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U.S. Import Tariffs in 2025: Realized Tariff Rates, Import Prices, and Local Labor-Market Effects

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Abstract

This paper analyzes the effect of the 2025 U.S. import tariffs on import prices and local labor-markets. To that end, we use highly disaggregated customs data to construct realized tariff rates from actual duty collections, rather than announced statutory schedules. An important contribution is that we document a large and persistent gap between the two measures, driven by within-country product reallocation, cross-country sourcing shifts, and implementation frictions. This implies that statutory rates are a poor proxy for the trade shock that firms actually faced. Using realized tariffs, we find that pass-through of realized tariffs into import prices was close to one hundred percent, with negligible adjustment by foreign exporters and a significant reduction in import quantities. When we examine local labor-market consequences of the increase in import tariffs, we find that counties which are more exposed to import-competing sectors experienced small declines in unemployment and that rising input costs weighed marginally on labor-force participation. Both effects, though heterogeneous across space, are economically negligible. In contrast to the 2018–2019 tariff episode, where rising input costs dominated, resulting in lower manufacturing employment, the 2025 tariffs did not generate large labor-market changes in either direction.

Keywords— Tariffs, Pass-through, AETR, Realized Tariffs, Statutory Tariffs, Labor Markets, Unemployment, Import Prices.

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1 Introduction

The increase in U.S. import tariffs during 2025 is among the largest and most complex trade-policy shocks in recent decades. During that year, announced tariff rates rose sharply and were applied to a broad set of products as well as trading partners. From the outset, the implemented tariff rates diverged materially from announced ones: Exemptions were granted and withdrawn, legal challenges created uncertainty in terms of enforcement, the timing of shipments was modified in anticipation of rate increases, and firms reallocated sourcing across countries in real time. As a result, the duties collected at the border were significantly smaller than what the statutory schedules implied (nearly half in some months). The gap between announced and realized tariff rates is not just a measurement detail: it determined how much of the tariff increase was reflected in prices paid by U.S. importers and their effect on real outcomes.

In this paper, we study the price, quantity, and local labor-market effects of the 2025 tariffs. We use highly disaggregated U.S. customs data on import values, quantities, and duties at the good–country–month level. An important contribution is the construction of *realized* average effective tariff rates (AETRs) from actual duty collections and the explicit decomposition of the gap between statutory and realized rates. Building on a series of policy analyses by one of the authors (e.g., Azzimonti et al., 2025b,c; Azzimonti, 2025), we emphasize three mechanisms that drive this divergence and quantify their effect: (i) within-industry product reallocation, (ii) cross-country sourcing shifts, and (iii) tariff implementation and collection frictions. We show that during May 2025—where the difference was largest—these channels account for a substantial share of the gap between announced and realized tariff rates. This result motivates our empirical strategy: the relevant shock for price, quantity, and employment adjustment is the realized tariff paid by importers rather than the announced statutory rate.

We find that despite the breadth and complexity of the 2025 measures, realized tariffs were almost fully passed through into U.S. import prices. Foreign exporter prices adjusted minimally, implying that the price increase at the border fell predominantly on U.S. importers. This is similar to the findings in Amiti et al. (2019), a paper whose empirical strategy we follow closely, for the 2018–2019 tariff episode. Moreover, it is in line with the findings in Amiti et al., 2026 (even though using statutory rates) and Gopinath and Neiman (2026) (even though they focus on one month). We show that the price response is front-loaded using local-projection estimates. Tariff-inclusive prices adjust on impact, but the effect dissipates quickly, consistent with tariffs operating as an immediate border-cost shock. Import quantities and import values also contract significantly in response to higher realized tariffs, consistent with demand-side adjustment and reallocation rather than systematic absorption by foreign producers: A one percent increase in tariff rates is associated with a 1.4 percent decline in import quantities.

We then analyze the effects of the 2025 tariffs on local labor-market, following the work of Flaaen and Pierce (2024). Overall, we find that the even though there is some geographical heterogeneity, the effects are modest. Counties more exposed to import-competing sectors experience small relative declines in unemployment, consistent with the protective role of import tariffs. Higher input costs resulting from tariffs—operating through supply-chain linkages—are associated with weaker labor-force participation, but those effects that are economically small outside of a few outlier counties. Through counterfactual exercises, we show that absent tariff exposure, national unemployment in 2025 would have been only slightly higher, with gains concentrated in a small subset of counties.

Taken together, the evidence indicates that the 2025 tariffs functioned primarily as a broad-based cost shock at the border, with little adjustment in foreign exporter prices and modest, geographically dispersed effects on local labor markets. In contrast to the 2018–2019 episode, where input-cost effects dominated and net manufacturing employment declined, the 2025 evidence points to a modest positive net effect on unemployment from the protection channel—though this comparison should be interpreted cautiously given differences in the scope, timing, and composition of response from trade partners across the two episodes. More broadly, the results emphasize a relevant measurement point: when trade policy changes are large, layered, and administratively complex, statutory schedules can be imperfect proxies for the shock actually faced by firms, and analyses based on announced rates could mischaracterize both the price and labor-market consequences of it.

The remainder of the paper proceeds as follows. Section 2 situates our contribution in the related literature. Section 3 documents the evolution of statutory and realized tariffs in 2025, develops the decomposition of the statutory–realized gap, and summarizes heterogeneity in realized tariffs across industries and countries. Section 4 estimates the effects of realized tariff changes on prices and quantities, including heterogeneity by origin, end-use, and time. Section 5 estimates the effects of realized tariff changes on local labor markets, separately identifying the import-protection and rising-input-cost channels at the county level. Section 6 concludes.

2 Related Literature

A growing body of empirical work examines the price and welfare effects of recent U.S. trade policy. A central reference is Amiti et al. (2019), who use highly disaggregated U.S. customs data to estimate the impact of the 2018–2019 tariffs on import prices and quantities. Using a product–country panel regression framework, they document near-complete pass-through of tariffs into U.S. import prices and little evidence that foreign exporters systematically reduced their pre-tariff prices. Related contributions by Fajgelbaum et al. (2019), Flaaen et al. (2020), and Cavallo et al. (2021) reach similar conclusions: tariffs during that episode were largely transmitted into higher domestic prices, with the price impact falling primarily on U.S. importers and consumers rather than foreign producers.

Our paper builds directly on this literature and, in particular, extends the empirical framework of Amiti et al. (2019) to the 2025 tariff episode. We adopt their product–country specification relating 12-month changes in prices and quantities to changes in tariff rates, while introducing several key modifications motivated by the design of the 2025 regime. First, we measure tariff shocks using *realized* tariff rates constructed from customs collections, rather than relying solely on statutory schedules. As we document, the 2025 episode featured substantial divergence between announced and effective rates due to exemptions, delays, and partial implementation. Aligning price changes with tariffs actually paid at the border sharpens identification and alters the magnitude of measured shocks. Second, the 2025 tariffs are considerably broader in scope, affecting a wide set of products and countries simultaneously. This reduces the relevance of a narrow untreated comparison group and increases the importance of exploiting within-product and within-country-time variation. We therefore emphasize heterogeneity across countries of origin, end-use categories, and time.

Despite these differences in policy design and measurement, our central finding mirrors the earlier literature: pass-through into import prices is close to complete. However, we show that in 2025 this near-full pass-through operates in a more diffuse environment relative to the 2019 event, with evidence of spillovers across goods and countries. The 2025 tariffs therefore resemble less a targeted bilateral intervention and more a broad-based cost shock to U.S. supply chains.

Recent work by Gopinath and Neiman (2026) studies the incidence of the 2025 tariff episode with a careful focus on the distinction between statutory tariff schedules and the tariffs actually paid at the border. Using measures constructed from customs collections and related price data, they document high average pass-through into U.S. import prices and accompanying adjustments in import quantities, and they emphasize that implementation frictions—shipment timing, exemptions, and treaty utilization—can generate sizable gaps between announced and realized tariff rates. In addition, in their Table 4 they implement an Amiti et al. (2019)-style regression using disaggregated customs data for a single month (September 2025), which delivers pass-through estimates close to unity. Our paper is complementary but differs in both scope and emphasis. First, we estimate the pass-through specification in a full product–country–month panel covering January 2024 through December 2025, which allows us to characterize the stability of incidence over time and to explore heterogeneity across countries of origin, end-use categories, and industries. Second—and most importantly—we develop and implement a decomposition of the statutory–realized AETR gap that quantifies the relative importance of three channels: within-country product-mix changes (including front-loading and substitution across goods), cross-country reallocation of sourcing toward lower-tariff partners, and tariff collection/implementation dynamics (including shipment lags, exemptions, and administrative/legal frictions). This accounting exercise helps interpret why realized tariffs in early 2025 diverged sharply from statutory schedules and clarifies how behavioral and implementation responses shape the effective tariff shock faced by importers. Our analysis was conducted contemporaneously with Gopinath and Neiman (2026); while both papers point to high pass-through on average, our contribution is to pin down—quantitatively—the mechanisms behind the statutory–realized wedge, to connect those mechanisms to identification and interpretation of price and quantity responses in the disaggregated data, and to extend the analysis to local labor markets. Using county-level measures of realized tariff exposure that separately capture import protection and rising input costs, we document modest and heterogeneous employment effects, providing evidence on the real-side transmission of the 2025 tariff episode that complements the price and quantity findings.

Contemporaneously, Amiti et al. (2026) apply the same product-country regression framework as Amiti et al. (2019) to the 2025 episode, using statutory tariff measures for the period through November 2025. They find that approximately 90 percent of the tariff burden fell on U.S. importers, with foreign exporters reducing prices by less than one percentage point per ten percentage points of tariff. Our estimates of 98 percent pass-through exceed their figure. We attribute part of this difference to the use of realized rather than statutory tariff rates. Because statutory rates overstated the effective tariff burden throughout much of 2025—as documented in Section 3—using them as the shock measure inflates the denominator of the pass-through estimate relative to the price response actually observed in the data, mechanically pushing the coefficient below unity. Aligning the tariff measure with duties actually collected narrows this gap. Despite the quantitative difference, both papers agree on the central qualitative conclusion: price adjustments from the 2025 tariffs fell overwhelmingly on U.S. buyers rather than foreign exporters.

We also contribute to the literature examining the real-side effects of tariffs on employment. Earlier work by Autor et al. (2013) documents large and persistent local employment losses from rising Chinese import competition, establishing the methodological template for cross-county variation in trade exposure. Waugh (2019) extends this approach to the retaliatory dimension of the 2018–2019 episode, showing that counties more exposed to Chinese counter-tariffs experienced significant declines in consumption and goods-producing employment. Flaaen and Pierce (2024) construct industry- and county-level measures of tariff exposure for the 2018–2019 episode and find that, while import-competing industries gained modest protection, these gains were outweighed by higher input costs in downstream sectors, producing net employment declines in manufacturing. Their county-level framework—which we adapt directly—exploits pre-existing variation in local industry composition to identify labor-market effects. Our paper extends Flaaen and Pierce (2024) to the 2025 episode using realized rather than statutory tariff measures, and connects the labor-market analysis explicitly to the price pass-through results: because tariffs were passed through entirely into domestic costs, the magnitude of the cost shock entering the local labor-market regressions is not attenuated by exporter absorption.

3 Tariffs over time

Historically, tariffs played a central role in U.S. fiscal policy. From the nation's founding through the early twentieth century, average effective tariff rates (AETR) frequently exceeded 30 percent and constituted the primary source of federal government revenue, prior to the introduction of the federal income tax in 1913 (Figure 1). During this period, tariffs also served as a key instrument of industrial policy, protecting emerging domestic industries through import substitution.

Figure 1: U.S. tariffs, 1821–2025

Source: U.S. Census Bureau, *Historical Statistics of the United States: Colonial Times to 1970*, Part II; U.S. International Trade Commission, "U.S. imports for consumption, duties collected, and ratio of duties to values, 1891–2023" (Table 1); 2024–2025 calculated by authors.

In the postwar period, successive rounds of multilateral trade liberalization led to a sustained decline in tariff protection. Under the General Agreement on Tariffs and Trade, average tariff rates fell from roughly 20 percent in 1947 to below 5 percent by the conclusion of the Uruguay Round in 1994. These reductions were reinforced by the broader globalization of the 1980s and 1990s and institutionalized with the establishment of the World Trade Organization in 1995. For several decades thereafter, tariffs among WTO members remained low—typically around 1.6 percent—reflecting a prolonged period of deepening global trade integration.

This long-run decline was interrupted by the tariff increases implemented in 2018–2019, which marked the first notable reversal of U.S. trade liberalization in the postwar era. While those measures raised effective tariff rates modestly by historical standards, to about 2.4 percent, they represented a clear departure from prevailing policy norms. The escalation of trade protection intensified further in 2025, when effective tariff rates rose sharply to 7.8 percent, reaching 11 percent in October, a level not observed in the United States since the mid-twentieth century. As Figure 1 illustrates, the 2025 tariffs constitute a substantial break from the low-tariff environment that characterized the global trading system for much of the past three decades.

Having provided a long-term perspective on tariffs, the remainder of the paper focuses on the 2025 tariff episode. Section 3.1 documents the sequence of tariff policy announcements, summarized by statutory AETRs, which characterize the scope and timing of announced trade policy measures. The subsequent section then examines how these announcements translated into tariffs actually implemented at the border.

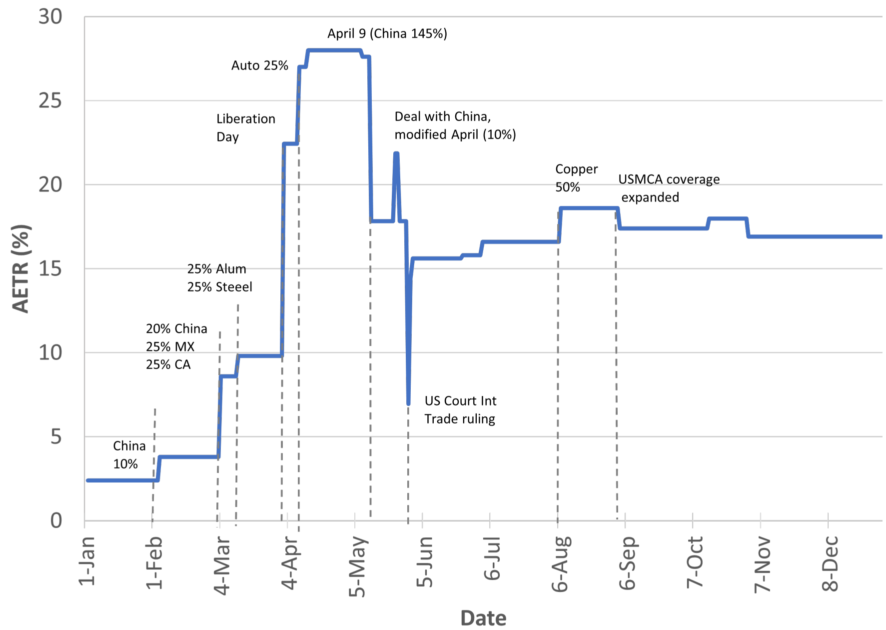
3.1 2025 Tariff Policy

Figure 2 summarizes the evolution of U.S. statutory tariff policy during 2025, a period characterized by a rapid succession of tariff announcements, implementations, revisions, and legal challenges. The series is constructed at the daily frequency from the set of tariff measures announced by policymakers and codified in statutory schedules. These are, effectively, the tariff rates that would apply if every announced policy were fully implemented without exemptions, evasion, changes in behavior (e.g. choosing a different supplier or substituting imports for a good subject to a lower tariff rate), or delays (due to the implementation of the system at the border, or because importers choose to delay shipments waiting for changes in policy). They reflect tariff duties as they are written into law or formal policy statements, rather than as they are immediately collected at the border.

We can distinguish four distinct waves. The first wave, capturing a major step-up in statutory tariffs, occurs in February and March 2025. In early February, a broad 10 percent tariff on imports from China was introduced, followed in early March by the introduction of 25 percent tariffs on imports from Mexico and Canada and an additional 10 percent in Chinese imports. Shortly thereafter, in mid-March, a 25 percent tariff on steel and aluminum imports was imposed. These measures account for the initial discrete increases in the statutory AETR, which reached 10%, visible in the figure during the first quarter of the year (see Azzimonti et al. (2025b) for details).

The second wave of tariff increases occurred in early April and represented a substantially larger escalation in statutory trade protection. On April 2, the administration unveiled a comprehensive package of what it called "reciprocal tariffs," introducing a 10 percent minimum tariff on most imports, with higher rates applied to selected trading partners, along with new tariffs on Canadian energy and potash (see Azzimonti et al. (2025c) for further details). Under this announcement, tariff rates were set at 20 percent for the European Union, 34 percent for China, 24 percent for Japan, and 46 percent for Vietnam. The full set of country-specific tariff rates is reported in Table 7 of Appendix B. One day later, on April 3, a 25 percent tariff on automobiles was implemented, subject to exemptions based on U.S. content. The April wave culminated on April 9 with the imposition of tariffs of up to 145 percent on imports from China, marking the most extreme escalation of the 2025 tariff episode. Taken together, these measures produced a sharp increase in the statutory AETR, pushing tariff rates to 28%, a level not observed in decades (see the pronounced jump in early April in Figure 2).

Figure 2: Statutory AETR, January 1 to December 31, 2025



Source: Statutory rate obtained from Yale Budget Lab (2025).

The third wave of tariff policy unfolded in May and was characterized by partial de-escalation and growing legal uncertainty. Following the sharp escalation in early April, several tariff measures were revised, delayed, or suspended over the course of May, leading to a moderation in the statutory tariff path. In particular, announced tariff rates on imports from China were reduced to 10 percent from their early-April peak, exemptions and clarifications were expanded, and the expected scope of the April 2 tariffs narrowed relative to initial announcements. Later in the month, on May 23, a further escalation was announced in the form of a proposed 50 percent tariff on imports from the European Union, scheduled to take effect on June 1. These announcements are reflected in the continued upward drift of the statutory AETR through late May. The end of May was marked by heightened legal and administrative uncertainty. On May 28, the U.S. Court of International Trade ruled that certain tariffs imposed under the International Emergency Economic Powers Act (IEEPA)—including the April 2 tariffs and the Canada–Mexico tariffs—were invalid. Although this ruling was temporarily stayed by a federal appeals court on May 29, allowing the tariffs to remain in effect pending further litigation, it introduced uncertainty regarding the durability of the statutory tariff regime. Around the same time, the administration announced an increase in steel and aluminum tariffs from 25 percent to 50 percent, further modifying the statutory schedule.

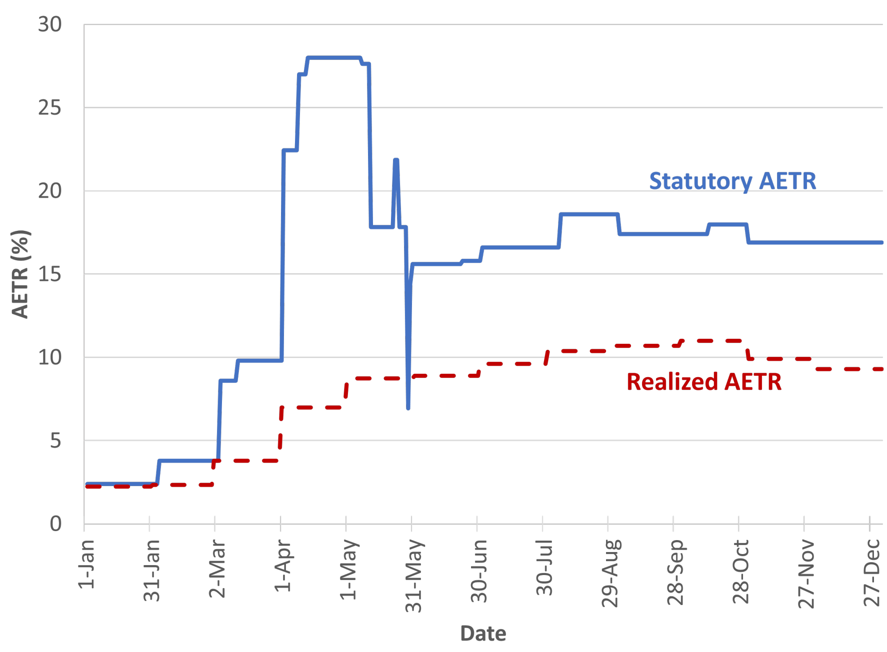
The fourth wave began in June and marked a transition toward stabilization and greater certainty in tariff policy. Following the de-escalation and legal uncertainty of May, tariff measures from June on were characterized by fewer reversals and a clearer delineation of which policies would remain in force. While some adjustments continued—most notably the imposition of 50 percent tariffs on copper and the US–Vietnam framework—the overall statutory tariff schedule evolved more gradually. As a result, the statutory AETR settled in the 16–18 percent range, with subsequent changes reflecting incremental coverage adjustments rather than discrete policy shocks. This period of relative stability is visible in Figure 2 as a flattening of the statutory series beginning in June, indicating that the major tariff escalations of early 2025 had largely concluded and that trade policy uncertainty diminished in the months that followed.

The discussion of statutory tariff changes is relevant because announcements and revisions in tariff policy introduced considerable uncertainty that influenced firm behavior, including pricing decisions, the timing of imports, and sourcing strategies, as we will see in the next section.

3.2 Tariff Implementation

While statutory AETRs summarize the tariff burden implied by policy announcements, the tariffs ultimately faced by importers depend on how those announcements translate into duties actually collected at the border.

Figure 3: AETR January 1 to December 31, 2025



Source: Statutory rate (dashed-red) obtained from Yale Budget Lab (2025). Realized rate computed from the U.S. Census Bureau “USA Trade® Online” (see https://usatrade.census.gov).

Survey evidence from the Federal Reserve Bank of Richmond's Fifth District firms[1] between February 27 and March 19, discussed in Azzimonti et al. (2025a), indicates that uncertainty about the scope, timing, and persistence of tariff measures affected firms' planning and expectations. In particular, firms reported adjusting pricing decisions, front-loading imports to avoid anticipated tariff increases, delaying orders while awaiting policy clarification, renegotiating prices with foreign suppliers, and reallocating sourcing away from countries facing higher announced tariffs toward alternative foreign or domestic suppliers. More generally, realized effective tariff rates reflect shipment lags, product- and firm-level exemptions, the utilization of trade agreements, enforcement and compliance frictions, and importer responses along both sourcing and timing margins. As a result, realized tariffs can diverge substantially from statutory rates, especially during periods of rapid policy change and legal uncertainty.

Figure 3 compares the evolution of statutory and realized tariff rates over 2025, with the latter constructed from customs revenue data to capture tariffs actually paid at the border. While statutory AETRs can be computed at the daily frequency based on policy announcements, realized AETRs are observed only at the monthly frequency, reflecting the timing of shipments and duty collection. The figure shows that implementation of the 2025 tariff regime was gradual and incomplete. While the statutory AETR reached approximately 17 percent by December, the realized AETR settled at 9.3 percent, indicating a persistent gap between announced and implemented tariff burdens. The gap between statutory and realized AETRs was most pronounced during the second and third waves of policy escalation (in April and May), when the statutory AETR spiked sharply following the April 2 and April 9 announcements, but realized collections lagged.

3.3 Mind the Gap

In order to understand what drives the gap between statutory and realized rates, we construct a decomposition that isolates the channels through which announced tariff policies are only imperfectly reflected in duties collected at the border. We focus on May 2025, where the AETR implied by statutory schedules equaled 17.5 percent and the realized AETR was only 8.7 percent.[2]

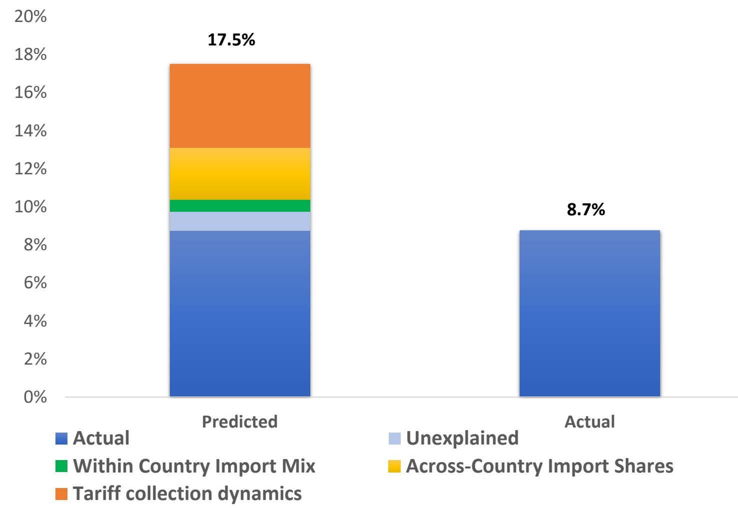
The decomposition is motivated by three mechanisms through which statutory tariffs may diverge from realized tariff burdens, guided by survey evidence from local company leaders in Azzimonti et al. (2025a). They are: (i) within-country changes in the product mix, reflecting substitution across goods and intertemporal adjustments in response to tariff announcements; (ii) shifts in import shares across countries, as firms reallocate sourcing away from higher-tariff partners toward lower-tariff suppliers; and (iii) tariff collection and implementation dynamics, including shipment lags, administrative delays, and legal uncertainty. These mechanisms yield testable implications

[1] The Fifth District is comprised of Maryland, Virginia, North Carolina, South Carolina, DC, and most of West Virginia.

[2] The quantitative results underlying this decomposition were released in a contemporaneous policy memorandum (Azzimonti, 2025) as part of Azzimonti's policy work, but the framework and analysis are developed here for the purposes of this paper and have not been published elsewhere in an academic outlet.

for the divergence between statutory and realized AETRs and motivate the counterfactual analysis that follows. Results are summarized in Figure 4 and discussed below.

Figure 4: AETR Decomposition



Implementing the decomposition requires constructing statutory tariff rates at the product–country level. This step is nontrivial, as it involves carefully mapping legislative announcements and subsequent updates into good-specific tariff schedules, while accounting for product-level provisions, bilateral trade agreements, and a wide range of exemption rules, typically defined at the HS-6 level. As a baseline, we compute tariffs for each good j imported from country n in 2024 using Most Favored Nation (MFN) tariff schedules, together with the additional tariffs on Chinese products imposed during the 2018–2019 tariff episode that remained in effect. These baseline statutory tariffs are denoted by $\tau^s_{jn,24}$. We then augment these rates with the country-specific tariffs listed in Table 7 (Appendix B) and with product–country-specific measures, including tariffs on aluminum, steel, automobiles, energy, and potash (for Canada), accounting for non-stacking provisions, United States–Mexico–Canada Agreement (USMCA) exclusions, announced exemptions, U.S. content requirements, and other product-specific carve-outs such as those for iPhones. Appendix A provides implementation details and sources.

The resulting statutory tariffs at the product–country level in May 2025, $\tau^s_{jn,25}$, are used to compute statutory tariff rates by country $\tau^s_{n,25}$, keeping importer behavior constant at 2024 levels,

$$\tau^s_{n,25} = \sum_j \tau^s_{jn,25}\, \gamma_{jn,24},$$

where $\gamma_{jn,24} = \frac{m_{jn,24}}{m_{n,24}}$ denotes the import share of product j in country n's total imports in 2024. Letting $\omega_{n,24} = \frac{m_{n,24}}{m_{24}}$ denote each country's share in total U.S. imports, the statutory May 2025

AETR is given by

$$AETR_{25}^{stat} = \sum_n \tau_{n,25}^s \, \omega_{n,24} = 17.5\%.$$

This rate is hypothetical, and will serve as a benchmark.

In order to compute realized product-country rates, we divide duties collected on good j imported from country n during May 2025 with the level of imports (in U.S. dollars) during that same month for each j, n pair

$$\tau_{jn,25}^r = \frac{d_{jn,25}}{m_{jn,25}}.$$

The realized AETR is,

$$AETR_{25}^{real} = \sum_n \sum_j \tau_{jn,25}^r \, \gamma_{jn,25} \, \omega_{n,25} = 8.9\%.$$

The shares $\gamma_{jn,25}$ and $\omega_{n,25}$ are defined as above, but using May 2025 data. The $AETR_{25}^{real}$ provides a benchmark against which the counterfactual measures can be compared. The sequence of counterfactuals allows the total gap between statutory and realized tariff rates to be decomposed into contributions from product-level substitution, country-level reallocation, and tariff implementation dynamics, as illustrated in Figure 4.

To isolate the role of within-country changes in the product mix, we recompute the statutory AETR using May 2025 product weights while holding country weights fixed at their 2024 levels:

$$AETR_{25}^{prod} = \sum_n \sum_j \tau_{jn,25}^s \, \gamma_{jn,25} \, \omega_{n,24}.$$

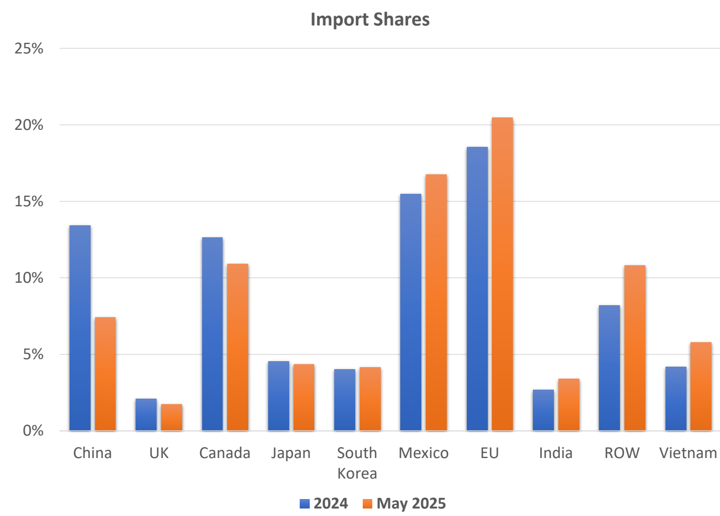
This yields $AETR_{25}^{prod} = 16.9\%$. The difference $AETR_{25}^{stat} - AETR_{25}^{prod}$ captures the contribution of within-country product substitution, front-loading, and other product-level adjustments. Updating product-level import weights within each country using May 2025 trade flows rather than 2024 weights reduces the predicted AETR by 0.6 percentage points, indicating that within-country product substitution played a relatively limited role.

A second mechanism reflects shifts in import shares across countries. Firms can reallocate sourcing away from high-tariff countries—most notably China—and toward lower-tariff suppliers such as Vietnam, as well as toward domestic production or alternative foreign sources not subject to tariffs. Figure 5 depicts the shares in 2024 and May 2025, illustrating the degree of reallocation.

Because predicted AETRs are typically constructed using fixed pre-tariff import shares, such cross-country reallocation mechanically reduces the realized AETR relative to its statutory counterpart. To quantify this effect, we allow country import shares to adjust to their May 2025 values while holding product shares within each country fixed at their May levels:

$$AETR_{25}^{country} = \sum_n \sum_j \tau_{jn,25}^s \, \gamma_{jn,25} \, \omega_{n,25}.$$

Figure 5: Cross-country reallocation of imports



The $AETR_{25}^{country} = 14.1\%$. The difference $AETR_{25}^{prod} - AETR_{25}^{country}$ captures the contribution of cross-country reallocation of imports toward lower-tariff trading partners. Replacing 2024 country-level import weights with those observed in May 2025 produces a larger reduction of 2.7 percentage points, reflecting a reallocation of imports away from higher-tariff sources toward lower-tariff suppliers.

The third, and quantitatively most important, mechanism operates through *tariff collection and implementation dynamics*. These include shipment lags that allow goods already in transit to enter under prior tariff regimes, exemptions and treaty provisions not fully reflected in announced-policy data, delays in updating customs systems, and legal uncertainty regarding the applicability of newly announced tariffs. Together, these frictions prevent statutory tariff rates from being fully reflected in duties collected at the border, particularly during periods of rapid policy change.

To capture these effects, we identify country–product pairs that (i) recorded positive import values in May 2025, (ii) were exempt from tariffs in 2024, and (iii) exhibited a discrepancy exceeding 0.5 percentage points between predicted and realized tariff rates at the product–country level in May 2025. For pairs satisfying these conditions, we set the implemented tariff to zero, $\tau_{jn,25}^{impl} = 0$; for all remaining pairs, we set $\tau_{jn,25}^{impl} = \tau_{jn,25}^{s}$. This procedure reflects the assumption that goods not previously subject to tariffs and newly covered in 2025 were not fully incorporated into customs collections by May, due to implementation delays and administrative frictions. The resulting counterfactual AETR is

$$AETR_{25}^{impl} = \sum_{n} \sum_{j} \tau_{jn,25}^{impl} \, \gamma_{jn,25} \, \omega_{n,25} = 9.7\%.$$

Incorporating these partial or delayed collections lowers the predicted AETR, substantially narrowing the gap between predicted and realized tariff rates.

Subsequent research has emphasized additional channels contributing to this divergence. In particular, Gopinath and Neiman (2026) highlight the role of increased compliance with preferential trade agreements. Evidence on USMCA utilization is especially notable: compliance rates for goods imported from Canada and Mexico rose from roughly 50 percent in 2024 to nearly 90 percent by September 2025, further reducing realized tariff burdens relative to statutory rates. In our analysis, we assumed that all items which are listed as compliant were exempted, so their explanation is implicitly incorporated in our last decomposition exercise.

3.4 Realized tariffs by country over time

Realized tariffs per country can be computed from the HTS-10 disaggregated data as

$$\tau^r_{n,t} = \sum_j \tau^r_{jn,t} \frac{m_{jn,t}}{m_{n,t}},$$

where $m_{n,t} = \sum_j m_{jn,t}$ are total imports from country n at time t. Their evolution for a selection of countries is displayed in Figure 6.

Table 1 summarizes average realized tariff rates by country in 2024 and 2025, together with the average import share of the U.S. major trading partners. The table reveals that tariffs differ substantially across countries, both in levels and in their changes between 2024 and 2025. In contrast to the industry dimension—where pre-existing protection was generally low—country-level exposure already displayed dispersion in 2024 due primarily to residual Section 301 tariffs on Chinese imports. The 2025 measures dramatically amplified these differences.

Tariffs on China stand out, both in level and subsequent escalation. Its realized tariff rate rises from 10.7 percent in 2024 to over 40 percent in 2025, far exceeding the increases observed for other major trading partners. Several Asian economies—including Japan, South Korea, India, and Vietnam—also experience meaningful increases, though at considerably lower levels. In contrast, Canada and Mexico remain comparatively less affected, reflecting USMCA utilization and product-level exemptions. The resulting pattern reflects the country-specific design of the 2025 tariff regime, which layered country-specific tariff measures on top of pre-existing China-focused tariffs.

A scatterplot of tariffs in the last two years is displayed in Figure 7. As in the industry dimension, the relationship is positive, indicating persistence in the cross-sectional structure of protection. The resulting pattern reflects amplification of pre-existing differences rather than a reshuffling of relative protection across countries. China emerges as a clear outlier, combining a high baseline tariff with a disproportionate escalation in 2025. The bubble sizes (capturing import share from each given country in the plot) underscore that the largest tariff increases occur for economically significant partners. China, the European Union, and Mexico together account

Figure 6: Tariffs collected, by country

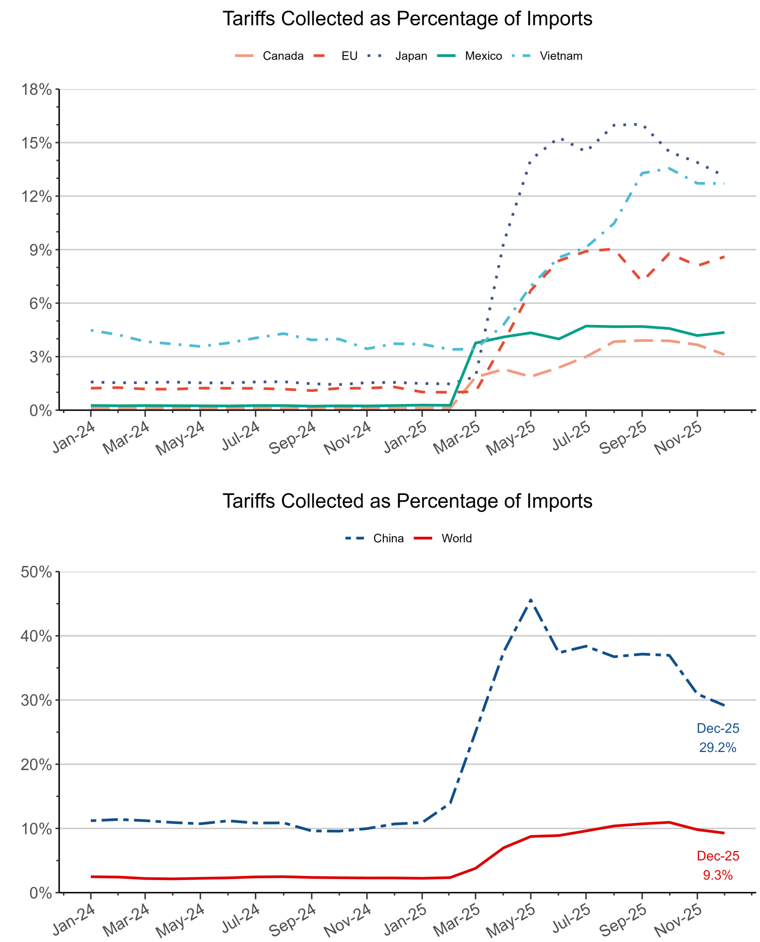
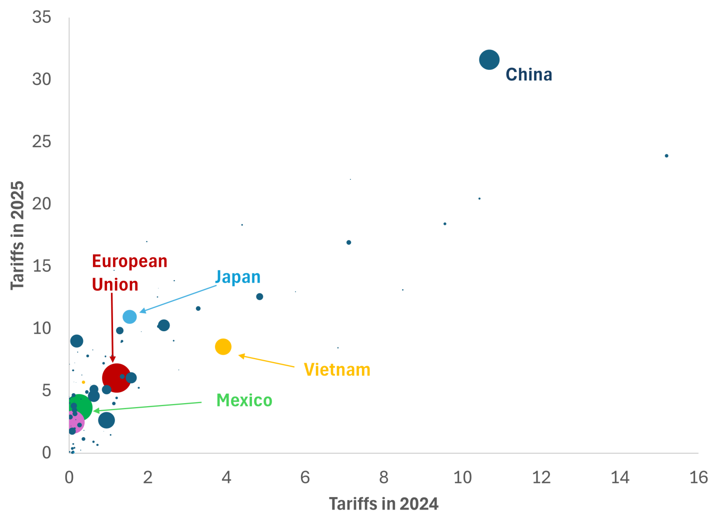


Table 1: Import Data by Country

Country	2024	2025	Import Share
European Union	1.21	6.05	19%
Mexico	0.25	3.66	16%
Canada	0.10	2.50	12%
China	10.68	31.61	11%
Vietnam	3.92	8.56	5%
Taiwan	0.95	2.64	4%
Japan	1.54	10.96	4%
South Korea	0.19	9.02	4%
India	2.41	8.47	3%
Switzerland	0.63	4.6	3%
Thailand	1.58	6.06	2%
United Kingdom	0.95	5.11	2%

for nearly half of U.S. imports, implying that cross-country escalation has first-order aggregate consequences even when some partners experience smaller increases.

Figure 7: Scatterplot of tariffs by industry, 2024 vs 2025 (avgs)



Source: Realized rate computed from the U.S. Census Bureau "USA Trade® Online." Horizontal axis is average of 2024 tariffs per industry and vertical axis is the average for 2025 (January to December). Bubble size represents average import shares of the country.

This country-level evidence informs the interpretation of the pass-through estimates in Section 4. First, the amplification of cross-country differences provides substantial within-industry, across-country variation in realized tariff changes, strengthening identification in the price regressions. Second, because the largest increases are concentrated in major trading partners—especially China—the estimated pass-through reflects economically meaningful bilateral shocks rather than marginal trade relationships. Finally, the coexistence of countries with modest changes and countries with sharp increases ensures that the near-complete pass-through estimates are not driven by a single partner but emerge as a pervasive feature of the 2025 episode.

3.5 Realized tariffs by industry over time

Realized tariffs by industry can be computed by averaging out tariffs per product $\tau^r_{jn,t}$ within an industry, using their import-shares as weights at date t. An industry is defined at the NAICS-3 code level of aggregation. Let the set of products j in industry i be denoted by Γ^i and the total imports in that industry by $m_{i,t} = \sum_{n,j\in\Gamma^i} m_{jnt}$. Then, industry-tariffs $\tau^r_{i,t}$ are defined by

$$\tau^r_{i,t} = \sum_{n,j\in\Gamma^i} \tau^r_{jn,t} \frac{m_{jn,t}}{m_{i,t}}. \tag{1}$$

The industry-level aggregation serves two purposes. First, it provides a transparent mapping between the highly disaggregated HTS-10 tariff data used in our empirical analysis and economically meaningful sectors defined at the NAICS-3 level. Second, it allows us to assess whether the 2025 tariff episode represents a broad-based shift in trade protection or a concentration of tariff increases in specific upstream or downstream segments of the economy. In Table 2 we list all NAICS-3 industries together with their average tariffs in 2024 and the level of tariffs as of December 2025. The top tariffed industries are displayed in the left panel of Figure 8. The orange bars represent the average tariffs in 2024 by industry, whereas the blue bars correspond to the additions in 2025. The average tariff in 2025 can be seen as the sum of the two areas (blue plus orange).

Table 2: Industry Data by NAICS Code

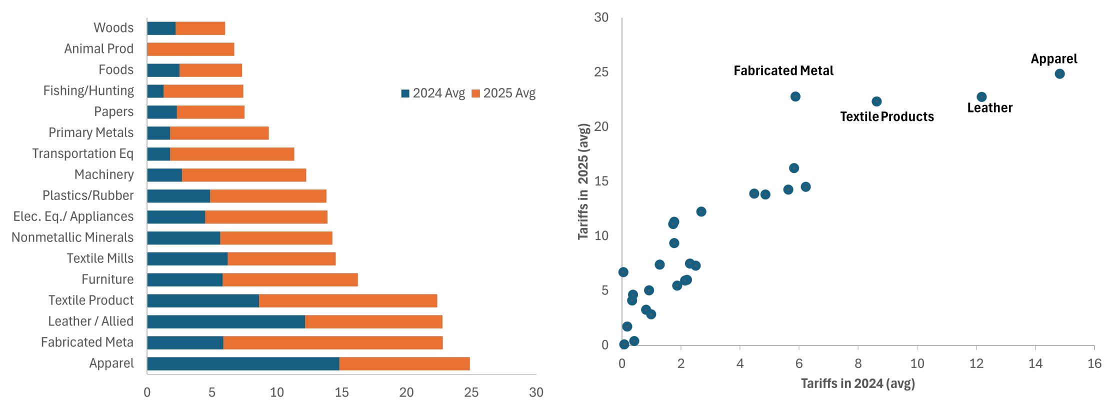
NAICS	Description	2024 Avg	2025 Avg
111	Crop Production	0.34	4.13
112	Animal Production	0.04	6.72
113	Forestry and Logging	0.91	5.05
114	Fishing, Hunting, and Trapping	1.27	7.41
115	Support Activities for Agriculture and Forestry	1.87	5.48
211	Oil and Gas Extraction	0.07	0.10
212	Mining (except Oil and Gas)	0.17	1.74
311	Food Manufacturing	2.49	7.31
312	Beverage and Tobacco Product Manufacturing	0.37	4.66
313	Textile Mills	6.22	14.54
314	Textile Product Mills	8.62	22.36
315	Apparel Manufacturing	14.82	24.88
316	Leather and Allied Product Manufacturing	12.18	22.77
321	Wood Product Manufacturing	2.20	6.01
322	Paper Manufacturing	2.30	7.5
323	Printing and Related Support Activities	2.13	5.96
324	Petroleum and Coal Products Manufacturing	0.41	0.41
325	Chemical Manufacturing	0.99	2.86
326	Plastics and Rubber Products Manufacturing	4.85	13.83
327	Nonmetallic Mineral Product Manufacturing	5.63	14.28
331	Primary Metal Manufacturing	1.76	9.37
332	Fabricated Metal Product Manufacturing	5.87	22.79
333	Machinery Manufacturing	2.69	12.26
334	Computer and Electronic Product Manufacturing	0.81	3.28
335	Electrical Equipment, Appliance, and Component Manufacturing	4.48	13.90
336	Transportation Equipment and Manufacturing	1.76	11.34
337	Furniture and Related Product Manufacturing	5.83	16.24
339	Miscellaneous Manufacturing	1.73	11.12

The highest realized tariffs are concentrated in textiles, apparel, leather, and fabricated metal products. Textile Product Mills (NAICS 314) and Apparel Manufacturing (NAICS 315) reach average tariff rates of approximately 22 percent in 2025 (peaking at 33 percent in October), while Leather and Allied Products (NAICS 316) and Fabricated Metal Products (NAICS 332) exceed 22 percent. These industries share two characteristics. First, they were already relatively exposed to tariffs in 2024, particularly through residual Section 301 measures on Chinese imports. Second, they rely heavily on imported intermediate inputs and finished goods from countries subject to large country-specific tariff increases in 2025, most notably China and several Asian exporters.

By contrast, sectors such as Oil and Gas Extraction (NAICS 211), Petroleum and Coal Products (NAICS 324), and certain primary commodities exhibit minimal changes in realized tariffs. In these industries, either statutory measures were limited in scope or imports are sourced disproportionately from countries facing low or zero effective tariff increases (such as Canada, whose imports are subject to the USMCA treaty). The limited movement in these sectors indicates that the 2025 tariff episode, while broad in coverage, did not translate into uniform tariff exposure across the production structure.

The right panel of Figure 8 shows the correlation between existing tariffs across industries and those imposed in 2025. In 2024, realized tariffs were generally low and tightly clustered, with most NAICS-3 industries facing average rates below 5 percent. By December 2025, however, dispersion increases sharply. Several industries experience tariff levels above 20 percent, while others remain largely unaffected. This widening cross-industry dispersion reflects the layered structure of the 2025 tariff regime, combining country-specific measures, sectoral tariffs on steel and aluminum, and targeted product exclusions.

Figure 8: Realized tariffs by industry



Source: Realized rate computed from the U.S. Census Bureau "USA Trade® Online." *Left panel*: Blue bars indicate average 2024 tariffs in the industry, orange bars are the additional realized tariffs in the same industry in 2025. Blue plus orange bars indicate total tariffs in 2025. *Right panel*: Scatterplot of tariffs by industry, 2024 vs 2025.

The positive correlation between 2024 and 2025 tariffs indicates persistence in the cross-industry structure of protection. Industries that were relatively protected prior to 2025 remain among the most protected after the new measures. However, the slope exceeds one, implying amplification rather than simple level shifting: pre-existing differences in protection were magnified under the 2025 regime. Although the overall ranking is preserved, dispersion increases substantially, indicating that the 2025 episode amplified existing differences rather than uniformly raising protection across sectors.

This pattern is economically intuitive. Because country-specific tariff hikes were layered on top of existing MFN and Section 301 measures, industries with high exposure to previously targeted countries experienced disproportionately large increases in effective rates. Moreover, sector-specific measures—such as the steel and aluminum tariffs—propagate through downstream manufacturing sectors, particularly fabricated metals and machinery. As a result, the 2025 tariffs combine both vertical (supply-chain) and horizontal (country-specific) amplification mechanisms. This cross-industry heterogeneity in realized tariff exposure is the key input to the local labor-market analysis in Section 5: the differential tariff burdens across NAICS-3 industries, combined with variation in county-level industry composition, generate the identifying variation used to estimate employment effects.

4 Tariffs and Import Prices

To study the incidence of the 2025 tariff episode, we examine the response of U.S. import prices to changes in tariff rates, following closely the empirical framework of Amiti et al. (2019). Their approach infers tariff incidence from the degree of pass-through into import prices: when tariffs are fully reflected in higher import prices, the burden of protection falls primarily on domestic importers rather than foreign exporters. By contrast, if foreign exporters absorb part of the tariff through reductions in pre-tariff prices, import prices will rise by less than the tariff itself. Measuring the pass-through of tariffs into import prices therefore provides a direct test of incidence. In the data, this amounts to estimating the extent to which changes in effective tariff rates translate into changes in import unit values, holding fixed underlying demand and supply conditions.

A key difference in our setting is the measurement of tariffs. While Amiti et al. (2019) rely on statutory tariff schedules, the preceding sections show that in 2025 statutory rates diverged sharply from tariffs actually collected at the border. Motivated by this, our analysis uses *realized* tariffs—constructed from customs collections—to identify tariff shocks. This choice aligns the price responses with the tariffs actually paid, sharpens the timing of implementation, and avoids attributing price movements to policies that were announced but not yet enforced. Using realized tariffs is therefore essential for interpreting import price dynamics and tariff incidence during the 2025 episode.

A potential concern with our use of realized tariff rates is that they are constructed as duties collected divided by import values. Because import values also enter the construction of unit prices, realized rates may be mechanically related to the dependent variable. More fundamentally, realized tariffs reflect not only statutory policy but also firm behavior—such as front-loading, sourcing shifts, and exemption utilization—which can simultaneously affect measured tariff rates and import prices. We acknowledge this endogeneity concern. At the same time, our strategy follows the approach adopted by Gopinath and Neiman (2026), who likewise compute incidence using realized tariff collections when analyzing the October 2025 episode. As in their analysis, our focus is on the incidence of tariffs actually paid at the border, while recognizing that realized rates embed both policy and behavioral responses. As Amiti et al. (2026) note, price-based measures of incidence cannot rule out that foreign exporters absorbed part of the price adjustment through currency depreciation, which would not appear in dollar-denominated unit values. Gopinath and Neiman (2026)'s study, which includes exchange rates as a regressor for their specification in one month of 2025 shows that its effect is statistically significant but quantitatively minimal.

4.1 Effects of 2025 tariffs on prices and quantities

Our analysis uses monthly U.S. import data from the Census Bureau spanning January 2022 to December 2025. The data report, at the ten-digit Harmonized Tariff Schedule (HTS-10) level by country of origin, import values m_{jnt}, quantities q_{jnt}, and duties collected d_{jnt}. These data allow us to construct: (i) foreign export unit values from import values ($p^*_{jnt} = m_{jnt}/q_{jnt}$), realized tariff rates (τ^r_{jnt} described in Section 3) and tariff-inclusive domestic prices $p_{jnt} = p^*_{jnt}(1 + \tau^r_{jnt})$. The sample covers approximately 17,000 unique HTS-10 products imported from over 200 countries.

Our empirical specification closely follows Amiti et al. (2019), relating changes in tariffs to changes in import prices and import quantities, and values at the product-country level[3]. Two features distinguish our setting. First, we measure tariff shocks using realized rates constructed from customs collections rather than statutory schedules. As documented in Section 3, this distinction is critical for 2025, when exemptions, delays, and policy reversals generated large gaps between announced and effective tariffs. Second, our dependent variable is the tariff-inclusive import price $p_{jnt} = p^*_{jnt}(1+\tau^r_{jnt})$ paid by domestic buyers, whereas Amiti et al. (2019) use the pre-tariff exporter price. This choice directly measures the cost burden borne by U.S. importers—the same cost shock that propagates downstream into wages and employment through supply-chain linkages, as we examine in Section 5. Using monthly data on HTS-10 products j imported from country n between January 2024 and December 2025, we estimate

$$\Delta \ln\bigl(p_{jnt}\bigr) = \mu_j + \eta_{nt} + \beta \Delta \ln(1 + \tau^r_{jnt}) + u_{jnt}, \qquad (2)$$

where μ_j is a product fixed effect, η_{nt} is a country-time fixed effect, and u_{jnt} denotes the stochastic error term. Import prices are defined as $p_{jnt} = p^*_{jnt}(1 + \tau^r_{jnt})$, where p^*_{jnt} is the pre-tariff exporter price and τ^r_{jnt} is the realized tariff rate defined in previous sections.

Table 3 reports the results, with errors clustered by HTS-8 product code. Column (1) shows that, for the 2025 tariff episode, changes in realized tariffs are passed through almost one-for-one into import prices: about 98% of the increase in tariffs was passed through to U.S. importers, with little evidence of systematic price adjustment by foreign exporters. Our estimate is somewhat above the approximately 90 percent reported by Amiti et al. (2026) for the same episode, a difference we attribute partly to our use of tariff-inclusive prices as the dependent variable and our full-year sample.

Column (2) shows a significant contraction in import quantities, consistent with higher import prices reducing demand. Under the assumption that tariff changes are exogenous, and given that foreign exporters did basically no adjustment in prices, these values can be interpreted as the demand elasticity. A 1 percent increase in tariffs is associated with a 1.4 percent decline in quantities exported.

[3] Also following Amiti et al. (2019), we eliminate outliers belonging to the top 90th percentile and the bottom 10th percentile of pre-tax price changes (e.g. of p^*).

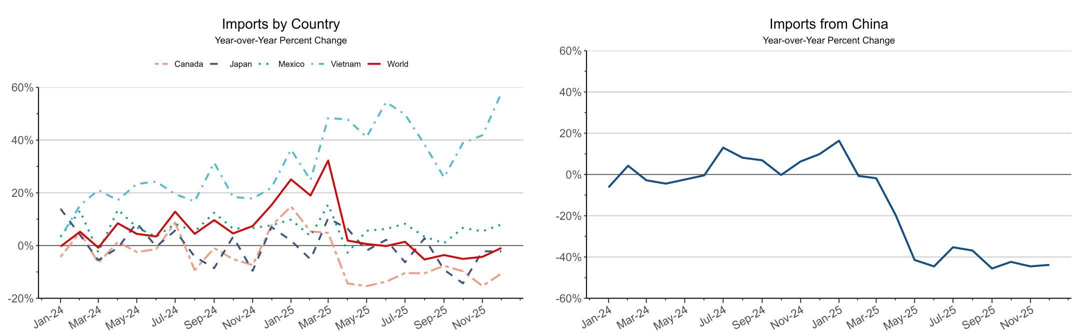
Table 3: Impact of U.S. Tariffs on Importing

	2025 Tariffs			*2018–2019 Tariffs*		
	Import prices (1)	Import quantities (2)	Import values (3)	Import prices (4)	Import quantities (5)	Import values (6)
	$\Delta\ln\big(p^*_{jnt}(1+\tau^r_{jnt})\big)$	$\Delta\ln(q_{jnt})$	$\Delta\hat{m}_{jnt}$	$\Delta\ln\big(p^*_{jnt}\big)$	$\Delta\ln(q_{jnt})$	$\Delta\hat{m}_{jnt}$
$\Delta\ln(1+\tau_{jnt})$	0.98***	−1.42***	−1.45***	−0.01	−1.31***	−5.89***
	(0.008)	(0.038)	(0.076)	(0.023)	(0.09)	(0.59)
N	867,277	867,277	1,209,387	1,647,617	1,647,617	3,318,912
R^2	0.10	0.07	0.08	0.02	0.02	0.10

Notes: The table reports estimates from regressions of log changes in prices and quantities on log changes in realized tariff rates. Column (1) reports tariff-inclusive import prices; Column (4) reports pre-tariff foreign export prices. Import prices are unit values inclusive of tariffs. Standard errors are reported in parentheses. *** denotes significance at the 1 percent level. The 2025 columns use realized tariffs, $\Delta\ln(1+\tau^r_{jnt})$, whereas the 2018-19 columns use statutory tariffs, $\Delta\ln(1+\tau^s_{jnt})$.

The aggregate trade data displayed in Figure 9 provide a transparent macro counterpart to these micro estimates. The left panel plots year-over-year changes in import values for the world (red solid line) and selected trading partners. Import growth accelerates in early 2025—consistent with front-loading ahead of anticipated tariff increases—and then drops sharply after the April–May escalation. The contraction is especially pronounced for China, as shown in the right panel, where year-over-year import growth falls dramatically following the tariff hikes. These patterns are consistent with the large negative quantity elasticity estimated in column (2), as well as with cross-country reallocation documented earlier.

Figure 9: Import values over time, selected countries



Because many importers chose to reduce their imports to zero in some goods, we did not observe prices or quantities for them and had to drop them from the estimation of specifications (1) and (2). In column (3) we re-compute the estimation using the inverse hyperbolic sine of import quantities (which may be zero). Letting $m_{jnt} = p^*_{jnt}q_{jnt}$ denote import values, we use instead

$\hat{m} = \ln(m + \sqrt{m^2 + 1})$ (so this equals zero when $m = 0$). We find that a one percent increase in tariffs reduces import values by 1.45 percent. We note that there are more observations than in the previous two columns because we are not dropping those with zero quantity.

For comparison, columns (4)–(6) report the corresponding estimates for the 2018–2019 tariff episode from Amiti et al. (2019). Despite substantial differences in scope and implementation between the two episodes, the price and quantity responses are strikingly similar. In both cases, tariff changes are transmitted almost entirely into higher import prices, with sizable quantity contractions. Recall that because the authors use pre-tariff prices, a coefficient of -0.01 implies that foreign exporter prices did not adjust in response to U.S. tariffs. The main difference arises in the import-value specification, which is smaller in magnitude in our case. Part of this discrepancy reflects measurement: Amiti et al. (2019) use statutory rates and a balanced panel of product–country pairs, whereas our use of realized tariffs excludes observations without recorded duties and captures implementation lags during 2025. In addition, they consider January to December 2018 changes, whereas we only have data between January 2025 and December 2025.

Taken together, our results indicate that the 2025 tariffs functioned largely as a cost shock to U.S. importers, with quantity adjustments reflecting reduced import demand rather than exporter price concessions.

4.1.1 Estimates by country of origin

Figure 10 reports estimates of tariff pass-through obtained by re-estimating equation (2) separately for each major trading partner. The coefficients measure the elasticity of import prices with respect to realized tariffs and therefore provide a direct measure of tariff incidence by country of origin.

Across countries, estimated pass-through rates are uniformly high. For most trading partners—including Canada, the European Union, the United Kingdom, Japan, India, Vietnam, and Mexico—the estimated coefficients lie between roughly 85 and 100 percent, and in several cases are statistically indistinguishable from full pass-through. These results indicate that, regardless of origin, tariff increases were transmitted almost entirely into higher prices paid by U.S. importers, with little evidence of systematic absorption by foreign exporters.

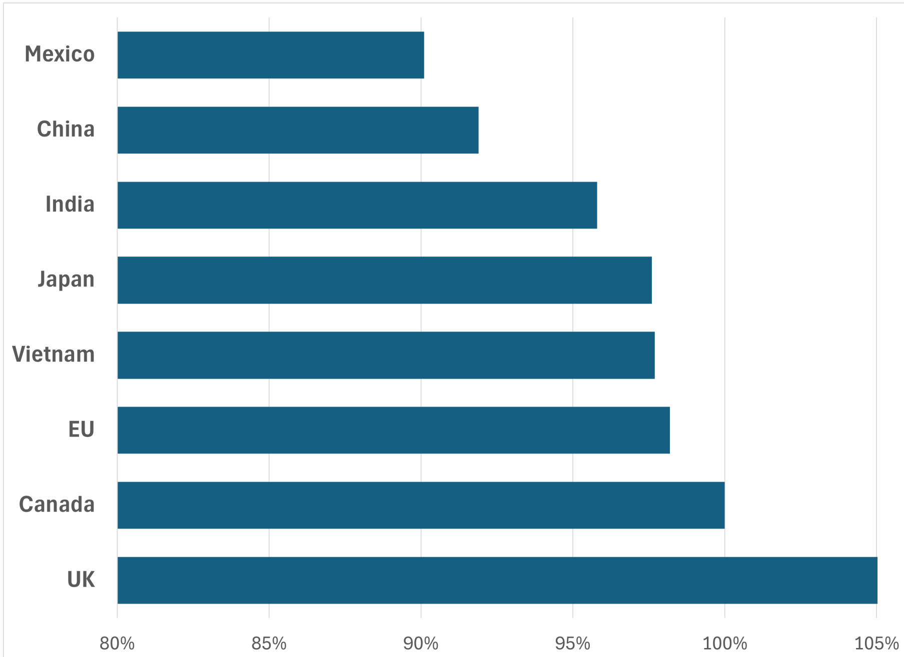
While there is some variation across countries, the differences are modest and do not overturn the central finding. Countries with more integrated supply chains or preferential trade arrangements, such as Mexico and China exhibit slightly lower point estimates, consistent with greater scope for adjustment along non-price margins[4].

4.1.2 Estimates by end-use

To assess whether tariff pass-through varies systematically across types of goods, we re-estimate the baseline price specification separately by *end-use category*. End-use categories classify imports

[4] We do not see this for Canada, but recall from Table 1 that overall tariff rates on Canada were on average small.

Figure 10: Pass-through by country of origin



according to their primary economic use—such as consumption, intermediate inputs, or investment goods—rather than by industry or product characteristics. We follow the U.S. Census Bureau's end-use classification system, which groups imports into foods, industrial supplies and materials, capital goods (excluding automotive), automotive vehicles and parts, and consumer goods.[5] For each end-use category, we estimate equation (2) using only observations within that category. This approach allows us to test whether differences in supply-chain structure, input substitutability, or demand elasticities across end uses translate into heterogeneous tariff incidence. All specifications include product fixed effects and country–time fixed effects, and standard errors are clustered at the HTS-8 level.

The results, summarized in Table 4, reveal remarkably limited heterogeneity across end-use categories. Estimated pass-through rates are close to unity for industrial supplies, capital goods, automotive products, and consumer goods, implying that tariff increases in these sectors were almost fully reflected in higher prices paid by U.S. importers. This pattern is consistent with highly elastic foreign export supply at the product-country level and with limited short-run adjustment margins for U.S. buyers, particularly in sectors characterized by established supply chains and contractual pricing arrangements.

Estimates at or above unity can arise in environments with measurement error in realized tariffs, pricing complementarities within production networks, or strategic price adjustments that

[5]See https://www.census.gov/foreign-trade/reference/definitions/enduse.html for the official definition and classification.

Table 4: Tariff Pass-Through by End-Use Category

End-use category	Tariff pass-through	Observations
Foods, feeds, and beverages (0)	0.83***	102,398
Industrial supplies and materials (1)	0.98***	240,351
Capital goods, except automotive (2)	0.94***	189,713
Automotive vehicles, parts, and engines (3)	0.97***	28,174
Consumer goods (4)	1.00***	297,427
Other goods (5)	0.56**	8,055

Notes: The table reports coefficients from regressions of 12-month log changes in import prices on log changes in realized tariff rates, estimated separately by end-use category. All regressions include HTS-10 fixed effects and country–time fixed effects, with standard errors clustered at the HTS-8 level. *** and ** denote statistical significance at the 1 and 5 percent levels, respectively.

amplify cost shocks. In sectors where imported inputs are tightly embedded in domestic production processes, a tariff-induced cost increase may propagate through supply chains and generate price adjustments that slightly exceed the mechanical tariff change. Foods, feeds, and beverages display somewhat lower pass-through, at approximately 0.8, suggesting modest scope for foreign exporters to absorb part of the tariff. Agricultural markets often feature greater short-run supply rigidity, seasonal production cycles, and commodity pricing benchmarks, which may allow exporters to partially adjust margins in response to trade barriers. The "Other goods" category shows a smaller coefficient, but this residual group includes returned goods and special transactions with limited economic interpretation.

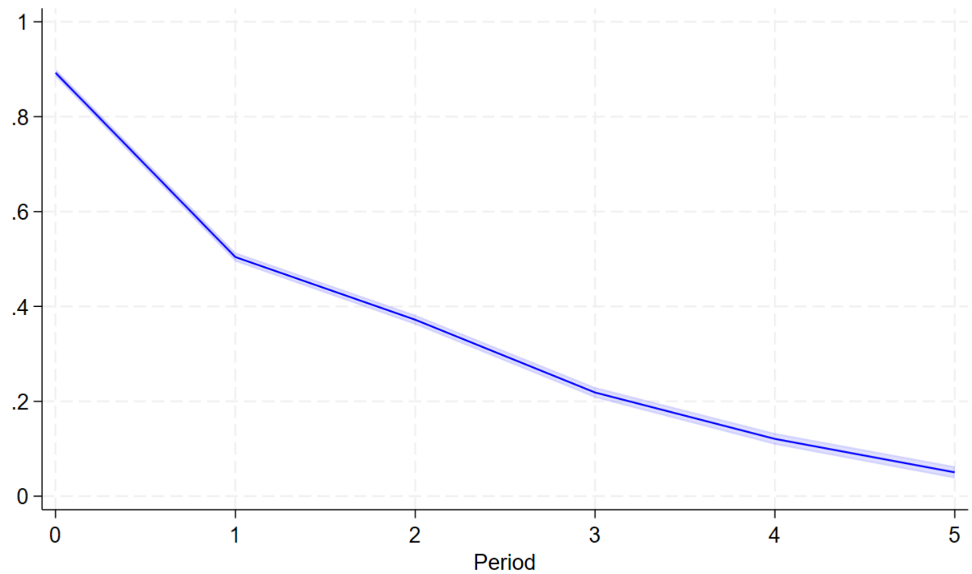
Overall, the findings indicate that near-complete pass-through is not confined to a particular segment of trade but is pervasive across both intermediate and final goods. This broad-based response reinforces the interpretation that the 2025 tariff episode operated primarily as a cost shock to U.S. importers rather than as a margin squeeze on foreign exporters.

4.1.3 Estimates by time

We also re-estimate the specification on a month-by-month basis, restricting the sample to individual months such as May 2025 or October 2025. The results are highly stable over time: estimated pass-through rates are at or above 95 percent in every month, with the lowest estimate occurring in May 2025, at approximately 95 percent. The slightly lower estimate in May coincides with the period of greatest policy uncertainty and legal challenges described in Section 3.1, when exemptions, shipment delays, and temporary suspensions were most prevalent. Even during this episode of heightened implementation frictions, however, the bulk of tariff changes was transmitted into prices paid by U.S. importers.

We further examine the dynamic response of prices using a local-projection framework. To that end, we estimate equation (2) at different horizons, using $\Delta \ln(p_{jnt})$ as the dependent variable, where $p_{jnt} = p^*_{jnt}(1 + \tau^r_{jnt})$ denotes the tariff-inclusive import price. Standard errors are clustered at the HTS-8 level. Figure 11 reports the impulse response of prices to a realized tariff shock. The

Figure 11: Local projection of a tariff shock



response is sharply front-loaded. Prices increase almost one-for-one on impact and then decline gradually over subsequent months. The contemporaneous jump reflects the mechanical nature of tariffs as border taxes: because duties are assessed when shipments clear customs, changes in realized tariff rates are immediately embedded in landed import prices. There is therefore little scope for gradual pass-through in tariff-inclusive prices.

Taken together, these results establish that the 2025 tariffs operated as a near-complete and immediate cost shock at the border: foreign exporters absorbed virtually none of the tariff change, import quantities contracted sharply, and price responses dissipated within months. For U.S. importers and their downstream suppliers, this implies a substantial contemporaneous increase in input costs. At the same time, the contraction in import quantities may have opened space for domestic producers to expand output in import-competing industries, a channel that our 'import protection' measure is designed to capture. Whether this protective effect was large enough to offset the cost pressures facing downstream users—and how these forces played out across localities with different industrial compositions—is the central question of Section 5.

5 Tariffs and Local Labor-Markets

The preceding section establishes that the 2025 tariffs were passed through almost entirely into import prices, with negligible absorption by foreign exporters. This near-complete pass-through has competing implications for domestic labor markets. Higher import prices reduce foreign competition, making domestic substitutes relatively cheaper and potentially inducing domestic producers to expand output and hire more workers in import-competing sectors. At the same time, the same price increases raise input costs for downstream industries that rely on imported intermediates, compressing margins and potentially leading firms to reduce production and shed workers. The net employment effect is therefore theoretically ambiguous: it depends on whether the protective gains in import-competing sectors outweigh the cost pressures transmitted through supply chains, and on how these forces are distributed across local labor markets with different industrial compositions. Flaaen and Pierce (2024) show that during the 2018–2019 episode, input-cost effects dominated protection effects, producing net declines in manufacturing employment. Whether the same logic applies in 2025—an episode of broader tariff coverage and near-identical pass-through—is the question we now take to the data. They construct measures of exposure to import protection and rising input costs and show that, while tariffs provided modest protection to some narrowly defined industries, these gains were offset—and in many cases dominated—by higher input costs (and foreign retaliation). Their results indicate that, on net, U.S. manufacturing employment declined in more exposed industries during the 2018–2019 episode. The key mechanism operates through supply-chain linkages: industries more reliant on imported intermediate inputs experienced employment contractions that outweighed any protective effect from import-competing tariffs. Importantly, they extend the analysis to the local level by constructing county-level measures of tariff exposure based on pre-existing industry employment shares. Their county-level evidence indicates that areas more exposed to tariff increases experienced relative declines in manufacturing employment, highlighting the role of input linkages and regional industrial composition in shaping labor-market outcomes.

5.1 Measuring Tariff Impact

Motivated by this framework, we examine whether the 2025 tariffs generated similar local labor-market effects. We construct a measure of realized tariff exposure at the county level using the product-country tariffs described in earlier sections, and construct two measures of geographical tariff impact: the 'Import Protection' effect and the 'Rising Input Costs' effect, at the county level, following Flaaen and Pierce (2024).

Import Protection One of the main objectives of tariffs is to restrict competition by foreign firms. We would expect that as industries become more protected, their unemployment rates would go down and the labor force participation rate would increase.

We now want to construct a measure of import protection. We modify tariffs by industry to satisfy

$$\tau_{i,t}^{r,b} = \sum_{n,j \in \Gamma^i} \tau_{jn,t}^{r} \frac{m_{jn}}{m_{in}},$$

where $\tau_{jn,t}^{r}$, as defined above, denotes realized tariffs from product j imported from country n in month t and Γ^i captures the set of HTS-10 product–country pairs constituting NAICS-3 industry i.

We weight the tariff in each good by the share of imports of that good within the industry in a base year. Hence, m_{jn} captures import levels from that product–country pair and $m_{in} = \sum_{j \in \Gamma^i} m_{jn}$.

In order to construct our measure of import protection we add the product of industry imports and the change in industry tariff rate, and divide this product by the value of domestic absorption. Mathematically, industry import protection (IP) is

$$\text{Industry IP}_{i,t} = \frac{m_i \Delta \tau_{i,t}^{r,b}}{Q_i + m_i - x_i},$$

where $\Delta \tau_{i,t}^{r,b}$ denotes the 12-month change in industry tariff rates (in percentages), $Q_i + m_i - x_i$ is domestic absorption given that Q_i is domestic production, m_i imports (defined in Section 3.5) and x_i exports of industry i in the base period.

Rising Input Costs Each industry in the U.S. uses inputs from other industries. As such, it may experience cost pressures from tariffs imposed on sectors from which inputs are sourced. In other words, there are spillover effects of tariff changes via the supply-chain. The BEA input-output tables provides a 'use' table: a matrix that defines the dollar value of commodity h used in industry's i production, with element u_{ih}. It is possible to combine this information with the industry's use of intermediate inputs ι_i and the compensation to employees ω_i. With these, we can construct, again following Flaaen and Pierce (2024), the matrix S_{ih}, containing the share of input costs of commodities from industry h in final industry i:

$$S_{ih} = \frac{u_{ih}}{\iota_i + \omega_i}.$$

The tariff-affected import share of domestic absorption of commodities from industry h can be defined as

$$\gamma_{h,t} = \frac{m_h \Delta \tau_{h,t}^{r,b}}{Q_h + m_h - x_h}.$$

Then the Rising Input Costs (RIC) in industry i is the product between S_{ih} and $\gamma_{h,t}$

$$\text{RIC}_{i,t} = \sum_h \frac{u_{ih}}{\iota_i + \omega_i} \frac{m_h \Delta \tau_{h,t}^{r,b}}{Q_h + m_h - x_h}.$$

Local Exposure To map industry exposure into local labor markets, we aggregate industry-level import protection to the county level using pre-determined employment shares. Let N_{ic} denote employment in industry i at county c and N_c the total employment in that county, both evaluated at some base period. Local IP in month t is defined as

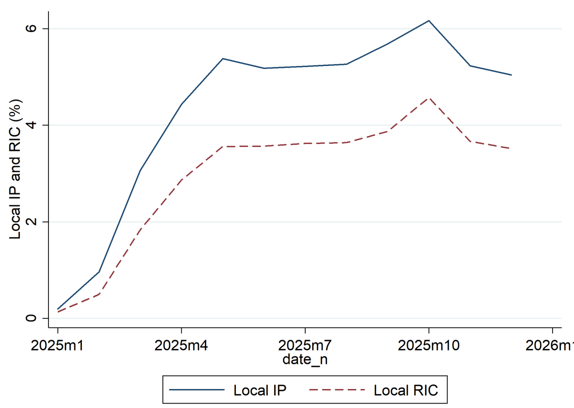
$$\text{Local IP}_{c,t} = \sum_i \frac{N_{ic}}{N_c} \text{Industry IP}_{i,t}.$$

This measure captures the intensity with which each county in the U.S. is exposed to the realized tariff increases through the import protection channel. We construct the county-level RIC analogously

$$\text{Local RIC}_{c,t} = \sum_i \frac{N_{ic}}{N_c} \text{RIC}_{i,t}.$$

This metric captures the degree to which every U.S. county is affected by actual tariff through the rising input cost channel. Data for N_{ic} and N_c is obtained from the Quarterly Census of Employment and Wages[6]. The base year is 2024, and we compute Local IP for January 2025 to December 2025[7].

Figure 12: Local IP and RIC over time



5.2 Estimating the effect of tariffs on local labor markets

Using monthly data on county-level tariffs between January 2024 and December 2025, we estimate

$$y_{c,t} = \mu_c + \eta_t + \beta_1 \text{Local IP}_{c,t} + \beta_2 \text{Local RIC}_{c,t} + \epsilon_{c,t}, \tag{3}$$

where μ_c is a county fixed effect, η_t is a time fixed effect, and $\epsilon_{c,t}$ denotes the stochastic error term. The dependent variable $y_{c,t}$ represents either the unemployment rate, $u_{c,t}$, or the labor-force participation rate, $l_{c,t}$, in county c at date t. Data for $u_{c,t}$ and $l_{c,t}$ is obtained from the Local Area Unemployment Statistics (LAUS) constructed by the U.S. Bureau of Labor Statistics[8]. The measures for Local $\text{IP}_{c,t}$ and Local $\text{RIC}_{c,t}$ were defined in the previous section. The base year for their construction is 2024.

Table 5 reports county-level labor-market effects for both, the full sample and a specification that trims the top one percent of good-specific tariff changes. In the untrimmed sample, greater

[6]See https://www.bls.gov/cew/downloadable-data-files.htm.
[7]We recomputed these using 2023 as a base year, and the results are basically unchanged.
[8]See https://www.bls.gov/lau/.

Table 5: Tariffs and Local Labor-Market Outcomes

	Untrimmed Sample		Trimmed (1% tails)	
	(1)	(2)	(3)	(4)
	$\Delta \ln u_{c,t}$	$\Delta \ln l_{c,t}$	$\Delta \ln u_{c,t}$	$\Delta \ln l_{c,t}$
Local $\text{IP}_{c,t}$	-0.24^{**}	0.034^{**}	-0.26^{*}	0.033^{**}
	(0.12)	(0.015)	(0.13)	(0.015)
Local $\text{RIC}_{c,t}$	0.11	-0.058^{**}	0.11	-0.061^{***}
	(0.12)	(0.022)	(0.12)	(0.02)
County & Month FE	Yes	Yes	Yes	Yes
Counties	3,108	3,108	3,046	3,046
Observations	37,296	37,296	36,552	36,552
R^2	0.43	0.60	0.43	0.60

Notes: The dependent variable in columns (1) and (3) is the 12-month log change in the county-level unemployment rate. Columns (2) and (4) report results for the 12-month log change in the labor-force participation rate. Local Import Protection (IP) and Rising Input Costs (RIC) are county-level measures of tariff exposure constructed using pre-determined industry employment shares from 2024. Columns (3)–(4) exclude the top one percent of observations in the direct exposure measure. All regressions include county and month fixed effects. Standard errors clustered at the state level are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

exposure to import protection is associated with a modest decline in unemployment growth and a small increase in labor-force participation. Exposure through rising input costs does not generate a significant change in unemployment, but decreases labor force participation, consistent with supply-chain cost pressures weighing on local labor markets. Trimming extreme observations does not change the results meaningfully.

The pattern is consistent with the following mechanism. When tariffs raise, the cost of imported intermediate inputs increases implying that firms in downstream industries face higher production costs. Because this compresses their margins, it can potentially lead them to scale back production or reduce hours. Workers who lose their job or face reduced hours in these industries may become discouraged and exit the labor force rather than searching for new employment, particularly when cost pressures are broad-based and affect many local employers simultaneously. When most employers in a county face the same input-cost shock, the outside options available to displaced workers within the local labor market are limited, making labor force exit more likely than job-to-job transitions. This mechanism predicts that the RIC channel should show up primarily in labor-force participation rather than in the unemployment rate, which is consistent with the findings from Table 5.

Interpreting the results In order to quantify the implications of tariff exposure on unemployment, we construct a county-level counterfactual that removes the estimated effects of local IP and RIC, holding county heterogeneity and national month shocks fixed. Using the estimated coefficients, it is possible to compute the predicted tariff contribution for each county at every month,

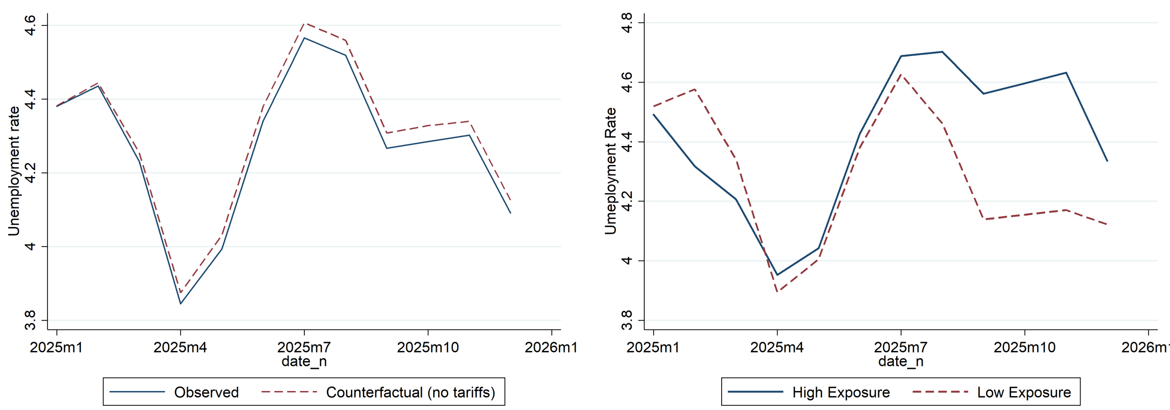
$$\widehat{TE}_{c,t} = \widehat{\beta}_1 \text{Local IP}_{c,t} + \widehat{\beta}_2 \text{Local RIC}_{c,t},$$

where $\widehat{\beta}_1$ and $\widehat{\beta}_2$ correspond to the estimated values of specification (3)—displayed in column (1) of Table 5. The "counterfactual unemployment rate" $\widehat{u}$, that is, the value of unemployment in county c at month t if tariffs hadn't changed, corresponds to

$$\widehat{u}_{c,t} = u_{c,t} - \widehat{TE}_{c,t}.$$

This procedure isolates the portion of unemployment dynamics attributable to local tariff exposure, leaving unchanged the estimated county fixed effects μ_c and common month shocks η_t. To express the counterfactual in levels (rather than in log-changes), we invert the definition of the 12-month log change and compute $u_{c,t} = u_{c,t-12} \exp(\widehat{u}_{c,t})$, where $u_{c,t-12}$ is the 12-month lagged unemployment rate in the same county. We then average out observed and counterfactual unemployment rates across counties, using county-employment levels as weights.

Figure 13: Counter-factual Unemployment



Notes: The left panel averages out counter-factual (dashed-red) vs realized unemployment (solid-blue) at each month, weighted by county's employment in 2024. The right panel shows counterfactual unemployment in highly exposed counties (top 25%, solid blue) and low-exposure counties (bottom 25%, dashed-red) to the IP channel.

Figure 13 plots the employment-weighted national unemployment rate together with the implied counterfactual absent tariff exposure. The gap between the two series represents the model-implied contribution of the 2025 tariffs to unemployment, holding fixed national labor-market conditions and persistent county characteristics. Consistent with the regression estimates, the counterfactual unemployment rate lies modestly above the observed series during most of 2025, reflecting the negative coefficient on Local IP. In other words, removing tariff exposure eliminates the (small) protective component associated with import protection, raising unemployment slightly in the counterfactual path. The magnitude of the divergence is economically limited, indicating that while tariff exposure has statistically detectable local effects, its aggregate impact on national unemployment during 2025 is modest. In contrast to the 2018–2019 episode studied by Flaaen and Pierce (2024), where input-cost effects played a central role, the 2025 evidence points to a weaker and less systematic role for supply-chain cost pressures in shaping local labor-market outcomes. The overall magnitudes are economically modest, indicating that, at the local level, the 2025 tariffs did not generate large labor-market dislocations in either direction. In contrast to the 2018–2019 episode, where input-cost effects dominated and net employment fell, the 2025 episode shows a modest positive effect from the protection channel, possibly reflecting the broader scope of tariff coverage or differences in the timing and composition of retaliation relative to the 2018–2019 episode.

To make the local patterns more transparent, the right panel of Figure 13 contrasts unemployment dynamics in counties at opposite ends of the distribution of predicted tariff effects. Specifically, we rank counties by the estimated IP tariff contribution, $\widehat{IP}_{c,t} = \hat{\beta}_1 \text{Local IP}_t$ and form employment-weighted quartiles of this measure. The solid line reports the employment-weighted average unemployment rate among counties in the top 25% of the distribution (those with the largest predicted tariff effects), while the dashed line reports the analogous average for counties in the bottom 25%. Two features stand out. First, in the pre-implementation months of January–March 2025, counties that will later exhibit larger predicted tariff effects have slightly higher unemployment rates, reflecting pre-existing differences in industrial structure rather than contemporaneous policy effects. Second, following the tariff escalation, the ordering reverses: unemployment declines more, and remains lower, in counties with larger predicted tariff effects relative to those with smaller effects. The divergence widens through the summer and is most pronounced in October, when the gap between the two series peaks. Although this figure is descriptive and does not partial out county fixed effects or common time shocks, it provides a transparent visualization of the mechanism highlighted by the regression results: counties with greater predicted exposure to the protective channel experienced relatively stronger labor-market outcomes during the 2025 tariff episode.

Geographical dispersion Figure 14 maps the geographical distribution of the estimated unemployment gains associated to tariff policy in 2025. It is based on the difference between observed $u_{c,t}$ and counterfactual $\hat{u}_{c,t}$ outcomes. For each county c and month t, we compute the average gain in employment in the last 10 months of 2025 (that is March to December). Mathematically,

$$\Delta u_c = \frac{1}{10} \sum_{t=3}^{12} 100 \times \frac{\widehat{u}_{c,t} - u_{c,t}}{u_{c,t}}$$

If tariff policy is associated with a lower unemployment rate than in the counter-factual with no tariffs, $\Delta u_c > 0$, indicating the county has, on average, gained by tariffs. In such case, we represent the county with a shade of green (the darker the shade, the larger the gain). If instead $\Delta u_c < 0$, then we represent the county in a shade of red.

Figure 14: Gains in Unemployment

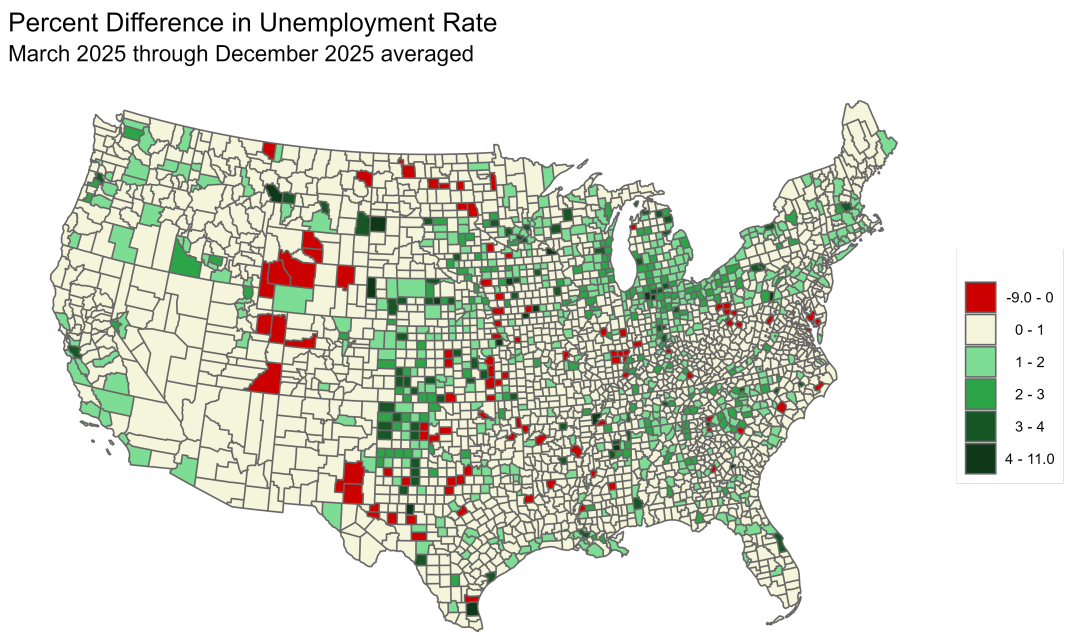


Table 6: Summary of Gains in Unemployment

Bin	N	Mean	Median
-9.0 - 0	98	-0.6	-0.2
0 - 1	2,206	0.3	0.3
1 - 2	532	1.4	1.4
2 - 3	174	2.4	2.4
3 - 4	58	3.5	3.5
4 - 11.0	40	5.5	4.9

The first thing to note is that most counties gain with tariff policy, as seen in Table 6. However, the gains are minimal, mostly concentrated around 1% and 2%, indicating that the implied labor-market gains or losses from tariff exposure are economically small. Second, counties at the tails—those experiencing either relatively larger gains or losses—are comparatively few and geographically dispersed rather than clustered in a single region. Even among counties classified as "gainers," the magnitude of the effect remains modest in absolute terms. The map therefore reinforces the aggregate evidence: while the regression identifies statistically detectable local effects, the implied labor-market consequences of the 2025 tariff episode are limited in size and heterogeneous across space, with relatively few counties experiencing large deviations from the counterfactual path. There are only 4 counties with gains of 10% or more, all with less than 1,000 employees.

We have also looked at the effect in large counties, those with employment levels larger than 500,000. On average, their unemployment rate in the period was 4.3 %. They experienced gains of 0.76% in unemployment, which would have declined their unemployment rate to 4.26%. We conclude that while the tariffs provided some import protection, they had negligible effects on unemployment rates and labor force participation, both on average and when looking at the distribution of counties in the U.S.

6 Conclusions

In this paper, we study the effects of the 2025 U.S. tariff episode on import prices, import quantities, and local labor-market outcomes, in particular unemployment rates and labor-force participation. We use disaggregated customs data on import values, quantities, and the dollar value of duties collected at the good–country–month level. We show that realized tariff rates differ systematically from announced tariff rates, and decompose this difference into three forces: within-industry product reallocation, cross-country sourcing shifts, and tariff collection frictions. We conclude that statutory tariffs are a poor proxy for the rates paid by importers and use realized rates to derive our results.

Using fixed-effect regressions on a sample of approximately 19,000 goods over the twelve months of 2025, we show that a one percent increase in realized tariffs is associated with an approximately equal increase in import price. This implies that foreign exporters did not adjust their prices in response to higher U.S. import tariffs, and that domestic importers absorbed the trade shock. We also find that a one percent increase in tariffs is associated with approximately a 1.4 percent decline in import quantities, consistent with demand-side adjustment. The contraction in imports is especially pronounced for those originating from China following the April–May increase in tariffs, a magnitude comparable to the response estimated for the 2018–2019 tariff episode by Amiti et al. (2019). These estimates speak to incidence at the border and should be interpreted with that scope in mind: they do not determine the extent to which higher import costs were subsequently passed on to final consumers versus absorbed by domestic firms along the supply chain, nor do they capture broader general equilibrium effects on domestic producer prices, wages, or consumer spending.

Turning to local labor markets, we find that counties more exposed to import-competing sectors experienced small relative declines in unemployment, consistent with limited but detectable protective effects through the import-protection channel. Exposure through rising input costs is associated with modestly weaker labor-force participation. This pattern is consistent with broad-based input-cost pressures discouraging labor force participation: when most employers face higher costs simultaneously within a county, displaced or underemployed workers find limited outside options within the same local labor market and are more likely to exit the labor force than to transition to new employment. Through counterfactual exercises, we uncover that national unemployment would have been only slightly higher absent tariff exposure, with gains concentrated in a small subset of counties. The geographic distribution reinforces this conclusion: large effects in either direction are rare. In contrast to the 2018–2019 episode, where input-cost effects dominated and net manufacturing employment went down, the 2025 evidence points to a small positive net effect on unemployment from the protection channel. This comparison should be interpreted with caution, however, since our specification does not capture retaliatory export tariffs, general-equilibrium feedback through consumer spending, or other macroeconomic channels that operate beyond the county-industry structure used to construct the exposure measures.

Taken together, the evidence indicates that the 2025 tariffs operated primarily as a broad-based cost shock to U.S. importers at the border, with little adjustment in foreign exporter prices and modest, geographically dispersed effects on local labor markets. More broadly, the results underscore the importance of measuring realized policy exposure in episodes characterized by layered announcements and complex implementation. When statutory and effective tariffs diverge—as they did sharply and persistently throughout 2025—inference based solely on announced schedules risks mischaracterizing both the price effects at the border and their downstream consequences for import quantities and local labor markets.

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A Technical Appendix

In order to compute the decomposition, we need to construct: (1) the statutory tariffs, (2) 2024 tariffs, and (3) the counter-factual to check each potential hypothesis.

A.1 Construction of Statutory Tariff Rates in 2024

Statutory tariff rates in 2024 are constructed as the sum of Most Favored Nation (MFN) tariffs and the additional tariffs imposed on imports from China during the 2018–2019 tariff episode that remain in effect. Tariff information is obtained from the United States International Trade Commission (USITC) *Harmonized Tariff Schedule* (HTS), available at https://hts.usitc.gov. The HTS provides a harmonized classification of products subject to ad valorem tariffs under Section 301 of the Trade Act of 1974. The data are reported at the 10-digit Harmonized Tariff Schedule level (HTS-10) and are updated monthly with a two-month reporting lag.

From the USITC website, we also download the annual tariff database, which reports MFN tariff rates applied under World Trade Organization agreements. This database additionally identifies goods eligible for preferential treatment under NAFTA/USMCA and therefore exempt from tariffs. Together, these sources provide bilateral tariff rates applied to imports of product j from country n during 2024 into the United States. The resulting tariff rates are denoted by $\tau^{MFN}_{jn,24}$.

In addition, we obtain from the USITC the list of products imported from China that are subject to additional Section 301 tariffs, including those introduced during the 2018–2019 tariff episode that remain in force. These product–country–time tariff rates are denoted by $\tau^{s}_{j,CH,24}$. Because some items are available only at the six-digit Harmonized System level (HS-6), all tariff measures are aggregated from HTS-10 to HS-6.

Using these disaggregated tariff rates, we construct statutory tariffs for 2024 and verify internal consistency by comparing the implied average effective tariff rate (AETR) with the realized AETR computed directly from aggregate customs data. Specifically, the statutory AETR for 2024 is calculated as

$$\tau^{s}_{n,24} = \sum_{j} \tau^{s}_{jn,24} \gamma_{jn,24},$$

where $\tau^{s}_{jn,24} = \tau^{MFN}_{jn,24}$ for all countries except China, which has $\tau^{s}_{jn,24} = \tau^{s}_{j,CH,24}$. The variable $\gamma_{jn,24}$ denotes import-share of good j from country n in total imports of country n

$$\gamma_{j,24} = \frac{m_{jn,24}}{m_{n,24}}.$$

where $m_{jn,24}$ denotes imports of product j from country n during 2024. Denoting $\omega_{n,24} = \frac{m_{n,24}}{m_{24}}$ the import-share of country n ,we can define the AETR in 2024 as:

$$AETR^{stat}_{24} = \sum_{n} \tau^{s}_{n,24} \omega_{n,24}.$$

The resulting statutory AETR closely matches the realized AETR obtained by dividing total duties collected by total import values in 2024, confirming the accuracy of the constructed tariff series

$$AETR_{24}^{real} = \sum_{n} \frac{d_{jn,24}}{m_{jn,24}} \omega_{n,24} \simeq AETR_{24}^{stat}.$$

A.2 Imports, duties, and HTS exemptions and special duties

Using the CENSUS API we obtain the import levels and duties collected from country n to the U.S. at the HS-6 level (this is more aggregated than the tariff data) and denote it by $m_{jn,25}$. The measures are downloaded from May 2025:

- Imports, denoted by $m_{jn,25}$ corresponds to "Customs Value (Gen) ($US)." It is measured in U.S. dollars.
- Duties, denoted by $d_{jn,25}$ corresponds to "Calculated Duty ($US)." It is measured in U.S. dollars.

We construct the following dummy variables, equal to 1 if product j is

- $I_{usmca,j}$: in the USMCA-product list,obtained from the USITC website, tariff database.
- $I_{A2,j}$: in the list of Annex II exclusions announced on April 2. This is obtained from https://www.whitehouse.gov/wp-content/uploads/2025/04/Annex-II.pdf
- $I_{A11,j}$: other products excluded, obtained from CSMS # 64724565 - UPDATED GUIDANCE – Reciprocal Tariff Exclusion for Specified Products; April 5, 2025 Effective Date, 4/11
- $I_{steel,j}$: Steel products downloaded from the cpb/gov website, in Section 232 Tariffs on Steel and Aluminum Frequently Asked Questions, under General Section 232 FAQs. See link here. They correspond to the Presidential Proclamations 9704 and 10896.
- $I_{alum,j}$: Aluminum products, downloaded from the same source as Steel products' list.
- $I_{auto,j}$: Auto products codes were obtained from here.[9]
- $I_{cont,j}$: "U.S. Content' if at least 20% of the total customs value is of U.S. origin for the content tariff provision 9903.01.34. See https://hts.usitc.gov/search?query=9903.01.34
- $I_{pot,j}$ Potash product codes imported from Canada, obtained from CSMS # 64336037 - GUIDANCE – Update on Additional Duties on Imports from Canada – USMCA Qualifying Products and Potash, March 6 2025. See here.

[9]See https://www.trade.gov/automotive-motor-vehicle-tariff-codes.

- I_{ener}: Energy products imported from Canada, HTS 9903.01. This covers a broad range: crude oil, natural gas, natural gas liquids, refined petroleum, uranium, coal, biofuels, geothermal heat, hydropower, and critical minerals.
- $I_{iPH,j}$: Iphones, HTS 8517.13 under a Presidential Memorandum for "reciprocal tariffs," effective retroactively to April 5, 2025.

Because there is no 'stacking' of certain tariffs, we constructed a combined aluminum-steel tariff for products that are not in the auto category

$$I_{as,j} = I_{alum,j}(1 - I_{auto,j}) + I_{steel,j}(1 - I_{auto,j})$$

A.3 Construction of Statutory and Realized Tariff Rates in May 2025

We begin by downloading import values m'_{jn}, where the prime denotes observations for May 2025. We exclude goods for which there are no recorded imports from any country. Countries are grouped into the following categories: Canada, Mexico, China, the European Union, Japan, Vietnam, South Korea, India, the United Kingdom, Thailand, Switzerland, Malaysia, Brazil, Indonesia, Singapore, Saudi Arabia, Israel, Turkey, Colombia, Chile, the Philippines, Australia, Russia, South Africa, Cambodia, Bangladesh, Ecuador, Iraq, and a residual *Rest of the World* (ROW) category.

The most granular measure of tariffs is $\tau^s_{jn,25}$, which denotes the tariff applied to imports of good j from country n in May 2025. This statutory tariff is constructed as

$$\tau^s_{jn,25} = \tau^s_{jn,24} + \delta_n(1 - I_j) + 0.25\, I_{auto,j} + 0.25\, I_{as,j},$$

where δ_n is the country-specific tariff reported in the May column of Table 7. The additional tariff on automobiles is applied through the indicator $I_{auto,j}$, as defined in the previous section, and is set to zero for imports from Canada and Mexico when goods qualify for USMCA treatment and meet U.S. content requirements, as well as for the UK following the US–UK treaty. The 25 percent tariff on steel and aluminum is applied to products satisfying $I_{as,j} = 1$, taking into account non-stacking provisions.

For imports from Canada, the tariff on potash products (identified by $I_{pot,j} = 1$) is set to 10 percent. In addition, for both Canada and Mexico, the country-specific tariff component satisfies $\delta_n = 0$ whenever $I_{usmca,j} = 1$. Finally, the country-specific tariff is set to zero in all countries for excluded goods, captured by the indicator $I_j = 1$, which equals one when $I_{A2,j} = 1$, $I_{A11,j} = 1$, or $I_{iPH,j} = 1$.

Realized tariff rates in May 2025 are computed as the ratio between duties collected in May 2025 and imports during that month

$$\tau^r_{jn,25} = \frac{d_{jn,25}}{m_{jn,25}}.$$

B April and May Tariff Rates

The list of countries and their specific tariff announced on April 2 can be found in the first column of Table 7. The second column contains the share of imports from this country relative to all imports to the U.S. The last column is the most-favored-nation (MFN) rates, weighted by trade and adjusted by treaties already in place. (These are also referred to as AHS on the World Integrated Trade Solution site.)

Table 7: Statutory Tariff Announcements and Import Shares by Country

Country	April 2 Tariff (%)	May Tariff (%)	Import Share (%)	MFN Rate (%)
Panel A. Major Trading Partners				
European Union	20.0	10.0	18.5	0.0
China	34.0	30.0	17.1	2.9
Mexico	0.0	25.0	13.6	0.0
Canada	0.0	25.0	13.2	0.1
Japan	24.0	10.0	4.6	1.6
Vietnam	46.0	10.0	4.0	4.6
South Korea	25.0	10.0	3.6	0.0
India	26.0	10.0	2.7	3.0
United Kingdom	10.0	10.0	1.9	1.3
Panel B. Other Trading Partners				
Thailand	36.0	10.0	1.9	0.9
Switzerland	31.0	10.0	1.8	2.2
Malaysia	24.0	10.0	1.7	0.7
Brazil	10.0	10.0	1.2	1.3
Indonesia	32.0	10.0	1.1	4.1
Singapore	10.0	10.0	1.0	0.0
Saudi Arabia	10.0	10.0	0.7	1.6
Israel	17.0	10.0	0.7	0.1
Turkey	10.0	10.0	0.6	3.3
Colombia	10.0	10.0	0.6	0.2
Chile	10.0	10.0	0.5	0.0
Philippines	17.0	10.0	0.5	1.4
Australia	10.0	10.0	0.5	0.5
Russia*	0.0	0.0	0.5	-
South Africa	30.0	10.0	0.4	0.1
Cambodia	49.0	10.0	0.4	8.0
Bangladesh	37.0	10.0	0.4	10.7
Ecuador	10.0	10.0	0.3	1.2
Iraq	39.0	10.0	0.3	1.6
Costa Rica	10.0	10.0	0.3	0.2
Peru	10.0	10.0	0.3	0.1
Argentina	10.0	10.0	0.2	1.6
United Arab Emirates	10.0	10.0	0.2	1.5
Dominican Republic	10.0	10.0	0.2	0.5
Norway	15.0	15.0	0.2	1.1
Honduras	10.0	10.0	0.2	0.1
Pakistan	29.0	29.0	0.2	8.7
Guatemala	10.0	10.0	0.2	0.6

Notes: The table reports statutory tariff rates announced on April 2, 2025, and the statutory tariff schedule in place by May 12th, 2025. Import shares are based on pre-tariff trade flows. MFN rates reflect WTO commitments and preferential trade agreements. Import shares may not sum to 100 due to rounding. *As of 2022, Russian imports are subject to “Column 2” rates.