sidewalk I noticed two main types of individuals besides the casual passersby. There were groups wearing “PRESS” labeled helmets carrying cameras and recording equipment. They looked bored, waiting for an interaction between police and protestors. Scattered throughout were also the medics that Pierre had described to me, wearing blue uniforms with crosses. Many of the medics were holding spray bottles with a fluid that relieved tear gas. Some medics marched with the protestors, while others kept their distance. Next to them, Police, in a line,

began walking up the sidewalk, tailing the crowd. Seeing them, a few people started pointing and began a chant, interspersed with laughter. The mass took it up:

The whores of Macron,
The whores of Macron,
The whores,
The whores,
The whores of Macron.

“This movement was our first time protesting or taking political action like this”

“Really?” I was talking to Celeste and her friend Basem.

“Yeah. Things have gotten really bad.”

“What do you guys do for work?”

“I work at a daycare,” Celeste replied. Basem added, “And I’m an electrician, but I have no work now even though I’m looking every day.”

“That’s no fair.”

“It’s like this for everyone,” said Celeste, “even for the parents of the kids I work with. They never get time off to spend-” She saw something, broke off and started running up the street. I saw her grab her brother by the arm, Adam, who, to my surprise, was yelling at a policeman. The policeman was sneering, laughing in his face. Celeste pulled Adam back toward the crowd and I lost sight of them. Our group rushed forward to see what the problem was.

Adam, a young 20s man, looked angry. I whispered to Athena,

“What happened?”

“The policeman called him fat.”

“What? Why?”

“They’re police. This is just a tactic they use to bait people.”

I shook my head. There wasn't time to reflect further on it. We all moved forward with the crowd.

Ahead there was a bronze tunnel covered in graffiti with a sign above that read neon letters that read: "Ongoing Protest in the Periphery." People pointed up to the sign and raised their fists, cheering. A few young men pushed over some barriers with glee. As we entered the tunnel, a chant began. It rolled over itself and echoed throughout the tunnel:

Re-vo-lu-tion
Re-vo-lu-tion
Re-vo-lu-tion

The sound of the chant and reverberations were deafening. It was impossible to hear anything else, but it felt like our numbers had tripled. I couldn't hear anything else until we exited the tunnel. Out of the tunnel, the crowd turned left and started down a new street, it was narrower and the crowd became denser.

A cloud of gas suddenly surrounded us. And en mass, we retreated. This time, as we were even closer to the gas and I felt its burn quickly before I was free of the crowd. I saw Athena to my left holding onto Amjhed's shoulder, who's glasses blocked some of the gas exposure and was leading her off the street. I ran over toward them, grabbed Athena's shoulder, and shut my eyes tight.

Athena yelled: "Everyone stay close!" Forming a human chain, led by Amjhed, our group headed for a side street. Once there, we spent a minute recovering. Scarves and tissues were out, eye drops were shared, and soon we were on our way again: zig zagging through side streets until we found the main group on a wide boulevard. I saw the Syrian flag high in the air.

Of all signs and flags, the French flag was the most common. I also saw a Che flag and flags from particular provinces. Some people held signs calling for the "RIC." Many signs

insulted Macron – one read, “They’re coming to get me!” over a photo of him looked panicked. Others were celebratory and one read, “Happy Birthday Friends!” celebrating the anniversary of the movement. Standing on the monument at Place de la Republique, over a pile of stacked ‘ride sharing’ scooters and street signs, one protester held a poster with text that read: “17.11.19 – 17.11.19: The birth of the movement.” We walked on.

Gérard moved diagonally over to me and opened the large bag, still dwarfed by his yet larger frame, that he’d been carrying all day.

“Would you like a sandwich?” He said, looking down at me.

Inside the bag I saw over a dozen sandwiches wrapped in tin foil. He explained that he had prepared them for the group on the previous night and that this is what they did for each protest.

“Yes! Thank you so much.” He handed me one and walked with me momentarily. Gérard worked as a street cleaner for the city and had been a part of the movement since the beginning.

“Will you go to any protests tomorrow?”

“No, I think this is the main one for everyone. I’ll be with my grandchildren tomorrow, that’s my time to see them.”

“Ah, that’s nice.” He smiled behind his glasses and nodded. He then trudged over to the other members of our group, continuing to hand out sandwiches. Everyone took one. Soon, we were all walking down the street munching on foil-wrapped baguettes filled mortadella.

I sidled over to join Athena, Emily, and Vivienne. We all chatted for a bit about what they were studying at University and how they had joined the movement. All had protested before and were active political organizers around Paris. During our conversation about political

organizing, I suddenly saw smoke billowing up in the middle of the street. I instinctively stepped backwards, but soon realized that it was too dark in color to be tear gas; some protestors had started a fire in the middle of the street. We skirted around it, ignoring the crowd of young men cheering and throwing trash and street materials into it. I heard the smash of storefront glass breaking behind me, turned to look, but couldn't locate the store. Our conversation continued, uninterrupted, and we moved forward.

Sirens roared behind us and I saw a firetruck rolling up to the scene to extinguish the now roaring fire. Police began to swarm in from side streets onto the sidewalk of the main boulevard ahead. A few young men dressed in black started getting in their faces and yelling at them. The people wearing "PRESS" helmets perked up and edged in to capture the action.

"We know that violence can be one part of revolution, but some of this stuff is pointless. Those guys a pretty small minority of us. They think they are making things hard for the state by destroying things, but they don't realize that the state doesn't care." Athena said.

"Ah ok." Our group veered to the left to give ample space to the protestor versus police conflict to our right.

Alex walked up to us.

"The protestors at the Place D'Italie in the roundabout are trapped by the police."

Multiple voices reacted:

"What?"

"But it was a legal protest!"

"The state changed its mind when people built a barricade," Alex replied.

"How are they trapped?"

Alex held up his phone which was streaming live the news story. It showed protestors boxed in by police with rapid-fire news anchor commentary, indiscernible with the noise around us. Someone in our group swore. I could tell they felt cheated. Here was another instance where the state had agreed to conditions, but it had failed them in the end. At that time, we were nearing the end of our route.

“Look, the Bastille!”

At the sight of the Bastille, the mass of protestors became more and more energized. There was a huge gathering at the monument ahead. A young man with a long black beard to the right of us pushed over a porta-potty, we avoided it, and kept walking forward.

Amjhed said, “It’s where we cut the king’s head off.²⁸ It’s perfect!”

Those of us who heard laughed and we all walked straight toward it – roughly 50 yards away.

I saw the grenade this time – tossed from the sidewalk and spinning in the middle of the street ahead – tear gas. At first, it appeared that the wind was blowing the gas away from us, but then it changed. More tear gas from other canisters filled the street. I looked behind us and there were police in cars and others on the street and sidewalk advancing toward the Bastille behind us. I looked toward the Bastille ahead, it was in a light fog. It seemed the police intended to surround the protestors already at the Bastille.

“Leave the street!” Someone in our group yelled. I looked back again and the police and their trucks has sped up, moving fast down the street toward the Bastille in a line. We were in the way.

“This café!” Everyone quickly entered the front of a covered café and closed the door.

²⁸ For the sake of historical accuracy, the Execution of Louis XVI took place at Place de la Concorde.

“I’ll just order a coffee,” Vivienne offered.

“We can all just sit and order something,” said Athena.

As we were figuring out where to sit, some of us taking off yellow vests and transforming into patrons, I saw the police and their trucks passing by a window, focused ahead. We all sat down. Most of the patrons of the café were further inside, but in the covered area where we were standing there was a family – an elderly couple and their adult daughter enjoying a late lunch.

“Apologies for the interruption,” Gérard said to them with a polite nod.

“Not a problem, of course! It’s difficult out there.” The elderly man returned. We straightened ourselves and sat down at some tables. I took a small table with Amjhed. Looking at the police jogging by in formation I spoke first,

“So it was best for us to avoid them, huh?”

“Oh yeah. They’re crazy, they’ll just hit you directly.”

“I bet,” I said nodding my head in agreement. There was an odd feeling in the air. The feeling one gets when having to rouse a different self at a split second. A transformation from disobeyer of the state to polite patron. A transformation that every Yellow Vest habitually makes, but rarely so suddenly. Despite our efforts, the waiter stayed in the main room and avoided us.

The police soon passed and the gas cleared. We picked up our bags, prepared to leave, and waved goodbye to the family.

“Bon Appétit,” Alex said to them with a nod and a smile.

The old Frenchman looked up from his tea at us. He took a second to search for the precise reply, as all French do, a task more difficult given our absurd situation. He finally smiled and with perfect politesse and a nod in return said,

“Bonne revolution.”

...

On Tuesday, November 27, 2018 President Emmanuel Macron stood outside of the Élysée Palace in Paris to address the French Republic. The weekend before, the Yellow Vest protesters (Les Gilets Jaunes) had assembled for the second Saturday in a row, and the aftermath was unlike anything France had seen since May of 1968. Up and down the Champs-Élysées, shop windows were smashed in from thrown cobblestones, cars charred from fires, and monuments defaced by graffiti. The French government faced damages totaling over one million euros. Describing the time period one year later to me in a cafe, a Yellow Vest activist gave a candid look over his tea and said, “We attacked the very symbol of their wealth.” Standing in front of two flags, one French and the other European, Macron gestured with his right hand as he looked up at the cameras:

What I want to make French people understand – notably those who say ‘we hear the president, the government, they talk about the end of the world and we are talking about the end of the month’ – is that we are going to treat both, that we must treat both. (France 24 2018)

While Macron’s statement, contrasting a carbon tax with living expenses, was ridiculed by the Yellow Vest protestors, it captures a tension between two world views: one oriented, beyond even the European flag, toward solving global climate change, and the other, oriented toward addressing the everyday issues facing the French people. With increasing globalization, countries are forced to balance national concerns of employment, growth, and general welfare with international ones of trade, migration, conflict, and, more recently, a pandemic. Climate change, as well, is considered one of the foremost global problems, but like other international concerns, reform can sometimes run counter to national interests and popular movements. This is why major industrialized democracies have not fulfilled their commitments to the Paris

Agreement (Victor et al. 2017). The fact that international climate agreements are non-binding hasn't helped.

Macron continued his speech, characterizing any action against the carbon tax, which raised fuel prices, as anti-climate. Beyond Macron, there were many reactions globally to the Yellow Vest movement and climate policies. Publications from the left, center, and the right raised questions about whether the Yellow Vests were anti-climate and the viability of carbon prices for fighting climate change (Aronoff 2018; Breitbart London 2018; Wall Street Journal 2009). In addition to accusing them of not taking climate change seriously, the French media and Macron have, at times, characterized the Yellow Vest movement as nationalist and far-right (Aline Leclerc 2019; BBC 2018; Elise Vincent, Abel Mestre, and Olivier Faye 2018; Noiriel and Truong 2019).²⁹

These depictions of the movement are sometimes strategic actions, designed to use the movement for alternate ends. This explains why Trump tweeted that the movement confirmed his view that the Paris Agreement was a waste of time and that taxing carbon was too expensive (Withers 2018).³⁰ The fact that Macron called their protests anti-climate could also be viewed as a strategy to discredit those who so loudly oppose him in a national setting where the reality of climate change is widely accepted. These characterizations, however, also reflect a deeper issue in emerging scholarship on popular movements and obstacles to climate change reform. When

²⁹ Scholars find that movement credibility and support is compromised by violent protest (Simpson, Willer, and Feinberg 2018). While the vast majority of the Yellow Vests did not participate in violence, at protests I did witness particular protestors (typically young men) destroying objects or setting fires in the street. These acts certainly compromised the credibility of the movement with the government and many in the French public. I did, notably, witness more violence from the state – beating, verbally assaulting, and tear-gassing protestors. Though my group protested peacefully, I was tear-gassed multiple times and had to run to avoid getting beaten by charging police. Most of the time, protests were peaceful and state response felt extreme at times. This is one reason the movement sought to bring attention to police violence.

³⁰ To be clear, his claims are purely ideological. The evidence indicates that pricing carbon to lower emissions does not limit economic growth (Driscoll 2020).

presented with a populist movement opposing a climate policy, current scholarship, like Macron and the media, would *also* tend to characterize the movement as denialist, nationalist, and right-wing (Forchtner 2019; Huber 2020; McCarthy 2019; McCright and Dunlap 2003; Pulido et al. 2019).

These characterizations are understandable. With popular and far-right leaders like Trump and Bolsonaro rejecting the reality of global climate change and choosing instead to emphasize the development of the nation's natural resources (Waldron 2019), populist opposition to a carbon tax would seem entirely consistent. However, as I will show, based on in-depth interviews with Yellow Vest activists supplemented by survey and documentary evidence, these characterizations are off target when it comes to the French case. The Yellow Vest movement is especially instructive because it does not fit expectations. Based on the French case, I offer a more nuanced understanding of the relationship between popular movements and climate change.

I argue that negative characterizations and expectations of the Yellow Vest movement are rooted in a misunderstanding of how and why a popular movement might oppose climate reforms. Ultimately, the negative characterizations assume that because the Yellow Vest movement opposed a climate policy, they fit neatly with the other features of a right-wing populist package. To address this lacuna, I propose a framework that outlines how and why popular movements may oppose particular climate reforms. This framework outlines why the Yellow Vest movement (which, in fact, accepts the reality of climate change and is neither left nor right) exists and differs in a world of populist authoritarians like Bolsonaro or fossil fuel business-elites who encourage populist opposition to climate reform.

The chapter is structured as follows. First, I review the emerging literature on populist opposition to climate change reform. I argue that existing perspectives cannot explain the Yellow Vest movement. Second, I introduce my case, methods, and evidence. This study brings together in-depth interviews with 31 Yellow Vest activists and supplementary primary text documents and data. Third, I present my findings and show how a ‘bottom-up’ or grassroots populist movement frames carbon taxation and climate change within their political struggle. Finally, I conclude with my framework, contribution, and discussion.

Populist Opposition to Climate Change Reform

Scholarly interest in populism has exploded during the past several years, and for good reason. Events like Brexit, movements like the Yellow Vests, and political leaders like Donald Trump have inspired scholars to study populist causes, ideologies, and more. In fact, the usage of the term ‘populism’ has become widespread to the point of misuse and contestation. In this chapter, I align with the well-established ‘ideational approach’ (Hawkins et al. 2018) which defines populism as “a thin-centered ideology³¹ that considers society to be ultimately separated into two homogeneous and antagonistic camps, ‘the pure people’ versus ‘the corrupt elite,’ and which argues that politics should be an expression of the *volonté générale* (general will) of the people” (Mudde and Rovira Kaltwasser 2017:6). This distinction between ‘the pure people’ and ‘the corrupt elite’ is ubiquitous across forms of populism. Brexit has been called a “mutiny against the cosmopolitan elite” of London, who only served Europe (Calhoun 2016). The Yellow Vest movement crusaded for the resignation of ‘corrupt’ President Emmanuel Macron who

³¹ A ‘thin-centered ideology’ refers to an ideology that is typically linked to broader ideologies and offers less explanation for how the world works. Socialism, fascism, or liberalism would be considered ‘thick-centered ideologies’ because they can help explain broader socio-political forces and outcomes (Mudde and Rovira Kaltwasser 2017).

obliged the rich (Noiriel and Truong 2019; Piketty 2019). And Donald Trump’s rhetoric has been laced with populist distinctions: “The only people brave enough to vote out this corrupt political establishment is you, the American people” (Smith et al. 2019). While there are many variants of populism, at its very foundation it is held together by a stark Manichean contrast between the ‘virtuous people’ and the ‘crooked elite’, typically calling for popular sovereignty (Mudde and Kaltwasser 2013). Like social movements in general, populist movements mobilize for or against a sociopolitical outcome or goal (Staggenborg 2015). Populist movements are, however, a subset of social movements and are distinct in that they are undergirded by a ‘virtuous people’ versus the ‘crooked elite’ ideology with solutions that involve varying forms of popular sovereignty.³²

Climate change has increasingly become a prominent issue in many populist movements, with activists mobilizing for or against reforms. In the circumstance of popular movements mobilizing against climate reforms, there are two main interpretations that scholars offer. The first links anti-climate populism to authoritarianism, and the second, to business-elite power. In the following sections I review both perspectives.

Authoritarian populism

Authoritarian populist efforts to block climate reforms are often driven by nationalism and a commitment to economic growth at almost any cost to international cooperation. Authoritarian populism has emerged in many countries (Norris and Inglehart 2019), and popular movements are commonly linked to what scholars term a ‘charismatic strongman’ who “mobilize the masses and/or conduct their parties with the aim of enacting radical reforms” and exercise “power that is independent of any office and free of any constraint” (Mudde and Rovira

³² Not all social movements are anti-elite. Other social movements, for instance, can be led by elites and champion elite outcomes (Martin 2013).

Kaltwasser 2017:62–63). These leaders are often outsiders from the political establishment and appear as strong, independent voices of ‘the people.’ Examples of authoritarian populist leader antagonism toward climate reform include Trump’s repudiation of the Paris Accord while expanding coal production, and Bolsonaro’s opening of the Amazon rainforest (a crucial carbon sequestration sink) to logging, burning, and farming. The root of their ideology is nationalistic, what American President Donald Trump terms as, ‘America first,’ implying maximal ‘national prosperity’ before any ‘global ideals’ associated with international cooperation to the benefit of all countries. Some social scientists would term these actions a symptom of the ‘free-rider’ problem resulting from non-binding international agreements. Public intellectual Naomi Klein goes so far as to term this type of action, ‘climate barbarism’ (Klein 2019). Both leaders include climate change denial in their right-wing, nationalist agendas that are often skeptical of ‘scientific elites’ (Waldron 2019).

Scholarly work on authoritarian populism and climate change is in its early stages, but has swelled the past few years (McCarthy 2019). Scholars are investigating a variety of questions around authoritarian governance. How does the authoritarian state govern natural resources (Middeldorp and Billon 2019; Wilson 2019)? Is an authoritarian state more competent for enacting effective climate policy outcomes (Beeson 2010; Gilley 2012)? What risks come with a “non-participatory approach to public policy-making and implementation” (Gilley 2012:287), and are we headed in that direction as prompt state action becomes increasingly necessary? Scholars are also investigating how populist figures, like Donald Trump, further agendas of climate deregulation and marginalize science (Dillon et al. 2019; Sparke and Bessner 2019). Researchers find ideological links between climate deregulation, anti-immigrant sentiment, and white nationalist agendas (Pulido et al. 2019), connected even with border walls (Wright 2019).

While the closing of borders has been linked to some pro-environmental or climate concerns, those concerns are more typically linked to nationalist sovereignty over ‘pure’ nature and ‘protecting’ nature by excluding those living beyond national borders (Forchtner 2019; Hultgren 2015). There are many varieties of nationalism, and environmental nationalism is increasingly present in nationalist discourse (Klein 2019). Taken together, authoritarian populist regimes and movements often spur or capture popular sentiments and steer them in nationalistic and climate denialist directions. As climate reforms often require a globalist mindset, populist nationalism or “America first” ideals run counter to such reforms. In sum, authoritarian populism scholarship links opposition to climate reform to climate denial within a broader platform of right-wing nationalism.

Business-elite power

Business-elite motivation for influencing popular movements to block climate reforms is driven by profit and protecting returns on investment. There are prominent studies in sociology on business-elite influence on populist party or movement platforms, ideologies, and mobilization (Hertel-Fernandez 2019; Martin 2013; Skocpol and Williamson 2016). How do business-elites influence the views of populist movements on the issue of climate change? Environmental sociologists have done their part and documented the ‘climate denial countermovement’ and its influence on movements, political parties, public discourse, and the media (Dunlap and McCright 2015). The business-elite in the denial movement typically consist of the fossil fuel industry and corporations. They carry significant lobbying power over politicians (Brulle 2018; Hacker and Pierson 2010). They also use their ample resources to influence the media (Boykoff 2008) and scientists (Oreskes and Conway 2011) to question or

deny the reality of climate change. How do fossil fuel business-elites attempt to influence popular movements and parties to oppose climate change reform and policies? Invisible, but pulling the strings, they fund grassroots organizations and groups to deny climate change (Farrell 2016) and even create ‘front’ groups and ‘astroturf’ campaigns that oppose climate change reform (Brulle 2014; Dunlap and McCright 2015). The Koch brothers and other groups, for instance, backed the populist Tea Party to include climate change denial in its right-wing platform (Dunlap, McCright, and Yarosh 2016; Hertel-Fernandez 2019). These strategies often rely on populist language to discredit climate change science and policies. As a result, a dominant right-wing popular movement in the United States denies climate change and rejects proposed reforms like carbon prices (Driscoll 2021).

In general, these efforts have proved effective. Today right-wing populist platforms are associated with climate change denial (Forchtner 2019; Huber 2020) and link climate reform to ‘cosmopolitan elites’ (Lockwood 2018). In the United States, populism has a polarizing effect on climate change views – pushing those on the left and right to extremes (Huber, Fesenfeld, and Bernauer 2020). In fact, the United States, which has one of the strongest denial movements, is the most polarized country around climate change action, and sluggish in its reforms (Driscoll 2019; McCright and Dunlap 2011). This is all supported by the revelation that, at the cross-national level, the amount of business-elite in the fossil fuel industry is correlated with lower concern about climate change and higher rates of denial (Knight 2018; Tvinnereim and Ivarsflaten 2016). In sum, scholarship on business-elite influence on populist movements and parties links opposition to climate reform to climate denial and other far-right ideals of nationalism, xenophobia, limited government, and more.

Limitations and moving toward a 'bottom-up' perspective

The review of the two perspectives just presented may leave the reader dissatisfied. First, while authoritarian leaders and business-elites engage with populist ideologies and movements, they are clearly 'top-down,' seeking to influence, capture, and spark popular movements. These perspectives ignore movements and 'the people' themselves. The lacuna here has nothing to do with the limitations of scholarship; rather, it can be attributed to the absence of cases. Until now, no massive grassroots populist movement has been sparked by opposition to a key climate policy instrument. Second, both perspectives link populist opposition to climate reform with right-wing populist platforms and ideology simply due to association. Right-wing authoritarian and business-elite influence have been used to explain the climate agenda of populist movements that oppose climate reforms. This is a mistake, however, because populist attitudes on climate change can be independent of the left-right divide (Huber 2020).

What would the two perspectives predict about a populist movement that attempted to block a carbon tax (i.e., the Yellow Vest movement)? If presented with such a movement, authoritarian populism scholarship would likely characterize the movement ideology as nationalist, supporting a centralized state role in decision-making behind a charismatic leader, a right-wing partisanship, and exhibiting strong climate change denial. Business-elite scholarship would likely characterize the movement ideology as linked to fossil fuel sectors that have shaped anti-tax grievances, calling for deregulation of fossil fuel sources and lower taxes, a right-wing partisanship, and strong climate denial. In fact, those expectations of the Yellow Vests are widespread. The French media and Macron have characterized the Yellow Vest movement as nationalist, far-right, and also accused them of not taking climate change seriously (Aline Leclerc 2019; BBC 2018). As I will show, these characterizations stray far from reality.

The Yellow Vest Movement

The definitively populist Yellow Vest movement explicitly rejects leadership, unions, parties, nationalism, right-wing or left-wing identifications, xenophobia, and business interests (Noiriel and Truong 2019; Nossiter 2018; Thomas 2019). The majority of participants also reject attempts to formally organize the movement or create an official party, and thus the movement does not lie on a typical populist ideological left-right spectrum (Gomez, Morales, and Ramiro 2016). Being neither right nor left classifies the movement as closer to a form of ‘valence populism’ that focuses “on nonpositional issues such as the fight against corruption, increased transparency, democratic reform and moral integrity, while emphasizing anti-establishment motives” (Zulianello 2020:329). Broader frames and narratives such as these can be efficacious for building alliances and growing movements (Polletta 1998, 2009). Under this umbrella, the movement would be a ‘purer’ popular movement blocking a climate policy. While the Yellow Vest Movement was sparked by a carbon tax and a rise in fuel prices, it is worth noting that scholars agree that the root causes are economic, linked to Macron’s government cancelling the wealth tax, high unemployment rates, and continued cuts to social protections (Noiriel and Truong 2019; Piketty 2019). Many activists told me that life had become too expensive in France and the carbon tax brought that into the open.

My research shows that the Yellow Vest movement is primarily guided by an ideology that puts the wellbeing and interests of ‘the people’ first. Their view of political change is through direct democracy initiatives; they do not identify with parties or nationalism; and they accept the reality of climate change. The Yellow Vest movement was initially sparked by a climate policy instrument and many in the French government and media condemned them as

anti-climate. However, the movement espouses a populist discourse on climate reform that is relatively free of ‘top-down’ influence. This case offers a ‘bottom-up’ perspective on populism and climate change reform.

The utility of studying the Yellow Vest movement for scholars interested in climate politics and populism also brings to light the ethical dilemmas of carbon taxation. Not all carbon prices are created equal. Usually, scholars, politicians, and experts place carbon prices in the same category as other progressive, leftist policies. However, the French case shows that carbon prices can be socially regressive and bring to light tensions between national-level inequalities and neoliberal economic responses to global climate change. This is echoed by Marcon’s ‘end of the month, and end of the world’ dichotomy. While this statement is considered ridiculous by many of the Yellow Vest protestors, it captures the tension between these two world views and the fact that climate issues were only one aspect of this multi-layered movement.

How does the Yellow Vest movement, a grassroots populist movement, frame carbon taxation and climate change? In the following section, I discuss my sources of evidence and methods for answering this question.

Evidence and Methods

This study brings together in-depth interviews with 31 Yellow Vest activists supplemented by primary texts and survey data. The survey and documentary evidence can point to particular national patterns, but, due to their generality, miss populist perspectives and activists’ experiences rooted in the narratives, scripts, and meanings behind answers to survey questions on climate change and carbon taxation. I use the surveys and documents for

triangulation and to construct a general picture, while the in-depth qualitative interviews provide the richest data and theoretical insight.

As the Yellow Vest movement is intentionally decentralized, gaining sources of evidence is not easy. They have no main publication or newsletter or common platform that all members share, besides certain neighborhood or activist social media groups. There are, however, three sources offering general evidence about the movement: (1) the movement's initial petition on Change.org; (2) 'The Grand Debate' (Le Grand Débat National) in which, following the protests, the French government collected perspectives from the French people on climate policies (among many other topics); and (3) 'The Real Debate' (Le Vrai Débat), organized by a group of Yellow Vests to counter The Grand Debate by expressing what they considered the 'truer' opinions of the French public. The Grand Debate surveyed over 1.9 million citizens through local meetings and their online platform.³³ They also collected citizens' letters and emails. The Real Debate amassed over one million votes for policy proposals, impressive for a grassroots effort.³⁴ The following section reviews each source of evidence and then moves onto discussing the interview data collection.

The Petition

The movement began with a petition, "For a drop in fuel prices at the pump!", posted in May of 2018 on Change.org by Priscillia Ludosky. The petition gained little momentum over the summer, but when fuel prices rose further, it was discovered by truck driver Eric Drouet. Drouet reached out to Ludosky and together, they spread the petition online through their networks. Their efforts, combined with the rise of fuel prices, helped the petition gain hundreds of

³³ Data from Le Grand Débat can be accessed here: <https://granddebat.fr/>

³⁴ Data from Le Vrai Débat can be accessed here: <https://www.le-vrai-debat.fr/>

thousands of signatures in October. Once the roadblocks and protests began in November to raise awareness about fuel prices, the petition hit one million. How does the petition frame the carbon price and climate change?

The petition is detailed. Ludosky begins by discussing the rapid rise in fuel prices in 2018 and the projected increase during Macron's presidency. She then overviews why the high prices exist. The first reason was to encourage motorists to buy new, more efficient gas or electric cars. Other reasons mention geopolitics around oil and gas industry regulations. Further on, Ludosky reports that much of the rise is due to increased government taxes, including a carbon tax, which together are responsible for a significant portion (about 60%) of the fuel price (Ludosky 2018). After outlining the causes like geopolitics around oil, the petition reads in all capital letters, "THESE ARE REASONS FOR WHICH WE CITIZENS ARE NOT RESPONSIBLE!", underlining the moral indignation behind having to pay the tax. The petition goes on to say that electric and hybrid cars are too expensive for most people to buy and are only a small fraction of the car market.

Ludosky concludes with two points. First, she writes, "It is most commendable that we are looking for ways to drive in a way that causes the least possible pollution to our environment. But higher taxes imposed by the government are not the solution!" (Ludosky 2018). She then lays out several solutions including: (1) the government working with car companies and manufacturers directly (this includes regulations and subsidies), and (2) allowing workers to work from home more to save on fuel. She ends with a global statement, "I think I can speak for all the people who can no longer afford to pay for the mistakes of managers."

There are several points to highlight from the petition around the issue of climate change. Though the petition recognizes that a carbon tax is contributing to the higher fuel prices at the

pump, it isn't anti-climate. Ludosky actually commends action to mitigate climate change.

However, she makes the point that it is unfair to tax 'all the people' when (1) they can't afford it, and (2) they are not responsible. Rather, the government should tax those responsible and work with companies to make the ecological transition.

In October 2019, I spoke with Ludosky about her petition over a year after it was first issued. In our interview she told me,

It [the petition] was about ecology, but linked to social justice. About how to make this ecological transition with more 'just' measures. So, that was the first thing, and then the transparency was the second... The government and media said that I was against ecology, that it was wrong because when you read the petition, you see that I'm not saying that I'm against ecology. I'm just asking about transparency.

There is a concerted effort in the petition to explain why fuel prices were high as well. It was an attempt to give transparency to the French people about the increased costs and then explain why those costs were not fair.

Le Grand Débat National

In response to the Yellow Vest protestors, the French government held a three-month series of town halls across France, led by government ministers, to hear perspectives from the French population. This ended up helping Macron's popularity rebound to a degree as some accounts assert that, "Macron, in particular, was relentless, holding marathon sessions in small towns lasting several hours, at the end of which he was often the last man awake" (Zaretsky 2019). Beyond increasing the government's credibility with the French people, the main purpose was to collect their perspectives. They surveyed citizens at the local meetings, post offices or station stands, and through their online platform. They also collected perspectives from citizens' letters and emails. The government reported four categories of reform that were suggested: (1)

less taxes and public spending, (2) less inequality between French regions (Paris being particularly wealthy), (3) more direct democracy, and (4) more initiatives for climate change. However, referendums and wealth taxes, two popular proposals, were not mentioned and many people in France were frustrated, arguing it was simply a return to business as usual without real change (McAuley 2019).

What does *Le Grand Débat National* survey data report about public views on climate change and carbon taxation? One of the four reports is on ‘La transition écologique’ or ‘the Ecological Transition’ (Le Grand Débat National 2019). There are several key features to take away from the survey. The majority surveyed believe their lives are impacted by climate change, particularly by heat waves and drought. They want to help protect the environment, but do not think that fuel and diesel taxes will allow them to change their behavior. They believe that the ecological transition can be fiscal, but corporations, governments, and individuals must be involved. There was a narrow majority support for taxing imports that harmed the environment. They also thought those revenues should be used for ecological transition purposes. Of all environmental issues, they considered climate change the most important. A huge majority emphasized the priority of an ecological transition. The findings paint a fairly straightforward picture. The French public are concerned about climate change as a problem, urge solutions, but don’t want to be the only ones paying for it as individuals. They also want purposive use of the revenues from carbon taxes.

Le Vrai Débat

Despite the French government’s efforts with *Le Grand Débat* to subdue accusations that they weren’t interested in the thoughts and opinions of the French people, many still felt *Le*

Grand Débat was false and insincere. In our interview, Ludosky called *Le Grand Débat National* a “one man show,” all about Macron and at its core, a publicity stunt. This widespread critique spurred a group of Yellow Vests to create *Le Vrai Débat*, a website that allowed French citizens to propose laws and changes in French society and subsequently vote on them online. The website of *Le Vrai Débat*, makes clear its counter status: “Le Vrai Débat will not organize 27 assemblies with limited participants, giving priority to 27 cities and at fixed dates” (Le Vrai Débat 2019a). All proposals were made public and once votes (over one million) were calculated and analyzed, the team behind *Le Vrai Débat* published a synthesis of the main proposals. The synthesis includes four main areas that the million French citizens wanted shifted in France: (1) transformation of the political system, (2) stronger public services, (3) social and fiscal justice, and (4) the urgency of environmental and climate issues (Le Vrai Débat 2019b).

The environment, interestingly, plays a significant role in their proposals. The report pushes back against Macron’s dichotomy, “Unlike the opposition between hackneyed ‘end of the month’ and ‘end of the world,’ we observe a strong aspiration to preserve the environment, often conceived as a common good of all humanity” (Le Vrai Débat 2019b). Many of the proposals go beyond climate and also discuss local environmental issues and pollution. Furthermore, the report goes on to say that any proposals that went counter to climate change mitigation, environmental protection, and safety were resoundingly voted down. The caveat to these environmental proposals is that the contributors to *Le Vrai Débat* want an environmental future more on their terms, not the government’s. This is why there is a widespread call for the implementation of measures of direct democracy, like a citizen referendum initiative (in French, Le RIC). They also call for policies that are fair and equitable. Thus, while they hold real environmental concerns, they don’t support policies that are inequitable or policies they feel they

don't have a voice in forming. To the credit of the respondents, the design of the carbon tax in France buttresses their grievances regarding fairness and transparency (see discussion section).

Discussion of survey and documentary sources

It is important to recognize that these three sources are not consistent as sources of evidence, nor do they offer a representative sample of the Yellow Vest protestors. The petition most closely represents the moral indignation and grievances of the Yellow Vest protestors, while the *Le Grand Débat National* is closer to the views of the French general public filtered through the state. *Le Vrai Débat* is somewhere in the middle, as it was organized by a group of Yellow Vests. These differences are clear in what is emphasized and the formality of the prose in each document. They all, however, share common views about climate change and the types of environmental policies preferred. All convey the importance and reality of global climate change as an issue, but emphasize the need for more equitable, transparent carbon taxation (and general taxation) policies and revenue use. There are several important considerations missing from these accounts, however: populist perspectives and experiences, opinions, narratives, and scripts behind answers. Instead of representing a populist movement on the issue of climate change, they all read more like policy critiques and opinion surveys. In short, these sources do not address perspectives and meanings characteristic of populist movements.

In-depth interviews: sampling and methods

The fieldwork took place during October through December 2019, a phase focused on rallying around the one-year anniversary of the movement and opposing the proposed pension reform. The time period was ideal for my study as the movement's platform and discourse

around climate change and carbon taxation had solidified. I utilized qualitative interviews because they are among the best methodological tools for collecting activist opinions, meanings, and experiences related to both historical events and people's own personal political histories. While the movement's decentralization made sampling challenging, I located and contacted activists through participant observation at events (i.e., protests and group meetings), chain-referral sampling, and online searches of news sources (Charmaz 2014; Lofland et al. 2006; Weiss 1994). Participants typically had to have participated in multiple protest events to be considered for the study. I also interviewed three activists who, due to accessibility and health issues, were unable to participate in the protests, but found other ways to contribute through organizing events or by attending meetings.

Many interviews were conducted in more formal settings (such as offices or cafés) and recorded (if they were comfortable with it), while others took place during participant observation (after group meetings, during events, while marching and protesting, etc.). In these cases, I would typically take notes. Both practices were crucial, as I soon discovered. Many Yellow Vests were not comfortable sitting down and discussing politics for extended periods. Those interested in formal interviews typically were more likely to be in leadership positions and/or more politicized.

The sample includes 10 women and 21 men. While not representative of the movement, it's not an uncommon ratio as the movement is male-majority (Cometti 2019). Most of the activists were from the periphery of Paris (the site of the largest and most publicized demonstrations) and had participated in local demonstrations; however, I also interviewed activists who were from the countryside in northern, southern, and eastern parts of France and had protested in those locations. The interviewees came from diverse socio-economic

backgrounds, but most were working class. They included factory workers, drivers, electricians, artisans, students, teachers, janitorial workers, hospital workers, a handyman, a journalist, a military veteran, retirees, and more. Several were unemployed. Some lived outside of Paris and commuted to work by car. For some, this was their first time protesting; for others, they had participated in activism in the past. The sample was mostly composed of activists born in France, but several were immigrants from Africa and the Middle East. I interviewed a range of activists on the spectrum who were left-wing, right-wing, communists, environmentalists, union members, anarchists, and more. More than anything, however, they emphasized that, as Yellow Vests, they did not identify with being left or right.³⁵

In the interviews, I would begin with questions about their previous political orientations or protest experiences. Then, typically with little prompting, we would come to the present Yellow Vest protests and they would tell me about their experiences in the movement. We would then move forward to what they considered the most important political problems and issues in France today. After understanding what was most important to them, I would ask about their opinion of the carbon tax and climate change. Usually, however, it had already come up without prompting. The interview would end when they felt like they had sufficiently shared their story and opinions. Interviews averaged 45 minutes.

³⁵ As for my positionality, I am an American white male with a middle-class background who would be considered politically left of center. As is true for all researchers, my positionality afforded me both advantages and disadvantages. While I spoke in only French with most interviewees, my American cultural status and accent seemed more prominent to them than my other listed characteristics. Despite many years of study, my knowledge of French language, politics, and culture is significantly lower relative to any French researcher in my same position. I nevertheless found my position as a foreigner helpful. I wasn't embedded in political organizations or groups or networks in France as I was in the United States. This transformed me into a foreigner who wanted to learn about their activism and movement. I wanted to hear their stories. Once this was clear to interviewees, many opened up and were frank about their views. They perceived that I was not there to judge (or, at the very least, had less ability to do so) and also saw it as their job to educate me about their views of French politics and the Yellow Vest movement.

Perspectives from the Yellow Vest Movement

The interviews confirmed the general findings from the previously analyzed sources of evidence. All conveyed the importance of global climate change as an issue but emphasized the need for more equitable carbon taxation (and general taxation) policies. The interviews also added a great deal of nuance with respect to how a populist movement might discuss climate policy, social justice, and democracy.

In the following section, I advance several major themes to illustrate how the Yellow Vest movement, a popular movement, frames carbon pricing and climate change. First, the Yellow Vests are truly concerned about global climate change and feel their widespread anti-climate depictions in the media are rooted in a government strategy to divide and discredit the movement. Second, they view the government taxing them in order to fight climate change as corrupt and unfair, pointing to the tax exemptions that certain economic sectors receive and the government usage of the revenue, which they maintain favors elites. Third, they argue that the carbon tax is additionally unjust due to their precarity, which has only increased over the past several decades. Corporations and the governments should pay instead. Finally, they want to fight climate change on their own terms and argue for more direct forms of democracy in order to equalize decision making. I chose to organize the headings using their own terms, so that their ‘deep story’ (Hochschild 2018), based on what feels true to them, is expressed.

The government lies about our ideological views on climate to both discredit and divide us.

In the beginning, the government and media often framed the Yellow Vest movement as anti-climate. Macron made the famous parallel between tight paychecks and fighting climate change, implying a necessary trade-off: “It is the end of the world and the end of the month, we

will deal with both and we must deal with both” (Le Monde 2018). He then criticized the movement, “You cannot be pro-environment on Monday and then when Tuesday comes be against rising fuel prices” (BBC 2018). In interviews, the Yellow Vest activists were bothered by their anti-climate depictions – as well as other depictions of being prejudiced (racist, homophobic, and more).

Pierre,³⁶ a teacher, in response to media coverage, said: “I heard the Yellow Vests are selfish. They don’t think about the planet. They don’t think about pollution.” However, not one interviewee expressed anti-environmental views in our conversations. Instead, they said they expressed concern about environmental problems and the climate crisis as a movement, confirming the documentary evidence analyzed above. With regards to climate change, one journalist and activist, said: “We risk the extinction of our species.” A female activist from the northern outskirts of Paris expressed true concern to me over a coffee:

I have the impression that we're going to see wars. It feels like it's going to weigh heavily in the international political situation and it's going to blow up in our faces. Not so much because we're going to get hit by tsunamis, but there is no way to understand the migration policies of today when there are going to be 250 million climate refugees. I think we will get closer to genocide if the same bourgeoisie rule the world. And if that's true, it will be a horror. It's scary. I think that there are many wealthy people who try to save the planet, but they will save themselves. They're going to save the planet to a minimum, and then continue their profits, continue their policies.

The Yellow vests concerns about the future of the world’s climate and the people living with it couldn’t be further from the xenophobia of many far-right movements. Their concerns also center on how climate problems will be solved by elites. They think elites do the bare minimum for the climate to save themselves and then ignore the suffering of others. Many called

³⁶ All interviewees are de-identified, save Priscillia Ludosky who, as a historical figure in the movement, preferred to be named.

the government hypocritical environmentally and complained about the effects of local pollution from companies that the government conveniently ignored, allowing them to prioritize profit.

Many activists considered the Yellow Vests an environmental movement. Simon, a student from a small town near Bordeaux, said:

There are a lot of media and government who said that it's not an environmental movement at all because we opposed the tax. But when I was protesting, I heard people say there were democratic, ecological, and social problems. A mix. For me, it is an environmental movement, the first popular environmental movement in France.

What Simon discussed - democratic, ecological, and social problems - were issues most interviewees brought up as important to them. They saw the movement as representing a mix of problems in France that elites in government offices decidedly ignored.

How do they explain these anti-climate or anti-environment depictions that they are assigned? They attribute them to a government strategy to discredit and divide the movement. Priscillia Ludowski, a movement founder who wrote the initial petition, experienced this firsthand. She told me:

The first thing the government did was to ignore us, saying that Yellow Vests complaints were not reality. The government saying that I was against the environment was a way to get people who are watching TV to think, "Don't listen to what she's saying. She's against ecology. Don't listen to her." So, it was, I think, a strategy and they used the media to spread this message. To say that the Yellow Vests are against ecology, against the environment is very, very false... transparency concerns everybody. The environment concerns everybody. The government doesn't want the people to go in demonstrations so that's why they're working very hard to separate the suburbs and the rest of France who might oppose them.

They, the people, were pro-climate. This strategy was utilized not only with climate change, but with many other social issues as well. It was a general script. In response to other accusations by the government and media, the activists were adamant that the racism,

xenophobia, homophobia, sexism, and destruction of property came from a small minority.

Pierre said,

The government wants to divide the movement and uses every tactic. The first week, they said, “Oh that’s just few people. They don’t count.” After the 24th of November protests, they said, “Oh that’s a far-right movement with racist, homophobic people.” They always base their arguments on very specific incidents. These incidents exist, but mostly we’re not like this.

In the opinion of many activists this tactic was effective. They felt in the beginning they had the support of the country, but later on it waned, in part, due to the government strategy.

Emily, a university student, told me:

It was a government strategy that actually worked, to divide those who were already in the movement, and the rest of France. It was pretty obvious in the beginning of the movement that everyone was Yellow Vest, at least in their head. Especially people making below 1,500 euros a month, very clearly. And, in fact, after 2 or 3 weeks, that's all, there were more and more people who said: “Yes, but still, the violence...” It’s a hoax and it works well. When you see only horrible pictures on TV, people are not ready to assume this violence is people arming themselves to fight the police violence. It was the media and the government and it impacted a lot of people.

The movement is a direct critique of the current government and its leadership. Because the movement was the largest and most intense in France since 1968, it gave government officials real concern. A major discourse in the movement, one that I heard in interviews and via participant observation, was that the government was scared; Macron was afraid. Whether the government and media have an alliance to suppress and divide the movement is another question, but the government undoubtedly had the motive to maintain its power and the existing social order. In my experience in interviews most activists actually included environmental and climate issues in their platforms. Many in the movement called the climate crisis and their justice concerns the *même combat* or “same fight.” What Simon mentioned – democracy, ecology, and social problems – were what most activists considered important. Based on the evidence from

my interviews and the general evidence cited above from surveys and documents, the anti-climate accusations are unfounded. The Yellow Vest movement affirms the reality of climate change and shows clear evidence of concern.

Unequal and corrupt taxation: the government favors elites and burdens the public.

Many of the activists argue that they were unfairly targeted with carbon taxation. They believe that they have little voice in the general policymaking process and politicians don't care about them. Jeff, a journalist, describes the socialization process of 'elite' politicians and how that impacted the nature of the carbon tax and their views of 'the people':

I think the policy is very symptomatic of who these people are. They are technocrats, bureaucrats; they are coming out of elite schools, which put them at the service of an economic machine that has no end. They almost despise the people. There is a profound contempt, I swear. They do not know how we live. They do not rub shoulders with us or coexist, they do not talk like us, they do not think like us... the carbon tax is really a symptom of that blindness. For them, a few euros, even 10 or 20 euros is nothing. I think that when they launched the carbon tax, they thought it was nothing – cat piss.

Activists are aware of the elite educations that policymakers receive. They resent it and feel cheated because their lives are no better despite the resources poured into these individuals. Amjhed said, "We paid a lot, a lot of money for these people to go to school to learn how to do politics. In fact, we paid for these people to learn how to steal. That was the reality. It is a scam."³⁷ Jeff and Amjhed both express clear moral distinctions between 'the people' and the 'elite.'

³⁷ It's true; more French tax dollars go to elite schools than average ones: <https://www.lemonde.fr/blog/piketty/2017/04/18/inequality-in-france/>

They feel scammed and that their money is stolen because politicians favor big business in their economic policies, including the carbon tax. Many Yellow Vest activists take issue with exemptions that corporations receive from the carbon tax. One said,

A lot of Yellow Vests on Facebook were really upset that Airbus [the aerospace company] is not paying any carbon tax. The government said, “Oh, they have to be competitive so if we tax the carbon of our big companies, they’re going to harm clients.” That’s crap. You know Total, the oil and gasoline company? It’s almost as big as Shell or Exxon. They barely pay the tax in France because they have exemptions. That’s definitely not fair.

The Yellow Vests argue they shouldn’t have to pay when companies do not. They also argue that the policy is unfair regionally. People I interviewed from the countryside, highlighted the geographic divide as well. Bastien, from a town in the south of France said, “We don’t have great public transportation like Paris.” Jeanne, from a village in the west of France elaborated, “We are really spread out and have to use cars. There is not public transportation in my town like Paris except for two buses, which are infrequent. The tax was a clear disruption of life for us. The effect was immediate.”

The Yellow Vests took issue with having to pay the tax when corporations were exempt. It also felt unfair because of the disproportionate geographic impact on those who relied on cars as well as rising inequality. Furthermore, many took issue with the revenue use, the majority of which went to the CICE, a corporate tax credit that reduces labor costs for companies. Céline said,

It was ultra-hypocritical, the carbon tax. There is a report from the Court of Auditors that came out, and now it’s proven, in fact, that it didn’t serve to finance the ecological transition or the green tax system. It was used to finance the CICE. So, in fact, it was giving billions to companies that, by the way, themselves are polluting and laying off workers. I mean, it’s a bullshit carbon tax. It’s all bullshit. It’s just to take from the people and give to the rich, literally.

Priscillia Ludosky highlighted the injustice of this and describes how this use of the revenue was hidden from the French public:

Every politician was saying that they are using the revenue to finance the ecological transition. But then, at the end of 2018, a document was found on the internet. It was sent by the French government to the European Commission showing that the tax was financing the CICE, a fiscal advantage for big companies in France. It's written that it would help big companies hire people. But instead, they fire people. People didn't know and now they know. That's the reason we bother. We say a lot of things they don't want us to say, and they don't want the people to know.

Though the CICE revenue use is clear in the law itself and known by some tax experts, many argue it was hidden from the French public. Both Emily and Priscillia highlight how the policy taxes 'the people' and revenue goes to 'the rich' or 'big companies.' Scholars have long discussed how people must trust tax systems for them to work. Tax rates and revenue use, particularly environmental ones, must appear fair for people to accept the policies (Fairbrother 2017). This type of policy, with exemptions and revenue going to corporations, is a clear violation.³⁸

Further, the Yellow Vests argue that having them pay for climate change implies that they are responsible. This further infuriates them because they consider governments and corporations responsible for climate change.

The problem of the climate and ecology is not a new problem. Who is doing bad things to nature? Me? You? Him? No. All the big factories. All the governments. They have all the responsibility. Not even part of the responsibility. We are innocent. They are guilty. They want us to pay for their mistakes. No. No. I disagree with this tax. And even though we pay the taxes, the problem is not even fixed. So when you have us pay ecological taxes –I especially disagree.

³⁸ Le Grand Débat National also found that people want the revenue to go towards an ecological transition, not toward corporations. Again, this kind of policymaking erodes trust.

In the end, many argue that the government is made up of corrupt elites. These political elites misrepresent their views, are out of touch, despise them, and tax them unfairly in favor of business or urban elite. Marc, a retired airport worker and union member put it succinctly:

Many people are impoverished and now they understand that it is the system itself that has impoverished them. And besides, many of the elite have benefited from this system in one way or another. Sometimes they were corrupt. Such as former President Sarkozy, who has been charged for accepting bribes. So the population understands it was impoverished by people who were themselves corrupt elites. That's why there is rebellion.

Throughout this section, interviewees highlight contrasts between the people and elites. In the following section, I discuss how interviewees describe their precarity and how the impacts of the tax are compounded by it.

Precarity: this policy is even less fair because we are suffering.

Not only do Yellow Vests say that the policy taxes them unfairly, it harms them further because many are financially precarious. This makes the policy even more unjust to them. Empirical work provides evidence of rising economic inequality in France (Garbinti, Goupille-Lebret, and Piketty 2018), and all of the Yellow Vests that I interviewed felt living conditions in France have not improved over the last few decades. Athena, an artist, said, “Our salaries are not following the inflation. It’s been 40 years! We are only going from one defeat to another in social movements, and nothing is advancing.” A military veteran, Louis, told me he felt, “There is less freedom, less equality, and less brotherhood.” Many of the activists that I interviewed, including a Yellow Vest group that I conducted participant observation with, lived outside of

Paris in less prosperous areas. I went to group meetings in these areas as well. Vivienne, an activist in one group, described her neighborhood to me:

It's all big buildings that are very poor. They were built in 1970s and half falling apart. So it's very bad living conditions for us, and we all work in the factories around or a bit further away.

Priscillia Ludowsky, described what she constantly heard from people at protests:

I meet a lot of people in the demonstrations who say to me, "We are parents. We have €2,000 a month. Before it was great. Now, we don't live with that because everything has become more expensive." Now, it's not a good salary. 10 years ago, it was good. 20 years ago, it was great. Now, it's not.

In many interviews a narrative of decline emerged. One interviewee describes the change in manufacturing jobs and unemployment that took place around Paris in the last few decades and how it transformed life:

For a lot of people, they moved outside of Paris to work in factories. But now, a lot of the factories have closed. So they have to go back to work in Paris because every factory in the north and the east closed or went overseas. Coke, car industries, steel, and more. A lot of people are jobless or drive to Paris for work.

People moved outside of Paris to work in factories. Later, however, those factories closed. Those people now drive to Paris for work or are left unemployed. With the carbon tax, that commute became increasingly expensive. They feel they are getting hit when they are already down. One activist called it getting "left behind." Those from the countryside shared similar experiences. Jeff, from northeast France said,

In the countryside, we need cars. The car is needed for everything. So the carbon tax will soon rise to 10, 15, 20, 50, 70 euros per month (that's what people told me). That's the cost to fill up my car or buy my groceries!

Having to pay the tax, while life is increasingly difficult felt unfair. Alex said,

The idea of the carbon tax was to push people to stop using their car or to change for a more environmental model, but the environmental model is expensive. We can't afford these cars...I'm here because my pay is not enough to pay my rent,

my car, and live. A lot of Yellow Vests say that after they pay rent, school, and taxes, they have nothing. That's the majority.

While life has gotten worse for the common person, it has improved for the rich (Piketty 2019). Simon said, "Rich people in France just continue to become more and more wealthy." On top of this, many feel the government doesn't acknowledge these harsh realities. Priscillia Ludoski told me, "The government says that people are lazy. That they do not want to work. That's what we hear every time." This has eroded their trust in the government. Amjhed, a handyman, illustrated this in a metaphor:

The population has suffered for years. Suffered. And people continue to suffer. And they were trying to communicate their suffering. It's like someone who goes to their doctor. They tell the doctor, "I'm hurting." And the doctor says, "Okay...here are documents, here is some medicine." But they don't get better and they come back to the doctor, "I still have the same health problems. Headache, everything else." The doctor then does not care for them or even look into their mouth. The doctor says, "No, this is an 'imaginary illnesses.' You have no problem." So they no longer trust the doctor.

The Yellow Vests feel that they had trusted in the French government at one time, but have slowly lost that trust when they felt their suffering was ignored or dismissed as fantasy. That combined with the stagnation of living conditions led to what Rodrigo said "exploded with the tax, the straw that broke the camel's back." It led to a movement that, with the defacing of historic monuments, according to Marc, was "an attack on the very symbol of their [elite] wealth."

Summary and moving toward direct democracy.

To summarize, the Yellow Vest movement mobilized around the French carbon tax in several ways. First, the Yellow Vests feel that the government mischaracterized their views on a variety of issues, including climate, to divide the movement. This characterization occurred despite the fact that the anti-climate views come from an extreme minority and most activists

care about climate change. Second, the Yellow Vests take issue with the government making them pay a carbon tax when (a) many corporations are exempt, (b) it is felt harder by those in the countryside, (c) much of the revenue goes to corporations, and (d) they do not feel responsible for climate change compared to companies or governments. Third, this carbon tax is considered even less fair because they argue that their living situations are increasingly precarious. Over the years, inequality in France has risen, and they feel that their incomes and salaries have stagnated for a long time. Furthermore, they feel that the government doesn't take their concerns seriously.

One could argue that these perspectives are the rationalizations of those who do not want to seem self-interested. However, the interviewees took the problem of global climate change seriously and have alternative proposals. What does a better climate policymaking strategy look like to interviewees? For the Yellow Vests, I heard two recommendations: (1) make corporations pay and (2) include the voices of the people more with direct democracy. In the protests I attended, there is a chant that highlights the inequity of the policy: "Those who create pollution, pay for their pollution." And when I asked activists about fairer climate policy many referenced this chant. Pierre said, "A lot of Yellow Vests talk about ecology. But they all say the big companies have to pay, not us." These views are directly connected to the fact that corporations receive exemptions and also receive the majority of the tax revenue. Many said, as one activist put it: "We are not against ecology, but we want fair ecology." Finally, many of them believe that climate change is better addressed with direct democracy. This is why most support a referendum. Many protest signs or yellow vests have "RIC" (referendum) written on them. Like many populists, they are troubled when decisions are made against the general will of the public. They call for popular sovereignty and keeping governments and corporations accountable.

Discussion

The Yellow Vests focused on their economic precarity and hardship. In many cases, it was exacerbated by the carbon tax. There is little debate that social inequality can fuel popular movements (Lonergan and Blyth 2020; Piketty 2019). Weaker welfare institutions coupled with inequality lead to social unrest (Burgoon 2006; Hochschild 2018), and positional deprivation can drive people to the far right or far left (Burgoon 2006; Halikiopoulou, Nanou, and Vasilopoulou 2012; Vlandas and Halikiopoulou 2019) or to charismatic populist leaders (Garrido 2017). There are non-trivial levels of inequality in France (Garbinti et al. 2018), and the country is increasingly liberalizing (Amable 2016; Baccaro and Howell 2011). This has led to backlash from the French public (Amable 2017; Delalande 2014; Spire 2018).

In some ways, my findings are consistent with expectations based in the literature on populism. Absent from the surveys, but revealed in the interviews, was a strong general script of the Yellow Vests' distrust in elites. According to them, politicians had placed the tax burden on 'everyday people' instead of companies, who were far more responsible for climate change, and conspired to discredit the movement. Research on populism finds the same critical view of elites versus the innocence of 'the people' in many popular movements (Calhoun 2016; Cramer 2016). There also can be widespread belief in elite conspiracies and corruption (Mudde and Rovira Kaltwasser 2017; Silva, Vegetti, and Littvay 2017). Furthermore, popular movements can emerge in countries with higher feelings of hopelessness for the future and disaffection with politics and elections. France, increasingly so, fits this pattern (Kroneberg and Wimmer 2012; Zapryanova and Christiansen 2017). Activist support of direct democracy (i.e., popular sovereignty) was ubiquitous in the interviews. Support of direct democracy initiatives is also common for populist movements because it removes decision-making from the 'corrupt' elite

and places it in the hands of the people (Canovan 2016; Mohrenberg, Huber, and Freyburg 2019).

In other respects, my findings run contrary to the current literature on populist opposition to climate change reform. Authoritarian and business-elite ‘top-down’ perspectives would have predicted a denialist, right-wing movement that was subject to the manipulations of either a populist leader or the influence of business-elite ideology. I found a ‘bottom-up’ populist movement, however, that (1) affirmed the reality of climate change, (2) showed concern, and (3) called for action through direct democracy initiatives and holding corporations accountable. They were anti-elite, caring about social justice for ‘the people.’ When most authoritarian or business-elite movements oppose climate reform, the popular movements themselves may not actually have significant grievances directly related to climate change. For example, research on a Canadian anti-climate reform movement revealed that activists, when actually prodded about their views, were far more driven by anti-immigrant attitudes and partisanship than climate change, suggesting that their climate views were more driven by ‘top-down’ ideology (Lachapelle and Kiss 2019). In the Yellow Vest movement, however, because the initial grievance involved the inequities of a climate change reform, climate change entered the discourse with a more populist bent. Because the movement ideology explicitly rejects ties to business-elite and formal leadership, Yellow Vests maintained a balanced view on the issue of climate change, focusing more on social justice. These findings provide a basis for analytic distinctions, not previously made. I compare the Yellow Vest movement with types of popular, ‘top-down’ movements in Table 4.1.

Table 4.1 Populist opposition to climate reforms

	TOP-DOWN		BOTTOM-UP
	Authoritarian Populism	Business-Elite	The Yellow Vest Movement
Guiding ideology	Nationalism	Profit	Social justice and equity for ‘the people’
View of state’s role in climate reform	Centralized decision-making, development of resources	Deregulation, development of resources	Direct democracy
Partisanship	Right	Right	Variable
Climate change denial/acceptance	Denialist when action counters ‘national interests’	Denialist when action counters profit	Acceptance

Thus, interpretations of populist opposition to climate reform require nuance and recognition of guiding ideologies when discussing popular movements. If a popular movement maintains a guiding ideology related to ‘the people’ and rejects leadership or money, then it is possible that climate change is not denied. Instead, activists will demand that reforms cater to what best serves ‘the people.’ This analytic separation between business-elite, authoritarian, and the Yellow Vest populism allows the literature to more precisely address popular movements and climate reform, isolating ideology, state role, partisanship, and denial/acceptance. As the framework reveals, populist climate denial rooted in authoritarian regimes or business-elite power is a ‘top-down’ phenomena. The French case further illuminates a brand of populism from below that opposes neoliberal solutions to structural and existential challenges of our time such as climate change. With this framework, we can better understand what might drive ‘bottom-up’

popular opposition to climate reform and how to design reforms that attend to potential social justice issues. Without it, any opposition to climate reform is easily miscategorized as nationalist, far-right, corporate, or denialist. Such characterizations too easily ignore real equity concerns, common grievances for ‘bottom-up’ or grassroots populist movements.

How do my findings shed light on carbon tax implementation? After the Yellow Vest backlash, public intellectuals and media spoke out against the political viability of carbon prices. The Wall Street Journal even released an article two weeks after the protests began criticizing the viability and effectiveness of carbon taxes, focusing on the French case (Wall Street Journal Editorial Board 2018). The French case is not typical of carbon tax politics. Comparing carbon taxes is akin to comparing welfare states; there are many types and studying them requires much empirical and theoretical research. It’s worth noting that carbon taxes are effective for lowering carbon emissions (Andersson 2019; Best, Burke, and Jotzo 2020; Murray and Rivers 2015) and do not limit economic growth (Driscoll 2020). Design and use of revenue, however, are key. The French policy contains many exemptions for industries, the majority of the tax burden falls on households, and the revenue is earmarked for a corporate tax credit (French National Assembly 2013; Rocamora 2017). Thus, social justice and acceptability concerns can be very real (Fairbrother 2017; Klenert et al. 2018). This is why certain seemingly ‘progressive’ reforms can be opposed in order to protect other progressive reforms.

However, the French policy design is not universal, nor does it resemble the approach of many other countries. There are other ways carbon prices are designed so that social impacts are minimal, the policy is transparent, and revenue use is more thoughtful or equitable (Bureau, Henriët, and Schubert 2019; Klenert et al. 2018; Prasad 2009). My findings show that when

implementing climate reforms, policymakers must take transparency, trust, and social justice concerns into account.

Chapter 4 is a reprint of the material as it appears in *Social Problems*, 2022, Driscoll, Daniel. The dissertation author was the primary investigator and author of this paper.

CHAPTER FIVE: THE NORDIC MODEL

When people joke that the best place to live out the American dream is in Finland (Partanen 2017), they are not wrong. Over the past thirty years, the Nordic countries of Denmark, Finland, Norway, and Sweden emerged as model societies. They consistently outclass other wealthy democracies across rankings of happiness, quality of life, healthcare, education, equality of opportunity, and economic productivity. How did they develop? Evidence tells us that a combination of democratic political institutions, generous welfare states, strong education policies, high levels of public sector jobs, and moderate regulation produce this system (Kenworthy 2020). These outcomes occurred, as they often do, due to a combination of agency, path dependence, and luck (Katzenstein 1985; Schwartz 2001). As countries get richer, they tend to move in the general direction of social democratic capitalism (Friedman 2006; Inglehart 2018; Kenworthy 2020). For Nordic countries in particular, the development of strong social policies was more pragmatic than moral; necessary for the survival of relatively small economies exposed to the whims of international trade (Hall and Soskice 2001; Rodrik 1998). Moreover, a historically powerful ‘red-green’ coalition between Social Democratic parties and farmers (who were dependent on state-aid) pushed welfare policies to the center of politics (Esping-Andersen 1990).

Regarding climate reform, Nordic countries also outperform other wealthy democracies. Since 2005, Germanwatch has been producing and updating their *Climate Change Performance Index* annually. The index evaluates countries by their emissions, renewable energy, energy use, and climate policies³⁹ (Burck et al. 2020). Figure 5.1 details performance across twenty wealthy

³⁹ Policies are assessed and rated by multiple policy experts and NGOs.

democracies. Denmark, Finland, Norway, and Sweden all dominate the ranking, occupying four out of the top five positions.

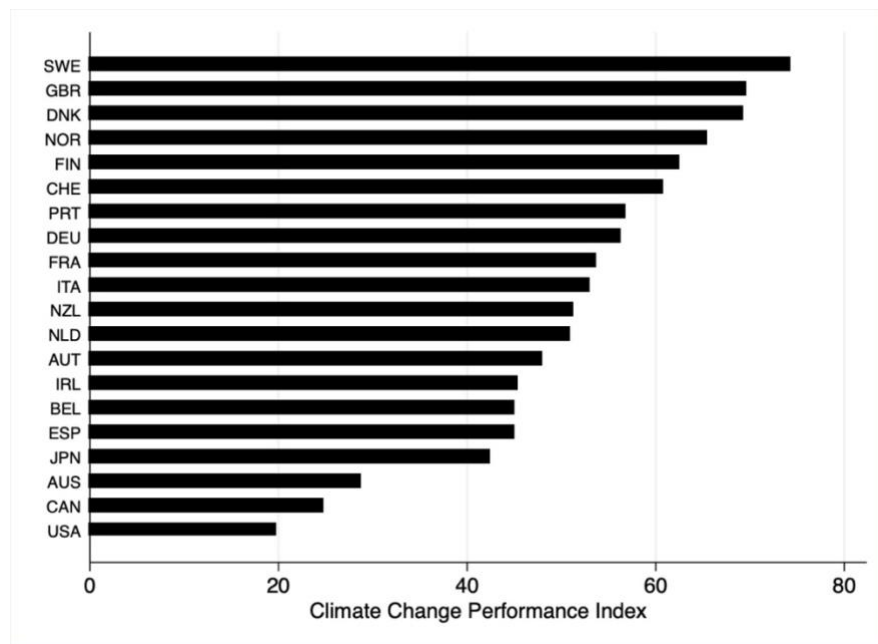


Figure 5.1 Climate Change Performance ranked in Twenty Wealthy Democracies. Data Source: Germanwatch 2020

From reading chapter two, we also know that Nordic countries have the strongest national carbon prices, occupying four out of the top six top positions in Figure 5.2.

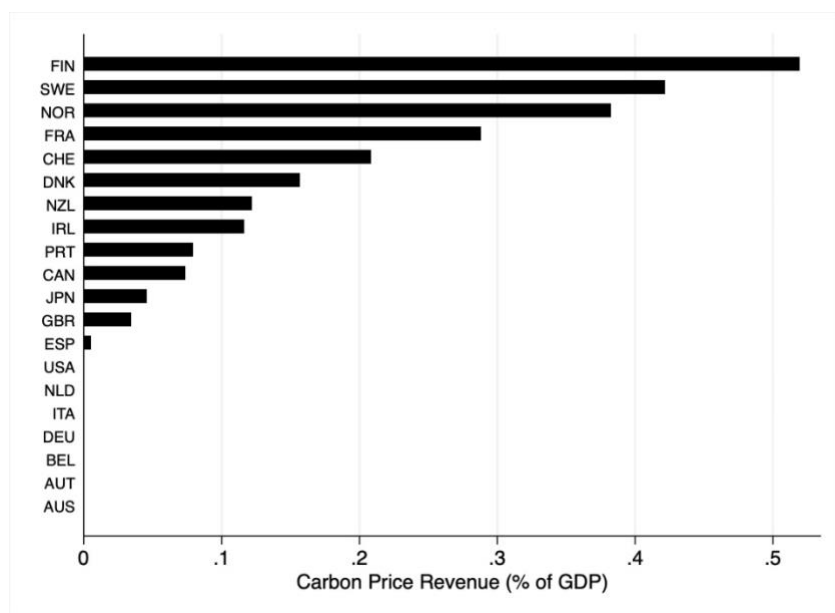


Figure 5.2 Carbon Price Revenue (% of GDP) ranked in Twenty Wealthy Democracies. Data Source: World Bank 2019

The goal of this chapter is to analyze the development of Nordic carbon prices. I will conclude that the cases of Sweden, Finland, and Norway fit the expectations of the twenty country analyses of Chapter two: wealthy countries with lower fossil fuel energy use and veto points are more likely to enact stronger carbon prices than other countries. Additionally, I will assert that Norway, like the United States in chapter three, illustrates how a growth model significantly impacts carbon price politics and policy design. I will then turn my attention to Denmark, which serves as a puzzle case and is a slight outlier. Despite high fossil fuel energy use, Denmark enacted a relatively strong carbon price early on, replaced significant levels of fossil fuel energy with renewables, and has since decoupled emissions from GDP. I conclude with a discussion of whether lessons from the Nordic cases are generalizable.

Fit the model?

The relative strength of the carbon prices in Sweden, Finland, and Norway is well-explained by the twenty country analyses of chapter one (lower levels of fossil fuel energy and

few veto points). From the beginning, pricing carbon in Nordic countries has been less expensive, garnered less opposition, and political institutions faced less obstacles. The historical particulars of Finland's carbon price, for example, are consistent. A left party coalition proposed the policy and made a deal with the majority alliance⁴⁰ to implement the policy, which, in the beginning had no exemptions for carbon-intensive firms despite their protestations (Harrison 2010). Why was enactment so swift, without much contention? Only a little over half of Finland's energy came from fossil fuels at the time, whereas the average fossil fuel electricity percentage of total electricity for the greater twenty-country sample was 75%. Therefore, for Finland, the influence of fossil fuel business-elite was relatively lower (lower fossil fuels) and a tax, making emissions expensive, was less costly. Furthermore, Finland has only one veto point. Finnish policies are enacted by simple majority in a unicameral parliament.

A few years after the initial policy implementation, further exemptions were granted to industries – mostly due to competitiveness concerns increasing (Harrison 2010; Vehmas 2005). Despite this shift, the politics of enactment still fit the model of chapter two perfectly. Finland was the first country to enact a carbon price (and a relatively strong one) because of its lower levels of fossil fuels and open, democratic political institutions. Recently, both Finland and Sweden have reduced the exemptions so that industries are incentivized to further decrease emissions. Sweden now fully taxes certain industries that are also regulated under the EU ETS (World Bank 2019). While these countries are clearly not taxing carbon sufficiently, they are 'top-performers' comparatively.

At first glance, the socio-politics of carbon pricing in Norway appear identical to the Swedish and Finnish experiences. With one veto point, political institutions are more open than

⁴⁰ The left coalition conceded a reduction in income taxes (Sairinen 2003).

in most other wealthy democracies. Furthermore, like Finland, fossil fuel electricity comprised half of total electricity at the time of enactment in 1991. This was, in part, due to relatively abundant hydro-electric power (Figure 5.3).

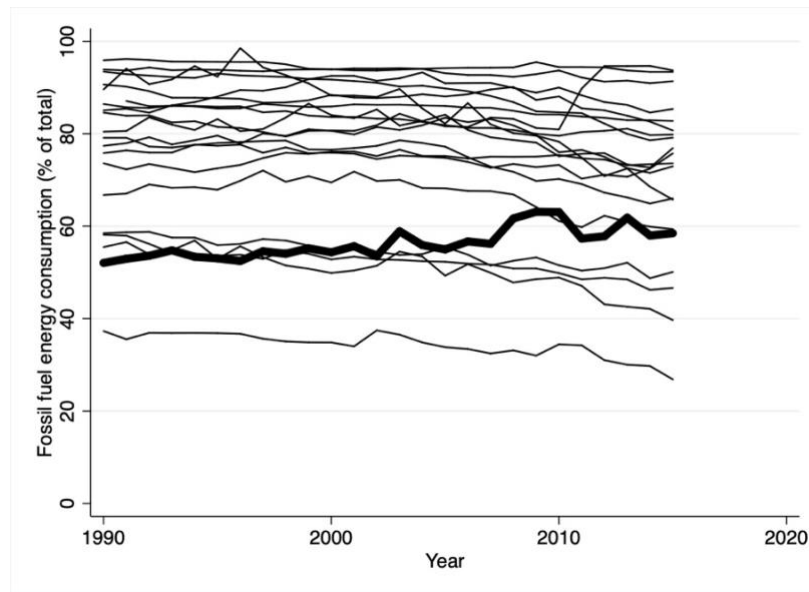


Figure 5.3 Norway Fossil Fuel Energy Use Compared to 20 Country Sample. Data Source: World Bank

Thus, one could conclude that Norway is performing comparatively well due to a combination of energy path dependence and effective Nordic policymaking institutions. Why then, is Norway the only one of the four countries who has not decreased emissions or decoupled emissions from growth? Emissions, in fact, are increasing. Figure 5.4 compares the decoupling of emissions and GDP per capita growth over time.⁴¹

⁴¹ The data to create the decoupling visualization are sourced from both the World Resources Institute and the Organisation for Economic Co-operation and Development. The World Resources Institute houses one of the most complete historical CO₂ emissions datasets and I utilize total territorial CO₂ emissions. To capture the rate of change in emissions over time I divide each year by the first year (1979). For economic growth, I utilize data on gross domestic product per capita from the Organisation for Economic Co-operation and Development. I employ GDP per capita due to its widespread use in the literature and also because it measures general prosperity more accurately than gross domestic product. For comparability, the GDP per capita data are inflation adjusted and measured at 2010 purchasing power parity. Emissions are still rising above 1979 levels. I also divided by the first year (1979) to capture the change in GDP growth over time.

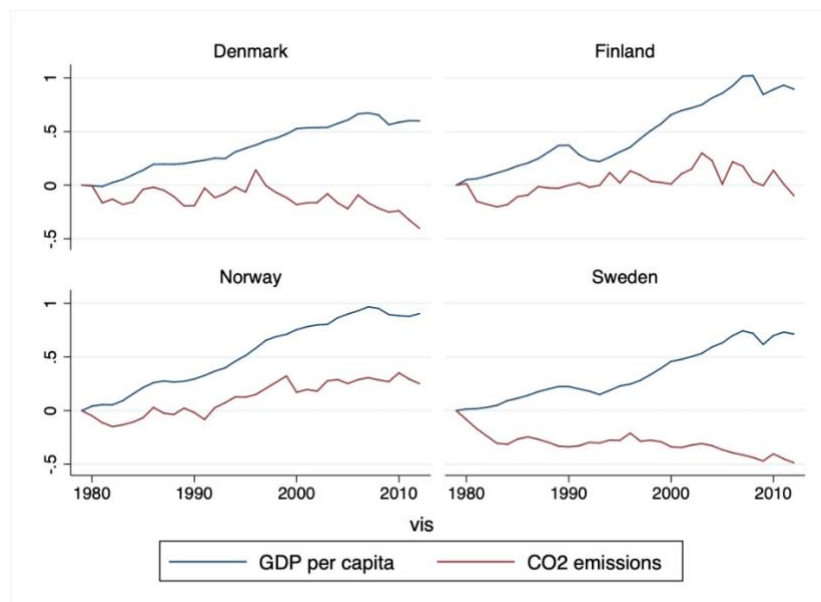


Figure 5.4 Visualizing the decoupling of GDP per capita and CO₂ emissions, 1979-2012

Investigating the history of carbon pricing in the country may shed light. In the following section, I explore the tell-tale links between Norway's carbon price and its growth model.

Norway: Carbon Pricing in a Fossil Fuel Export-Led Growth Model

Norway, an export-led growth model, is one of the top oil and gas exporters in the world. Oil and gas alone contribute to 18% of Norwegian GDP and comprise over half of its exports (European Commission 2020). Most of its oil and gas exports go straight to the UK, France, Germany, Belgium, and other European countries. North Sea oil has not only funded Norway's past and present prosperity, it bankrolls its future. The country's government pension fund, the largest sovereign wealth fund on the planet, was built on reinvesting state oil profits (NBIM 2021; Teigen 2018). With complete candor, most call it the *Oil Fund*. All in all, the growth model of Norway is heavily reliant upon fossil fuel production.

Figure 5.5 displays Norway's per capita value of oil exports compared to the sample. The picture is clear; Norwegian citizens owe a great deal of their past, present, and future prosperity to fossil fuel production. How does the Norwegian carbon tax politics reflect its growth model?

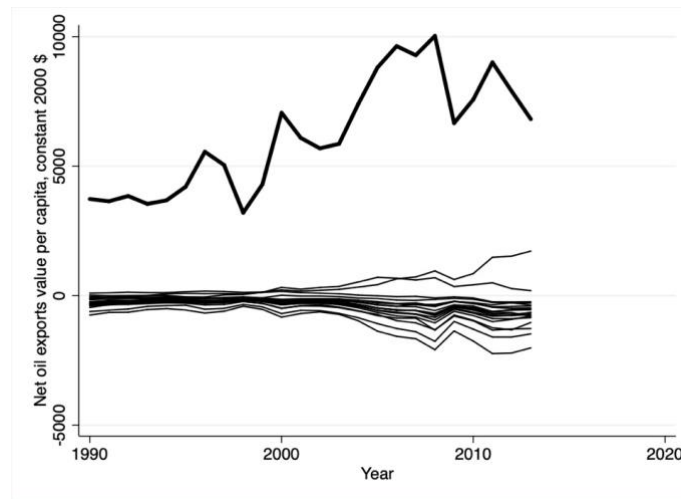


Figure 5.5 Norway Per Capita Value of Oil Exports Compared to Sample. Data Source: Ross & Mahdavi, 2015

The history of carbon pricing in Norway prioritizes prosperity over curbing major sources of emissions. Mildenberger (2020) traces the history of Norwegian climate policymaking and finds that both parties and political institutions protected fossil fuel firms from *any* significant costs (and thus, reform) for decades. The onshore industry was mostly exempt from the national carbon price, despite pressures, until it “could join the EU Emissions Trading System on favorable terms” (Mildenberger 2020:95). While the offshore oil sector is taxed, the sector pays the tax with the ease of a billionaire tossing pennies into a wishing well. Unsurprisingly, offshore sectoral emissions have increased and the industry continues to expand (Mildenberger 2020). While the Norwegian carbon tax may disincentivize emissions in some arenas, mostly impacting consumers (Svendsen et al. 2001), it is clearly ineffective as it does not sincerely target the most carbon-intensive sectors of the economy.

Mildenberger asserts that the corporatist political institutions in Norway, instead of regulating industry, facilitated ‘regulatory capture’ and protected industry. This challenges comparative scholarship that argues corporatist institutions facilitate environmental progress (Matthews 2001; Scruggs 1999, 2003). While this assertion is supported by strong evidence at the case level, it seems just as likely that even without corporatist bargaining arrangements, Norway would still deregulate its fossil-fuel sector. Countries with corporatist political institutions still top climate performance rankings and tax carbon emissions. Liberal market economies deregulate fossil fuel sectors even more. Furthermore, the corporatist institutions of Denmark, in contrast, contributed to the enactment of a comparatively effective carbon tax (discussed later in this chapter). The main difference between Denmark and Norway is that Denmark does not have a gold mine of North Sea oil. Therefore, while corporatist institutions certainly played a role in Norway, I contend that Norway’s fossil fuel export-led growth model was the primary driver of its carbon tax politics. In contrast to the high fossil fuel consumption in the U.S. growth model from Chapter Two, it was the share of carbon-intensity in Norway’s exports that determined national carbon tax politics. Both cases in this book highlight how comparatively high shares of fossil fuels in national growth models, whatever the type, conflict with effective regulation. Who wants to tax something that makes them rich and affluent?

A discussion of growth models and power

Because carbon emissions are strongly linked to economic growth (Jorgenson 2014; Jorgenson and Clark 2012), climate policies are therefore economic policies. Challenging existing economic policies or implementing new ones requires an understanding of power (Gourevitch 1986). One way to clarify Norway’s carbon tax politics is to consider the

relationship between its growth model and sectoral power. Hegemonic forces have recently been discussed with relation to growth models in the form of ‘social blocs’ (Amable et al. 2019; Baccaro and Pontusson 2019) and offer a lens to understand how particular economic systems are maintained. For the purposes of this book, I use the concepts of *structural* and *instrumental* power to understand the form of power, usually from firms, in shaping climate policy. Structural power typically refers to “a set of mutual dependencies between business and the state” (Culpepper 2015:391). In other words, this circumstance affords business significant influence on policy outcomes because their structural “power results from the fact that firms and capital holders control the investment decisions on which the economy depends for growth” (Culpepper 2015:396). In this sense, economic policy aligns with firms in key structural positions almost automatically (Hacker and Pierson 2002), barring some cases when some firms use their structural power strategically (Culpepper and Reinke 2014).

In this case, the clearest example of fossil fuel firm structural power in a national economy is the oil sector in Norway’s export-led growth model. Oil and gas are the largest exports, fund the massive sovereign wealth fund, and are the stem of GDP growth. Because the state and oil sector are dependent upon one another, it stands to reason that the oil sector has exemptions from the national carbon tax policy (Mildenberger 2020; World Bank 2019) and recently received tax relief in the face of decreased global demand during the coronavirus pandemic (Adomaitis and Solsvik 2020). While these Norwegian firms do not receive total protections and benefits (there is some electoral conflict over their regulation), their protection from any *significant* costs is automatic. This is simply because sectoral investment decisions have direct effects on Norway’s economic growth and future prosperity.

These points are key for future work on growth models and climate change. While the U.S. chapter focused on consumption-led growth models, export-led growth models are also key for understanding blocks to carbon prices and other climate reforms. Exported goods are still consumed somewhere and the consumption of an export like oil certainly contributes to higher emissions. Of course, not all exports are created equal; some exports are more carbon intensive than others. The export-led growth models of Norway or the Netherlands include oil. Other countries like France or Germany have exports that tend to be more labor than energy intensive (e.g. machinery, cars, pharmaceuticals), thus their export-based emissions are lower.

A puzzle: Denmark

Denmark enacted a carbon tax with unusually high fossil energy levels, making it an outlier among Nordic countries and the greater twenty country sample in chapter two. Despite this, Denmark is considered to have one of the highest performing carbon prices, reducing emissions more than other Nordic policies (Andersen 2004; Harrison 2010; Prasad 2009). If low fossil fuel energy use did not help them to enact their policy, then what structures were in place to support adoption?

Table 5.1 compares Denmark with nineteen other wealthy democracies and its Nordic neighbors Sweden, Finland, and Norway. As comparative ‘top-performers’ in climate action, Nordic countries all have smaller economies, lower veto points, lower levels of inequality, and more corporatist political institutions and unions than other wealthy democracies. Given the higher climate performance of Nordic countries, corporatism does not appear to inhibit climate action. Denmark, in particular, greatly resembles its Nordic neighbors in all arenas save fossil

fuel energy levels. Its levels of fossil fuel energy are even higher than those of other wealthy democracies.

Table 5.1 Comparing Denmark with other wealthy democracies. Note: Means are calculated from 1990 to present. Data sources: GDP 2011 USD (PPP), World Bank (2019); Fossil Fuel Energy, World Bank (2019); Veto Points, Brady et al. (2014); Union Density, Visser (2016); Corporatism Index, Jahn (2016); Gini Index, Solt (2020).

	GDP (trillions)	Fossil Fuel Energy (%)	Veto Points	Union Density	Corporatism Index	Gini Index
Average	1.7	74%	2.7	35%	0.13	29.3
Nordic Countries (without Denmark)	0.27	47%	1	69%	0.58	24.3
<i>Denmark in 1992</i>	<i>0.18</i>	<i>94%</i>	<i>1</i>	<i>75%</i>	<i>0.46</i>	<i>23.6</i>

How did these factors play out in the enactment of a carbon tax in 1991 and onward?

There are a few salient points about the Danish case that are raised in several case studies of its policy: (1) in the late 1980s and early 1990s there was significant concern about climate change in Nordic countries that extended from the far left to the political center-right in Denmark; (2) Danish parties created a majority coalition to enact and manage the policy over time (something more difficult in non-parliamentary political systems and/or higher veto points); (3) business organizations (i.e., Federation of Danish Industry) brought up competitiveness concerns and the government responded with attention and concessions; (4) the Danish government made tax-exempt industries and corporations legally agree to decrease fossil fuel emissions; and (5) the carbon price was framed in a way that it would encourage the expansion of renewable energy and help the economy (Andersen 2004; Harrison 2010; Klok et al. 2006; Wier et al. 2005). These features paint a picture of a small corporatist country with a comparatively strong democratic system: industry brought up concerns, an agreement between government and industry was

reached (while still regulating industry), parties forged coalitions, and plans were made for increasing renewable energy sources.

Denmark's carbon tax revenue allocation is key. Revenue from taxes on industry are, in fact, returned to industry for environmental and efficiency energy advances (Andersen 2004; Bjørner and Jensen 2002; Klok et al. 2006; Prasad 2009). Many scholars agree that this decision contributes to both the efficacy of the policy in curbing emissions and the acquiescence of industry. Monica Prasad explains why,

Denmark avoids the temptation to maximize the tax revenue by giving the proceeds back to industry, earmarking much of it to subsidize environmental innovation. Danish firms are pushed away from carbon and pulled into environmental innovation, and the country's economy isn't put at a competitive disadvantage. (Prasad 2008)

This revenue strategy is politically viable because fossil fuel sectors are not 'losing' capital but diverting it instead. This is clearly more favorable to them and likely wards off some opposition. Furthermore, this revenue strategy is also effective because it directs revenues toward decarbonizing. While the tax is somewhat regressive (Wier et al. 2005), it has worked. Denmark has developed renewable energy to great success since the introduction of their carbon tax. The country is now the global leader in wind energy production and wind turbine manufacturing, home to Vestas Wind Systems which is, coincidentally, the world's largest wind turbine producing company. This circumstance is due, in part, to the impact of their carbon tax on industry research and development (Klaassen et al. 2005). Figure 5.6 details the energy transition of Denmark over time, showing how the country pursued an aggressive renewable agenda and decreased fossil fuel energy dependence from a high level to a relatively moderate one.

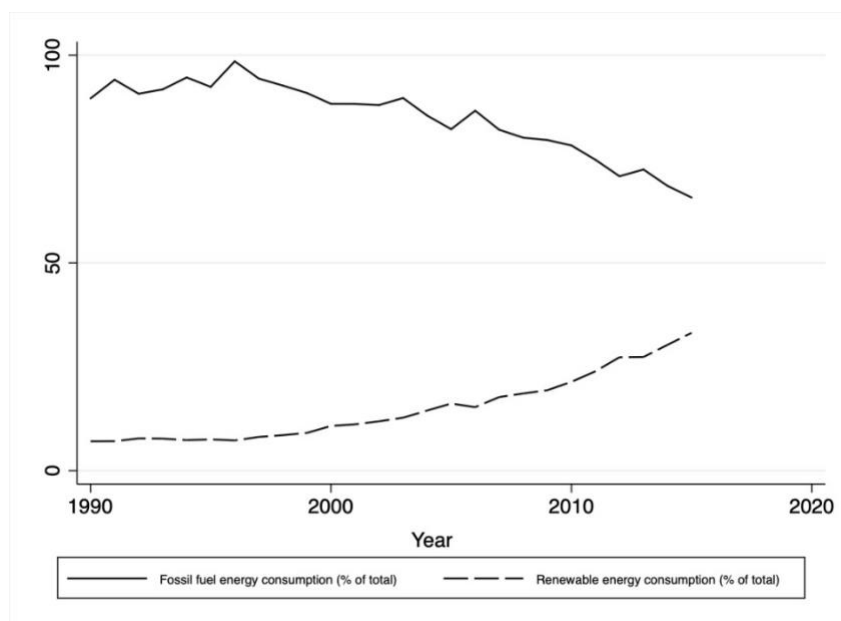


Figure 5.6 Danish Energy Use. Data Source: World Bank

The take-home message from the Danish case is that policy design matters and has the potential to overcome the limits of fossil fuel energy use. Instead of making an enemy of industry by imposing high costs, Denmark's corporatist institutions worked with industry to design a carbon tax that facilitated an industrial energy transition in an increasingly competitive global neoliberal economic context. They achieved this with voluntary agreements (Harrison 2010; Klaassen et al. 2005) and earmarking revenue for energy efficiency and sustainability innovations (Andersen 2004; Klok et al. 2006; Prasad 2009). While the policy is somewhat regressive (Wier et al. 2005), it is likely that inequality is low enough in Denmark that the impacts on equity are minimal. The impacts on emissions, however, by all accounts suggest that their carbon tax performs better than those of their Nordic neighbors.

Are lessons from Nordic carbon prices generalizable?

Some scholars argue that policy practices from Nordic countries are not generalizable to other wealthy democracies. Hypotheses that argue for Nordic exceptionalism range from their

supposed inherent work ethic or intelligence, higher levels of trust or social solidarity, small and homogenous population, effective political institutions and unions, higher levels of equality, and more. None of these hypotheses, save higher levels of union density, survive a close investigation (Kenworthy 2020). Thus, Kenworthy (2020) concludes that a better way to think of Nordic countries is as ‘test sites’ for progressive policies and their impacts.

Nordic countries are top performers when it comes to carbon tax strength and early adoption. This chapter examined their development. We’ve learned that the politics of pricing carbon in Nordic countries resembles carbon price politics in other wealthy democracies; they just experience fewer constraints and that has driven their outcomes. They were simply blessed with lower levels of fossil fuel energy and more democratic institutions. These conditions eased taxing emissions politically and economically. Few other countries have the same institutional and energy privileges and, more importantly, both factors are slow to change. In every case, that fossil fuel business-elite (no matter how small) still opposed policies and often found exemptions. Furthermore, in Norway, just as in the United States, attention to a growth model shaped carbon tax politics.⁴² In short, the same constraints that exist in other wealthy democracies are present in Nordic ones, but they are less limiting due to more open political institutions and lower fossil fuel energy levels.

If more democratic institutions and lower levels of fossil fuel energy drive carbon price adoption and strength, then do Nordic countries have anything to teach us as test sites?

Absolutely. First, they can teach us that relatively strong carbon prices have not limited

⁴² Future research should investigate export-led growth models that produce carbon intensive goods such as cement, steel, and oil. How do they shape chains of consumption? How much does their growth benefit from those carbon-intensive goods relative to the political privileges those industries receive? How much is responsibility for emissions is shared or embedded within international trade?

economic growth (Driscoll 2020). This is important for refuting conservative arguments against taxing emissions. Second, while generalizability is limited due to other countries having stronger constraints (i.e., founding documents that offer far more institutional veto opportunities to opposition and the relative abundance of fossil fuel natural endowments), the Danish case offers some lessons because it enacted a carbon tax with high fossil fuel energy levels.

Denmark was not blessed with hydro-electric power or nuclear energy development; 94% of their energy was sourced from fossil fuels when they adopted their tax. While Denmark's institutions fit the model, their energy did not. The Danish case reveals how stakeholder opposition and costs to existing energy structures can be managed when tax revenue is earmarked and returned to firms to invest in sustainability transitions. This neither harms growth, nor competitiveness. Experientially, it has also decreased emissions more than other types of carbon prices. Denmark now finds itself the world leader in both wind energy and turbine production. The policy works well because it incentivizes *both* emission reductions and the development of fossil-free alternatives. This revenue design is promising not only for countries that resemble Denmark, particularly those who have high levels of fossil fuel energy use. Veto points and political institutions may not determine outcomes if firms are regulated thoughtfully. As a result, opposition decreases.

CHAPTER SIX: HOW TO PRICE CARBON: COMPARISONS & PROBLEM SOLVING

A Brief Review

At the 2015 United Nations Climate Change Conference in Paris, experts quickly realized that the heterogeneity of political, economic, and social conditions in each country greatly constrained uniform climate action. Forcing countries to implement the same measures to curb emissions would be both unequal and complicated. As a result, policymakers concluded that each country should devise their own national approaches to curb emissions. The Paris Agreement was left nonbinding.

In this project, the same constraints still exist. The heterogeneity of each country's political, economic, and social conditions supports and/or impedes national carbon pricing and decarbonization. Some countries have implemented relatively strong carbon prices and decreased emissions. Others have not. These outcomes are rooted in the relative force of each country's internal/external constraints. Below I review the evidence and then outline some comparative points on pricing carbon.

In the quantitative analyses of twenty wealthy democracies, I examined conditions linked to carbon price adoption and strength. Rather than being driven by international values, agreements, or norms, I found the conditions that supported/limited carbon pricing were domestic. Carbon price adoption is more likely in countries with less fossil fuel energy use (and, by proxy, less powerful fossil fuel business-elite actors) and with less encumbered democratic institutions (i.e., fewer institutional veto points). This means that the global free-rider problem, posed by non-binding international climate agreements and lack of enforcement, and fossil fuel business-elite power undermine the force of international values and norms (world polity) that would normally facilitate adoption. No country or firm wants to 'lose out' in a liberal global

economy without rules that regulate *all* actors so they continue to prioritize growth and competition over serious reform that typically poses domestic challenges.

I selected the United States as an illustrative case to reveal in-depth impediments to pricing carbon because it (1) perfectly fit the model of impediments in the 20-country comparison and (2) is widely considered the ‘worst performing’ of all countries. The case was particularly revealing. First, U.S. state-level carbon pricing was consistent with country-level carbon pricing, confirming factors from the 20-country analyses. This can be used to rule out some common explanations for the US case (e.g., anti-statist culture). Second, the growth regime of the United States revealed that when growth models are linked to fossil fuels, curbing carbon emissions is more difficult because national prosperity is linked to emissions. U.S. fossil fuels are subsidized, deregulated, and strongly linked to the financial sector. From reviewing the U.S. case in-depth, I argued that the primary blocks to pricing carbon are largely (1) economic, linked to the presence of fossil fuels in growth models, (2) energy, linked to fossil fuel infrastructural path dependence; and (3) institutional, linked to deregulatory political systems that allow for the influence of private organizations and fossil fuel business-elite. The argument was illustrated by the short history of the American Clean Energy and Security Act of 2009 at the start of the chapter.

In France, I examined the strongest non-Nordic carbon price in a relatively large economy. Given the twenty-country comparison, France should have had an easy time enacting the policy. Yet the policy faced numerous challenges and its comparatively less progressive design was puzzling: the majority of the carbon tax burden is on households, many carbon-intensive sectors are exempt, and most of the revenue is earmarked for corporate tax credits. Furthermore, after years of blocks, policymakers resorted to somewhat underhanded means to

implement it. What forces shaped this carbon tax? How was it enacted when two similar carbon tax proposals that came before were declared unconstitutional? Through a comparison of three episodes of carbon tax policy proposals (2000, 2009, 2013), I found that the policy form and implementation over time was increasingly shaped by economic integration (including European), the power of carbon-intensive firms, and policymakers refining their strategies. Economic integration and liberalization empowers carbon-intensive firms (often trade-exposed) with arguments to avoid any national regulation that might compromise competition. Policymakers then, learning from the past, slipped the carbon tax through, largely unbeknownst to the public. Years later, there was populist backlash to the French carbon price from the Yellow Vest movement. This form of populism, however, was not anti-climate and emerged from ‘below’ rather than from ‘top-down’ elite sponsorship and was motivated by social justice concerns. In-depth interviews revealed that activists were concerned about climate change but viewed their paying a carbon tax as unethical when many corporations received both exemptions and revenue from the policy. They argued that the inequitable tax burden was unjust in a country with rising inequality and wage stagnation. All in all, the French case revealed fundamental clashes between external (global economic competition) and internal constraints (equity and democratic institutions) in the formation of a national carbon price.

France shows us that perhaps a weak international context destabilizes climate governance at all levels and the burden of decarbonizing is passed along. Let me illustrate. Nonbinding international agreements place the burden of decarbonizing on national governments. National governments then must govern the climate while contending with another international force - global economic liberalization and trade competition, which can incentivize deregulation. Liberalization, thus, intensifies the free-rider problem; not only do fossil fuels offer

easy economic growth, but regulating them can limit (in the words of policymakers) your country competitively and economically in the short-term. In addition to those powerful economic pressures, policymakers had other domestic pressures they were very cognizant of: maintaining economic prosperity, voters and interest group support, party competition, and contending with the limits of their own political institutions or vetoes, and more. As we saw in the French tax history, global economic integration and EU integration armed firms with powerful arguments to avoid regulation. French national policymakers seemed both unable and unwilling to regulate fossil fuel companies. The burden of decarbonizing was then passed from governments to firms to consumers. In other countries with carbon-intensive sectors, perhaps the burden would be passed to labor. With low levels of fossil fuel energy and low veto points, France should have had an easier time enacting a carbon tax. It was the opposite. Can democratic political institutions govern the climate? Probably not.

Nordic countries experience the same tensions as others, but the tensions are filtered through lighter constraints, namely less fossil fuel energy dependence and more open political institutions. Finland, Sweden, and Norway have comparatively strong carbon prices to be sure, but they still prioritize their growth models, export competitiveness, and other national concerns over curbing emissions. Norway, for instance, in its commitment to profiting from fossil fuel exports, has a carbon price rife with exemptions and negligible costs to industry. Thus, carbon pricing in most Nordic countries, while relatively strong, is unremarkable. The only Nordic carbon price that offered a glimmer of efficacy was Denmark's. By returning carbon tax revenue to firms, earmarked for sustainability transformations, the country has significantly decreased their once high levels of fossil fuel energy, profited from burgeoning wind energy, and largely

decoupled emissions from economic growth. Their approach seems promising and will be discussed further in this chapter.

All in all, by scrutinizing a policy that many call a key solution to lowering carbon emissions, this work reveals the variation in how particular countries navigate the ethical and practical dilemmas underlying climate action. Carbon prices resonate with global ideals, prioritizing a planet-wide challenge over national economic benefits. This book explores the conditions under which such a law can be adopted, but it also emphasizes that enactment is not the end of the story. Rather, policies, themselves, reshape continuing political controversies over climate change. Carbon pricing thus becomes a case study in the trade-offs between global norms and national interests, highlighting the importance of national growth models, globalism, and populist movements (equity). Examining a policy that attaches national costs to global solutions brings fundamental issues to the surface--issues that all countries face today. In the following section, I outline each national cost.

Growth, Globalism, and Populism

The biggest barrier to effective climate reform is that economic growth, which is strongly linked to carbon emissions, offers *immediate benefits* to society (Friedman 2006; Inglehart 2018; Kenworthy 2020). If distribution is relatively even and wealth is not concentrated at a rate higher than growth (Piketty 2014), increasing affluence means improved quality of life, better public insurance and health care programs, greater educational outcomes, increased public desires for general fairness and equality, more freedom and safety, higher life expectancies, more democracy, and so on (Friedman 2006; Inglehart 2018; Kenworthy 2020). Social scientists have

demonstrated that economic growth can coexist with effective social reform and redistributive policies that make societies more fair (Kenworthy 2004, 2020; Piketty 2019).

In addition to society at large, those in power appreciate the immediate benefits of economic growth. Politicians are incentivized to base decisions on their term limits and are eager to please constituents. Business leaders are incentivized to base decisions on annual returns and must please stakeholders to continue to exist. For both parties, immediate economic growth is a top priority. Climate experts, who think and behave with broader time horizons, have no power in comparison. Is there really a question of why no country is doing enough to fight climate change? The take-away here is that the immediacy of economic growth will always be a priority in democracies as long as the benefits remain so substantial.

Equally important, economies no longer grow in relative isolation. They exist in an interconnected and global economy. National policies that fight climate change, therefore, have both national and global economic implications. The increased speed and financialization of trade has heightened global competitiveness tenfold (Klein and Pettis 2020). As a result, most countries are liberalizing and deregulating to maintain growth and competitiveness (Baccaro and Howell 2011). Due to growth and globalism, each country adopted a carbon price that did not limit economic growth or compromise export competitiveness and external demand. Due to its growth model, the United States is driven to consume many goods (Klein and Pettis 2020; Schwartz 2019), including high levels of fossil fuels. With high global demand for North Sea oil, Norway continues to drill and export vast quantities of oil (Mildenberger 2020). In France, a carbon price policy (and discourse surrounding it) became more liberal over time due to increasing economic pressures of international competition and growth. Globalization and economic integration changes the rules of national policymaking.

As a result of neoliberal globalization, many countries are implementing carbon taxes that target emissions from household consumption and provide exemptions for industry. In countries that are more unequal, this strategy can raise issues of social justice. While Nordic countries experience some pushback about high prices of gasoline and fuel, France, a less equal country, faced its most tumultuous social movement in decades. Carbon pricing in a world of globalization and growth, increasingly puts the burden of climate change on the backs of citizens rather than polluters. Anti-climate reform populism, in this sense, prioritizes national prosperity. In countries like the United States, it is ‘top-down,’ linked to maintaining the profits of national fossil fuel business-elite. The Koch brothers infiltrated the Tea Party to this end. In countries like France, it is ‘bottom-up,’ linked to equity and not burdening working classes with costs they cannot bear. Thus, while countries face universal constraints, there are variations in how countries respond to them.

Growth, globalism, and populism (equity) pose real constraints on pricing carbon. Pricing carbon is (so far) never enough to adequately curb emissions and often the tax base is uneven. Given how slow political institutions are to transform (Streeck and Thelen 2005) and the weakness of the climate movement in transforming them (McAdam 2017), this poses a real problem for climate reform. Is adequately pricing carbon even possible? How might we get there?

Moving Toward a Problem-Solving Sociological Approach

Expanding renewable energy, the single most popular climate solution, is not enough. As shown in chapter one: as efficiency increases with more energy available, consumption of all energy sources increases (Jevon’s paradox). Carbon emissions, therefore, must be actively

suppressed so that an energy transition can truly occur. Instead of masquerading as if societies can curb emissions with deregulated markets and innovation, governments must become more active. Carbon prices (even the underpowered existing ones) can help achieve decarbonization. Still, what is the use of a solution if it's not being adequately implemented? How can societies implement more and stronger carbon prices when they face constraints from their institutions, energy infrastructures, growth model, trade, business-elite, inequality, and economic nationalism/populism?

In the rest of this chapter, I utilize a problem-solving sociological approach for making policy recommendations. First, I overview the approach. Second, I suggest that carbon prices can be designed to match growth models in ways to complement national growth characteristics and constraints. Third, I discuss the free-rider problem, limitations, and strategies for overcoming it. Fourth, I analyze carbon prices in relation to other policy solutions. I conclude with points about carbon prices as climate policies and offer suggestions for future research.

Problem-solving sociology is a developing approach that merges the disciplinary needs to both theorize and offer solutions to societal problems. A social problem, in this approach, “provides an empirical testing ground for the theories, and the theories become resources for the solving of the problem” (Prasad 2018:393–94). Problem solving sociologists, therefore, study both the social structures that produce societal problems and interrogate the mechanisms that might trigger change or transformations.

For producing problem-solving sociological research, Prasad warns scholars of three main ‘traps’ and offers remedies for each. First, ‘describing and complaining rather than solving’ social problems can sometimes essentialize or idealize a single population. A comparative method remedies this issue because differences between groups or research sites are emphasized.

Second, ‘studying the victims rather than the villains’ may offer a precise portrait of a problem, but can ignore the big picture or causes. Studying the causes (i.e., villains) of social problems renders a more precise and complete image. Third, ‘critiquing other solutions rather than providing new ones’ is unproductive: “Solutions proposed by policy-makers or economists are often criticized for their reductive and individualistic assumptions, but non-reductive and non-individualistic alternatives are not often proposed” (Prasad 2018:396). This problem is overcome by understanding the practical problem theoretically and then utilizing the corresponding theory’s literature to propose solutions.

All in all, the core of this project on the socio-politics of carbon pricing is a problem-solving sociological project. It is comparative, focusing on differences, at both the macro and micro levels. It studies both ‘victims’ like the Yellow Vests, ‘villains’ like business-elite, and even those in between like policymakers. In this chapter, I take on the third task; rather than simply critiquing carbon prices, I will attempt to use theory-backed empirics to diagnose the problem and causes holistically, in order to provide theoretically grounded policy recommendations.

The central problem is that current national carbon pricing efforts are insufficient for curbing emissions effectively (Green 2021; Ricke et al. 2018). In my view, this circumstance has three causes, as discussed in the previous chapter. First, emissions are linked to economic growth. Curbing emissions, thus, has the potential to curb prosperity. Equally important to growth, liberal globalization forces policymakers to prioritize maintaining competitiveness or losing out economically. Second, fossil-fuel business-elite fight any regulations. The influence of multi-national corporations have only increased over time. Some firms are linked to national growth models and/or are given disproportionate power in political institutions. Third, levels of

inequality vary greatly between countries, and a carbon price can disproportionately impact lower-income groups, triggering backlash. These circumstances both *cause* and *maintain* the free-rider problem associated with nonbinding international agreements. No country or firm wants to ‘lose out’ in a liberal global economy without rules that regulate *all* actors so they continue to prioritize growth and competition over serious reforms that may pose domestic challenges. Therefore, the cause of insufficient carbon pricing is simple: carbon emissions can pay the bills.

Design Carbon Tax Revenue to Fit Growth Models

If all countries have refused to compromise national prosperity with carbon prices for over the last thirty years, why should scholars continue to suggest limiting growth? Degrowth approaches (discussed later) are impractical, unrealistic, and not taken seriously by policymakers on either the right or the left. Consistent with a problem-solving sociological approach, evidence tells us that growth is at the center of carbon pricing politics. Emissions are linked to growth and growth is prioritized over pricing carbon. Therefore, a theory of growth models should inform carbon pricing. Policymakers have already taken this approach implicitly, but with a more explicit and realistic focus, new insights can emerge. If all carbon prices are filtered through political and economic regimes anyway, then why not focus all energies on a better and more suitable policy design strategy? My proposed strategy is simple: carbon prices can be altered via revenue to complement both export-led and consumption-led growth models.⁴³

Export-led: Greening firms

⁴³I limit this solution to my sample of wealthy democracies. Carbon pricing in emerging economies is more complex – particularly with concerns to equity.

In export-led economies, growth is more linked to exports than household consumption. Germany is a paragon of this system along with many other rich European countries. In my view, if an economy is export-led, it would be advantageous to adopt the Danish carbon tax model. Denmark gives carbon tax revenue to carbon-intensive firms for sustainable transformations. This approach has contributed to their decreasing fossil fuel energy levels and emissions along with supporting the expansion of wind energy. When a carbon tax is linked to more elastic sectors that can transform faster, it is more effective. It also complements economies that rely heavily on export competitiveness.

Are there drawbacks? Certainly. When revenue is not returned to consumers to offset increased energy costs, the tax can be regressive and spark issues of equity. Due to current exemptions and revenue use, the majority of the carbon taxes burden consumers. Though there are some complaints of high energy costs in certain Nordic countries, households have not become so affronted that they take to the streets like people in France. In this sense, those taxes seem to work because the countries have sufficient levels of equality, prosperity, and a social safety net to support increased energy costs. Populism, remember, has economic roots (Lonergan and Blyth 2020; Piketty 2019; Sandbu 2020). Finally, regulatory efficacy is key for this approach, returning revenue to firms must occur under strict conditions lest regulatory capture occur. A firm regaining taxed capital for erecting one solar panel on the roof of a plant would not be sufficient. Emission reductions and technological shifts must be held accountable. All in all, this approach, while it may depress consumer demand some (which matters less in economies with more green energy), it complements export-led economies.

Consumption-led: Dividends for all

In consumption-led economies, growth is more linked to household consumption than exports. Many of the liberal market Anglo-economies of the world (United States, United Kingdom, Canada, Australia, etc.) are consumption-led and serve as huge global import markets. In my view, if an economy is consumption-led, it would be advantageous to adopt the Canadian carbon tax model where tax revenue is sent as dividends to citizens in routine payments. In this system, “prudent people would use their dividend wisely, adjusting their lifestyle, choice of vehicle and so on. Those who do better than average in choosing less-polluting goods would receive more in the dividend than they pay in added costs” (Hansen 2009). In other words, changing behavior will make consumers money. The natural regressiveness of the tax is reversed and the majority of households benefit.

The U.S. Treasury ran the numbers in 2017. They found that a \$49 carbon tax rate⁴⁴ per ton of CO₂ would supply each American with an annual check of \$538 (Horowitz et al. 2017; Sandbu 2020). They also calculated that most Americans, particularly poorer ones, would experience an increase in living standards. Rebates can also be differentiated between urban versus rural areas to ensure that those with higher energy use – think ‘Yellow Vests’ from the countryside who drive long distances - are not overburdened (Bureau, Henriët, and Schubert 2019; Sandbu 2020).

One of the many upsides of this approach is that if stimulation money is sent to lower-income households, consumption is driven up and the economy is energized (Lonergan and Blyth 2020). It also counters inequality as lower-income households are helped the most (Sandbu 2020). Some economists argue that dividend rebates can further counter inequality if rates are

⁴⁴ While the rate would be significant for the United States, it is still considered too low by experts.

graduated and more capital goes to lower-income citizens (Sterner 2020). Figure 6.1 compares a flat versus graduated dividend rate.

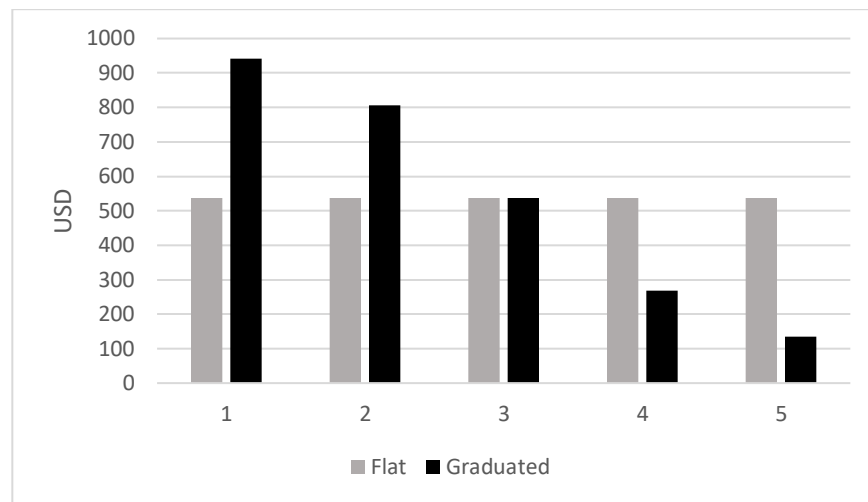


Figure 6.1 Flat versus graduated dividends across income quintiles. Note: These numbers are arbitrary and simply demonstrate the possibility of a carbon tax that offers greater support to those who most need it.

Curbing emissions while offering citizens in the lowest quintile nearly \$1000 annually is promising. Note that the dividend payments would not be permanent if emission reductions are truly reached. When the tax ‘works’ and an economy transitions, there would be less emissions to tax and, therefore, less revenue to distribute. Thus, policymakers must not view this policy strategy as a stable solution to reducing inequality. The primary focus of any carbon tax policy instrument should be to achieve emission reductions. Still, this approach is favored by many for good reasons. It decreases emissions and inequality, and in my view, complements a consumption-led growth model. Furthermore, it is politically popular. Getting checks in the mail is far more concrete for citizens than, say, for instance, payroll tax reductions that might have the same fiscal impact.

Mixed Economies: Dividend again

If countries have mixed growth models, it is likely that a dividend rebate is the best approach. The French carbon tax burdened households more relative to firms, yet revenue was returned to many firms through tax credits without any conditions. These costs, according to the Yellow Vests, were inequitable for consumers. Figure 6.2 compares the inequality in France to Denmark to illustrate this point.

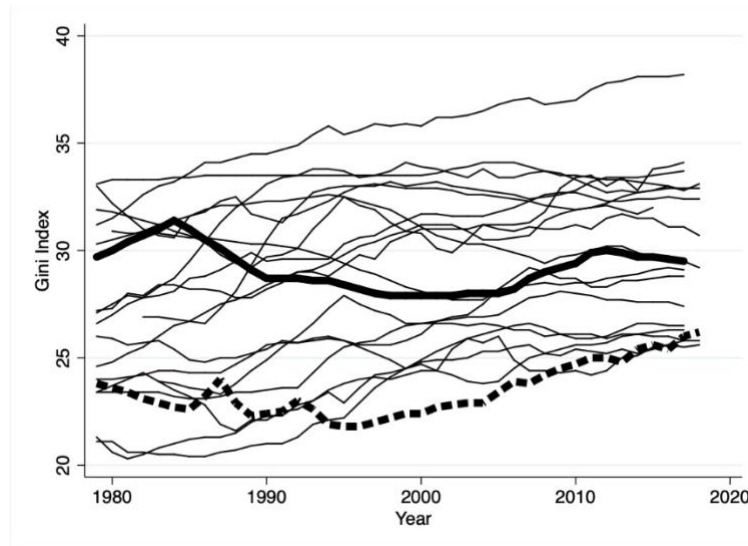


Figure 6.2 Comparing Inequality (Gini) in France (solid) and Denmark (dotted). Note: The same twenty country sample is displayed. Data is sourced from the Standardized World Income Inequality Database (Solt 2020).

With a mixed growth model and inequality at medium levels, a dividend would likely have been able to gain more public support in France. Though multiple intersecting conditions led to unrest, it is possible that the movement would not have been triggered in the first place. The French government already knows this and many, including the Conseil d'analyse économique (CAE), have since argued for the use of a dividend (Bureau et al. 2019).

Overcoming the Free-Rider Problem

The free-rider problem still presents a thorny challenge for climate reform. Consistent with a problem-solving sociological approach, what does the literature tell us about regulating

public goods that all parties benefit from but do not pay for? The most obvious answer is a binding international agreement, but history tells us that will be an unlikely realization. What sorts of solutions do scholars advance for making actors pay their fair share and to disincentivize noncompliance?

There are three main approaches of varying difficulties. The first, and easiest, argues that, given this collective action problem, policy action must occur at multiple levels: “A polycentric approach has the main advantage of encouraging experimental efforts at multiple levels, leading to the development of methods for assessing the benefits and costs of particular strategies adopted in one type of ecosystem and compared to results obtained in other ecosystems” (Ostrom 2009). In other words, actors everywhere (i.e., individuals, cities, states, nations, etc.) should act as they can without forcing uniformity. This allows for experiments (innovation) and flexibility, but is the least concrete. The second approach calls for enforcement mechanisms, but without global, world-wide agreements. Climate economists have advanced ideas like ‘climate clubs’ or alliances that would exist between countries or trading partners. Each club would punish non-compliers or disadvantage nonmembers who disregard emission reductions or whose production methods are particularly polluting (Cooper et al. 2017; Nordhaus 2015). The alliances could allow for some domestic flexibility, but still bind participants (Stiglitz 2015). Third, and most relevant to a project on carbon taxation, is the idea of a carbon border tax. It is promising and I elucidate on it further below with a short analysis of the newly proposed EU carbon border tax.

Policy spotlight: why the EU is uniquely positioned for a strong carbon border tax

The European Commission, in designing the European Green Deal, has recently proposed a Carbon Border Adjustment Mechanism (CBAM) or carbon border tax (European Commission

2020). In practice, this would mean imposing a fee on carbon-intensive imports to Europe from countries and industries with weaker climate regulations. As EU companies already pay a carbon price through the EU emission trading system, in addition to assorted domestic carbon policies, this initiative would furnish them with a competitive boost by establishing a more level playing field, which currently advantages free-riders with lower emission standards (Kuik and Hofkes 2010). Beyond competition, the policy also could have significant implications for global emissions. Due to the EU's significant position in world trade, a border tax would incentivize countries and industries to undertake sincere climate reforms and regulations beyond the 'paper promises' of nonbinding international agreements. In short, not only will more carbon-efficient firms in industries like oil extraction and steel production be more competitive, producers who previously relied upon more carbon-intensive methods will now be incentivized to shift. There are a number of challenges that the initiative will have to overcome, including and not limited to: opposition from other countries and firms exporting carbon-intensive goods, domestic economic and trade politics, the details of implementation and design, and World Trade Organization rules (Allan 2020; Colman 2020).

Challenges aside, the European Union, is comparatively well-positioned to enact a strong border tax. My argument has nothing to do with their climate policymaking regime or an external free-rider problem with other, more polluting, countries. A strong carbon border tax is to their political and economic advantage given their growth and emissions position. As discussed, economies primarily source economic growth from household consumption, exports, or a mix of the two (Baccaro and Pontusson 2016). Carbon emissions, as well, are linked to either exports or consumption in particular economies (Ritchie 2019). The European Union is the largest economy and trading bloc in the world. The European Union is also the only major global economy where

emissions are consumption-led, but growth is export-led. In practice this means that even if EU imports are taxed to raise the prices of some goods consumed, the primary source of growth (exports) will not be depressed, but actually amplified through enhanced export competitiveness.⁴⁵ Table 6.1 compares the EU with other major world economies and carbon emitters.

Table 6.1 Emissions trade and growth. Note: Emissions information are sourced from Our World in Data. Consumption versus export information are sourced from the OECD National Accounts; countries with an export share of GDP over 40% are typically categorized as export-led growth models (Hassel and Palier 2021).

Region	Share of global emissions	Emissions trade balance	Growth model
India	7%	Export-led	Consumption-led
USA	15%	Consumption-led	Consumption-led
China	25%	Export-led	Consumption-led
<i>EU</i>	<i>10%</i>	<i>Consumption-led</i>	<i>Export-led</i>

As shown, it is possible that if other trading blocs enacted a carbon border tax, they might risk raising the price of consumption. Limiting consumption can limit growth. That said, there is no evidence that carbon prices limit economic growth (Driscoll 2020). However, Europe's position with consumption-led emissions and export-led growth is an efficacious setting for a carbon border tax, to put pressure on the rest of the world. In sum, an EU carbon border tax decreases emissions, while increasing competitiveness of exports, and by proxy, stimulating growth.

⁴⁵ It will be interesting to see if increased prices on carbon-intensive steel, however, would impact EU auto exports, a key growth sector.

European leaders should be encouraged to move forward boldly with this policy proposal. Not only does a carbon border tax begin to pressure polluting countries to regulate carbon, the policy has multiple other benefits. It (1) helps solve the external free-rider problem, (2) increases the competitiveness of carbon-efficient European companies, (3) targets consumption-led emissions that are less tied to growth, and (4) complements the EU export-led growth model. If other trading blocs match the tax rate and follow, many countries will be on their way.

Other Policies and Concluding Thoughts

I want to take an opportunity to contextualize carbon prices with other climate solutions and consider them together in the global context. One reasonable conclusion, considering the relationship between emissions and economic growth, argues that societies should stop prioritizing GDP growth (degrowth) and prioritize curbing emissions instead. Though this idea is not a new one, with a strong base in ‘treadmill of production’ theory in sociology (Schnaiberg 1980), it has recently gained prominence on the political left as well as in academic debate (Hickel 2020; Hickel and Kallis 2020; Milanovic 2017). The uncomfortable truth, as shown saw throughout this work, is that climate reform is often at odds with prosperity in our current economic system which was built upon harnessing the energy of fossil fuels. Key scholarship argues that there are significant trade-offs between curbing emissions and prosperity and equity (D’Alessandro et al. 2020; Haberl et al. 2020; Wiedenhofer et al. 2020). Readers witnessed this first-hand with the Yellow Vest movement. These trade-offs easily lead the uninformed to advocate for burning capitalism down and the slight better informed to advocate for radical, innovative, and immediate reform of capitalism. Degrowth will not happen any time soon. Why?

First, if *wealthy* economies will not compromise GDP growth, as evidenced by this work, emerging economies (upon which the majority of future emissions depend) will most certainly not. And why should they agree to be sealed in permanent destitution just because the global north had the privilege to develop first? Second, there is no debate that climate reform must be global and include the world's largest economies. One country, bloc, or even the global north or south cannot do it alone. In the current era of economic nationalism and populism, this is highly unlikely. Even the most globally minded and equal countries have not reached significant emission reductions, for they are unwilling to compromise growth. Third and finally, human beings enjoy and seek out the comforts of prosperity and wealth in every society. Citizens will continue to demand national prosperity from their policymakers and leaders. Both concern for climate change and incidences of green transitions decrease during economic recessions (Scruggs and Benegal 2012; Sheldon 2015). To complicate matters, complete and global economic stagnation alone is not enough to decrease emissions from current rates (Wolf 2020). Perhaps the most efficient method for solving climate change today is through an austere global soviet-style authoritarian regime. Would those horrors outweigh the impacts of global climate change? The answer does not even matter because the climate movement is far too weak for that kind of influence (McAdam 2017). All in all, growth must be accepted. Most people, save privileged leftists (who have benefitted greatly from growth), are unwilling to give it up.

In many ways, people are unfair to carbon taxes when they are considered silver bullets for solving climate change. How could they ever single-handedly succeed in this global system of constraints? Has any proposed climate solution succeeded? How can a single policy ever solve such a massive and complex problem? For example, can educational reforms *alone* redress inequality? They cannot. Those policies, however, executed thoughtfully in unison with justice

system, healthcare, welfare, trade, and tax reforms do make a difference. Carbon prices reduce emissions and that alone makes them worth supporting. It is far better, in my view, to consider carbon taxes as one policy in a portfolio of climate policies and solutions.

While carbon taxes or emission trading schemes are broad in impact, other policies are not. This fact can support the efficacy and implementation of other policies in settings with high veto points or institutional constraints, such as the United States. Electric vehicle incentives, efficiency regulations for carbon intensive industries like steel or cement manufacturing, or building codes and energy standards for homes, are more specific and focus on particular industries or sectors of the economy. Certain policies, as well, simply set goals (such as New York's zero carbon electricity target), and while they may be nonbinding, they have been shown to generate shifts to carbon-free technologies. All in all, none of these solutions alone or implemented in one country will be enough. They do, however, complement one another, reinforce the effects of each, and lead the adoption of more reforms (Meckling, Sterner, and Wagner 2017).

Recent scholarship highlights the potential influence of central banks in curbing emissions with tools such as green bonds and interest rates (Campiglio et al. 2018; Kelton 2020; Lonergan and Blyth 2020). They are powerful with little democratic oversight. Coupled with carbon pricing, monetary policy may be key for transitioning. The surplus economies of Germany and China, for instance, have substantial assets. Most of them are held in the U.S. financial sector (remember that the US dollar is the global reserve currency), and that capital is not getting invested or entering economies. If governments, instead, invest that capital, central banks can incentivize green structural investments, and carbon prices disincentivize fossil-fuel use/investment (crucial given Jevon's Paradox), the world may get closer to the radical transition

that it needs. This combination of three conditions (massive investment, green incentives, fossil fuel disincentives) offers one of our best scenarios because combatting climate change requires extreme innovation coupled with extreme decarbonization. This is the sort of government and private sector partnership and mobilization that is outlined by economist Mariana Mazzucato (Mazzucato 2013). Green Keynesianism should be central, and if private sectors win state investment, it must condition that they decarbonize and include workers in the process.

On the other hand, if measures are not implemented soon enough, it will be necessary to prepare for future disasters and plan for how societies will adapt. Still, the possibility for significant change is never gone. When human societies enslaved people or kings ruled by divine right, people never imagined paradigm shifts would happen (Wolf and Varoufakis 2019), but they did.

The challenge of modernity is to live life without illusions and without becoming disillusioned ...my mind is pessimistic, but my will is optimistic. Whatever the situation, I imagine the worst that could happen in order to summon up all my reserves and will power to overcome every obstacle.

- Antonio Gramsci, 1929

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