Carbon Copy: US Public Opinion on the Diffusion of Carbon Border Adjustment Mechanisms

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Abstract

In October 2023, the European Union officially implemented its Carbon Border Adjustment Mechanism (CBAM). This policy, which taxes carbon-intensive imports and aims to prevent carbon leakage, sets a precedent for other nations by incentivizing the global diffusion of similar carbon pricing schemes. Among the countries considering their own CBAM, the United States stands out. As both the world's largest economy and of the top carbon emitters, US action on climate change has implications throughout the world. However, the success of a US CBAM hinges on public support. This raises the question: how does the American public perceive CBAM policies, and under what conditions will they support them? Using data from two original surveys, this paper investigates perceptions of CBAM diffusion and support for a US policy among the American public. Our findings reveal broad support for a US CBAM and expectations of further global diffusion. When considering CBAM proposals, respondents demonstrate sensitivity to both economic and geopolitical considerations. We find, for example, that large predicted price increases decrease support while endorsements from international organizations increase support. Across party lines respondents are supportive of allocating CBAM revenues to developing countries and green initiatives. This contributes to the literature on the determinants of public support for climate policies.

1   Introduction

In October 2023, the European Union formally adopted its Carbon Border Adjustment Mechanism (CBAM), which levies import taxes on carbon-intensive goods to account for emissions produced during manufacturing. In its transitional phase until the policy's complete rollout in 2026, the CBAM serves as a complement to the EU Emissions Trading System (ETS), a cap-and-trade framework that promotes domestic industrial decarbonization. Together, the CBAM and ETS encourage companies both within and outside Europe to reduce reliance on carbon-intensive processes. While ETS aims to create financial incentives for greener domestic production methods, the CBAM subjects foreign manufacturers to similar taxes, disincentivizing "carbon leakage," whereby companies transfer production overseas to avoid emissions regulations, and exerting similar pressures on foreign importers to curb emissions. The combined mechanism seeks to drive global progress towards carbon neutrality across industrial supply chains connecting Europe internationally EP and Council (2023); Commission (2023b); Clausing and Wolfram (2023).

The CBAM will require companies importing from non-EU countries to purchase and surrender certificates for relevant imports, with obligations determined according to the EU ETS carbon price. Fees are intended to be equivalent under the CBAM and ETS. However, importers can deduct any carbon taxes already paid on the producing country of origin, providing an incentive for non-EU countries to adopt their own internal carbon pricing schemes to collect revenues that would otherwise be paid to EU states. Importers are responsible for collecting data on embedded emissions associated with the relevant production process from third-party manufacturers, including manufacturers of upstream precursor materials. As of now, the EU has defined a limited number of carbon-intensive products subject to the CBAM including cement, electricity, iron and steel, aluminum, hydrogen, and fertilizers. During the transitional phase, importers are required to report the quantity of CBAM goods imported each quarter, along with the total embedded emissions of their products, covering direct and

indirect CO2 emissions per ton of goods associated with the manufacturing process. Once the CBAM is fully implemented in 2026, countries will be required to obtain authorization to import CBAM goods EP and Council (2023); Commission (2023b).

Initial projections suggest that by 2028, the CBAM will generate approximately €1.5 billion in annual revenues Commission (2023a). This revenue is modest compared to the ETS, which generated €33 billion in revenues in 2022 alone Commission (2023a).This difference is by design, as the policy allows importing companies to deduct carbon emissions contributions paid in the country of origin. As such, the policy also incentivizes non-EU states to adopt their own carbon pricing schemes to capture CBAM tax revenues. Importantly, the design of the CBAM specifically encourages non-EU countries to set their carbon emissions fee schedules equivalent to or higher than EU ETS prices. That is, companies importing from countries that do not collect carbon emissions fees will be subject to the full ETS carbon price, whereas companies with products originating in countries that levy a lower carbon fee schedule than the ETS encounter ETS charges minus their origin price. Companies importing from countries with an equivalent or higher carbon price compared to the ETS are exempt from additional fees. In effect, if all states with importing firms carbon pricing schemes greater than or equal to ETS fee schedules, the CBAM instrument would raise no revenue for the EU.

The European Union is not alone in pursuing a Carbon Border Adjustment Mechanism policy. In December 2023, following the EU's lead, the United Kingdom announced plans to implement a CBAM fee starting in 2027 Treasury (2023). Other countries such as Australia and Canada have initiated official investigations into the possibility of adopting similar Carbon Border Adjustment Mechanisms Australian Government: Department of Climate Change, Energy, the Environment, and Water (2023); of Finance Canada (2023). Additionally, several countries are taking policy action to respond to the EU CBAM. For example, Türkiye announced a domestic carbon trading system last year that will go online in late 2024. This is largely a response to the EU CBAM Long et al. (2023); Türkiye (Türkiye); Directorate-General for Climate Action (2021). Many other countries, including the United

States, are also at various stages of exploring CBAM options.

Implementing a US Carbon Border Adjustment Mechanism would have significant global implications. As the world's largest economy, the United States is not only the second-highest annual carbon emitter but also responsible for the most cumulative CO_2 emissions in history Representative (Representative); Crippa et al. (2023); Callahan and Mankin (2022). Additionally, the US is a leading global trader, accounting for approximately $2 trillion in exports and $3 trillion in imports in 2023 alone Bureau (2024). A US CBAM would have far-reaching financial impacts on numerous countries, significantly decrease CO_2 emissions, and further encourage the diffusion of CBAM mechanisms throughout the world.

The passage of a US CBAM will depend on public support, and yet survey work regarding public opinions on a US CBAM are quite limited. Sagatelova et al. (2023) report broad support for a US CBAM, with 74%of respondents favoring its implementation, yet their study provides limited insight into the factors driving this support. In the European context, Bayer and Schaffer find that respondents generally favor a CBAM, with twice as many indicating support as opposition. Similarly, Kuehner et al. document substantial support for an EU CBAM, with 59% of respondents expressing approval. Despite these findings, the specific conditions under which a CBAM is supported in the United States, as well as the preferred attributes of such a policy, remain largely unexplored.

Our study aims to advance this literature by investigating public support for a US CBAM. We specifically focus on identifying the policy attributes and contextual factors that influence public support or opposition for a US CBAM. Additionally, we explore the incentives and pressures that are likely to affect global diffusion of CBAM policies and preferences over the strategic allocation of CBAM revenues. To achieve this, we draw on data from two original surveys conducted in 2024. Our findings reveal broad support for a US CBAM, with a majority of respondents favoring the policy and anticipating that the US adoption could spur global diffusion. As expected. fiscal aspects of the policy are salient to public opinion. Respondents are sensitive to potential cost increases associated with the policy but demonstrate support for policies that reinvest revenues into domestic and international

climate initiatives. Notably, support for allocating revenues abroad toward developing countries is positive across partisan lines. Finally, we find that policy attitudes are influenced by the international context, including endorsements from international organizations and the number of other countries that adopt similar policies.

2 Contemporary US CBAM Proposals

Legislators have actively discussed US CBAM policy proposals in recent years, with five related proposals introduced since 2021. Senator Christopher Coons proposed the first CBAM proposal in 2021 with the FAIR Transition and Competition Act Congress.gov (2021). This bill advocates for a CBAM on high-pollution imports without imposing a domestic carbon tax. Three more CBAM proposals were introduced to the legislature in 2023. The Clean Competition and Foreign Pollution Acts propose a carbon tax on imported goods that exceed a certain level of emission. The Clean Competition Act sets an industry-specific emissions baseline while the Foreign Pollution Fee Act proposes a border tax on products that are 50% or more more polluting than the equivalent US-produced goods Whitehouse (2024); Congress.gov (2023). Both acts include exemptions for "climate clubs" similar to the exemptions allowed in the EU CBAM, and the Clean Competition Act allows exemptions for "relatively least developed" countries Whitehouse (2024). The most recently introduced bill, The Market Share Act, is similar to the other two but has a heavier focus on fossil fuels ?.

In addition to these CBAM proposals, in January 2024 the Prove It Act was voted out of committee. This bipartisan bill would "require the Secretary of Energy to conduct a study and submit a report on the greenhouse gas emissions intensity of certain products produced in the United States and in certain foreign countries" Senate (2024). While not a carbon border adjustment mechanism itself, this bill lays the foundation for future CBAM policies as all future carbon border adjustment mechanisms will require the tracking and reporting capacity this bill seeks to develop.

3   Public Opinion and Climate Policy

The American public will play an important role in the passage of a US CBAM. Successful legislation is contingent on support from elected members of Congress who will consider impacts on their constituents, particularly because climate policies often generate sizeable costs and benefits that are likely to impact several constituencies. Existing evidence shows that policymakers exhibit responsiveness to public opinion on climate policy (Bromley-Trujillo and Poe, 2020; Schaffer et al., 2022). Furthermore, interest groups invest substantial resources distorting elite perceptions of public opinion (Hertel-Fernandez et al., 2019), a task that would only matter if public opinion was seen as relevant.

One of the most important consequences consumers will face from a US CBAM is price increases on consumer goods. As with any tariff, the cost of covered goods will inevitably rise in response to a carbon border adjustment mechanism. A CBAM will inherit challenges of any cost based approach to climate policy (Gazmararian et al., 2023; Ansolabehere and Konisky, 2016).[1]

The anticipated cost of a CBAM is particularly relevant to its potential policy success as cost of living increases have become one of the most salient political issues for American voters Gallup (2024). It is unlikely any CBAM proposal will gain traction if voters perceive the policy to be too costly. Evidence from Europe seems to support this. Bayer and Schaffer (2024a) find that respondents who learn more about the increased costs of imported goods

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[1]It is difficult to find precise estimates of the predicted price increases due to a CBAM. However, we can look to the EU CBAM for an example. In 2023 the US imported 27 million metric tons of cement, 28 million metric tons of steel products, 6.5 million metric tons of aluminum, and 4.5 million metric tons of fertilizer (nitrogen and phosphate) Hatfield and Survey (2024); Economic Indicators Division and Office (2024); Merrill and Survey (2023); Apodaca and Survey (2023); Jasinski and Survey (2023). If the US implemented an EU-style CBAM all of these products would be covered. Even with a lower carbon price such as $25 per ton of carbon, this represents a meaningful cost that will be passed onto consumers.

due to CBAM are significantly less likely to support the policy. That being said, they also find that "learning about positive labor market effects somewhat offsets the negative effects of policy costs from price increases alone." (Bayer and Schaffer, 2024a, pg. 4)This begs the question, what costs are consumers willing to bear for a carbon border adjustment mechanism and how does that interact with other policy dimensions and context?

Price increases are not the only policy attribute the public must evaluate when considering a CBAM. We observe intense political rhetoric and framing regarding the geopolitics of carbon border adjustment mechanisms in the US. The most often cited consideration is concern over the competitiveness of US production, often in comparison with China. In a press release for the Foreign Pollution Act, Senator Cassidy stated "It makes absolutely no sense that we allow China to pollute freely and export their products to the US displacing U.S jobs, manufacturing, and excellence... The Foreign Pollution Fee begins to hold China accountable for their lack of environmental standards...We are leveling the playing field" Cassidy and Graham (2023). His cosponsor, Senator Graham also stated that "It is long past time that the polluters of the world, like China and others, pay a price for their environmental policies" Cassidy and Graham (2023). These sentiments are shared by Senator Whitehouse, who introduced the Clean Competition Act and stated it would give "a competitive advantage to American companies doing their part to address climate change" Whitehouse (2022).

Concerns over fair international competition are often also tied to concerns over domestic job loss. Congresswoman DelBene, a co-sponsor of the Clean Competition Act, highlighted in her statement on the bill that "For too long, American industries producing goods in a less carbon-intensive way have been undercut by foreign competitors with dirtier production processes. Washington saw this firsthand with the closure of the Intalco aluminum smelter due to China's overproduction, which resulted in the loss of over 700 good-paying union jobs." Whitehouse and DelBene (2023). Senator Graham echoed this sentiment in his statement on the Foreign Pollution Act saying, "In the last 20 years, the US has lost roughly five million jobs, and half of those losses are a result of our trade deficit with China. Meanwhile, the US

has eliminated more emissions than any other country and our economy is 44% more carbon efficient than the world average". Much of the reasoning for a CBAM in the United States is motivated by this concern over Chinese competition and its impact not only on producing companies but also on American job loss.

Outside of highlighting the impact of a US CBAM on American businesses and consumers, politicians also highlight the potential for a CBAM to impact international cooperation, US climate change leadership, and relations between the US and its allies. One of the main points of the FAIR Transition and Competition Act is "supporting international climate cooperation" Coons and Peters (2021). Many politicians also present the opportunity for American leadership on climate change as a major benefit of the policy. The press release for the Clean Competition Act highlights that "A carbon border adjustment mechanism would bring substantial... national security and geopolitical benefits to the US and its economy, while cementing America's global leadership in clean industry and environmental steward-ship" Whitehouse and DelBene (2023). On the national security and geopolitics front, the statement also highlights that "With China's Belt and Road Initiative floundering, we can supplant the financing of carbon-intensive manufacturing and fossil fuel projects around the world. By offering an alternative path for Least Developed Countries, climate-forward trade bills like the Clean Competition Act are important opportunities to assert American global leadership Whitehouse and DelBene (2023). Politicians highlight that not only does a CBAM present an opportunity to "level the playing field", but it allows the US to cooperate with its allies and assert itself as a leader in fighting climate change. These are important and influential considerations for American voters, but we have little idea how this impacts their support for a CBAM.

While experts and politicians advocate for a carbon border adjustment mechanism in the United States, any potential policy relevance is contingent upon, amongst other things, public support. Thus, understanding if, when, and why different segments of the electorate support or reject a CBAM provides critical insight into the future of climate change policy in the US. Moreover, examining voter preferences on a CBAM offers broader insights into

public attitudes toward climate policy as a whole. In this paper, we explore how citizens balance short-term economic challenges against the long-term benefits of carbon reduction, the influence of international dynamics on voter preferences, and the interplay between geopolitical concerns and personal economic interests in shaping support for climate change and environmental policies.

3.1   Previous Public Opinion Work on CBAM

Existing survey work on CBAM is limited. Most studies have focused on evaluating stakeholder preferences in the EU and the UK, offering insights specific to contexts where the policy was already in the process of being passed or implemented. Kuehner et al. conducted a survey of 81 German respondents from industry, civil society, and academia. Their findings indicate majority support (59%) for the CBAM, with nuanced preferences regarding implementation. Civil society representatives and researchers predominantly favored exemptions for least developed and low-income countries. When considering revenue allocation, industry representatives showed the strongest support for reinvesting in EU green technologies. About a third of civil society respondents and researchers supported funds directed to transferring green technologies to low-income countries. Support for recycling revenues into the general EU budget or compensating EU citizens most affected by climate policies was low across all respondents.

Buylova et al. also surveyed members of industry and civil society organizations confirming general support for CBAM while highlighting divergent priorities. Civil society organizations were more likely to cite the need for protecting low-income countries while industry groups were focused on protecting the competitiveness of EU industries. Bayer and Schaffer evaluated public attitudes in a large sample spanning Germany, Hungary, Switzerland and the United Kingdom, investigating how information framing impacts CBAM support. While the majority favored implementation, information about increased costs for imported goods decreased support across all countries. This negative effect was partially mitigated by highlighting potential positive impacts on domestic labor markets. Interestingly, framing

the policy as either promoting climate action or impeding global trade had limited influence on respondents' opinions.

A survey conducted by the US-based think tank Third Way surveyed registered voters in the US, with a focus on four republican-leaning states: Indiana, South Carolina, Louisiana, and Utah. They find broad support (74%) for the implementation of a CBAM in the US, with partisan affiliation driving variation in support. Nonetheless, over 80% of all respondents found two justifications for the CBAM compelling: supporting domestic manufacturers producing low-carbon goods and holding disproportionately large polluters like China and Russia accountable were convincing reasons to support the CBAM. These findings offer potential insights for framing and communication strategies that may help increase support for a CBAM in the US (Sagatelova et al., 2023).

Our study builds on these findings to investigate how policy design and global peer effects impact public attitudes about CBAM in the US.

4 Policy Diffusion and Institutional Design Features

Understanding interstate diffusion of national policies and the role of policy design in this process is necessary to analyze the conditions under which the US may adopt its own CBAM. In this section, we apply existing policy diffusion frameworks to CBAMs and discuss a number of salient policy features, including institutional design and international influence, which are likely to impact US public attitudes toward a CBAM.

4.1 Diffusion

Policy diffusion, or the process by which policies spread across various jurisdictions, has been studied across a wide range of policy contexts. Early studies analyzed the dissemination of policies across local and intrastate boundaries. Scholars have since applied these same insights internationally to understand how policies migrate across national borders. We draw from the Marsh and Sharman (2009) framework in differentiating policy diffusion, or

the indirect proliferation of policies, from policy transfer, the active and deliberate exchange of policy knowledge and practices between entities. The breadth of international policy diffusion spans several domains, including democratization, trade policy, labor rights, and, most relevant to the current discussion, environmental regulation.

Several mechanisms have been proposed to explain how policy diffusion occurs (for an extensive review vis a vis CBAM, see Ingles et al. (2024)). Simmons et al. (2006) analysis of the proliferation of economic liberalism during the late 20th century identifies four primary channels through which policies may become adopted across international contexts: coercion, competition, learning, and emulation. Coercion and competition focus on relations between actors to explain whether and when policy diffusion occurs. Coercion underscores the impact of power differentials, suggesting that weaker actors may adopt policies under pressure from more dominant entities. Competition assumes instead that actors willingly adopt policies to gain an equal or greater advantage vis-a-vis their rivals. Learning posits that actors independently assess the perceived successes and failures from peers before deciding whether to adopt the same policies on their own. Nicholson-Crotty and Carley 2016 extend this further by arguing that states evaluate their ability to implement policy innovations before deciding whether to adopt, incorporating state capacity as a necessary condition for policy diffusion to occur. As such, states may not only look to the success of external policy outcomes, but also whether the institutional conditions of the external state are similar enough to their own to suggest that the adopting state can reproduce the policy implementation. Finally, emulation describes the process by which identity and norms influence actors' decisions to enact policies in alignment with those they perceive as peers, driven by a desire for conformity or legitimacy

These mechanisms map well onto extant studies of environmental policy diffusion. For example, Vogel (2009) early analysis of the gradual intensification of environmental regulations, both within US states and globally, identifies mechanisms that can be classified as competition and coercion to explain what he terms the "California effect." By enhancing environmental standards, domestic firms may gain a competitive advantage, especially if

they adapt more effectively than their foreign counterparts. Moreover, powerful governments can extend their regulations to weaker states reliant on their markets. This dynamic was observed in the context of strengthening vehicle emissions standards, which originated in California and subsequently became adopted across the US and in many other developed countries. Saikawa 2013 builds on this analysis with the inclusion of developing countries and finds evidence suggesting that competitive market forces indeed drive regulatory diffusion. Ovodenko and Keohane 2012 observe the diffusion of international environmental institutions such as emissions trading schemes, focusing primarily on the mechanism of learning. They argue that states are inclined to adopt external policies particularly when the nature of the problem that the originator and adopter faces is similar between contexts, and when the earlier institutional innovation has demonstrated effectiveness.

We anticipate that the diffusion of a carbon border adjustment mechanism to the US will be driven by coercion, competition, and learning. Coercion will compel US firms to develop carbon emissions measurement systems to avoid restricted access to EU markets. Simultaneously, the EU's carbon fee will incentivize US firms to reduce their emissions and encourage the US government to implement its own CBAM, ensuring competitiveness in the EU market and retaining tax revenue domestically rather than sending it abroad. Additionally, the US is likely to assess and learn from the EU's experience with CBAM to inform its own policy decisions.

Understanding the potential for CBAM diffusion is important because it is an inherent dimension of most CBAM policies. The design of the EU CBAM encourages other countries to establish carbon emissions fees that are equivalent to or higher than EU ETS prices, thereby avoiding the need to pay taxes to the EU. EU statements articulate that promoting the diffusion of carbon border adjustment mechanisms is a central goal of the CBAM EP and Council (2023); European Commission (2023). Similar mechanisms are included in the Clean Competition and Foreign Pollution Fee Acts Whitehouse (2024); Congress.gov (2023). These policies are, in effect, designed to generate no revenue if the goal of global diffusion is fully realized.

Importantly, the perceived diffusion of carbon border adjustment mechanisms can influence public support for such policies. Public perceptions of CBAM diffusion can affect how individuals assess the broader international context. For instance, if key trading partners like the EU or China adopt CBAMs, it could shift public support in favor of a US CBAM due to the desire to remain competitive.[2] In the case of China, support may be spurred because implementing a US CBAM could be seen as a retaliatory action. In addition, individuals may be motivated to support a CBAM out of a desire for the US to be perceived as a leader on climate change issues or to conform to changing norms. This relationship can work in both directions. The perception of diffusion may lead to more support for a CBAM, and other countries are more likely to adopt a CBAM if public support leads to a US CBAM. However, these dynamics are dependent on public perceptions of CBAM diffusion.

4.2 Policy Design Preferences and International Context

Expectations of policy diffusion are likely to be conditional on both the specific design features of CBAM policies and observed responses of global actors to the EU's CBAM implementation.

As motivated above, the expected impact of a CBAM on carbon-intensive goods is likely to play a key role in shaping public opinion and support for the policy among US citizens. The estimated increase in consumer prices due to a CBAM implementation faces a design trade-off. On one hand, price increases support the policy's purpose of internalizing the environmental costs of carbon-intensive production and incentivizing more sustainable consumption patterns. However, these increases are also expected to face resistance from consumers who are sensitive to price increases, especially for essential goods. Prior studies

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[2]Similar effects have been documented by scholars studying the role of reciprocity in climate effort (e.g., Tingley and Tomz, 2014). Here of course the underlying incentive problem differs from a public good problem as there are strong incentives to adopt a CBAM if others are adopting one rather than free-rider incentives.

have shown that sensitivity to price increases can influence their public support for climate policies (Gazmararian et al., 2023; Ansolabehere and Konisky, 2016; Bayer and Schaffer, 2024a).

That said, opposition to cost increases from climate policies can be mitigated if citizens believe the revenue generated will be directed toward initiatives they support. Beiser-McGrath and Bernauer show that revenue recycling, or the redistribution of funds back to citizens through mechanisms such as cash transfers, rebates, or subsidies, can bolster public support for carbon taxes. Similarly, Carattini et al. confirm the positive impact of citizen-directed redistribution on carbon tax support and additionally highlight substantial public backing for policies that allocate revenues to global and domestic climate mitigation efforts. Gaikwad et al. also find evidence of public support for climate finance projects that incentivize partnership models between US firms and firms in developing countries. In fact, revenue allocation emerged as a key debate during the development of the EU's CBAM policy, and is likely to continue to moderate public opinion over policy proposals in other countries (Ingles et al., 2024).

Beyond policy design characteristics, features of the broader international landscape will shape the likelihood and extent of CBAM policy diffusion across nations. The previous section summarized features of interstate relations that can impact the incentives for state governments to adopt policies from their peer governments. Such peer effects may also extend to impact public opinion on policy adoption as well. For example, Beiser-McGrath and Bernauer find that public support for carbon taxes is conditional on the participation of other countries, both in terms of whether specific countries participate and how many do so. Moreover, citizens often express particular concern over whether countries perceived as the strongest polluters are doing their fair share by exerting comparable efforts in passing climate mitigation policies.

Responses to policy adoption by international organizations may also impact public opinion for CBAM policies. Indeed, multiple countries have already submitted formal objections to the World Trade Organization (WTO) in response to the EU's CBAM, charging that the

policy infringes on free trade regulations by favoring nations with the institutional capacity and financial resources to adapt to the policy. The debate over CBAM's compatibility with WTO regulations underscores the broader importance of IO support or opposition in shaping both the legal viability and public support of climate mitigation strategies. Prior research has shown that endorsements, rulings, or legislation passed by international organization can shape public opinion on government performance and policy across multiple domains including economic (Matsumura, 2019), security (Grieco et al., 2011; Wallace, 2019), and climate policy (Greenhill, 2020).

5   New Public Opinion Evidence

In March and August 2024, we conducted two nationally-representative surveys in the US, each sampling approximately 1,500 respondents.[3] Both surveys began with an introduction to Carbon Border Adjustment Mechanisms, tailored for a general audience. To ensure participants had a basic understanding of the concept, we included a series of comprehension checks before proceeding to the main survey questions. The core of each survey focused on exploring respondents' preferences and attitudes toward the potential implementation of a CBAM in the US as well as expectations about the effect of countries adopting border adjustment mechanisms.

The two surveys share a similar purpose in exploring diffusion and support for a CBAM, but differ in significant ways. The March 2024 survey focused on identifying general public support for a United States CBAM and exploring respondents' preferences for the use of CBAM revenues. Respondents were asked a battery of questions concerning their support for a CBAM and perceptions of its diffusion. This was followed by an experiment exploring respondents' preferences for the use of CBAM revenues. The August 2024 survey focused on evaluating comparative CBAM policy characteristics to investigate what features increase

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[3]Surveys fielded with Qualtrics with nationally representative quotas for age, education, income, and region.

support. Respondents were presented with a conjoint experiment that manipulated CBAM policy proposals. This was followed by a variety of CBAM related questions further exploring policy support, policy diffusion, and policy justification. [4]

5.1 Results

We first examine baseline support for a CBAM in the United States. We detail the overall level of support and the underlying reasons for this support. We then explore perceptions of CBAM diffusion by presenting both descriptive and experimental findings regarding expectations of CBAM adoption by other regions. Next, we discuss an experiment assessing preferences for the allocation of revenues generated by a CBAM. Finally, we analyze a conjoint experiment that asks how various policy attributes and geopolitical considerations influence support for a CBAM. We aim to investigate general levels of support for a CBAM, American perceptions of diffusion and revenue use, and policy characteristics that lead to increased support.

5.1.1 Support baselines

A majority of respondents in our March 2024 survey (63.1%) favored the US adopting a carbon border adjustment. Support was highest among respondents identifying as Democrats (76.4%), followed by respondents who did not identify with either party (57.4%) and respondents identifying as Republicans (50.7%).

Rationales for supporting or opposing CBAM were roughly consistent across party affiliations. Promoting global environmental sustainability was the most popular justification among supporters, followed by safeguarding US economic interests among Democrats and Republicans. The third most popular reason for support among Democrats was the potential to generate funds to support climate efforts in developing countries. Conversely, Republicans valued the benefit of additional tax revenue raised for US government programs. Among re-

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[4]The full survey texts can be found in Appendix A and Appendix B

spondents who thought the US should not adopt CBAM, respondents most commonly cited increasing costs to consumers as the top reasons for their opposition, followed by the belief that the US already imposes taxes on too many products. Approximately one-fifth (19.6%) of Republican opponents reported that there is insufficient evidence to justify climate change as a basis for trade policies.

5.1.2 Policy Diffusion

We explore respondent's perceptions of diffusion in both surveys. In the first survey, we examined expectations around the diffusion of CBAM policies to other regions. Respondents were randomly assigned to consider whether countries in Asia, Africa, or "other countries" were likely to implement their own CBAM. Figure 1 presents the results, again broken out by the respondent's party affiliation. Overall, respondents who identified as Democrats were more inclined to expect broader adoption of CBAM by various countries, regardless of whether they were asked about a specific continent. Republicans and respondents with neither affiliation tended to predict that Asian countries or other countries, generally, were likely to establish their own CBAM. A greater number of Republicans and respondents with neither affiliation reported that countries in Africa were unlikely to adopt similar policies.

In the second survey we simply asked respondents how much they agree or disagree with the statement "If the US adopts a CBAM, it will motivate other countries to adopt their own CBAM." Figure 2 demonstrates that we find generally similar results across the two surveys. Somewhat agree is the mode for Democrats and Republicans while neither agree or disagree is most common for respondents with neither affiliation. As before, respondents who identified as Democrats were more inclined to expect broader adoption of CBAM. While these questions do not allow us to investigate why respondents belief diffusion is or is not likely or explore perceptions of different regional adoption, it provides a starting baseline for future investigation.
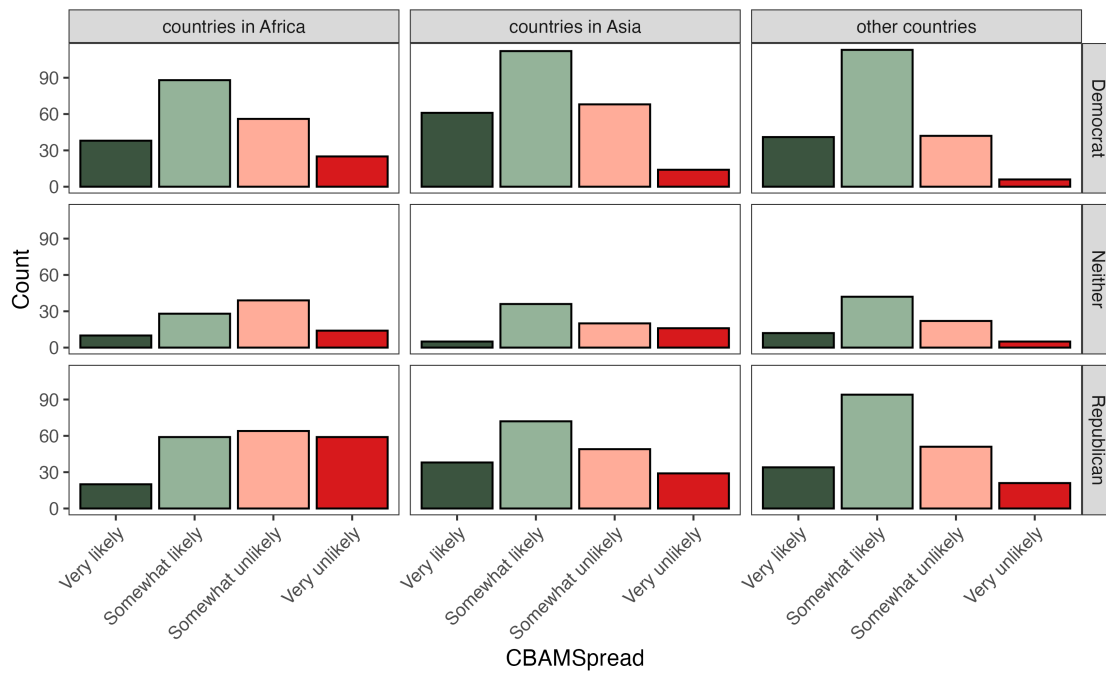
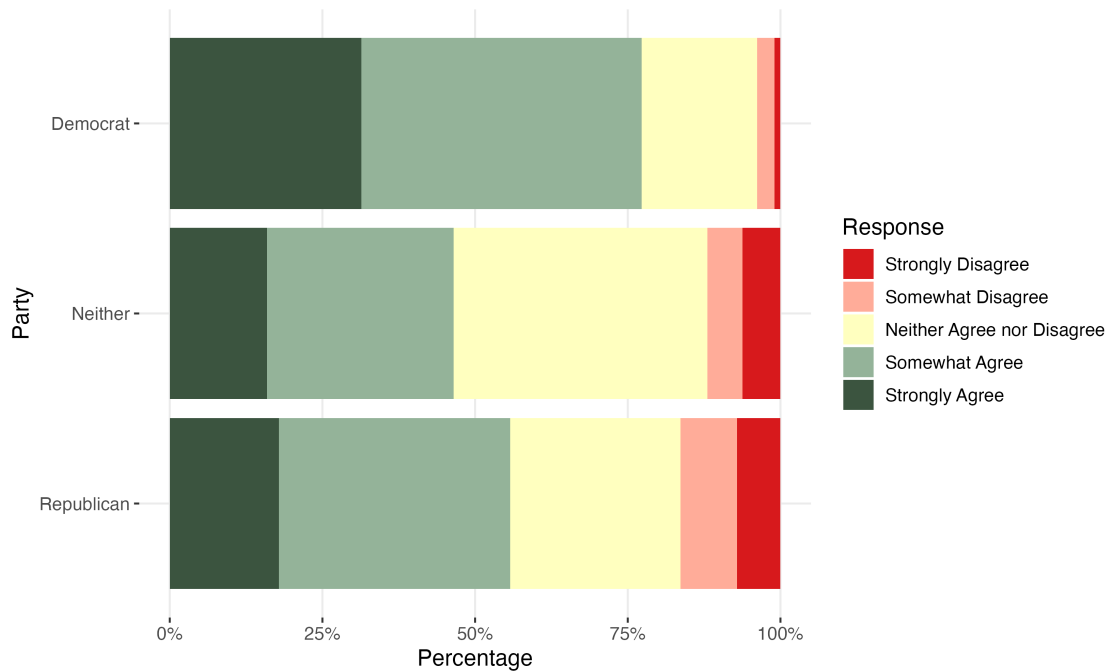Figure 1: Likelihood of . . . establishing their own CBAM

Figure 2: A US CBAM will motivate other countries to adopt their own CBAM

5.1.3   Revenue Usage

In the first survey, we explored how individuals would use funds raised by a CBAM by asking respondents to allocate revenues across four categories with two experimental treatments. The first treatment randomized whether the question asked about how the EU should spend revenues from an EU CBAM or how the US should spend revenues from a US CBAM. This treatment aims to evaluate whether our US-based respondents exhibited a "local bias" consistent with previous climate finance work Gaikwad et al. (2023b). The second treatment included a prime informing respondents that developing countries may be particularly disadvantaged by a CBAM policy. This treatment aims to evaluate if support for sending funds to developing countries could be increased with a relatively small amount of information.

The first two categories directed funds to help poorer developing countries implement their own carbon pricing systems or invest in green technologies, respectively. The latter two categories allotted EU (US) funding to help EU (US) companies develop green technologies or to general EU (US) government initiatives. We plot the results in Figure 3.

Respondents were categorized based on their assignment across both experiments, resulting in four subgroups. We further differentiate results by the individual's partisan orientation. First, we observe that on average there is support for all of the different funding categories. By and large, the median levels are similar across the different categories. Reinvesting funds into domestic green technology was the top category that respondents allocated funds to, regardless of party identification. Although this provides some evidence to support prior work highlighting domestic revenue recycling as a determinant of climate policy support, we find that respondents allocated as much or more revenue toward initiatives in developing countries compared with returning the revenues to general domestic government initiatives. We also observe a small depressing effect of the informational prime on keeping resources within the implementing country, which tended to be offset by greater support for technology transfers to developing countries.
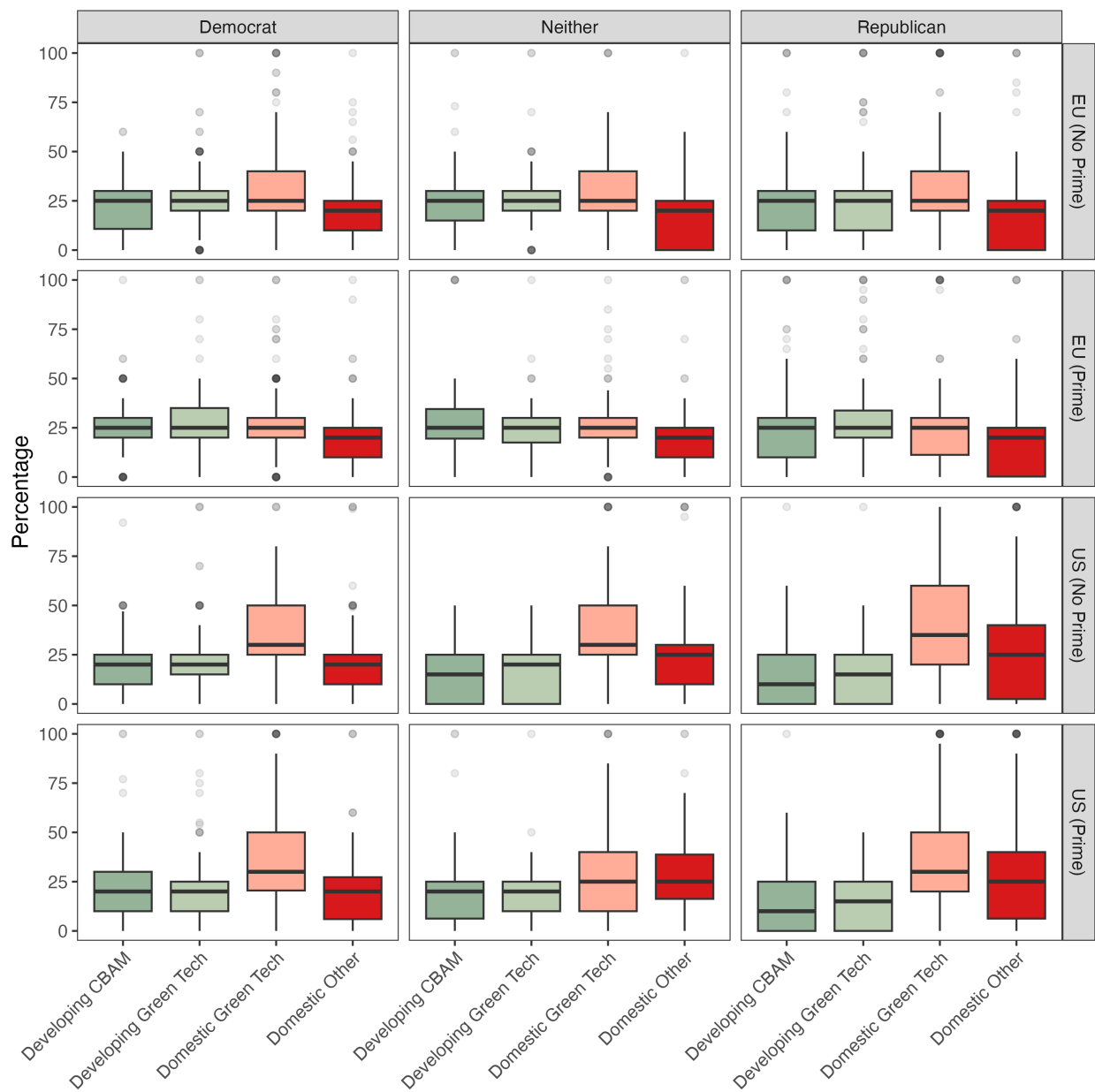
Figure 3: Preferred allocation of CBAM funds by party affiliation

5.1.4 Multidimensional Institutional Design

Our second survey sought to evaluate comparative policy characteristics to evaluate which features increase support for a US CBAM. After an extensive introduction to the CBAM (see Appendix B), respondents were presented with a single-profile conjoint experiment wherein respondents were presented with a policy profile that could vary across six attributes. Each respondent was presented a total of five policy profiles and asked to rate their level of support for the CBAM policy on a scale of 1-10. The levels for each policy attribute are presented in Table 1. Respondents also answered four comprehension questions prior to viewing the conjoint profiles. [5] [6]

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[5]Comprehension rates were lower in the second survey compared to the first. When asked the same question—'How can companies avoid paying the EU carbon border fee?'—only 59% of respondents answered correctly in the second survey, compared to 89% in the first survey. When asked —'What does a carbon border adjustment mechanism (CBAM) impose fees on?'— only 38% answered correctly. Respondents fared slightly better with the question -What does the World Trade Organization (WTO) do?- with 63% answering correctly. Comprehension was best for the question -'One proposed way to use the funds from a Carbon Border Adjustment Mechanism is to help poorer developing countries implement their own carbon pricing system'- with 90% of respondents answering correctly. However, it should be noted that this is a true/false question.

[6]After evaluating five policy profiles, respondents ranked the policy attributes based on their importance in influencing support or opposition to the policy. Following this, we asked respondents to report on their familiarity with carbon border adjustment mechanisms. Respondents were asked -'Prior to this survey, how familiar were you with the Carbon Border Adjustment Mechanism policy?'. On average, respondents report low familiarity with CBAM. 52% of respondents reported that they were 'Not at all familiar' with CBAM prior to the survey, and only 26% reported that they were somewhat or very familiar with CBAM. If anything we expect that self-reported familiarity is biased upwards. We also included a series of questions probing expectations about the policy's impact on domestic

Table 1: Conjoint Attributes and Possible Levels

Attribute	Possible Levels
Trading Partners	10, 25, or 50 Countries
Important Country	China, Japan, or India
WTO Position	Approves, Disapproves, or Undecided
Retained Money	USD $1 Billion, $4 Billion, or $7 Billion
Cost Increase	0.6%, 1.2%, or 1.8%
Fund Recipient	Poorer developing countries to implement their own carbon pricing systems, US companies to reduce carbon emissions General US government initiatives, or US companies' green investments in developing countries

The average rating for CBAM proposals is relatively high but exhibits substantial variation by party. The mean rating across all proposal profiles and respondents is 6.3. On a scale of definitely oppose (1) to definitely support (10). On average respondents are more supportive than opposed to a CBAM regardless of the policy attributes. Respondents who identify as Democrats had a mean proposal rating of 7. Republican respondents indicate the least support with an average rating of 5.6. Respondents who identify with neither party fall in the middle with an average rating of 5.9. This aligns with prior research that finds respondents are relatively supportive of CBAM.

In our main analysis we find significant results for all conjoint attributes except one.[7]

activities and developing countries, and how other countries might react to a US CBAM enactment. Finally, we asked questions to identify information sources respondents prefer for making decisions regarding the CBAM and other climate policies. We present these results in Appendix C.

[7]To analyze the conjoint data, we utilized average marginal component effects (AMCEs) estimated through ordinary least squares (OLS) regression, with standard errors clustered by respondent ID to account for intra-respondent correlation.
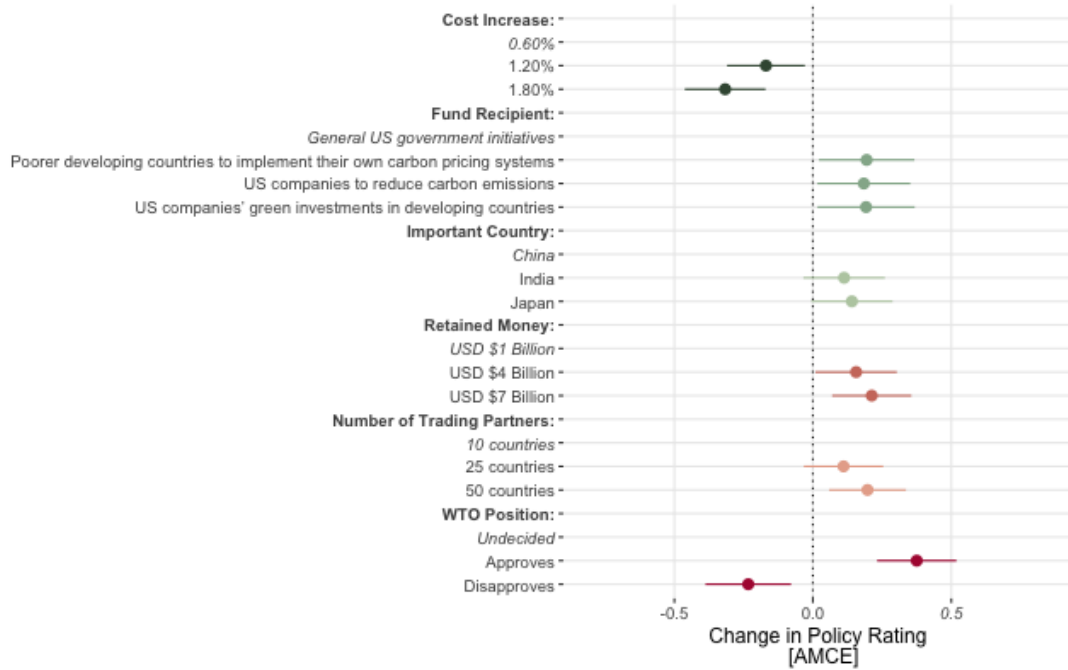
Figure 4: Conjoint Experiment Results

The largest reduction in average respondent rating across the experiment occurs for the price increase attribute. As the anticipated cost of the CBAM rises, there is a significant decrease in support for the policy proposal. In the case of a predicted 1.80% price increase, average proposal ratings drop by 0.3 points. This is a meaningful shift on a ten-point scale considering the difference between Republicans and Democrats is only 1.4. These results are consistent with existing public opinion data which highlight the role of cost in CBAM policy consideration. It also reflects the broader literature demonstrating that public sensitivity to price increases can significantly influence attitudes toward climate policy (Gazmararian et al., 2023; Ansolabehere and Konisky, 2016; Bayer and Schaffer, 2024a).

Closely related, an increase in retained money leads to increased policy support. When compared to the baseline of $1 billion, retention of $4 billion and $7 billion leads to a rating increase of 0.15 and 0.21. This complements the price increase results. It further demonstrates that economic considerations are very salient for individuals as they asses a US CBAM. Not only are respondents concerned about the personal economic effects of a CBAM, but they also show worry over the broader economic implications of a CBAM.

Respondents are significantly more supportive of a CBAM designed to support a green program compared to spending the money on a general US government initiative. Interestingly, the three treatments that suggest using CBAM funds for green issues have essentially the same treatment contrast compared to sending the funds back to the US government for general usage. We expected that respondents would be more supportive of domestic revenue recycling, but this was not observed. Suggestions to spend the revenue to help poorer developing countries implement their own CBAM or providing it to US companies for green investment in developing countries shifted average ratings positively by 0.19 while spending the revenue to help US companies reduce carbon emissions shifted ratings positively by 0.18. This potentially suggests a smaller degree of "local bias" in climate finance than found by previous climate finance work but is consistent with results that support providing US firms resources to make green investments in developing countries Gaikwad et al. (2023b); Ingles et al. (2024).

Shifting our focus to the geopolitical context surrounding CBAM, we find significant results for WTO position on CBAM and number of trading partners that would have already adopted a CBAM. WTO approval or disapproval of a CBAM moved respondents in both directions relative to an undecided WTO ruling. WTO approval increased average ratings by 0.38 points, the largest average effect across all policy attribute levels. WTO disapproval had a smaller but still significant impact decreasing support by an average of 0.23 points. This may support prior research indicating that endorsements from international organizations lend legitimacy to policy proposals in contention, especially those which require overcoming global collective action problems.

The adoption of a CBAM by other key countries had a positive effect but had confidence intervals slightly overlapping with 0. This is consistent with the ideas that respondents might be more likely to support a U.S. CBAM if countries like China had already adopted their own, potentially as a retaliatory measure. Additionally, support may be driven by competitive pressure for the U.S. to demonstrate leadership on climate change. Future work will explore whether there is any treatment effect heterogeneity that this average result is

masking.

Turning to the more general condition of the extent of adoption by trading partners, we observe the clearest effect at the largest level of fifty trading partners with a significant shift of .2 points.[8] This is supportive of a diffusion argument. However, our survey instrument here cannot unpack the extent to which this is driven by different diffusion mechanisms such as normal alignment/emulation.

6   Conclusion

The emergence of carbon border adjustment mechanisms marks a significant step in aligning international trade with environmental policy. The potential adoption of a CBAM by the US is particularly salient given its global economic influence and its status as a leading carbon emitter. In this paper, we examined how aspects of CBAM policy design and geopolitical context impact US public opinion toward the policy. Our findings reveal that although there is broad support generally for the US adoption of a CBAM, the design of a CBAM –ranging from the most salient fiscal policy features to how funds are used– are likely to shape public attitudes. These insights may help US legislators design a CBAM policy that maximizes public support and facilitates its passage. Furthermore, our findings indicate that endorsement by the WTO and adoption by numerous peer countries boost support for the policy among US respondents, suggesting international conditions that could increase the likelihood of US adoption of a CBAM.

Although public support is a crucial determinant of US policy adoption, the influence of other domestic stakeholders, including industry and government actors, will also play a significant role. As such, we plan to expand upon this public opinion work by engaging

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[8]In a follow-up question, respondents were asked whether the adoption of a US CBAM would motivate other countries to implement their own. The majority of respondents across party affiliation agreed. This suggests that respondents also view the US as influential in the diffusion of CBAM. C.2

with private and public actors to understand competing interests that may affect legislative outcomes. Furthermore, given that CBAM policies may disproportionately harm economies in developing countries, evaluating how international support can help developing countries adapt to a more environmentally sustainable economy will be crucial.

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Appendix

A March 2024 Survey Instrument

Preamble

The European Union (EU) is a group of European countries that work together to make laws and trade with each other.

The EU has a new policy called a Carbon Border Adjustment Mechanism. This policy affects companies in countries outside the EU that want to sell their products inside the EU.

When a company makes a product, it requires energy which often creates carbon emissions that warm the planet. Since 2005, companies that make products in the EU have had to pay a fee to the EU when they create emissions. Until now, companies making products outside the EU did not have to pay that carbon fee.

The Carbon Border Adjustment Mechanism tries to level the playing field by charging a similar fee on products imported into the EU from non-EU countries. Products made outside of the EU and exported into the EU will now be charged a fee based on the carbon emissions of the product. This fee is paid once products cross the border into the EU. That's why it's called a carbon border adjustment.

This carbon fee can be avoided if the product is made in a country that has its own carbon fee. If the carbon fee is lower than the EU's, the charge would be the difference between the two. If the fee is higher than the EU's, there would be no fees paid to the EU.

The policy means that if countries outside the EU do not adopt their own carbon fee system, their exports will cost more. This means businesses outside the EU may be less

competitive in the EU market.

The next questions are about this Carbon Border Adjustment policy.

Survey

1. How can companies avoid paying the EU carbon border fee?

   - The country where the exporting company is located can apply for an exemption.

   - The country where the exporting company is located can sign a treaty with the EU.

   - The country where the exporting company is located can charge its own carbon fee equivalent to the EU amount,

   - The country where the exporting company is located can provide "green aid" to poorer developing countries.

   The following questions will ask about your opinion about carbon border adjustment policies.

2. Given that the European Union adopted a fee on internal carbon emissions and a fee on products imported from countries without a carbon fee, should the United States adopt a similar carbon border adjustment policy?

   If the US adopts the EU policy, it will mean that:

   - US Manufacturers will pay carbon emissions fees to the US government based on how much carbon dioxide is released during the manufacturing of many products

   - When US companies export many products to the European Union, carbon emission fees will not be paid to the European Union.

   - When foreign countries that do not themselves charge for carbon emissions import many products into the United States, fees will be charged on these products based on the amount of carbon released during manufacturing.

2

- Goods that are charged carbon emissions fees may become more expensive to consumers.

- The US should adopt a carbon border adjustment.

- The US should NOT adopt a carbon border adjustment.

- The US should adopt a carbon border adjustment.

- The US should NOT adopt a carbon border adjustment.

3A In your opinion, which of the following best describes why the US should adopt a carbon border adjustment?

- The policy would promote global environmental sustainability by encouraging cleaner production.

- The policy would safeguard US economic interests and ensure fair trade practices.

- The policy would generate additional tax revenue for US government programs.

- The policy would generate funds for assisting developing countries in combating climate change.

- The policy would enhance US leadership in global climate change efforts.

3B In your opinion, which of the following best describes why the US should not adopt a carbon border adjustment?

- The policy would increase costs for consumers due to higher prices on imported goods.

- The US already levies taxes on too many products.

- The policy would negatively impact developing countries' economies and trade.

- Environmental regulation should not interfere with free market dynamics and international trade.

- There is insufficient evidence to justify climate change as a basis for trade policies.

4 How likely do you believe it is that [other countries/countries in Asia/countries in Africa] will establish their own carbon pricing and carbon border adjustment policies?

- Very likely
- Somewhat likely
- Neutral/unsure
- Somewhat unlikely
- Very unlikely

5 Products imported from countries without carbon fees will lead to charges being paid to the country that has the carbon border adjustment policy. There are debates about what countries should do with the money. [Some argue that developing countries will be the hardest hit by these policies and are the least able to adapt. / no text]

Where should funds raised by the [European Union / United States] from a carbon border adjustment policy be spent? Please allocate percentages to each option so that the total sums to 100%. Enter positive integers only.

[Require positive integers that sum to 100]

- __% of the funds should be used to help poorer developing countries implement their own carbon pricing systems.
- __% of the funds should be used to help poorer developing countries invest in technologies that help them reduce their emissions.
- __% of the funds should be used to help companies in the [European Union / United States] develop technologies to reduce carbon emissions.
- __% of the funds should be used for other [European Union / United States] government initiatives.

B   August 2024 Survey Instrument

Introduction

Many countries around the world are considering a new policy called a Carbon Border Adjustment Mechanism. The European Union (EU), which is a group of European countries that work together to make laws and trade with each other, is the first place to implement a Carbon Border Adjustment Mechanism.

This is how the new Carbon Border Adjustment Mechanism works in the EU.

When a company makes a product it uses energy, which often creates carbon emissions that warm the planet. Since 2005, companies that make products in the EU have had to pay a carbon fee to the EU when they create emissions. Until now, companies making products outside the EU did not have to pay this carbon fee.

The Carbon Border Adjustment Mechanism tries to level the playing field by charging a similar fee on some products imported into the EU from non-EU countries. Some products imported into the EU will now be charged a fee based on the carbon emissions of the product. This fee is paid once products cross the border into the EU. That is why it is called a carbon border adjustment.

The products currently covered by the EU Carbon Border Adjustment Mechanism are cement, iron and steel, fertilizers, electricity, and hydrogen.

This carbon border fee can be avoided if the product is made in a country that has its own carbon fee.

If the country's carbon fee is lower than the EU's fee, the border fee amount would be the difference between the two. If the country's carbon fee is higher than the EU's, there would be no carbon border fees paid to the EU.

As mentioned above, the United States is considering adopting a similar carbon border

adjustment policy. If the US adopts the EU policy, it will mean that:

- US companies will pay carbon emissions fees to the US government based on how much carbon dioxide is released during the manufacturing of many products.

- When US companies export many products to the European Union, carbon emission fees will not be paid to the European Union.

- Products from foreign countries without charges for carbon emissions that are imported into the United States will be charged a fee based on the amount of carbon released during manufacturing.

- Goods that are charged carbon emissions fees may become more expensive to consumers.

In the following section you will be asked several questions concerning carbon border adjustment mechanisms.

Attention Check Questions

1. How can companies avoid paying the EU carbon border fee?

   - The country where the exporting company is located can apply for an exemption.

   - The country where the exporting company is located can sign a treaty with the EU.

   - The country where the exporting company is located can charge its own carbon fee equivalent to the EU amount.

   - The country where the exporting company is located can provide "green aid" to poorer developing countries.

2. What does a carbon border adjustment mechanism (CBAM) tax?

- A CBAM taxes the amount of carbon emitted when a product is made in another country

- A CBAM taxes the amount of carbon emitted when a product is made in another country that has a lower tax on carbon.

- A CBAM taxes the amount of pollution dumped into bodies of water shared by two or more countries.

- A CBAM taxes the extraction of fossil fuels in countries that export to nations with stricter environmental regulations.

3. Which of the following products is currently covered by the EU Carbon Border Adjustment Mechanism?

- Corn

- Textiles

- Cement

- All of the above

Conjoint Analysis

We would like to get your opinion on different proposals for a US Carbon Border Adjustment Mechanism.

We next describe the ways the US Carbon Border Adjustment Mechanism proposals can differ.

Each proposal for the US Carbon Border Adjustment Mechanism (CBAM) policy varies in the following ways:

- **Trading Partners:** The *number* of US trading partner countries that will have adopted a CBAM in addition to the EU.

- **Important Country:** Which strategically important country—

- *China, Japan, or India*—along with the EU and UK, will have adopted a CBAM.

- **WTO Position:** Whether the World Trade Organization (WTO) *approves, disapproves*, or is *undecided* on the policy. The WTO is an international organization that helps to establish, negotiate, and enforce free trade between countries.

- **Retained Money:** This is the amount of money that the United States will no longer have to pay to the EU and other countries that have adopted a CBAM if the US enacts its own CBAM. This amount will instead be collected by the US government. The retained amounts can be *USD $1 Billion*, *USD $4 Billion*, or *USD $7 Billion*.

- **Cost Increase:** The estimated average cost increase on consumer goods as a result of a US CBAM. Cost increases can be *0.6%*, *1.2%*, or *1.8%*.

- **Fund Recipient:** The funds raised by the US CBAM can be allocated to: *Poorer developing countries to implement their own carbon pricing systems*, *US companies to reduce carbon emissions*, *General US government initiatives*, *US companies' green investments in developing countries*

4-8 Please read the following policy proposal and indicate your level of support:

	Policy Proposal
Trading Partners	10 Countries
Important Country	China
WTO Position	Approves
Retained Money	USD $1 Billion
Cost Increase	0.6%
Fund Recipient	Poorer developing countries to implement their own carbon pricing systems.

On a scale from definitely oppose (1) to definitely support (10), how much do you support this policy proposal?

[Slider scale from 1-10]

[This format is repeated for questions 5-8, each with a unique policy proposal]

9. Please rank the proposal characteristics by order of importance in your decision to oppose or support the Carbon Border Adjustment Mechanism (CBAM) proposals. Click each option and drag it to place the characteristics in the order of importance.

- The number of US **trading partners** that have adopted a CBAM.

- Which strategically **important country** has adopted a CBAM.

- The amount of **retained money** from adopting the CBAM.

- The **WTO Position** on the policy.

- The estimated average **cost increase** on consumer goods.

- The proposed **fund recipient** for revenue collected from the CBAM.

10. Prior to this survey, how familiar were you with the Carbon Border Adjustment Mechanism policy?

- Very familiar

- Somewhat familiar

- Not very familiar

- Not at all familiar

11. Which of the following groups would you most want to hear from to inform your opinion about the Carbon Border Adjustment Mechanism proposal? Please check all that apply.

- Republican party leaders

- Democrat party leaders

- Economists

- Climate scientists

- Business leaders

- Political scientists

- Union leaders

- Leaders of foreign countries

12. Please indicate how much you agree or disagree with the following statements about the Carbon Border Adjustment Mechanism (CBAM):

- If the US adopts a CBAM, it will motivate other countries to adopt their own CBAM.

- If the US adopts a CBAM, other countries may initiate trade disputes or retaliation against the US.

- A US CBAM would be economically helpful to the United States.

- A US CBAM would reduce carbon emissions in the United States.

[Matrix format. Options: Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, Strongly Disagree]

Broader Climate Questions

13. Please indicate how much you agree or disagree with the following statements about climate change:

- It is important for our government to take steps now to limit climate change in the future, even if it is expensive or causes some job losses or other harm to our economy.

- Developing countries should take action to limit climate change even if it slows economic development and growth.

- The United States should take action to limit climate change even if it slows economic development and growth.

- Market forces are the most effective approach to limiting climate change and reducing its impact.

- Government policies are the most effective approach to limiting climate change and reducing its impact.

[Matrix format. Options: Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, Strongly Disagree]

14. The US government designs tariffs with different purposes in mind. A tariff is a tax on imported or exported goods. Consider a tariff designed to raise money for the government*[./ and lower global carbon emissions to address climate change./ and balance international trade to protect American jobs.]*

    How much would you support or oppose the US government creating such a tariff?

    Definitely oppose (1) to definitely support (10)

    [Slider scale from 1-10]

15. Many experts support a Carbon Border Adjustment Mechanism.

    [No text/They suggest it will encourage other countries to adopt their own climate policies and take a fair share of responsibility in addressing climate change./They suggest it will help establish the United States as a leader in addressing climate change./They suggest it will help protect the United States from paying additional economic costs to other countries.]

    How much would you support or oppose the US government creating a CBAM?

    Definitely oppose (1) to definitely support (10)
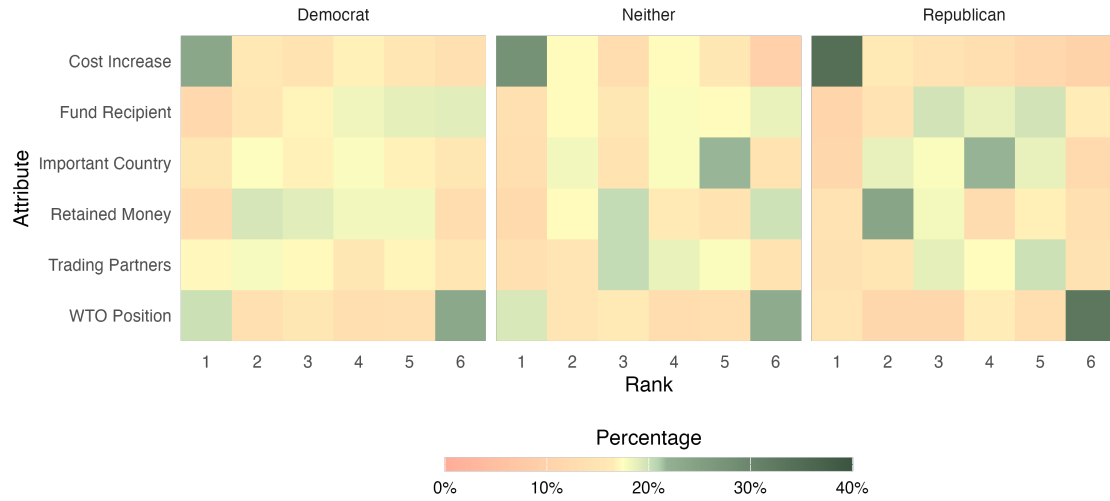
    [Slider scale from 1-10]

C Additional Results

Figure C.1: Ranking of Conjoint Attributes

Following the the conjoint experiment respondents were asked to rank the conjoint attributes in order of their importance on their decisions. For example, cost increase is the most commonly ranked first choice attribute across party affiliation.
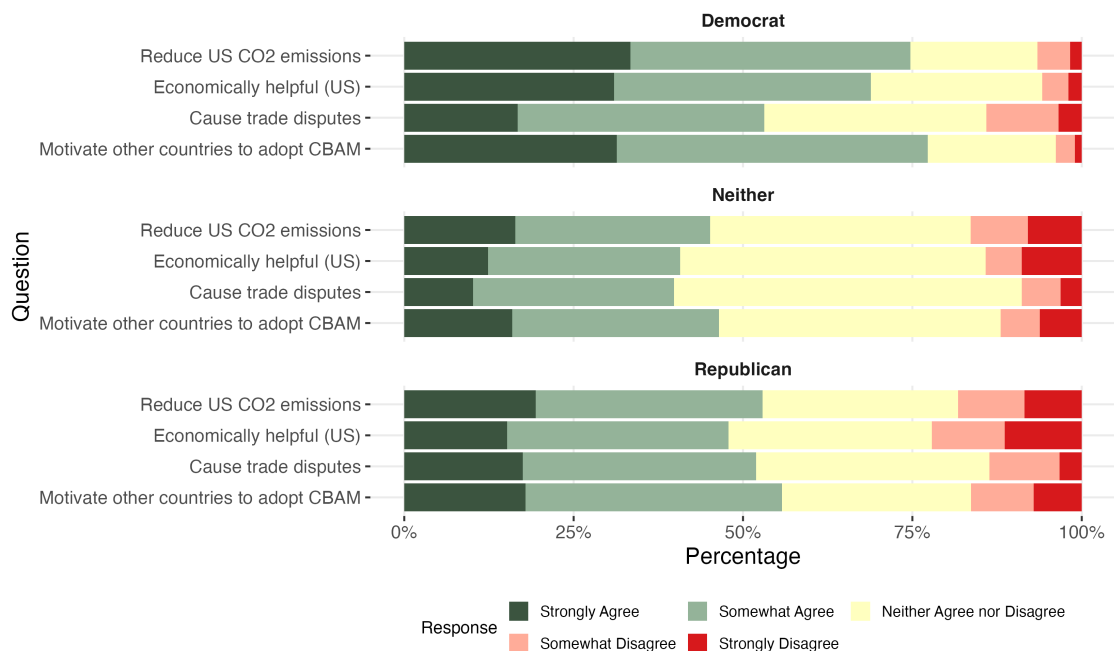
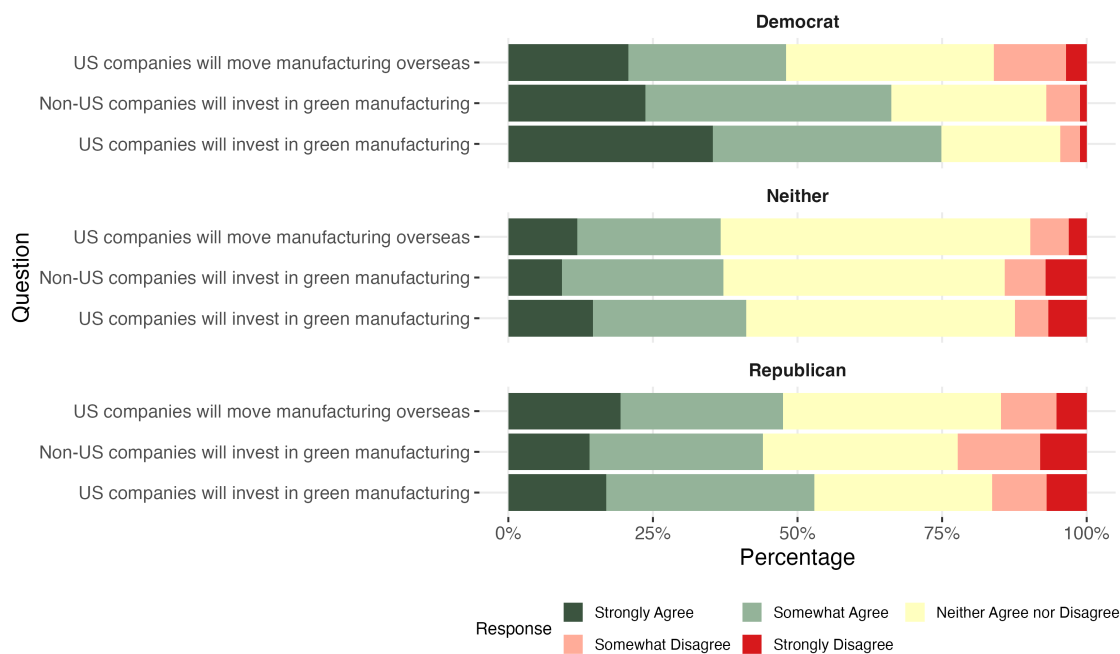Figure C.2: General Expectations of the Impact of a US CBAM

Figure C.3: Expectations of the Impact of a US CBAM on Firms
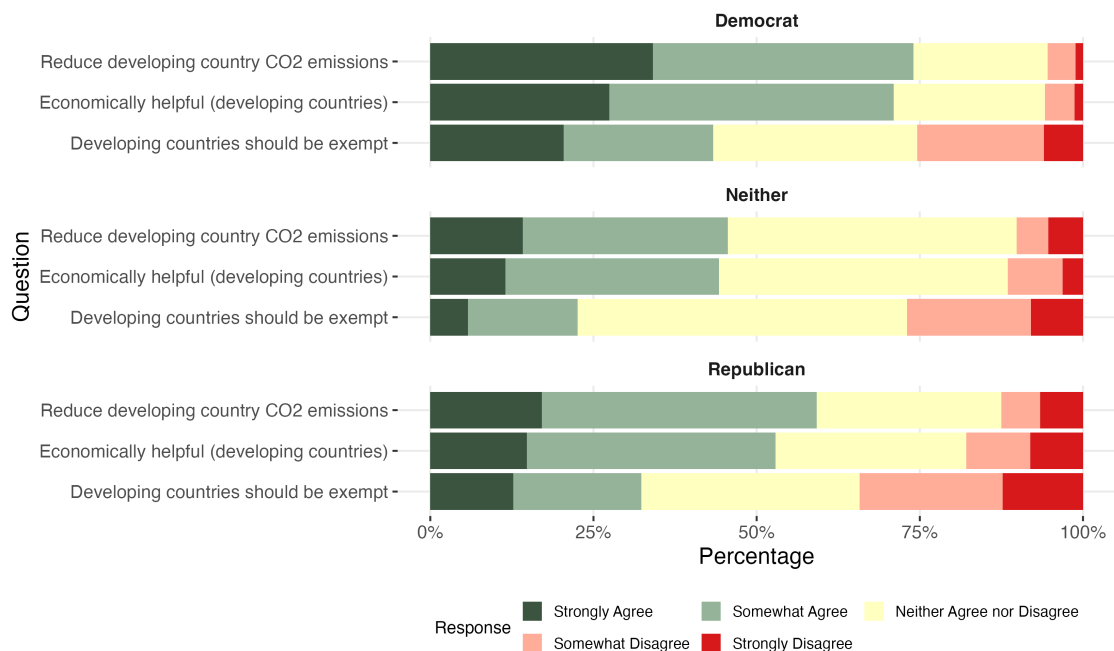
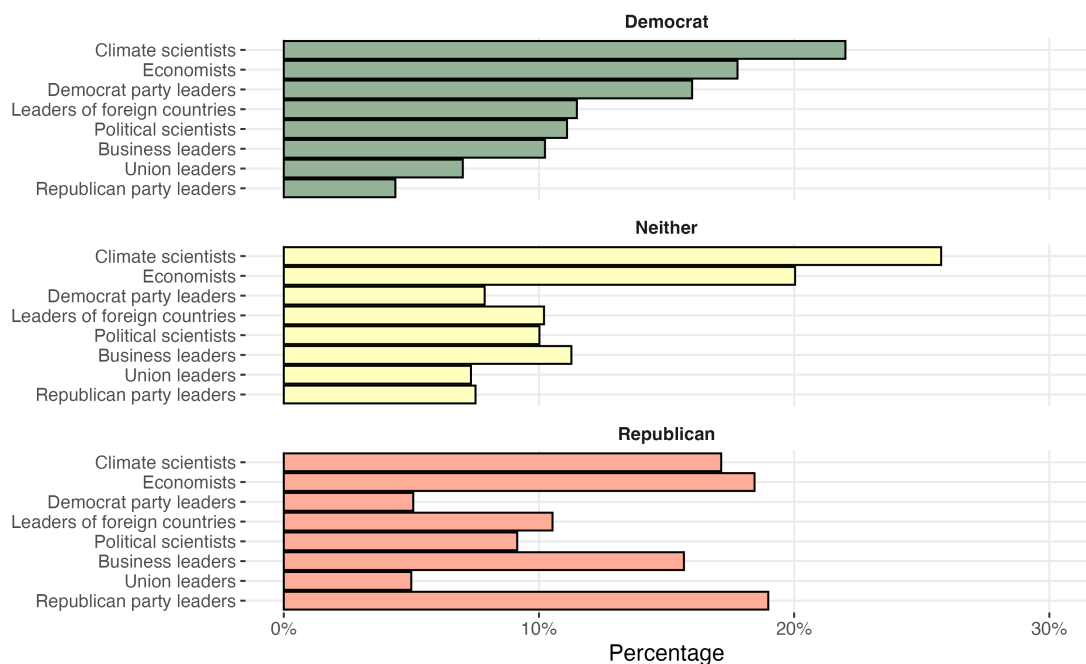Figure C.4: Expectations of the Impact of a US CBAM on Developing Countries

Figure C.5: Preferences for Information Sources on CBAM Policy

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