The Strategic Use of Tariff Phaseouts in US Free Trade Agreements

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Abstract

Rules prescribing the duration of tariff elimination are common in modern free trade agreements (FTAs) and are assigned differentially and selectively to sensitive products, as their extensive use incurs opportunity costs for more exporters. What explains the variation in allocation and duration of tariff phaseouts? Beyond mitigating import competition, I argue that executives design FTA tariff schedules to serve both electoral and ratification goals. I test my argument using a novel dataset on tariff treatment at the tariff line level across all 13 FTAs ratified by the United States. I find that US presidents allocated longer tariff phaseout duration to products made by industries concentrated in swing states to electorally insulate themselves and districts of protectionist legislators to buy their silence. Both effects are stronger when the partner poses a greater import threat. This paper is the first to demonstrate the dual focus of negotiating carve-outs in international agreements.

Key words: tariffs, trade agreements, US politics, reciprocity

Word count: 9046

1 Introduction

Rules on tariff elimination, i.e., tariff staging or phaseouts, are ubiquitous in free-trade agreements (FTAs), yet little is understood about their political economy. Even when committing themselves to free trade, importing countries retain significant flexibility on when specific products become duty-free. About 26% of imported good tariffs from the United States FTA partners are phased out instead of eliminated overnight with a median duration of 6 years. Even while excluding product tariffs from liberalization may be the preferred method to protect domestic industries, the principle of reciprocity forecloses exclusion and necessitates tariff phaseouts to balance the interests of import-competing and exporting producers.[2] Furthermore, reciprocity moderates the use and duration because a reciprocal exchange of phaseout would introduce opportunity costs for exporters, thereby necessitating the prioritization of lengthy stagings to placate politically sensitive import-competing producers. What determines the executive's priority in negotiating carve-outs on tariffs in trade agreements?

This paper argues that the United States executives and, by extension, negotiators strategically allocate longer phaseout duration to *politically sensitive* products in free trade

[2]The focus on reciprocity does not negate the institutional constraints from GATT/WTO Article XXIV that mandate that any preferential arrangement eliminate substantially all trade. Rather, reciprocity directly constrains the strategic incentives for states to use exclusion.

agreements. The sources of such sensitivity are the focus of this paper. I argue that the executives juggle between two potentially competing political interests: electoral insulation and ratification promotion. First, I hypothesize that products made by industries concentrating in electorally competitive states are phased out for longer. Because of the high vote-electoral college vote elasticity in the US, a majoritarian electoral system (Rogowski and Kayser 2002), Presidents are interested in maintaining or improving their (party's) vote margins in competitive states as small changes in vote counts can majorly affect the outcome of Presidential Elections. Alternatively, industries may become politically sensitive from their historical concentration in swing states, elevating their perceived importance; therefore, the targeting of phaseouts may be nothing more than path-dependent policymaking.

Second, executives may care about ratifying major trade policies like FTAs to shore up economic and strategic trade partners and to enhance their electoral prospects by improving aggregate welfare (Mansfield, Milner, and Rosendorff 2002; Mansfield and Milner 2018). Executives may either buy votes or buy silence from the opposition to promote domestic ratification. Given legislators' preferences on trade are shaped by the underlying interests of their districts, negotiators can flip votes by targeting phaseouts to the median legislators and/or minimize opposition by targeting protectionist legislators.

I test my argument using a novel and highly disaggregated tariff line dataset on tariff treatment for all 13 ratified US FTAs since the North American Free Trade Agreement (NAFTA). I find evidence to support both electoral insulation and ratification promotion incentives of the executive.

First, I find that products made by industries concentrated in electorally competitive states are given longer tariff phaseouts; this effect is stronger when the partner poses a greater import threat and is present only during the first term of the George W. Bush administration, lending greater confidence to suggest the intentional targeting of tariff phaseouts to protect the President's electoral prospects. Additionally, the executive targets longer phaseouts to industries in swing states with fewer electoral college votes, suggesting that it may be more prudent to maintain the electoral advantage in smaller swing states as the same amount of tariff phaseouts can do more for workers in smaller states than in larger states. Second, I find that tariff phaseouts are targeted at states of protectionist senators, suggesting that part of the executive's strategy is to buy silence from the opposition in order to promote domestic ratification of the FTA rather than buying votes.

This paper makes several contributions. First, I theorize and test the extent to which

electoral insulation or ratification promotion permeates into trade policymaking, which, to my knowledge, has not been closely examined nor possible due to the lack of highly disaggregated data. While I provide further evidence echoing the literature on the particularistic president and trade policies (Lowande, Jenkins, and Clarke 2018; Kriner and Reeves 2015*a*; Ma and McLaren 2018),[3] I also present new evidence supplementing how executives play the two-level game in trade negotiation (Putnam 1988). While executives may negotiate carve-outs to promote ratification, I present new evidence suggesting that tariff phaseouts are given to buy the silence of the opposition rather than to swing the votes, as evident by longer phaseouts being allocated to districts of protectionist senators.

Second, this article contributes to the growing literature on tariff phaseouts. Unlike earlier studies that focused on economic (and demand-side) explanations—such as product types, pre-existing vertical integration, intra-industry trade, economies of scale, import demand price elasticities, and existing base rates (Anderer, Dür, and Lechner 2020; Kowalczyk and Davis 1998; Baccini, Dür, and Elsig 2018; Chase 2003; Choi et al. 2021; Clark 2007; Clark, Sawyer, and Sprinkle 2000)—as well as the preferences of import-competing producers and foreign exporters (Van Lieshout 2021*a*,*b*), I demonstrate that the design of trade agreements' tariff schedules is also politically motivated from the supply side. I show that phasing out tariffs represents a more disaggregated form of flexibility provision that can be targeted toward politically salient and sensitive industries and, by extension, politically salient states and districts to achieve political ends. Furthermore, this article contributes to the established literature on flexibility and escape clauses in promoting cooperation (Rosendorff and Milner 2001; Kucik and Reinhardt 2008). In contrast to agreement-wide provisions, such as safeguards and other escape clauses, tariff staging provides new opportunities for scholars to investigate how various domestic interests influence the design of agreements and how the final design affects domestic preferences regarding trade agreements.

Third, this paper underscores the significance of buying time for domestic producers by demonstrating the political incentives of phasing out tariffs. Or rather, at the bare minimum, the electorally motivated targeting of phaseouts highlights the broad beliefs surrounding their supposed functions.[4] Given that the electoral consequences from trade

[3]Prior research on particularistic presidents and trade policy focused on most-favored-nation rates and unilateral tariff hikes, not on the design of free-trade agreements.

[4]I am careful about making such a claim despite finding evidence, both quantitative and qualitative, to suggest that there is a broad range of demand for tariff phaseouts. This is because despite phaseouts being relatively common in US tariff schedules, some economic research has found little to no evidence of phaseouts' ability to differentially affect import growth in a predictable manner (Besedes, Kohl, and Lake 2020; Dong and Jestrab 2022).

are mainly due to its adverse outcomes, notably unemployment and offshoring (Jensen, Quinn, and Weymouth 2017; Margalit 2011; Autor et al. 2017, 2020; Rickard 2022), and considering that lengthy tariff phaseouts can ease industry adjustment (Riker 2021; Mussa 1984; Leamer 1980), it follows that tariff phaseouts can delay political consequences, although further research is needed.

Finally, this paper speaks to the growing *differentiated integration* literature (Schneider 2008; Schimmelfennig, Leuffen, and Rittberger 2015; Schimmelfennig 2016; Schimmelfennig, Leuffen, and De Vries 2023), which has broadly focused on the EU's enlargement and the phasing in of the benefits and freedoms for EU acceding countries. Similar to the argument initially made by Schneider (2008), the differentiated phasing out of products is responsive to political sensitivities and is an institutional tool to boost cooperation on trade and, in the EU's case — cooperation on enlargement. The more distinct and obvious difference in this article would be the granularity of the differentiated object of investigation.

I organize the article in the following manner: First, I provide a brief background on tariff phaseouts, demonstrate their variation across products and partners, and discuss their puzzling existence. Second, I posit that reciprocity forecloses states' incentive to exclude products from liberalization, thereby necessitating and moderating the use and duration of tariff phaseout to promote trade cooperation. Third, I theorize on the origins of political sensitivities in shaping negotiation priorities and, thus, the resulting tariff schedule. I then develop my empirical strategy and present my results.

2 Tariff Phaseouts

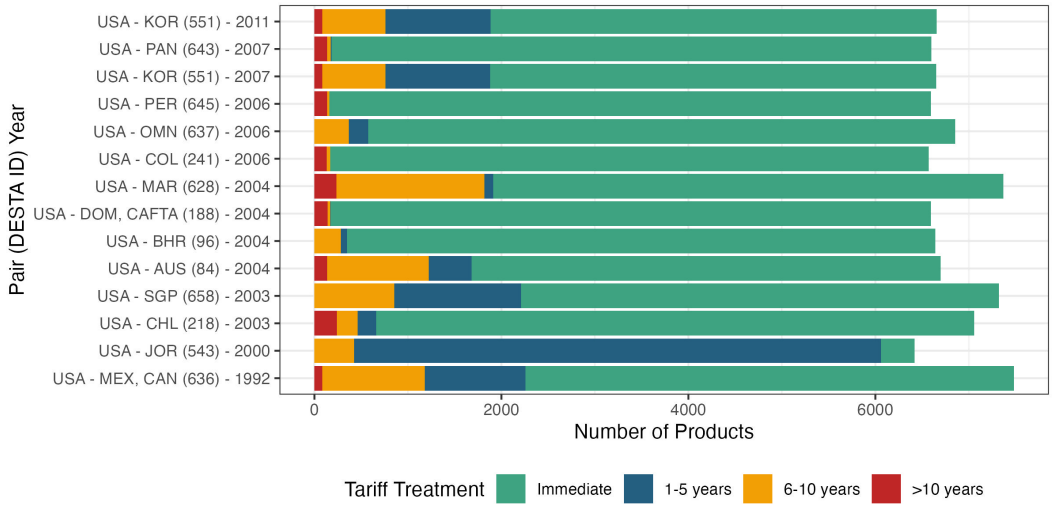
Tariff phaseouts, otherwise known as tariff staging, prescribe *when* products become duty-free and *how* they are to be eliminated. In many free-trade agreements (FTAs), negotiators allocate "staging categories" to every product in the tariff schedule. These staging categories are then explained in a separate Annex chapter, specifying the duration and mode of reduction. Figure A1 displays a page of the US tariff schedule on Australian imports with staging categories "A", "B", "D", and "E". To understand the treatment of specific tariffs, Annex 2-B of the FTA describes the reduction timeline for each staging category, as shown in Figure A2. For example, goods with staging category A "shall be eliminated entirely ... and be duty-free on the date this Agreement enters into force." Category A indicates an *immediate elimination* of tariffs, contrary to the variety of stagings that phases out tariffs; for example, products with category B "shall be removed in equal annual stages ... and shall be duty-free, effective January 1 of year four" while category D "shall be duty-

free ... year ten." Otherwise, products that are already duty-free are given category "E" which specifies such goods "shall continue to receive duty-free treatment."

The duration of tariff phaseouts the US places on imports tends to be less or equal to 10 years, with a median of 6 and an average of 6.8 years. Indeed, the duration may be constrained by international institutions. Paragraph 5(c) of GATT Article XXIV specifies that agreements to establish a free trade area must eliminate barriers on "substantially all trade" between member states, and the schedule must implement the free-trade area within a "reasonable length of time." A reasonable length of time was later clarified not to exceed 10 years unless for "exceptional cases," in which the phaseout duration can go upward to 20 years.[5] Figure 1 plots the number of products and their associated phaseout duration on imports from trade partners. While most products are eliminated overnight, about 26.2% of tariffs are phased out (Figure 2a).

[Figure 1 about here]

Figure 1: Number of Products and Phaseout Duration



Note: Country pair is formatted as home-partner, where the home country (USA) sets tariff treatment toward the partner country. Created by Author 11/3/24.

Tariff phaseouts are not new and exclusive to FTAs, as they have long been an institution of compromise in domestic trade agreements and previous WTO rounds.[6] The main

[5]GATT Article XXIV. Text can be accessed here: https://www.wto.org/english/tratop_e/region_e/region_art24_e.htm.

[6]The earliest example is the Compromise Tariff Act of 1833 in the United States that phased out products with tariff rates above 20% over nine years (Irwin 2020); this compromise was meant to diffuse objections from the South who demanded a reduction of import tariffs by threatening not to enforce tariffs and secede

difference with FTAs is that the allocation and duration of phaseouts are seemingly *bespoke*. The use and duration of phaseouts are catered to specific sectors and sometimes specific products. FTA Phaseouts are much more selective than umbrella coverage like the GATT/WTO Rounds and diverse in length of duration. Among the 26.2% of existing tariffs being phased out (Figure 2a), there are incredible variations in the duration among products within the same sector and across partners within the same industry. Figure 3 plots the distribution of various categories of phaseout duration from the United States toward its trade partners to provide an idea of which products are phased out and for how long. Each tick represents a product code that is phased out over (1) 1-5 years, (2) 6-10 years, or (3) over 10 years. The concentration of phaseout allocation (the presence and cluster of ticks) differs across trade partners and sectors.

[Figure 2 about here]

Products that are phased out hold economic significance. Among the product tariffs negotiated in the 13 US FTAs, while the phaseout of tariffs is only assigned to 26.2% of existing product tariffs, the associated import value of the phased-out products amounts to 34.5% of all import value (Figure 2b).[7] Indeed, previous literature has posited that phasing out tariffs can slow down industry adjustment (Riker 2021; Mussa 1984; Leamer 1980), although more comprehensive analysis is needed.

[Figure 3 about here]

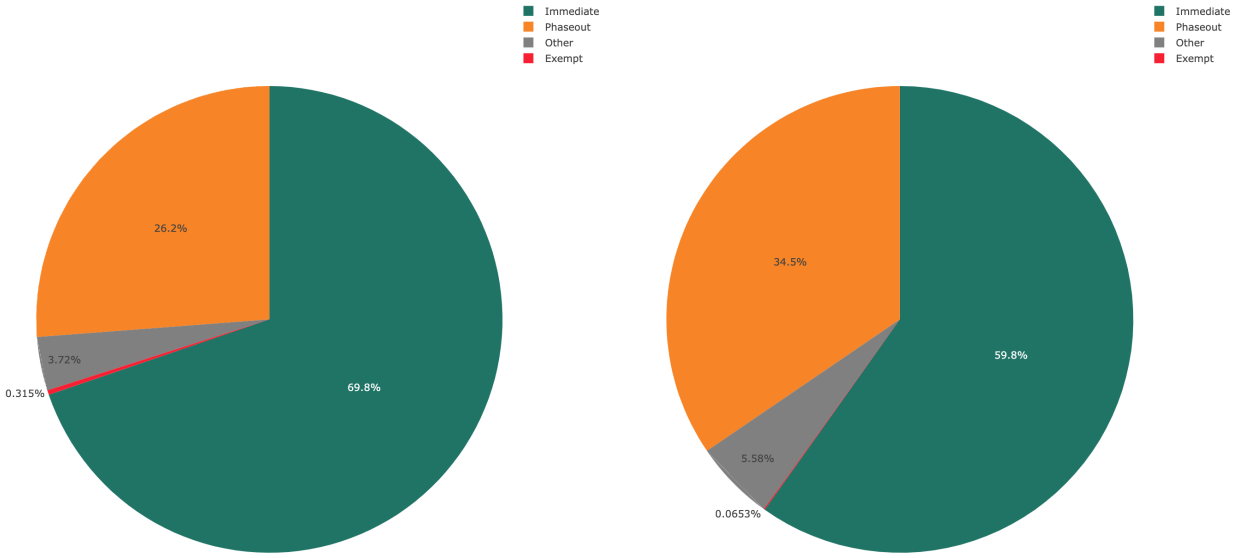
Because of the economic weight of committing to free trade, the negotiation of tariff phaseouts is deeply political. Negotiators often spend the majority of their bargaining on the staging of sensitive products. A former trade negotiator estimates they spent about 60% of the market access chapter negotiation on the tariff schedule (Interview 2, 4:48). Another former trade negotiator attests to the political implication of protracting tariff staging bargaining until the end of negotiation in order to signal their commitment to protecting domestic industries (Interview 1, 26:38).

Tariff phaseouts can buy political support for FTA from key interest groups such as unions, which are historically anti-trade. In the 2007 version of the US-Korea Free Trade Agreement (KORUS), ten auto product codes were given immediate phaseout because the

from the Union (See review in Irwin 2020). Other examples can be seen from previous GATT rounds, such as the Kennedy, Tokyo, and Uruguay rounds. In all three rounds of liberalization, all product bound rates were phased out over five or eight years (Kowalczyk and Davis 1998; Winham 1986; Stewart 1999).

[7] It is important to note that the import value may be attenuated toward zero because existing tariffs may had disincentivized trade. If countries are less likely to export into the US due to high existing tariffs, then it is reasonable to conclude that the potential import value for phased-out products would be significantly higher than pre-existing trade.

Figure 2: Proportion of Tariff Treatment in USA Trade Agreements After Omitting Already Duty-Free Category



(a) Product Codes

(b) Import Values

Note: Proportions are calculated by aggregating all product code lines (and 5-year rolling average import values before the agreement's signature date) across all USA free trade agreements. "Other" indicates that the product's tariff reduction is governed by other means, such as the WTO commitment. Created by Author on 11/8/24.

US received significant non-tariff measure concessions from South Korea in 2007 on autos (Interview 2, 34:43). However, the renegotiated version in 2011 lengthened the phaseout duration and modulated the mode of reduction of the ten automobile product codes, which won the endorsement of the United Auto Workers (UAW) union.[8] The UAW's endorsement deviated from the position of other large unions such as the AFL-CIO,[9] United Steel Workers,[10] and the Communications Workers of America[11] that opposed on labor, investment, and environmental grounds. The UAW statement (Figure A5) cited the slow phasing out of tariffs on automobile imports as one of the main reasons for its en-

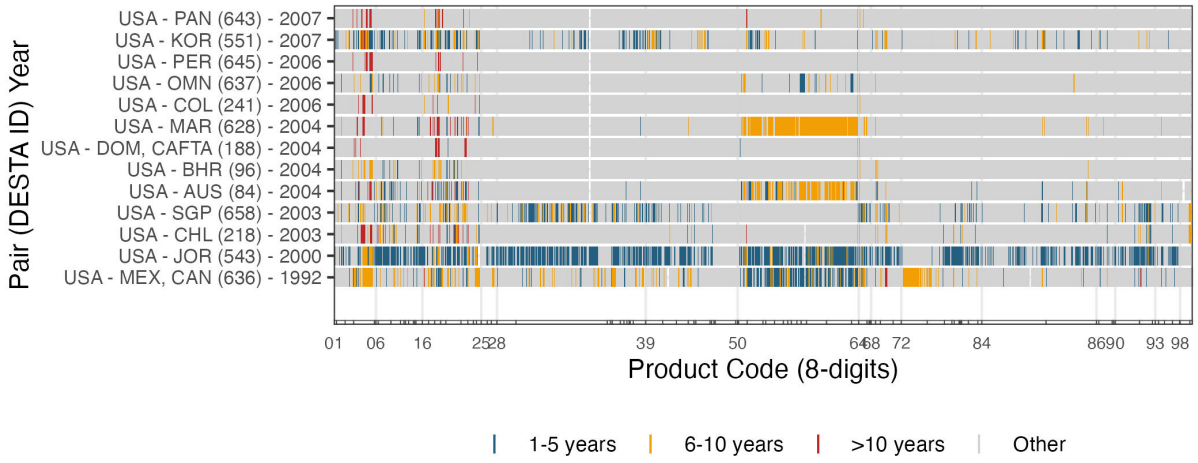
[8]See the 2011 KORUS Side Letter that details the new staging rules for automobile products here https://ustr.gov/sites/default/files/uploads/agreements/fta/korus/2011_Side_Letter.pdf

[9]https://apw-aba.org/content/afl-cio-and-other-union-statements-us-korea-free-trade-deal. Last accessed 9/19/23.

[10]https://www.usw.org/news/media-center/releases/2010/usw-opposes-passage-of-revised-us-korea-trade-agreemer Last accessed 9/19/23.

[11]https://cwa-union.org/news/entry/statement_by_the_communications_workers_of_america_on_the_proposed_korea-u. Last accessed on 9/19/23.

Figure 3: Distribution of Tariff Phaseout Duration from USA FTAs Across 8-digit Product Codes



Note: Each tick represents one product code, and product codes that were already duty-free or treated with immediate elimination or exemption are grouped as "Other" to improve visibility. Each tick on the x-axis demarcates a 2-digit chapter. Important 2-digit chapters are displayed. Refer to https://hts.usitc.gov/ on the title of HS chapters. Created by Author 10/25/24.

dorsement.[12] This case demonstrates the extent to which phasing out just ten automobile product tariffs can win political support from important interest groups, like the UAW, which has been shown to shape the trade attitudes of UAW union members (Kim and Margalit 2017).

2.1 The Puzzle of Tariff Phaseouts

The existence of tariff phaseouts is puzzling because excluding tariffs from being reduced or eliminated is a better way to protect domestic industries. Why do states deviate from exclusion, and why do interest groups, like the UAW, find tariff phaseouts acceptable when tariffs are bound to be eliminated in the end, eventually harming their members? I posit that states are both institutionally and strategically constrained to negotiate free trade agreements rather than partial scope or sectoral agreements and are, therefore, forced to use tariff phaseouts to facilitate free trade commitment.

Conventional wisdom holds that institutions, like GATT Article XXIV, constrain states' behavior. GATT Article XXIV, in particular, allows for customs unions and free trade areas under the condition that trade barriers on "substantially all trade" between member

[12]https://ustr.gov/about-us/policy-offices/press-office/blog/2011/october/uaw-backs-korea-trade-agreement. Last accessed on 9/19/23.

states are eliminated. Essentially, any preferential trade agreement must be a "free" trade agreement. This is to mitigate local price externality generated from trade discrimination (Bagwell and Staiger 1999). Since countries are bound to sign only free trade agreements, their only flexibility is to negotiate over the duration of tariff phaseouts to promote trade cooperation (Van Lieshout 2021*a*; Grossman and Helpman 1995).[13]

Complementary to international institutions, I argue that states' desire to commit to free trade, as opposed to sectoral agreements, is rooted in strategic constraints. States enter trade agreements negotiation to benefit exporters (Chase 2003, 2005; Gilligan 1997*a*; Baccini et al. 2019). Reciprocity is necessary for states to commit to self-enforcing trade cooperation, and domestic industries are harmed as a result of reciprocal exchange in market access. However, even if a state prefers to exclude products to protect domestic industries, such an incentive is foreclosed by the principle of reciprocity. This is because exclusion empowers trade partners to do the same; moreover, the partner state may strategically target exclusion on products most important to its counterpart's exporters, foreclosing any incentive to exclude. Indeed, a former US trade negotiator stated that the "principle [in negotiation] was no exclusion" because "the things that our partners wanted to exclude were things that mattered to us" (Interview 2 7:37, 7:56).

If states are institutionally and strategically constrained to commit to free trade, how do negotiators minimize objection to FTAs from both exporters and import-competing producers when placating one means alienating the other with liberalization exclusion? I argue that tariff phaseouts allow states to commit to free trade while temporarily protecting import-competing producers.[14] Negotiators may commit to free trade for specific products on day one (immediate elimination) or commit to free trade with the condition that the reduction takes place over a negotiated duration. With these constraints, import-competing producers would rather receive a lengthy phaseout than have tariffs eliminated overnight. Even though exchanging tariff phaseouts may generate *diminishing* opportunity costs for exporters as their access to the partner's market is delayed, it is better than exclusion, which would otherwise materialize the *full* opportunity costs for exporters.

Phasing out tariffs, therefore, provides an optimal trade-off for the import-competing sector and exporters in free trade agreements. Essentially, doing so allows negotiators to craft an agreement that not only liberalizes substantially all trade but also maximizes ratification chances by minimizing objections from stakeholders (Grossman and Help-

[13]Van Lieshout (2021*a*) provides a fantastic historical account of the origin of tariff phaseouts as a flexibility mechanism under institutional constraints of GATT XXIV.

[14]See also: Furusawa and Lai (1999); Grossman and Helpman (1995); Bond (2008)

man 1995). The resulting agreement made possible by tariff phaseouts would (1) generate welfare gains for consumers, (2) increase surplus for domestic exporters slowly over time, and (3) minimize the immediate surplus losses for import-competing producers and ease their adjustment costs (Riker 2021; Mussa 1984; Leamer 1980). As a result, (1) the eventual *losers* of the agreement may not oppose as strongly as they would under immediate tariff elimination and be able to adjust accordingly without future push to renege on the free-trade commitment. (2) The eventual *winners* would continue to lobby, thereby increasing the chances for ratification and ensuring the interest in keeping compliant with the agreement to achieve the eventual free trade.[15] In short, tariff phaseouts promote cooperation both at the negotiation and enforcement level (Fearon 1998; Keohane 1984).

Reciprocity also begets moderation on phaseout usage and duration. Phasing out tariffs is inherently redistributive. The longer the staging is used on more product codes to protect domestic import-competing producers, the longer it would take for more domestic exporters to have full access to trade partners' markets. Essentially, their usage redistributes the upfront adjustment costs for the import-competing sector into opportunity costs for exporters. Limiting the use of phaseouts on imports means that the trade partners would similarly minimize their use of tariff phaseouts, benefiting domestic exporters and improving aggregate welfare at a quicker pace on more products. Hence, reciprocity requires the allocation of tariff phaseout duration to be strategic as an over-use can harm exporters' interests; therefore, prioritization is essential.

3 Whom to Target?

This section theorizes the generation and prioritization of products to be phased out. To summarize, the costs of lobbying through public comments on the Federal Register prior to negotiation are minimal; therefore, executives and negotiators are assumed to know the preferences of import-competing producers. While this process generates the list of products to be phased out, prioritization on which products to be phased out longer is essential to minimize opportunity costs for domestic exporters. In short, I argue that the executive's desire to secure his electoral prospects and achieve foreign policy objectives (i.e., ratification) informs the prioritization.

[15] Blanga-Gubbay, Conconi, and Parenti (2023) find that 99% of all FTA lobbying in the United States are done by pro-trade interests.

3.1 Trade Promotion Authority and Consultation

The Trade Promotion Authority (TPA) or Fast Track Authority has been the cornerstone piece of legislation enabling trade liberalization since the introduction of the Reciprocal Trade Agreement Act (RTAA) in 1934 (Bailey, Goldstein, and Weingast 1997). TPA essentially delegates negotiating power over to the executive branch under tight conditions. These conditions require that negotiators satisfy US negotiating objectives set out by TPA and fulfill notification and consultation requirements to qualify for an expedited procedure (Casey and Cimino-Isaacs 2024). The expedited procedure allows for FTA implementation bills to be automatically introduced and discharged from committees and approved with a simple majority in both chambers without amendments or filibusters, as opposed to a two-thirds majority in the Senate.

Under TPA, negotiators are institutionally mandated to consult with stakeholders (i.e., business groups and unions). These consultations take place before and during negotiations in the form of public comments in the Federal Register. Three months before the commencement of any trade negotiation, the Office of US Trade Representatives (USTR) would place a request for comments in the Federal Register, where any stakeholder can submit comments, setting their preferences and expectations (Interview 2, 14:44). Theoretically, comments from stakeholders provide negotiators with an unordered list of products. Because comments on the Federal Register do not require much for producers to state their preferences, it is relatively costless for producers to lobby trade negotiators.

Consultation also occurs during negotiation through "cleared advisors" (Interview 2, 15:47; Interview 1, 27:37); they provide a secured informational channel between negotiators and stakeholders as well as members of Congress (Interview 2, 15:25; Interview 1, 27:37), opening up room for members of Congress to lobby negotiators by linking concessions with ratification votes.

In order to maximize the value of using tariff phaseouts[16] without unnecessarily imposing additional opportunity costs for exports, I theorize that negotiators would rank-order the products based on the political importance of the products, shaping their negotiation priority. In the context of exchanging phaseout duration, an optimal negotiation strategy would be to impose the most extended phaseout duration for high-priority products, waning in duration as products become less important to minimize the opportunity costs imposed on exporters.

What is deemed politically important is often nebulous and muddled. Presidents of-

[16]By this I mean maximizing ratification chances (consist of swinging votes and minimizing outward opposition) and electoral benefits/safeguards.

ten concern themselves with two issues when negotiating FTAs. First, they aim for ratification of trade agreements in order to improve the aggregate welfare (Putnam 1988; Milner 1997), which may improve the incumbent government's electoral chances (Mansfield, Milner, and Rosendorff 2002; Mansfield and Milner 2018). Second, presidents are concerned about the electoral implications generated by distributional consequences of trade liberalization (Margalit 2011). Given the majoritarian electoral institution and the fact that industries geographically cluster, small changes in vote share can majorly affect the electoral college vote count (Rogowski and Kayser 2002). Hence, I posit that electoral and ratification incentives both inform what it means for products to be politically salient.

3.2 Electoral Insulation

In contrast to the parochialism of Congress in setting trade policies (Lohmann and O'Halloran 1994), Presidents have been conventionally thought of as more universalistic (Lowande, Jenkins, and Clarke 2018; Kriner and Reeves 2015*b*,*a*; Nzelibe 2006). However, tariff structure has been found to be heavily biased in favor of industries located in swing states (Ma and McLaren 2018) and similarly for the allocation of trade protection (Lowande, Jenkins, and Clarke 2018; Kriner and Reeves 2015*a*). So, while a universalist president can negotiate a reciprocal trade agreement that benefits the aggregate welfare and exporters (Gilligan 1997*a*), the existence of tariff phaseouts provides opportunities for a particularistic president to shape negotiation priority in favor of import-competing industries concentrated in swing states.

Tariff phaseouts serve three economic function in regards to industry employment with implications for electoral prospects.[17] First, phasing out tariffs maintains the relatively high price of imported goods compared to domestically made goods. While imported goods may enter the US market early in the staged reduction process (Besedes, Kohl, and Lake 2020; Dong and Jestrab 2022), it does not necessarily mean that domestic producers are immediately less competitive. Branding and reputation of existing domestic companies may mitigate consumer flocking to imported foreign brands, at least earlier on. Therefore, the longer the price of imported goods is maintained relatively higher than domestic-made goods, the better insulated domestic producers are from foreign competition. Indeed, economists have argued and found that such phasing out tariffs can ease industry adjustments and resource reallocation (Riker 2021; Mussa 1984; Leamer 1980).

Second, the maintenance of some level of tariffs early in the phase-out period can

[17] I use employment as a benchmark due to its salience in regard to trade and politics (Margalit 2011; Autor et al. 2017, 2020; Ritchie and You 2021; Baccini and Weymouth 2021).

dampen firms' incentives to offshore jobs to the trade partners. The intuition is simple. Firms only offshore if the cost of producing abroad is lower than the cost of domestic production; labor and transportation costs, as well as tariffs, contribute to the firm's cost calculation for offshoring. One may intuitively conclude that the longer it takes for tariffs to be reduced to a critical threshold, one that would make offshoring profitable relative to domestic production, the longer the delay on firms' decision to offshore.

Finally, the declining price of foreign goods and the certainty of when tariffs are reduced and fully eliminated can help motivate domestic producers who cannot simply offshore to innovate and differentiate their products or to source cheaper inputs abroad. Where consumers prefer variety (Krugman 1980), domestic producers can adjust and remain viable if they have enough time to distinguish their offerings from foreign competitors. Khan and Khederlarian (2021) provides evidence of such certainty-producing feature of tariff phaseouts; they find that US importers slowed down imports in anticipation of a staged reduction in tariffs from NAFTA, followed by a liberalization bump after the tariff has been reduced. This study suggests that producers are aware of the annual reduction from the tariff schedule and react accordingly to take advantage of lower rates, despite the reported low utilization rate of FTA preferential tariffs (Zeng and Li 2021).

While the electoral incentive for targeting longer phaseouts to industries located in swing states is cut-and-dry, one may ponder whether allocating lengthy phaseouts is due to electoral concerns or due to the salience of industries based on their perceived electoral importance. On the one hand, Presidents may want to minimize domestic backlash from signing FTAs, especially in swing states. In a majoritarian system such as the United States, where the winner takes all, the vote-seat, or the vote-electoral college vote elasticity, is rather high compared to a proportional representation system (Rogowski and Kayser 2002). Therefore, the adverse employment consequences from trade agreements, while potentially small, can lead to big changes in the electoral college vote counts in more competitive states. Import competition not only hurts the workers in affected industries directly but also spills over to the local economy (Autor, Dorn, and Hanson 2013). Furthermore, trade has been documented to directly affect elections (Margalit 2011; Che et al. 2016; Blanchard, Bown, and Chor 2019; Autor et al. 2020; Kim and Cha 2022; Lake and Nie 2022). If tariff phaseouts can delay the adverse employment consequences of trade, one may conclude that a particularistic president may *intentionally* phase out tariffs for industries that concentrate in more competitive states in order to insulate himself (and his party) from domestic backlash at the polls.

On the other hand, industries may receive longer phaseouts by virtue of their political salience as a function of being historically located in highly electorally competitive states.

In contrast with the particularistic president argument, which implies an intention to target industries in swing states with longer phaseouts for political ends, this opposing view suggests that any correlation is primarily due to the industry's inherent political salience. Indeed, an interview with a former negotiator reveals that swing states are not part of the consideration when phasing out products (Interview 2, 31:26). However, this does not negate the sources of an industry's political salience being derived from the electoral competitiveness of the states they concentrate in.

For example, the steel industry has been salient in the American consciousness. This salience is reinforced by various protection by previous Presidents (Kriner and Reeves 2015*a*, p.51 and 56), as well as the concentration of integrated mills in Indiana, Michigan, Ohio, and Pennsylvania (Watson 2022). According to reported beliefs from George W. Bush's presidential campaign, Bill Clinton's failure to protect the domestic steel industry was crucial to the success of Bush's campaign (Kriner and Reeves 2015*a*, p.38). Consequently, the importance of the steel industry is primarily due to its presence in key swing states.

Hence, industries' salience can be derived from their political geographies, and it can shape negotiation priorities due to path-dependent policymaking. That is, if salient industries are not protected in FTAs, there would be substantial backlash as it is in opposition to prior, more favorable treatments. However, such backlash is essentially what the President prefers to insulate himself from. In the end, the consequences of not phasing out salient industries' products are the same regardless of the reasons and intentions behind doing so. Hence, the first hypothesis:

> **Hypothesis 1 (H1):** On average, products belonging to industries concentrated in more electorally competitive states are phased out for a longer period.

If the *intentional* hypothesis stands, it may suggest that the incentive to allocate tariff phaseouts to industry concentrated in swing states only holds when the executive has an electoral horizon. Under only such condition would an executive prefer to phase out tariffs as it has been shown to ease labor adjustments (Riker 2021; Mussa 1984; Leamer 1980) and potentially delay the incentive for firms to offshore as offshoring has been linked to anti-incumbency effect (Margalit 2011; Rickard 2022). Hence, the second hypothesis:

> **Hypothesis 2 (H2):** Products belonging to industries concentrated in more electorally competitive states are phased out for a longer period only during an executive's first term.

An industry's political salience stems not only from its geography but also from its economic sensitivities. The theoretical discussion thus far assumes that all import-competing producers are equal. While such an assumption is valid if the context of trade liberalization is at the global scale, i.e., the reduction of the US's most-favored-nation tariffs, producers' import sensitivities are often contingent on the FTA partner country's comparative advantage. Hence, we may expect industries concentrating in electorally competitive states that are more threatened by the potential import competition from the trade partner to be heavily prioritized compared to if they are not as threatened by the trade partner. Hence, the second hypothesis.

> **Hypothesis 3 (H3):** On average, products belonging to industries concentrated in electorally competitive states are phased out for a longer period when the partner poses a greater import threat.

Finally, the size of swing states that industries concentrate in matters. If executives prefer to maximize their re-election chances, targeting swing states with relatively higher electoral college vote count may be rational; however, states with higher electoral college votes are more populous, thereby increasing the costs of allocating tariff phaseouts as more is needed to swing or maintain votes in favor of the incumbent. Alternatively, executives may strategically spread their tariff phaseouts among smaller swing state industries as it would be more efficient to flip fewer votes in favor of the incumbent. Here, I present two competing hypotheses:

> **Hypothesis 4a (H4a):** On average, products belonging to industries concentrated in electorally competitive states are phased out for a longer period when the state has *more* electoral college votes.

> **Hypothesis 4b (H4b):** On average, products belonging to industries concentrated in electorally competitive states are phased out for a longer period when the state has *fewer* electoral college votes.

3.3 Ratification Promotion

Assuming the executive cares about ratifying major international agreements that would bring both domestic and political benefits, they must play a two-level game when negotiating FTAs (Putnam 1988). To increase ratification prospects, the executive must maximize the pro-ratification coalition while dampening the opposition. This section outlines the dual, perhaps complementary, targeting destinations for tariff phaseouts to ensure FTA ratification.

Recall the aforementioned consultation mechanism, which mandates that negotiators consult with stakeholders and members of Congress before and during negotiation. While consultation is a legal requirement for the FTA to benefit from the expedited procedure, it is within the negotiators' interests to engage in it as consultation reveals domestic preferences. In order to design an agreement that appeals to the majority of congressional members for ratification, negotiators must have near-complete information on industry preferences and the preferences of members of Congress.

Let us assume that industries' preferences communicated through the Federal Register help negotiators compile an unordered list of products to protect. Because negotiators are constrained by time, resources, and concessions to exchange, they may rely on Members of Congress to set the priority of products. Members of Congress may condition their ratification vote on the protection or promotion of certain industries that are important in their states.

However, not every member of Congress is equal in their ratification threats and promises. Furthermore, in order for negotiators to maximize aggregate welfare and surpluses for exporters and maintain the margins for ratification, they must strategically target phase-out to industries concentrating districts of legislators that would provide higher marginal returns. Such return is the degree to which their ratification votes can be swayed.

I argue that median legislators on trade are most credible with their ratification threats. Staunchly anti- or pro-trade legislators' threats are not as credible because their preferences on trade are shaped by the support of local interest groups. For example, a labor-union-endorsed and supported legislator cannot credibly promise to ratify an agreement that would hurt her constituents, and neither can a pro-trade legislator whose constituency primarily is in the export sector threaten not to ratify an FTA. Therefore, the priority of certain products, and consequently the degree to which their tariffs are phased out, may be informed by the industry's concentration in the median legislator's districts. Hence, the fifth hypothesis:

> **Hypothesis 5 (H5)** ***Buying Vote*****:** On average, products belonging to industries concentrated in districts of median legislators are phased out for a longer period.

In addition to swinging legislator votes, executives may also prefer to dampen the opposition. While implementation bills for FTAs cannot be filibustered nor amended, how loud legislators are at opposing an FTA may have spillover effects to on-the-fence legislators. By raising the salience of a particular FTA to the broader public perception, grassroots campaigns may nullify any "vote-buying" effect of targeting the median leg-

islator. Hence, there exists an incentive for the executive to buy the silence of staunchly anti-trade legislators by phasing out products important to their district. Hence, the sixth hypothesis:

> **Hypothesis 6 (H6)** ***Buying Silence*****:** On average, products belonging to industries concentrated in districts of protectionist legislators are phased out for a longer period.

The current discussion thus far assumes that lobbying for product protection in FTAs is constant. This assumption is reasonable because lobbying for protection through Public Comments on USTR Federal Register is relatively costless compared to buying access to legislators. With a relatively low barrier to lobbying USTR on the Public Register, producers do not face problems of collective action often characterized by the lobbying literature (Kim 2017; Gilligan 1997*b*), as they tend to assume differential costs to lobbying. As such, anyone can submit comments and requests for carve-outs in trade negotiations.

However, we may expect producers with more to lose from the FTA to be more incentivized to bear the cost of buying access to Members of Congress. This may translate to more lobbying between legislators and negotiators, raising the threshold necessary to buy their support and/or silence. Hence, when the trade partner poses more of an import threat, we should expect the targeting of tariff phaseouts to districts of median and protectionist legislators to marginally increase. Hence, the final hypothesis:

> **Hypothesis 7 (H7):** On average, products belonging to industries concentrated in districts of median and protectionist legislators are phased out for a longer period when the partner poses a greater import threat.

4 Data and Empirical Strategy

4.1 Tariff Phaseout Duration

To test my argument, I make use of PTARIFF, a novel dataset on FTA tariff treatment at the original tariff line level in all 13 ratified US FTAs. PTARIFF is a broader data project in collaboration with Elizabeth Van Lieshout[18] that is slated to provide dyadic tariff treatment for 140 bilateral free trade agreements. Raw PDF tariff schedules are first extracted as tables; then, each unique staging category is hand-coded by referring to the FTA main text. A product tariff can be "already duty-free," "exempt," or excluded from liberalization, eliminated "immediately," or "phased out." Phased-out products are coded with the

[18]Stanford Political Science Ph.D., currently a trade policy analyst at the OECD.

number of years for tariffs to be fully eliminated.

For this paper, I use the phaseout duration the United States places on imports from its trade partners as the main dependent variable at the original 8-digit product code. I use the original 8-digit reported in US tariff schedules to conserve the sample size and the specific treatment for each product.[19] I concord different HS revisions across agreements to HS rev. 2002, linking it with industry-level variables at NAICS rev. 2012.[20] The phaseout duration is a continuous variable that ranges from 0 (immediate elimination) to 20 years.[21]

4.2 Industry's Concentration in Electorally Competitive States

To test H1 to H4, I operationalize the degree to which an industry is concentrated in electorally competitive states by first weighing the share of industry employment in each state $\frac{E_{sk\tau}}{E_{k\tau}}$ by the state's electoral competitiveness ψ_{st} and then sum up the weighted values across all states for each industry $\sum_{s=1}^{S}$.

Equation 1 outlines the measurement construction for *Competitive Margins* or $CompMarg$, where $\frac{E_{sk\tau}}{E_{k\tau}}$ captures the five-year average (τ) of an industry k employment in state s relative to five-year average total industry employment.[22] The index s denotes states, k denotes industries, and τ refers to the year t in which the employment values are smoothed over the preceding five years.

$$CompMarg_{kt} = \sum_{s=1}^{S} \left(\frac{E_{sk\tau}}{E_{k\tau}} \times \psi_{st} \right) \tag{1}$$

ψ_{st} represents the electoral competitiveness of state s in year t. The electoral competitiveness is measured to be how close to 50% the President's party received for state s in the past three elections. Equation 2 outlines how ψ_{st} is constructed. Here, V_{st} represents the three-election average of the two-party vote share of the sitting president in state s

[19] The author thanks Besedes, Kohl, and Lake (2020) for providing digitized NAFTA tariff data from their replication package. The author manually coded approximately 1100 products with more than one tariff treatment, which were previously not coded.

[20] In order to concord between product and industries, I use Liao et al.'s 2020 `Concordance` package to translate 6-digits HS codes (2002 revision) to 6-digits NAICS (2012 revision). My independent variables are constructed using Eckert et al.'s 2020 County Business Pattern data, where they harmonized industry codes to the 2012 revision of the NAICS.

[21] While the duration is usually whole numbers in years (e.g., 1, 2, 3), there are special cases where product codes have more than one tariff treatment, in which the average duration is taken, creating rational numbers (e.g., 2.34, 5.21).

[22] I use Eckert et al.'s (2020) NAICS-harmonized version of the County Business Pattern for employment numbers.

during term t. Using a three-election average helps smooth out short-term fluctuations. The competitiveness measure is calculated by first finding the absolute difference from 50%. A state with a close election would have a smaller number. I then flip the direction by subtracting the absolute difference from 50% so that more competitive states have higher values, closer to 50%.

$$\psi_{st} = 0.50 - (|V_{st} - 0.50|) \tag{2}$$

4.3 Industry's Concentration in Districts of Median and Protectionist Legislators

To test H5 to H7, I operationalize the industry's concentration in districts of median and protectionist legislators (denoted singularly as Γ_{kt}) by weighing the share of industry employment in each district $\frac{E_{dk\tau}}{E_{k\tau}}$ with trade ideal point estimates γ_{dt}. γ_{dt} here indicates either the raw -1 to 1 NOMINATE score for legislators' revealed protectionist preferences or the inverse ideal point distance from the median. After weighing industry employment with γ_{dt}, the values are summed up across all districts for each industry $\sum_{d=1}^{D}$. Equation 3 outlines this process,

$$\Gamma_{kt} = \sum_{d=1}^{D} \left(\frac{E_{dk\tau}}{E_{k\tau}} \times \gamma_{dt} \right) \tag{3}$$

To construct $\gamma_{dt}^{DistanceToMedian}$, I use `wnominate` R package to estimate legislators' ideal points using 736 roll call votes from VoteView database (Poole et al. 2008; Lewis et al. 2023). I use Bernie Sanders as the most anti-trade legislator for the algorithm to function.[23] Bernie Sanders has been historically critical of US trade liberalization efforts. Not only did he oppose granting China permanent normal trade relations in 2000, but he also opposed the North American Free Trade Agreement (NAFTA) and the USMCA.[24]

After the `wnominate` algorithm generates all legislators' ideal point estimates on trade that goes from -1 (pro-trade) to 1 (anti-trade) $\gamma_{dt}^{AntiTradeIdeal}$,[25] I calculate every legislator's distance to the median ideal estimate for each Congressional session for both chambers, represented by Equation 4.[26] I then inverse the distance so that higher values would

[23] For further details on a more systematic approach that produces Bernie Sanders as the most protectionist legislator, please see Appendix A.2.

[24] Source. Last accessed 1/30/25.

[25] The algorithm excludes legislators with fewer than 20 trade votes — which is the default setting.

[26] Since there are two senators representing a single district — the state — I take the average ideal point

indicate that the legislator is closer to the median legislator.

$$\gamma_{dt}^{Median} = 1 - |\gamma_{dt}^{AntiTradeIdeal} - Median(\gamma_{dt}^{AntiTradeIdeal})| \tag{4}$$

4.4 Import Threat

To test H3 and H7, I operationalize *import threat* as the degree to which the import of specific products from an FTA partner is viewed as "threatening," which depends on two components. First, if the product tariff were to be eliminated, what would be the increase in demand for such a product? Even if import demand elasticity is high, it doesn't necessarily imply that the partner would be able to fulfill increased demands. Hence, a trade partner would only pose an import threat for any particular product if the demand change from eliminating tariff is high and if the partner has already been exporting said product to a high degree.

Equation 5 outlines how *Import Threat* is constructed as a function of demand change when the tariff is eliminated $(1 - (1 + BaseRate)^{-\sigma})$ and the FTA partner's capability of exporting product to the world except for the United States in the three years leading up to the agreement $Export_{jip\tau,i\neq USA}$. I specify the partner's export number to exclude their export into the United States to avoid any endogeneity because existing barriers disincentivize trade. Here, τ specifies that the export numbers are rolling averages of three years prior to the agreement's signing.[27] Export data is aggregated to the 4-digits to minimize missing data at the 6-digits from 16% to 5%.

$$ImportThreat_{jpt} = log(Export_{jip\tau,i\neq USA} \times (1 - (1 + BaseRate_{ipt})^{-\sigma_{ip}})) \tag{5}$$

The demand change is characterized as the inverse of the demand level when prices are higher due to tariffs. First, $(1 + BaseRate_{ipt})$ specifies the percentage change in price for imports when there are tariffs. For example, a 25% tariff on light trucks would increase the price of said goods by 1.25 times. σ_{ip} is the import demand elasticity. Put together $(1 + BaseRate_{ipt})^{-\sigma_{ip}}$ computes the demand level when there's a tariff in place; hence, with high import demand elasticity, a large price change (i.e., reduction in price when tariffs are eliminated) would lead to a greater reduction in demand levels.

estimates before calculating the distance.

[27] There are some inconsistencies in the number of years used as rolling averages in this paper. Three years is used due to differing product codes available from UNComTrade for earlier agreements. For example, the export data from Mexico and Canada prior to 1992 at the 6-digit HS rev.0 only go back to 1990.

For example, the demand for imported light trucks with 25% tariff would be 41% with an elasticity of 4 (high) versus 80% with an elasticity of 1 (low), compared to the baseline of 100% when there's no tariff.[28] If demand for light trucks is highly elastic, the elimination of tariffs would increase demand by 59%, as captured by the difference with 1.

MFN base rates are taken from UNCTAD, and data on import demand elasticity is from Broda and Weinstein (2006), accessed from Liao et al. (2020)'s `concordance` package. Because the 6-digit estimates of import demand elasticity have extreme outliers, I take the median value of 6-digit HS products and aggregate it to the 2-digit HS.

4.5 Controls

I employ a mix of product and industry-level characteristics to control for any confounders. First, I hold the *Base Rate* constant to control for the documented relationship where products with higher base rates receive longer tariff phaseout (Baccini, Dür, and Elsig 2018; Anderer, Dür, and Lechner 2020; Kowalczyk and Davis 1998). I use ad-valorem rates from the FTA tariff schedule at the 8-digit and supplemented any non-ad-valorem-rates, such as tariff rate quotas, with ad-valorem-equivalent rates calculated by UNCTAD TRAINS database.[29]

Second, I control for a variety of product characteristics, such as whether the product is intermediate, capital, consumer, or agricultural and the degree to which the product is upstream and differentiated. I use Liao et al.'s (2020) `concordance` package to classify each 6-digit product as intermediate or final goods. Agricultural, capital, and consumer goods are binary variables derived from the USITC Concordance Wizard database.[30] The database provides a binary coding for agricultural products as well as end-use cases in which I use the one-digit code to classify whether a product is capital goods or consumer goods.[31] Product differentiation and upstreamness are all drawn from Liao et al.'s (2020) `concordance` R package. Product differentiation is drawn from Rauch (1999)'s classification, and data on upstreamness is from Antràs and Chor (2018); Antràs et al. (2012). I used HS revision 2002 to derive these product-level controls, and I standardized all non-binary variables.

[28] In which case, regardless of elasticity, the resulting demand level would be 100%. For example $1^{-4} = 1^{-1}$.

[29] To learn more about how UNCTAD convert tariff rate quotas to ad-valorem equivalent rates, see https://wits.worldbank.org/wits/wits/witshelp/content/data_retrieval/p/intro/c2.ad_valorem_equivalents.htm.

[30] Data accessible here https://dataweb.usitc.gov/classification/commodity-translation. Last accessed 10/26/24.

[31] End use classification codebook is accessible here https://www.census.gov/foreign-trade/reference/codes/enduse/imeumstr.txt. Last accessed 10/26/24.

Industry Size is simply the natural log of employment number for industry k. Industry employment number is drawn from Eckert et al. (2020)'s NAICS-harmonized version of the County Business Pattern.[32]

Fourth, *Capital Mobility* is measured using Liquidation Recovery Rate for property, plant, and equipment (PPE) from Kermani and Ma (2023)'s database of Asset Specificity.[33] The data is time-invariant and originally was coded using 2-digit BEC codes; I converted this to NAICS 6-digit. If a firm resides within an industry with a relatively high asset specificity, i.e., higher asset immobility, it may lobby for longer tariff phaseouts to allow for its investments to depreciate. If an industry can take advantage of the labor market abroad and its liquid recovery rate for PPE is relatively high, it may lobby for a faster tariff phaseout so it may offshore production and import final goods from abroad. Having a high liquidation rate, or asset mobility, allows producers to benefit from moving their investment abroad to low-cost labor countries where returns are higher. This variable is meant to approximate the *depreciation hypothesis* where longer phaseouts are provided so that industries may depreciate their physical assets (Mussa 1984).

I also account for intra-industry trade (IIT), in which I use the Grubel–Lloyd index $(1 - \frac{|import_{ij} - export_{ij}|}{import_{ij} + export_{ij}}$ (Grubel and Lloyd 1971). A low value indicates that there is little intra-industry trade, while a high value would indicate that the two countries simultaneously exchange the same good. Controlling for IIT speaks directly to Kowalczyk and Davis (1998) and Baccini, Dür, and Elsig (2018), who find that higher intra-industry trade may induce shorter phaseout. The bilateral trade data at 6-digit HS is from the UNComTrade. I group CAFTA and Dominican Republic together as a trade bloc, as well as Mexico and Canada when dealing with plurilateral agreement.[34]

I also control industry concentration in districts of legislators that are in either House Ways and Means or Senate Finance committees. Even though trade agreement implementation bills cannot be politically held up by committees, such as House Ways and Means and Senate Finance, it is imperative to negotiators that the committee votes favorably prior to entering the floor votes (Interview 2, 48:49). I follow the previous the operationalization laid out in Equation 3. Instead of the median legislator dummy to subset the share of industry employment concentrated in key ratifying voters, I subset them based on whether their Representative or Senator is in the Ways and Means or Finance Committee, respectively. Data on whether a district or state is represented by a Represen-

[32]The data is accessible at http://www.fpeckert.me/cbp/.
[33]Data accessible through https://assetspecificity.com/. Last accessed 8/6/24
[34]Unlike other continuous control variables, I do not standardize IIT as it is bound between 0 and 1.

tative or Senator in either committee comes from Stewart III and Woon (2024).[35] Similarly, I control for industry concentration in states with higher electoral college votes, *EC Votes*, by weighing industry employment share with the state's electoral college vote counts.

Finally, I account for unions' ability to leverage their "vote" and "money" in extracting concessions in trade agreements via legislators. As demonstrated by UAW's endorsement of KORUS, unions may lobby Congressional members and Senators to push for more extensive phaseout duration for relevant industries that concentrate in local districts and states. Hence, we should see that industry concentration in districts and states with greater union power, measured through PAC donations or union membership, is associated with longer phaseouts for relevant products. Following Equations 1 and 3, I weigh industry employment in each district or state by the logged union PAC donation averaged over three election cycles or union membership by population ratio. Data on Union PAC donation comes from the Database on Ideology, Money in Politics, and Elections (DIME) (Bonica 2023).[36] Union membership data at the state level is from Hirsch, MacPherson, and Even (2024)'s *Unionstats*, while district-level union membership is from Becher, Stegmueller, and Käppner (2018).

Table 1 displays the summary statistics for all variables discussed above.

4.6 Research Design

I assess how longer phaseout durations are assigned to products based on economic and political sensitivities within each FTA by estimating the following model:

$$Y_{pj} = \theta_j + \delta_K + \beta_1 CompMarg_{kt} + \beta_2 \Gamma_{kt} + \beta_3 ImportThreat_{pt} + \beta_4 \mathbf{X}_{kt} + \beta_5 \mathbf{Z}_{pt} + \varepsilon_{pt} \quad (6)$$

where Y_{pj} is the phaseout duration at the 8-digit product code. The main variables of interests are: $CompMarg_{kt}$, Γ_{kt}, and $ImportThreat_{pt}$. Matrices $\mathbf{X}_{kt}$ and $\mathbf{Z}_{pt}$ include controls at the industry and product levels, respectively. I include two sets of fixed effects: θ_j are FTA dummies, capturing time-invariant FTA characteristics and allowing for variation within FTAs; δ_K are sector dummies, as defined by HTS's "sections," which account for unobserved heterogeneity within sectors.[37] I also include FTA-Sector fixed effects to ac-

[35] I hand-coded the committee membership of legislator for the 102nd Congress (for NAFTA) due to missing data from Stewart III and Woon (2024).

[36] While it may also be reasonable to control for Corporate PAC donations, it is highly collinear with Union PAC donation.

[37] See https://hts.usitc.gov/ on sector grouping of two-digit chapters.

Table 1: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Phaseout Duration	139,983	1.344	3.118	0.000	20.000
Phaseout Usage	139,983	0.212	0.409	0	1
Excluded	149,009	0.007	0.081	0	1
Competitive Margins	140,571	0.000	1.000	−9.331	3.945
Import Threat	128,930	−0.000	1.000	−4.401	2.872
EC Vote	140,571	0.000	1.000	−3.264	5.937
Median Trade NOMINATE (HoR)	140,571	0.000	1.000	−8.040	5.637
Anti-Trade NOMINATE (HoR)	140,571	−0.000	1.000	−5.431	7.542
Median Trade NOMINATE (Senate)	140,571	−0.000	1.000	−5.603	4.811
Anti-Trade NOMINATE (Senate)	140,571	−0.000	1.000	−4.862	4.089
Union PAC (HoR)	140,571	0.000	1.000	−12.331	5.033
Union PAC (Senate)	140,571	0.000	1.000	−3.781	2.874
Ways and Means Committee (HoR)	140,571	0.000	1.000	−2.355	18.467
Finance Committee (Senate)	140,571	−0.000	1.000	−2.608	6.386
Rust Belt	140,571	−0.000	1.000	−2.128	4.360
Sun Belt	140,571	−0.000	1.000	−2.544	3.217
MFN Base Rate	148,666	−0.000	1.000	−0.596	31.908
Intermediate Products	148,692	0.099	0.298	0	1
Industry Size (ln)	140,571	−0.000	1.000	−7.076	2.906
Capital Mobility	137,697	0.000	1.000	−1.802	2.831
Agricultural Products	148,814	0.799	0.401	0	1
Capital Products	148,814	0.148	0.355	0	1
Consumer Products	148,814	0.241	0.428	0	1
Upstreamness	147,967	0.000	1.000	−2.080	1.889
Differentiated Goods	142,659	0.647	0.478	0	1
Union Membership Rate (CD)	130,738	−0.000	1.000	−2.371	6.108
Union Membership Rate (State)	140,571	0.000	1.000	−2.956	3.449
Intra-Industry Trade	95,449	0.093	0.218	0.000	0.999

count for the tendency for products to be phased out within sector clusters, as illustrated in Figure 3. I cluster my standard errors by 6-digit NAICS to account for correlation in the errors among products made by the industry. The estimates capture effects for products only in the manufacturing sector (NAICS 31-33) since missingness in the data yield rather minimal variation in the agricultural, forestry, fishing, and hunting (NAICS 11) and mining, quarrying, and oil and gas extraction (NAICS 21) sectors.

5 Findings

I theorize that the design of trade agreements' tariff schedules is politically motivated. Unlike prior studies that focused on economic and demand-side explanations, such as the type of goods (Baccini, Dür, and Elsig 2018), intra-industry trade (Baccini, Dür, and Elsig 2018; Kowalczyk and Davis 1998), supply chain linkages (Anderer, Dür, and Lechner 2020; Chase 2003), and the degree to which the partner's imports pose a threat to domestic producers (Van Lieshout 2021*a*), I contribute a novel political and supply-side explanation for the duration of tariff phaseouts.

Table 2 presents the main set of results. I find that *Competitive Margins* is positive and highly significant in all four models, from least to most stringent in fixed effects specification. *Anti-trade NOMINATE (Senator)* is positive and significant for column (1) to (3), losing significance in column (4). *Anti-trade NOMINATE (HoR)* is positive and significant only for columns (1) and (2). Overall, I conclude that the executives' interest in insulating themselves electorally is stronger than their interest in getting FTAs ratified.

[Table 2 about here]

Table A3 includes Intra-Industry Trade and industry concentration in states and districts with higher union membership rates separately due to the massive reduction in sample size. Missing about 30,000 observations led to a non-significant finding for *Competitive Margins* for the FTA-Sector fixed effect model (column 3); nevertheless, the main findings remain robust.

The findings is robust when (1) the estimations are conducted with Poisson Pseudo Maximum Likelihood (PPML) and Logistic Regression (Table A4); (2) accounting for industry concentration in rust and sun belt states (Table A5); (3) *Competitive Margins* is substituted with an alternative coding rule;[38] and (4) *Competitive Margins* is constructed with

[38]To construct the alternative measure, I weigh industry employment concentration in each state with binary indicators on whether the state's margin is within 10%, 5%, or 2% around the mean; *Competitive Margins* is robust for *Swing (10%)* for both FTA + Sector and FTA-Sector fixed effects models, but *Swing*

Table 2: Effect of Geographic Concentration of Industries on Tariff Phaseout Duration

Dependent Variable:	Phaseout Duration			
	No FE	FTA FE	FTA + Sector FE	FTA-Sector FE
Model:	(1)	(2)	(3)	(4)
Variables				
Competitive Margins	0.527***	0.257***	0.226***	0.141**
	(0.075)	(0.065)	(0.062)	(0.060)
Anti-Trade NOMINATE (Senate)	0.401***	0.246**	0.272***	0.061
	(0.092)	(0.106)	(0.090)	(0.072)
Anti-Trade NOMINATE (HoR)	0.540***	0.290***	0.113	0.144*
	(0.096)	(0.103)	(0.115)	(0.076)
Median Trade NOMINATE (Senate)	0.079	-0.066	-0.076	-0.181***
	(0.080)	(0.093)	(0.087)	(0.059)
Median Trade NOMINATE (HoR)	0.371***	0.098	-0.083	-0.0006
	(0.099)	(0.122)	(0.111)	(0.097)
Import Threat	0.513***	0.411***	0.399***	0.367***
	(0.047)	(0.043)	(0.045)	(0.044)
Controls	Yes	Yes	Yes	Yes
Fixed-effects				
FTA		Yes	Yes	
HTS Sector			Yes	
FTA-HTS Sector				Yes
Fit statistics				
Observations	103,166	103,166	103,166	103,166
R^2	0.17	0.23	0.24	0.37
Within R^2		0.14	0.05	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for all 13 free trade agreements. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33). See Table A1 for the full regression table.

the previous election's two-party vote shares to to examine whether short-term fluctuation, or shock, in the margins would affect phaseout duration (Table A7).[39]

To differentiate whether the swing state effect is due to the incumbent intentionally insulating themselves from electoral backlash or a consequence of path-dependent policymaking, we should only see the effect when there is a political horizon. Table 3 subsets the sample to the 11 FTAs negotiated during George W. Bush's administration. I split the sample to President Bush's first and second terms and observed that *Competitive Margins*'s statistically significant effect is only present during his first term. Surprisingly, but perhaps not, *Anti-trade NOMINATE (Senator)* is also significant only during President Bush's first term. This implies that there exists some electoral incentive to maximize FTA ratification chances; additionally, since President Bush enjoyed a unified government from 2003 to 2007, he did not need to buy votes; therefore, buying silence from the opposition may perhaps have aided in the ratification process.

[Table 3 about here]

5.1 Accounting for Selection Biases

The negotiation of tariff phaseout is contingent on whether the product is included in the liberalization in the first place. While exclusion is rare, accounting for about 0.315% of product codes — see Figure 2a — the duration of tariff phaseouts may be endogenous to whether the product makes it to the bargaining table. To control for this potential selection bias, I run a Heckman Selection Model where the first stage calculates the predicted probability of a product being included in liberalization, with the second stage model controlling for the inverse mill ratio to adjust for any selection bias (Heckman 1979).

Due to the rarity of product exclusion, running a probit model with FTA and/or FTA-sector fixed effects would significantly limit the observation to which the probability of a product is included because the model requires at least more than one outcome (as most fixed effect groupings do not exclude products). Hence, I run two probit models with and without FTA fixed effects to which the inverse Mill's ratios are calculated and controlled for in the second stage. Including FTA fixed effects in the first stage reduced the second-stage sample size from 103,166 to 41,514.

Table 4 demonstrates that even controlling for selection bias, the main result of *Competitive Margins* and *Anti-Trade NOMINATE (Senate)* remain robust.

(5%) is only significant for FTA + Sector fixed effects model.

[39] Bown et al. (2024) recently use changes in the identity of swing states as an exogenous variation for an instrumental variable estimation.

Table 3: First Term Effects With George W. Bush's Free Trade Agreements

Dependent Variable:	Phaseout Duration					
term	1st Term			2nd Term		
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Competitive Margins	0.336***	0.207***	0.189**	0.108	0.065	0.056
	(0.087)	(0.072)	(0.074)	(0.068)	(0.065)	(0.063)
Anti-Trade NOMINATE (Senate)	0.334**	0.194**	0.188*	-0.062	-0.050	-0.096
	(0.134)	(0.097)	(0.100)	(0.121)	(0.090)	(0.087)
Anti-Trade NOMINATE (HoR)	0.420***	0.092	0.099	0.219**	0.074	0.078
	(0.144)	(0.099)	(0.097)	(0.092)	(0.089)	(0.074)
Median Trade NOMINATE (Senate)	0.022	-0.038	-0.049	-0.382***	-0.231***	-0.305***
	(0.111)	(0.074)	(0.073)	(0.104)	(0.073)	(0.074)
Median Trade NOMINATE (HoR)	0.231	0.040	0.041	-0.045	-0.149	-0.087
	(0.216)	(0.135)	(0.137)	(0.107)	(0.114)	(0.097)
Import Threat	0.493***	0.513***	0.342***	0.287***	0.230***	0.351***
	(0.069)	(0.069)	(0.053)	(0.034)	(0.040)	(0.047)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects						
FTA	Yes	Yes		Yes	Yes	
HTS Sector		Yes			Yes	
FTA-HTS Sector			Yes			Yes
Fit statistics						
Observations	49,911	49,911	49,911	39,809	39,809	39,809
R^2	0.19	0.21	0.37	0.23	0.25	0.30
Within R^2	0.16	0.04	0.04	0.17	0.04	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for 11 free trade agreements negotiated under George W. Bush. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

[Table 4 about here]

Table 4: Heckman Selection Model

Dependent Variables:	Included	Phaseout Duration			Included	Phaseout Duration		
	1st Stage	2nd Stage			1st Stage	2nd Stage		
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit	OLS	OLS	OLS	Probit	OLS	OLS	OLS
Variables								
Competitive Margins	0.105	0.241***	0.221***	0.137**	-0.098	0.341***	0.314***	0.144**
	(0.073)	(0.061)	(0.059)	(0.057)	(0.151)	(0.097)	(0.091)	(0.070)
Anti-Trade NOMINATE (Senate)	0.046	0.270***	0.294***	0.089	-0.195	0.445**	0.495***	0.141*
	(0.071)	(0.101)	(0.088)	(0.069)	(0.127)	(0.172)	(0.156)	(0.076)
Anti-Trade NOMINATE (HoR)	-0.231***	0.227**	0.071	0.103	-0.396***	0.303**	0.028	0.034
	(0.051)	(0.101)	(0.115)	(0.074)	(0.077)	(0.140)	(0.112)	(0.071)
Median Trade NOMINATE (Senate)	0.060	-0.046	-0.040	-0.139**	-0.170	-0.007	0.031	-0.142**
	(0.059)	(0.090)	(0.086)	(0.058)	(0.130)	(0.158)	(0.099)	(0.068)
Median Trade NOMINATE (HoR)	0.098	0.115	-0.061	0.021	0.098	-0.005	-0.242**	-0.051
	(0.061)	(0.115)	(0.107)	(0.091)	(0.088)	(0.123)	(0.099)	(0.095)
Import Threat	-0.618***	0.315***	0.316***	0.283***	-0.623***	0.039	0.024	0.154***
	(0.154)	(0.043)	(0.045)	(0.035)	(0.177)	(0.057)	(0.052)	(0.046)
Inverse Mill Ratio		5.76***	5.21***	4.94***		2.28**	2.34**	2.27***
		(0.959)	(0.870)	(0.919)		(1.14)	(1.08)	(0.512)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects								
FTA		Yes	Yes		Yes	Yes	Yes	
HTS Sector			Yes				Yes	
FTA-HTS Sector				Yes				Yes
Fit statistics								
Observations	105,814	103,166	103,166	103,166	42,431	41,514	41,514	41,514
Squared Correlation	0.10	0.23	0.24	0.37	0.29	0.19	0.22	0.34
Pseudo R^2	0.42	0.05	0.05	0.09	0.53	0.04	0.05	0.08
BIC	6,376.7	505,925.1	504,540.5	488,395.4	4,406.7	200,619.3	199,186.3	192,947.3

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for all 13 free trade agreements. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33). See Table A2 for the full regression table.

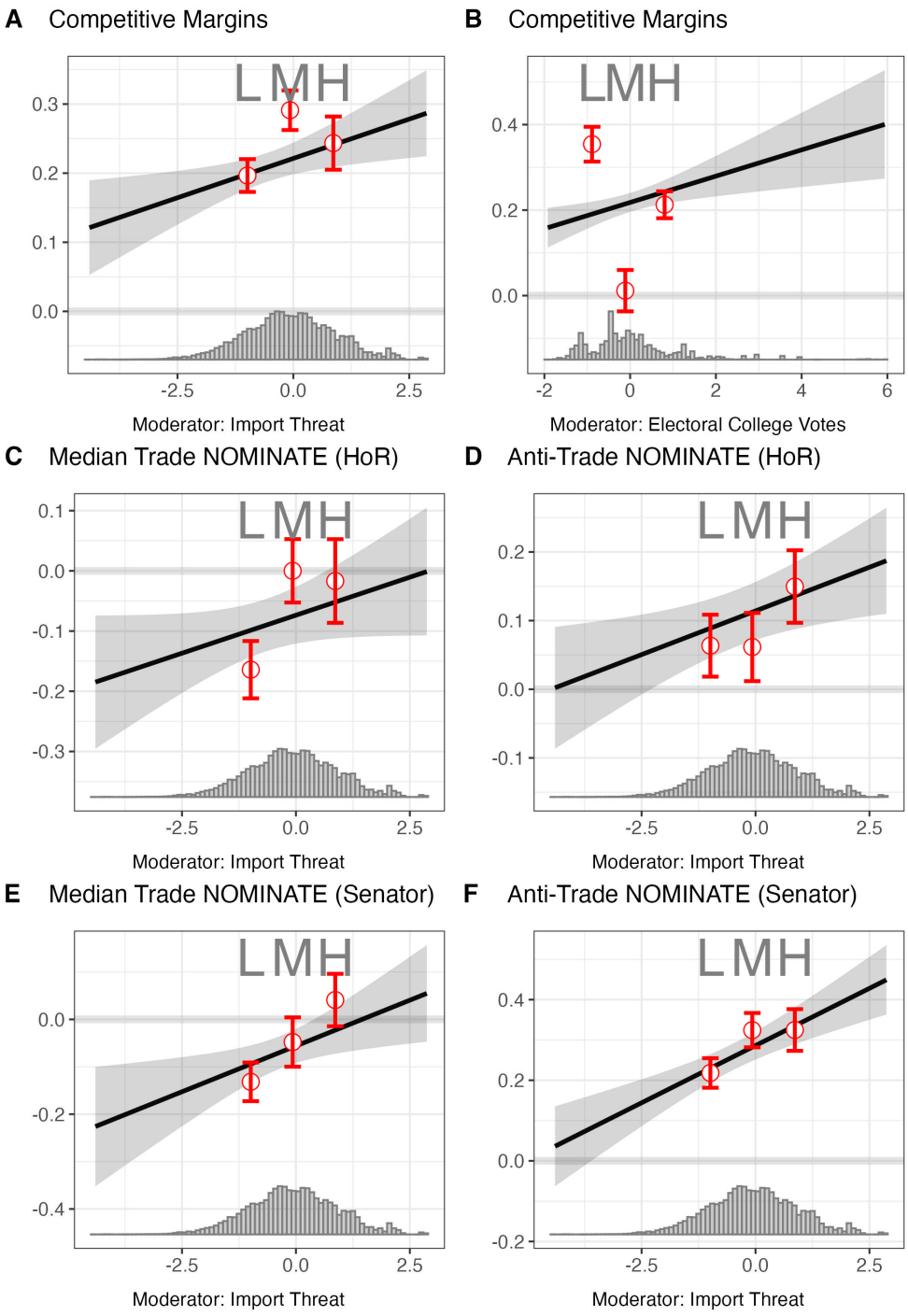
5.2 Marginal Effects

I assess H3 and H7 by interacting the main explanatory variables with *Import Threat*. Figure 4 presents five plots (A, C, D, E, and F) where the marginal effects of the main explanatory variables are conditional on *Import Threat*. In all plots, as the partner poses a greater import threat for any particular product, the marginal effect becomes more positive.

[Figure 4 about here]

The static marginal effects are estimated with the typically low, medium, and high values of *Import Threat* suggests that the interaction effects for *Competitive Margins* and *Median Trade NOMINATE (HoR)* are not linear. For instance, the magnitude of *Competitive Margins* with the typical medium value of *Import Threat* is higher than with the typical

Figure 4: Marginal Effects on Phaseout Duration



Note: Marginal effect plots are created using `interflex` R package (Hainmueller, Mummolo, and Xu 2019), using FTA + Sector fixed effects specifications (Equation 6). L, M, and H are the typically low, medium, and high values of the moderating variable (X) used to calculate static marginal effect point estimates and confidence intervals. The histogram displays the distribution of the moderating variable.

high *Import Threat*. Regardless of non-linearity in interaction effects, I can still conclude that swing industries receive longer phaseouts when the partner poses a greater import threat, supporting H3.

H7 is only partially supported because *Median Trade NOMINATE* for representatives and senators are not positive and significant at any *Import Threat* value. However, the positive and significant marginal effect for *Anti-Trade NOMINATE* for both representatives and senators increases as the partner poses a greater import threat.

Finally, Figure 4.B tests H4a and H4b. The figure suggests that industries concentrated in swing states with relatively lower electoral college vote counts received statistically distinguishably longer phaseout duration than those in states with medium or high electoral college votes. Therefore, H4b is supported.

6 Conclusion

Tariff staging, or the rules that prescribe when tariffs are completely phased out, is an under-theorized and under-appreciated flexibility provision that can be geographically targeted due to industry agglomeration. Besides economic and demand-side factors, what explains the allocation of tariff phaseouts from the supply side? That is, what determines the priority of products to be phased out, especially when staging is redistributive due to reciprocity. I argue that lengthy phaseouts are prioritized for politically sensitive products, and the executive's interests in insulating themselves electorally and promoting ratification shape which products are salient in negotiation. I find that the executive allocates tariff phaseouts to industries that concentrate in swing states to serve electoral interests while buying silence from the opposition in the Senate to promote ratification. This evidence is strongest when examining the free trade agreements signed during George W. Bush's first term.

This article introduces tariff staging as a new way to link domestic interests with the design of international institutions; given its highly disaggregated nature and how industries tend to geographically agglomerate, this paper is able to test electoral insulation and ratification promotion argument against each other — a question previous scholars have not been able to ask due to the lack of highly disaggregated data. In the process, I find that electoral incentives primarily shape the design of tariff schedules; additionally, this article informs us of a new way in which the executive plays a two-level game. As opposed to primarily buying ratification votes as previously assumed (Putnam 1988; Milner 1997), executives can buy silence from the anti-trade coalition to promote ratification.

This article focuses on the political incentive to phase out tariffs toward politically salient industries, yet more work needs to be done to understand the political economy of tariff phaseouts fully. One fruitful research agenda would be to examine the causal mechanism between tariff phaseouts, employment, and political consequences more closely. The results of this paper seemingly suggest that there is an electoral incentive to phase out tariffs. What is missing is a comprehensive examination of whether longer staging is effective at slowing down employment decline and the subsequent political consequences of trade. While Riker (2021) has demonstrated that tariff staging can mitigate labor adjustment in the electrical equipment, appliances, and component manufacturing industry, further work is needed to demonstrate tariff phaseouts' effectiveness at easing the cost of labor adjustment for all industries. Even if future research demonstrates how phasing out tariffs may not marginally make a difference in employment decline, it will show how phasing out tariffs is simply an "empty-husk" political tool to facilitate free-trade commitment,[40] in which the belief of its effectiveness motivates its particularistic targeting.

[40]Whereas Grossman and Helpman (1995) and Van Lieshout (2021*a*) argue that tariff staging can promote cooperation by reducing domestic objection, the underlying assumption is that tariff phaseouts are effective at producing desired outcomes.

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A.1 Appendix

A.1.1 Example of Tariff Phaseout Rules in FTAs

Figure A1: Tariff Schedule Example from US-Australia FTA

HTSUS (2004)	DESCRIPTION	BASE RATE	STAGING CATEGORY
0711.20	-Olives:		
	--Not pitted:		
	---Green in color, in a saline solution, in containers each holding more than 8 kg, drained weight, certified by the importer to be used for repacking or sale as green olives:		
0711.20.18	----Described in additional U.S. note 5 to this chapter and entered pursuant to its provisions	3.7 cents/kg on drained weight	A
0711.20.28	----Other	5.9 cents/kg on drained weight	A
0711.20.38	---Other	5.9 cents/kg on drained weight	A
0711.20.40	--Pitted or stuffed	8.6 cents/kg on drained weight	A
0711.30.00	-Capers	8%	B
0711.40.00	-Cucumbers including gherkins	7.7%	B
	-Mushrooms and truffles:		
0711.51.00	--Mushrooms of the genus Agaricus	5.7 cents/kg on drained weight + 8%	D
0711.59	--Other:		
0711.59.10	---Mushrooms	5.7 cents/kg on drained weight + 8%	D
0711.59.90	---Other	7.7%	B
0711.90	-Other vegetables; mixtures of vegetables:		
0711.90.20	--Leguminous vegetables	Free	E
0711.90.50	--Onions	5.1%	B
0711.90.65	--Other vegetables; mixtures of vegetables	7.7%	B
0712	Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared:		
0712.20	-Onions:		
0712.20.20	--Powder or flour	29.8%	F
0712.20.40	--Other	21.3%	F
	-Mushrooms, wood ears (Auricularia spp.), jelly fungi (Tremella spp.) and truffles:		
0712.31	--Mushrooms of the genus Agaricus:		
0712.31.10	---Air dried or sun dried	1.3 cents/kg + 1.8%	A
0712.31.20	---Other	1.9 cents/kg + 2.6%	A

Note:

Figure A2: Description of Staging Categories from US-Australia FTA

ANNEX 2-B
TARIFF ELIMINATION

1. Base Rates of Customs Duty. Except as otherwise indicated, the base rates of customs duty set forth in this schedule reflect the HTSUS Column 1 General rates of duty in effect January 1, 2004, for the United States and the general rates of duty in Schedule 3 to the Australian Customs Tariff Act 1995, in effect January 1, 2004, for Australia.

2. Staging. Except as otherwise provided in a Party's Schedule attached to this Annex, the following staging categories apply to the elimination of duties by each Party pursuant to Article 2.3:

(a) duties on goods provided for in the items in staging category A shall be eliminated entirely and such goods shall be duty-free on the date this Agreement enters into force;

(b) duties on goods provided for in the items in staging category B shall be removed in equal annual stages beginning on the date this Agreement enters into force, and such goods shall be duty-free, effective January 1 of year four;

(c) duties on goods provided for in the items in staging category C shall be removed in equal annual stages beginning on the date this Agreement enters into force, and such goods shall be duty-free, effective January 1 of year eight;

(d) duties on goods provided for in the items in staging category D shall be removed in equal annual stages beginning on the date this Agreement enters into force, and such goods shall be duty-free, effective January 1 of year ten; and

(e) goods provided for in staging category E shall continue to receive duty-free treatment.

Note:

A.1.2 UAW Endorsement Statement

Figure A3: Description of US-Specific Staging Categories from the Head Note of US-Australia FTA

4. Staging. The following staging categories apply to the elimination of customs duties by the United States pursuant to Article 2.3 (Elimination of Duties):

(a) Duties on goods provided for in subheadings 2918.90.20, 8111.00.47 and 8111.00.49 shall be removed in equal annual stages beginning on the date this Agreement enters into force, and such goods shall be duty free, effective January 1, 2010;

(b) Duties on goods provided for in the items in staging category F shall be removed in eighteen equal annual stages beginning on the date this Agreement enters into force, and such goods shall be duty-free, effective January 1 of year eighteen.

(c) Duties on goods provided for in the items in staging category G shall remain at base rates during years one through six. Duties on these goods shall be reduced by 5.6 percent of the base rate on January 1 of year seven and by an additional 5.6 percent of the base rate on January 1 of each year thereafter through year twelve. Beginning January 1 of year thirteen, duties on these goods shall be reduced by an additional 11.1 percent of the base rate annually through year eighteen and shall be duty-free effective January 1 of year eighteen.

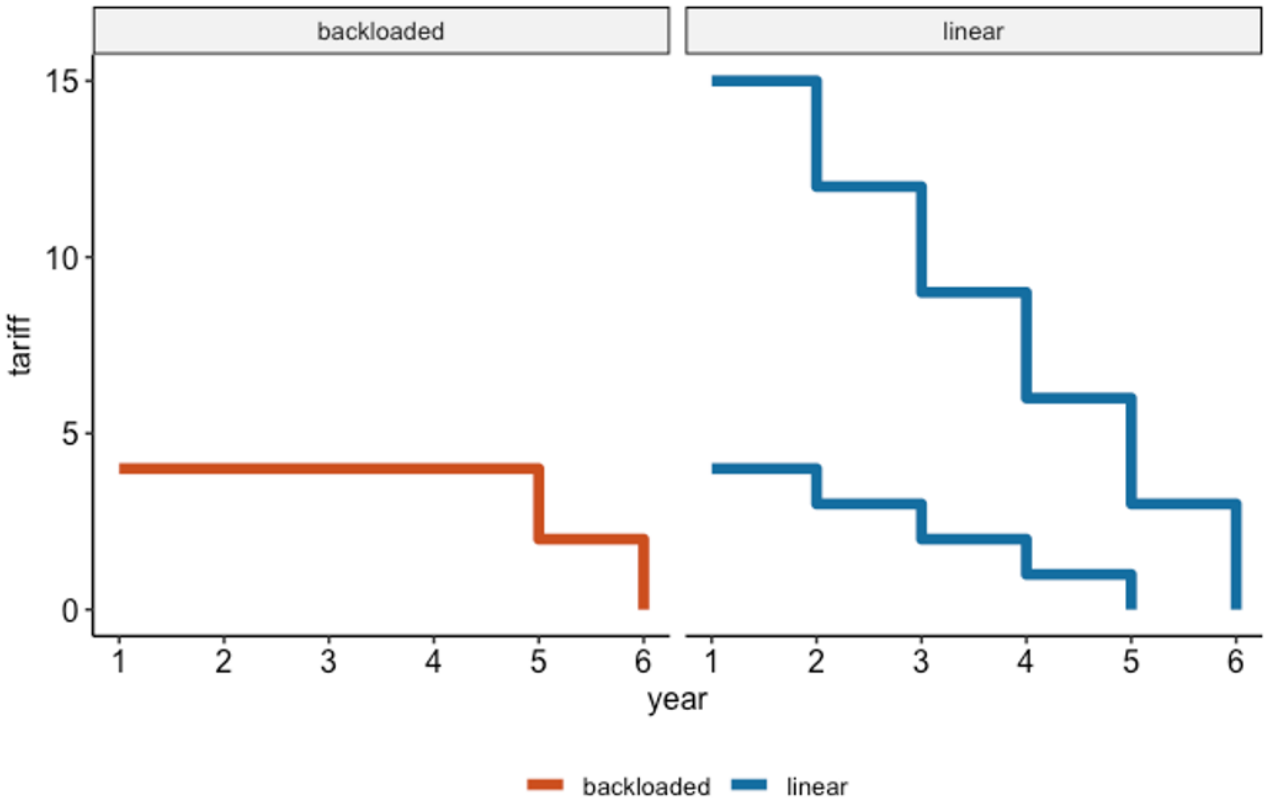
(d) Duties on goods provided for in the items in staging category H shall remain at base rates during years one through eight. Duties on these goods shall be reduced by 6.7 percent of the base rate on January 1 of year nine and by an

Annex 2B-US-Notes-1

Note:

A.1.3 FTARIFF Descriptive Statistics

Figure A4: Example of Linear and Backloaded Phaseout "Shape"



Note:

A.2 Construction of NOMINATE Trade Ideal Points Estimates

To construct $\gamma_{dt}^{DistanceToMedian}$, I use `wnominate` R package to estimate legislators' ideal points using about 736 roll call votes from VoteView database (Poole et al. 2008; Lewis et al. 2023).[41] I first manually handcode each roll call votes on whether voting yes is "pro-trade" or "anti-trade."[42] I code voting yes on a bill, resolution, joint-resolution, or amendment to a bill as pro-trade (1) if the vote:

- would reduce, suspend, or eliminate duty on imports;
- would extend Most Favored Nation (MFN) or Normal Trading Relations (NTR) status to countries;

[41] I filter all roll call votes to "tariffs" issue. Coded roll call votes only go up until October 2013.

[42] Not every roll call votes have a clear direction on the implication of the vote. In such cases, I leave the observation blank, or fill out whether the vote is procedural or if I am unsure of its nature.

Figure A5: UAW Statement

UAW backs Korea trade agreement

The full text of the op-ed by UAW President Bob King is printed below. The piece, published today, can be read online here.

UAW backs Korea trade agreement
By Bob King

> President Barack Obama and U.S. Rep. Sander Levin, a Royal Oak Democrat, should be commended for their effective efforts to substantially revise the U.S.-Korea Free Trade Agreement, which Congress overwhelmingly approved Wednesday night. The UAW fully supports this trade agreement because the automotive provisions, which are very different from those negotiated by President George W. Bush in 2007, will create significantly greater market access for American auto exports and include strong, auto-specific safeguards to protect our domestic markets from potentially harmful surges of Korean automotive imports.
>
> Unlike the 2007 negotiations with South Korea, the labor movement, and particularly the UAW, had an opportunity to be part of the 2010 discussions on strengthening the trade deal. Working with U.S. Trade Representative Ron Kirk and other members of the Obama administration, then-Ways and Means Committee Chairman Levin and top management from the auto companies, the UAW believes the new agreement will help protect current American auto jobs, contains meaningful trade law enforcement and makes stronger labor and environmental commitments.
>
> Under the 2007 proposed agreement, almost 90% of Korea's auto exports to the U.S. would have received immediate duty-free access. Under the agreement passed this week, the 2.5% U.S. tariff on automobiles will stay in place until the fifth year after implementation of the agreement, and the 25% tariff on light trucks remains until the eighth year, when it starts to be phased out. Moreover, South Korea will immediately reduce its electric car tariffs from 8% to 4%, and will phase out the tariff by the fifth year of the agreement. The delay in tariff reductions will allow the domestic automakers time to strengthen their global competitive positions in both traditional and advanced energy efficient auto markets.

Note: Full statement can be accessed here: https://ustr.gov/about-us/policy-offices/press-office/blog/2011/october/uaw-backs-korea-trade-agreement

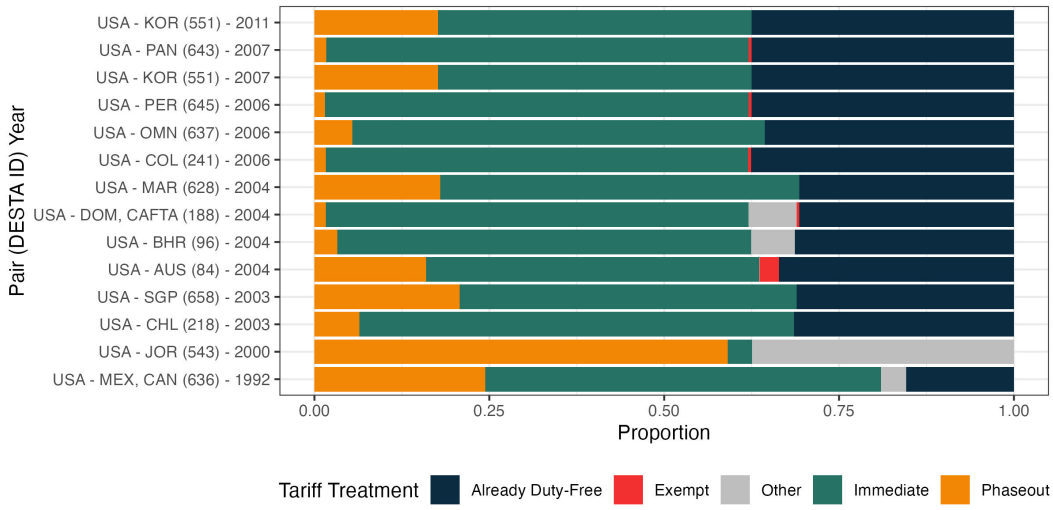
- would modify the tariff schedule or customs procedure to make trade more efficient
- would extend trade adjustment assistance or any policies that aligns with the embedded liberalism value (Ruggie 1982).
- set forth the consideration of a pro-trade bill

On the other hand, voting yes would be coded as anti-trade (0) if the vote:

- would restrict import for clearly protectionist reasons.
- would do the opposite of the above items indicating pro-trade vote.

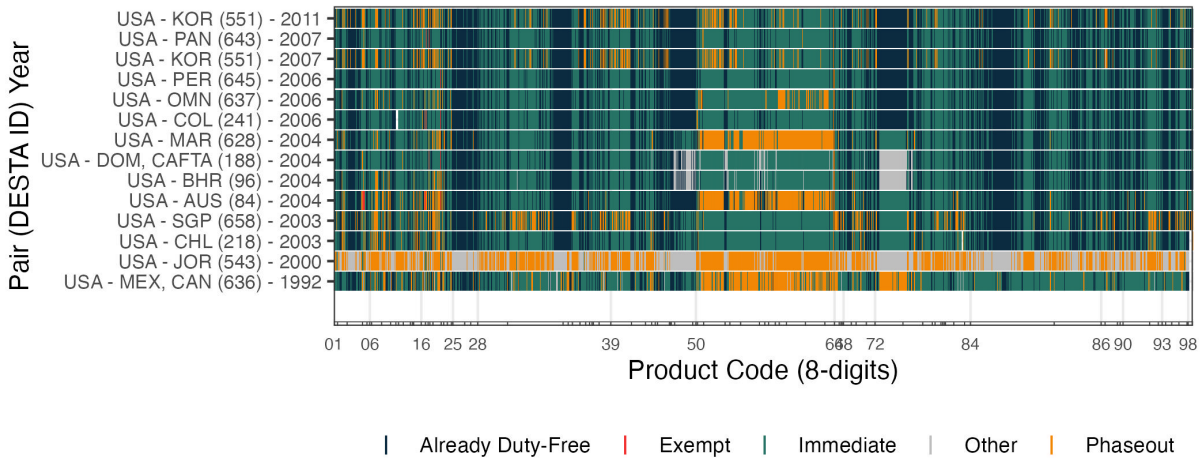
Arriving at a database where 235 roll call votes are coded as either pro- or anti-trade,

Figure A6: Proportion of Each USA Tariff Treatment Category Toward Imports From Trade Partners



Note: Country pair is formatted as home-partner, where the home country sets tariff treatment toward the partner country. "Other" indicates that the product's tariff reduction is governed by other means, such as the WTO commitment. Created by Author 10/24/24.

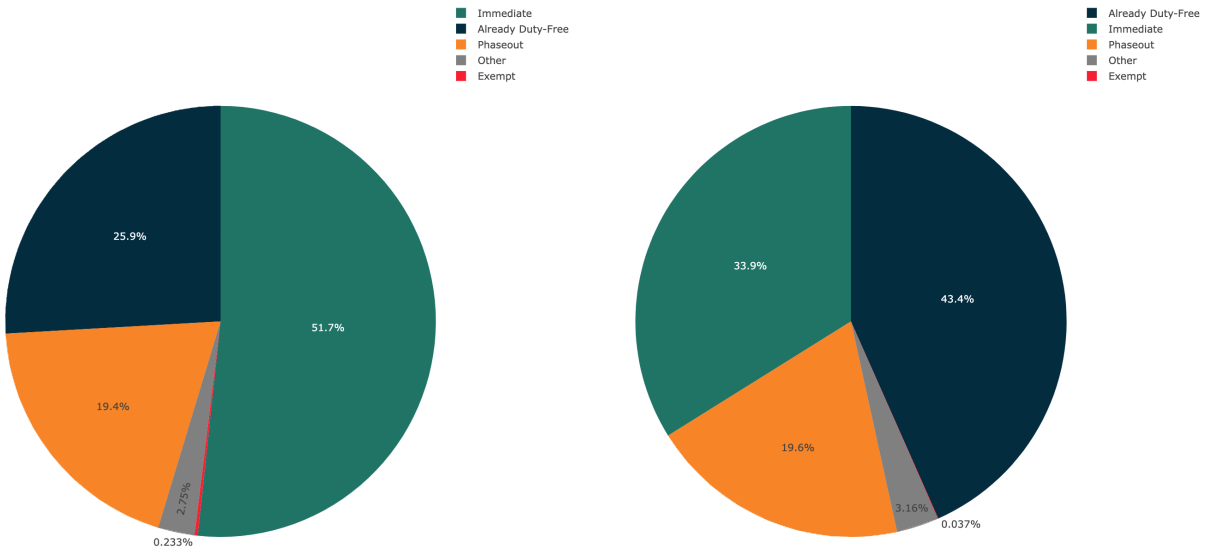
Figure A7: Distribution of Tariff Treatment from USA FTAs Across 8-digit Product Codes



Note: Each tick represents one product code. "Other" indicates that the product's tariff reduction is governed by other means, such as the WTO commitment. Each tick on the x-axis demarcates a 2-digit chapter. Important 2-digit chapters are displayed. Refer to https://hts.usitc.gov/ on the title of HS chapters. Created by Author 10/24/24.

I then calculate each legislators' total roll call votes that are either pro- or anti-trade and the total pro-trade votes for each Congressional session. Subsetting to the 90th percentile of legislators' total number of trade bill votes, I take the most anti-trade legislator, i.e.,

Figure A8: Proportion of Tariff Treatment in USA Trade Agreements



(a) Product Codes

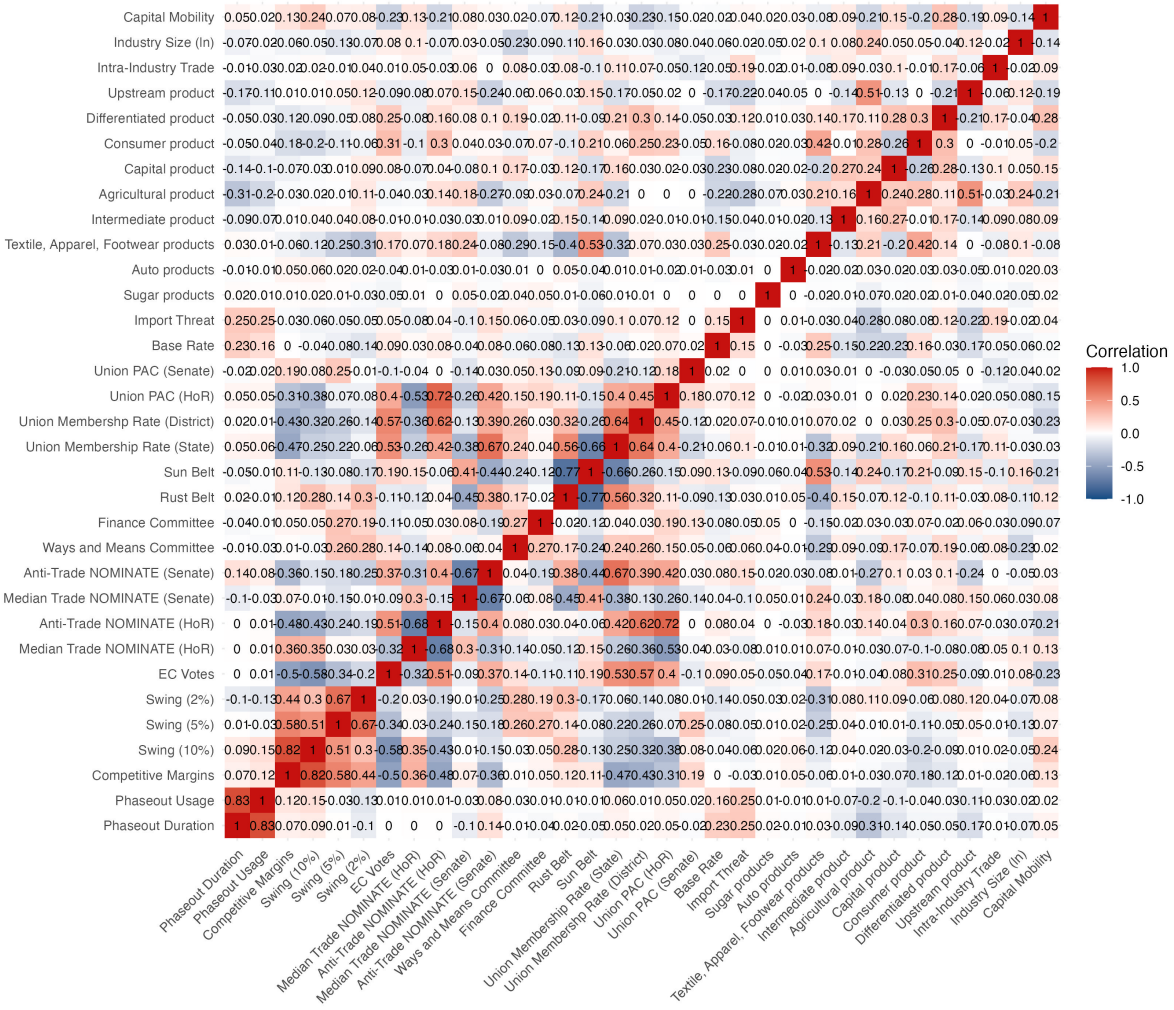
(b) Import Values

Note: Proportions are calculated by aggregating all product code lines (and 5-year rolling average import values before the agreement's signature date) across all USA free trade agreements. "Other" indicates that the product's tariff reduction is governed by other means, such as the WTO commitment. Created by Author on 10/24/24.

legislator with lowest pro-trade vote share, to be fed into the `wnominate` algorithm, who is none other than Bernie Sanders. Bernie Sanders has been historically critical of US trade liberalization efforts. Not only did he opposed granting China permanent normal trade relations in 2000, but also opposed the North American Free Trade Agreement (NAFTA), USMCA.[43]

[43]Source. Last accessed 1/30/25.

Figure A9: Correlation of Variable Heat Map



Note: Created by Author 10/26/24

A.3 Full Regression Tables

[Table A1 about here]

[Table A2 about here]

Table A1: Effect of Geographic Concentration of Industries on Tariff Phaseout Duration

Dependent Variable:	Phaseout Duration			
	No FE	FTA FE	FTA + Sector FE	FTA-Sector FE
Model:	(1)	(2)	(3)	(4)
Variables				
Competitive Margins	0.527***	0.257***	0.226***	0.141**
	(0.075)	(0.065)	(0.062)	(0.060)
Anti-Trade NOMINATE (Senate)	0.401***	0.246**	0.272***	0.061
	(0.092)	(0.106)	(0.090)	(0.072)
Anti-Trade NOMINATE (HoR)	0.540***	0.290***	0.113	0.144*
	(0.096)	(0.103)	(0.115)	(0.076)
Median Trade NOMINATE (Senate)	0.079	-0.066	-0.076	-0.181***
	(0.080)	(0.093)	(0.087)	(0.059)
Median Trade NOMINATE (HoR)	0.371***	0.098	-0.083	-0.0006
	(0.099)	(0.122)	(0.111)	(0.097)
Import Threat	0.513***	0.411***	0.399***	0.367***
	(0.047)	(0.043)	(0.045)	(0.044)
Controls	Yes	Yes	Yes	Yes
Fixed-effects				
FTA		Yes	Yes	
HTS Sector			Yes	
FTA-HTS Sector				Yes
Fit statistics				
Observations	103,166	103,166	103,166	103,166
R^2	0.17	0.23	0.24	0.37
Within R^2		0.14	0.05	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: Unit of observation is 8-digit HS product code for all 13 free trade agreements. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

Table A2: Heckman Selection Model (Full Model)

Dependent Variables:	Included	Phaseout Duration			Included	Phaseout Duration		
	1st Stage	2nd Stage			1st Stage	2nd Stage		
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Probit	OLS	OLS	OLS	Probit	OLS	OLS	OLS
Variables								
Competitive Margins	0.105	0.241***	0.221***	0.137**	-0.098	0.341***	0.314***	0.144**
	(0.073)	(0.061)	(0.059)	(0.057)	(0.151)	(0.097)	(0.091)	(0.070)
Anti-Trade NOMINATE (Senate)	0.046	0.270***	0.294***	0.089	-0.195	0.445**	0.495***	0.141*
	(0.071)	(0.101)	(0.088)	(0.069)	(0.127)	(0.172)	(0.156)	(0.076)
Anti-Trade NOMINATE (HoR)	-0.231***	0.227**	0.071	0.103	-0.396***	0.303**	0.028	0.034
	(0.051)	(0.101)	(0.115)	(0.074)	(0.077)	(0.140)	(0.112)	(0.071)
Median Trade NOMINATE (Senate)	0.060	-0.046	-0.040	-0.139**	-0.170	-0.007	0.031	-0.142**
	(0.059)	(0.090)	(0.086)	(0.058)	(0.130)	(0.158)	(0.099)	(0.068)
Median Trade NOMINATE (HoR)	0.098	0.115	-0.061	0.021	0.098	-0.005	-0.242**	-0.051
	(0.061)	(0.115)	(0.107)	(0.091)	(0.088)	(0.123)	(0.099)	(0.095)
Import Threat	-0.618***	0.315***	0.316***	0.283***	-0.623***	0.039	0.024	0.154***
	(0.154)	(0.043)	(0.045)	(0.035)	(0.177)	(0.057)	(0.052)	(0.046)
Finance Committee	-0.003	0.093*	0.146***	0.043	0.065	-0.053	0.086	0.046
	(0.060)	(0.049)	(0.043)	(0.039)	(0.064)	(0.083)	(0.065)	(0.052)
Ways and Means Committee	0.038	-0.084*	0.002	-0.016	0.028	-0.171**	-0.034	-0.025
	(0.046)	(0.043)	(0.034)	(0.023)	(0.033)	(0.074)	(0.051)	(0.036)
Union PAC (HoR)	0.057	-0.095	-0.007	0.025	0.140**	-0.317*	-0.194	-0.026
	(0.038)	(0.104)	(0.093)	(0.057)	(0.058)	(0.183)	(0.165)	(0.085)
Union PAC (Senate)	0.085***	-0.071	-0.104	-0.110***	0.087	-0.028	-0.096	-0.061
	(0.030)	(0.070)	(0.069)	(0.035)	(0.057)	(0.155)	(0.156)	(0.071)
EC Votes	0.140*	-0.027	-0.061	-0.020	0.243***	-0.054	-0.080	-0.016
	(0.080)	(0.046)	(0.058)	(0.033)	(0.086)	(0.076)	(0.075)	(0.039)
Base Rate	-0.018	0.745***	0.630***	0.616***	-0.003	0.682***	0.556***	0.540***
	(0.057)	(0.210)	(0.169)	(0.166)	(0.062)	(0.160)	(0.116)	(0.109)
Industry Size (ln)	0.169***	0.044	0.026	-0.022	0.175***	0.102	0.030	-0.040
	(0.051)	(0.037)	(0.036)	(0.027)	(0.065)	(0.080)	(0.055)	(0.037)
Capital Mobility	0.020	0.083*	0.105**	0.088*	0.034	0.100	0.040	0.062
	(0.061)	(0.049)	(0.049)	(0.046)	(0.108)	(0.080)	(0.061)	(0.060)
Intermediate product	3.32***	-0.342***	-0.077	-0.100**	3.95***	-0.289***	-0.014	0.005
	(0.122)	(0.079)	(0.047)	(0.042)	(0.246)	(0.090)	(0.042)	(0.034)
Agricultural product	1.79***	-0.907***	-0.438*	-0.538**	2.09***	-1.20***	-0.548**	-0.624***
	(0.346)	(0.194)	(0.249)	(0.261)	(0.365)	(0.351)	(0.235)	(0.222)
Capital product	2.64***	-0.417***	-0.247***	-0.246***	2.77***	-0.202	-0.055	-0.069
	(0.394)	(0.119)	(0.086)	(0.080)	(0.323)	(0.142)	(0.087)	(0.073)
Consumer product	0.200	0.048	-0.081	-0.143**	0.356	0.228	-0.107	-0.193**
	(0.250)	(0.123)	(0.076)	(0.071)	(0.308)	(0.168)	(0.082)	(0.074)
Upstream product	0.517***	-0.053	-0.031	-0.071	0.578***	-0.094**	0.011	-0.036
	(0.088)	(0.043)	(0.070)	(0.061)	(0.111)	(0.047)	(0.059)	(0.048)
Differentiated product	-0.156	-0.205**	-0.129*	-0.097	-0.380*	-0.042	0.070	0.037
	(0.176)	(0.102)	(0.078)	(0.073)	(0.201)	(0.184)	(0.103)	(0.080)
Constant	3.04***							
	(0.174)							
Inverse Mill Ratio		5.76***	5.21***	4.94***		2.28**	2.34**	2.27***
		(0.959)	(0.870)	(0.919)		(1.14)	(1.08)	(0.512)
Fixed-effects								
FTA		Yes	Yes		Yes	Yes	Yes	
HTS Sector			Yes				Yes	
FTA-HTS Sector				Yes				Yes
Fit statistics								
Observations	105,814	103,166	103,166	103,166	42,431	41,514	41,514	41,514
Squared Correlation	0.10	0.23	0.24	0.37	0.29	0.19	0.22	0.34
Pseudo R^2	0.42	0.05	0.05	0.09	0.53	0.04	0.05	0.08
BIC	6,376.7	505,925.1	504,540.5	488,395.4	4,406.7	200,619.3	199,186.3	192,947.3

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for all 13 free trade agreements. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

A.4 Robustness Checks

A.4.1 Including Intra-Industry Trade and Union Membership

[Table A3 about here]

Table A3: Robustness Check: Including Intra Industry Trade and Union Membership

Dependent Variable:	Phaseout Duration		
	FTA FE	FTA + Sector FE	FTA-Sector FE
Model:	(1)	(2)	(3)
Variables			
Competitive Margins	0.156**	0.169***	0.093
	(0.065)	(0.060)	(0.057)
Anti-Trade NOMINATE (Senate)	0.378***	0.355***	0.117
	(0.111)	(0.100)	(0.084)
Anti-Trade NOMINATE (HoR)	0.066	-0.058	0.005
	(0.091)	(0.081)	(0.067)
Median Trade NOMINATE (Senate)	-0.115*	-0.010	-0.132***
	(0.066)	(0.059)	(0.046)
Median Trade NOMINATE (HoR)	-0.076	-0.149	-0.040
	(0.121)	(0.106)	(0.083)
Import Threat	0.361***	0.342***	0.366***
	(0.046)	(0.048)	(0.045)
Controls	Yes	Yes	Yes
Fixed-effects			
FTA	Yes	Yes	
HTS Sector		Yes	
FTA-HTS Sector			Yes
Fit statistics			
Observations	69,886	69,886	69,886
R^2	0.20	0.22	0.33
Within R^2	0.15	0.03	0.04

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for each trade agreement. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

A.4.2 Poisson and Logit Regression

[Table A4 about here]

A.4.3 Accounting for Rust and Sun Belt States

[Table A5 about here]

Table A4: Robustness Check: Poisson and Logit Models

Dependent Variables:	Phaseout Duration			Phaseout Usage		
Model:	(1)	(2)	(3)	(4)	(5)	(6)
	Poisson	Poisson	Poisson	Logit	Logit	Logit
Variables						
Competitive Margins	0.234***	0.216***	0.100**	0.260***	0.249***	0.098
	(0.049)	(0.044)	(0.040)	(0.064)	(0.058)	(0.073)
Anti-Trade NOMINATE (Senate)	0.204***	0.171***	0.040	0.259***	0.301***	0.086
	(0.065)	(0.047)	(0.038)	(0.085)	(0.073)	(0.074)
Anti-Trade NOMINATE (HoR)	0.231***	0.132*	0.112***	0.174*	0.041	0.074
	(0.059)	(0.076)	(0.037)	(0.094)	(0.107)	(0.077)
Median Trade NOMINATE (Senate)	0.043	0.011	-0.043	0.134*	0.065	0.0004
	(0.052)	(0.049)	(0.029)	(0.079)	(0.086)	(0.075)
Median Trade NOMINATE (HoR)	0.159*	0.015	0.029	0.161	-0.002	0.127
	(0.084)	(0.084)	(0.057)	(0.117)	(0.111)	(0.114)
Import Threat	0.430***	0.430***	0.329***	0.595***	0.645***	0.553***
	(0.049)	(0.052)	(0.034)	(0.085)	(0.096)	(0.073)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects						
FTA	Yes	Yes		Yes	Yes	
HTS Sector		Yes			Yes	
FTA-HTS Sector			Yes			Yes
Fit statistics						
Observations	103,166	102,279	65,245	103,166	102,279	64,225
Squared Correlation	0.16	0.18	0.28	0.44	0.45	0.50
Pseudo R^2	0.28	0.30	0.30	0.41	0.42	0.46
BIC	408,899.1	397,405.4	304,142.6	64,386.4	63,078.0	46,261.2

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for all 13 free trade agreements. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

Table A5: Controlling for Industry Concentration in Rust and Sun Belt States

Dependent Variable:	Phaseout Duration					
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Competitive Margins	0.226***	0.218***	0.218***	0.141**	0.118**	0.144**
	(0.062)	(0.063)	(0.057)	(0.060)	(0.059)	(0.058)
Anti-Trade NOMINATE (Senate)	0.272***	0.263***	0.292***	0.061	0.032	0.052
	(0.090)	(0.096)	(0.102)	(0.072)	(0.072)	(0.083)
Anti-Trade NOMINATE (HoR)	0.113	0.110	0.115	0.144*	0.139*	0.143*
	(0.115)	(0.112)	(0.117)	(0.076)	(0.072)	(0.076)
Median Trade NOMINATE (Senate)	-0.076	-0.070	-0.077	-0.181***	-0.165***	-0.181***
	(0.087)	(0.083)	(0.087)	(0.059)	(0.058)	(0.059)
Median Trade NOMINATE (HoR)	-0.083	-0.077	-0.093	-0.0006	0.016	0.004
	(0.111)	(0.111)	(0.113)	(0.097)	(0.090)	(0.092)
Import Threat	0.399***	0.400***	0.398***	0.367***	0.372***	0.368***
	(0.045)	(0.045)	(0.046)	(0.044)	(0.043)	(0.043)
Rust Belt		0.035			0.092*	
		(0.054)			(0.053)	
Sun Belt			0.057			-0.023
			(0.060)			(0.052)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects						
HTS Sector	Yes	Yes	Yes			
FTA	Yes	Yes	Yes			
HTS Sector-FTA				Yes	Yes	Yes
Fit statistics						
Observations	103,166	103,166	103,166	103,166	103,166	103,166
R^2	0.24	0.24	0.24	0.37	0.37	0.37
Within R^2	0.05	0.05	0.05	0.05	0.05	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for each trade agreement. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

A.4.4 Alternative Measures of Swing States

[Table A6 about here]

Table A6: Robustness Check: Alternative Measures of Swing States

Dependent Variable:	Phaseout Duration					
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Anti-Trade NOMINATE (Senate)	0.201**	0.015	0.248***	0.025	0.201**	-0.005
	(0.079)	(0.058)	(0.090)	(0.070)	(0.093)	(0.065)
Anti-Trade NOMINATE (HoR)	0.091	0.133*	0.103	0.127	0.078	0.125
	(0.113)	(0.074)	(0.119)	(0.079)	(0.125)	(0.081)
Median Trade NOMINATE (Senate)	-0.079	-0.184***	-0.071	-0.203***	-0.130	-0.227***
	(0.088)	(0.059)	(0.091)	(0.058)	(0.086)	(0.054)
Median Trade NOMINATE (HoR)	-0.049	0.020	-0.050	0.010	-0.081	0.008
	(0.107)	(0.093)	(0.118)	(0.108)	(0.120)	(0.100)
Import Threat	0.405***	0.370***	0.403***	0.364***	0.390***	0.359***
	(0.045)	(0.043)	(0.046)	(0.045)	(0.046)	(0.046)
Swing (10%)	0.246***	0.167**				
	(0.082)	(0.078)				
Swing (5%)			0.178***	0.040		
			(0.066)	(0.060)		
Swing (2%)					-0.007	-0.049
					(0.052)	(0.053)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects						
FTA	Yes		Yes		Yes	
HTS Sector	Yes		Yes		Yes	
FTA-HTS Sector		Yes		Yes		Yes
Fit statistics						
Observations	103,166	103,166	103,166	103,166	103,166	103,166
R^2	0.24	0.37	0.24	0.36	0.24	0.36
Within R^2	0.05	0.05	0.05	0.05	0.05	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for each trade agreement. Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).

[Table A7 about here]

Table A7: Swing State Shock and Term Effects

Dependent Variable:	Phaseout Duration					
term			Bush 1st Term		Bush 2nd Term	
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Comp Margins Last Election	0.120*	0.094*	0.139**	0.126**	0.072	0.084
	(0.062)	(0.055)	(0.061)	(0.063)	(0.099)	(0.100)
Anti-Trade NOMINATE (Senate)	0.185**	-0.004	0.096	0.100	-0.100	-0.148
	(0.084)	(0.055)	(0.077)	(0.079)	(0.108)	(0.113)
Anti-Trade NOMINATE (HoR)	0.098	0.137*	0.083	0.091	0.072	0.080
	(0.122)	(0.077)	(0.099)	(0.096)	(0.092)	(0.077)
Median Trade NOMINATE (Senate)	-0.101	-0.196***	-0.072	-0.081	-0.243***	-0.316***
	(0.084)	(0.056)	(0.068)	(0.067)	(0.075)	(0.076)
Median Trade NOMINATE (HoR)	-0.098	-0.011	0.055	0.055	-0.154	-0.087
	(0.118)	(0.102)	(0.144)	(0.145)	(0.113)	(0.093)
Import Threat	0.393***	0.366***	0.513***	0.342***	0.231***	0.352***
	(0.045)	(0.044)	(0.070)	(0.053)	(0.040)	(0.046)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed-effects						
FTA	Yes		Yes		Yes	
HTS Sector	Yes		Yes		Yes	
FTA-HTS Sector		Yes		Yes		Yes
Fit statistics						
Observations	103,166	103,166	49,911	49,911	39,809	39,809
R^2	0.24	0.36	0.21	0.37	0.25	0.30
Within R^2	0.05	0.05	0.04	0.04	0.04	0.05

Clustered (NAICS 6d) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Note: Unit of observation is 8-digit HS product code for all 13 free trade agreements (for models (1) and (2)). Standard errors are corrected for clustering at the NAICS 6 digit industry level. Sample is restricted to manufacturing sector (NAICS 31-33).