Escape from Tariffs

The Political Economies of Protection and Classification

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Abstract

The literature on the political economy of trade protection has focused on how firms lobby for their preferred tariffs, but opportunities to change the tariff schedule in the US by legislation are relatively uncommon. How do firms use the political system to their advantage to escape inconvenient trade barriers? This article documents how firms seek favorable tariffs by strategically requesting product classifications. In the United States products must be sorted into tariff categories by the customs office before the appropriate duty can be determined. Using a differences-in-differences empirical strategy and a unique dataset of over $200,000$ classification rulings between 1990 and 2020, I find evidence that firms request classifications when trade barriers are imposed. In particular, I find that firms request classifications when quotas are imposed, when President Donald Trump's tariffs were imposed, and when China entered the World Trade Organization. Consistent with a tariff evasion motive, I find that more classification requests are registered when the variance of tariff rates within a tariff heading is higher.

1 Introduction

Although the struggle between protectionists and free traders is continuous, the opportunities to change the tariff schedule are limited. Schattschneider (1935) described how members of the

United States Congress exchanged support for tariffs protecting important industries in their districts and ultimately logrolled their way to the highly protective Tariff Act of 1930. That scenario where interest groups vie directly for Congressional support has not been repeated in a long time – the United States last significantly reduced its tariffs as part of a multilateral negotiation in 1994 and its most recent preferential trade agreements were signed in 2006. What can firms do to change the tariff schedule even when there are no trade negotiations in progress? How do those efforts determine which firms and industries are willing to participate in attempts to lobby the legislature? A brief discussion of two cases suggests how diligent importers can effectively and continuously bend the tariff schedule in their favor even when there are no trade negotiations in the headlines.

In October of 1926 the pioneering early modernist Constantin Brancusi shipped 20 sculptures from Paris to New York City for an exhibition including his masterpiece titled *Bird in Space*. Modern art and its tendency towards abstraction was not widely known or appreciated at the time. The customs officials who processed the sculptures refused to exempt *Bird in Space* from tariffs as a work of art because they were unable to discern the bird. Instead, they classified it as a "manufactured object of metal" and applied a 40% tariff. Brancusi and the artwork's buyer, having been offended by the decision, sued the US government for re-classification of the good and reimbursement of the duties. The consequent legal proceedings quite literally put the concept of modern art on trial: would Brancusi's revolutionary approach be accepted by society as art?[1] Ultimately, Brancusi prevailed in court, the duties were returned, and finally in 2005 *Bird in Space* was purchased at auction for almost $\$30$ million as a major work of modernism (Giry 2002; Cleary 2014).

Close to a century later, another dissatisfied importer found itself involved in litigation over tariffs. Apple Inc. imports iPad Smart Covers from China which are classified by customs officials as "other articles of plastic" and subject to a 5.3% tariff. Apple's lawyers argued that the product would correctly be classified as "an accessory to a machine," a category that was conveniently duty free. Unfortunately for Apple, the duty free category's description explicitly excludes "covers" as

[1] The tariff classification of artwork has encountered somewhat frequent difficulties. In a separate incident, Customs classified a mosaic by Pablo Picasso as "an article of glass," a decision which was also reversed by the courts (New York Times 1960).

accessories. Apple argued in court that the iPad Smart Cover was not a cover at all – instead, it was an article of furniture because it could be configured as a stand for the iPad. Ultimately, they lost the case (Kelly 2019; Friedman 2019).

These two cases, though separated by a wide expanse of time, echo each other strongly. In both cases an importer was displeased with a tariff and they challenged it through the judicial rather than legislative process. Also in both cases the importer targeted the *ex post* enforcement of the tariff rather than its *ex ante* determination. The purpose of this study is to theorize what the mostly hidden political economy of classification means for the better studied political economy of protection. The argument is that certain bureaucratic institutions are designed to afford importers – and only importers, except in rare circumstances – the opportunity to obtain favorable but narrow legal rulings to reduce their tariffs. The narrowness of these rulings raises the firms' private benefits from lobbying and therefore encourages firms to lobby for classification individually rather than as part of an industry group.

The article documents how firms can attempt to escape tariffs by directly lobbying the bureaucratic classification process using a novel dataset of over $200,000$ advance classification rulings issued by the customs authorities since 1990. The customs authorities in many countries, including the United States, issue legally binding rulings on the classification of particular goods at the request of an importer. The US's rulings are available from the Customs Rulings Online Search System (CROSS) (https://rulings.cbp.gov/home). An analysis of the data provides evidence consistent with the contention that firms use the system not only to responsibly comply with regulations but also to escape unfavorable trade barriers. There is evidence that the number of classification requests increases with the mean and variance of the tariff rates within a heading of the tariff schedule. Also, firms appear to request classifications when quotas are adjusted (particularly in textiles) and when President Donald Trump imposed tariffs during the trade war with China.

Additionally, the findings portray the political economy of classification as an intertemporal and inter-institutional conflict. The opportunity to lobby for more liberal *ex post* enforcement may cause importers to substitute away from *ex ante* lobbying against proposals to raise tariffs in the

legislature. Since protectionists have only limited opportunities to lobby *ex post* for their preferred level of enforcement they choose to focus their efforts on *ex ante* lobbying to determine the tariff schedule. Protectionist interests can only participate in the classification system indirectly by their past success at securing protective tariffs, raising other types of trade barriers such as antidumping duties, and successfully writing the category descriptions using broad language that cannot easily be disputed by importers.

The tariff schedule has had a prominent role in previous studies of the clash between free traders and protectionists. Rogowski (1989) argues that trade politics, and in particular average tariffs, are a proxy for class conflict because the distributional consequences of trade liberalization depend on whether a worker owns labor or capital. Hiscox (2001) also emphasizes tariffs in his study of how changes in factor mobility caused by advancements in technology can shift the political competition from class-cleavages to sector-cleavages. Related work has emphasized how populations delineated by either class or sector are affected by the global economy and how they use the political system to raise or lower tariffs accordingly (Schattschneider 1935; Milner 1988; Rodrik 1995; Scheve and Slaughter 2004; Milner and Kubota 2005; Irwin 2017). As an example, the large literature on the political economy of populism describes how those who have been harmed by globalization have voted against incumbents and in favor or politicians who promised to raise tariffs (Autor, Dorn, and Hanson 2013; Autor et al. 2016; Jensen, Quinn, and Weymouth 2017; Colantone and Stanig 2018a, 2018b; Goldstein and Gulotty 2019). The economics literature has similarly focused on tariffs to measure trade openness.[2]

The tariff schedule also plays a role in the processes that determine non-tariff barriers outside the legislature. Among the most important non-tariff barriers studied by scholars are anti-dumping duties.[3] Because the US anti-dumping duties are determined by the International

[2]Particularly the theoretical approach of Grossman and Helpman (1994) and the work it inspired (including Mitra 1999; Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000, among others). In these models a central regulator that chooses a tariff schedule favorable to the groups that earned the highest political weights by making "campaign contributions" (generically, lobbying investments). Ludema, Mayda, and Mishra (2018) study the process of temporary tariff suspensions.

[3]Other approaches to non-tariff barriers study how regulations, subsidies, and quotas are used to protect domestic industry (Goldstein 1986; Mansfield and Busch 1995; Deardorff and Stern 1998; Lawrence 2000; Kono 2006; Büthe and Mattli 2013; Egger et al. 2015, among many others). Like anti-dumping duties, these instruments are also implemented

Trade Commission (ITC) and the Department of Commerce (DOC) these two bureaucracies have attracted some scholarly attention (Hansen 1990; Hansen and Prusa 1997). Anti-dumping duties originated as a way to temporarily buttress domestic industry against malicious anticompetitive behavior from foreign monopolists. The study of anti-dumping duties has shown how domestic industries have been able to transform the system into a tool for semi-permanently raising protective tariffs on foreign goods (Blonigen and Bown 2003; Blonigen 2002; for an excellent review see Blonigen and Prusa 2008). However, the ITC and the DOC conduct their investigations on the basis of the categories defined in the tariff schedule. Therefore, the classification of products into categories has a direct effect on the data that determine whether the ITC and DOC will find that dumping occurred. The classification process is important for understanding the reach and significance of anti-dumping duties because, just like tariffs, the duties are applied to product categories rather than to individual products. Importers can still attempt to escape the anti-dumping duties by seeking favorable classifications.[4]

Recent work in political science has highlighted how politics does not cease after the determination of law or policy – it continues at the enforcement stage. You (2017) documents how most lobbying in the US occurs after the law in question has been passed. She develops a framework for the study of *ex post* lobbying, or the direct lobbying of bureaucratic agencies for favorable enforcement. Her work concludes that the difficulty of collective action and whether the benefits are particularistic determine the intensity of *ex post* lobbying. In a very different setting, Holland (2016) also demonstrates how the enforcement of law can become a political instrument.[5] She studies how politicians selectively choose not to enforce laws to maximize votes from specific populations. The present article applies these principles to the political economy of protection. The study discusses the role of classification as aa process that selects which tariffs will be enforced and which

using the categories specified in the tariff code. Therefore, it is possible that firms might seek preferred classifications to escape from unfavorable non-tariff barriers.

[4]Institutionalists have studied when and why the legislature could decide to delegate its tariff setting authority to the executive (Goldstein 1993; Lohmann and O'Halloran 1994; Bailey, Goldstein, and Weingast 1997,@goldstein2014america). Congress has historically chosen to strategically delegate tariff setting authority when doing so is expected to tie the hands of a future Congress that would reverse current policy.

[5]See also Holland (2015) and Holland (2017).

will not. Furthermore, importers are privileged by the institutional structure because they have more opportunities to lobby the bureaucracy for favorable outcomes.

A new approach in the literature has conceptualized lobbying as a private good. Recent literature has sought to understand when firms lobby for protection individually or as part of an industry group (Gilligan 1997; Bombardini and Trebbi 2012; Madeira 2016; Kim 2017; Osgood 2017; Baccini, Pinto, and Weymouth 2017; Rho and Tomz 2017).[6] The literature has found that firms producing highly differentiated products tend to lobby individually. Firms tend to lobby in cooperation with their industry when the tariff would benefit all firms relatively equally. Particularistic rewards, however, incentivize firms to lobby alone. These recent studies explain when import competing firms are able to overcome obstacles to collective action, but relatively little attention has been paid to importers. In addition, these studies also take the tariff schedule as given. The present article will expand the literature on lobbying as a private good to cover these issues.

The classification process has attracted some previous scholarly attention. Fisman and Wei (2004) study tax evasion by comparing Hong Kong's reported exports to China with China's reported imports from Hong Kong at the category level. They find that the gap in reported trade is higher for categories where the tax rates are higher, which they interpret as evidence of tariff evasion.[7] Fisman and Wei's approach detects only illegal misclassifications because their measures compare reported trade in two locales. Similarly, Betz (2019) studies the relationship between the complexity of the tariff code, measured by the variance of tariffs, and tariff compliance.[8] His approach also focuses on illegal means to evade tariffs. This article focuses exclusively on explaining how firms legally use the institutions of the classification process to evade tariffs, which is a process that exists independently of illegal misclassifications.

[6] The recent literature draws on advances in the economics literature on the study of global firms including Krugman (1980), Helpman and Krugman (1985), Bernard and Jensen (1999), Bernard et al. (2003), and Melitz (2003) among many others.

[7] The authors continue their research program in Fisman, Moustakerski, and Wei (2008) and Fisman and Wei (2009). Their program is also explored in Javorcik and Narciso (2008), Javorcik and Wei (2009), and Buehn and Eichler (2011).

[8] See also Tavares (2006)

2 Institutional Context

The key characteristic of the political economy of classification is the institutional context of the conflict between free traders and protectionists. Because institutions are central to the theory it is necessary to explicate some of the details of the classification process in the US. Since the Customs Modernization Act was passed in 1993 importers have been responsible for self-reporting their products and their correct classification on entry into the United States. The port authorities and customs officials conduct regular audits of the declarations to deter importers from dodging tariffs by intentionally reporting incorrect classifications and underpaying tariffs. If the port authority disagrees with a classification they can demand that a higher tariff be paid. The possible financial penalties for deliberate misclassification are very steep but fines are relatively uncommon (US Customs and Border Protection 2004a).

Importers might be concerned about the possibility of mistakenly declaring an incorrect classification and facing a costly penalty after an audit.[9] Alternatively, importers may wish to declare a low tariff classification that would stretch the category definitions and risk being challenged during an audit. Regardless of the motivation, firms can eliminate the risk of penalties by requesting a legally binding ruling on the classification of their product before importation (US Customs and Border Protection 2004b, 37). These advance rulings are issued by the United States Customs Office (USCS) and its successor agency, Customs and Border Protection (CBP) following the Department of Homeland Security Reorganization. Firms request a ruling by submitting a letter to the agency detailing relevant information about the product, often including photographs and sometimes even including a sample item. Firms can either prepare the letter themselves or retain legal counsel to do it on their behalf. The letters are permitted to request a particular classification for the product and to provide a legal rationale for the request referencing the category descriptions, their associated notes of interpretation, and precedent. A firm that disagrees with a ruling can

[9] The tariff code is formally called the Harmonized Tariff Schedule of the United States (HTSUS) and is available at https://hts.usitc.gov/. The first six digits of the hierarchically organized codes are standardized internationally by the World Customs Organization. Each member state can define higher precision categories using up to four additional digits. In the United States tariffs are set at the eight digit level, which is also known as a tariff line.

appeal the decision. If the appeal is denied the firm can sue the United States in the Court of International Trade for reimbursement of the duties and reclassification of the product.

The classification rulings are legally binding but they are not laws so they can be revoked by the customs office.[10] Generally, these revocations occur when the office determines the ruling to be in error. Revocations and modifications are relatively rare events, but they can be very meaningful for importers when they do occur. Rulings are periodically reviewed by customs lawyers for consistency with current practice and are sometimes unilaterally modified or revoked. Additionally, there is a process which permits protectionists to petition for a ruling to be revoked (described in 19 CFR Part 175), but the process is only very rarely used. Since 1994 fewer than 30 petitions have been recorded in the Federal Register, while there have been around $200,000$ classification rulings issued over that same interval.

3 Theory of the Political Economy of Classification

Figure 1 represents the classic approach to the study of the political economy of protection using dashed arrows and is loosely inspired by Grossman and Helpman (1994). Importers and protectionists lobby the legislature to promote their interests. There is substantial evidence suggesting that protectionist interests are more effective because they tend to be geographically concentrated, enabling them to punish any firms that under-contribute to the lobbying effort (Busch and Reinhardt 1999, 2000).[11] The struggle for control over the tariff schedule normally occurs in the legislature while conflict over non-tariff barriers usually occurs in bureaucratic institutions.

Figure 1 shows how the classic approach is supplemented by the political economy of classification using thick arrows. In the United States the classification process is administered by executive branch agencies (the United States Custom Service and the Customs and Border Protection

[10] The precise legal deference given to Customs' rulings was decided by the Supreme Court in United States v. Mead Corp., 533 U.S. 218, 121 S. Ct. 2164, 150 L. Ed. 2d 292 (2001).

[11] An alternative mechanism explaining the success of protectionists focuses on information about the distributional consequences of liberalization. If workers are unsure about whether their wages will be benefitted or harmed by trade liberalization (perhaps because they cannot discern the degree of factor mobility) then a majority may oppose liberalization even if it generates aggregate gains (Fernandez and Rodrik 1991).

agency since 2003) as overseen by the judiciary. The agencies are staffed by civil servants who are motivated to implement the laws as passed by Congress. They require information from importers about their products to do that work. Thus, importers have an opportunity to make the best legal case possible that their products should be placed into favorable categories. Importers lobby, not by meeting with policymakers in smoke filled rooms, but by providing information about their products in a relatively transparent institutionalized system. But the system is not politically neutral – it gives importers the opportunity to make their case to the bureaucracy with limited interference from protectionists.

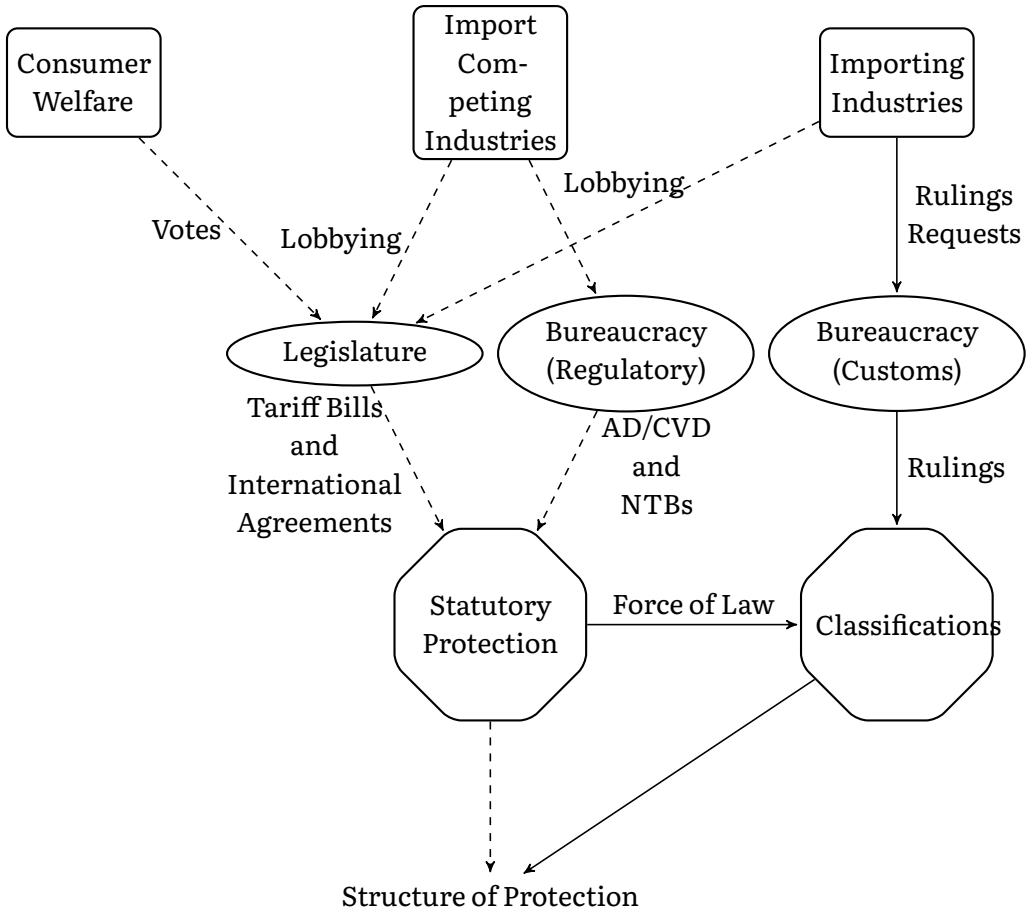

Figure 1: Schematic diagram of the classic approach as modified by the theory of this paper. The dashed lines represent the theory as articulated in the classic approach while solid lines depict the additional components related to tariff classification. Boxes represent actors, ellipses represent institutions, and diamonds represent outcomes. Arrows are labelled with the mechanism of the interaction.

The political economy of classification is an intertemporal and inter-institutional conflict be-

tween protectionists and free traders. Protectionists have no direct role in the classification exercise – therefore, they can only interact with the process indirectly by influencing the determination of the tariff schedule. The free traders have the opportunity to argue for the classification of each and every product they choose to import, whenever they choose to import it. The protectionists must wait patiently for opportunities to change the tariff schedule or turn to non-tariff barriers that frequently rely on the category definitions in the tariff code. Thus, the ability of free traders to argue for favorable classification is constrained by the historical success of protectionists at determining the statutory level of protection. The political economy of classification occurs on a daily basis.

When the average tariff is fairly low there are fewer incentives for importers to obtain favorable classifications at potentially significant cost. Legal counsel can be expensive so firms will not lobby the classification process unless the potential gains justify the investment. The structure of protection is not only reflected by the assignment of tariffs to products – the tariffs assigned to similar products affect the structure of protection by determining whether firms will attempt to influence the classification. When tariffs are roughly flat among similar products importers have fewer incentives to hire legal counsel in the hopes of obtaining favorable classifications. When the tariffs are highly variable among similar product categories then firms could justify spending significant resources to ensure their product is classified in a favorable category.

The political economy of classification decreases the incentives of firms that import intermediate products to lobby for lower statutory tariffs. Typically, lobbying the legislature requires collective action of an industry. Firms that wish to lower the tariff on an imported good might find it easier and less costly to obtain a favorable classification ruling than to coordinate with potential competitors in their industry. The logic implies a *substitution hypothesis* that importing firms treat lobbying the classification system and lobbying the legislature as substitute strategies for achieving lower tariffs. The substitution hypothesis suggests that the classification process undermines the effectiveness of collective action among importers by tempting them to lobby individually rather than collectively through the legislature.

Aspects of the tariff schedule other than the tariff rate itself can become political at the classification stage. The wording of the category descriptions has previously been considered an anodyne feature of the tariff code.[12] However, the precise wording of the category descriptions and the associated interpretation notes are crucial to determining how easily firms can target their preferred classification. In the *Apple Inc. v. United States* case it was clear that the exemption of "covers" from their targeted category's description required their lawyers to make a more tenuous legal argument. Broader description wording facillitates the ability of importers to argue for their preferred categories during the classification stage. Importers may also prefer that the tariff code includes a large number of categories because a higher number of categories provides more opportunities to achieve a favorable classification. Precisely worded category descriptions have a double edged effect. Firms may find it very difficult to escape to a target category which is precisely defined, but a higher number of precisely defined categories can increase the number of categories, which creates opportunities to target other categories. Regardless, the wording of the category descriptions is a political object because it determines the ease with which different categories can be targeted by the firm.

The literature has sometimes used the specificity of a category wording as a proxy for the degree of differentiation of the products in the category. The often unstated assumption is that highly differentiated products require highly specific wording for identification. However, it is not necessarily true that highly specific category wording must be an indication of a highly differentiated product. Because the category wording has implications for the possibility of tariff classification it is possible that the wording itself is subject to political influence. The specificity of the category wording may reflect more than the purely economic characteristics of the products at issue.

The political economy of classification theorizes how firms are using the classification system to escape from tariffs. It describes how importing firms spread their lobbying efforts across both

[12] The arguments in this section address the specificity of description wording at the eight digit level, also known as the tariff line level. A direct consequence of the tariff code's hierarchical design is that the description wording is always more precise for more disaggregated levels. These differences in precision are unimportant to firms because tariffs are set at the line level. The specificity of the category wording is only important for the classification process when comparing descriptions at the line level within a group of similar products (which is taken as the four digit or tariff heading level).

legislative and bureaucratic channels while import competing firms are constrained to focus their efforts to directly affect the tariff schedule on legislative lobbying.[13] The implication is that the import competing firms that do engage in legislative lobbying are self-selecting out of additional bureaucratic lobbying. Therefore, classic studies of the political economy of protection that focus only on legislative lobbying could be studying a highly nonrandom subset of the lobbying for free trade. In particular, firms that produce highly differentiated products should be more inclined to lobby the classification process because of how narrowly the classification rulings are applied.

4 Case: Heartland By-Products

Perhaps the most crucial question about the political economy of classification is the extent to which it is actually about importers using the system to escape from tariffs. It is true that some importers request classification rulings without targeting a low tariff category simply to ensure their compliance with customs law. At least some requests for rulings are motivated by a desire to limiting transactions costs associated with international trade – to create certainty about the tariff that will be charged and to guard against future litigation. Is there any evidence that firms treat classification politically? To demonstrate that the political aspects of the classification process have not escaped the interest of firms this section briefly discusses the case of a firm whose use of the classification system fell afoul of some politically powerful groups.[14]

For the sake of transparency it should be noted upfront that the case of Heartland By-Products is atypical in two major ways. First and most importantly, a classification ruling was directly challenged by a domestic industry in this case. As discussed above, this mechanism has only been invoked fewer than 30 times since 1994. Second, members of Congress became directly involved in the ruling process, which is also unusual. Congress rarely intervenes in the classification process, appearing to choose the fire-alarm method of oversight in this instance (McCubbins and Schwartz

[13] As discussed previously, there are avenues for import competing firms to pursue non-tariff barriers such as anti-dumping duties. But they have relatively few available paths if they wish to change the tariff schedule.

[14] The section draws on the contemporary journalistic accounts of the incident by Rabson (2000), Palmer (2000), Morgan and Sarasohn (2000), Staff (2000), Salant (2000), and particularly Tirschwell (1999).

1984). The purpose of studying the case is to demonstrate how classification can matter to firms and how a seemingly innocuous technical process can create distributional consequences that determine the structure of protection.[15]

The US sugar market is protected by a type of quota called a tariff rate quota. The sugar products subject to the tariff rate quotas are enumerated by their categories in the tariff schedule. In mid-1995 the firm Heartland By-Products developed a strategy to import sugar without it being subject to the quotas. First, they received an advance classification ruling indicating that their imported syrup from Canada would not be subject to the sugar import quotas. Next, Heartland promptly invested $\$7$ million in a processing plant that could transform the imported syrup into sugar which could then be sold on American markets.

The strategy had two effects on the US domestic sugar market. First, the supply of sugar was increased by an amount which may have had a small effect on prices. At its peak Heartland's single processing plant represented 0.5% of the entire US sugar market. Second and perhaps more importantly, Heartland's strategy actually decreased US sugar imports despite the fact that Heartland was now importing syrup from Canada. Because the syrup had a tariff classification which was not subject to the sugar quotas it was not counted in the trade statistics on sugar imports. The syrup was transformed into sugar in the United States, which meant that Heartland's sugar was produced inside the United States and did not count as an import. The sugar industry had a previous arrangement with the government where loans from the Department of Agriculture would be forgiven if the total sugar imports were estimated above 1.5 million tons at the beginning of the fiscal year. The estimates were threatening to dip below the threshold because of how Heartland's scheme reduced sugar imports. There was a possibility that Heartland could inadvertently cause a significant increase in the financial liabilities of sugar producers.

In December 1997 the sugar industry met with Customs officials, the Deputy Assistant Secretary

[15]Of course, even if classifications are mostly motivated by circumspect firms seeking to avoid surprising litigation and tariffs the process may yet play a political role. As discussed extensively by Williamson (1979), transactions costs can greatly affect the structure of economic relations. If the bureaucracy is designed to help importers reduce transactions costs then it is also harming the interests of protectionists who would prefer that the act of importing be a risky endeavor (see also Williamson 1999).

of the Treasury, and staff of the co-chairmen of the Senate Sweetener Caucus. They soon filed a formal petition for the revocation of Heartland's ruling. In January 1998 Heartland learned that their ruling was under review, but they were unable to obtain the petition until March through the Freedom of Information Act. They contacted their Congressman, John Dingell (D-MI), who contacted the Department of Treasury and Customs on their behalf. According to an internal sugar industry memo reviewed by journalists, sugar industry executives were told that "political muscle" would help their cause. The sugar executives then asked senators to send a letter to the Secretary of the Treasury requesting that the ruling be revoked. The letter, signed by 22 senators, was sent in September 1998. It took another several months but in June 1999 Customs recommended that Heartland's ruling be revoked.

Heartland then sued to prevent Customs from following through on the revocation. Due to highly complex litigation, Heartland only ceased importing the syrup in 2001. The last legal disputes were finally settled in 2009, more than 14 years after the initial classification ruling was issued. The litigation in the Heartland case is a reminder that the Customs bureaucracy also does not exist in an institutional vacuum – the courts are ultimately the entity that determines classification in the event of a dispute. The threat of litigation and the disposition of the judges to free trade must play a role in classification decisions. The key judicial institution to the classification process is the degree of judicial deference afforded to Customs, or the degree to which the courts are willing to yield to Customs' legal reasoning. The degree of judicial deference to Customs impacts the difficulty of overturning a classification decision on appeal. The difficulty of an appeal in turn affects the willingness of firms to use the classification system to lower their tariffs because firms always risk receiving an unfavorable ruling. The degree of judicial deference has varied over time with somewhat regular input from the Supreme Court.[16]

The case of Heartland By-Products highlights how classification can become political. Heartland may have initially sought a ruling with the intent to circumvent the quotas or simply to better

[16] The most important case on judicial deference is United States v. Mead Corp., 533 U.S. 218, 121 S. Ct. 2164, 150 L. Ed. 2d 292 (2001) which directly addresses the Customs advance classification rulings. Other cases frequently referenced include Chevron USA Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 104 S. Ct. 2778, 81 L. Ed. 2d 694 (1984) and Skidmore v. Swift & Co., 323 U.S. 134, 65 S. Ct. 161, 89 L. Ed. 124 (1944).

understand their import costs. Regardless of whether their motivation was technical or strategic, the ruling had a significant impact on the profits of the domestic sugar industry. In many cases the story ends here – the importer achieves a better outcome by virtue of having more access to the bureaucratic institutions responsible for enforcing the customs law. In this case, the sugar industry was able to overcome barriers to collective action and leverage its existing political connections to reverse the ruling.

5 Introducing the CROSS Dataset

The CROSS database contains all classification rulings issued by CBP since 1990.[17] The metadata contains, for every ruling, information on which tariff lines were identified by CBP, which rulings are related, whether the ruling has been revoked by subsequent rulings, and the date on which the ruling was issued. The left panel of Figure 2 shows the count of rulings issued on a monthly basis since 1990. Rulings are very frequent in most years; there are months in which Customs issues more than a thousand rulings. The large decline in the number of rulings issued in September, October, and November of 2001 occurred because the Customs office responsible for the rulings was located in Building Six of the World Trade Center until it was destroyed during the terror attacks on September 11 (US Customs and Border Protection 2016). The decline in January 2019 coincides with the government shutdown of that month.

The history of significant developments in US trade policy can be read directly off of Figure 3, which shows the number of classification rulings by country of origin and product type. The inverted U pattern is particularly prominent in textile products.[18] The peak of the hump in textiles coincides with the termination of the Multifiber Arrangement, a global system of quotas in textile manufacturing that was gradually phased out between 1995 and 2005 (Khandelwal, Schott, and Wei 2013). It is possible that the number of classifications rises as the importing firms attempt to deter-

[17] In addition to rulings on tariff classification, CROSS also contains around $50,000$ rulings on topics including country of origin, coastwise transportation, and other issues. All non-classification rulings are excluded from the present analysis.

[18] Here, textile products are roughly defined as HTS chapters 50-63

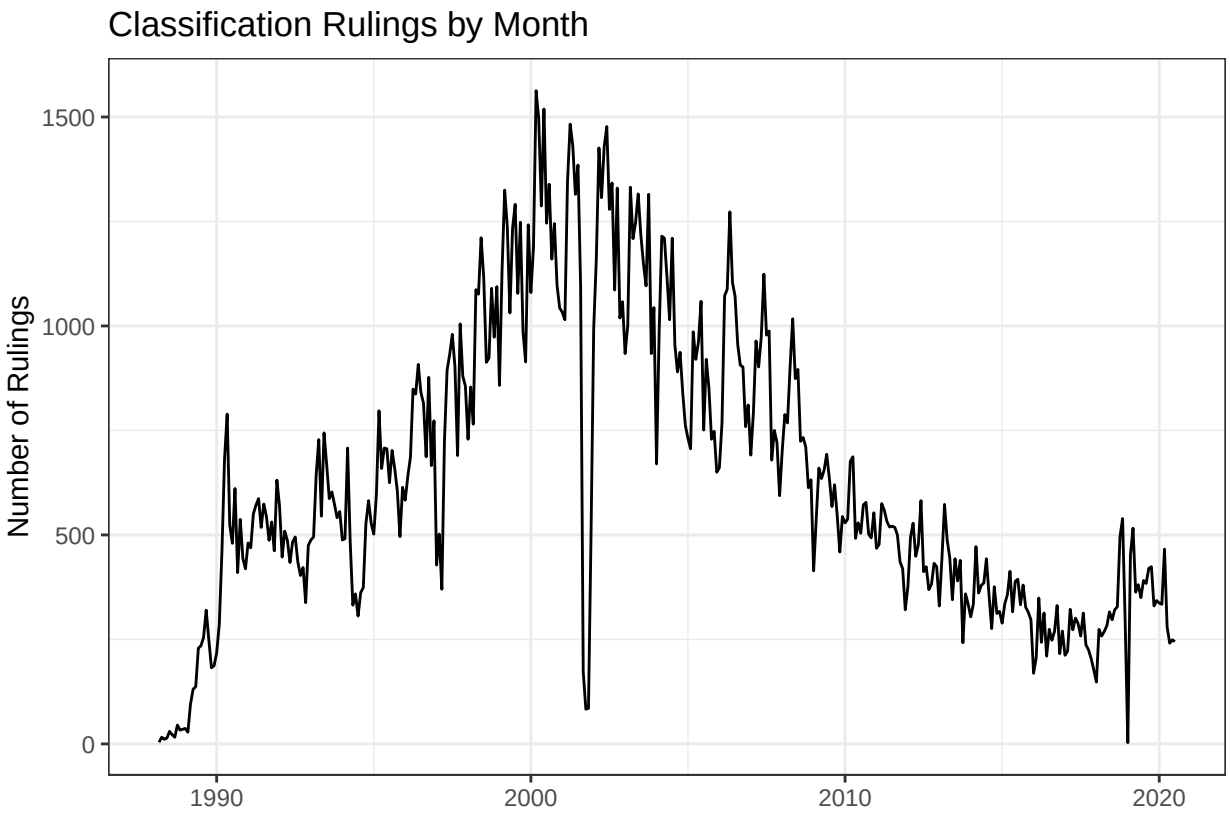

Figure 2: Count of advance classification rulings by month available in the CROSS dataset.

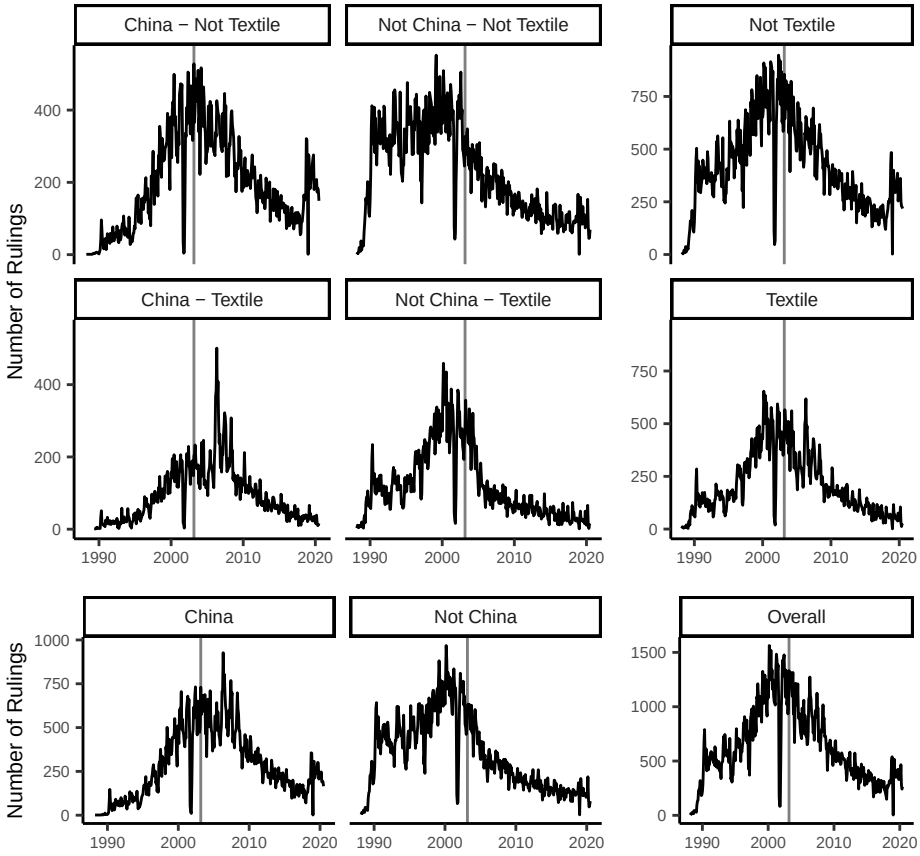

Figure 3: Number of CBP rulings by product's country of origin and textile status. The country of origin is indicated by the applicant and the HTS chapter is decided by CBP. The light bar indicates March 2003 when the US Customs Service was reorganized into the Customs and Border Protection (CBP).

mine when their products will no longer be subject to quotas, or perhaps to convince Customs to classify their products in categories newly without quotas.

As China became more integrated into the global economy more firms it quickly became a preferred location for the production of consumer goods and textiles. The rising demand for Chinese imports appeared to drive an increase in the number of classification requests. Previous scholarship has shown that China's entry into the WTO greatly increased trade, potentially by reducing trade policy undertainty (Handley and Limão 2017; Autor, Dorn, and Hanson 2013). China's low wages made it a particularly profitable location to produce textiles (Khandelwal, Schott, and Wei 2013). The end of the textile quota system combined with the entry of China onto world markets was anticipated to cause a huge spike in textile imports that could put textile producers in the US out of business. The US, under pressure from domestic textile producers, retained the ability to temporarily reimpose quotas on Chinese textiles during China's negotiations to enter the WTO. The Chinese government and US textile importers balked at the piecemeal reimposition of these quotas between 2003 and 2005. In particular, they found it difficult to plan business decisions while being unsure about which textile products would be subject to quotas in the future. The US and China negotiated an agreement in late 2005 that would provide some degree of import protection for US textile producers while clarifying policy for the US retailers and Chinese producers. The US would reimpose quotas on certain pre-specified textile product categories (with some products individually exempt) and would completely remove quotas on all textile goods after three years. The huge spike in classifications related to textile goods from China occurs after the new agreement was implemented on January 1, 2006 (Jones 2005). I will show some evidence that the spike represents attempts by firms to convince Customs to classify their products into the quota exempt categories.

The pattern of classification requests unrelated to textiles and China follows a quite different pattern which appears to be driven by an episode of institutional change. While classification requests related to China or textile products experience a hump shape pattern, the other goods experience a slow rise in classifications followed by a dramatic and persistent decline. The decline occurs immediately after March 2003, the month in which the US Customs Service was absorbed

into Customs and Border Patrol as part of the Department of Homeland Security Reorganization (shown by the grey bar on the plot). Examining the other panels it appears that they also began to decline after the reorganization (or, in the case of non-Chinese textiles, a pre-existing decline began to intensify). The pattern suggests that the reorganization of Customs inside the new Customs and Border Patrol agency, an example of institutional change, affected its effectiveness as an organization. These trends are explored in a separate paper.

6 Hypotheses and Research Design

How significant are classification rulings as a channel of bureaucratic lobbying? It is certainly the case that some classification rulings are not attempts to escape tariffs but are instead a consequence of prudent regulatory compliance.[19] Firms may request classification rulings to reduce uncertainty about their import costs and to avoid expensive fines. The contention that there are firms using the classification process strategically can be tested. Firms that strategically divide their resources between lobbying the legislative and classification, treating them as substitutes, firms may concentrate their investments on one or the other depending on their economic situation. In this case there should be a negative correlation between a firm's classification rulings requests and their lobbying expenditures. However, if firms are mostly using the classification system to prudently verify the classification of a product before importation then both classification requests and lobbying should be proportional to imports. In this case, there should be a positive correlation between a firm's classification rulings and their lobbying expenditures.

To study the relationship between classification rulings and lobbying, firm level data on the firms that requested classification rulings were collected from over $100,000$ rulings. Because most rulings are issued in the form of a letter to the applicant, it is normally possible to extract the name of the firm that submitted the request from the ruling's text. These names were then approximately matched to the names of firms appearing in the firm-level LobbyView database

[19] An informal survey of the CROSS rulings indicates that some small firms are requesting rulings for the first time. These firms are probably motivated by diligent compliance with the law.

(https://www.lobbyview.org/) (Kim 2018). The LobbyView database contains information from thousands of digitized lobbying reports filed under the Lobbying Disclosure Act of 1995. The merged dataset was then supplemented with firm and industry level control variables (Feenstra, Romalis, and Schott 2002; Bown 2005).[20] To separate importing firms from import competing firms, the dataset also includes sector level information about dependence on foreign inputs from the World Input-Output Database (Timmer et al. 2012, 2015).

The correlation between classifications and lobbying will be tested at three levels of analysis. First, the fraction of firms that have ever lobbied both Congress on a trade or tariff issue and have filed for classification rulings will be found. If there are few firms that use both channels it would suggest that they are treated as substitutes. Second, the correlation between lobbying and classification intensity will be studied for each firm. Again, a negative correlation would substantiate the substitution hypothesis. Third, to account for firm specific confounding variables the number of years in which a particular firm employs both channels will also be studied. All of these analysis appear in Section 7.1.

If, as proposed by the theory, import competing firms are largely cut out of the bureaucratic lobbying process then these firms should focus on lobbying Congress. Firms that depend heavily on imported intermediate products would be more likely to accumulate a significant number of classification rulings. Thus, the theory would predict that few firms would lobby both the *ex ante* process of determining tariffs and the *ex post* process of classifying products. Import competing firms should be expected to favor the *ex ante* channel while firms that rely on imports, and particularly firms that import highly differentiated products, would be likely to favor *ex post* lobbying. This relationship will also be tested using regressions that proxy for supply chain location using the WIOD data.

Another empirical prediction from the theory is that more firms will attempt to shop around

[20] Because of the presence of privately owned firms I relied on Bureau van Dijk's *Orbis* dataset for firm level control variables. Feenstra, Romalis, and Schott's trade database was most recently updated by Schott in 2018. I also use tariff data from the International Trade Commission and data on antidumping cases from Bown (2005). When industry level variables need to be connected to the classifications I use the concordance provided by Pierce and Schott (2012). Finally, to ascertain whether a given product category consists of mostly differentiated products the elasticities of substitution from Fontagne, Guimbard, and Orefice (2019) were merged to the final dataset.

for favorable tariff rates when tariffs are steeper. The prediction can be operationalized in at least a few ways. First, importers should be more likely to request a classification ruling if tariffs in a group of similar products are relatively high. Second, importers should be more likely to request a classification ruling when there are plausible alternative categories with low tariffs. Third, importers should be more likely to request classification rulings for categories whose descriptions are broadly worded because it is easier for firms to make a plausible legal argument for classification in the category. Fourth, changes in the tariff code such as new quotas or tariffs should cause spikes in classification requests for those products. Each of these predictions will be tested empirically in Sections 7.2, 7.3, E.3, and 7.4. The combination of intertemporal, inter-sectoral, and case study analyses robustly test the relationship between tariffs and classification rulings.

Unfortunately, the available data are somewhat limited in their ability to evaluate these predictions from the theory unless certain assumptions are made. The most significant limitation is that the rulings indicate only Customs' decision on the product's classification and contain very limited information about whichever alternative possible classifications were considered. Without knowledge of the set of plausible classifications for each product it is not possible to directly evaluate whether the firm was able to successfully achieve a low tariff classification.[21] For the same reason, it is difficult to obtain a good sense of the consequences of the political economy of classification for tariff revenue. To make progress some weak assumptions must be made when interpreting the CROSS data. First, the analysis will assume that attempts to escape from a particular category are not always successful. Therefore, an increase in the frequency of rulings that classify a product into a category could represent either an increase in unsuccessful attempts to escape the category or an increase in successful attempts to reach the category. It is still necessary to define a set of comparable product categories to evaluate how successfully firms are avoiding tariffs. Second, the analysis will assume that the set of plausible alternative classifications is some subset of

[21] Some rulings do indicate the alternative categories considered by Customs. However, Customs appears to have a lot of discretion to choose the discussion's level of detail. Sometimes many categories are discussed, sometimes just a few, and typically none at all. There appears to be no systematic information available from the rulings on the alternative categories under consideration.

the tariff heading.[22]

7 Results and Analysis

7.1 Do the same firms that heavily lobby the legislature also heavily use the classification system?

Table 1 demonstrates how firms rely on the legislative and classification processes at the extensive margin. It shows the fraction of firms that accumulate significant lobbying expenditure and/or significant numbers of classification rulings between 2000 and 2020.[23] Consistent with existing findings on lobbying in the literature, the vast majority of firms do not spend significant amounts on lobbying (Osgood 2017; Kim 2017; Huneeus and Kim 2018). This pattern is also observed in the realm of lobbying the classification process – only around 10% of firms in the dataset requested three or more rulings. Crucially, the firms that spend heavily on lobbying are not the same as the firms that regularly request classification rulings. Only around 3% of all firms in the dataset lobbied both Congress and the bureaucracy in significant amounts. These differences suggest that the type of firm which chooses to lobby Congress is quite different from the type of firm that chooses to lobby the bureaucracy, which is consistent with the theory.

	Insignificant Rulings	Significant Rulings
Insignificant Lobbying	$3155\ (80.81\%)$	$209\ (5.35\%)$
Significant Lobbying	$448\ (11.48\%)$	$92\ (2.36\%)$

Table 1: Count of firms having significant spending on lobbying Congress and/or a significant number of classification rulings. Lobbying was deemed significant if it amounted to at least $\$1$ million between 2000 and 2020. The number of classification rulings was deemed significant if there were at least three rulings associated with the firm over the same interval. Only 92 firms (3%) had significant amounts of both lobbying and classification rulings.

Table 1 suggests that different types of firms prefer different lobbying strategies but provides

[22] The heading level corresponds to the 4 digit codes of the hierarchical tariff classification scheme. While there are clearly products which could be sorted into categories under multiple headings, industry experts have validated the use of headings as a heuristic for comparability in interviews with the author.

[23] Total lobbying expenditure between 2000 and 2020 was deemed significant if it exceeded $\$1$ million. Three or more total classification rulings over the same period was considered significant.

little insight into how those groups differ. While the theory suggests that the groups should be differentiated by their orientation towards trade and the type of products they import, it may be that another factor such as firm size is driving the differences in the table. One way to bolster confidence that the groups in Table 1 reflect the theory would be to observe substitution at the intensive margin among the few firms that do lobby in both channels. If the firms that rely relatively heavily on one channel eschew the other channel, even among the rarefied group of firms that use both, then it will be easier to accept the substitution hypothesis.

Figure 4 provides two perspectives on the intensive margin of *ex ante* and *ex post* lobbying. The left panel depicts the actual lobbying expenditure and ruling frequency for the roughly 3% of firms that lobbied significantly in both channels. The panel shows that the firms which lobbied Congress relatively heavily tended not to lobby the classification bureaucracy heavily and vice versa. This negative relationship at the intensive margin supports the theory. Even among the firms with enough resources to properly invest in lobbying, firms tend to choose one channel or the other.

The right panel of Figure 4 shows, among the firms that significantly lobbied either Congress or the bureaucracy, whether both channels were regularly employed in the same year. If the two channels are complements then firms would benefit from employing them at the same time because investment in one channel would enhance the efficacy of the other. If the two channels are substitutes then the firm would prefer to use one or the other depending on their relative favorability at that time. The plot shows the proportion of years in which a given firm lobbied Congress, requested a classification ruling, or both. Very few firms regularly chose to both lobby Congress and request classification rulings in the same year. The plot provides evidence that firms are treating these channels as substitutes in the way proposed by the theory.

Table 1 and Figure 4 demonstrate that firms treat the two lobbying channels as substitutes and that different groups of firms prioritize each channel. The theory goes a step further and conjectures that the firms which emphasize lobbying the classification process are importers while the firms that emphasize channels that determine tariff rates are import competers. The prediction is tested directly using data from the World Input-Output Database (WIOD) which provides detailed

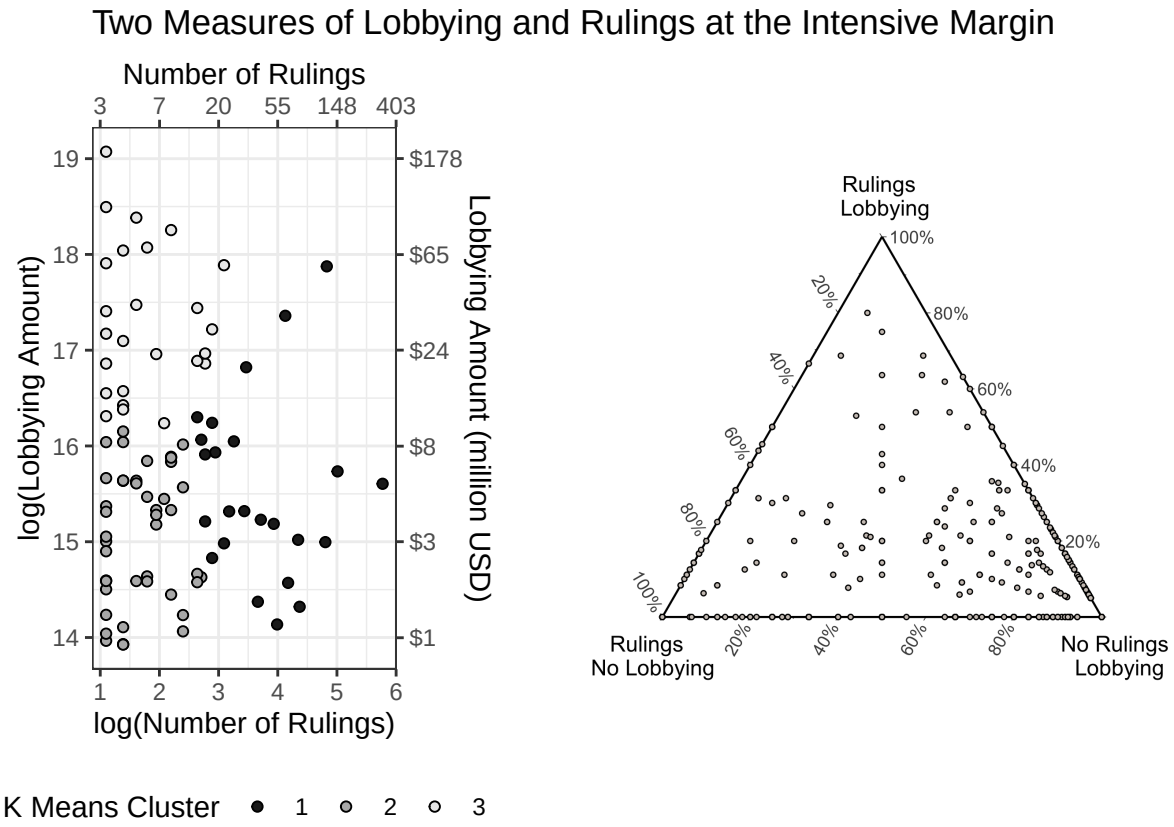

Figure 4: The left panel shows the 92 firms with significant amounts of both lobbying and classification rulings. Even among the group of firms that employ both strategies, few firms utilize both equally intensely. The depicted clusters (from the Hartigan and Wong (1979) K-Means algorithm with three centers) are identifiable as one group that focuses on lobbying Congress, one group that focuses on filing classification rulings, and a final group that uses both methods relatively less intensely. The right panel depicts, among firms that significantly use either channel, how frequently firms have nonzero lobbying and nonzero classification rulings in any given year. Few firms regularly lobby Congress and pursue classification rulings in the same year.

information on the international and intersectoral flow of value added (Timmer et al. 2012, 2015). The dataset, which is typically used to study global value chains, was aggregated to the industry level and then matched to the firms in the LobbyView and classification rulings datasets by their industries.[24] These data are appropriate for the analysis because they reveal an industry's dependence on foreign intermediate products. Using the value of US imports alone is insufficient for this analysis – while import data cannot distinguish between foreign competition and dependence on global value chains, the WIOD data can.

Table 2 provides some evidence that import competing firms (which are in industries that do not depend heavily on foreign inputs) cannot effectively lobby the bureaucracy of the classification process and therefore turn to lobbying Congress. Firms that do depend on foreign inputs are more likely to utilize the classification system. The coefficients remain stable even after controlling for various variables known to affect lobbying for trade protection, including firm size as proxied by sales, the number of patents, trade in that sector, tariff levels, and antidumping cases in the industry. Consistent with the theory, lobbying is less likely for firms in industries that are dependent on foreign inputs.

There are some limits to the analysis in Table 2. First, the data employed are measured at different levels of aggregation. In particular, the WIOD data are available only at sector levels but lobbying and classification rulings are observed annually at the firm level. Second, the data are missing for a large number of firm-years due to the difficulty of matching firms across datasets. Thus, the analyses in Table 2 can only be taken as a suggestive indication that import competing firms focus their efforts much more heavily on legislative lobbying. However, the results from Table 1 and Figure 4 provide relatively strong evidence that firms choose either to lobby the legislature or the classification bureaucracy but not both. This evidence indicates that the two channels are considered substitutes by firms.

[24] Although seldom used in the international political economy literature, the input output database is heavily used in the economics literature on international trade. For a typical application, see Antràs and Chor (2013).

Table 2: Foreign input value added is aggregated to the North American Industry Classification System (NAICS) 4 digit level from WIOD by examining the category definitions. Observations are at the firm-year. Antidumping counts the number of product lines affected by antidumping within a NAICS code, which is then matched to firms in that code. MFN Tariffs is the mean most favored nation tariff within products associated to a NAICS code. Imports are the c.i.f. value and are aggregated to the NAICS-year level. The Number of Patents variable counts the number of patents associated with the firm and measures investment in intellectual property, an important trade issue. Each observation is a firm-year, but many firms were dropped due to missingness in the control variables.

	Dependent variable:			
	Lobbying	Classifications	Lobbying	Classifications
	OLS	*OLS*	*logistic*	*logistic*
	(1)	(2)	(3)	(4)
Foreign Input Value Added Share	−0.529***	0.395***	−3.267***	1.701**
	(0.151)	(0.151)	(0.988)	(0.797)
log(Total Imports+1)	0.006	−0.015*	0.043	−0.131**
	(0.010)	(0.008)	(0.065)	(0.057)
log(Number of Patents+1)	0.017**	0.055***	0.080	0.451***
	(0.008)	(0.006)	(0.053)	(0.066)
Antidumping	0.00000	0.00000	0.00000	0.00003
	(0.00000)	(0.00001)	(0.00002)	(0.00004)
MFN Tariffs	−0.524	0.220	−3.050	1.709
	(0.431)	(0.427)	(1.921)	(2.391)
log(Sales)	0.123***	−0.003	0.757***	−0.118
	(0.011)	(0.011)	(0.093)	(0.081)
Constant	−1.490***	0.105	−12.243***	−0.772
	(0.216)	(0.195)	(1.687)	(1.364)
Observations	668	668	668	668
Note:				*p<0.1; **p<0.05; ***p<0.01

7.2 Are there more tariff classification rulings in headings with higher or more varied tariff rates?

Higher average tariffs within a tariff heading raise the stakes for classification and high tariff variance ensures that there are low tariff lines within a heading that can serve as target destinations. If importers are attempting to escape from tariffs then there should be more requests for advance classification rulings in headings with higher average tariffs and higher tariff variance. These two hypotheses are tested in Figure 5. As shown by the lines of best fit, the number of rulings is increasing in both the mean and variance of the tariffs within a heading.

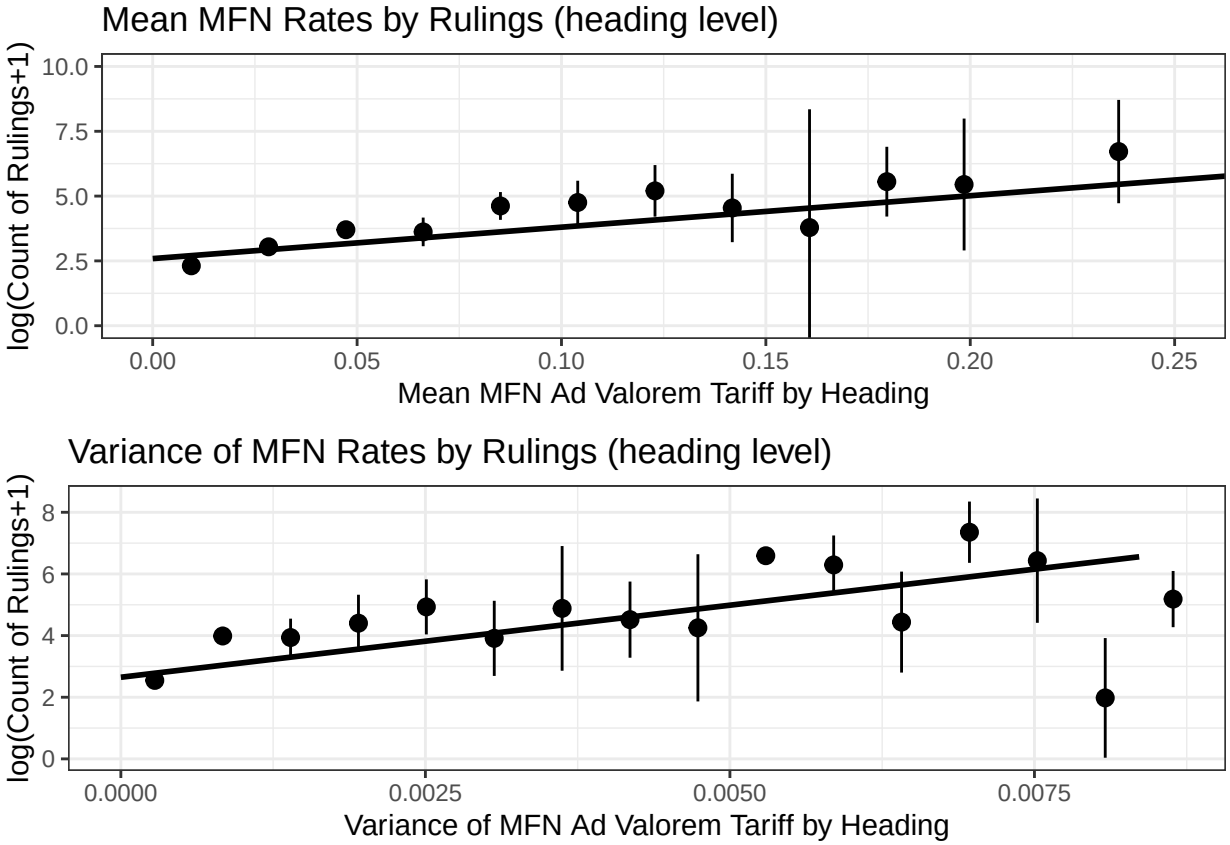

Figure 5: The number of rulings within a tariff heading increases in both the mean and the variance of the tariffs in that heading. Due to the presence of a small number of extreme outliers, the heading level variances are top coded at a threshold of 2%. Both figures show a bin scatter plot and a line of best fit.

7.3 Are there more rulings requests in categories with broadly worded descriptions?

The theory predicts that broadly worded categories should attract requests for classification rulings. Category descriptions which are broad are both easier to escape from if its tariffs are high or to enter if its tariffs are low. The concept of a "broadly worded" category can be operationalized using the mean string distance between category descriptions among similar products. The distance between two sentences, or strings, is a function of the number of changes which must be made to one string to transform it into the other.

The average string distance to all other category descriptions within a tariff heading can be calculated for each category. Category descriptions which are very similar to the other descriptions in their heading will have a low average string distance. These values were standardized by heading to account for idiosyncratic differences in the language used to describe different types of products. Categories with more broadly worded category descriptions would be more similar to the other descriptions in their heading, and thus would have smaller average string distance. The theory would predict that these categories would have more classification requests and rulings.

Table 3 shows OLS regressions on the determinants of theoretical interest. When a tariff line is worded more precisely (meaning that its description is less similar to the descriptions of other tariff lines within the same heading) there are fewer classification rulings associated with the line. The relationship is stable across several specifications.

Also, the regressions in Table 3 show that product lines associated with a higher elasticity of substitution have fewer classification rulings. The elasticity of substitution is an indicator of the degree of product differentiation. A product which is highly differentiated cannot be easily substituted for another and so would have a low elasticity of substitution. The regressions show that higher elasticities of substitution are associated with fewer classification rulings. This result confirms the earlier conjecture that the benefits of lobbying for favorable classifications are largely private. Classification rulings apply narrowly to a particular firm's product, so there are few advantages to coordinating lobbying activity across firms. As a consequence, most rulings occur in

highly differentiated product categories.

Table 3: Regression analysis of the key determinants of the number of rulings associated with a given tariff line. The mean string distance has been standardized by heading. The elasticity of substitution applies to the six digit level of the tariff code (Fontagne et al 2019). The distance from median is the difference between the tariff associated with that line and the median tariff within its heading. The standard errors are robust.

	Dependent variable:			
	log(Count of Rulings+1)			
	(1)	(2)	(3)	(4)
Mean String Distance (Standardized by Heading)	-0.014^{***}	-0.014^{***}	-0.015^{***}	-0.015^{***}
	(0.001)	(0.001)	(0.001)	(0.001)
Elasticity of Substitution	-0.004^{***}	-0.004^{***}	-0.004^{***}	-0.004^{***}
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
MFN Tariff (Variance by Heading)			23.924^{***}	24.713^{***}
			(0.850)	(0.841)
MFN Tariff (Mean by Heading)			0.171^{***}	0.086^{***}
			(0.031)	(0.030)
Distance to Median			0.005	0.004
			(0.011)	(0.009)
Constant	0.240^{***}	197.124	0.191^{***}	-621.325^{***}
	(0.002)	(125.337)	(0.002)	(124.350)
Quadratic Year Trends	No	Yes	No	Yes
Observations	209,804	209,804	205,714	205,714
R^2	0.004	0.017	0.019	0.033
Note:				$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

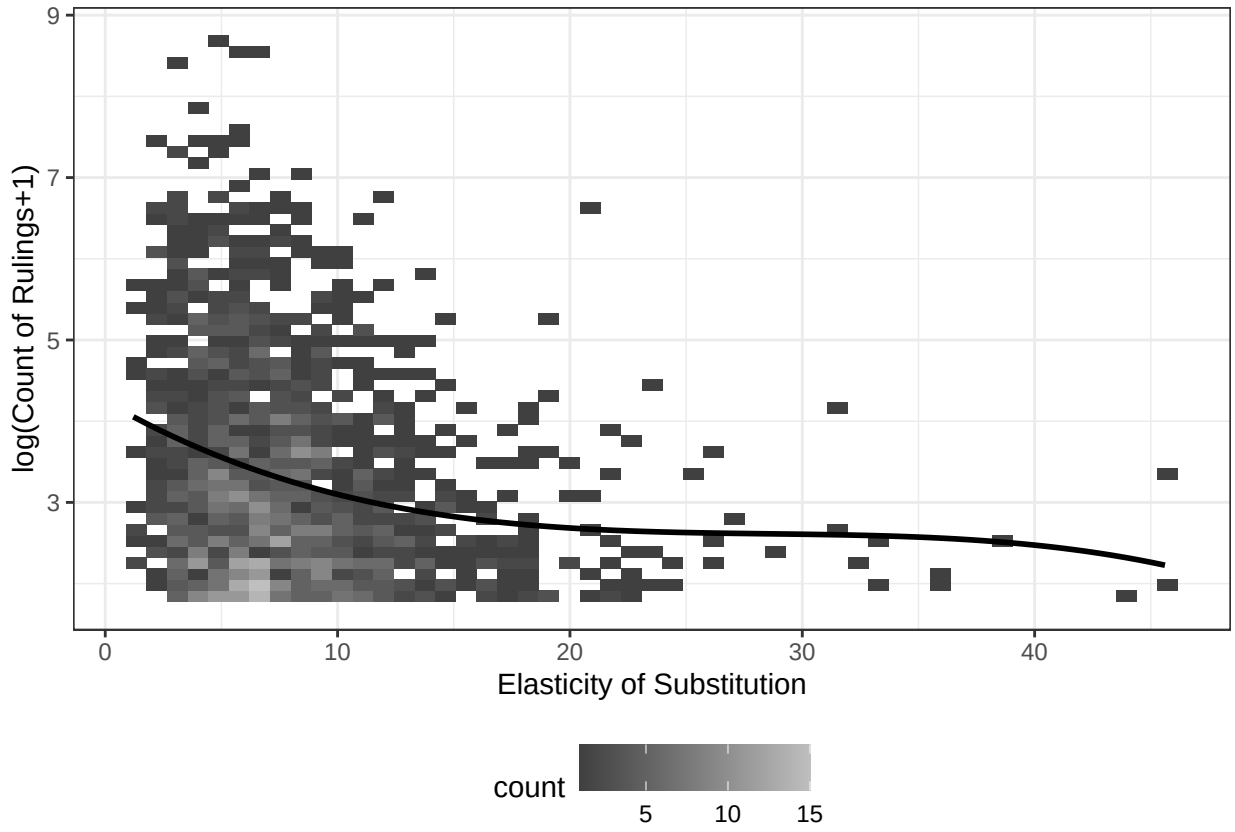

Figure 6: The number of rulings associated with a six digit tariff code is decreasing in its elasticity of substitution. Two dimensional binning is used to avoid overplotting. The count of six digit tariff codes inside each box is shown by the box's color. All categories with zero elasticities of substitution or fewer than five classification rulings have been excluded. The black line is a cubic polynomial spline.

7.4 Do the 2018 China tariffs cause an increase in the number of classification requests?

President Donald J. Trump imposed tariffs on products from China under Section 301 of the Trade Act of 1974 during an extended confrontation over trade policy. As of the time of writing, the China tariffs have been implmented in three waves mostly during the summer of 2018. The first China tariffs came into effect on June 20, 2018, a second wave of products was added on August 16, 2018, and a massive number of additional products was added on September 24, 2018. These tariffs are very steep at 25% *ad valorem*. Would firms undercut the effectiveness of the tariffs by using the classification system to escape them? The analysis proceeds under the assumption that if firms attempt to escape the tariffs some will succeed and some will fail, leading to a higher number number of classifications in the affected tariff lines.

Careful consideration of the importers' incentives to use the classification system to escape the China tariffs reveals its limits. Importers face additional risks when relying on the classification system to escape tariffs that do not apply in other contexts because the China tariffs could be removed in the future. There are at least three consequences of the tariffs' impermanence and their targeted scope. First, in the event of a reclassification that successfully avoids the China tariffs, the new MFN tariff rate could be higher than previously. While the firm avoids the additional China tariffs, their product would continue to be charged the higher rate if the China tariffs are removed. Also, Customs would apply the new higher rate retroactively, so the firm would need to pay additional taxes on previous imports. Second, the China tariffs are specific to China but tariff classifications apply to all imports. A firm that imports from multiple countries may not benefit from reclassification if it means paying higher duties on imports from other sources. Third, firms can apply for specific exemptions from the China tariffs through the United States Trade Representative, which would not involve reclassification. Nonetheless, firms facing hardship because of the tariffs may resort to the use of the classification system to escape the China tariffs.

Figure 7 illustrates the daily count of tariff classification rulings for tariff headings affected by

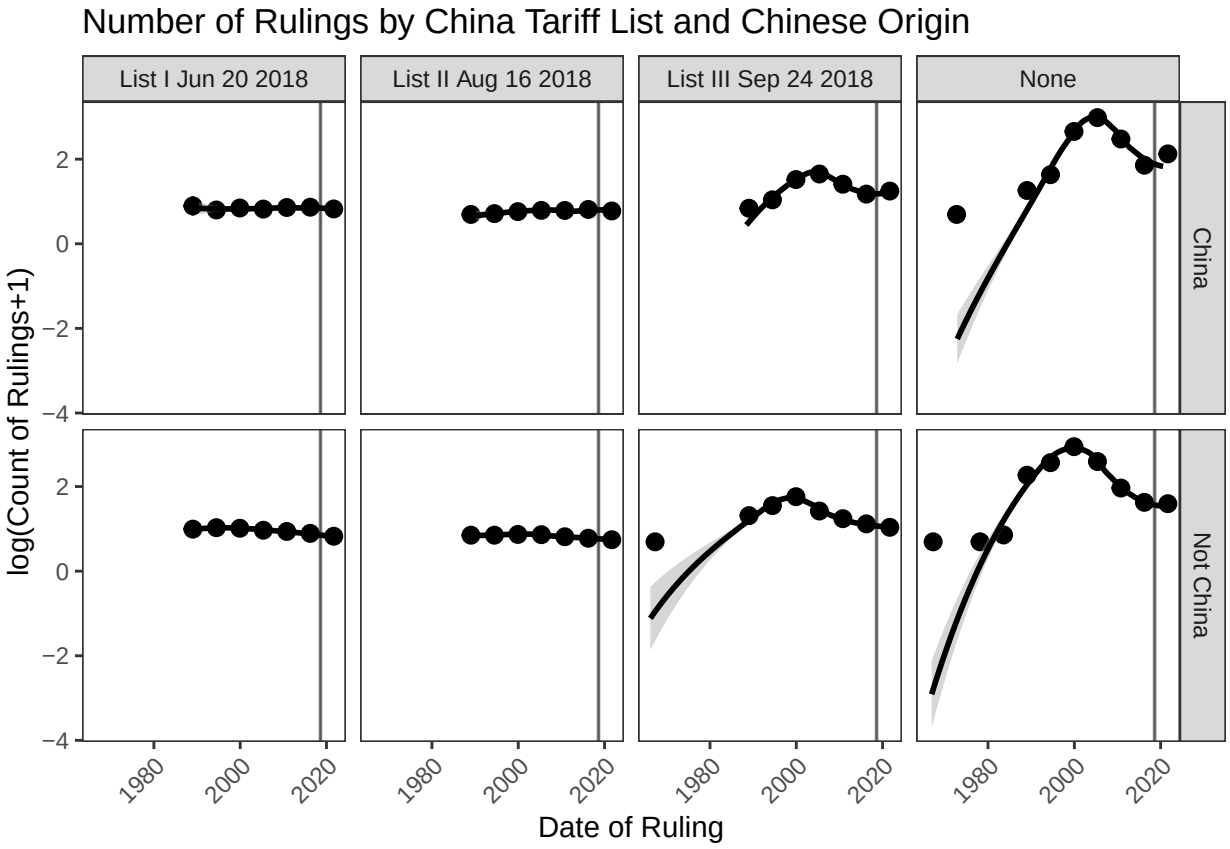

Figure 7: Tariff classification rulings related to the China Tariffs by Country of Origin

the China tariffs. The three grey bars indicate the three implementation dates for each wave of the China tariffs. Each panel indicates the count of classification rulings affecting a product on each list on each date. Interestingly, there is a clear increase in the number of classifications recorded for products not on any list after the China tariffs are implemented. Again, this pattern suggests that firms are successfully obtaining classifications which are not subject to the tariffs.

Are the increases in ruling frequency for products on the three lists larger than the increase in ruling frequency for the products were not subject to tariffs? The relative differences can be tested in a differences-in-differences framework, which is illustrated in Table 4. The first regression shows the simple ordinary least squares specification where treatment is defined as both being 1) a product on one of the three China tariffs lists and 2) a date following the list's implementation. The result is actually a negative effect which suggests that other confounding trends are overwhelming the effect of the China tariffs. Adjustment for these confounding trends occurs in the second regression which adds control variables, month dummy variables to deseasonalize the data, and quadratic trends to de-trend the data. The addition of the controls turns the effect of the China tariffs on rulings requests positive. The effect is similar for an analysis conducted at the heading level, where the product is considered treated if its heading appears on a China tariff list and the list has been implemented. This regression is designed to identify cases where firms were successful at avoiding the China tariffs – the products were classified within a heading but not into a category subject to the tariffs. Finally, the same regression is run where treatment is again redefined to only examine products originating from China after the first list was implemented, which is another way of identifying the successful cases of firms escaping the China tariffs. This regression again finds a higher number of classification rulings for affected products following the implementation of the China tariffs.

Table 4: Regressions illustrating the relationship between the imposition of the China tariffs and the frequency of classification rulings. Robust standard errors are reported.

	Dependent variable:			
	log(Count of Rulings+1)			
	(1)	(2)	(3)	(4)
Treatment (Affected Lines After Tariffs)	−0.027***	0.007*		
	(0.003)	(0.004)		
Treatment (Affected Headings After Tariffs)			0.008**	
			(0.003)	
Treatment (Chinese Origin After Tariffs)				0.016***
				(0.003)
MFN Rate		0.077***	0.077***	0.077***
		(0.009)	(0.009)	(0.009)
MFN Rate > Heading Mean		−0.002***	−0.002***	−0.002***
		(0.001)	(0.001)	(0.001)
MFN Tariff (Mean by Heading)		0.098***	0.098***	0.099***
		(0.011)	(0.011)	(0.011)
MFN Tariff (Variance by Heading)		−0.091***	−0.091***	−0.092***
		(0.011)	(0.011)	(0.011)
Constant	0.751***	−635.738***	−646.334***	−706.937***
	(0.0004)	(52.641)	(53.785)	(55.535)
Month Dummies	No	Yes	Yes	Yes
Quadratic Trends	No	Yes	Yes	Yes
Observations	212,831	158,863	158,863	158,863
Note:				*p<0.1; **p<0.05; ***p<0.01

8 Conclusion

The extensive literature on the political economy of protection has illuminated how firms and industries use the apparatus of the state to promote their own narrow economic interests. In the classic approach, firms lobby a central regulator who sets a tariff schedule by balancing the interests of producers and consumers. This literature is important to political economists because it demonstrates how concentrated interests can subvert the social good (in this context, higher consumer welfare) through the political process.

The classical political economy of protection literature underemphasizes the role of enforcement institutions in the lobbying process. Tariffs are changed rarely, but firms have opportunities to continue advancing their interests between rounds of trade negotiation through the process of tariff classification. These bureaucratic institutions favor importers. The paper presents a theory of the political economy of classification where importers divide their lobbying efforts across lobbying channels. By contrast, import competing firms must concentrate their lobbying efforts on the processes that determine tariffs rather than the process that classifies products.

Empirical evidence suggests that firms really do treat lobbying the legislature and lobbying the classification bureaucracy as strategic substitutes. It also shows support for the assertion that firms are more likely to engage in classification lobbying as tariffs change.

The political economy of classification changes how scholars should interpret congressional lobbying on trade related issues and the tariff schedule itself. First, the firms that lobby Congress have chosen not to spend those resources on lobbying the bureaucracy through the classification system. Second, the tariff schedule as determined by Congress should be considered something of an upper bound on the protection available to import competing firms because importers have the opportunity to escape the tariffs through the classification system. Third, the design of the tariff schedule should be considered a component of the political economy of protection because importers benefit when the category descriptions are broad.

Future work should study how the opportunity to escape from tariffs by lobbying for favorable

classifications changes how the tariff code should be interpreted. Previous studies such as Broda and Weinstein (2006) have often used the categories of the tariff schedule to estimate welfare gains from increased product variety due to trade. An often unstated assumption of this approach is that the addition of new categories to the tariff code represents the introduction of new product varieties for consumers. The political economy of classification suggests that free traders have an incentive to expand the number of categories when lobbying the legislature because more categories provide more opportunities to target a favorable tariff rate. Therefore, some product categories could be added to the tariff schedule for strategic reasons which do not reflect increased innovation associated with international trade. For example, it is possible that the categories have been defined by protectionists who wanted to limit the ability of firms to jump their products to lower tariff lines. In addition, many non-tariff barriers also depend on classification. For example, the ITC and DOC investigate anti-dumping cases using trade data defined by the tariff code. If anti-dumping duties are added to a particular category firms may have incentives to use the classification system to escape that category. Ultimately, the classification of products into the tariff schedule needs to be considered as a political process, not merely technical, which shapes the trade data that we observe.

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Escape from Tariffs

The Political Economies of Protection and Classification

ONLINE APPENDIX

REDACTED

June 13, 2021

Table of Contents

A Example Advance Classification Ruling

The ruling which was at issue in the case of Heartland By-Products is produced in Figure 8 as an example of an advance classification ruling.

B Example of the Harmonized Tariff Schedule

The United States tariff schedule is based on the Harmonized Tariff System of the World Customs Organization, which is an international standard. The tariff codes are standardized internationally up to the first six digits. The US defines tariffs at the eight digit level of this hierarchical schedule, which is also called a *tariff line*. The four digit level is called a *tariff heading* and contains a group of relatively similar products. The US sometimes appends an additional two digits called the statistical suffix to the end of the tariff line, but these final digits affect the tariff only under rare circumstances.

Figure 9 shows a screenshot from hts.usitc.gov from the section on heading `8473: Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of headings 8470 to 8472`. This was the category at issue in Apple Inc.'s attempt to re-classify the iPad Smart Covers. Many categories, including `8473`, have additional General Rules of Interpretation which provide additional legal guidance.

C Processing the CROSS Dataset

Many steps were necessary to convert the CROSS dataset into a useable form. Information on the tariffs affected by the ruling, the date of the ruling, the ruling's title, and the ruling's type were all available from the database's metadata which was scraped using the `R` package `httr`. The product's country of origin is usually identified explicitly in the title of the ruling and was extracted using regular expressions.

NY 810328

May 15, 1995

CLA-2-17:S:N:N7:232 810328

CATEGORY: Classification

TARIFF NO.: 1702.90.4000

Mr. John Minock
Heartland By-Products Inc.
P.O. Box 242
Saline, Michigan 48176

RE: The tariff classification of a sugar syrup from Australia.

Dear Mr. Minock:

In your letter dated April 19, 1995 you requested a tariff classification ruling.

Samples were included with your request. Information was submitted with your initial request dated March 6, 1995. The subject merchandise is described as a sugar syrup which is produced from sugar cane or sugar beet and will contain sugar solids, water and more than 6 percent soluble non-sugar solids. This merchandise will be imported in bulk.

The applicable subheading for the sugar syrup will be 1702.90.4000, Harmonized Tariff Schedule of the United States (HTS), which provides for other sugars...sugar syrups not containing added flavoring or coloring matter...other, including invert sugar: derived from sugar cane or sugar beets...other ...other. The rate of duty will be 0.7 cents per liter.

This ruling is being issued under the provisions of Section 177 of the Customs Regulations (19 C.F.R. 177).

A copy of this ruling letter should be attached to the entry documents filed at the time this merchandise is imported. If the documents have been filed without a copy, this ruling should be brought to the attention of the Customs officer handling the transaction.

Sincerely,

Jean F. Maguire
Area Director
New York Seaport

Figure 8: Ruling NY810328, which gave Heartland By-Products the ability to import its sugar syrup under a tariff classification that was not subject to the tariff rate quotas on sugar.

Heading/ Subheading	Stat Suf fix	Article Description	Unit of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
8473		Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of headings 8470 to 8472:				
		Parts and accessories of the machines of heading 8470:				
8473.21.00	00	Of the electronic calculating machines of subheading 8470.10, 8470.21 or 8470.29	kg	Free [/]		35%
8473.29.00	00	Other [/]	kg	Free [/]		35%
8473.30		Parts and accessories of the machines of heading 8471:				
		Not incorporating a cathode ray tube:				
8473.30.11		Printed circuit assemblies		Free [/]		35%
	40	Memory modules suitable for use solely or principally with machines of heading 8471	No.			
	80	Other [/]	No.			
8473.30.20	00	Parts and accessories, including face plates and lock latches, of printed circuit assemblies	No.	Free [/]		35%
8473.30.51	00	Other [/]	No.	Free [/]		35%
8473.30.91	00	Other	No.	Free [/]		35%
8473.40		Parts and accessories of the machines of heading 8472:				
8473.40.10	00	Printed circuit assemblies for automatic teller machines of subheading 8472.90.10 [/]	No.	Free [/]		35%
8473.40.21	00	Printed circuit assemblies of word processing machines of 8472.90.50	No.	Free [/]		45%
8473.40.41	00	Other parts and accessories of the machines of 8472.90.50	kg	2% [/]	Free (A, AU, BH, CA, CL, CO, D, E, IL, JO, KR, MA, MX, OM, P, PA, PE, S, SG)	45%

Figure 9: The text of tariff heading 8473 in the Harmonized Tariff Schedule.

All the firm level information in the dataset is contained inside the text of the rulings themselves and never appears in the metadata. Accessing this information was a lengthy process. First, the rulings were scraped from the CBP's online portal using `httr`. The server provides each ruling separately as a Microsoft Word 97 document – these files were then converted to text strings using the R package `antiword`. The rulings have a loosely standard format. For example, the firm's name generally appears in the second line of the text block containing the addressee of the letter. Also, when a law firm filed the request, the ruling almost always mentions the client firm in the text preceded by a variation of the phrase "on behalf of your client." A list of heuristics for finding relevant information from the rulings was developed through extensive inspection of the formatting in an arbitrary sample of rulings. For example, when the second line of the address block contains the string "Mr." or "Mrs." then the company name is usually in the third line rather than the second. These heuristics were implemented using regular expressions implmented in the R package `stringr` to extract firm level data from the text.

D Table of Variables

Table 5 summarizes all variables used in the regressions and their sources.

Table 5: All variables and their sources.

Variable	Table	Description	Source
Foreign Input Value Added Share	2	Share of value added from imports by NAICS code. The categories were mapped from the WIOD categories to NAICS by inspecting the descriptions.	WIOD
Total Imports	2	Sum of imports in the NAICS code of the firm.	Feenstra, Schott, etc.
Number of Patents	2	Number of patents registered by the firm	Orbis
Antidumping	2	Number of antidumping cases filed in the NAICS sector of the firm.	GAD
MFN Tariffs	2	Mean MFN tariff within the firm's NAICS code.	ITC
Mean String Distance	3	Mean string distance between the category descriptions of a tariff line and the description of every other tariff line in the same heading.	Author's calculations from CROSS
Elasticity of Substitution	3	The elasticity of substitution between products in that category as calculated from a gravity model. Available only at the six digit HTS level.	Fontagne
MFN Tariff (Variance by Heading)	3	The variance of MFN tariffs within a heading. Top coded at a 2% threshold to account for extreme outliers.	Author's calculations from ITC data
MFN Tariff (Mean by Heading)	3	The mean of MFN tariffs within a heading.	Author's calculations from ITC data
Distance to Median	3	The difference between the MFN tariff applied to a tariff line and the median of all MFN tariffs within that heading.	Author's calculations from ITC data.
Treatment	8	Dummy variable indicating dates after the new quotas on textiles were imposed.	US China MOU

Table 5: All variables and their sources.

Variable	Table	Description	Source
Quota Applied	8	Dummy variable indicating products listed in categories subject to the quotas.	US China MOU
Textile (Quota Exempt)	8	Dummy variable indicating products which were explicitly exempt from the quotas	US China MOU
Textile (No Quota)	8	Dummy variable indicating products which are in a textile-related category but which are never mentioned in the quota's governing text.	US China MOU
Treatment (Affected Lines After Tariffs)	4	Dummy indicating tariff lines subject to the tariffs in time periods after the tariffs are implemented.	USTR documentation
Treatment (Affected Headings After Tariffs)	4	Dummy indicating tariff headings containing lines subject to the tariffs in time periods after the tariffs are implemented.	USTR documentation
Treatment (Chinese Origin After Treatment)	4	Dummy indicating rulings that reference Chinese origin in the time period after tariffs.	USTR Documentation
MFN Rate	4	The MFN rate of the tariff line	ITC data
MFN Rate > Heading Mean	4	Dummy indicating whether the MFN rate for a line is above the mean tariff rate within the heading.	ITC Data
Heading Tariff - Mean	4	The mean tariff of the heading	ITC Data
Heading Tariff - Variance	4	The variance of the tariffs within the heading	ITC Data

E Additional Analyses

E.1 Do changes in the tariff schedule increase demand for classification rulings?

Another prediction of the theory is that changes in the tariff code should stimulate demand for rulings requests as firms rush to classify their products into the lower tariff category. Under the assumption that some firms are successful at achieving their preferred classification while others are not, the theory predicts that there should be more classification rulings in all categories related to the change. To test this prediction the frequency of rulings following a change in the tariff schedule was examined and the results from a differences-in-differences type regression are produced in Table 6.

The results show that tariff lines in high tariff headings have more rulings requests when their tariffs are changed (either increased or decreased) by at least 1 percentage point.[1] The first model, containing no controls, does not uncover the effect. The second model, which does return the effect, includes control variables at the tariff line and heading level. The controls are lagged as appropriate to avoid simultaneity bias. The third model provides evidence that the increase in rulings is concentrated in the high tariff headings. By comparing the effect of a change in tariff levels in both low and high tariff headings, the regression shows credible evidence that changes in the tariff schedule cause increases in the frequency of rulings.

E.2 Antidumping and Classifications

One of the key hypotheses from the theory is that firms treat lobbying the classification process and lobbying the legislature as strategic substitutes. The hypothesis was tested by investigating whether firms tend to lobby both the legislature and the classification process or whether they focus on one channel but not the other (See Table 1). An alternative test would be to investigate whether firms lobby both the classification process and the bureaucratic processes that determine

[1] The vast majority of these changes are tariff decreases, a point worth bearing in mind when interpreting the results.

Table 6: Three models illustrating how changes in the tariff schedule can affect the frequency of rulings. Tariff changes are associated with increases in the number of rulings, and the effect is especially true when the tariff heading has high average tariffs. Robust standard errors are reported.

	Dependent variable:		
	log(Count of Rulings+1)		
	(1)	(2)	(3)
Tariff Change	−0.002	0.108***	0.033
	(0.008)	(0.008)	(0.025)
Heading Mean (lag)		0.467***	0.461***
		(0.034)	(0.032)
Heading Variance (lag)		−0.005***	−0.005***
		(0.0004)	(0.0004)
MFN Rate (lag)		0.032	0.047*
		(0.027)	(0.025)
Mean String Distance (standardized)		−0.013***	−0.013***
		(0.001)	(0.001)
Tariff Change * Heading Mean (lag)			1.075***
			(0.352)
Constant	0.190***	528.025***	521.534***
	(0.001)	(129.778)	(129.722)
Quadratic Time Trend	No	Yes	Yes
Observations	246,484	229,376	229,376
Note:			*p<0.1; **p<0.05; ***p<0.01

trade barriers such as antidumping duties. Under the theory, few firms should seek antidumping duties and tariff classifications because the political economy of classification favors importers. Table 7 shows that very few firms both lobby the classification process and file requests for antidumping duties.

	Insignificant Rulings	Significant Rulings
At Least One Antidumping Case	1224 (5.86%)	41 (0.2%)
No Antidumping Cases	12713 (60.89%)	6900 (33.05%)

Table 7: Count of firms having been associated with at least one antidumping case and/or a significant number of classification rulings. The number of classification rulings was deemed significant if there were at least three rulings associated with the firm. Data on antidumping cases are from the Global Antidumping Dataset (Bown 2005). The numbers of firms with significant rulings may differ from Table 2 because data on antidumping cases is available over a longer time period.

E.3 The 2006 Temporary Textile Quotas

The following two sections introduce case studies designed to examine how changes in trade barriers affect demand for classification rulings in finer detail than was possible so far. The first section studies the termination of the Multifiber Arrangement (MFA), which was a multinational system of quotas in the textile industry. During the Uruguay Round in 1995 members of the newly created World Trade Organization agreed to replace the quota system with tariffs. The MFA would be phased out in four waves the last of which was implemented in 2005. China was allowed to become a member of the WTO in 2001 which meant that it would also benefit from the end of the MFA. But during negotiations it agreed to delay its access to the full benefits of membership at the behest of the US and other states. One concession was that states were permitted to implement a special safeguard applicable only to China which would allow the re-imposition of quotas for certain textile products. At the urging of textile producers, the US slowly re-imposed quotas on a number of textile products using this mechanism between 2003 and 2005 which greatly frustrated Chinese exporters and US retail firms. To resolve their dispute over the US's adherence to WTO rules, China and the US initiated negotiations.

On January 1, 2006 the US and China implemented a memorandum of understanding that per-

mitted the full re-imposition of quotas on most Chinese textile products, but only for a maximum of three years. US textile producers were somewhat satisfied, but the US importers and Chinese exporters were disappointed that they had longer to wait before they could access the Chinese market. Some textile products were exempt from the quotas, and these products were identified by their classification. There is some evidence that Chinese exporters attempted to evade the quotas by deliberately misclassifying their products into non-quota categories without having an official classification ruling (Leonard III 2006). To what extent did importers attempt to legally evade the quotas by seeking a classification ruling into a non-quota category?

Figure 10 plots the count of rulings by line and date over time, split by Chinese origin and the relevance of the classification identified in the ruling to textiles. The vertical line indicates the date on which the new temporary quotas were implemented. Each product is placed into one of four categories: either it is not a textile product and not affected by the re-imposition of quotas (Not a Textile), it is clearly subject to the new quotas (Quota Applied), it is a textile product but not subject to the new quotas (Textile (No Quota)), or it is explicitly made exempt from the quotas in the agreement (Quota Exempt). Most products that were explicitly exempted were "knit to shape." The graph shows that immediately after the quotas were implemented there was a rush of rulings that found products to be exempt. These increases do not appear in textile products of non-Chinese origin and they also do not appear in non-textile products. Ultimately, the data suggest that most rulings on textile products from around the time that the quotas were implemented decided that the product under consideration was not subject to the quotas for one reason or another. The case illustrates how firms can use the institutions of classifications to obtain preferable outcomes. The results are corroborated using various specifications from a differences-in-differences framework reported in Table 8.

Figure 10: Effect of temporary quotas on tariff classifications. The plot shows a bin scatter of daily data by tariff line with a loess curve included. The vertical ine indicates the date that the quota system from the US-China Memorandum of Understanding was implemented. Quota Applied means that the listed product was subject to a quota as part of the US-China Memorandum of Understanding. Quota Exempt means that the listed product is either one of the HS codes created to identify articles that are knit to shape and exempt from the China quota or one of the antecedant codes.

Table 8: Models studying the effect of temporary textile quotas on classification rulings. Under all specifications there are large increases in the number of classification rulings that sort a product into an exempt category after the imposition of the quotas. Control variables include the MFN tariff rate of the product, the heading level variance and mean, and whether the product's tariff is above the heading level mean.

	Dependent variable:		
	log(Count of Rulings+1)		
	(1)	(2)	(3)
Treatment	0.018***	0.017***	0.015***
	(0.001)	(0.001)	(0.001)
Quota Applied	−0.002**	−0.003***	−0.004***
	(0.001)	(0.001)	(0.001)
Quota Exempt	0.072***	0.070***	0.079***
	(0.004)	(0.004)	(0.005)
Textile (No Quota)	0.004***	0.003***	0.001
	(0.001)	(0.001)	(0.001)
Treatment * Quota Applied	−0.021***	−0.022***	−0.017***
	(0.002)	(0.002)	(0.003)
Treatment * Quota Exempt	0.096***	0.092***	0.086***
	(0.016)	(0.016)	(0.016)
Treatment * Textile (No Quota)	−0.023***	−0.025***	−0.018***
	(0.002)	(0.002)	(0.002)
Month Dummies and Quadratic Trends	No	Yes	Yes
Controls	No	No	Yes
Observations	221,304	221,304	169,555
Note:			*p<0.1; **p<0.05; ***p<0.01