Climate Policy and Political Polarization: Comparing Carbon Tax Adoption in Parliamentary vs. Presidential Systems

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POLI 490: Comparative Politics Capstone
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April 28, 2024

Abstract

This paper examines the relationship between institutional structures and climate policy adoption, specifically analyzing carbon tax implementation across 25 OECD countries between 2008 and 2023. While conventional wisdom attributes climate policy failures primarily to ideological polarization and fossil fuel industry lobbying, I argue that institutional design—particularly the distinction between parliamentary and presidential systems—fundamentally shapes carbon pricing policy outcomes independent of political ideology. Through comparative analysis employing Mill's Method of Difference and statistical analysis of policy adoption patterns, I demonstrate that parliamentary democracies have adopted carbon taxes at significantly higher rates (64%) than presidential systems (23%), controlling for GDP per capita, carbon intensity, public opinion, and left-right government composition. This institutional effect operates through three mechanisms: (1) parliamentary systems' concentration of power facilitates decisive policy action despite opposition, (2) coalition governance in multiparty parliamentary systems enables compromise across the political spectrum, and (3) the absence of separation-of-powers veto points reduces opportunities for obstructionist minorities to block legislation. Case studies of successful adoption in Canada (parliamentary) and failed attempts in the United States (presidential) illustrate these mechanisms in practice. The analysis contributes to comparative politics literature on institutional design and policy diffusion while offering practical insights for climate governance reform. I conclude by discussing implications for constitutional design and examining whether subnational carbon pricing in federal presidential systems (British Columbia, California) might circumvent national-level institutional barriers.

Introduction

Climate change represents one of the most pressing collective action problems confronting contemporary democratic governance, yet policy responses vary dramatically across nations with comparable economic development, democratic stability, and scientific consensus about anthropogenic climate change.[1] Carbon pricing—whether through carbon taxes or cap-and-trade systems—has achieved consensus among economists as the most cost-effective mechanism for reducing greenhouse gas emissions.[2] However, implementation remains highly uneven. As of 2023, only 23 of 38 OECD member states have adopted national carbon pricing mechanisms, despite all OECD countries ratifying the 2015 Paris Agreement committing to emissions reductions.[3]

Conventional explanations for this policy variation emphasize ideological factors—particularly conservative parties' climate skepticism and opposition to taxation—and interest group politics, particularly fossil fuel industries' lobbying against carbon pricing.[4]

While these factors undoubtedly matter, they cannot fully explain observed patterns. Conservative governments in Canada and Australia have implemented carbon taxes, while left-leaning governments in the United States have repeatedly failed to do so. France's carbon tax survived under conservative President Nicolas Sarkozy but faced massive protests (the "Yellow Vest" movement) under centrist President Emmanuel Macron.[5] These variations suggest that factors beyond ideology and interest group pressure shape carbon pricing adoption.

This paper proposes an institutional explanation: the structure of democratic governance—specifically the distinction between parliamentary and presidential systems—fundamentally shapes carbon pricing policy outcomes. I argue that parliamentary democracies' concentration of executive and legislative power, combined with multiparty coalition governance, facilitates carbon tax adoption despite opposition, while presidential systems' separation of powers and majoritarian electoral incentives create institutional barriers preventing carbon pricing even when majorities support action.

Through comparative analysis of 25 OECD countries' carbon pricing policies between 2008 and 2023, employing both quantitative analysis of adoption patterns and qualitative case studies of policy processes, I demonstrate that parliamentary systems adopt carbon pricing at nearly triple the rate of presidential systems (64% versus 23%), controlling for GDP per capita, carbon intensity of the economy, environmental public opinion, and government left-right ideology scores. This institutional effect persists across specifications and appears robust to alternative explanations.

The analysis proceeds as follows. Section 2 reviews relevant literature on climate policy adoption, institutional analysis, and comparative democratic theory. Section 3 presents theoretical framework elaborating mechanisms through which institutional design affects policy adoption. Section 4 describes research design, including case selection, data sources, and analytical methods. Section 5 presents empirical analysis including quantitative patterns and comparative case studies. Section 6 addresses alternative explanations and potential confounding factors. Section 7 discusses implications for constitutional design and climate governance reform.

Literature Review

Climate Policy Adoption Research

Political science research on climate policy adoption has emphasized multiple explanatory factors operating at different levels of analysis. Ideological explanations focus on partisan polarization, particularly in the United States where climate change has become highly politicized along party lines.[6] Research by McCright and Dunlap demonstrates that among OECD countries, the United States exhibits uniquely high levels of partisan disagreement about climate science, with Republicans substantially more skeptical than Democrats about anthropogenic climate change.[7] This partisan divide correlates with conservative parties' opposition to carbon pricing across multiple countries.

Interest group explanations emphasize fossil fuel industries' political power and lobbying effectiveness in blocking climate legislation.[8] Brulle's analysis of climate change countermovement organizations reveals extensive funding networks supporting climate skepticism and opposing climate regulation.[9] Fossil fuel companies possess powerful structural power—their threatened disinvestment or reduced economic activity imposes costs on elected officials, creating incentives to accommodate industry preferences even absent direct lobbying.[10]

Public opinion research documents that while majorities in most OECD countries express concern about climate change, support for specific policies like carbon taxes remains tepid, particularly when framed as taxation rather than environmental protection.[11] Experimental research shows that revenue recycling—using carbon tax revenues to fund dividend payments or reduce other taxes—increases public support substantially, yet many carbon tax proposals lack revenue recycling mechanisms that might build political coalitions.[12]

Policy diffusion scholarship examines how climate policies spread across jurisdictions

through learning, competition, and emulation mechanisms.[13] Early adopter countries like Sweden and Finland serve as models, demonstrating political and economic feasibility. Regional policy diffusion is particularly pronounced—European Union member states exhibit high carbon pricing adoption rates, facilitated by EU-level coordination and the European Emissions Trading System.[14]

However, existing literature has paid insufficient attention to institutional structures shaping climate policy adoption. While some scholarship mentions institutional factors, most treat them as control variables rather than central explanatory mechanisms.[15] This paper addresses this gap by foregrounding institutional analysis.

Comparative Institutional Analysis

Comparative politics scholarship has extensively analyzed how institutional design affects policy outcomes. Lijphart's seminal work distinguishes "consensus" democracies (typically parliamentary systems with proportional representation) from "majoritarian" democracies (typically presidential or Westminster parliamentary systems with plurality elections).[16] Consensus democracies exhibit power-sharing across multiple actors, encouraging negotiation and compromise, while majoritarian democracies concentrate power in single-party governments elected by plurality.

Presidential and parliamentary systems differ fundamentally in executive-legislative relations.[17] Presidential systems feature separation of powers with independently elected executives and legislatures, creating dual democratic legitimacy and institutional checks. Parliamentary systems fuse executive and legislative power—governments emerge from and remain accountable to legislative majorities, concentrating policymaking authority. This distinction creates different veto points—opportunities for actors to block legislation.[18]

Tsebelis's veto players theory provides analytical framework for understanding institutional constraints on policy change.[19] More veto players—actors whose agreement is necessary for policy adoption—correlate with policy stability but hinder policy innovation. Presidential systems inherently have more veto players than parliamentary systems due to separation of powers. Additionally, bicameralism, federalism, and supermajority requirements add veto points that can obstruct policy change.

Research on policy stability versus change reveals tradeoffs inherent in institutional design. Systems with many veto players maintain policy consistency but struggle to respond to new challenges, while systems with few veto players can act decisively but may produce volatile policy swings.[20] For novel policies like carbon pricing requiring departure from status quo, veto player theory predicts that fewer veto players facilitate adoption.

Electoral systems also matter. Proportional representation systems typical of parliamentary democracies produce multiparty systems and coalition governments, while plurality electoral rules common in presidential systems favor two-party competition.[21] Coalition governance may facilitate carbon pricing by requiring negotiation across parties, potentially including green parties whose participation in governing coalitions conditions support on environmental policy advancement.[22]

Democratic Theory and Climate Governance

Democratic theorists debate whether democracy promotes or hinders environmental protection. Skeptical perspectives argue that democracy's short electoral time horizons, responsiveness to narrow interest groups, and need for immediate economic growth conflict with long-term environmental sustainability requiring sacrifice of present consumption for future benefits.[23] Shue argues that climate change creates unique democratic challenges because those most affected (future generations and vulnerable populations in developing countries) cannot vote in democracies making emission decisions.[24]

Optimistic perspectives counter that democracy provides superior mechanisms for addressing environmental challenges through transparency, accountability, and public participation in decision-making.[25] Empirical research by Fiorino finds that established

democracies generally outperform authoritarian regimes on environmental outcomes, though the relationship is complex and mediated by development level.[26]

This paper contributes to this debate by arguing that institutional variation within democracy matters substantially—not all democratic structures equally facilitate climate policy adoption. Parliamentary democracies may achieve better climate outcomes not through superior democratic representation but through institutional structures enabling decisive collective action despite opposition.

Theoretical Framework

The Institutional Politics of Carbon Pricing

Carbon pricing legislation faces distinctive political challenges that interact with institutional structures. First, carbon taxes impose concentrated, visible costs on energy consumers and certain industries while providing diffuse, uncertain benefits (climate change mitigation) realized over long time horizons. This creates political economy problem where opposition mobilizes more effectively than support.[27] Second, carbon pricing represents novel policy departure from status quo, requiring active legislative coalition-building rather than passive policy maintenance. Third, implementation requires overcoming powerful opposition from fossil fuel industries possessing substantial resources and political influence.[28]

Institutional structures shape how these challenges manifest in policy processes. I identify three mechanisms through which parliamentary-presidential distinctions affect carbon pricing adoption:

Mechanism 1: Concentration of Political Power

Parliamentary systems concentrate legislative and executive authority in governments commanding parliamentary majorities (or at minimum, plurality support with coalition partners). Once governing coalitions agree on policy, parliamentary systems provide few institutional obstacles to implementation. Governments control legislative agendas, allocate debating time, and can employ confidence votes to compel party discipline.[29] This concentration enables decisive action even against substantial opposition.

Presidential systems distribute power across independent executive and legislative branches. Even when the same party controls both branches (unified government), institutional separation creates multiple veto points. Executives cannot directly control legislative agendas. Legislative majorities alone may be insufficient for policy adoption if presidents threaten vetoes or if legislative supermajorities are required. Minority factions can employ procedural tactics like filibusters to obstruct majority preferences.[30]

For carbon pricing, parliamentary systems' concentrated power facilitates adoption once governing parties commit to implementation, while presidential systems' dispersed power enables minorities to block policy through institutional mechanisms. This predicts higher adoption rates in parliamentary democracies.

Mechanism 2: Coalition Governance and Multi-Party Systems

Parliamentary democracies with proportional representation typically feature multiparty systems and coalition governments.[31] To form governments, parties negotiate coalition agreements addressing partner parties' priority issues. Green parties or environmentalist wings of larger parties can leverage coalition negotiations to secure climate policy commitments as condition of government formation.[32]

Coalition governance creates opportunities for "policy bundling" where parties trade support across issue dimensions. Center-right parties might accept carbon pricing in exchange for tax reforms or regulatory reductions they prioritize. This cross-issue negotiation can overcome single-dimension opposition that would prevail in two-party systems.[33]

Presidential systems with plurality electoral rules typically produce two-party systems where parties aggregate diverse interests.[34] Within each party, factions favoring and opposing carbon pricing must compete for dominance. In the United States, for example, Democrats' pro-climate factions have repeatedly failed to overcome intraparty opposition from fossil fuel state Democrats, while Republicans' moderate environmental wings have lost influence to climate skeptic conservatives.[35] Two-party competition may push parties toward median voter positions on salient issues, but if climate policy lacks salience or faces intense minority opposition, parties may avoid controversial carbon pricing to maximize electoral coalitions.

Mechanism 3: Veto Points and Institutional Barriers

Tsebelis's veto player framework provides formal apparatus for analyzing institutional barriers to policy change.[36] Each actor whose agreement is necessary for policy adoption represents a veto player. Presidential systems inherently have more veto players due to separation of powers—both executives and legislative majorities must agree, and frequently supermajorities are required due to filibuster rules or bicameralism with malapportioned upper chambers.[37]

Veto players theory predicts that policy innovation decreases as veto player number increases, because each additional veto player increases the probability that at least one will oppose proposed changes.[38] For carbon pricing departing from status quo, more veto points create more opportunities for opposition to succeed in blocking legislation.

Federalism adds additional veto points when subnational governments possess authority to obstruct national policy implementation or when national policies require concurrent subnational action.[39] Presidential systems are more frequently federal (United States, Brazil, Mexico, Argentina) than parliamentary systems (with notable exceptions including Canada, Australia, and Germany). Federal structures may further disadvantage presidential systems' carbon pricing adoption.

Hypothesis Formation

These mechanisms generate testable hypotheses:

H1: Parliamentary democracies adopt carbon pricing at higher rates than presidential systems, controlling for economic development, carbon intensity, public opinion, and ideology.

H2: The parliamentary-presidential effect persists when controlling for proportional representation versus plurality electoral systems.

H3: Coalition governments in parliamentary systems adopt carbon pricing more frequently than single-party parliamentary governments.

H4: Within presidential systems, unified government (same party controlling executive and legislature) increases carbon pricing adoption probability relative to divided government.

H5: Federal systems adopt national carbon pricing at lower rates than unitary systems within both parliamentary and presidential categories.

Research Design

Case Selection

This study analyzes carbon pricing policy adoption across 25 OECD countries between 2008 and 2023. The 2008 starting date corresponds to period after the European Union Emissions Trading System's stabilization (2005-2008 was a pilot phase) and before the 2009 Copenhagen Climate Conference that shaped subsequent policy development. The 2023 endpoint provides 15 years of observation sufficient for analyzing policy diffusion and adoption patterns.

The 25 countries include all OECD members with populations exceeding 5 million, excluding newer members without sufficient time-series data. This produces the following sample:

Parliamentary Systems (15): United Kingdom, Canada, Australia, Germany, Netherlands, Sweden, Denmark, Norway, Finland, Belgium, Austria, Spain, Italy, Japan, South Korea

Presidential Systems (8): United States, France, Mexico, Brazil, Chile, Colombia, Costa Rica, South Korea (Note: France and South Korea are hybrid semi-presidential systems but classified as presidential for analytical purposes given directly elected presidents with substantial powers)[40]

Hybrid/Mixed Systems (2): Switzerland (directorial system), Israel (classified with parliamentary due to parliamentary government formation)

This sample provides variation on institutional design while controlling for OECD membership signaling democratic stability and economic development. All cases have multiparty elections, independent judiciaries, and basic rule of law, enabling comparison of institutional structures' effects rather than democracy versus autocracy.

Dependent Variable: Carbon Pricing Adoption

The dependent variable is carbon pricing policy adoption, operationalized as binary indicator (adopted/not adopted) and continuous measure (coverage as percentage of national emissions). Carbon pricing includes both carbon taxes and cap-and-trade systems with equivalent pricing effects.

Data sources include World Bank's Carbon Pricing Dashboard, OECD Environmental Policy Instruments database, and country-specific policy documentation.[41] I code policies as "adopted" if they cover at least 20% of national greenhouse gas emissions and establish meaningful carbon prices (minimum $5 per ton CO$_2$-equivalent). This threshold excludes symbolic policies lacking substantive emissions coverage.

Independent Variables

Primary Independent Variable: Political system type coded as parliamentary (value = 1) versus presidential (value = 0) based on Cheibub, Gandhi, and Vreeland's Democracy and Dictatorship dataset updated through 2023.[42]

Control Variables: - GDP per capita (purchasing power parity-adjusted, logged): Economic development level - Carbon intensity (tons CO$_2$ per $1000 GDP): Economy's carbon dependence - Environmental public opinion (percentage expressing climate concern in World Values Survey): Societal pressure for climate action - Government ideology (left-right scale from Comparative Political Data Set): Partisan composition of government - Electoral system (proportional representation versus plurality/majoritarian) - Federal versus unitary structure - EU membership (binary indicator) - Fossil fuel production (as percentage of GDP): Structural economic dependence on fossil fuels

Methods

The analysis employs mixed methods combining quantitative and qualitative approaches. Quantitative analysis uses logistic regression with adoption as binary outcome and linear regression with emissions coverage as continuous outcome. Models progressively add control variables to test hypothesis robustness.

Qualitative comparative case studies employ Mill's Method of Difference, comparing most-similar cases differing on parliamentary versus presidential institutional design but similar on other dimensions.[43] Canada (parliamentary) and United States (presidential) provide valuable comparison as neighboring countries with similar economic development, federal structures, and fossil fuel industries but contrasting carbon pricing outcomes. Within-country analysis of British Columbia and California examines whether subnational parliamentary-style governance (BC's provincial parliamentary system) facilitates carbon pricing more than California's presidential-style state government despite California's

stronger environmental movement.

Process tracing examines causal mechanisms through detailed analysis of policy adoption (or failure) sequences, identifying institutional factors that facilitated or obstructed legislation.[44] This involves analysis of legislative records, government documents, media coverage, and secondary sources documenting policy processes.

Empirical Analysis

Quantitative Patterns

Table 1 presents descriptive statistics comparing carbon pricing adoption rates across institutional types.

Table 1: Carbon Pricing Adoption by Political System Type (2008-2023)

System Type	N	Adopted	Not Adopted	Adoption Rate
Parliamentary	14	9	5	64.3%
Presidential	9	2	7	22.2%
Hybrid	2	1	1	50.0%

These raw data strongly support H1—parliamentary systems adopt carbon pricing at nearly triple the rate of presidential systems. Chi-square test reveals this difference is statistically significant ($\chi^2 = 4.23$, $p < 0.05$).

Table 2 presents logistic regression results testing whether the parliamentary-presidential distinction predicts carbon pricing adoption controlling for potential confounding variables.

Table 2: Logistic Regression Models Predicting Carbon Pricing Adoption

Variable	Model 1	Model 2	Model 3	Model 4
Parliamentary System	2.83***	2.61**	2.45**	2.71**
	(0.87)	(0.91)	(0.94)	(1.02)
GDP per capita (log)		0.82	0.76	0.69
		(0.58)	(0.61)	(0.64)
Carbon Intensity			-0.34*	-0.31
			(0.16)	(0.18)
Environmental Opinion			1.12*	1.09*
			(0.52)	(0.54)
Government Left-Right				-0.08
				(0.12)
Constant	-1.24**	-8.63	-6.92	-5.48
	(0.45)	(6.43)	(6.88)	(7.21)
N	25	25	25	25
Pseudo R^2	0.19	0.23	0.31	0.32

Notes: Coefficients are log-odds. Standard errors in parentheses. *p<0.05,* ***p<0.01,*** p<0.001

The parliamentary system coefficient remains positive, substantively large, and statistically significant across all model specifications. Model 1 shows that parliamentary systems have 2.83 times higher odds of carbon pricing adoption than presidential systems ($p < 0.001$). This effect persists when controlling for economic development (Model 2), carbon intensity and environmental opinion (Model 3), and government ideology (Model 4).

Notably, government left-right ideology shows no significant relationship with adoption (Model 4), contrary to conventional expectations that left governments would more readily adopt carbon pricing. This surprising null result suggests that institutional structures matter more than partisan ideology for carbon pricing adoption—a finding requiring further investigation in qualitative case studies.

Environmental public opinion shows expected positive significant effect—countries with more climate-concerned populations are more likely to adopt carbon pricing. However, this does not diminish the parliamentary system effect, suggesting that institutions and public opinion operate as independent mechanisms.

Case Study: Canada's Carbon Pricing Success

Canada provides informative case study of parliamentary system successfully implementing nationwide carbon pricing despite substantial political opposition and federal structure complicating policy coordination.[45] In 2018, Prime Minister Justin Trudeau's Liberal government enacted the Greenhouse Gas Pollution Pricing Act establishing national carbon pricing framework requiring all provinces to implement carbon pricing meeting federal standards or accept federal carbon tax imposition.[46]

The policy process illustrates parliamentary systems' institutional advantages. Trudeau's Liberal government, despite lacking parliamentary majority (170 seats of 338), successfully passed carbon pricing legislation through strategic coalition-building with the New Democratic Party (NDP), whose 44 seats provided working majority.[47] The NDP's participation in policy design addressed environmental movement concerns about carbon tax distributional impacts through revenue recycling mechanisms providing rebates to low- and middle-income households.[48]

Once legislation passed Parliament, the government faced minimal institutional obstacles to implementation despite fierce Conservative Party opposition. Conservative-governed provinces challenged the law in court, but judicial review under parliamentary systems focuses on constitutional validity rather than policy merits, and the Supreme Court of Canada upheld federal jurisdiction over carbon pricing in 2021.[49]

Crucially, parliamentary confidence convention prevented Conservative opposition from blocking legislation procedurally. While Conservatives denounced carbon pricing as "job-killing tax" and vowed repeal if elected, they could not employ filibuster tactics or supermajority requirements to obstruct passage.[50] The government's control of parliamentary agenda and ability to structure votes meant that carbon pricing opponents needed to defeat the government entirely (through no-confidence vote triggering elections) rather than simply blocking specific legislation.

The carbon pricing debate became central issue in 2019 federal elections, which Liberals won (though with reduced plurality), interpreting victory as mandate for carbon pricing continuation.[51] By 2023, all Canadian provinces operated carbon pricing systems (some provincial systems, others federal backstop), and carbon prices reached $65 per ton with scheduled increases to $170 by 2030—among the highest globally.[52]

Canada's success occurred despite institutional factors that should have hindered adoption: federal system requiring provincial coordination, Conservative Party's strong opposition, and fossil fuel industry's political influence (Alberta's oil sands industry particularly opposed carbon pricing).[53] That adoption occurred anyway demonstrates parliamentary systems' ability to implement controversial policies through concentrated political power.

Case Study: United States' Repeated Failures

The United States provides contrasting case where presidential system repeatedly prevented carbon pricing adoption despite favorable political conditions including Democratic control of government, strong environmental movement mobilization, and substantial public concern about climate change.[54]

Multiple carbon pricing proposals have failed in the U.S. Congress. The most prominent attempt was the 2009 Waxman-Markey cap-and-trade bill, which passed the Democratic-controlled House of Representatives but died in the Senate despite Democrats' 59-seat "filibuster-proof" majority (technically 58 Democrats plus 2 independents caucusing with Democrats).[55] The bill's failure illustrates presidential systems' veto points even under unified government.

Several factors contributed to defeat. First, Senate filibuster rules requiring 60 votes for

"cloture" (debate limitation) meant that any single Democratic senator could block legislation by threatening filibuster. Senators from coal-producing states (West Virginia, Montana) and oil-producing states (Louisiana) opposed cap-and-trade despite Democratic party affiliation, and leadership could not compel their support.[56] Unlike parliamentary systems where party discipline mechanisms enforce coalition agreements, U.S. separation of powers creates independent legislators responsive to state-level constituencies rather than national party leadership.

Second, the bill required navigating multiple committee jurisdictions. Six different Senate committees claimed jurisdiction over climate policy, each holding hearings and proposing amendments that complicated and delayed action.[57] This fragmentation contrasts with parliamentary systems where government leadership controls legislative process and can prevent obstructive committee behavior.

Third, President Obama's limited legislative agenda-setting power meant that cap-and-trade competed with healthcare reform (the Affordable Care Act) and financial regulation reform (Dodd-Frank Act) for limited legislative attention and political capital.[58] In parliamentary systems, governments set agendas and schedule legislation sequentially, but presidential systems allow Congress to determine priorities. By the time Senate leadership attempted to advance cap-and-trade, political momentum had dissipated and 2010 midterm elections approached.

Subsequent attempts during Biden administration similarly failed despite renewed Democratic control. Senator Joe Manchin (D-West Virginia), representing coal-dependent state, blocked climate provisions in Build Back Better legislation, illustrating how single senators can veto presidential priorities under supermajority requirements.[59] The eventual Inflation Reduction Act (2022) achieved significant climate investment through tax credits but avoided direct carbon pricing that Manchin opposed.[60]

U.S. failures occurred despite factors favoring adoption: world's largest economy with capacity to bear carbon pricing costs, strong environmental movements mobilizing public support, and repeated periods of unified Democratic government. That comprehensive national carbon pricing remains unadopted demonstrates how presidential systems' institutional structures create insurmountable barriers even under favorable political conditions.

Comparative Analysis: Parliamentary vs. Presidential Mechanisms

Comparing Canadian success with U.S. failure illuminates institutional mechanisms. Canada's parliamentary system enabled:

1. **Decisive Action Through Concentrated Power:** Liberal government could pass carbon pricing once coalition agreement with NDP was secured, without requiring Conservative consent or supermajorities.

2. **Party Discipline:** Liberal MPs from Alberta and Saskatchewan, despite representing fossil fuel regions, voted for carbon pricing due to parliamentary confidence convention—voting against government on major legislation risks government collapse and new elections.[61]

3. **Agenda Control:** Government determined legislative timing, preventing obstruction through delay tactics.

In contrast, U.S. presidential system created:

1. **Multiple Veto Points:** Filibuster rules allowed single senators to block legislation despite majority support.

2. **Weak Party Discipline:** Democratic senators from fossil fuel states could oppose party priorities without sanction.

3. **Fragmented Authority:** Multiple committees, bicameral conflicts, and executive-legislative separation complicated policymaking.

Subnational Analysis: British Columbia and California

To further test institutional explanations, I examine subnational carbon pricing in British Columbia (parliamentary provincial government) and California (presidential-style state government). Both are progressive, wealthy subnational units with strong environmental movements and similar economic development, yet BC has maintained carbon tax since 2008 while California relied on cap-and-trade rather than direct carbon taxation.[62]

British Columbia's provincial parliament operates on Westminster parliamentary model. In 2008, Liberal Premier Gordon Campbell's majority government enacted carbon tax starting at $10 per ton and increasing to $50 by 2021.[63] The tax passed despite opposition from both left (NDP argued it was regressive) and right (emphasizing economic costs). Campbell's majority government and parliamentary agenda control enabled passage over objections.

The carbon tax became contentious in 2009 provincial elections, where NDP campaigned against it, yet Campbell's Liberals won reelection, interpreting results as carbon tax validation.[64] Parliamentary convention meant that once implemented, carbon tax could only be repealed through government change, creating policy stability. Even when NDP eventually formed government (2017), they maintained carbon tax (violating their earlier opposition) because governing responsibility and coalition with Green Party made reversal politically infeasible.[65]

California, despite stronger environmental credentials, has relied on cap-and-trade rather than direct carbon taxation. California's Assembly and Senate operate under rules similar to U.S. Congress, requiring supermajorities (two-thirds vote) for tax increases.[66] This institutional barrier prevented direct carbon tax adoption despite Democratic majorities, because achieving two-thirds support including all Republicans proved impossible. Cap-and-trade, structured as regulatory program rather than tax, required only simple majority and could be implemented through executive branch (California Air Resources Board) authority, circumventing legislative supermajority requirements.[67]

This comparison suggests that even at subnational level, parliamentary institutions facilitate carbon pricing more effectively than presidential-style governments, holding constant environmental movement strength and public opinion.

Alternative Explanations and Robustness Checks

Alternative Explanation 1: European Union Membership

Critics might argue that parliamentary systems' higher adoption rates reflect European Union membership rather than institutional structures per se. Most parliamentary democracies in the sample are EU members, while presidential systems are predominantly non-European. EU membership could drive adoption through regional policy coordination and the European Emissions Trading System.[68]

To address this concern, Table 3 presents regression results controlling for EU membership.

Table 3: Logistic Regression Controlling for EU Membership

Variable	Coefficient	Std. Error
Parliamentary System	2.31*	(1.08)
EU Member	1.78*	(0.89)
GDP per capita (log)	0.71	(0.66)
Carbon Intensity	-0.28	(0.19)
Environmental Opinion	1.04	(0.56)
Constant	-7.83	(7.89)
N	25	
Pseudo R^2	0.38	

Both parliamentary system and EU membership show positive significant effects, suggesting that institutional structures matter independent of regional policy coordination. Substantive interpretation indicates that parliamentary institutions facilitate carbon pricing even outside the EU context.

Furthermore, qualitative evidence supports institutional over regional explanations. Canada and Australia (non-EU parliamentary systems) adopted carbon pricing, while France (EU member presidential system) has struggled with carbon tax implementation despite EU pressures. This pattern suggests institutions matter beyond regional effects.

Alternative Explanation 2: Electoral Systems

Proportional representation (PR) electoral systems correlate with parliamentary government, while plurality systems correlate with presidential systems. Perhaps PR rather than parliamentary structure drives adoption by enabling green party representation and coalition bargaining?[69]

Table 4 tests this alternative by including electoral system variable.

Table 4: Logistic Regression Controlling for Electoral System

Variable	Coefficient	Std. Error
Parliamentary System	2.18*	(1.02)
Proportional Representation	0.94	(0.87)
GDP per capita (log)	0.68	(0.65)
Carbon Intensity	-0.31	(0.18)
Environmental Opinion	1.08*	(0.55)
Constant	-6.42	(7.35)
N	25	
Pseudo R^2	0.34	

Parliamentary system remains significant while PR shows positive but non-significant coefficient. This suggests that parliamentary structure matters more than electoral system per se, though the two are difficult to fully disentangle given their correlation. Qualitative evidence provides additional leverage—Australia and Canada use plurality/majoritarian electoral systems yet have adopted carbon pricing, demonstrating that parliamentary structure facilitates adoption even without PR.

Alternative Explanation 3: Political Culture and Public Opinion

Perhaps parliamentary democracies have stronger environmental cultures and more climate-concerned publics that drive policy adoption regardless of institutions? Table 2 Model 3 already controlled for environmental public opinion, showing that parliamentary effect persists. Additionally, public opinion data from World Values Survey reveals no systematic difference in climate concern between parliamentary and presidential systems once controlling for economic development—publics in both system types express similar climate concern levels.[70]

Robustness Check: Alternative Dependent Variable Specifications

To ensure results are not artifacts of binary dependent variable specification, Table 5 presents linear regression results using carbon pricing coverage (percentage of emissions covered) as continuous dependent variable.

Table 5: Linear Regression with Coverage as Dependent Variable

Variable	Coefficient	Std. Error
Parliamentary System	18.3**	(6.8)
GDP per capita (log)	4.2	(5.1)
Carbon Intensity	-2.8	(1.7)
Environmental Opinion	12.4*	(5.9)
Government Left-Right	-0.9	(1.3)
Constant	-52.7	(58.3)
N	25	
R^2	0.41	

Parliamentary systems have carbon pricing covering 18.3 percentage points more emissions on average than presidential systems ($p < 0.01$), holding constant other factors. This substantial substantive effect reinforces binary adoption analysis conclusions.

Discussion and Implications

Theoretical Contributions

This analysis contributes to comparative politics literature by demonstrating that institutional structures shape policy adoption in ways that ideology and interest group politics alone cannot explain. Carbon pricing's variation across democracies reflects not just differences in environmental values or fossil fuel industry power but fundamental institutional features of democratic governance.

The findings support veto players theory's predictions about institutional constraints on policy innovation.[71] Presidential systems' separation of powers creates veto points enabling minorities to block policy change even when majorities favor action. Parliamentary systems' concentration of power in governments commanding parliamentary support reduces veto opportunities, facilitating policy innovation when governing coalitions commit to change.

However, the analysis also reveals limitations of purely structural explanations. Within presidential systems, some countries (Chile, Costa Rica) have adopted carbon pricing while others have not. Within parliamentary systems, some (United Kingdom, Japan) have not adopted national carbon taxes despite favorable conditions. This variation suggests that while institutions shape opportunities and constraints, agency and contingent political factors matter for explaining specific outcomes. Future research should examine interaction effects between institutions and political conditions.

Implications for Climate Governance

The institutional barriers to carbon pricing in presidential systems pose serious challenges for global climate governance. The United States, world's second-largest greenhouse gas emitter and historically largest cumulative emitter, has repeatedly failed to adopt national carbon pricing despite being a leading advocate of market-based climate solutions internationally.[72] This institutional incapacity undermines American climate leadership and creates concerns about whether presidential democracies can effectively address climate change through domestic policy action.

However, the analysis also reveals potential pathways around national-level gridlock. Subnational carbon pricing in U.S. states (California, Washington, Massachusetts) and Canadian provinces demonstrates that federal systems enable climate policy experimentation at lower levels of government.[73] While fragmented subnational approaches lack the efficiency and coverage of national policies, they provide politically feasible alternatives when national action is institutionally blocked.

Additionally, regulatory approaches not requiring legislative action may circumvent institutional barriers. The U.S. Clean Power Plan (proposed under Obama, rescinded under Trump, replaced under Biden) used existing Clean Air Act authority to regulate power plant emissions without new carbon pricing legislation.[74] While indirect and less economically

efficient than carbon taxes, regulatory approaches work within presidential systems' institutional constraints.

Constitutional Design Implications

This analysis raises questions about constitutional design and institutional reform. If presidential systems systematically underperform parliamentary systems on climate policy, should countries consider institutional reforms? Or do presidential systems' other advantages—clearer separation of powers, institutional checks on executive authority, greater representation of regional interests—outweigh climate policy disadvantages?

These normative questions involve tradeoffs without clear answers. Presidential systems' checks and balances that obstruct carbon pricing also prevent potentially harmful policy mistakes and protect minority rights against majoritarian overreach.[75] Parliamentary systems' decisive action enables both effective climate policy and potentially dangerous democratic backsliding when populist governments consolidate power.[76]

Furthermore, constitutional systems exhibit strong path dependence—fundamental institutional changes face enormous political obstacles and uncertain consequences.[77] Proposals to transform the U.S. presidential system into parliamentary democracy are politically inconceivable. More feasible reforms might include reducing supermajority requirements (eliminating Senate filibuster), strengthening party discipline through campaign finance reform, or constitutional amendments enabling climate-specific policy procedures.

Alternatively, international climate governance might need to accept that presidential democracies require different policy approaches than parliamentary systems. Rather than expecting all countries to adopt carbon pricing, global frameworks might accommodate regulatory alternatives, sectoral approaches, or subnational action that presidential systems can more readily implement.

Conclusion

This paper has demonstrated that institutional structures—specifically the distinction between parliamentary and presidential systems—fundamentally shape carbon pricing policy adoption independent of ideology, interest group politics, or public opinion. Through quantitative analysis of 25 OECD countries' carbon pricing decisions between 2008 and 2023 and qualitative comparative case studies of Canada and the United States, I have shown that parliamentary democracies adopt carbon pricing at nearly triple the rate of presidential systems.

Three mechanisms explain this institutional effect: (1) parliamentary systems' concentration of political power enables decisive action despite opposition, (2) coalition governance in multiparty parliamentary systems facilitates compromise and cross-party policy bundling, and (3) fewer institutional veto points reduce opportunities for obstructionist minorities to block legislation. These mechanisms operate independently of whether governments are left or right ideologically, whether countries face strong fossil fuel industry opposition, and whether publics express high environmental concern.

The analysis has significant implications for understanding comparative climate policy and democratic governance more broadly. It suggests that institutional design may be as important as political will for explaining climate policy variation, and that presidential systems face structural disadvantages in addressing collective action problems requiring departure from status quo policies. These findings contribute to ongoing debates about institutional design, democratic performance, and climate governance challenges.

Several limitations warrant acknowledgment. The relatively small sample size limits statistical power for detecting smaller effects and testing complex interactions. The analysis focuses on carbon pricing specifically rather than comprehensive climate policy portfolios—presidential systems might perform better on alternative policy approaches. Future research should examine whether parliamentary advantages extend to other climate policies including renewable energy subsidies, efficiency standards, and adaptation measures.

Additionally, this research cannot definitively establish causal mechanisms—institutional effects might operate through unmeasured pathways or interact with factors not adequately controlled. Process tracing in case studies provides evidence for proposed mechanisms but cannot rule out all alternatives. Experimental or quasi-experimental research designs could provide stronger causal leverage though such designs are difficult to implement for questions of constitutional structure.

Despite these limitations, the analysis provides robust evidence that institutions matter profoundly for climate policy outcomes. As nations struggle to address climate change within democratic frameworks, understanding how institutional designs facilitate or hinder collective action becomes increasingly critical for both academic understanding and practical policymaking. The research suggests that effective climate governance may require not just political will and public mobilization but also institutional arrangements enabling decisive policy action despite opposition. Whether through constitutional reform, creative institutional adaptations, or acceptance that different democratic systems require different policy approaches, addressing climate change will demand serious engagement with questions of institutional design that comparative politics is uniquely positioned to illuminate.

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Word Count: 5,412 words