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ABSTRACT

We use high-frequency retail microdata to measure the short-run impact of the 2025 U.S. tariffs on consumer prices. By matching daily prices from major U.S. retailers to product-level tariff rates and countries of origin, we construct price indices that isolate the direct effects of tariff changes across goods and trading partners. Prices began rising immediately after the broader tariff measures announced in early March and continued to increase gradually over subsequent months, with imported goods rising roughly twice as much as domestic ones. Our estimated retail tariff pass-through is 20 percent, with a cumulative contribution of about 0.7 percentage points to the all-items Consumer Price Index by September 2025. Our results show that tariff costs were gradually but steadily transmitted to U.S. consumers, with additional spillovers to domestic goods.

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1 Introduction

In early 2025, the United States introduced broad new import tariffs, applying a 10 percent duty on most goods while raising rates to as high as 145 percent on some imports from China and up to about 50 percent for several other countries by September. These measures represent one of the largest shifts in U.S. trade policy in recent decades, offering a rare opportunity to study how such interventions transmit to consumer prices and, ultimately, shape inflation dynamics. Yet quantifying these effects remains challenging: official consumer price indices (CPIs) are published with delays and at levels of aggregation that obscure short-run price dynamics and differences across products and trading partners. We address these limitations by constructing new high-frequency retail price indices that isolate the short-run impact of tariff shocks across goods and source countries.

Our analysis combines micro-level retail price data with detailed information on product origin and tariff classifications. We link daily prices from five major U.S. retailers to country-of-origin data, obtained by searching UPC codes online or by using generative AI models to identify each product's origin. We then use AI to match these products to 10-digit Harmonized System codes and retrieve their corresponding tariff rates from publicly available data provided by the U.S. International Trade Commission (USITC) and the U.S. Census Bureau. The data cover the period from October 1, 2024, to September 8, 2025, roughly six months after the first major tariffs were imposed. This integrated dataset enables us to trace how retail prices for affected and unaffected goods evolve across product categories and trading partners, capturing the timing and magnitude of tariff pass-through with a level of precision not achievable in official price statistics.

We find that retail prices reacted quickly but adjusted gradually to the 2025 tariffs. Prices began rising within days of the first announcements in early March and continued to increase over the following months. Imported goods rose roughly twice as much as domestic products, indicating both direct and indirect exposure to tariff shocks. Between March and September, prices of imported goods increased by about 5.4 percent relative to pre-tariff trends, while domestic goods rose by 3 percent. These increases, while small relative to some announced statutory tariff rates, are sizable relative to the applied tariff rates—net of exemptions—of about 19.9 percent that we estimate for our sample of products.

Price responses varied significantly across trading partners and sectors. Goods imported from China—subject to higher or more persistent tariffs—experienced larger and more sustained price increases than those from Canada and Mexico, where exemptions under the USMCA reduced effective exposure. Across product categories, the largest effects were concentrated in household furnishings and miscellaneous goods, both heavily reliant on Chinese imports, while food and recreational items showed smaller or insignificant deviations from pre-tariff trends. Within categories, cheaper varieties exhibited faster price increases than higher-priced

ones, suggesting that firms with thinner markups passed through a larger share of tariff costs. These heterogeneous responses highlight the importance of product characteristics and sourcing structure in shaping short-run price dynamics.

Six months after their introduction, we estimate retail tariff pass-through rates reaching up to 20 percent. These rates are higher and materialize faster than those observed during the 2018–2019 U.S.–China trade war, but remain well below full pass-through, reflecting gradual transmission and continuing uncertainty about policy persistence. Despite incomplete pass-through, the estimated impact on the CPI is significant. Aggregating the price deviations from pre-tariff trends for both domestic and imported goods using official CPI expenditure shares, we estimate that the 2025 tariffs contributed about 0.7 percentage points to the all-items Consumer Price Index in six months. This implies that the annual inflation rate in the all-items CPI (CPI-U, NSA)—which stood at 2.9 percent in August 2025—would have been about 2.2 percent in the absence of the tariffs, a level much closer to the Federal Reserve's inflation target.

Our results are consistent with those of Cavallo, Gopinath, Neiman and Tang (2021), who use a similar approach combining micro-level retail price data with tariff classifications to study the 2018–2019 trade war. Like them, we find that tariff pass-through to consumer prices is incomplete, reflecting frictions in the transmission from border costs to retail prices. However, our estimated pass-through rates on applied tariffs—between 14 and 20 percent after six months—are higher than those observed during the earlier episode, when comparable estimates remained below 5 percent after a year. This difference is consistent with the larger and broader tariff increases implemented in 2025, which generated stronger and more pervasive cost pressures across supply chains. Our estimates are similar in magnitude to the 16 percent cost pass-through in two quarters reported by Nakamura and Zerom (2010) for coffee, a commodity with well-measured input costs. The results also align with Amiti, Redding and Weinstein (2019) and Flaaen, Hortacsu and Tintelnot (2020), who emphasize the role of competitive pricing at the retail level in propagating tariff shocks to domestic products, a mechanism we also observe in categories where domestic and imported goods are close substitutes. At the aggregate level, our estimated contribution of roughly 0.7 percentage points to the all-items CPI is consistent with recent analyses by Barbiero and Stein (2025) and Minton and Somale (2025), who also estimate nontrivial inflationary effects from the 2025 tariffs.

Beyond providing new evidence on the short-run effects of trade policy, our paper develops a scalable framework that combines online retail microdata with AI-based product classification to monitor price changes in real time. Periodic updates to these results will be made available online at www.pricinglab.org/tariff-tracker.

2 Data and Methodologies

2.1 Retail Prices

We use product-level retail price data from PriceStats, a private firm whose data have been used in prior academic research by members of the Billion Prices Project and the HBS Pricing Lab, including Cavallo (2013) and Cavallo and Rigobon (2016). The data contain daily prices scraped from the online stores of large multichannel U.S. retailers, recorded at the product level with detailed descriptions and unique identifiers. Each product is categorized using COICOP (Classification of Individual Consumption According to Purpose), the standard classification system employed by national statistical agencies to construct the Consumer Price Index (CPI). Even though prices are collected online, Cavallo (2017) shows that they co-move closely with offline prices in large retailers, consistent with the prevalence of uniform pricing policies within chains in DellaVigna and Gentzkow (2019).

For this study, we focus on five large multichannel retailers where we can obtain detailed country-of-origin information for individual goods. This dataset provides broad coverage of retail goods, with full representation in categories such as furnishings and household items, recreation and culture (including electronics), and food and non-alcoholic beverages, covering about 28.5 percent of the official weights in the all-items CPI (NSA).

2.2 Country-of-Origin (COO) Information

To identify how tariff exposure varies across products, we supplement retail price data with product-level information on countries of origin (COO). Because this information is rarely disclosed on retail websites, we develop two complementary methods to recover it.

2.2.1 UPC Matching

The first method links products in the PriceStats dataset to external sources that report country-of-origin information. We obtain Universal Product Codes (UPCs) for each item, match them to the identifiers used by a large online-only retailer that discloses COO details, and extract the corresponding information from that retailer's website. This procedure yields COO data for approximately 308,000 products. Although this represents a substantial share of the sample, the method can only be applied to three of the five U.S. retailers in our dataset. It provides broad coverage in household goods, furniture, and electronics but offers limited coverage in food-related categories, as these items are generally not sold by the online-only retailer used for the UPC bridge.

2.2.2 Generative AI Predictions

The second method uses generative AI models to retrieve country-of-origin (COO) information through automated online searches. For each product, the model receives both the description and URL and first scans the retailer's website for COO metadata. If that information is not available, it performs a targeted search for the same item across other online retail platforms. The model records the country of origin when identified; if only general information can be confirmed, it classifies the item as "Domestic" or "Imported," and leaves the field blank when no reliable evidence is found. High accuracy is achieved only when the model is allowed to search online—a capability that has recently become accessible through API integration—and the reliability of the retrieved results has improved steadily as the underlying systems and search tools have advanced.

We assess the accuracy of this approach using a validation sample of 10,000 products with known COO drawn from the UPC-matched subset described in Section 2.2.1. As shown in Table 1, the model correctly distinguishes domestic from imported items 88 percent of the time and identifies the specific country in 85 percent of cases. These accuracy rates are broadly consistent across major product categories and countries.

Table 1: AI-Based Predictions of Country of Origin

	Products	Accuracy (%)
Domestic/Imported	9840	88
Imported	7827	87
Domestic	2013	89
Country of Origin	6820	85
China	3074	84
Canada	127	82
Mexico	84	68
Taiwan	200	83
Turkey	294	96
India	333	93
Vietnam	134	81
Malaysia	54	87
Other countries	507	68
Food and Beverages	315	90
Household and Furnishings	4171	86
Health	130	93
Transportation	372	69
Electronics and Recreation	1228	87
Miscellaneous Goods	383	92

Note: This table reports the number of products and prediction accuracy for AI-based country-of-origin classification. Accuracy rates are computed from a validation sample of 10 000 products with known countries of origin matched through UPC codes. Predictions were generated in May 2025 using OpenAI's gpt-4o-search-preview model.

This AI-based method is used to identify the COO for about 14 percent of all products in our sample, including 57 percent of those in the "Food and Non-Alcoholic Beverages" category. Although its main contribution in this paper is to enhance coverage in food-related products, the approach offers a scalable and replicable framework that can be applied to recover country-of-origin information for additional retailers, sectors, and countries in future work.

2.2.3 Full Dataset with COO information

Table 2 summarizes the distribution of products in our full dataset by country of origin. The dataset contains 359,148 products with daily price information and identified COO. More than two-thirds of these items originate from the United States (37.45 percent) or China (35.85 percent). India, Turkey, and Vietnam together account for almost 9 percent of the sample, while the remaining products come from a diverse set of smaller trading partners, each contributing a limited share.

Table 2: Product Counts by Country of Origin

Product Origin	**Frequency**	**Percentage (%)**
US	134,577	37.48
China	128,668	35.83
India	14,560	4.05
Turkey	9,477	2.64
Vietnam	6,671	1.86
Taiwan	6,264	1.74
Mexico	5,001	1.39
Canada	4,645	1.29
Others	49,241	13.71
Total	**359,104**	**100.00**

Table 3 shows the distribution of products across COICOP categories. The largest share falls under "Furnishings, household equipment and routine household maintenance," representing nearly 54 percent of the sample, followed by "Recreation and culture," with more than 77,000 products. In contrast, categories such as "Alcoholic beverages, tobacco and narcotics," "Clothing and footwear," and "Housing, water, electricity, gas and other fuels" each account for less than 2 percent of the total.

Table 3: Number of Products by Category

Category Name	**Products**	**Percentage (%)**
Furnishings & Household	192,415	53.58
Recreation and culture	77,134	21.48
Food and non-alcoholic beverages	33,195	9.24
Miscellaneous goods and services	24,671	6.87
Transport	13,854	3.86
Health	7,247	2.02
Communication	4,973	1.38
Housing, water, electricity, gas and other fuels	2,804	0.78
Alcoholic beverages, tobacco and narcotics	1,945	0.54
Clothing and footwear	866	0.24
Total	**359,104**	**100.00**

The composition of countries and product categories in the sample is representative of large general-merchandise retailers in the United States, which typically specialize in a broad selection of affordable consumer goods. The prevalence of Chinese products, together with the concentration in household furnishings and recreational items, reflects standard sourcing patterns in this segment of the retail market and underscores the relevance of these sectors for assessing the impact of the 2025 tariffs. Table A2 in the Appendix provides a detailed breakdown by category and country, showing how Chinese imports dominate the two largest categories listed in Table 3.

2.3 Tariff Data

To determine which goods are directly affected by the 2025 tariffs and to estimate pass-through into consumer prices, we assign each product a 10-digit Harmonized System (HS-10) code and link it to the applicable tariff rate at both the country and product levels. This granular mapping captures variation in tariff exposure across products, countries, and sectors.

2.3.1 AI-based HS-10 Classifications at the Individual Product Level

Products in the PriceStats dataset are originally categorized using the COICOP system, which is suitable for consumer price measurement but not directly comparable to the Harmonized System (HS) used in trade and tariff data. Although correspondences between COICOP and HS codes can be constructed at broad levels, the two classifications are conceptually different and often poorly aligned.

To address this limitation, we develop an AI-based method that classifies individual retail products directly within the HS hierarchy. The procedure is hierarchical and iterative: starting from broad categories, the algorithm refines each classification by incorporating contextual information from previous steps until it reaches the appropriate HS-10 code.

This approach allows us to match retail products to their corresponding trade categories with high precision, enabling a direct link between observed prices and tariff exposure. We apply this procedure to both imported and domestic goods, allowing us to identify not only which products are directly subject to tariffs but also which domestic items compete within the same HS categories.

2.3.2 Statutory and Applied Tariff Rates

We distinguish between two types of rates: *statutory* and *applied* (or effective). Both are first computed by country–HS10 pair and then aggregated using product counts in our sample as weights. The time series are shown in Figure 1.

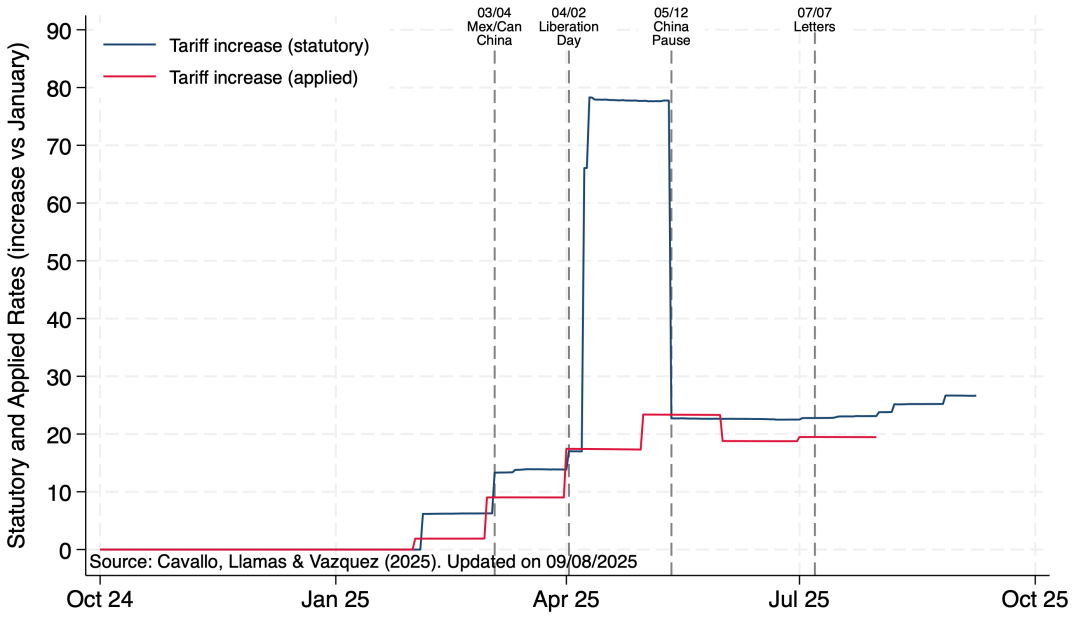

Figure 1: Statutory vs. Applied Tariff Rates Over Time

Notes: Statutory rates come from the Harmonized Tariff Schedule and Federal Register notices. Applied rates are calculated as duties paid divided by customs value of imports, aggregated to the country–HS-10 level and weighted by product counts.

Statutory tariff rates are those legally specified in the Harmonized Tariff Schedule (HTS). We identify changes using the HTS revision archive, beginning with revision 10 from 2024. Many of the 2025 measures were enacted through Chapter 99 of the HTS, which lists temporary or special duties not included in the main schedules. We also classify as tariffed any HS-10 or HS-

8 codes explicitly identified in the Federal Register, including those covering steel, aluminum, vehicles, and auto parts. Our statutory data are updated through September 9, 2025, with an average rate of 26.8 percent for the set of goods in our sample.

In practice, however, statutory rates often differ from what firms actually pay at the border. Exemptions and delayed implementation can reduce the effective burden. To capture this, we compute *applied* tariff rates using U.S. Census Bureau import data, defined as the ratio of duties paid to the customs value of imports (excluding insurance and freight) for each country–HS10 pair.[1] We find that applied rates are often substantially lower than statutory rates. In particular, during April statutory rates in our sample peaked near 80 percent—driven by the 145 percent duties on Chinese goods—while applied rates increased only gradually.

The latest available estimates indicate an average applied tariff rate of 19.9 percent in our sample as of July 2025. Because applied data are released with a lag—which, at the time of writing, was further extended due to the government shutdown—these figures reflect tariff conditions with a delay of roughly two months. The resulting levels and dynamic patterns are consistent with recent estimates of applied rates for all imports reported by Yale Budget Lab (2025) and Waugh (2025).

2.4 Price Index Methodology

We construct custom price indices from micro-level data following the methods in Cavallo (2013). Products are grouped in multiple ways—by country of origin, by domestic versus imported status, and by whether they are affected by tariffs. This flexible structure allows us to examine price dynamics across countries, sectors, and product types, which is particularly useful given the shifting scope of the 2025 tariff measures.

We begin by standardizing and cleaning the raw price data. Missing observations are replaced with the most recent available value for up to 30 consecutive days, and extreme price changes are excluded according to the methods in the U.S. Bureau of Labor Statistics (BLS) Handbook of Methods.

For each product, we compute a daily price relative—the ratio of its price to the previous day's price—and then take the unweighted geometric mean of these relatives across all items within each group. The resulting daily average rate of change is chained over time to produce an index initialized at one in the first observation period. This chained matched-model index approach captures cumulative price movements while accommodating product entry and exit, following the standard practice in official CPI construction where identical items are compared across consecutive periods.

To maintain consistency across categories, we do not explicitly adjust for quality changes or seasonality. This approach ensures comparability across products, sectors, and tariff events,

[1] See Appendix Section A for more details on dataset construction.

consistent with our focus on short-run price dynamics. Category weights are also omitted, except when estimating the aggregate impact on the CPI. In those cases, we construct weighted indices using official expenditure weights at the most disaggregated level available, ensuring that categories with larger shares of household consumption are properly represented.

3 Price Impact

This section documents how retail prices responded to the 2025 tariffs, focusing on movements around the time of major announcements. We examine price dynamics across several dimensions—domestic versus imported goods, country of origin, product category, and price tiers—to identify systematic patterns in the adjustment process. The analysis highlights the degree to which domestic goods were indirectly affected and the heterogeneity of price responses across trading partners and sectors.

3.1 Domestic vs Imported Goods

Figure 2 compares price indices for goods produced in the United States and those imported from abroad between October 1, 2024, and September 8, 2025. We also plot pre-tariff trends estimated from October 1, 2024, to March 4, 2025. The vertical lines mark major tariff announcements and policy changes, as detailed in Appendix A.2.[2]

Before the tariffs took effect, two patterns are evident in these indices. First, prices for imported goods fell temporarily from late November to early January, reflecting typical holiday discounts in categories such as electronics and household items. Second, both domestic and imported goods exhibited a mild deflationary trend during the initial months. This reflects the matched-model index structure and product composition: many goods, particularly electronics and furniture, are introduced at high prices and discounted gradually over time. Because the index does not attempt to link new and old models of similar goods, or apply quality adjustments, these markdowns appear as steady price declines. The pre-tariff trend therefore provides a natural benchmark for evaluating subsequent price movements. Similar trends can be seen when we extend the sample back to January 1, 2024, as shown in Appendix Figure A7.

[2]Tariffs first took effect on February 4 with a 10 percent rate on Chinese imports but had little immediate impact on retail prices. We therefore select March 4 as the first vertical line, corresponding to the date when the broader tariff expansion—25 percent on imports from Canada and Mexico and an additional 10 percent on Chinese goods—began to visibly affect prices

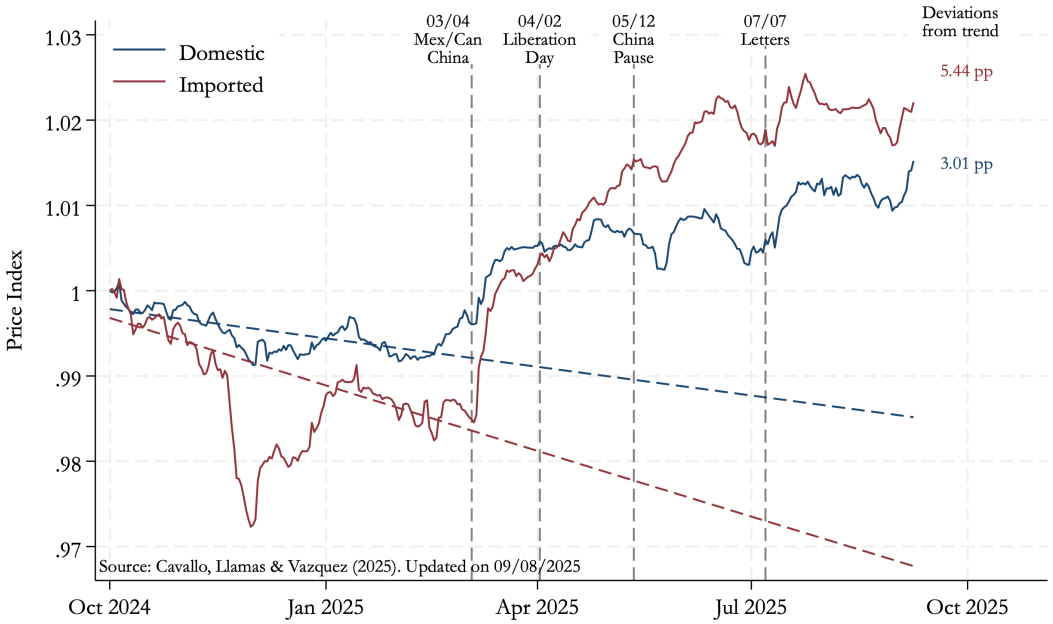

Figure 2: U.S. Retail Price Indices - Domestic vs Imported

Notes: Indices are constructed from daily prices of five large U.S. retailers, normalized to 1 on October 1 2024. Vertical lines mark major tariff events listed in Appendix A.2, and pre-tariff trends are fitted over October 2024–March 2025. Gaps at the right margin show cumulative differences between observed and predicted index levels as of September 2025.

Four salient patterns emerge from Figure 2 after the tariffs were implemented.

First, retail prices responded almost immediately to major tariff announcements, often adjusting within a few days. After March 4, imported goods prices rose by about 2 percent, while domestic prices increased by roughly half as much. Following the "Liberation Day" announcement on April 2, which introduced a 10 percent baseline tariff on all imports, imported goods continued to rise. The tariff pause on Chinese goods announced on May 12 led to a quick, temporary drop in all prices, while the "letters" escalation in July led to renewed pressures, also affecting domestic goods. These rapid reactions suggest that retailers were forward-looking, adjusting prices in anticipation of higher import costs rather than in response to tariffs already paid. Because most retailers sell from existing inventories that entered the country before the new tariffs took effect, it is unlikely that the goods sold within days of the announcements had yet incurred any additional duties. The immediate price movements therefore reflect expectations about future replacement costs, rather than realized import prices.

Second, most of the pass-through is gradual rather than discrete. After the tariffs were implemented, prices followed a new, persistent upward trajectory, marking a clear break from pre-tariff trends. This pattern likely reflects the uncertainty surrounding the level and duration of the tariffs that retailers would ultimately face. In such an environment, firms adjust prices cautiously and incrementally, updating them as new information becomes available rather than

implementing large, once-and-for-all increases. As a result, tariff shocks are more likely to generate a sustained period of upward pressure on prices—prolonging inflation dynamics—rather than producing an immediate, one-time shift in the price level.

Third, domestic goods were also affected, exhibiting a milder but sustained increase in prices since March. This highlights the broader reach of tariff policies beyond directly targeted imports. Several mechanisms may account for this pattern. Producers and sellers of domestic goods may raise prices in response to reduced competition from foreign goods, particularly in categories where domestic and imported products are close substitutes (Flaaen, Hortacsu and Tintelnot (2020)). Many U.S.-made products rely on imported inputs—such as components, packaging, or raw materials—from tariffed countries (Amiti, Redding and Weinstein (2019)). Additional factors could include efforts to distribute cost increases across product lines, maintain relative price structures, or expectations that higher inflation could increase future costs. In the next section, we split the domestic goods sample to further distinguish among these mechanisms.

Finally, while the magnitude of the observed price increases appears modest relative to the headline tariff announcements, they are nonetheless economically significant. Between March and September 2025, imported goods rose by about 4 percent and domestic goods by 2 percent. Relative to pre-tariff trends, these increases correspond to 5.4 and 3 percent, respectively. These adjustments occurred within only six months—a short period for retail prices to respond given common pricing rigidities and heightened policy uncertainty—and are meaningful when compared with the average applied tariff rate of 19.9 percent. Taken together, the results suggest that roughly one quarter of the tariff burden had already passed through to consumer prices within half a year. We examine this relationship more formally in Section 4, where we estimate the speed and magnitude of tariff pass-through.

3.2 Products in Affected and Unaffected Categories

To better understand the drivers of price changes among domestic goods, we combine information on countries of origin and HS code classifications to identify which products are more affected by tariffs. Barring a few exceptions, all imported goods in our sample are subject to at least the baseline 10 percent tariff. Domestic goods, however, can be differentiated by their degree of indirect exposure.

We classify a domestic good as *affected* if it either belongs to an HS category directly targeted by the tariffs or falls within a three-digit COICOP category in which more than half of the products are imported. The first criterion captures goods such as those made of steel and aluminum, whose imported counterparts faced explicit tariff rates at the HS level. The second identifies domestic goods in import-intensive consumption categories, where competition with

imports affected by country-level tariffs is expected to be strongest.[3]

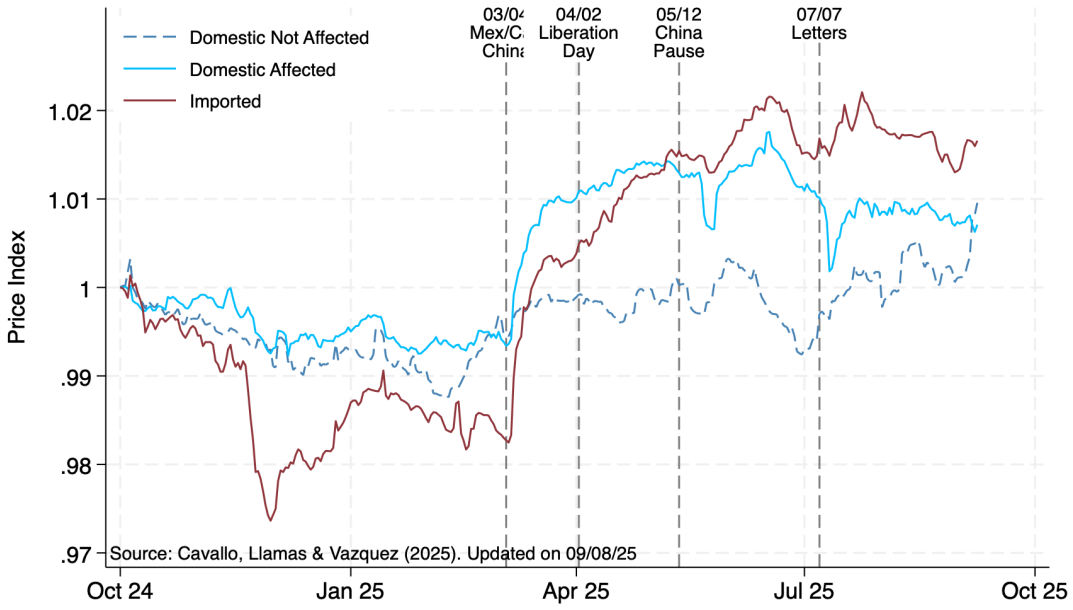

Figure 3: U.S. Retail Price Indices in Affected and Unaffected Categories

Notes: Indices are constructed from daily prices of five large U.S. retailers, normalized to 1 on October 1 2024. Vertical lines mark major tariff events listed in Appendix A.2. Goods are classified as affected if they belong to HS categories directly targeted by tariffs or to COICOP categories in which more than half of products are imported.

Figure 3 shows that prices of domestic goods in *affected* categories rose almost as much as those of imported goods in early March and displayed similar behaviors over time. In contrast, prices of domestic goods in *unaffected* categories were far more stable.

The modest upward drift in unaffected categories may reflect higher input costs from imported components or expectations of broader inflation. Retailers may also have raised domestic prices slightly to protect margins or maintain relative pricing across product lines. However, the evidence in Figure 3 suggests that the short-run price response of domestic goods was driven primarily by the degree of competition with imported products.

3.3 Country of Origin

A common feature of the 2025 tariffs is that they were applied broadly to all products imported from certain countries rather than to specific goods. To understand how this structure shaped retail price responses, we examine imported goods by country of origin. We begin with the

[3]The Appendix presents separate results for each condition and shows that both are important drivers of domestic price dynamics (see Figure A2 and Figure A3).

largest U.S. trading partners—China, Mexico, and Canada—which were also the first to be affected by the early 2025 measures.

Figure 4 presents price indices for products from each of these countries. All three show a temporary decline in prices during the holiday period, reflecting seasonal discounting, followed by clear divergence after the tariffs were imposed.

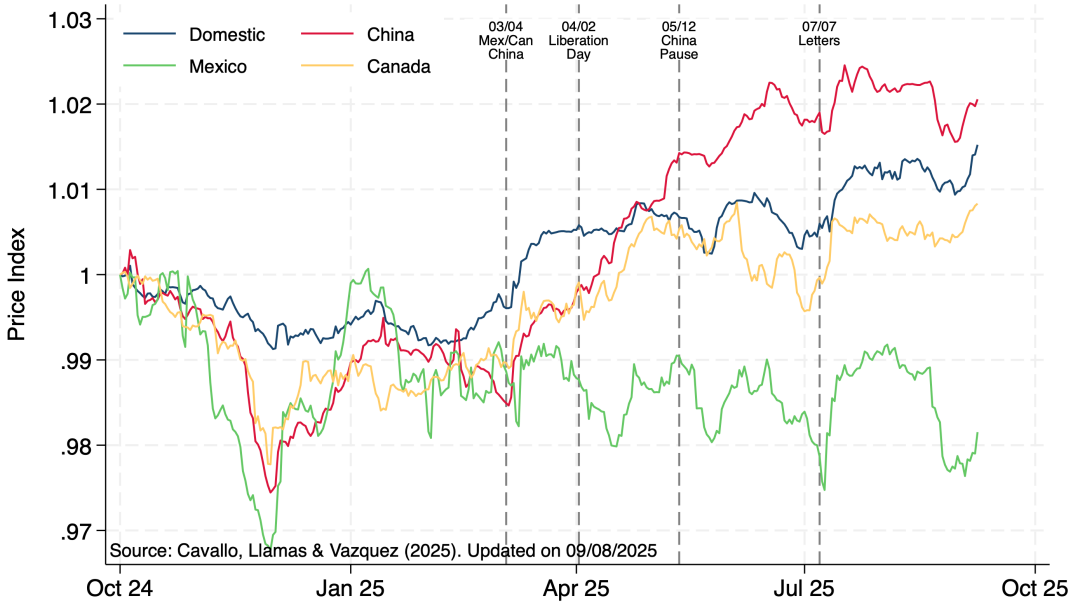

Figure 4: U.S. Retail Price Indices by Country of Origin

Notes: Indices are constructed from daily prices of five large U.S. retailers, normalized to 1 on October 1 2024. Vertical lines mark major tariff events listed in Appendix A.2. The figure includes price indices for domestic goods and for products imported from China, Canada, and Mexico, the three largest trading partners in the sample.

After the March 4 announcements, prices began to diverge. The initial spike was strongest for Chinese and Canadian goods but flattened toward the end of March, while prices of Mexican goods remained largely stable. The divergence widened following the "Liberation Day" measures on April 2. Chinese prices rose steadily through the summer as tariff rates on imports from China reached as high as 145 percent. Canadian prices increased in late April before declining slightly by July, whereas Mexican prices continued to follow their pre-tariff trend.

Relative to pre-tariff trends, by September 8 retail prices had risen by about 4.6 percent for Chinese goods, 3.6 percent for Canadian goods, and roughly 0.1 percent for Mexican goods (Appendix Figure A1). These heterogeneous price movements reflect both differences in tariff exposure and expectations about bilateral trade relations. China faced the highest statutory and applied tariff rates, with an average applied rate of 38 percent by July and few exemptions. In contrast, Canadian and Mexican goods benefited from extensive USMCA exemptions, resulting in applied rates of only 3 and 5 percent, respectively, in our sample. The sharper price

response for Canada relative to Mexico, despite similar effective rates, may reflect differences in expectations: Canada initially announced retaliatory measures, heightening perceived trade tensions, whereas Mexico maintained a more conciliatory stance.

Table 4 summarizes price changes by country for all origins with more than 1,000 products. It reports cumulative price increases since March 4 and deviations from pre-tariff trends (October 2024–March 2025). The last two columns show the statutory tariff rates, available until September, and the applied tariff rates, available until July.

Table 4: U.S. Retail Price Level Changes by Country of Origin

Country	**Price Change**	**Price Change vs. Pre-Tariff Trend**	**Applied Tariffs (July)**	**Statutory Tariffs (September)**
Turkey	26.08	33.52	9.8	15.0
Poland	13.30	14.39	9.5	15.1
United Kingdom	6.55	15.75	5.0	9.9
Thailand	5.33	7.38	5.9	19.6
Japan	5.11	7.51	13.0	14.8
Italy	4.27	5.72	8.4	15.1
India	4.05	9.19	6.1	48.9
France	3.90	4.80	6.8	10.0
Vietnam	3.88	6.37	5.4	20.1
China	3.56	4.56	27.5	29.6
Switzerland	3.02	4.16	2.0	35.8
Germany	3.01	4.20	9.5	14.9
Malaysia	2.82	10.38	5.7	18.8
Pakistan	2.03	3.41	9.7	19.0
United States	1.92	3.01	—	—
Canada	1.87	3.56	2.9	35.2
Taiwan	1.65	1.63	2.2	20.3
Korea	0.47	1.59	12.4	10.3
Mexico	−0.71	0.12	4.4	24.9
All Countries	**2.97**	**4.40**	**18.4**	**26.4**

Notes: Price changes reflect cumulative increases since the March 4 tariff announcements. Pre-tariff trends are estimated from country-specific regressions over the period October 1, 2024 to March 4, 2025. The values reported under "All Countries" represent weighted averages across countries, using the number of products in each as weights.

Table 4 shows substantial dispersion in price dynamics, highlighting marked cross-country heterogeneity. Retail price adjustments appear only partially aligned with countries' effective

tariff exposure. Some countries experienced price increases that closely track or even exceed their applied rates, while others—particularly China—show much smaller retail responses despite substantial tariff exposure.

The last two columns of Table 4 show that, in almost all cases, applied rates were substantially lower than statutory rates, partly explaining why price increases were generally modest in countries with broad exemptions or lower effective exposure. Across countries, however, the correlation between price changes and applied tariff rates is weak, as shown in Figure A6 in the Appendix. When the analysis is restricted to countries with more than 1,000 products—highlighted in red in the figure—the correlation disappears entirely. This pattern suggests that cross-country differences in price responses likely reflect other idiosyncratic factors, such as the composition of goods. For example, the sharp increase for Turkey is largely explained by "Carpets and Other Floor Coverings," which represent 87 percent of Turkish goods in our sample—highly differentiated items with limited substitution possibilities. Similarly, 67 percent of Polish imports fall under "Glassware, Tableware, and Household Utensils," many of which are made of steel and were directly targeted with 25 percent tariffs.

3.4 Categories

We explore the tariff impact across main categories of goods in Table 5, where we report price increases for all categories with more than 5,000 goods at the one-digit COICOP level, both relative to the level on March 4 and to the values predicted by pre-tariff trends.

Most of the short-run impact was concentrated in *Furnishings and Household Equipment* and *Miscellaneous Goods*. These categories rely heavily on imported products—about 65 percent of which originate from China. In contrast, less than 30 percent of the food items in our sample are imported, and price responses in that category were correspondingly smaller. In nearly all sectors, price increases for imported goods exceeded those for domestic goods. The main exception is food, where import penetration is limited and domestic competitors' prices appear largely unaffected.

Table 5: Retail Price Changes by Sector

Category	Price Change			vs. Pre-Tariff Trend		
	All	Imports	Domestic	All	Imports	Domestic
Furnishings, household equipment	4.21	4.93	2.06	6.74	7.93	3.57
Miscellaneous goods and services	2.94	3.96	1.67	5.20	6.62	3.42
Health	1.75	2.22	1.96	2.67	2.54	3.18
Food and non-alcoholic beverages	1.55	1.67	1.58	1.59	2.27	1.49
Recreation and culture	1.58	1.82	1.50	0.66	0.01	2.42
All sectors	**2.97**	**3.72**	**1.92**	**4.40**	**5.44**	**3.01**

Notes: "Price Change" columns measure differences between March 4 and September 8 2025; "vs. Pre-Tariff Trend" columns show deviations from trends estimated over October 2024–March 2025. Results are reported separately for all, imported, and domestic goods.

As expected, deviations from pre-tariff trends are generally larger than raw price increases, indicating a persistent change in trajectory. One exception is *Recreation and Culture*, dominated by electronics, where most imported products received tariff exemptions, explaining the lack of deviation from trend. Interestingly, domestic electronics prices have increased relative to trend, suggesting either substitution, opportunistic pricing, or the impact of tariffs on imported inputs.

A more detailed breakdown by three-digit COICOP categories is provided in Appendix Table A3. In general, the largest price increases occur among household goods, while the smallest are concentrated in food and beverages. Coffee stands out with an increase of over 8 percent, likely reflecting the effects of the 50 percent tariff on imports from Brazil, which constitute about a third of all coffee imports into the U.S. Another noteworthy result is for *Information Processing Equipment* (computers), where import prices are 9 percent below trend and domestic prices 11 percent above. This may indicate early signs of on-shoring, as reduced demand for Chinese imports is offset by higher-cost domestic production.

Overall, these sectoral results show that categories with greater reliance on foreign sourcing exhibit faster and larger price adjustments, while sectors with strong domestic production or tariff exemptions show less deviation from trend. These cross-category differences reinforce the broader finding that short-run tariff pass-through depends on multiple factors, including the structure of supply chains and the degree of competition within each sector.

3.5 Cheap vs Expensive Goods

An important factor that can influence tariff pass-through is the markup that firms charge, which can act as the buffer to absorb the additional tariff cost in the short-run. Although we do not observe markups directly, we can distinguish between cheaper and more expensive

varieties within product categories, which the literature has shown to differ systematically in their markups. For example, Mongey and Waugh (2025) show that firms offering lower-priced varieties tend to face more elastic demand from lower-income households and therefore set lower markups. As a result, these firms may be less able to absorb tariff-induced cost increases and more likely to pass them on to consumers.

To find evidence for this mechanism, we divide all imported goods within the narrowest 3-digit COICOP categories into quartiles based on their average pre-tariff price levels. We then construct separate price indices for each quartile and for the aggregate of all imported goods. The same product categories are represented in each quartile; only the relative price level of included varieties differs.

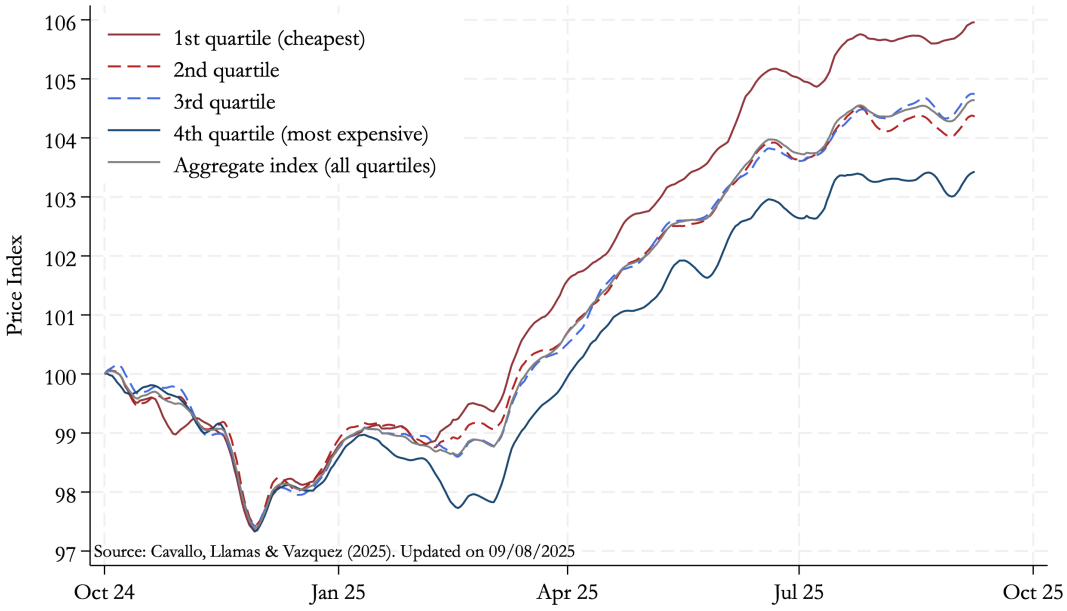

Figure 5: Price Indices of Imported Goods by Price-Level Quartile

Note: Imported goods within each 3-digit COICOP category are divided into quartiles based on average pre-tariff prices (October–March). Separate price indices are constructed for each quartile; the same product categories are represented in all indices, differing only by the relative price level of included varieties.

Figure 5 shows clear evidence of differential price responses across price tiers, consistent with markup-driven differences in pass-through. Between October 2024 and September 2025, prices in the cheapest quartile rose by about 5 percent, compared with 2.5 percent in the most expensive quartile. This is further evidence of *cheapflation*—a form of within-category inflation inequality documented by Cavallo and Kryvtsov (2024) and Chen, Levell and O'Connell (2024) in the post-Covid period.

The existence of cheapflation within categories can have important implications for the distributional effects of tariffs. Bils and Klenow (2001), Handbury (2021), and Jaimovich,

Rebelo, Wong and Zhang (2020) document that households sort across products by income, with lower-income households concentrating their spending on lower-priced varieties. When tariffs raise import costs, sellers of these low-markup goods seem to be passing through a larger share of the cost increase, amplifying inflation for low-income households. This result is consistent with Cravino and Levchenko (2017), who show that in the aftermath of a large devaluation, poorer households experienced higher cost-of-living increases than richer households because they consumed relatively more tradable goods and lower-priced varieties within categories. It is also consistent with Li (2019), who found stronger tariff pass-through in scanner data for products purchased by low-income consumers during the 2018–19 trade war.

4 Tariff Pass-through

In this section, we estimate the speed and magnitude of retail tariff pass-through, measured as the percentage of the change in import tariffs that are reflected in final consumer prices. A key advantage of our data is the frequency and granularity, which allows us to measure tariff exposure precisely and control for confounding factors that may also affect prices over time.

4.1 Event Study: Quick and Gradual

To visualize how quickly and gradually prices respond to tariffs, we first implement a high-frequency event study exploiting the sharp timing of the March 4 tariff announcement. The analysis compares daily price dynamics of *Imported*, *Domestic–Affected*, and *Domestic–Unaffected* goods within COICOP Level-1 categories, allowing us to isolate tariff-driven movements from broader trends such as seasonality, category-specific shocks, or concurrent policies. By treating *Imported* and *Domestic–Affected* goods as exposed and using *Domestic–Unaffected* items as a control group, we improve identification and achieve a cleaner contrast between exposed and unexposed products. The short event window minimizes contamination from slower-moving mechanisms, providing a focused view of the immediate pass-through of tariffs to retail prices.

Formally, we estimate

$$\text{Index}_{c,o,t} = \sum_{k=-10}^{15} \beta_k \, \mathbf{1}\{t - t_0 = k\} \; + \; \alpha_{co} \; + \; \lambda_t \; + \; \varepsilon_{c,o,t}, \tag{1}$$

where c indexes categories, $o \in \{\text{Imported, Domestic-Affected, Domestic-Unaffected}\}$ denotes origin/exposure grouping, and t_0 is the tariff date. The fixed effects α_{co} absorb all time-invariant heterogeneity within each COICOP × Origin cell, while λ_t denotes year–month fixed effects that capture shocks and common time trends affecting all units simultaneously.

Standard errors are clustered at the COICOP × Origin level.[4]

Figure 6 presents the results. The pre-treatment coefficients are flat and statistically insignificant, consistent with parallel trends. The series rises shortly after the tariff date and becomes significant within a week. Effects then accumulate smoothly—about 1.0 percent by day 10, 1.5 percent by day 20, and roughly 2.0–2.5 percent by days 60 to 90.

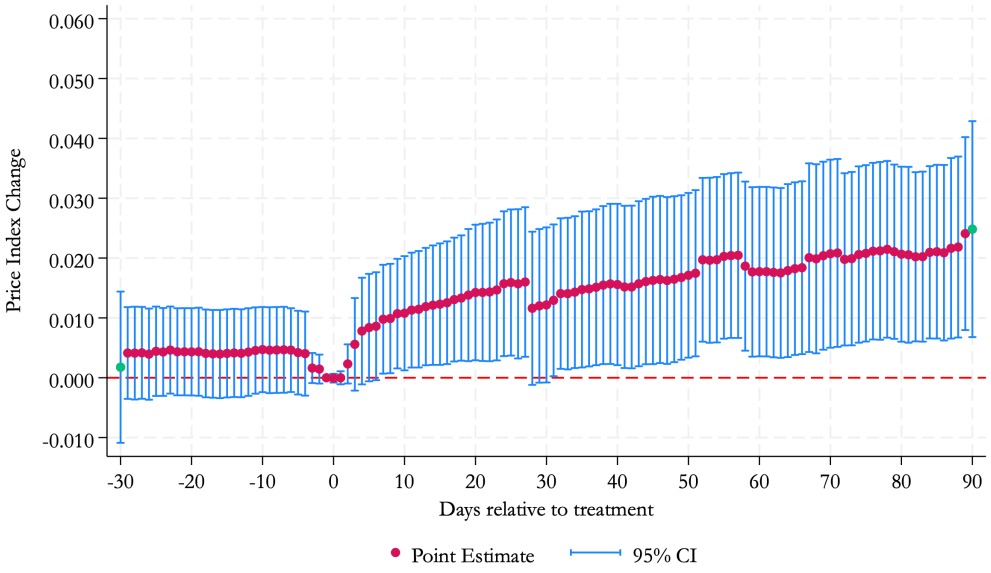

Figure 6: Event-study daily estimates for 90 days around tariff implementation.

Notes: Figure plots estimated coefficients from the event-study regression in Equation (1), showing daily price responses to the March 4 2025 tariff announcement. The sample covers imported, domestic-affected, and domestic-unaffected goods within COICOP Level-1 categories. Vertical bars denote 95 percent confidence intervals clustered at the COICOP × origin level.

Taken together, these results show clear evidence of a gradual but persistent pass-through to retail prices. Prices began to rise within a week of the March 4 announcement, and the effects accumulated steadily over time. The response was both rapid and sustained, with cumulative increases of roughly 2.5 percent within ninety days of implementation.

While this event study isolates the short-term tariff-driven movements from broader price trends and seasonal patterns, it also has important limitations. First, additional trade-policy measures were introduced over time, so estimates beyond the first few weeks may reflect subsequent policy changes. Second, greater precision on the magnitude of pass-through can be achieved using product-level regressions that incorporate the exact tariff rate faced by each item. The next section provides some standard pass-through regressions to address these issues.

[4]We exclude communications, clothing and footwear categories because we have no domestic goods. See more details in the Appendix.

4.2 Pass-through Regressions

To account for changes in tariff rates that occur with different magnitudes and timing, we now estimate a product-level pass-through regression using a distributed–lag specification with monthly observations, including periods where there is no price change. This approach is consistent with standard practices in the literature, enabling direct comparison with estimates from prior tariff episodes.

More formally, we estimate:

$$\Delta \ln p_{it} = \sum_{\ell=0}^{6} \gamma_\ell \, \Delta\tau_{i,t-\ell} + \alpha_k + \varepsilon_{it}.$$

where p_{it} is the retail price for item i in month t, and the term $\Delta\tau_{i,t-\ell}$ equals the log gross additional tariff rate that is applied to product i at month $t-l$. The fixed effect α_k captures the average sectoral inflation rate for sector k, defined at the COICOP 3-digit level. The lag structure allows monthly price changes to differentially reflect changes that went into effect at different points in time. We show the cumulative pass-through after 6 months by reporting the point estimate and standard error of $\sum_{\ell=0}^{6} \gamma_\ell$.

The first column of Table 6 reports results using statutory tariff rates. The estimated coefficient implies a six-month pass-through of 4 percent, meaning that a 20 percent statutory tariff increased the price of an affected import by roughly 0.8 percent relative to unaffected products in the same sector. This number is low, but we know from Figure 1 that the applied rates diverged sharply from statutory rates in mid 2025. When calculating pass-through, we need to use applied rates to account for these exemptions and delayed implementations.

Table 6: Pass-through Regression of Statutory and Applied Tariffs with Monthly Data

Variable		(1) Statutory	(2) Applied	(3) Dev. trend - Applied	(4)
Tariffs 6 mo.	$\left(\sum_{\ell=0}^{6}\gamma_\ell\right)$	0.041	0.141	0.200	
		(0.015)	(0.013)	(0.013)	
Over 20%	$\left(\sum_{\ell=0}^{6}\gamma_\ell^O\right)$				0.203
					(0.014)
Under 20%	$\left(\sum_{\ell=0}^{6}\gamma_\ell^U\right)$				0.034
					(0.040)
Adjusted R^2		0.001	0.002	0.002	0.003
Observations		462,546	374,214	309,911	309,911
Products		133,834	127,407	107,873	107,873
Sector Fixed effects		Yes	Yes	Yes	Yes

Notes: Table reports estimated coefficients from distributed-lag regressions of monthly log price changes on changes in statutory or applied tariff rates, as described in Section 4.2. Pass-through is measured as the cumulative response over six months. Standard errors are clustered by 3-digit COICOP sector.

Using the change in applied tariff rates as the independent variable raises the estimated pass-through to 14 percent, as shown in Column (2). This coefficient implies that a 20 percent applied tariff increased the price of an affected import by roughly 2.8 percent relative to unaffected products in the same sector.

The pass-through rises to 20 percent if we change the dependent variable to account for deviations from the pre-tariff trends, as shown in Column (3). For these specifications, we use data from January 2024 to March 2025 to estimate these trends at the product-level[5], and then measure the dependent variable as the log change in the price minus the predicted trend change. This pass-through coefficient implies that a 20 percent applied tariff rate increased the price of an affected import by roughly 4 percent relative to unaffected products in the same sector.

Finally, in Column (4) we report a specification that splits the tariffs into those that are above or below 20 percent. Our results suggest that the pass-through is mostly concentrated on goods that have experienced larger tariff increases above 20 percent. This suggests that firms experiencing larger cost increases are more likely to pass them on to consumers, as predicted by state-dependent models of price setting (Cavallo, Lippi and Miyahara (2024)).

How do these pass-through estimates compare to previous results in the literature? Evidence from the 2018–2019 trade war shows that the costs of tariffs were largely borne by U.S. firms at the time. Amiti, Redding and Weinstein (2019), Fajgelbaum, Goldberg, Kennedy and Khandelwal (2020), and Cavallo, Gopinath, Neiman and Tang (2021) find that import prices of tariffed goods did not decline, implying near-complete pass-through of those tariffs into higher

[5]Similar results are obtained with trends from October to March, shown in the Appendix.

duty-inclusive import prices.[6] However, this full pass-through at the border did not translate into significant consumer inflation. Cavallo, Gopinath, Neiman and Tang (2021) show that while import prices responded strongly to tariffs, only a small fraction of those cost increases reached retail prices after a year, reflecting incomplete transmission from border to consumer prices.

Our results are consistent with these findings but point to a faster and somewhat larger transmission in the 2025 episode. We estimate a short-run retail pass-through of about 20 percent—higher than in 2018–2019, yet still well below full transmission—reinforcing the view that tariff shocks are only partially reflected in consumer inflation in the short run. The gradual and incomplete pass-through we observe is consistent with models emphasizing the role of domestic cost components and distribution margins in dampening the effect of import cost shocks on retail prices as in Burstein and Jaimovich (2009). For a typical U.S. consumption good, distribution and retail costs represent roughly 40–50 percent of the final price, helping explain why even sizable tariffs result in modest increases in consumer price indices.

Our results also align with earlier evidence on incomplete tariff and cost pass-through for specific goods. Nakamura and Zerom (2010) analyze monthly retail sales data for coffee between 2000 and 2004 and estimate a delayed and incomplete cost pass-through, with roughly 16 percent transmitted after six months —very close to our estimate. Because coffee is a homogeneous good with well-measured input costs, their results provide a useful benchmark for interpreting our findings across a broader set of products. They also find near-complete pass-through when measured in levels (dollars), a pattern echoed in Sangani (2025) and Flaaen, Hortaçsu, Tintelnot, Urdaneta and Xu (2025), highlighting the importance of markups in explaining incomplete pass-through in percentages. Feenstra (1989) examines tariffs on Japanese cars and trucks in the 1970s and 1980s and reports long-run pass-through rates between 40 and 70 percent. Irwin (2019) studies sugar tariffs in New York City between 1890 and 1914 and finds that tariff increases raised consumer prices by roughly 40 percent.

5 Estimated Impact on CPI

In this section, we combine the observed price changes with official CPI expenditure weights to estimate the contribution of the tariffs to the all-items Consumer Price Index (CPI).

We construct a weighted aggregate index and measure its deviation from pre-tariff trends in several steps. First, within each 3-digit COICOP category, we compute a chained price index using daily item-level prices. Second, we aggregate these sectoral indices using normalized official CPI expenditure weights to obtain a daily weighted aggregate index, w_t.[7] Third, we es-

[6] Amiti, Redding and Weinstein (2020) and Flaaen, Hortaçsu, Tintelnot, Urdaneta and Xu (2025) document exceptions in sectors such as steel and wine, where foreign exporters absorbed part of the tariff costs.

[7] The weights are normalized to sum to one across the sectors covered by our sample.

timate a log-linear trend for w_t by regressing $\ln w_t$ on time over the period from October 1, 2024 to March 4, 2025, exponentiate the fitted values to obtain w_t^{trend}, and compute deviations from this trend in percentage points. Finally, we scale these deviations by 0.285 to approximate the contribution of the goods in our sample to movements in the all-items CPI.

Our estimates provide both lower and upper bounds for the contribution of the 2025 tariffs to the all-items CPI. The lower-bound estimate includes only imported goods directly affected by the tariffs and is consistent with the 20 percent pass-through measured in the previous section, implicitly assuming that domestic goods were unaffected. The upper-bound estimate also incorporates domestic goods, under the assumption that their price deviations since March were indirectly caused by the tariffs. As shown in Figure 7, imported goods alone account for a cumulative 0.45 percentage point increase in the all-items CPI since March, while including domestic goods raises the estimated contribution to about 0.7 percentage points.

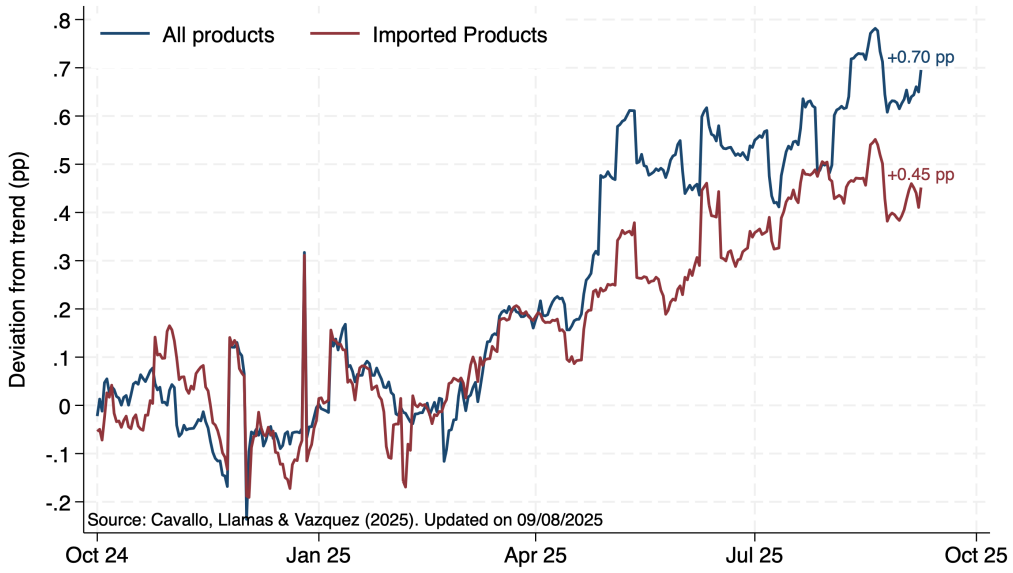

Figure 7: Cumulative Impact of Tariffs on All-Items CPI-U, NSA.

Notes: Figure shows the estimated contribution of tariff-affected goods to the all-items CPI. Deviations are measured relative to pre-tariff trends estimated over October 2024–March 2025. The aggregate indices are constructed by weighting daily sectoral price indices with official CPI expenditure shares.

Because this calculation covers only six months, the results should be interpreted as a partial-equilibrium estimate of the immediate inflationary impact—one that may influence, but does not yet incorporate, the monetary policy response. Consistent with this interpretation, the observed annual CPI inflation rate of 2.9 percent (NSA, CPI-U) in August 2025 would have been approximately 2.2 percent in the absence of the tariffs, a level closer to the Federal Reserve's inflation target. Viewed through this lens, the results illustrate how trade shocks can alter the short-run policy trade-off between inflation and output, even if their longer-run effects

ultimately depend on broader macroeconomic adjustments.

Barbiero and Stein (2025) use input–output tables to quantify both direct and indirect effects and project that the new measures would raise core PCE inflation by 0.5–0.8 percentage points—substantially larger than the 0.1–0.2 point contribution they estimate for the 2018 tariffs. Similarly, Minton and Somale (2025) estimate that tariffs had lifted core goods prices by about 0.3 percent by March 2025. Although methodological differences lead these studies to somewhat higher pass-through estimates than ours, their implied aggregate inflation effects are broadly consistent with our findings.

6 Conclusion

This paper presents a high-frequency analysis of the short-run impact of the 2025 U.S. tariffs on consumer prices, using a novel combination of daily retail price data, detailed country-of-origin information, and tariff classifications. By constructing customized price indices, we track how prices evolved across affected and unaffected product categories, and between imported and domestic goods. The results underscore how trade policy changes can lead to immediate but gradual price responses—patterns often obscured in aggregate inflation statistics.

We find that the tariff announcements led to a quick reaction but gradual impact on retail prices during the first six months. Imported goods rose by about 5.4 percent relative to the levels predicted by pre-tariff trends. Domestic goods also experienced price increases of around 3 percent, primarily in categories directly competing with imports, suggesting that competitive pricing behaviors are important in the short run. These findings highlight the broad reach of trade policy, which can influence retail prices even for goods not directly subject to tariffs.

There is significant heterogeneity across goods from different origins. Among the main U.S. trading partners, Chinese goods experienced the largest price increases. In contrast, goods from Canada and Mexico—where applied tariff rates were much lower—showed smaller adjustments. At the sector level, the greatest impacts were concentrated in "Furnishings and Household Goods," which include many Chinese-made products. Price increases were also larger for the cheapest varieties within categories, suggesting that firms' ability to absorb cost shocks through markups plays a central role in shaping short-run adjustment dynamics.

Our pass-through estimates reinforce the descriptive evidence. Using product-level regressions that relate monthly price changes to changes in applied tariff rates, we find that roughly 14 to 20 percent of the tariff changes were reflected in retail prices within six months. This magnitude is consistent with incomplete but nontrivial transmission, implying that a 20 percent tariff raised the retail prices of affected goods by about 4 percent relative to unaffected products in the same category.

Aggregating these product-level effects using official CPI expenditure weights, we estimate

that the 2025 tariffs added roughly 0.7 percentage points to the all-items Consumer Price Index within six months of implementation. This contribution is economically meaningful: without the tariffs, the annual inflation rate in the all-items Consumer Price Index (CPI-U, NSA)—which stood at 2.9 percent in August 2025—would have been close to 2.2 percent, a level broadly consistent with the Federal Reserve's inflation target.

Several factors may have contributed to this gradual pricing response. These include concerns about consumer backlash, the front-loading of inventories, trade diversion strategies, exemptions, or delays in implementation, and, most notably, heightened uncertainty about the scope and duration of the measures. Many of these mechanisms were already observed during the first U.S.–China trade war, but the current episode appears to involve an even greater degree of policy uncertainty. This uncertainty likely discourages firms from making immediate or full price adjustments, contributing to the gradual and uneven pass-through observed across product categories.

In short, we find that the short-run retail tariff pass-through was quick, gradual, and incomplete. It was quick to begin, with retailers responding rapidly to tariff news. It was gradual to unfold, as retailers adjusted prices progressively over time. And it was incomplete after six months, with about 20 percent of the tariff changes reflected at the consumer level. Given the uncertainty surrounding the tariff announcements, our results suggest pass-through may continue to accumulate gradually over time, putting persistent upward pressure on inflation statistics.

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Appendix

A Data and Methods

A.1 The Tariffs Dataset

A.1.1 Statutory tariffs

We construct a panel of statutory tariff rates from the U.S. International Trade Commission's Harmonized Tariff Schedule (HTS/HTSUS) Revisions Data Archive (hts.usitc.gov). The archive records every revision to the HTS since 1989, including tariff columns and statistical annotations at the ten–digit (HS-10) level. Our sample window begins with the revisions issued in October 2024 and covers all subsequent updates through calendar year 2025.

Each HTS revision reports the ad valorem and specific rates at the HS-10 level. Using these files, we harmonize HS-10 lines across consecutive revisions and build a revision-by-country-by-HS-10 panel. Let r index revisions, c countries of origin, and h HS-10 subheadings. For each (r, c, h), we compute the statutory change

$$\Delta\tau_{rch} \equiv \tau_{rch} - \tau_{r^-ch},$$

where r^- denotes the immediately preceding revision.

A distinctive feature of the 2025 policy environment is that many measures are promulgated via Chapter 99 ("Temporary Modifications"). Chapter 99 provisions appear as separate lines whose numbers begin with 99 and specify additional or temporary duties that apply to articles classified under referenced base subheadings. Because these adjustments are not encoded as new rates on the base HS-10 lines themselves, a mechanical comparison of successive revisions would miss them. We therefore identify all relevant Chapter 99 entries in each revision, read the associated descriptions and cross-references, and apply the specified adders (e.g., "an additional duty of 25% on products of country c classified under subheading h") to the corresponding (c, h) pairs in our panel.[8] This procedure yields a unified statutory rate for each country–HS-10 combination by revision date, and $\Delta\tau_{rch}$ captures both base-line changes and Chapter 99 adders.

Our baseline is the first revision at or after October 2024 ("2024, Revision 6" in the archive). We carry rates forward between revisions in the absence of changes, and we time-stamp each modification using the effective date reflected in the revision. The resulting dataset provides a complete record of statutory tariff changes for all country–HS-10 pairs from late 2024 through 2025.

[8] In practice, Chapter 99 lines can impose ad valorem or specific adders, temporary suspensions, or program-contingent differentials. We map each entry to its referenced HS-10s and countries of origin, respecting any exclusions, notes, or effective-date qualifiers stated in the revision.

A.1.2 Applied tariffs

We complement the statutory series with realized duties from the U.S. Census Bureau's monthly import statistics (census.gov). The data are reported at the ten–digit HS (HS-10) level by country of origin and month. We use the import series aligned with *imports for consumption*, for which customs duties are assessed.[9]

From this source we extract three variables:

- **Country of origin:** The reported country of origin for each HS-10 import line.
- **General value of imports:** The monthly value (USD) of all entries, excluding insurance and international freight.
- **Duties collected:** The monthly customs duties paid by U.S. importers (USD).

Let m index months, c countries of origin, and h HS-10 subheadings. We compute the effective applied tariff rate (an ad valorem equivalent that captures both ad valorem and specific charges) as

$$a_{mch} = \frac{Duties_{mch}}{Import\ Value_{mch}}.$$

Two limitations are inherent to the Census series. First, publication occurs with approximately a two-month delay relative to calendar time; at the time of writing, the latest available month is July 2025. Second, applied rates are only observed when there are imports: if an HS-10 from country c does not enter in month m, no duties are recorded and a_{mch} is unobserved.

[9] In the Census trade statistics, "duties" are customs import duties assessed at entry. "CIF value" equals cost, insurance, and freight to the U.S. port of entry. "Dutiable value" is the customs value of the subset of entries subject to duty.

A.2 Timeline of Main U.S. Tariff Measures in 2025

Date	Description
February 4, 2025	10% tariff imposed on all imports from China.
March 4, 2025*	Increase from 10% to 20% on all imports from China. 25% on all imports from Mexico. 10% on Canadian energy products (oil, natural gas, electricity). 25% on all other Canadian imports.
March 4, 2025	Exemptions for Canadian and Mexican goods meeting USMCA rules of origin.
March 12, 2025	25% tariffs on steel, aluminum, and derivative products take effect.
April 2, 2025*	"Liberation Day" tariffs announced: 10% baseline on nearly all countries, with higher reciprocal rates for countries driving sustained U.S. trade deficits.
April 3, 2025	25% tariff on automobiles takes effect; tariffs on auto parts delayed until May 3.
April 10, 2025	10% baseline tariff takes effect on nearly all countries; tariffs on Chinese imports raised to 145%.
April 11, 2025	Exemptions announced for a list of semiconductor-containing products, including smartphones and other consumer electronics.
May 3, 2025	25% tariff on auto parts takes effect.
May 12, 2025*	90-day pause with China: reduction in the additional tariff on imports from China from 125% to 10% (subject to carve-outs for certain products) for 90 days.
June 3, 2025	50% tariffs on steel, aluminum, and derivative products take effect.
June 11, 2025	President Trump announces deal with China on Truth Social; no legal details provided.
June 23, 2025	Additional steel tariffs on appliances take effect.
July 7–9, 2025	New tariff rate announcements, including 25% for Japan and South Korea, and 50% for Brazil. Implementation delayed until August 1.
August 1, 2025	50% tariffs on copper and derivative products take effect.
August 18, 2025	Additional steel and aluminum tariffs on more derivative products take effect.

Source: Trump's Trade War Timeline 2.0: An Up-to-Date Guide (2025), Peterson Institute for International Economics.

*Note: * These events are marked with vertical lines in figures.*

B Supplementary Price Dynamics

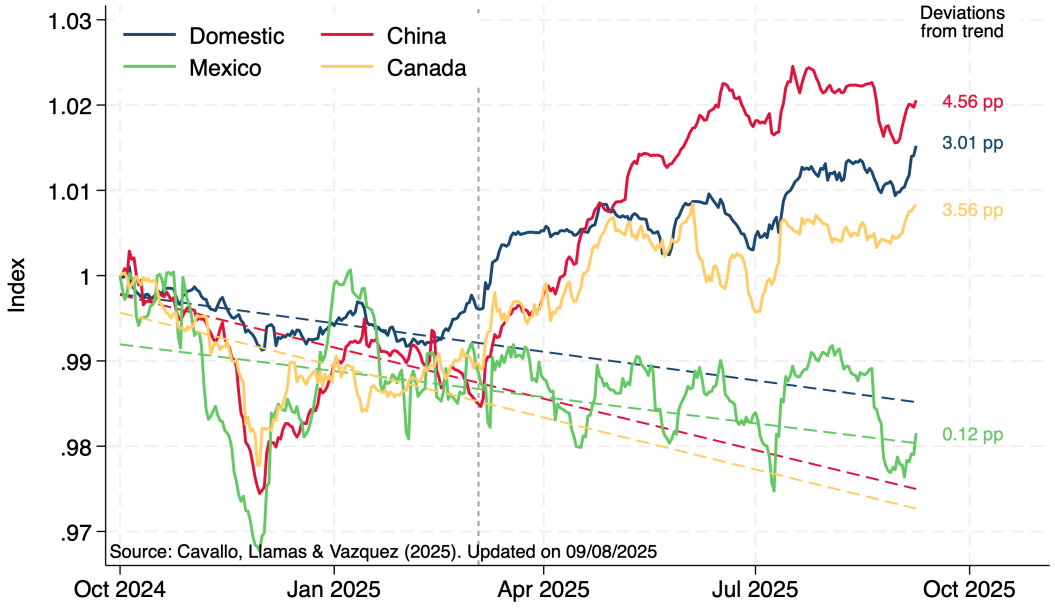


Figure A1: U.S. retail price indices by country of origin with pre-tariff trends

Note: Data from five large U.S. retailers. Vertical line denotes March 4, 2025. Pre-tariff trends estimated from October 1, 2024 to March 4, 2025 using a robust regression with preliminary outlier deletion based on Cook's distance.

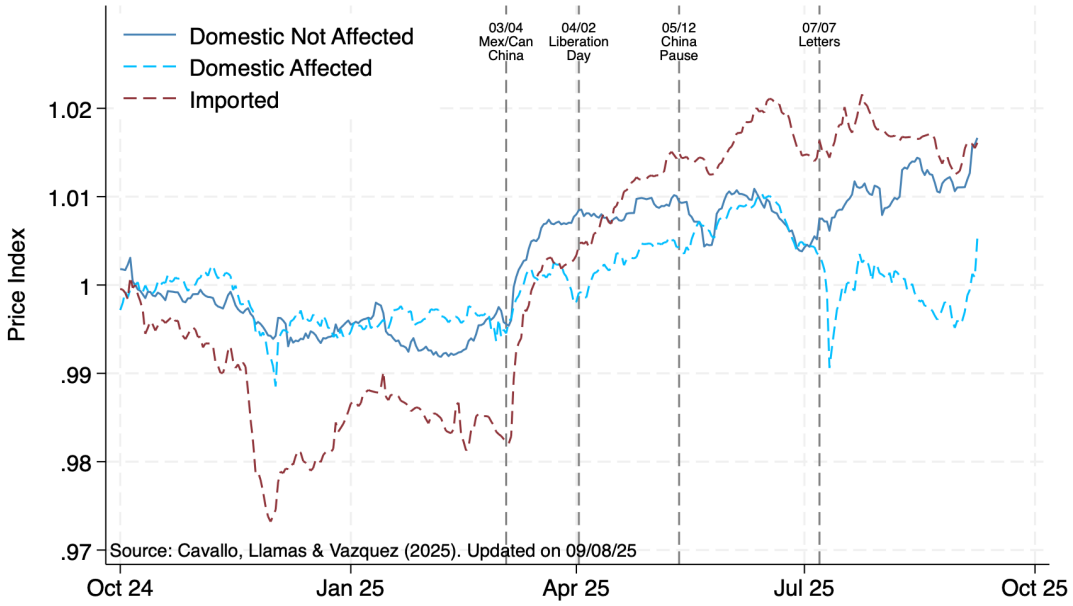


Figure A2: U.S. retail price indices in affected and unaffected HS categories

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events. Only HS categories impacted before August 2025 are considered affected.

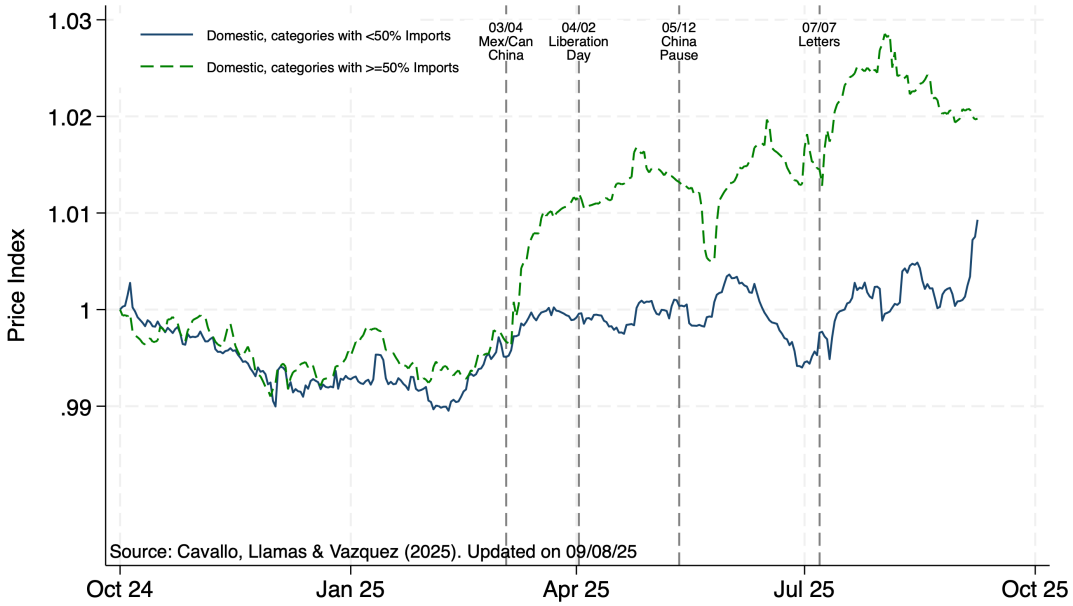


Figure A3: U.S. retail price indices in categories with different import shares

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events.

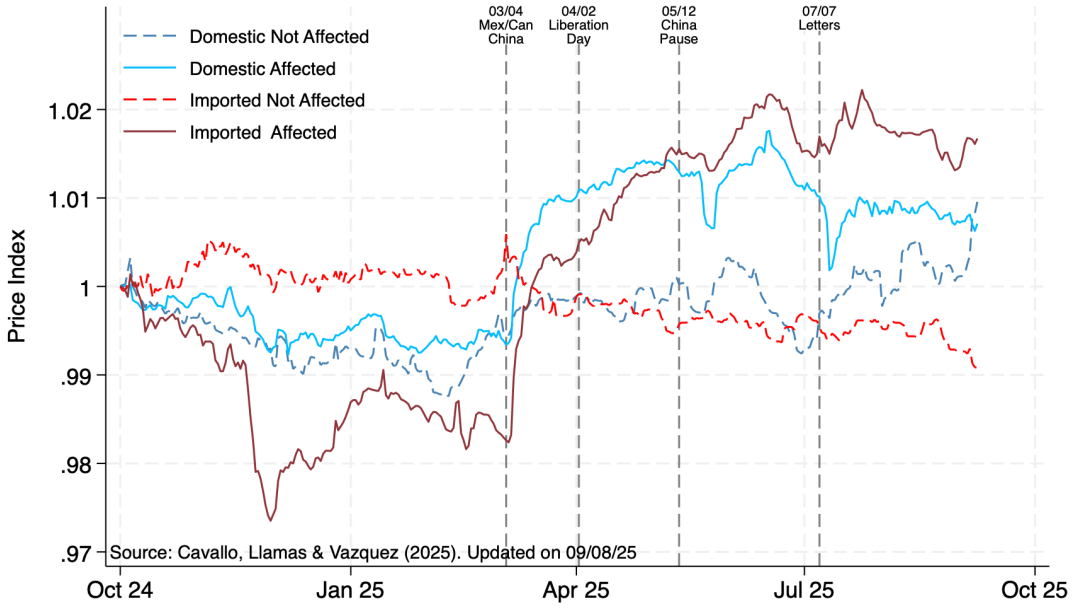


Figure A4: Domestic and imported goods in affected and unaffected categories

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events.

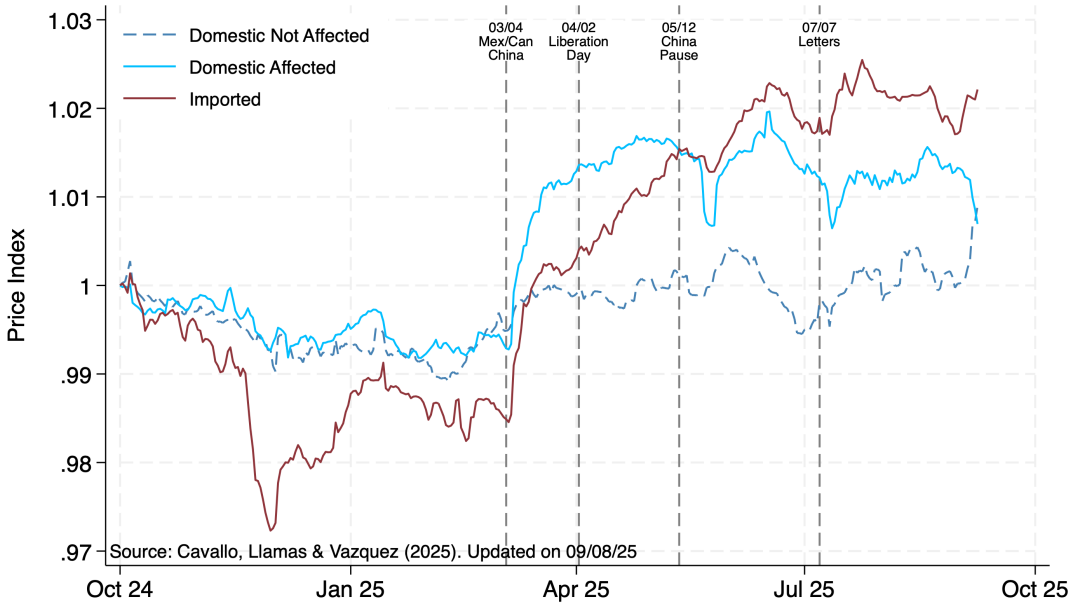
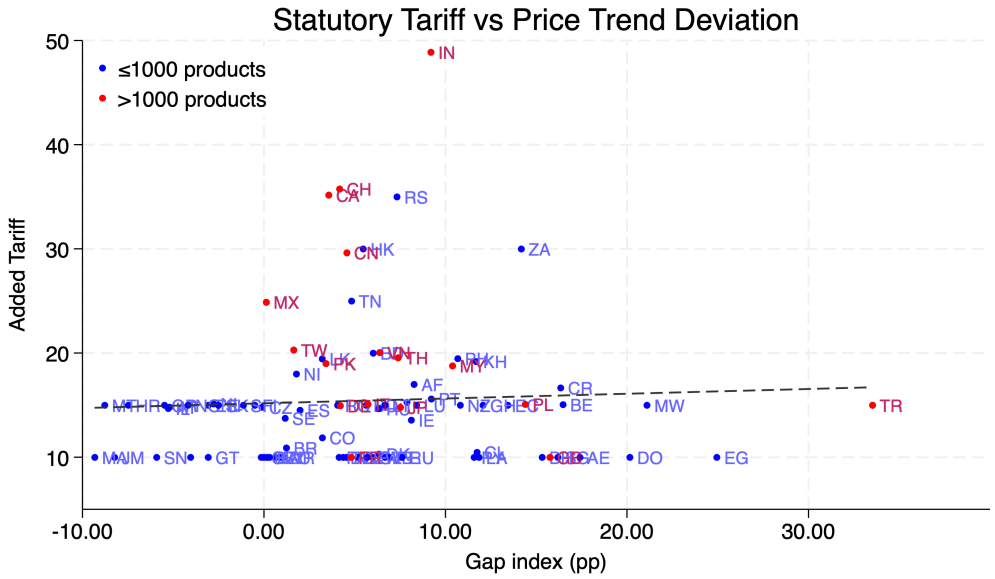


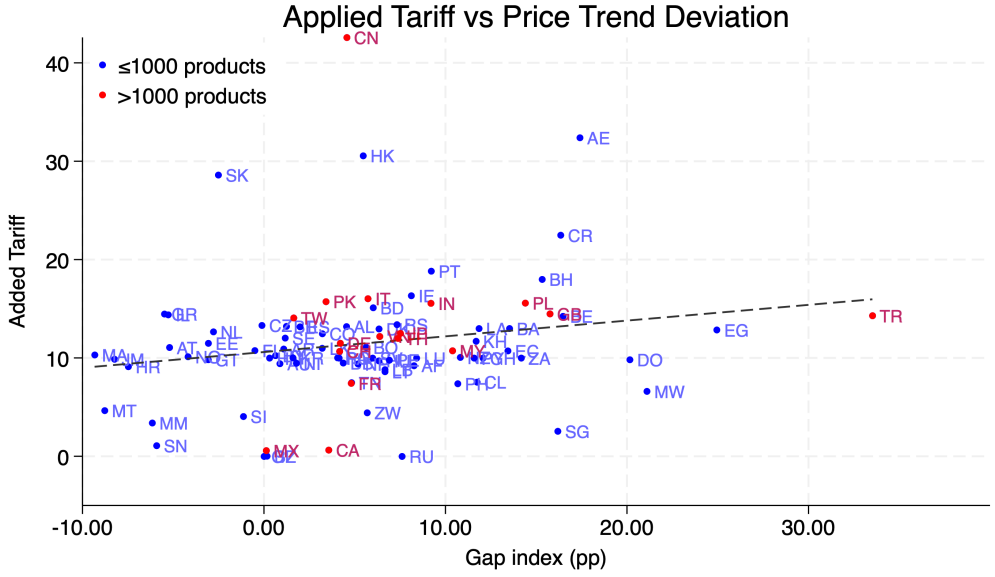
Figure A5: Domestic and all imported goods in affected and unaffected categories

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events.

B.1 Tariffs and price trends



(a) Statutory tariffs



(b) Applied tariffs

Figure A6: Correlation between tariffs and price trend deviations.

B.2 Extended data: starting in January 2024

The plots in this subsection extend the main results back to January 1, 2024. They show that pre-tariff trends remained stable from January 2024 through early March 2025, indicating that observed movements after March reflect tariff impacts rather than seasonality.

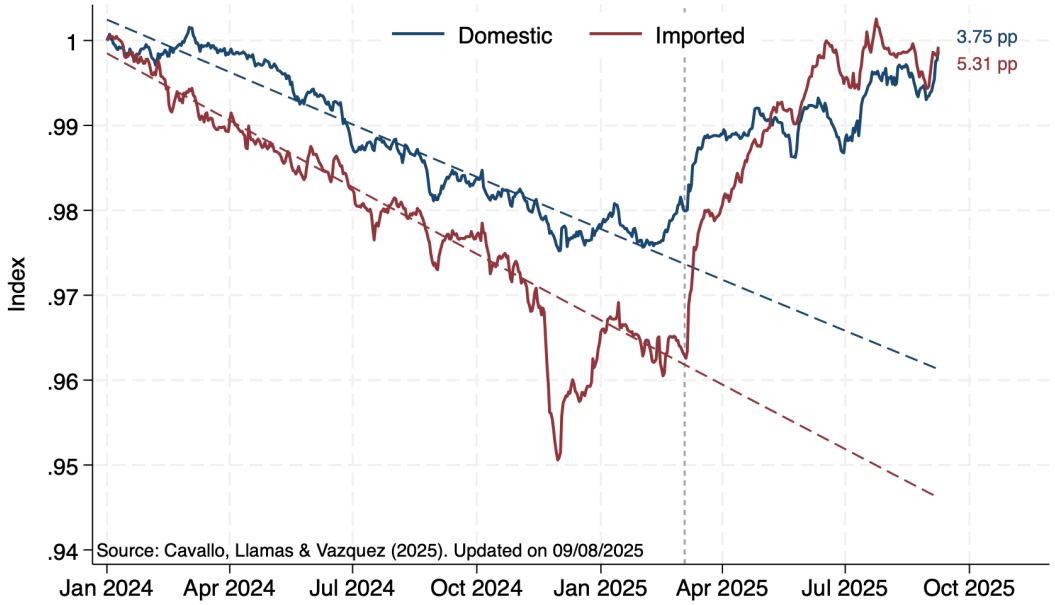


Figure A7: U.S. retail price indices with pre-tariff trends (extended horizon)

Note: Data from five large U.S. retailers. Vertical line denotes March 4. Pre-tariff trends estimated from January 1, 2024 to March 4, 2025 using a robust regression (Huber and biweight estimators) with preliminary outlier deletion based on Cook's distance.

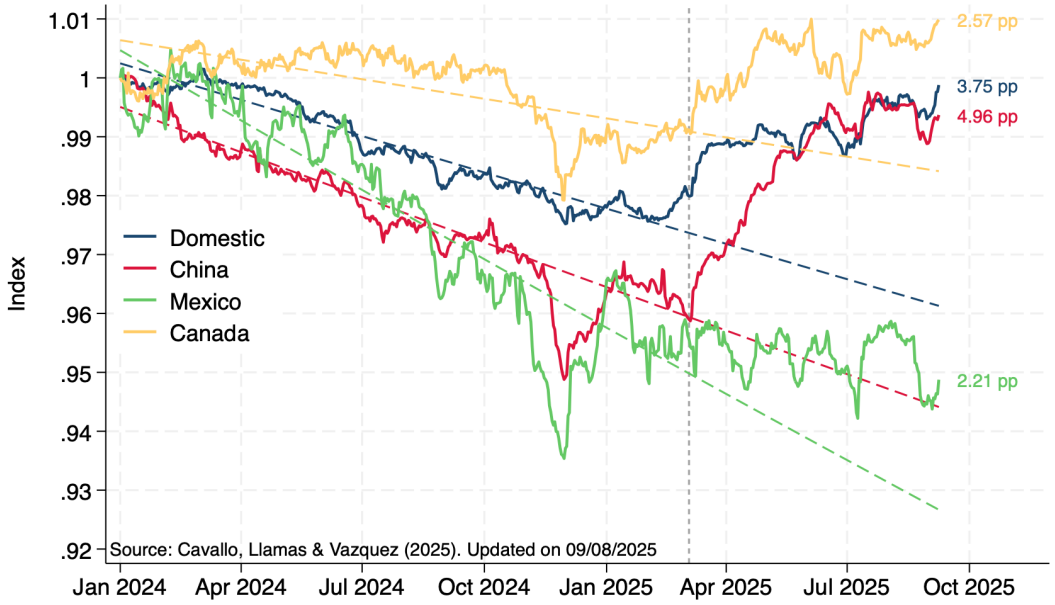


Figure A8: U.S. retail price indices by country of origin with pre-tariff trends (extended horizon)

Note: Data from five large U.S. retailers. Vertical line denotes March 4. Pre-tariff trends estimated from January 1, 2024 to March 4, 2025 using a robust regression (Huber and biweight estimators) with preliminary outlier deletion based on Cook's distance.

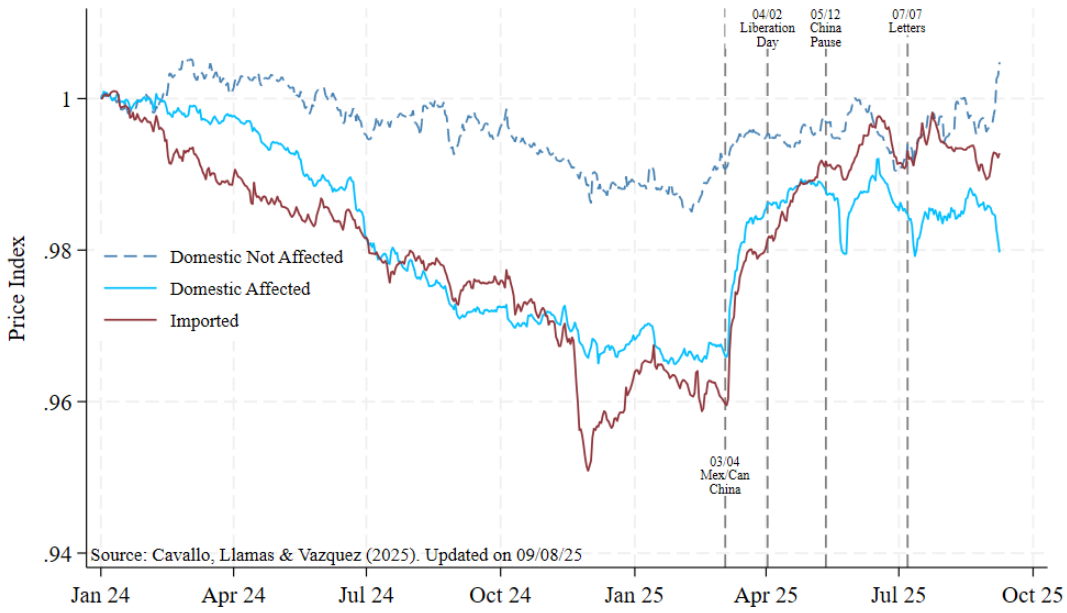


Figure A9: U.S. retail price indices in affected and unaffected HS categories (extended horizon)

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events.

Figure A10: U.S. retail price indices by import share (extended horizon)

Note: Data from five large U.S. retailers. Vertical lines denote major tariff events.

C Sectoral and Category Breakdowns

Category	Canada	China	India	Mexico	Taiwan	Turkey	US	Vietnam	All others	Total
Food and non-alcoholic beverages	854	532	377	667	42	64	25,308	70	5,281	33,195
Alcoholic beverages, tobacco and narcotics	14	4	0	15	0	0	1,662	0	250	1,945
Clothing and footwear	2	206	4	1	0	6	46	61	540	866
Housing, water, electricity, gas and other fuels	75	626	8	9	12	2	1,875	3	194	2,804
Furnishings, household equipment	2,392	78,739	13,180	1,746	4,049	9,345	56,099	4,738	22,127	192,415
Health	94	945	114	72	80	4	4,623	11	1,304	7,247
Transport	177	4,744	64	701	744	26	5,698	73	1,627	13,854
Communication	33	2,591	8	37	19	5	1,730	127	423	4,973
Recreation and culture	428	34,459	417	1,473	1,250	14	27,212	1,440	10,441	77,134
Miscellaneous goods and services	576	5,822	388	280	68	11	10,324	148	7,054	24,671
Total	4,645	128,668	14,560	5,001	6,264	9,477	134,577	6,671	49,241	359,104

Table A2: Counts by COICOP category and country of origin

Table A4: Retail Price Changes by Sector

Category	**Price Change**			**vs. Pre-Tariff Trend**		
	All	Imports	Domestic	All	Imports	Domestic
Furnishings, household equipment	4.08	4.78	1.99	6.74	7.28	5.25
Miscellaneous goods and services	2.93	3.90	1.69	3.47	5.07	1.60
Health	1.74	2.23	1.94	2.66	2.50	3.21
Recreation and culture	1.56	1.80	1.48	2.60	2.94	2.32
Food and non-alcoholic beverages	1.55	1.68	1.58	2.78	1.87	3.18
All sectors	**2.91**	**3.64**	**1.89**	**4.40**	**5.31**	**3.75**

Note: Price changes reflect cumulative increases since tariff announcements. Pre-tariff trend estimates are based on category-specific regressions between January 1st and March 4th.

Table A3: Price Changes Relative to Pre-Tariff Trend (%)

Category	All	Imported	Domestic
Carpets and other floor coverings	36.23	36.20	35.67
Other articles of clothing and clothing accessories	10.93	12.40	5.71
Coffee, tea and cocoa	8.67	9.21	9.12
Other personal effects	7.65	7.53	9.30
Photographic and cinematographic equipment and optical instruments	6.68	6.17	11.00
Major tools and equipment	6.41	6.38	3.47
Gardens, plants and flowers	6.34	6.64	3.27
Furniture and furnishings	5.75	6.09	4.36
Major durables for indoor and outdoor recreation including musical instruments	5.49	3.14	9.33
Glassware, tableware and household utensils	5.41	7.15	-1.61
Fruits	5.40	6.35	4.04
Household textiles	5.00	5.23	3.52
Materials for the maintenance and repair of the dwelling	4.99	6.26	4.24
Major household appliances whether electric or not and small electric household appliances	4.95	6.00	2.82
Other medical products; therapeutic appliances and equipment	4.91	4.62	5.64
Small tools and miscellaneous accessories	4.14	4.13	4.16
Miscellaneous printed matter; stationery and drawing materials	3.69	4.10	3.84
Food products n.e.c.	3.41	1.22	4.25
Electrical appliances for personal care; other appliances, articles and products for personal care	3.35	4.56	2.61
Non-durable household goods	3.10	3.97	3.12
Meat	2.47	6.38	1.99
Mineral waters, soft drinks, fruit and vegetable juices	2.13	-1.85	2.88
Spare parts and accessories for personal transport equipment	1.85	4.35	-0.68
Pharmaceutical products	1.73	0.45	2.71
Fish and seafood	1.58	5.66	-5.25
Games, toys and hobbies	1.53	0.26	4.35
Wine	1.50	-0.03	1.92
Bread and cereals	0.72	-0.30	1.16
Pets and related products, veterinary and other services for pets	0.39	-0.64	0.89
Telephone and telefax equipment	0.37	1.02	-0.23
Vegetables	0.22	4.68	-1.40
Fuels and lubricants for personal transport equipment	-0.62	-0.24	-0.70
Milk, cheese and eggs	-1.30	7.98	-2.97
Equipment for the reception, recording and reproduction of sound and picture	-1.30	-3.30	5.95
Sugar, jam, honey, chocolate and confectionery	-2.00	-1.80	-2.01
Beer	-2.48	-10.96	-1.75
Oils and fats	-3.17	-2.16	-4.17
Equipment for sport, camping and open-air recreation	-4.43	3.60	-9.86
Spirits	-6.19	-7.60	-5.59
Information processing equipment	-8.15	-9.59	11.48
All sectors	4.40	5.44	3.01

Table A5: U.S. Retail Price Level Changes by Country of Origin with Extended Horizon

Country	Price Change	Price Change vs. Pre-Tariff Trend	Applied Tariffs (July)	Statutory Tariffs (September)
Turkey	25.70	33.44	9.8	15.0
Poland	13.52	13.00	9.5	15.1
United Kingdom	6.44	8.92	5.0	9.9
Thailand	5.20	6.91	5.9	19.6
Japan	4.96	8.85	13.0	14.8
Italy	4.28	4.33	8.4	15.1
France	3.93	4.46	6.8	10.0
India	3.91	7.70	6.1	48.9
Vietnam	3.72	7.00	5.4	20.1
China	3.47	4.96	27.5	29.6
Switzerland	3.04	2.20	2.0	35.8
Germany	2.99	4.82	9.5	14.9
Malaysia	2.76	7.64	5.7	18.8
Pakistan	1.93	−0.82	9.7	19.0
United States	1.89	3.75	—	—
Canada	1.87	2.57	2.9	35.2
Taiwan	1.63	2.55	2.2	20.3
Korea	0.46	1.93	12.4	10.3
Mexico	−0.69	2.21	4.4	24.9
All Countries	**2.91**	**4.30**	**18.4**	**26.4**

Note: Price changes reflect cumulative increases since tariff announcements. Pre-tariff trend estimates are based on country-specific regressions between January 1 and March 4, 2025.

D Event Study: Additional Details

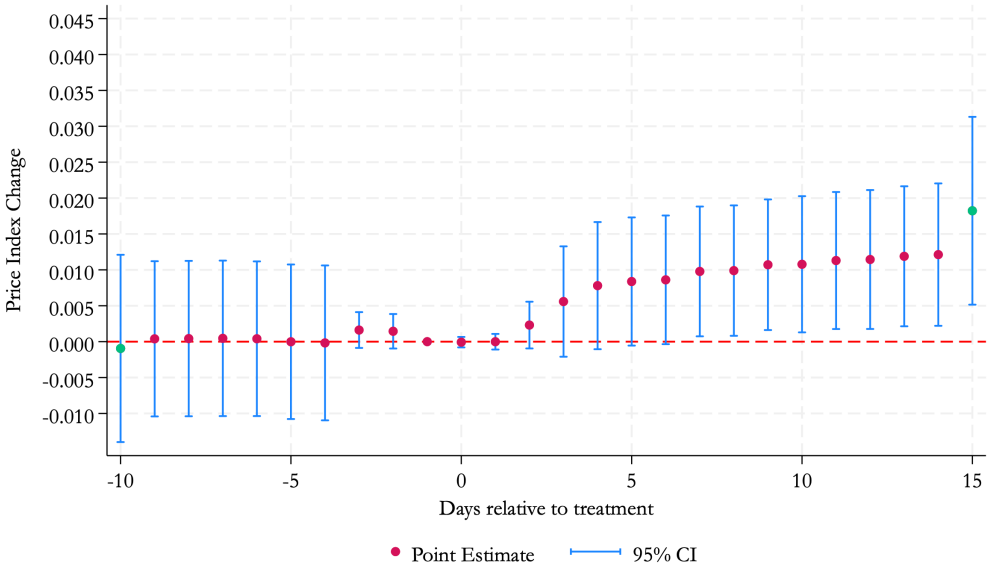


Figure A11: Event-study (first 15 days)

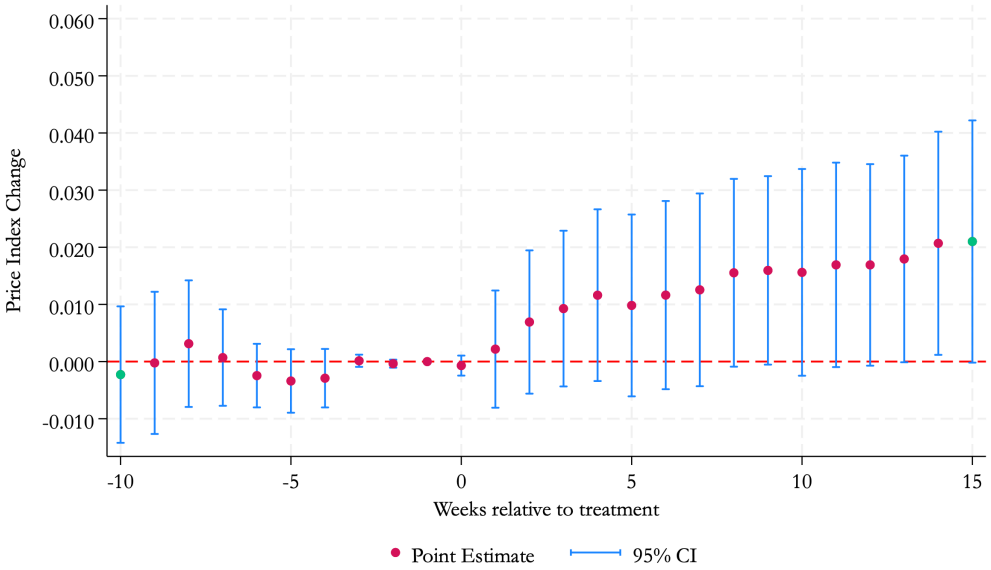


Figure A12: Event-study estimates (weekly)

D.1 All domestic as untreated group

As an additional specification, we collapse the exposure split to a two-group design that places *all* domestic products in the control group and compares them to imported goods. We build daily indices

at the COICOP Level-1 × origin level and re-estimate the event study. The results—reported in Appendix Figure A13- show a slower and smaller response: coefficients take longer to become significant and accumulate more gradually. This attenuation is consistent with contamination of the control by tariff-exposed domestic items, implying that the two-group estimates are conservative lower bounds on short-run pass-through and motivating the three-category split used in the main analysis.

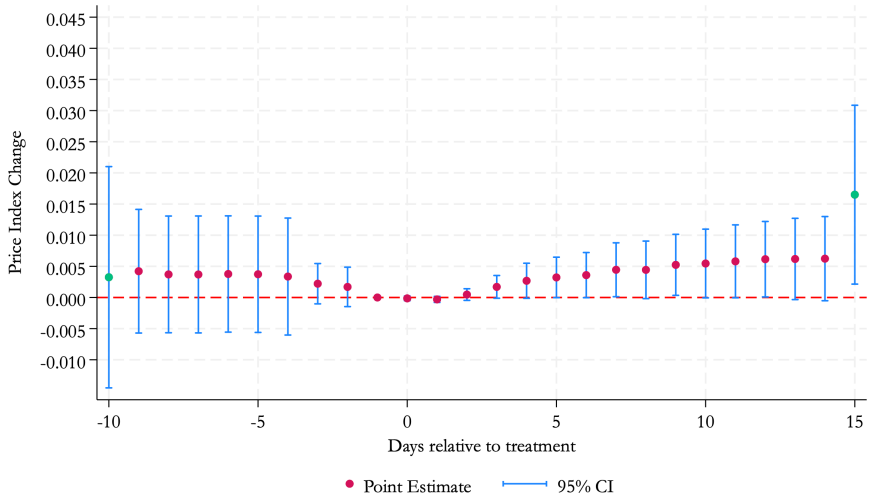


Figure A13: Event-study estimates around tariff implementation (daily)