Aid, Lending, and TRIPS *

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Abstract

The rise of superstar firms has accompanied the expansion of an international intellectual property (IP) regime that extends beyond the standards established in the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Despite sustained resistance from developing countries, the United States has successfully promoted TRIPS-plus provisions through preferential trade agreements, with other advanced economies following. This study attributes US success in diffusing TRIPS-plus standards to the interaction between corporate lobbying and development finance allocation. Using National Trade Estimate (NTE) reports from 1995 to 2022, published by the US Trade Representative, I construct a semantic proxy for US assessments of IP protection in partner countries using the DeBERTa-v3 language model. The analysis shows that lobbying by US corporate elites systematically shapes USTR evaluations of foreign IP regimes and that countries facing greater IP-related criticism are more likely to receive compensation for adopting TRIPS-plus commitments. Compensation varies by regime type: democracies receive increased foreign aid, while autocracies benefit more from International Finance Corporation lending to the private sector.

Keywords: TRIPS, foreign aid, multilateral lending, North-South relations, preferential trade agreements (PTAs), text-as-data, large language models

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1 Introduction

The incorporation of intellectual property rights into international trade law, most notably through the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and subsequent TRIPS-plus arrangements, established a multilateral baseline rather than a ceiling for US intellectual property (IP) policy. For IP-intensive US corporate elites, TRIPS represented a lowest common denominator that secured enforceable minimum standards but fell short of the level of protection they sought. As a result, the United States treated TRIPS as a foundation on which to build, turning to bilateral and regional trade agreements to pursue more intensive protections through TRIPS-plus provisions. A substantial literature shows that this trajectory was driven not simply by intergovernmental bargaining, but by sustained pressure from US multinational corporations in pharmaceuticals, software, chemicals, and entertainment. Beginning with the Trade Act of 1974 and its subsequent amendments in 1984 and 1988, the United States created institutional mechanisms, including Section 301, the National Trade Estimate (NTE) Report, and the Special 301 process, that embedded corporate preferences within trade enforcement and agenda-setting. These instruments converted firm-level grievances into actionable trade priorities, supplying the domestic bureaucratic infrastructure through which the United States could promote IP standards beyond TRIPS in subsequent bilateral and regional agreements.

The resulting TRIPS-plus agreements often impose deep IP commitments on developing countries, despite substantial evidence that such standards may hinder their growth and technological upgrading. As the literature suggests, emerging economies typically lack the capacity to resist these pressures outright. Instead, they are often incentivized to cooperate through economic side payments, including preferential market access, bilateral aid, and multilateral development finance. While existing research highlights the role of these side payments as a bargaining tool in trade agreements, less attention has been paid to how these varying sources of payments are calibrated to domestic political constraints in the donor country, and how recipient regime type forms part of the calculus. In this paper, I argue that the United States strategically alternates between bilateral aid and multilateral lending, particularly through the International Finance Corporation (IFC), as a function of the political feasibility of aid and the institutional context of the recipient coun-

try. Specifically, when dealing with autocracies, where aid may be politically sensitive or difficult to justify domestically, IFC lending offers a more flexible alternative for compensating IP-related commitments. Significant US influence on multilateral lending institutions, hinged upon strategic interests, has been substantiated by the vast existing literature (Kersting & Kilby, 2016, 2021; Kilby, 2013; Stone, 2002, 2008).

To empirically evaluate this argument, I introduce a novel text-based proxy for US evaluations of IP regimes in emerging economies, derived from 28 years (1995–2022) of country-level sections on IP rights protection in the NTE reports published by the United States Office of Trade Representative (USTR). Using state-of-the-art stance detection methods based on the DeBERTa-v3-large language model, I construct a continuous evaluation score for each country-year that reflects the extent of US concern over IP enforcement. This approach moves beyond conventional sentiment analysis by capturing evaluative stances embedded in government-issued technical texts, offering a replicable and fine-grained measure of perceived IP rights protection environment in major developing country US trading partners.

First, I assess whether IP-relevant lobbying by US multinational corporations increases IP reform pressure against emerging economies, as reflected in the constructed IP environment scoring measure. Second, I examine whether democratic developing countries that face high IP-related pressure are more likely to commit themselves to TRIPS-plus IP regime when they receive increased US aid. Third, I investigate whether autocracies facing similar pressures are instead more likely to receive increased IFC lending. Using a combination of two-way fixed-effects and instrumental variable designs, the results show that lobbying pressure by US IP-intensive corporate elites predicts more negative IP assessments in countries with less economic bargaining power and resources, represented by low levels of nations' per capita income, and that compensatory financial flows, aid for democracies and IFC lending for autocracies, are associated with increased likelihood of signing TRIPS-plus agreements. These findings offer new evidence for how the United States promotes firm-driven interests in promoting TRIPS-plus framework by alternating between modes of compensation offered to emerging economies, by combining the rich literature on private interests in global trade institutions and geopolitical considerations in development finance.

2 Expansion of TRIPS-plus Framework and Strategic Development Finance

The institutional foundations for the international promotion of US intellectual property interests were laid well before the TRIPS Agreement was formalized, most notably through the Trade Act of 1974 and its amendment in 1984. These statutes granted the executive broad authority to identify and address unfair foreign trade practices harming US commercial interests. Section 301 authorized the US Trade Representative (USTR) to investigate and retaliate against discriminatory or unreasonable practices abroad; the 1984 amendment strengthened these powers by permitting self-initiated investigations and reinforcing unilateral executive action. Taken together, these frameworks projected US economic leverage and, crucially, institutionalized channels through which private complaints could shape trade-enforcement priorities.

The Trade Act reforms created reporting instruments that made the targeting of IP deficiencies systematic and politically salient. The National Trade Estimate Report on Foreign Trade Barriers (NTE) and the Special 301 process, mandated by the Acts, became the principal vehicles through which firms flagged weak IP rights protection. These mechanisms did not merely "collect views", but they routinized the flow of private information into public evaluation. The USTR issues calls for submissions, holds hearings, and builds country narratives from the materials firms and trade associations supply. In technical policy areas regarding IP-related practices, lobbying operates as a "legislative subsidy": organized interests provide expertise, monitoring, and staff work that lower officials' costs of formulating and defending positions, thereby structuring what is observed and how it is characterized (Hall & Deardorff, 2006). The Special 301 process, launched in 1989, formalized this linkage by naming countries with inadequate IP rights protection and exposing them to bilateral pressure, e.g., placement on the Watch List, or to threats of sanctions, including potential withdrawal of GSP benefits (Drahos & Braithwaite, 2002). In effect, the Trade Act and its reporting machinery turned corporate grievances into actionable trade priorities and laid the groundwork for multilateral enforcement through TRIPS.

The expansion of US intellectual property policy rested on the interaction between these

institutional tools and sustained pressure from IP-intensive firms. Corporations in pharmaceuticals, software, chemicals, and entertainment consistently framed weak foreign IP regimes as trade barriers and competitiveness threats, advancing their preferences through corporate submissions, industry reports, and advisory committee processes throughout the late 1970s and 1980s. As documented by Sell (2003) and Drahos and Braithwaite (2002), these firms coordinated to shape US negotiating positions, leveraging informational advantages and concentrated expertise to influence agenda-setting and drafting within the USTR. The result was a trade policy orientation that treated stronger and more enforceable IP rights as a core commercial objective well before the Uruguay Round. TRIPS thus emerged not as the full realization of these preferences, but as a multilateral compromise that established enforceable minimum standards while leaving more expansive protections to be pursued through subsequent bilateral and regional agreements. It is well documented by Fink and Reichenmiller (2006) and Morin and Surbeck (2020) that all US preferential trade agreements (PTAs) after 1999 have incorporated provisions exceeding baseline TRIPS.

The legal instruments later grouped under the label "TRIPS-plus" specify how stronger protection was operationalized after TRIPS, particularly in US PTAs. These include, as Fink and Reichenmiller (2006) note, data exclusivity regimes that bar generic manufacturers from relying on originator clinical test data for a fixed period; patent term extensions to compensate for regulatory or marketing approval delays; tighter constraints on compulsory licensing relative to the flexibilities preserved under TRIPS Article 31; and narrower exceptions, such as limits on experimental use or parallel importation. While these mechanisms were not uniformly articulated in standardized form prior to the Uruguay Round, they can be understood as subsequent legal codifications of a broader, long-standing push by IP-intensive firms for more expansive and secure rights than those ultimately embedded in TRIPS.

Seen against this backdrop, TRIPS itself is best understood as the product of compromise rather than corporate overreach. The agreement incorporated enforceable minimum standards, including patentability across all fields of technology, copyright terms aligned with Berne, and multilateral dispute settlement, but it conspicuously fell short of what US firms had sought. TRIPS omitted data exclusivity obligations, left patent term extensions optional, preserved broad

flexibilities for compulsory licensing, and allowed transition periods for developing countries that diluted immediate commercial gains. The subsequent US turn to TRIPS-plus provisions in PTAs can thus be read not as escalation from an already maximal baseline, but as an effort to recapture protections that were bargained away during multilateral negotiations to secure consensus. In this sense, TRIPS functioned as a politically feasible equilibrium between US corporate preferences and resistance from developing countries, rather than as their full realization.

Two implications follow for the linkage between lobbying and USTR evaluations. First, the evidentiary economy of NTE and Special 301 favors organized stakeholders: country chapters must be documented with specific legal provisions, cases, and enforcement episodes, and firms are the actors best positioned to supply verifiable detail at scale. Greater volume and sophistication of submissions makes it easier for officials to defend critical language, to prioritize particular deficiencies, and to escalate countries to Watch Lists when criteria are met. Second, the process is path-dependent. Once deficiencies are formally recorded, subsequent cycles track progress against the same items. Where firms continue to monitor and file updates, negative assessments persist or deepen, both because new incidents are added and because unchanged provisions can be labeled as "continuing concerns." As Hall and Deardorff (2006) find, higher lobbying intensity reduces the marginal cost of negative findings and increases the salience of those findings in the public reports. The predictable result is more criticism incorporated in USTR evaluations when firm mobilization rises.

A further implication concerns how country characteristics condition the transmission of US corporate lobbying into USTR evaluations. The effect of firm mobilization is unlikely to be uniform across targets; instead, it should vary systematically with states' economic bargaining power and institutional capacity. Building on Dür and Mödlhamer (2022), asymmetries in economic size and wealth generate unequal negotiating power between the United States and emerging economies. Weaker state capacity can be translated as more limited legal and administrative resources, and reduced ability to resist external pressure. In such contexts, the threshold for demanding deeper IP commitments is lower, making these countries more susceptible to sustained criticism and escalation in US trade enforcement processes. It is therefore theoretically plausible that US multinationals

direct more intensive IP-related complaints toward poorer emerging economies, not only because deficiencies may be more prevalent, but because concessions are easier to extract.

Regime type further conditions these dynamics. Democracies are systematically associated with stronger protection of property rights and more credible constraints on arbitrary state action, which reduces political risk for foreign investors (Jensen, 2008; Li & Resnick, 2003). From the perspective of US multinationals, democratic institutions signal both greater baseline compliance with IP norms and higher reliability in enforcement and dispute resolution. Autocracies, by contrast, combine weaker institutional constraints with higher policy volatility, making IP commitments less predictable and more costly to monitor. As a result, US firms may evaluate the IP regimes of democracies more favorably and concentrate lobbying efforts against non-democratic regimes, where perceived risks are higher and external pressure is viewed as necessary to secure protection. In combination, economic capacity and regime type shape where corporate lobbying is most likely to translate into adverse USTR assessments.

Hypothesis 1: Higher levels of IP-relevant lobbying by US firms are associated with more negative US evaluations of partners' IP regimes, conditional on the countries' economic capacity and political regime type.

These IP evaluations from USTR matter because they authorize pressure and structure subsequent bargaining. For emerging economies, adopting TRIPS-plus rules entails visible domestic costs, e.g., higher pharmaceutical prices, constrained policy space for technology acquisition, and stricter enforcement against local producers, which mobilize opposition. Empirical work shows that harmonization at high standards reallocates rents toward originators in advanced economies and can slow catch-up in late developers (Glass & Wu, 2007; McCalman, 2001). Politically, these changes mobilize coalitions that bear concentrated costs, including domestic producers facing new liability, health ministries facing budget pressure, and civil society contesting access, so governments need offsetting benefits to assemble winning coalitions for ratification and implementation (Shadlen, 2005). Power asymmetries in PTA bargaining further sharpen this dynamic: the side with greater innovative capacity and market leverage is better placed to insert deep IP chapters, which magnifies domestic adjustment costs on the weaker side (Dür & Mödlhamer, 2022).

Compensation is therefore routine in bargains over deep provisions. Baccini and Urpelainen (2014) explain that leaders in developing countries are more likely to implement deep integration when it comes with material benefits that help ease the domestic political costs. Preferential market access is commonly offered, as it is particularly an important economic opportunity for smaller markets as the large market can easily shift the terms of trade in smaller economies by granting preferential access to one over the other (Bagwell & Staiger, 2002). For more immediate resources, donors use financial side payments to underwrite reforms, such as aid to ease fiscal and political adjustment, technical assistance to implement new rules, and multilateral finance to move resources at arm's length when bilateral transfers are politically constrained. Bearce and Tirone (2010) find that foreign aid is positively correlated with economic reforms, especially when donors can impose credible threats of curtailing aid commitments against recipients if promised reforms are not delivered on time. Moreover, Baccini and Urpelainen (2012) demonstrate that donor states use foreign aid as a side payment to facilitate the formation of preferential trade agreements with developing countries, especially when these agreements require significant domestic reform or trigger opposition. This strategic use of aid aligns closely with the logic of TRIPS-plus agreements, where stringent intellectual property standards imposed by developed countries may be offset by economic incentives designed to appease reluctant partners.

Nevertheless, the implementation of US foreign aid is not without domestic constraints. Bilateral aid is appropriated through Congress and explained to domestic audiences in the language of development, governance, and humanitarian purpose. It is easier to defend when recipients are democratic and when appropriators want visible alignment between dollars and norms (Carter & Stone, 2015). Divided government narrows executive discretion further and tightens legislative control over strategic allocation (Kersting & Kilby, 2021). When a democratic partner sits under a negative US IP evaluation, which is equivalent to high corporate pressure for TRIPS-plus compliance, an increase in US aid is expected to be the compensatory move that offsets reform costs abroad while remaining sustainable in Congress.

Hypothesis 2: Among democracies subject to negative US IP evaluations, increases in US bilateral aid raise the likelihood of signing TRIPS-plus provisions.

Autocracies pose a different domestic constraint on the donor side. Transfers to authoritarian governments are difficult to legitimize in Congress and attract reputational costs (Carter & Stone, 2015). When foreign aid is a less feasible option due to political considerations, the US government may turn to multilateral development banks to pursue its foreign policy objectives. Kersting and Kilby (2021) show that when the executive branch is blocked by congressional opposition under divided government, it chooses multilateral lending through international finance institutions (IFIs) such as the World Bank. Unlike foreign aid, multilateral lending is less subject to congressional scrutiny, and donor governments can exert influence indirectly through executive boards. Kilby (2013) provides compelling evidence that World Bank lending patterns respond to US strategic interests, with allies of the United States, defined by alignment in United Nations General Assembly (UNGA) voting, receiving loan disbursements faster than others. Similarly, Kersting and Kilby (2016) find that countries voting in alignment with the United States at the UNGA receive increased World Bank loans, reinforcing the argument that US foreign policy preferences are embedded within multilateral finance.

Studies have focused on modes of multilateral lending that closely align with the purposes of official development assistance (ODA) as defined by the Development Assistance Committee (DAC) under the Organisation for Economic Cooperation and Development (OECD), e.g., concessional loans and grants from International Development Association (IDA) and International Bank for Reconstruction and Development (IBRD), when it comes to exploring alternatives for bilateral aid. While these IFI concessional loans are not as bounded by domestic political constraints of donor states as bilateral aid, they may still not be free from reputational costs if development standards are visibly bent in favor of donor strategic interests (Malik & Stone, 2018; Stone, 2011). In other words, IDA/IBRD loans do serve as an alternative for bilateral aid, but the extent to which they must adhere to the missions of the Bank may hinder the full potential of carefree deployment of these loans whenever strategically desired by donors.

Hence, I focus specifically on the International Finance Corporation (IFC), which is the private-sector financing arm of the World Bank Group, as it is the multilateral instrument that most closely matches the mechanism at stake and is subject to the least domestic scrutiny in the

United States. IFC operations are framed as commercial investments, approved through board procedures that attract limited congressional attention, yet they remain responsive to shareholder preferences at the margin (Dreher et al., 2009, 2019). By contrast, the Bank's sovereign loans through IBRD and IDA are explicitly developmental, tightly bound to safeguards and ex-post evaluation, and, especially for IDA, embedded in highly visible replenishment cycles that invite donor and parliamentary oversight. When allocations to non-democracies appear to serve strategic aims, the reputational and political costs are higher and discretion is narrower. If donors shift sensitive transfers from bilateral to multilateral channels to minimize domestic costs, then IFC is the relevant compensatory margin in autocracies, as it delivers resources in a commercially legible form while keeping US political exposure low.

Hypothesis 3: Among autocracies subject to negative US IP evaluations, increases in IFC lending to the recipient's private sector raise the likelihood of signing TRIPS-plus provisions.

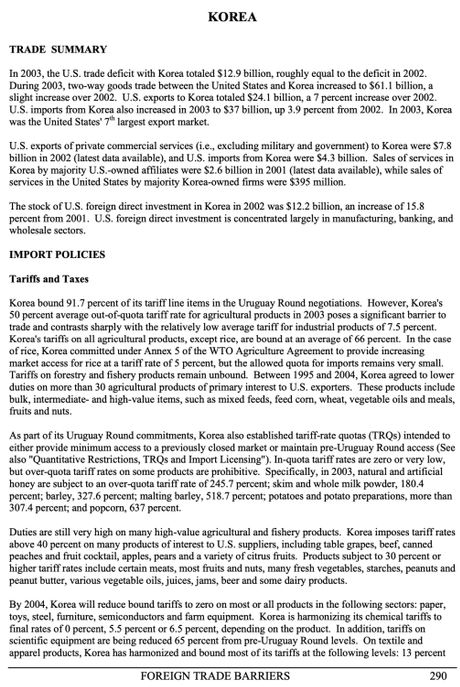
3 Data

I collect the whole text of NTE reports from 1995 to 2022, harnessing the Optical Character Recognition (OCR) method for PDF files available in Python. While the reports date back to 1986, the Wayback Machine[1] provides access to the outdated versions of USTR's websites starting from 1995. This leaves in hand 28 years of data in total.

The structure of NTE reports is quite resilient over time and across different administrations, which is evident in Figures 1 and 2. Each chapter of the reports is dedicated to a country of importance, and main issue areas are categorized into multiple sections followed by sub-issue areas for each country. Among the issue areas that appear persistently across years of reports are "import barriers", "export subsidies", "IP rights protection", and "government procurement" [2].

[1] https://web.archive.org

[2] I reorganized the main issue categories into 15 most frequently appearing areas of concerns: Import Policies; Export Subsidies; Standards, Labeling and Certification; Government Procurement; Intellectual Property Rights; Services Barriers; Investment Barriers; Anti-competitive Practices; Technical Barriers to Trade (TBT); Sanitary and Phytosanitary Barriers (SPS); E-commerce; Barriers to Digital Trade; Agriculture; Trade Remedies; and Other Barriers. This categorization is reflected in the replication data available through the original R package `nteText`, which can be downloaded from the GitHub repository (https://github.com/jacqpark/nteText).



KOREA

TRADE SUMMARY

In 2003, the U.S. trade deficit with Korea totaled $12.9 billion, roughly equal to the deficit in 2002. During 2003, two-way goods trade between the United States and Korea increased to $61.1 billion, a slight increase over 2002. U.S. exports to Korea totaled $24.1 billion, a 7 percent increase over 2002. U.S. imports from Korea also increased in 2003 to $37 billion, up 3.9 percent from 2002. In 2003, Korea was the United States' 7th largest export market.

U.S. exports of private commercial services (i.e., excluding military and government) to Korea were $7.8 billion in 2002 (latest data available), and U.S. imports from Korea were $4.3 billion. Sales of services in Korea by majority U.S.-owned affiliates were $2.6 billion in 2001 (latest data available), while sales of services in the United States by majority Korea-owned firms were $395 million.

The stock of U.S. foreign direct investment in Korea in 2002 was $12.2 billion, an increase of 15.8 percent from 2001. U.S. foreign direct investment is concentrated largely in manufacturing, banking, and wholesale sectors.

IMPORT POLICIES

Tariffs and Taxes

Korea bound 91.7 percent of its tariff line items in the Uruguay Round negotiations. However, Korea's 50 percent average out-of-quota tariff rate for agricultural products in 2003 poses a significant barrier to trade and contrasts sharply with the relatively low average tariff for industrial products of 7.5 percent. Korea's tariffs on all agricultural products, except rice, are bound at an average of 66 percent. In the case of rice, Korea committed under Annex 5 of the WTO Agriculture Agreement to provide increasing market access for rice at a tariff rate of 5 percent, but the allowed quota for imports remains very small. Tariffs on forestry and fishery products remain unbound. Between 1995 and 2004, Korea agreed to lower duties on more than 30 agricultural products of primary interest to U.S. exporters. These products include bulk, intermediate- and high-value items, such as mixed feeds, feed corn, wheat, vegetable oils and meals, fruits and nuts.

As part of its Uruguay Round commitments, Korea also established tariff-rate quotas (TRQs) intended to either provide minimum access to a previously closed market or maintain pre-Uruguay Round access (See also "Quantitative Restrictions, TRQs and Import Licensing"). In-quota tariff rates are zero or very low, but over-quota tariff rates on some products are prohibitive. Specifically, in 2003, natural and artificial honey are subject to an over-quota tariff rate of 245.7 percent; skim and whole milk powder, 180.4 percent; barley, 327.6 percent; malting barley, 518.7 percent; potatoes and potato preparations, more than 307.4 percent; and popcorn, 637 percent.

Duties are still very high on many high-value agricultural and fishery products. Korea imposes tariff rates above 40 percent on many products of interest to U.S. suppliers, including table grapes, beef, canned peaches and fruit cocktail, apples, pears and a variety of citrus fruits. Products subject to 30 percent or higher tariff rates include certain meats, most fruits and nuts, many fresh vegetables, starches, peanuts and peanut butter, various vegetable oils, juices, jams, beer and some dairy products.

By 2004, Korea will reduce bound tariffs to zero on most or all products in the following sectors: paper, toys, steel, furniture, semiconductors and farm equipment. Korea is harmonizing its chemical tariffs to final rates of 0 percent, 5.5 percent or 6.5 percent, depending on the product. In addition, tariffs on scientific equipment are being reduced 65 percent from pre-Uruguay Round levels. On textile and apparel products, Korea has harmonized and bound most of its tariffs at the following levels: 13 percent

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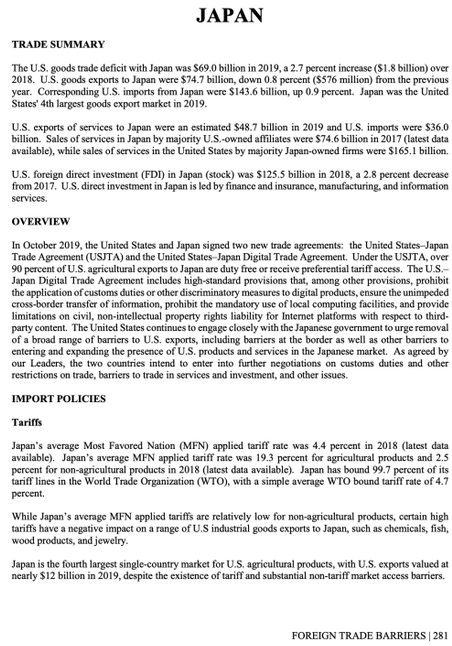
Figure 1: Chapter about Korea in 2004 NTE report



JAPAN

TRADE SUMMARY

The U.S. goods trade deficit with Japan was $69.0 billion in 2019, a 2.7 percent increase ($1.8 billion) over 2018. U.S. goods exports to Japan were $74.7 billion, down 0.8 percent ($576 million) from the previous year. Corresponding U.S. imports from Japan were $143.6 billion, up 0.9 percent. Japan was the United States' 4th largest goods export market in 2019.

U.S. exports of services to Japan were an estimated $48.7 billion in 2019 and U.S. imports were $36.0 billion. Sales of services in Japan by majority U.S.-owned affiliates were $74.6 billion in 2017 (latest data available), while sales of services in the United States by majority Japan-owned firms were $165.1 billion.

U.S. foreign direct investment (FDI) in Japan (stock) was $125.5 billion in 2018, a 2.8 percent decrease from 2017. U.S. direct investment in Japan is led by finance and insurance, manufacturing, and information services.

OVERVIEW

In October 2019, the United States and Japan signed two new trade agreements: the United States–Japan Trade Agreement (USJTA) and the United States–Japan Digital Trade Agreement. Under the USJTA, over 90 percent of U.S. agricultural exports to Japan are duty free or receive preferential tariff access. The U.S.–Japan Digital Trade Agreement includes high-standard provisions that, among other provisions, prohibit the application of customs duties or other discriminatory measures to digital products, ensure the unimpeded cross-border transfer of information, prohibit the mandatory use of local computing facilities, and provide limitations on civil, non-intellectual property rights liability for Internet platforms with respect to third-party content. The United States continues to engage closely with the Japanese government to urge removal of a broad range of barriers to U.S. exports, including barriers at the border as well as other barriers to entering and expanding the presence of U.S. products and services in the Japanese market. As agreed by our Leaders, the two countries intend to enter into further negotiations on customs duties and other restrictions on trade, barriers to trade in services and investment, and other issues.

IMPORT POLICIES

Tariffs

Japan's average Most Favored Nation (MFN) applied tariff rate was 4.4 percent in 2018 (latest data available). Japan's average MFN applied tariff rate was 19.3 percent for agricultural products and 2.5 percent for non-agricultural products in 2018 (latest data available). Japan has bound 99.7 percent of its tariff lines in the World Trade Organization (WTO), with a simple average WTO bound tariff rate of 4.7 percent.

While Japan's average MFN applied tariffs are relatively low for non-agricultural products, certain high tariffs have a negative impact on a range of U.S industrial goods exports to Japan, such as chemicals, fish, wood products, and jewelry.

Japan is the fourth largest single-country market for U.S. agricultural products, with U.S. exports valued at nearly $12 billion in 2019, despite the existence of tariff and substantial non-tariff market access barriers.

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Figure 2: Chapter about Japan in 2020 NTE report

There are roughly 60-80 countries listed every year in the report, each of which may appear in a persistent manner or appear for a certain period of time and subsequently not be included. I keep track of the appearance of a country in each year with "country" and "year" variables. The bodies of text are accumulated at country-year-issue area level. Within the scope of this paper, I am interested only in the paragraphs corresponding to the IP rights protection part, which contains detailed descriptions of a country's IP rights protection status generally perceived by US firms. I utilize the whole corpus of 1,434 texts to build a direct proxy for evaluations of IP rights protection environment vis-à-vis emerging economies by US corporate elites engaging in business with them. Among various text-as-data techniques, I rely on stance detection rather than sentiment analysis because my goal is to capture an evaluation expressed in formal government documents, which rarely convey strong sentiments yet do communicate support or opposition to specific propositions. By focusing on whether a text expresses support, opposition, or neutrality, stance detection precisely pinpoints authors' evaluations, which sentiment analysis alone cannot achieve (Burnham, 2024).

Following recommendations from Burnham (2024), I utilize DeBERTa-v3-large introduced by Laurer et al. (2024) to construct a country–year proxy of US evaluations of partners' IP

regimes. The measure is a continuous stance score scaled from -5 to +5, where lower values denote more negative assessments and higher values more positive assessments. This provides an intuitive, single-number summary of a country's IP regime perceived by US corporate elites. All the technical details of how the DeBERTa model generates the scores are provided in the Appendix.

DeBERTa-v3-large is preferable to general-purpose Generative Pretrained Transformer (GPT) models for the stance detection task. First, the objective matches the method. Stance detection is a natural-language inference problem, and DeBERTa's NLI pretraining yields high accuracy and label efficiency in few-shot settings (Burnham, 2024; Laurer et al., 2024). Second, reproducibility and governance are stronger. Fine-tuning an open model on a fixed corpus produces deterministic weights, stable outputs, and full transparency over training data and hyperparameters, whereas API-served GPTs are periodically updated, non-deterministic, and difficult to audit or version-control for scholarly replication. Third, it is cost-efficient and easy to control. DeBERTa can be retrained to adjust domain emphasis, class balance, or calibration and can be shared with code and checkpoints. On the other hand, GPTs are optimized for generative interaction rather than calibrated classification, and their parameter settings and training data are not user-controllable. Taken together, accuracy on NLI, data efficiency, and replicability make DeBERTa-v3-large the appropriate choice for constructing the IP evaluation proxy used in the analysis.

Table 1: Descriptive statistics

	Mean	SD	Min	Max	*N*
TRIPS	0.188	0.391	0	1	1,434
DeBERTa score$_{t-1}$	-1.883	3.383	-5	5	1,355
US aid obligations$_{t-1}$ (logged)	16.15	5.863	-18.07	22.55	1,355
IFC loan amount$_{t-1}$ (logged)	9.795	9.004	0	21.112	1,355
UNGA distance	2.886	0.786	0.107	4.848	1,195
UNGA important votes alignment$_{t-2}$	0.458	0.205	0	1	1,195
GDP per capita (logged)	9.574	0.925	6.679	11.794	1,385
GDP (logged)	26.74	1.568	22.21	31.02	1,385
GDP growth (%)	3.726	3.966	-28.759	18.287	1,404
US import (logged)	22.3	2.19	14.6	27.0	1,410
US export (logged)	22.1	1.94	15.7	26.6	1,410
Democracy$_{t-1}$	0.675	0.468	0	1	1,355
BIT status	0.354	0.478	0	1	1,434
ISDS occurrences	0.060	0.322	0	6	1,434
Mortality$_{t-2}$	-0.013	1.000	-1.989	4.976	1,303
Divided gov't$_{t-2}$	0.75	0.433	0	1	1,276
USTR lobbying$_{t-1}$	0.449	2.304	0	32	1,166
IRS lobbying$_{t-1}$	0.061	0.604	0	16	1,166

4 Empirical Findings

4.1 Corporate Lobbying & IP Evaluation

In this section, I first demonstrate the reflection of US corporate interests in IP regime evaluation vis-à-vis emerging economies. By emerging economies, I refer to states that were not members of the OECD before the organization's enlargement to South Korea, Mexico, and Central Europe that took place in 1990. Analysis in this section particularly focuses on lobbying practices of US corporate elites dedicated to USTR, as firm-level trade-related grievances have been institutionalized by the Trade Act of 1974 and its amendment in 1984 to run through the Office. The empirical strategy relies on TWFE OLS regressions to account for unobserved heterogeneity across both countries and years.

The dependent variable is the DeBERTa score, the proxy for US evaluation of IP regimes in emerging economies as introduced in the preceding section. The key explanatory variable is a triple interaction term that combines the logged amount of GDP per capita (World Bank, 2024) of each emerging economy, the cumulative number of lobbying reports dedicated to USTR from Lobbyview database (Kim, 2018) filed by US Fortune 500 firms identified to have investments in one of the countries according to Bloomberg data (or alternatively, dedicated to Internal Revenue Services (IRS) for placebo test), and the binary regime type of the emerging economy (democracy vs. autocracy). The sample includes only the Fortune 500 firms within IP-intensive industries, e.g., pharmaceuticals, software, computer, aerospace and defense, automotive, telecommunications, biotechnology, and semiconductor[3], to capture the most elite firms of the United States that rely heavily on their IP assets to retain a competitive edge in the market.

I condition the effect of US corporate lobbying on GDP per capita and the binary regime type of an emerging economy, which are proxies for state capacity, institutional strength, and economic bargaining power of a country. The theory builds on Dür et al.'s (2022) argument to explain that the asymmetric bargaining leverage between a large economy like the United States

[3]These sectors are defined by the US government to be the most dominant IP-intensive industries taking up a lion's share in value-added contributions (Economics and Statistics Administration, 2012).

and a developing nation, attributable to the differing levels of the country's wealth, along with consequential institutional and innovative capacity, lowers the hurdle for powerful states to push for deeper IP commitments from emerging economies. Thus, it is theoretically reasonable to expect that the countries with less bargaining leverage, proxied as lower levels of GDP per capita, are more likely to face IP-related complaints from US multinationals because it is easier to demand deeper commitments from them.

Another theoretical expectation is that US MNCs may evaluate IP regimes of democracies more favorably than those of autocracies. As Li and Resnick (2003) find, democracies are more keen to protect property rights than their autocratic counterparts, which is an essential factor of democracies that attracts foreign capital. Jensen (2008) also notes that democratic institutions, e.g., political constraints on executives, are effective safeguards against political risks, making democracies more attractive investment destinations for multinationals.

To ensure that the estimates capture the specific effect of firm-level lobbying on IP regime evaluations, I include a range of covariates that reflect both macroeconomic conditions and bilateral economic ties. The covariates include GDP from the World Bank's World Development Indicators dataset (World Bank, 2024) to control for overall economic size and wealth, which may independently affect a country's legal and regulatory frameworks. The percentage of GDP growth is included to account for economic growth and potential institutional changes. I also control for the logged amount of US imports and exports from each country to capture complementary economic ties that might influence the assessment of IP institutions of a country, sourced from the Statistics Department, International Monetary Fund (2021). Bilateral investment treaty (BIT) status with the United States is included as a proxy for deeper economic integration and legal harmonization, while the number of investor-state dispute settlement (ISDS) lawsuits involving the United States serves as an indicator of historical investment disputes and regulatory conflicts. Both variables are sourced from the Investment Dispute Settlement Database maintained by UNCTAD (n.d.). These covariates help isolate the effect of the main variables of interest, the triple interaction between GDP per capita, lobbying efforts of US corporate elites, and regime type on the DeBERTa score.

Figure 3 plots the marginal effects of increasing one standard deviation in USTR lobbying

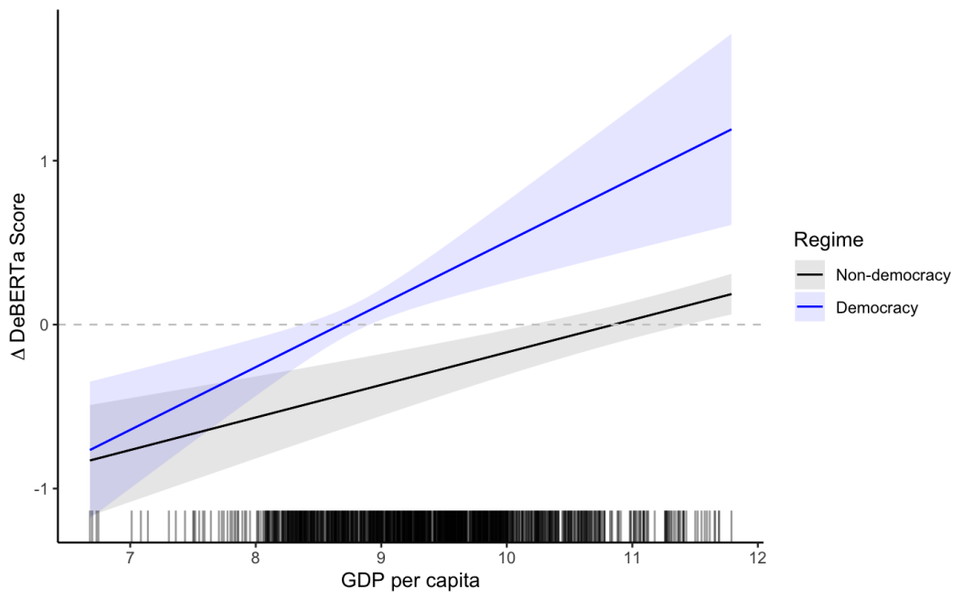

Figure 3: USTR lobbying

($\approx$ 2.3) on the DeBERTa score. All the terms consisting of the triple interaction term, USTR lobbying, GDP per capita, and the regime type are lagged a year. The results are presented in column (1) of Table A.2. This reveals a compelling narrative regarding the influence of targeted corporate lobbying on IP regime evaluations. At lower levels of GDP per capita, a one standard deviation increase of USTR lobbying at $t-1$ leads to a decrease of the DeBERTa score for both democratic and autocratic emerging economies at t. On the contrary, in developing countries with per capita income higher than the mean level (> 9), especially for democracies, more USTR lobbying at $t-1$ contributes to a higher DeBERTa score at t. In autocratic emerging economies, regardless of per capita income level, more USTR lobbying generally leads to a declining DeBERTa score.

The empirical pattern lends strong support to the literature about the institutional process of US IP regime evaluations regarding its trade partners. Because USTR is the focal point of trade-related IP grievances, corporate elites lobby USTR to have their IP-related demands met in countries where they invest. These evaluations, however, are conditional upon both a nation's per capita income and its political regime type. Low per capita income may reflect limited economic bargaining power, enabling corporate elites to voice grievances and exert demands with relative impunity. It may also indicate insufficient resources to implement IP reforms, thereby generating an increased number of complaints from US firms. As democracies attain higher levels of per capita

income, their IP regime scores correspondingly improve, a trend not observed among autocracies. This can be interpreted as the development of an IP rights protection framework within an emerging economy as it gains more capital to proceed with upgrading its institutions, which leads to the improvement of its DeBERTa score. On the contrary, although the marginal effect of USTR lobbying diminishes at higher income levels, autocratic regimes generally experience a decline in their IP evaluation scores as US firms intensify their USTR lobbying efforts. This deterioration likely stems from the US firms' skepticism regarding an autocratic government's credibility and commitment to safeguarding their IP assets compared with democratic counterparts (Jensen, 2008).

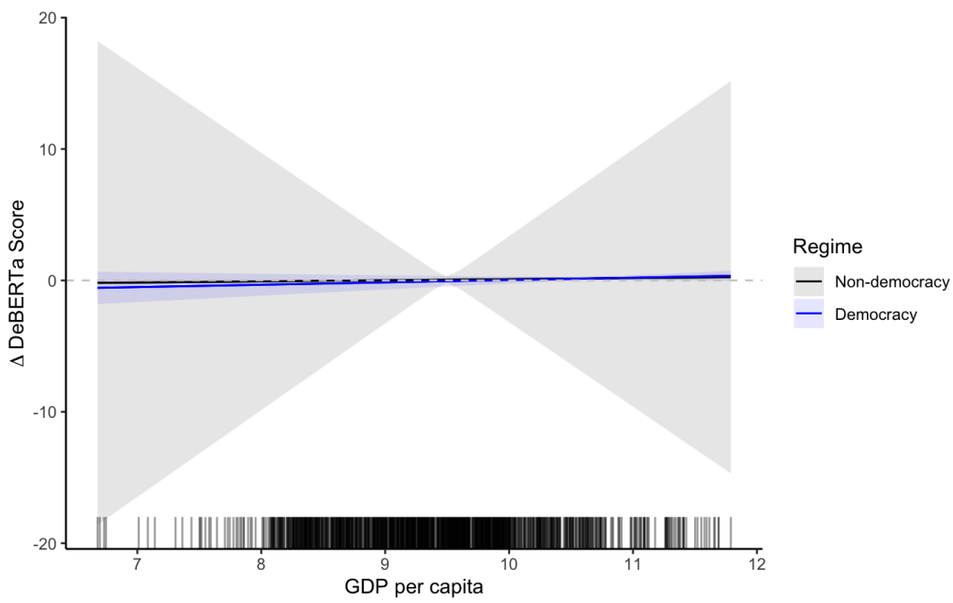

Figure 4: IRS lobbying

In addition, the marginal effects plot for IRS lobbying in Figure 4 serves as an important placebo test, highlighting the specificity of the USTR lobbying result. If firms' lobbying efforts related to IP evaluations about their investment destinations are truly specific to USTR, then IRS lobbying, which mainly concerns US domestic taxation matters and therefore is expected to bear little to no effect on trade outcomes, should produce null effects. The results are presented in column (2) of Table A.2. The analysis shows that IRS lobbying efforts, when interacted with logged GDP per capita and regime type, do not exhibit a statistically significant impact on the DeBERTa score. This lack of effect implies that the relationship observed with USTR lobbying is not merely a generic feature of firm lobbying but is tied to the particular content and framing associated with trade-related IP concerns. Given that IRS lobbying is conceptually distinct and not expected to influence IP regime perceptions in the same way, the insignificant finding for IRS

corroborates that US corporate lobbying to USTR is uniquely influential. In sum, the placebo test reinforces the validity of the main findings by demonstrating that only those lobbying activities relevant to USTR yield measurable effects on the DeBERTa score.

4.2 Aid or Lending?

The preceding section has presented the findings that are consistent with the interpretation that US corporate elites influence IP regime assessments on emerging economies, represented with the new proxy. I now turn to examining the strategic alternation between US aid giving and IFC lending, focusing on how the choice of these financial instruments interacts with a country's regime type, employing the DeBERTa score as an explanatory variable. The following set of analyses seeks to uncover whether such substitutive strategies are part of a coordinated effort by the United States to persuade emerging economies under high IP pressure to sign TRIPS-plus agreements.

I focus particularly on exploring the effect of a declining DeBERTa score because large markets, by their very nature, attract a greater volume of business activities and, consequently, more scrutiny from US elite firms operating there. In these markets, the increasing presence of firms intensifies attention to any perceived regulatory shortcomings or inefficiencies in IP enforcement. A lower DeBERTa score thus reflects heightened concerns, serving as a signal that the market is experiencing greater pressure from corporate stakeholders. This is well-noted in the results of the analyses performed in the previous section, featuring IP-relevant lobbying activities of US Fortune 500 firms. Furthermore, I have theorized that the United States has compelling strategic reasons to compensate emerging economies of large market size when they sign TRIPS-plus agreements, despite negative assessment of their current IP regime: large markets remain vital for US corporate interests and economic influence, and providing financial support helps offset short-term regulatory and market risks that might otherwise deter investment. Moreover, such compensation can serve as an incentive mechanism, encouraging emerging economies to implement TRIPS-plus standards that ultimately benefit both their domestic environments and US investors by fostering stronger IP rights protection.

The following analysis examines the joint effect of IP evaluation, US aid obligations, and regime type of a developing nation on the probability of signing a TRIPS-plus trade agreement with the United States. In the TWFE OLS model, the dependent variable is an indicator for whether an emerging economy signs a TRIPS-plus agreement with the United States. I obtain this variable from the Design of Trade Agreements (DESTA) data introduced by Dür et al. (2014) (`ipr_trips_1994_dummy`). The key explanatory variable is a triple interaction term that combines US aid obligations, the DeBERTa score, and the regime type of the emerging economy. The US aid obligations data come from the total ODA amounts reported by the US Agency for International Development (USAID) via the ForeignAssistance.gov database, while regime type data are obtained from the WhoGov (Nyrup & Bramwell, 2020) dataset. The model also includes a set of covariates identical to those discussed in the preceding section, which are GDP, GDP per capita, GDP growth rate, logged US imports, BIT status, and the number of ISDS lawsuits, with the addition of UNGA voting distance (Bailey & Voeten, 2018) between ideal points of an emerging economy and the United States to further capture political alignment between the two parties. UNGA voting is crucial in determining the allocation of development assistance funds per official USAID guidelines. In addition, UNGA voting alignment is often understood as signifying overlapping policy preference, which may contribute to a higher likelihood of signing TRIPS-plus agreements for the states of closer UNGA voting distance to the United States.

It is important to note that several features of the aid process make exogeneity unlikely. During negotiations over deep provisions, the executive can reallocate or time aid to ease partner adjustment, making obligations responsive to the bargaining process rather than exogenous inputs. Partner governments anticipating agreement may also undertake reforms or signal cooperation that simultaneously attract additional aid and increase the probability of signing, creating selection on unobservables. Shocks that spur aid, e.g., security contingencies, disasters, or governance initiatives, can also shift both sides' willingness to conclude a TRIPS-plus deal. Finally, obligations, as opposed to ex-post disbursements, can be set contemporaneously with negotiation milestones, which may cause simultaneity.

To address these concerns surrounding endogeneity, I implement a two-stage least squares

(2SLS) design. I instrument the aid variable using the US divided government status, where the majority of either chamber of the Congress differs from the presidential party, following Foncillas et al. (2025) and Kersting and Kilby (2021), as Congress may be more reluctant to agree with the administration's plan for using bilateral aid under divided government. Since I focus on the signature of treaties between the United States and its developing country partners, not ratification, there is little room for Congressional interests to enter at this stage. USTR retains control over the treaty until it is signed by both parties and reaches Congress for ratification. I add another exclusion restriction, which is mortality rates from non-endemic highly infectious diseases in emerging economies sourced from the Mortality Database hosted by the World Health Organization (WHO). Non-endemic infectious disease outbreaks are highly likely to be correlated with aid commitments, especially under humanitarian purposes, while there is no theoretical reason to expect that sporadic outbreaks of infectious diseases affect the signing of TRIPS-plus agreements, which should be negotiated and finalized over a long time horizon.

The structural equation for the TWFE 2SLS model at the outcome level is specified as follows:

$$\begin{aligned}
\text{TRIPS}_{it} = \beta_1 \, &\text{DeBERTa}_{it-1} \\
&+ \beta_2 \, \text{Democracy}_{it-1} + \beta_3 \left(\text{DeBERTa}_{it-1} \times \text{Democracy}_{it-1} \right) \\
&+ \delta_1 \, \text{US aid}_{it-1} + \delta_2 \left(\text{US aid}_{it-1} \times \text{DeBERTa}_{it-1} \right) \\
&+ \delta_3 \left(\text{US aid}_{it-1} \times \text{Democracy}_{it-1} \right) \\
&+ \delta_4 \left(\text{US aid}_{it-1} \times \text{DeBERTa}_{it-1} \times \text{Democracy}_{it-1} \right) + \gamma' \mathbf{Z} + \alpha_i + \lambda_t + \epsilon_{it},
\end{aligned}$$

where $\mathbf{Z}$ is the vector of control variables, the country fixed effects are denoted by α_i, the year fixed effects by λ_t, and ϵ_{it} is the error term. Note that key variables composing the triple interaction term are lagged by a year.

The first-stage equation is as follows:

$$\begin{aligned}\text{US aid}_{it-1} = \pi_0 &+ \pi_1 \,\text{Mortality}_{it-2} + \pi_2 \left(\text{Mortality}_{it-2} \times \text{DeBERTa}_{it-1}\right) \\ &+ \pi_3 \left(\text{Mortality}_{it-2} \times \text{Democracy}_{it-1}\right) \\ &+ \pi_4 \left(\text{Mortality}_{it-2} \times \text{DeBERTa}_{it-1} \times \text{Democracy}_{it-1}\right) \\ &+ \pi_5 \,\text{Divided}_{it-2} + \pi_6 \left(\text{Divided}_{it-2} \times \text{DeBERTa}_{it-1}\right) \\ &+ \pi_7 \left(\text{Divided}_{it-2} \times \text{Democracy}_{it-1}\right) \\ &+ \pi_8 \left(\text{Divided}_{it-2} \times \text{DeBERTa}_{it-1} \times \text{Democracy}_{it-1}\right) \\ &+ \kappa' \mathbf{X} + \eta_i + \tau_{t-1} + u_{it-1},\end{aligned}$$

where $\mathbf{X}$ is the vector of exogenous covariates in the second-stage equation. The exclusion restrictions are lagged two years since the instrumented variable is already lagged a year.

The design here is essentially a linear probability model (LPM) with two-way fixed effects, as the dependent variable represents a binary outcome. This is suitable for the current setting because some countries end up signing multiple TRIPS-plus agreements with the United States over time[4], so the outcome is a repeated binary decision rather than a one-off "time-to-first-event." The specification treats each country-year as an observation, absorbs unchanging country traits and common shocks with unit and year fixed effects, and delivers coefficients that read directly as percentage-point changes in the probability of signing, which is useful for interpreting triple interactions (Angrist & Pischke, 2008; Wooldridge, 2010). It also meshes cleanly with instrumental variables, which is far more cumbersome in nonlinear fixed-effects models (logit/probit). Heteroskedasticity concern is handled by clustering standard errors at the country level.

I start with a discussion of the joint effect of US aid obligations, DeBERTa score, and regime type in a TWFE OLS baseline specification, without instrumenting aid on the set of exclusion restrictions. The results are available in column (1) of Table A.3, and Figure 5 visualizes the marginal effect of a two-fold increase in aid obligations conditional on DeBERTa score and the recipient regime type. While it is a typical practice to refer to a one standard deviation increase for comparison purposes, as the aid variable is in the natural log form, I instead use a 200% increase

[4]For example, Chile has an FTA in force with the United States, and yet signed another TRIPS-plus agreement, Trans-Pacific Partnership in 2016, with the United States.

($ln(2)$) for more reasonable scales. The black-colored rug plot on the x-axis marks the distribution of the observations across the range of the DeBERTa scores.

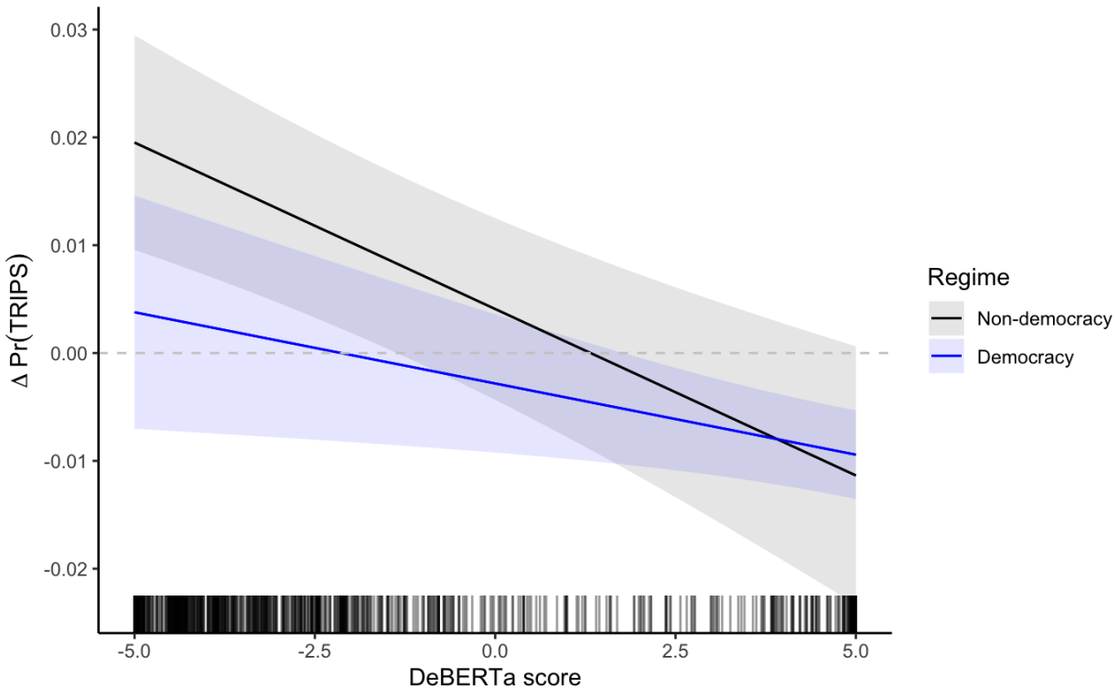

Figure 5: Marginal plot - joint effect of DeBERTa score and US aid (OLS)

The marginal plot exhibits a pattern opposed to the theoretical expectation made about US aid disposal hinging upon regime type. A two-fold increase of US aid obligations does not have an effect of enhancing the probability of signing TRIPS-plus agreements for democracies at most levels of the DeBERTa score. For those on the higher end of the score (> 2.5), the aid effect is in fact reversed; a 200% increase in aid inflow reduces the chance of agreeing to TRIPS-plus commitments for democracies roughly by 0.01 at most. On the other hand, autocracies with low DeBERTa scores (< -2.5) are more likely to sign TRIPS-plus agreements if they receive twice as much aid.

Figure 6 visualizes the predicted probabilities of signing TRIPS-plus agreements jointly affected by DeBERTa score, US aid, and recipient regime type as a contour plot overlaid with a scatterplot of observations colored by their corresponding size of partial residuals. The presence of more purple-colored observations in the democracy panel suggests more overprediction of results concerning democratic developing country observations.

The contour plot once again confirms the empirical pattern found in the marginal plot

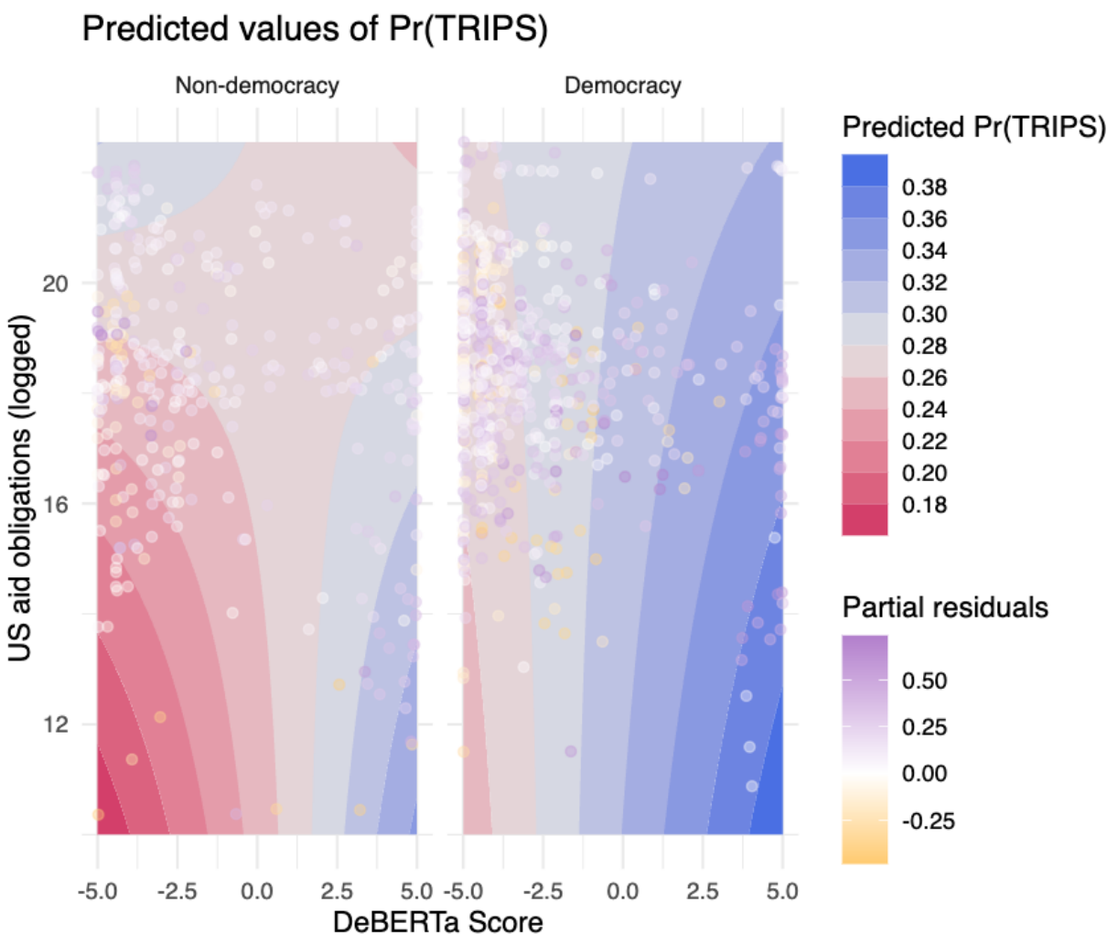

Figure 6: Contour plot - joint effect of DeBERTa score and US aid (OLS)

as opposed to the initial theory. Contour lines in the non-democracy panel show the joint effect of DeBERTa score and US aid obligations on the probability of signing TRIPS-plus agreements, whereas in the democracy panel, they mostly run vertically to the x-axis, meaning that TRIPS-plus commitment is largely determined by DeBERTa score, and aid has a minuscule effect for democracies. Increments of roughly 1.25 in the DeBERTa score are associated with an increase in the probability of signing a TRIPS-plus agreement by 0.02 for democracies, with almost no impact from aid obligations. In contrast, autocracies in the lower range of the DeBERTa score (< -2.5) are sensitive to the amount of aid received regarding their decision to commit themselves to the TRIPS-plus IP regime. For instance, increasing US aid obligations in the natural logarithmic scale from 16 to 18 steps up the probability range for signing TRIPS-plus agreements from [0.22, 0.24) to [0.24, 0.26). If aid is treated as exogenous, it seems to be effective for autocracies but not for democracies, dismissing the second hypothesis that bilateral aid is more effective with democracies.

I now turn to the 2SLS specification where aid is instrumented on divided government

and non-endemic infectious diseases mortality rates to see if the empirical pattern observed in the OLS results, which runs counter to the theory, still holds even after accounting for potential endogeneity issues surrounding aid. The results are available in column (2) of Table A.3. The statistical validity of the instruments is confirmed by both the Wu-Hausman and Hansen-J tests. In column (2), the Wu–Hausman statistic yields a p-value of 0.014, confirming that aid is endogenous concerning divided government status and mortality from non-endemic, highly infectious diseases. The Hansen-J test returns a p-value of 0.250, failing to reject the null hypothesis of valid overidentifying restrictions and indicating no overidentification concerns.

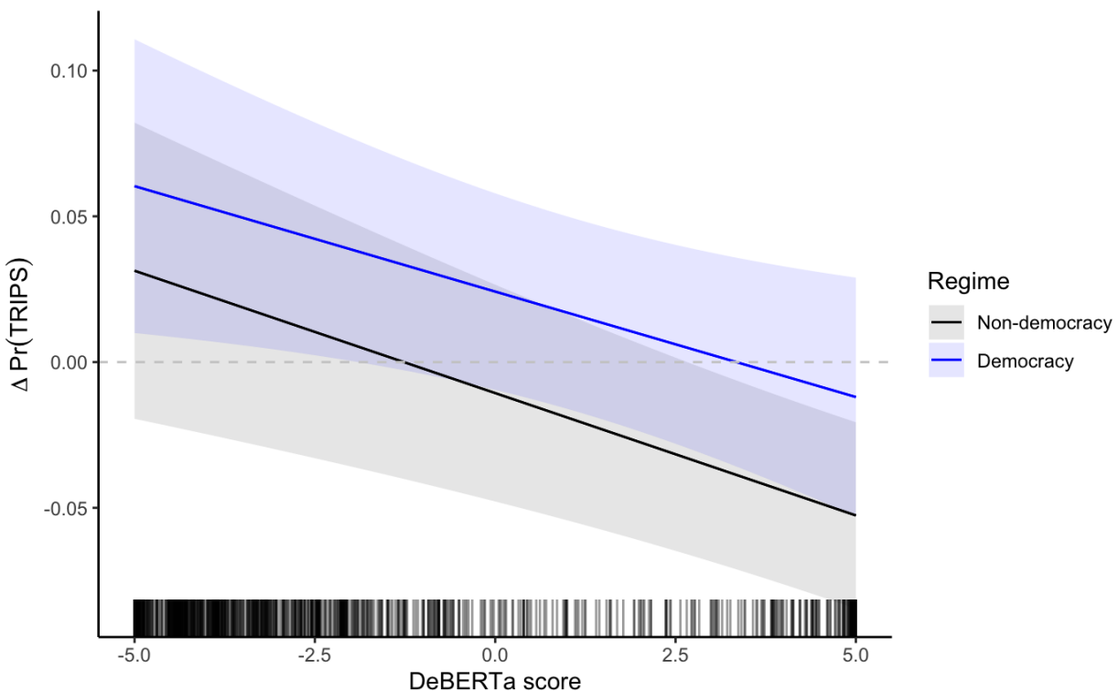

Figure 7: Marginal plot - joint effect of DeBERTa score and US aid (2SLS)

Figure 7 shows the marginal effect of US aid obligations on the probability of signing TRIPS-plus agreements, conditional on the DeBERTa score and the recipient regime type, under the 2SLS specification. The plot reveals an interesting pattern, starkly different from that observed in the baseline OLS results. Now, democracies with negative DeBERTa scores (< -2.5) are more likely to agree with TRIPS-plus commitments when there is a two-fold increase in their aid inflow. In contrast, the aid effect on signing TRIPS-plus agreements disappears with autocracies.

The joint effect of US aid obligations, DeBERTa score, and regime type is also visualized as a contour plot in Figure 8 with scattered points of observations. The overlaid scatterplot of observations with gradient colors representing their partial residuals in the regression shows the

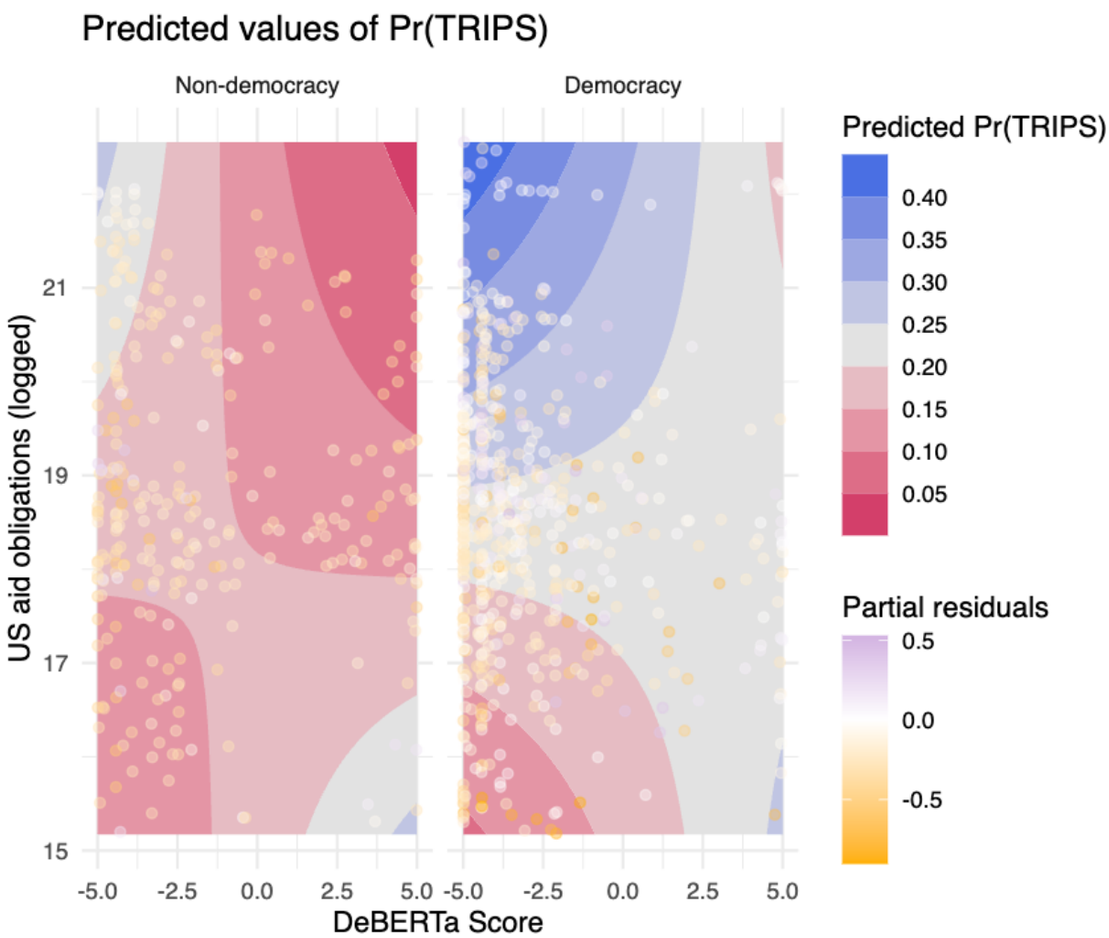

Figure 8: Contour plot - joint effect of DeBERTa score and US aid (2SLS)

actual distribution of data points. The non-democracy panel carries more orange-colored data points, which means a slight overprediction of the model about those data points. The democracy panel also shows a few orange-colored data points, but overall, most of the data points are white, which indicates that the model closely matches the predicted outcome to the actual outcome. In both autocratic and democratic emerging economies, those that face significant IP concerns, as indicated by lower DeBERTa scores, are more likely to sign TRIPS-plus trade agreements with the United States as the amount of aid obligations they receive increases, but the effect is much more pronounced for democracies. Say there are a hypothetical democracy and an autocracy, each with a DeBERTa score at -2.5. Increasing aid obligation from 18 to 19 results in increasing the predicted probability of signing TRIPS-plus for democracies from $[0.20, 0.25)$ to $[0.25, 0.30)$, but it barely has an effect for autocracies, as the predicted probability range is still at $[0.15, 0.20)$.

The next analysis probes the effect of IFC lending to the private sector on signing TRIPS-plus agreements. The specification remains largely the same as the OLS analysis with US aid

obligations. The information about IFC loan amounts is sourced from the IFC Investment Services Projects dataset hosted by the World Bank Group [5]. The OLS results are available in column (3) of Table A.3.

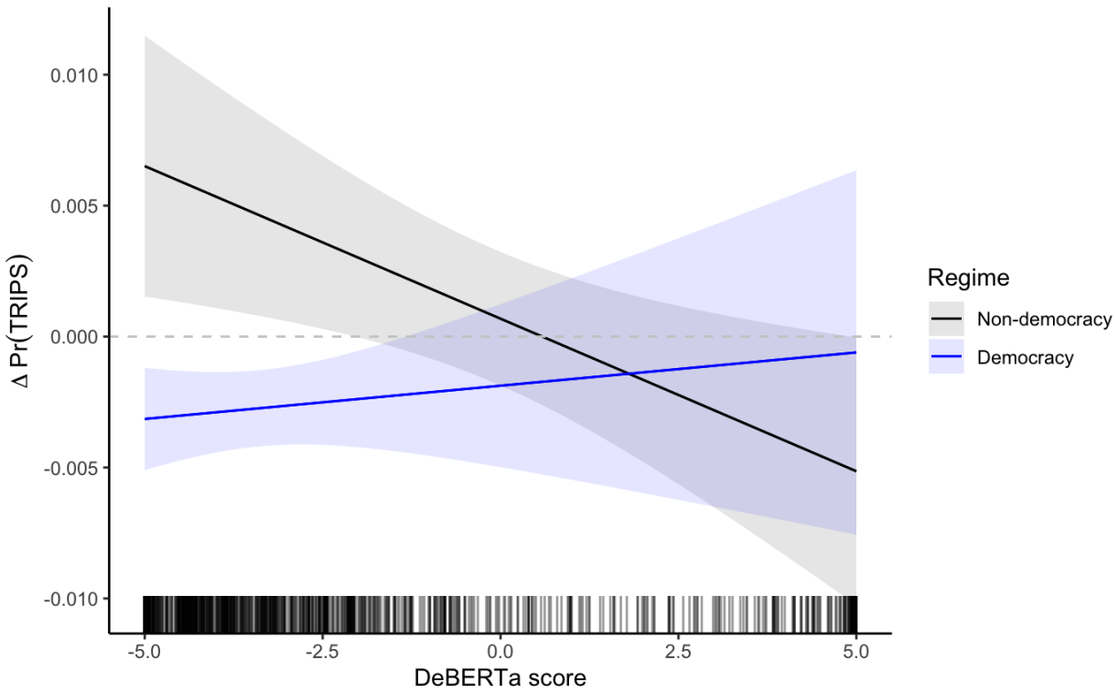

Figure 9: Marginal plot - joint effect of DeBERTa score and IFC lending (OLS)

Figure 9 visualizes the marginal effect of a two-fold increase in IFC loan amount on the probability of signing TRIPS-plus, conditional on the DeBERTa score and the regime type of the recipient. A 200% increase in IFC lending enhances the chances of committing to the TRIPS-plus regime for autocracies scoring roughly less than -2.5 in the DeBERTa score. On the contrary, IFC lending has a negative effect on signing TRIPS for the democracies in a similar score range.

I probe the effect of IFC lending further by examining the contour plot for the predicted probabilities of signing TRIPS-plus presented in Figure 10. The scatterplot for observations is overlaid on the contour plot. A visual inspection shows that, although a few observations in each panel show over- (purple) or under-prediction (orange), the majority appear in white, which indicates near-zero residuals and a close match between predicted and actual outcomes for both non-democracies and democracies. While the predicted range for autocracies is lower than democracies in general, both DeBERTa score and IFC lending clearly have a joint effect on TRIPS-plus for autocracies, but IFC lending shows little to no effect in democracies. More specifically, the prob-

[5] https://financesone.worldbank.org/ifc-investment-services-projects/DS00499

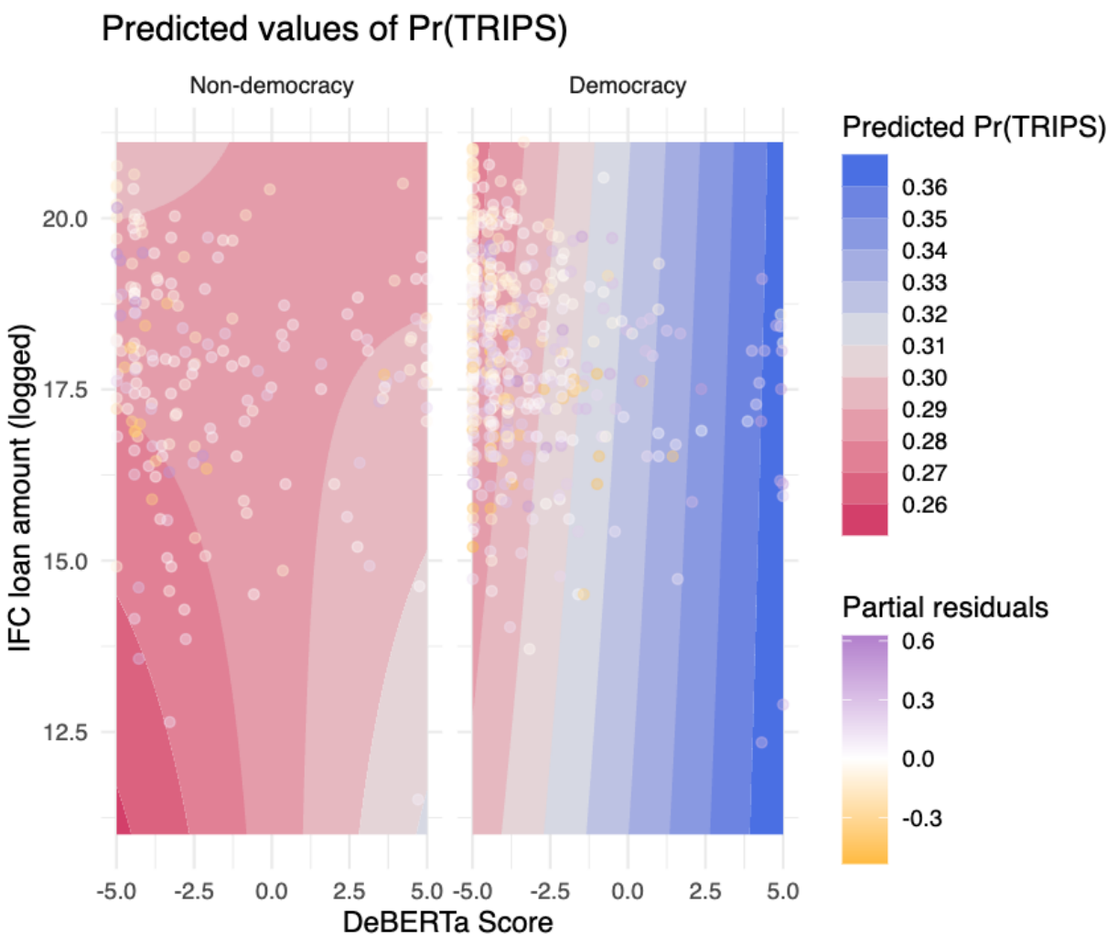

Figure 10: Contour plot - joint effect of DeBERTa score and IFC lending (OLS)

ability of signing TRIPS-plus increases for autocracies receiving substantial IP-related concerns (DeBERTa < -2.5) as their private sectors receive more IFC loans. In contrast, signing TRIPS-plus is mostly driven by an increase in the DeBERTa score in democratic developing countries, as mostly vertical contour lines show.

Even though the IFC is the private sector arm of the World Bank Group and, de jure, offers non-concessional financing based on the commercial viability of projects, existing literature has pointed to strategic interests as a significant factor influencing the disbursement of its funds (Dreher et al., 2009, 2019). I address the potential endogeneity concern on IFC lending by instrumenting it on US divided government status, just as the 2SLS analysis with US aid obligations, and UNGA voting alignment with the United States on important votes as determined by the US Department of State (Fjelstul et al., Forthcoming). My selection of the instruments is based on the arguments made by Kersting and Kilby (2016, 2021), and Kilby (2013). These works demonstrate that the US government may exert more influence in multilateral lending when it is faced

with congressional opposition in its use of bilateral aid for diplomatic purposes (Kersting & Kilby, 2021), and countries exhibiting shared preferences with the United States receive more favorable terms in IFCs.

However, there is a possibility that UNGA voting may violate exclusion restriction by directly influencing a developing country's tendency to sign TRIPS-plus agreements, as Voeten (2021) argues that UN voting per se reflects a country's policy preference. I overcome this issue by creating a shift-share instrument following the approaches introduced by Bartik (1991) and Blanchard and Katz (1992), and further polished by Goldsmith-Pinkham et al. (2020), which is an interaction of a developing country's average UNGA voting coincidence with the United States up to $t-1$ (*share*) with the total number of annual UNGA important votes as defined by the US State Department (*shift*). This setup satisfies the exclusion restriction requirement of the instrument, as the count of important resolutions in each UNGA session cannot be influenced by any average UN member state, thereby ensuring exogeneity. Any remaining time-invariant factors leading up to TRIPS-plus commitments are absorbed by the inclusion of country- and year-fixed effects, leaving no direct pathway for the instrument to affect treaty signing.

The 2SLS results are in column (4) of Table A.3. Statistical tests also confirm the instrument validity. In column (4), the Wu-Hausman test returns a p-value of 0.011, rejecting the null that IFC lending is not endogenous to the instruments at the 10% significance level. The Hansen-J test yields a p-value of 0.257, confirming there is no issue of overidentification.

Figure 11 demonstrates the marginal effect of a 200% increase in IFC lending on the probability of signing TRIPS-plus agreements under the 2SLS specification, conditional on the DeBERTa score and the recipient regime type. The overall pattern of the results remains similar to the OLS results presented in Figure 9; autocracies with lower range of DeBERTa scores are more likely to sign TRIPS-plus compared to democratic counterparts, when they receive twice as much aid from the United States. However, the results are no longer statistically significant.

I also examine the effect of IFC lending on TRIPS-plus commitments using a contour plot as in Figure 12, which shows how IFC lending and the DeBERTa scores jointly affect the predicted outcome. The data points clustered in the lower DeBERTa score region (< -2.5) in the

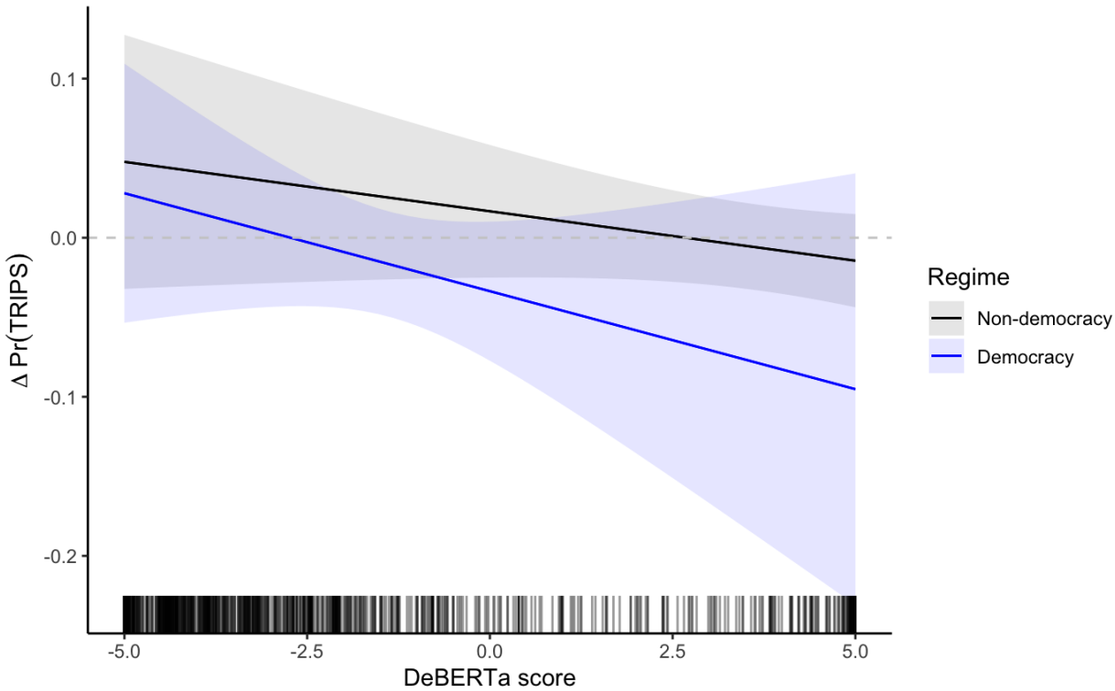

Figure 11: Marginal plot - joint effect of DeBERTa score and IFC lending (2SLS)

democracy panel are mostly colored purple, which shows systematic overprediction for democracies with negative IP regime evaluations. By contrast, although the non-democracy panel contains fewer observations, it also exhibits a lower incidence of purple residuals, reflecting a closer alignment between predicted and actual outcomes for autocratic cases. Even after IFC lending is instrumented, it still has minimal to no effect on signing TRIPS-plus agreements for democracies with negative DeBERTa scores (< 0), as the nearly vertical contour lines show. In contrast, the non-democracy panel shows smooth-curved, tightly packed contour lines in the lower DeBERTa score region (< 0), confirming the joint effect of the DeBERTa score and IFC lending on the probability of committing to TRIPS-plus arrangements for autocracies with negative IP regime evaluations. For instance, if an autocracy with the DeBERTa score less than -2.5 experiences a boost of IFC loans flowing into its private sector from 17.5 to 18.75, the predicted probability ramps up from $[0.45, 0.50)$ to $[0.50, 0.55)$.

Although the 2SLS estimates exhibit wider confidence intervals and fail to attain conventional levels of statistical significance, they nevertheless preserve the empirical pattern observed under ordinary least squares. I report these weaker 2SLS results in the interests of full transparency and to underscore the robustness of my core theoretical predictions: namely, that IFC lending is more effective in autocracies on TRIPS-plus adoption than in democracies, particularly when these

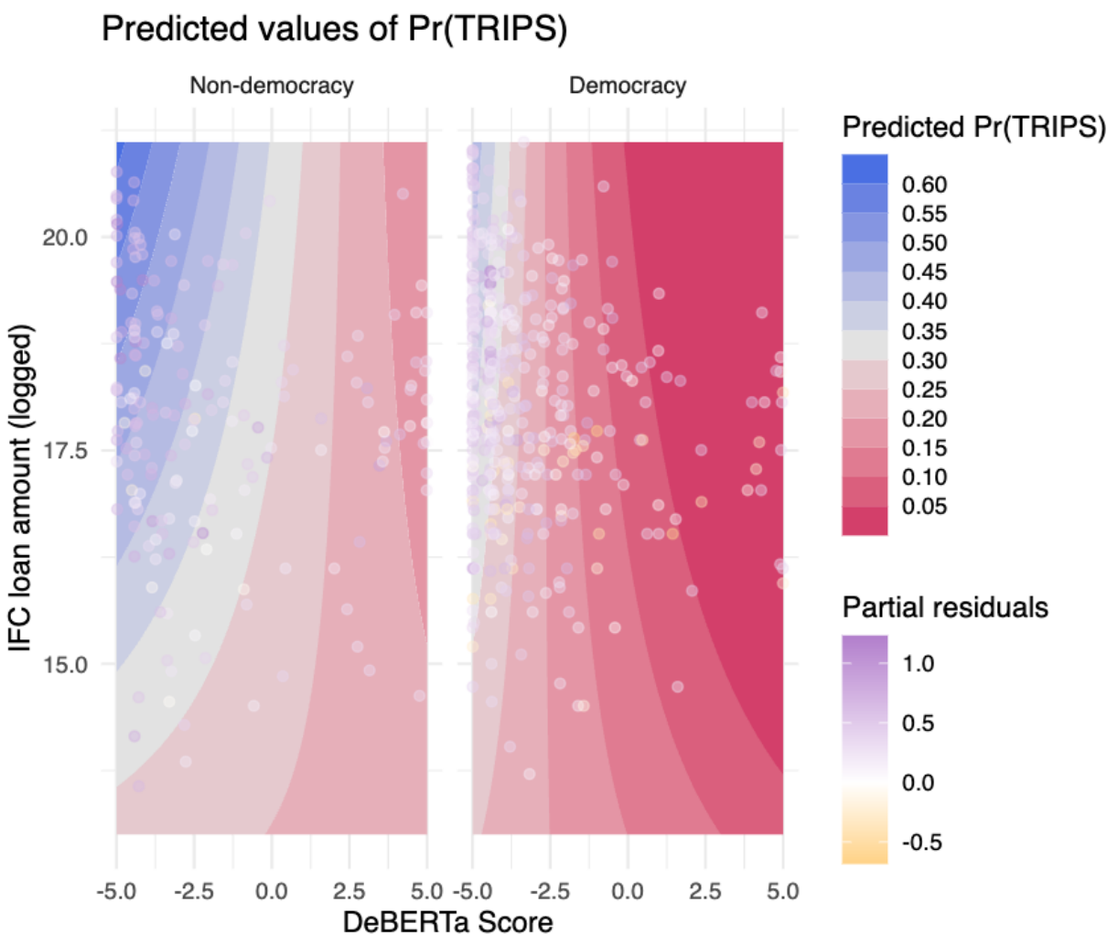

Figure 12: Contour plot - joint effect of DeBERTa score and IFC lending (2SLS)

countries are faced with IP reform demands. In other words, these results suggest that, while instrumenting for endogeneity may attenuate precision, it does not reverse the substantive conclusions, and the overall evidence remains coherent with the proposed theoretical framework about IFC lending.

5 Conclusion

This paper bridges two strands of literature, the domestic political origins of US trade enforcement, and the geopolitical deployment of aid and lending, to examine how the United States promotes TRIPS-plus intellectual property commitments in emerging economies by strategically deploying development finance in ways conditioned by recipient regime type and domestic political constraints. The Trade Act of 1974 and its amendments in 1984 and 1988 established mechanisms, such as Special 301 process, that enabled US firms to channel IP-related grievances into formal

trade policy. These mechanisms helped convert firm-level preferences into systemic international pressure. At the same time, because TRIPS-plus provisions impose high adjustment costs on developing countries, the United States has used foreign aid and multilateral lending strategically to compensate for those burdens.

To systematically capture IP-related pressure from US corporate elites, I introduced a novel text-based proxy of IP-related grievances, derived from 28 years of NTE reports and constructed using latest large language model, DeBERTa-v3-large, showing high performance in stance detection. The empirical analyses demonstrate that lobbying by elite US firms correlates with more negative IP evaluations in large emerging markets, particularly under conditions where state capacity is weak and institutional commitment seems less credible. In the following analyses using the IP evaluation score as an explanatory variable, I find that under high IP reform pressure from the United States, democratic regimes are more likely to receive increased bilateral aid in exchange for TRIPS-plus commitments, whereas autocracies, where aid is more politically sensitive, are more likely to receive increased IFC lending to the private sector.

Together, the findings illuminate a broader logic of strategic development finance underpinning US efforts to globalize its intellectual property regime. They altogether suggest an interesting framework on the US choice of development institutions to promote the business interests of the country's most elites through bilateral trade agreements. This study contributes to our understanding on how private interests shape specific terms of trade agreements, and the essential role that development finance institutions play during the process.

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A Appendix

A.1 Premise-Hypothesis Pairs & Few-Shot Learning

This section explains how I construct the IP evaluation score from NTE texts using a few-shot, premise–hypothesis approach. Few-shot learning means adapting a large, already pre-trained language model to a new task with a small, hand-labeled set of examples instead of a large training corpus. It leverages the model's prior linguistic knowledge and is well suited when expert labels are costly. I frame stance detection as natural-language inference because it forces the model to answer a concrete question about each passage: does this text "support", "contradict", or "say nothing" about a specific claim? Concretely, the premises are paragraph-level excerpts from the NTE reports, and the hypotheses are short, standardized statements that encode evaluation claims. e.g, "USTR believes that there is widespread IP violation in the country." For each premise–hypothesis pair, the model returns probabilities for "entailment". In other words, the model assesses whether a premise (IP paragraph from NTE) supports, or "entails", a hypothesis. I convert these to a signed stance value (support for a negative IP claim moves the score downward; support for a positive claim moves it upward; neutral stays near zero), then aggregate within country–year across all pairs.

I employ multiple hypotheses to build this new IP evaluation proxy primarily because IP rights protection is a multidimensional concept that involves distinct factors including enforcement efforts and legal provisions. Each IP paragraph from a country's NTE report forms a single premise and is paired with each hypothesis that appears in Table A.1, which allows the DeBERTa model to compute the probability of the premise entailing the hypothesis, namely entailment probabilities. The final score is derived by computing a weighted sum of the model's entailment probabilities across multiple hypotheses and then scaling it to the -5 to +5 range.

To minimize researcher discretion while capturing variation in institutional signal strength, I assign differential weights only to text segments tied to Special 301 Watch-List designations (Watch List, Priority Watch List, or Priority Foreign Country) and treat all other segments with unit weight. The rationale is informational, not theoretical: Watch-List placements follow a formal USTR process and constitute an adjudicated, high-salience statement of US dissatisfaction with a

Table A.1: Hypotheses & weights

Hypothesis	Weight
The country is the Priority Foreign Country.	-2
The country is on the Priority Watch List.	-2
The country is on the Watch List.	-1.5
The country has markets listed as the Notorious Market.	-1.5
The author of this text believes that the country does not put in efforts to combat IP violations.	-1
The author of this text believes that the country has made efforts to combat IP violations.	+1
The author of this text supports the passage of the new IP legislation in the country.	+1
The author of this text opposes the passage of the new IP legislation in the country.	-1
The author of this text believes that there is widespread IP violation in the country.	-1.5
The author of this text believes that the country is lack of resources to combat IP violations.	-1
The author of this text believes that the country has strong IP law.	+2
This text mentions the increase of IP violations in the country.	-1
This text mentions the decrease of IP violations in the country.	+1

Note: Gray-shaded hypotheses are used for few-shot learning.

partner's IP regime. Accordingly, when aggregating paragraph-level stance scores into the country–year measure, segments that explicitly reference a Watch-List placement receive a differential weight, while all other segments receive indifferent unit weights, which yields a weighted average that reflects the greater evidentiary content of these Watch List classifications. It is important to note that the weights are not tuned to the outcome but are set ex ante and applied uniformly.

From this comprehensive set, I select total of three hypotheses, two negative and one positive, for the few-shot training phase (refer to the gray-shaded texts in Table A.1). These are particularly chosen for the training as they specifically speak to whether a country is taking action against IP violations, and require the most contextual, nuanced reading of texts among all the hypotheses.

I first compile a small set of premise–hypothesis pairs drawn from IP paragraphs in the corpora of NTE reports, each labeled to indicate whether the text does or does not entail the selected hypothesis. The training hyperparameters are set as follows: learning rate at $2e-5$, weight decay of 0.03, training and evaluation batch size at 8, and epochs at 5. The selection of small learning rate and significant, non-zero weight decay is to ensure the generalizability of the finetuned model by reducing risks of memorizing idiosyncratic patterns in my few-shot training data with limited size and over fitting. Another fail-safe measure I put in place to mitigate overfitting is an early stopping approach based on the F1 score. F1 metric is a single, composite benchmark that equally assesses false positives and false negatives produced by a model, providing balanced evaluation. Specifically, once the F1 score spikes to 1.0 for two consecutive epochs, I determine

that the model is memorizing the training examples rather than generalizing robustly. In fact, by epoch 3, the F1 was 0.997, and by epochs 4 and 5, F1 reached 1.0, indicating potential overfitting. Hence, I select the model from epoch 3 as my final few-shot model to ensure better generalization. The final model is applied to the rest of the corpora to the whole set of text and hypotheses, with each text tested against the hypotheses, and entailment probabilities are then combined. After computing a weighted sum of these entailment probabilities, they are converted into a -5 to +5 scale to form the final proxy.

A.2 Estimation results

Table A.2: TWFE OLS results - DeBERTa and lobbying

Dependent Variable:	DeBERTa score	
Model:	(1)	(2)
USTR_{t-1}	-0.844***	
	(0.185)	
$\text{USTR}_{t-1} \times$ GDP per capita$_{t-1}$	0.077***	
	(0.016)	
$\text{USTR}_{t-1} \times$ Democracy$_{t-1}$	-0.506	
	(0.409)	
GDP per capita$_{t-1} \times$ Democracy$_{t-1}$	0.533	0.614
	(1.129)	(1.123)
$\text{USTR}_{t-1} \times$ GDP per capita$_{t-1} \times$ Democracy$_{t-1}$	0.079*	
	(0.045)	
IRS_{t-1}		-1.197
		(51.266)
$\text{IRS}_{t-1} \times$ GDP per capita$_{t-1}$		0.123
		(5.395)
$\text{IRS}_{t-1} \times$ Democracy$_{t-1}$		-1.445
		(52.151)
$\text{IRS}_{t-1} \times$ GDP per capita$_{t-1} \times$ Democracy$_{t-1}$		0.146
		(5.480)
GDP per capita$_{t-1}$	0.867	0.881
	(2.977)	(3.006)
Democracy$_{t-1}$	-5.344	-6.063
	(10.359)	(10.331)
GDP growth (%)	0.016	0.014
	(0.044)	(0.044)
US export	-0.870**	-0.933**
	(0.388)	(0.401)
US import	-0.250	-0.213
	(0.391)	(0.395)
GDP	-1.249	-1.192
	(2.842)	(2.865)
US BIT	1.102	1.087
	(1.164)	(1.171)
ISDS occurrences	0.165	0.126
	(0.247)	(0.255)
Country FE	✓	✓
Year FE	✓	✓
N	1,166	1,166
R^2	0.573	0.565
Within R^2	0.052	0.035

Standard errors clustered at country level in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Table A.3: TWFE OLS and 2SLS results - TRIPS and development finance

	DV: Signing TRIPS-plus			
	(1)	(2)	(3)	(4)
	OLS	2SLS	OLS	2SLS
DeBERTa score$_{t-1}$	0.090***	0.216***	0.033**	0.103
	(0.020)	(0.059)	(0.013)	(0.074)
US aid$_{t-1}$	0.006	-0.015		
	(0.007)	(0.033)		
IFC loan$_{t-1}$			0.001	0.024
			(0.002)	(0.037)
Democracy$_{t-1}$	0.272	-0.779	0.157	0.690*
	(0.215)	(0.806)	(0.150)	(0.376)
DeBERTa$_{t-1}$×US aid$_{t-1}$	-0.004***	-0.012***		
	(0.001)	(0.004)		
DeBERTa$_{t-1}$×IFC loan$_{t-1}$			-0.002**	-0.009
			(0.001)	(0.008)
DeBERTa$_{t-1}$×Democracy$_{t-1}$	-0.036	-0.024	-0.018	0.074
	(0.025)	(0.085)	(0.019)	(0.155)
Democracy$_{t-1}$×US aid$_{t-1}$	-0.010	0.050		
	(0.010)	(0.044)		
Democracy$_{t-1}$×IFC loan$_{t-1}$			-0.004	-0.072
			(0.004)	(0.059)
DeBERTa$_{t-1}$×US aid$_{t-1}$×Democracy$_{t-1}$	0.003*	0.002		
	(0.001)	(0.005)		
DeBERTa$_{t-1}$×IFC loan$_{t-1}$×Democracy$_{t-1}$			0.002*	-0.009
			(0.001)	(0.017)
GDP per capita	0.254	0.174	0.289	-0.230
	(0.413)	(0.450)	(0.453)	(0.740)
GDP	-0.397	-0.188	-0.466	0.073
	(0.412)	(0.476)	(0.443)	(0.680)
GDP growth(%)	0.003	-0.001	0.003	0.005
	(0.003)	(0.003)	(0.003)	(0.006)
US import	-0.050	-0.047	-0.033	-0.065
	(0.042)	(0.053)	(0.039)	(0.065)
US export	0.070	0.090	0.053	0.048
	(0.056)	(0.062)	(0.061)	(0.114)
UNGA distance	-0.111*	-0.061	-0.116*	
	(0.065)	(0.067)	(0.059)	
US BIT	0.380**	0.429*	0.376**	0.243
	(0.178)	(0.190)	(0.148)	(0.325)
ISDS occurrences	0.107**	0.109**	0.103**	0.135*
	(0.048)	(0.049)	(0.046)	(0.079)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Wu-Hausman (p-value)	N/A	0.014	N/A	0.011
Hansen J (p-value)	N/A	0.250	N/A	0.257
N	1,138	1,069	1,021	992

Standard errors clustered at country level in parentheses

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*