The Design and Effect of Tariff Retaliation: Evidence from the European Union*

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Abstract

We show that the EU's 2018 retaliation against US steel and aluminum tariffs was small and targeted goods with low import dependence. For the majority of tariffed goods, the US import share declined notably and remained below pre-2018 levels even after the retaliatory tariffs were lifted, reflecting asymmetric and permanent tariff effects on trade diversion. Moreover, although the retaliatory tariffs were rapidly and fully passed through to EU importers, they had no discernible inflationary effects. However, due to its larger scope, we estimate that implementing the EU's proposed 2025 retaliation against the US would increase consumer prices noticeably.

Keywords: Trade Wars, Retaliatory Tariffs, Tariff Pass-Through, Inflation, US-EU Trade Relations

JEL Classification: E31, F13, F14, F42, F62

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1 Introduction

The foreign response to recent US trade policy changes emphasizes that tariff retaliation is an inextricable element of a less multilateral and more protectionist global trade order. While many of the latest retaliatory threats against the US have been suspended following bilateral trade deals, these truces are often incomplete and fragile as US commitments are subject to legal challenges and fast-paced political developments. Thus, the risk of foreign tariff retaliation remains exceptionally high.

Despite the growing relevance of tariff retaliation in the current trade landscape, there is only scant evidence regarding its impact on the retaliating economies. While there is a burgeoning literature studying the effects of US tariffs on the domestic economy, its findings cannot be generalized to the foreign effect of retaliatory tariffs. First, the design and universality of retaliatory tariffs differs profoundly from US tariffs. Second, most economies depend more strongly on international trade than the US. Thus, understanding the effects of retaliation on the retaliator necessarily requires examining particular retaliatory episodes and foreign data.

Our paper closes this gap in the literature by assessing the trade destruction and inflationary effect of the EU's 2018 retaliation against US steel and aluminum tariffs. Between June 2018 and January 2022, the EU applied 10 and 25 percent ad-valorem duties on US imports which equaled about $3.3bn in 2017. Tariffed products ranged from steel and aluminum to consumer goods like bourbon, motorcycles, and apparel. With this selection of products, the EU sought to minimize domestic economic disruptions while maximizing pressure on the US to rescind the steel and aluminum tariffs.

Standard trade theory suggests that the incidence of tariffs, whether they are borne by exporters through lower pre-tariff prices or by importers through higher post-tariff prices, depends on the relative, product-specific elasticities of supply and demand. Hence, if the EU's demand for the tariffed US imports was inelastic, or if EU importers could not easily find substitutes, either from domestic or third-country suppliers, the retaliatory tariffs would have materialized as a tax on European businesses and consumers, resulting in inflationary pressures. We assess these mechanisms from an empirical perspective by studying the evolution of import quantities and prices of tariffed and non-tariffed products.

Our key findings are: First, the EU's import values of tariffed products fell by about half from the second month after the tariffs were implemented and did not recover fully after the retaliatory tariffs were suspended. Indeed, our estimate for the import demand elasticity of tariff implementation is about twice as large as that of tariff suspension. As a result of these asymmetric effects, the retaliation left permanent scars in US-EU trade flows.

Second, US exporters did not lower their pre-tariff prices to absorb the retaliatory tariffs. Instead, they were rapidly and comprehensively passed-through into the "at-the-dock" import prices of European importers. This finding is consistent with pass-through evidence for recent US tariffs.[1] Yet, it adds that even when tariffs target small import values and a large variety of products, they are still associated with high pass-through.

However, despite their immediate passthrough, we find that the retaliatory tariffs did not lead to inflationary pressures in the EU. To arrive at this conclusion, we develop concordances between classification schemes of European trade and price data and construct granular measures of tariff exposure for EU price indices, including country-consumer category specific exposures. We then regress measures of producer and consumer excess inflation on these exposures and also conduct an investigation using a difference-in-difference approach.

Two particular features of the EU's tariff retaliation explain its effect. First, the retaliation was asymmetric to the triggering US tariffs as it did not exclusively tariff steel and aluminum imports but distributed tariff costs over a large number of different import products. Most of these goods had low US import dependence, enabling EU importers to quickly and efficiently source tariffed products from non-US suppliers.

Second, the tariff package was moderate in size, applying to only 1.5 percent of all US goods imports to the EU. Based on 2017 import figures and abstracting from any substitutions or import price reductions, the cumulative tariff cost would have amounted to approximately $2.5bn during the 3.5 years in which the retaliation was active – compared to about $7trn in total EU imports. Moreover, due to the rapid and sustained decline of tariffed imports, *realized* tariff costs were even smaller and added up to just about $1.4bn. Accordingly, when computing the maximum inflationary effect of the tariffs on the most exposed consumer products, we find they could have added only 0.02 percentage points to their annualized aggregate price growth. In other words, the tariff retaliation was too small to noticeably drive up domestic prices.

We also compute the maximum inflationary effect of the EU's 2025 tariff retaliation proposal against the US "reciprocal tariffs". While it was ultimately not implemented, it might be resuscitated during future episodes of US-EU trade tensions or serve as a template for EU tariff retaliation against other trading partners. Its targeted import volume is more than 30 times

[1]See, for example, Amiti, Redding, and Weinstein (2019), Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020), Cavallo, Gopinath, Neiman, and Tang (2021) and Gopinath and Neiman (2026).

larger than that of the 2018 retaliation and we find that it would accelerate EU domestic inflation noticeably; for EU headline inflation, its predicted, annualized maximum inflationary impact is 0.48 percentage points – one order of magnitude larger than even the most exposed goods during the 2018 retaliation.

Our findings contribute a new perspective to the literature on the 2018-2020 and the ongoing 2025 trade wars. Most of this literature focuses on the impact of US tariffs on domestic prices, product varieties and production relocation choices, such as Amiti, Redding, and Weinstein (2019), Cavallo, Gopinath, Neiman, and Tang (2021), Flaaen, Hortaçsu, and Tintelnot (2020), and Flaaen and Pierce (2024). Those papers which study foreign effects typically investigate how the US-China trade war of 2018/19 re-configured global trade relationships and directed trade flows to third countries, for example Fajgelbaum, Goldberg, Kennedy, Khandelwal, and Taglioni (2024) and Iyoha, Malesky, Wen, and Wu (2024). Some also assess the effects of foreign retaliation on prices and quantities of US exporters, especially for the agricultural sector (Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2020), Grant, Arita, Emlinger, Johansson, and Xie (2021), Morgan, Arita, Beckman, Ahsan, Russell, Jarrell, and Kenner (2022)).

Our work is a counterpoint to these studies as we shift the focus away from the US and present trade disruptive and domestic inflationary consequences of a particular retaliation against US tariffs. For this "self-harm" effect, there is currently only little and narrow evidence, especially for the EU. For China, Chor and Li (2024) and Li, Balistreri, and Zhang (2020), provide estimates on how retaliation against US tariffs in 2018/2019 reduced domestic activity and increased production costs. For the EU, the few available studies, such as Fetzer and Schwarz (2021) and Braml (2020) focus on the political motives behind the design of the 2018 tariff retaliation while Bown, Jung, and Lu (2018) and Andersson (2019) provide stylized descriptions of its composition.[2] In contrast, our paper provides a rigorous and comprehensive empirical analysis of the trade diversion and inflationary effects of this retaliation. Finally, we contribute a methodology for constructing tariff exposures of EU price indices which can be used to assess the inflationary effects of other EU tariff retaliation packages.[3]

The remainder of this paper is organized as follows. Section 2 describes the timeline and design of the EU's 2018 tariff retaliation. Section 3 investigates the effect of the retaliation on the EU's

[2] These studies point out that certain tariffed products, such as whiskey or motorcycles, were produced in areas which predominantly voted for Trump in the 2016 election or national icons sure to receive ample public attention.

[3] Fleck and Pradhan (2026) study the distributional impact of the EU's proposed retaliation during the 2025 EU-US trade tensions. Gnocato, Gunnella, Montes-Galdon, Schuler, and Stamato (2025) assess the domestic macroeconomic effects of hypothetical EU tariff retaliation schemes focusing on the intermediate versus final goods composition.

import prices and quantities, including the effect of tariff suspension. Section 4 describes and applies our empirical strategy to estimate effects of the EU's 2018 retaliation producer and consumer prices. It also presents our prediction on the inflationary effect of the 2025 retaliation package. Section 5 concludes.

2 The EU's 2018 Tariff Retaliation: Timeline and Design

On March 8, 2018, President Trump signed executive orders which invoked Section 232 of the 1962 Trade Expansion Act to impose a tariff rate of 25 percent on imports of steel and a 10 percent tariff rate on imports of aluminum. While imports from the EU were initially exempt, they were added from June 1, 2018 and applied to about \$7.5bn (€6.4bn at the time) worth of imports from the EU based on 2017 trade data, according to EU Regulation 2018/724. The EU responded by filing a complaint with the WTO and announced two sets of retaliatory tariffs, referred to as Annex 1 and 2. Together, these tariffs represented WTO compliant rebalancing measures as they had the same target value as the US tariffs and mirrored the US tariff rates.

We focus on the Annex 1 tariffs to study the design and effect of tariff retaliation. They took effect on June 22, 2018 and included tariffs of 10 and 25 percent on 182 products imported from the US.[4] The EU suspended them after about 3.5 years, on January 1, 2022, following a joint EU-US statement in October 2021 which included a commitment to relinquishing the steel and aluminum tariffs as well as the retaliation.[5]

Four features of the retaliatory tariffs are critical to contextualize their effects on EU trade flows and domestic inflation. First, they only applied to imports valued about \$3.3bn (€2.8bn) in 2017 and the EU expected to collect just about \$0.7bn in tariff duties, per annum.[6] Hence, relative to EU total imports and even relative to EU imports from the US, the share of imports affected by the retaliatory tariffs was very small; they only applied to 1.5 percent of the value of all goods imported from the US and to 0.2 percent of the EU's total goods imports, in 2017 trade values. Thus, the retaliatory tariffs had a negligible effect on the EU's overall import costs and its realized effective tariff rate.[7]

[4]See EU Regulation 2018/886 and European Commission (2018c). The 10 percent tariff rate applied only to playing cards. The EU published the tariffs using its Combined Nomenclature (CN) eight-digit codes, listing 182 products. However, as trade data are generally classified according to the six-digit codes of the Harmonized System (HS), we aggregate the CN codes into HS codes throughout this paper, resulting in a total of 86 products.

[5]See EU Regulation 2021/2083 and European Commission (2021b). Appendix A provides additional details the Annex 2 tariffs as well as on other EU retaliation episodes against the US between 2018 and 2022.

[6]Computed from Eurostat data, see European Union (2018). When computed from Comtrade data, the import value is slightly lower (\$3.0bn). See note under Figure A1.

[7]The right panel of Figure A1 in Appendix A shows that this rate remained at 1.38 percent.

Second, the EU's retaliatory tariffs were asymmetric to the US steel and aluminum tariffs as they focused on a larger set of products. Figure 1a) shows that only 31.5 percent of the value of tariffed US imports included aluminum and steel products. Final good categories like "Beverages, spirits, and vinegar", "Ships and boats", "Vehicles", and "Cereals" contributed about 37.2 percent and included high visibility imports such as Harley Davidson motorbikes and Bourbon whiskey. Moreover, comparing the number of individual products tariffed within categories also reveals that the set of these final goods had a disproportionally smaller number of products relative to its overall import value. Thus, the retaliatory tariffs were designed to target a few final good products and were highly diversified within the steel and aluminum categories. This design points to the EU's intent to target a small number of "high-visibility" products to stir political pressure in the US, as discussed by, for example, Fetzer and Schwarz (2021).

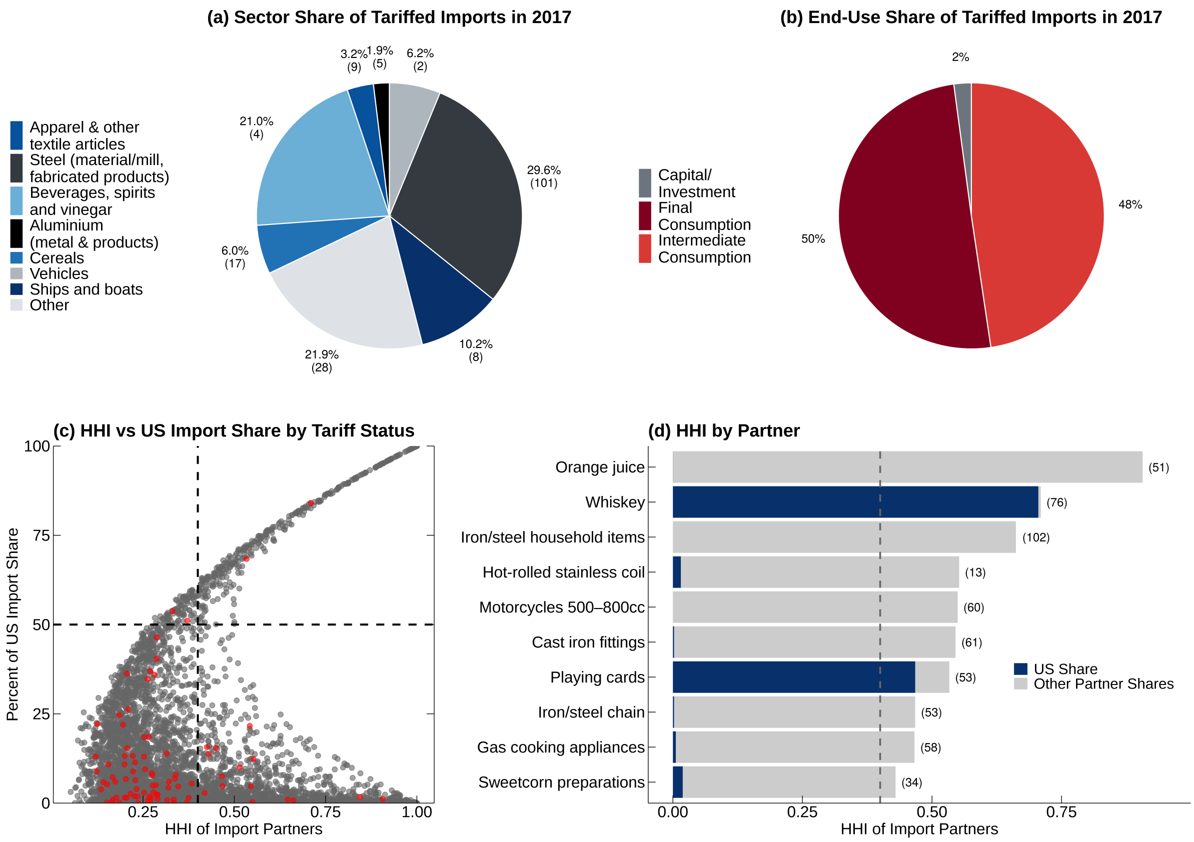

Figure 1: *EU 2018 Annex 1 retaliatory tariffs on US imports, 2017 trade values. (a) Breakdown by HS2 chapter (eight-digit CN level); numbers in parentheses indicate product count per chapter. (b) Breakdown by Broad Economic Categories (BEC). (c) Herfindahl-Hirschman Index (HHI) versus US import share at six-digit HS6 level; red dots denote tariffed products; dashed vertical line at HHI = 0.4 and dashed horizontal line at US import share = 50 percent represents the European Commission's thresholds for high import-partner concentration. (d) Top ten tariffed distinct products ranked by import-partner concentration (HHI) at six-digit HS6 level; numbers in parentheses indicate total import partners per HS6 subheading.*

Third, the value of final or processed products targeted by the retaliatory tariffs was about the same as that of raw or intermediate products, as shown by Figure 1b).[8] Thus, the share of products typically used for final consumption was almost identical to that of products typically used as inputs for production. This breakdown contrasts sharply with the US tariffs, which exclusively applied to intermediate products (steel and aluminum) and emphasizes that the design of the retaliatory tariffs was chosen to minimize supply chain disruptions for European companies, to avoid putting pressure on input prices of domestic downstream industries and to curtail any negative effects on domestic employment and activity. Instead, the design aimed to incentivize European consumers to substitute final goods imported from the US by goods supplied by EU and third-party suppliers.

Finally, except for two products, the EU's retaliatory tariffs applied to US imports with low import dependence. We arrive at this finding by measuring import-partner concentration for tariffed products at the HS6 subheading level using the Herfindahl–Hirschman Index (HHI). This index shows how concentrated import sourcing is across trading partners within each product group. While it does not directly capture substitutability across suppliers, it is informative about the extent to which imports are sourced from a narrow versus diversified set of partners. When imports are concentrated in a narrow set, replacing a tariffed product is likely to be more difficult in the short run.

For each HS6 subheading i the HHI concentration index is

$$HHI_i = \sum_p s_{i,p}^2 \qquad 0 < HHI_i \leq 1. \tag{1}$$

where $s_{i,p}$ is partner p's share of EU imports within the tariffed products of the HS6 code. Higher values of this index indicate that imports are sourced from a small number of partners, while lower values reflect a more diversified supplier base.

Concentration can be high even when partner count is high. This is the case when one or a few suppliers make up for a majority of imports while many others contribute small shares. Hence, in order to identify US import dependence, both HHI and US import share need to be considered. Figure 1c) shows both dimensions for all EU import categories, tariffed (red dots) and non-tariffed (gray dots). The dashed vertical line indicates an HHI value of 0.4, while the dashed horizontal line indicates a US import share of 50 percent. These are the thresholds

[8] To illustrate this dimension of the tariff design, we classify the HS product codes into Broad Economic Categories (BEC) by mapping product codes through concordances provided by the World Integrated Trade Solution (WITS).

which the European Commission uses to establish import dependence as a "strategic vulnerability".[9] Only 59 products of the 180 that were tariffed (and traded in 2017) had an HHI value above the threshold. Moreover, just two categories had simultaneously high HHIs and high US import shares, meaning that the vast majority of tariffed products were not at risk of supply chain disruptions due to reliance on US exporters.

In Figure 1d) we show ten select tariffed products which are from differentiated HS4 categories and have high HHI values, with the US import share in blue shading. "Whiskey" and "Playing cards" are the two categories in the upper-right quadrant of Figure 1c). While they had outstandingly large US import shares, they still had 75 and 53 non-US suppliers respectively. Thus, the EU's retaliation only featured significant import dependence on two goods which had no implications for European downstream industries and could be substituted by imports from non-US suppliers.

In summary, the EU's 2018 retaliatory tariffs were designed to result in minor disruptions to domestic consumers and producers as the tariffs balanced final and intermediate products. This design is consistent with the insight that tariffing final goods is generally less distortionary than tariffing intermediate inputs, because input tariffs propagate through supply chains and raise production costs as argued by, for example Antràs, Fort, Gutiérrez, and Tintelnot (2024). Moreover, most targeted products had low US import dependence and instances where reliance on a dominant US supplier was high were limited to a small subset of politically salient goods, reinforcing the interpretation that the retaliation balanced domestic cost containment with external political leverage.

3 Effect on EU Import Prices and Quantities

To investigate the price effects of the EU's retaliation, we construct monthly CN product-level unit values from UN Comtrade data and normalize twelve-month tariff-inclusive price changes to zero in the month prior to implementation (May 2018). As shown in Appendix Figure C1, tariffed and non-tariffed goods exhibited parallel trends before tariff implementation in June 2018. However, in later months, tariff-inclusive prices for targeted products rose rapidly by 20 to 30 percentage points, while untreated prices remained stable. This immediate increase aligns closely with the 25 percent tariff rate, indicating rapid, near-complete tariff pass-through to EU importers with no evidence of price spillovers to non-tariffed goods.

[9] See European Commission (2021c).

To rigorously quantify the tariff effects, we assess their impacts using twelve-month log changes in prices (and imports) between June 2017 and June 2019 by estimating the difference-in-difference model

$$\Delta \log y_{it} = \alpha_i + \lambda_t + \beta \, \Delta \log(1 + \text{Tariff}_{it}) + \varepsilon_{it} \tag{2}$$

This baseline specification controls for product-level and monthly fixed effects (α_i and λ_t) to absorb non-tariff shocks and exchange rate movements. Tariff_{it} is the (statutory) retaliatory tariff rate applying to product i.[10] This setup expands on the framework of Amiti, Redding, and Weinstein (2019) but exploits a longer 3.5-year window, which covers the entire active period of retaliation, to capture delayed price and quantity adjustment dynamics.

Column 1 of Table 1 shows that the tariffs had a small, statistically insignificant effect on foreign exporter prices (coefficient of 0.163), confirming complete pass-through to EU importers. While this mirrors evidence from US import tariffs in 2018 and 2025, it demonstrates that complete pass-through also characterizes small and targeted tariff retaliation which concentrates on products with low import dependence.

Turning to quantity effects, Columns 2 and 4 show that a one percent tariff increase reduced import quantities by 2.79 percent and import values by 3.44 percent. Incorporating zero-trade flows using an inverse hyperbolic sine (IHS) transformation (Columns 3 and 5) yields larger import demand elasticities: a 3.87 percent decline in quantities and a 4.25 percent drop in values.[11] These estimates fall within standard literature ranges, though they are slightly lower than the elasticities documented by Amiti, Redding, and Weinstein (2019) for the US-China trade war of 2018/2019.

Comparing Panel A (tariff imposition in June 2018) to Panel B (tariff suspension in January 2022) reveals a striking asymmetry. While the suspension coefficients in Panel B display the expected opposing signs, they are smaller than the imposition effects in every specification. For example, looking at column 2, the quantity response to suspension (1.45) is roughly half the response to imposition (2.79). A Wald test in the final row of Table 1 also rejects full reversal at the 5 percent level in both log specifications. This incomplete recovery provides formal evidence of trade-destruction hysteresis, or a persistent "scarring effect". Irreversible sunk costs involved in supply-chain reconfiguration likely compelled EU importers to maintain relationships with

[10] While the recent US tariffs feature time-varying enforcement and numerous exemptions, as documented by Eck, Hoang, Mix, and Ray (2026) and Gopinath and Neiman (2026), the EU's 2018 retaliatory tariffs had no meaningful difference between statutory (announced) and realized tariff rates.

[11] Figure C2 in Appendix C shows the change in total import values of tariffed and non-tariffed goods at the monthly frequency for the 30 months before and the first twelve months after the tariffs were imposed. Already in the first year, year-over-year growth in tariffed import values had fallen by about half relative to before June 2018.

Table 1: Effect of Retaliatory Tariffs on US Imports

	(1) *Log change foreign exporter prices*	(2) *Log change import quantities*	(3) *IHS change import quantities*	(4) *Log change import values*	(5) *IHS change import values*
Panel A					
$\Delta \ln(1 + \text{Tariff}_{\text{it}})$	0.163	-2.790^{***}	-3.867^{***}	-3.439^{***}	-4.245^{***}
	(0.192)	(0.423)	(1.097)	(0.507)	(1.066)
Observations	132 895	109 344	140 707	148 505	177 433
R^2	0.058	0.118	0.101	0.088	0.079
Panel B					
$-\Delta \ln(1 + \text{Tariff}_{\text{it}})$		1.449^{***}	1.361^{*}	2.040^{***}	2.985^{***}
		(0.348)	(0.818)	(0.382)	(0.786)
Observations		115 275	148 429	154 163	184 272
R^2		0.122	0.213	0.096	0.217
Wald test: full reversal					
$\hat{\beta}_{\text{impl}} + \hat{\beta}_{\text{susp}} = 0$		-1.341^{**}	-2.506^{*}	-1.399^{**}	-1.260
		(0.548)	(1.368)	(0.635)	(1.324)

Source: UN Comtrade.
Note: Data are at the CN2018 product level with a monthly frequency. Except for Column 1, the U.K.'s import values are subtracted from the EU aggregate through January 2020, the last month in which UN Comtrade's EU reporter includes the U.K. Panel A is the period between June 2017 to June 2019, and Panel B is the period between December 2020 to December 2022. In Panel A, $\Delta \ln(1 + \text{Tariff}_{it})$ reflects tariff imposition; in Panel B, $-\Delta \ln(1 + \text{Tariff}_{it})$ reflects tariff suspension. EU Regulation 2018/886 Annex I tariffs were implemented on June 22, 2018, and suspended on January 1, 2022. IHS is the inverse of hyperbolic sine to handle zero-value trade data in t or *t-12*. Columns 1-3 exclude unit value ratios of t and $t - 12$ that are greater than 3 or less than 1/3. The final row reports a Wald test of H_0 which tests if implementation effect + suspension effect = 0. Standard errors in parentheses and are clustered at the CN2018 eight-digit level, noted *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

newly established non-US suppliers even after the tariffs were lifted on January 1, 2022.

Related work supports this interpretation. For example, Carter and Steinbach (2020) find that foreign tariffs on US agricultural products in 2018 significantly reduced exports, already in the short-run, and resulted in a re-configuration of trade relationships as retaliators started sourcing tariffed products from countries not affected by retaliatory tariffs. Our results and Appendix Figure C3 show that this mechanism also applied to other export sectors and that US import shares in the EU have not recovered even about four years after the EU suspended its retaliation.

Because steel and aluminum faced a unique two-sided shock – the original US Section 232 tariffs and the EU's subsequent retaliation – global supply deflection may have amplified their measured import responses compared to other kinds of import products. We investigate this possibility using split-sample specifications. Our findings, reported in Appendix Tables C1 and C2, show that the import demand elasticity during tariff imposition is higher for steel and aluminum (-2.78) than for other tariffed goods (-1.97). This pattern is consistent across all measures (Columns 1 to 4).

Crucially, the pattern differs between steel and aluminum and the remaining tariffed products. While steel and aluminum imports display a statistically significant partial recovery, the suspension elasticities for other tariffed products are smaller and statistically insignificant for quantities, and significant only at the 10 percent level for values. Yet, while the split sample estimates are considerably less precise than the full sample, the Wald test rejects full trade reversal for steel and aluminum in values but not for the remaining products in any specification. Nevertheless, for the broader set of targeted products, US exporters had not reclaimed their pre-2018 market shares by the end of the sample.

Finally, going beyond a level-based trade analysis, US import *shares* could have remained depressed unrelated to tariff suspension, for example the Covid19 pandemic. Appendix C.5 therefore verifies the adjustment pattern formally by comparing tariffed products with non-tariffed products in the same sector, month by month. The differential US import share of tariffed products shows no pre-trend, falls at implementation, and remains 2.60 percentage points below its pre-retaliation benchmark three years after suspension. In addition, a triple-difference specification in import values, which absorbs any shock common to US-EU trade, including the Covid19 pandemic, reaches the same conclusion. We additionally split the post-suspension window into an early period (2022), when pandemic-era supply-chain disruptions were still unwinding, and a late period (2023–24), after freight rates and delivery times had largely normalized. Neither specification finds evidence of a differential catch-up between the early and late post-suspension periods.

4 Effect on EU Domestic Prices

As the EU's 2018 retaliatory tariffs were not absorbed by US exporters, European businesses and consumers bore their costs. Yet, these costs were small and tariffed imports from the US declined notably after the retaliation was implemented. Which of these offsetting forces had a stronger impact on EU domestic prices? To answer this question, we construct an exposure measure for EU price indices and conduct a formal difference-in-difference analysis comparing the price evolution of low and high exposure products. Since the retaliation had a roughly even split between intermediate and final goods, we construct separate exposure measures for producer and consumer price indices.

4.1 Constructing Tariff Exposure Measures for EU Price Indices

As mentioned earlier, there is a flourishing literature which uses a variety of data sources and methodological approaches to track the effect of tariffs on US domestic prices.[12] However, there are no comparable studies for the EU so a key contribution of our paper is to develop and apply a methodology to construct tariff exposure measures for European domestic prices. The following paragraphs provide a brief summary of our approach while Appendix D has additional details.

Producer Prices EU Producer Price Indices (PPI) are classified according to the NACE Rev. 2 system. Using the 2017 edition of the European Union's Full International and Global Accounts for Research in Input-Output Analysis (FIGARO) tables, we can observe how products, categorized according to the Classification of Products by Activity (CPA), are used by each of the 31 NACE Rev. 2 industries as inputs for production. Importantly, the FIGARO tables also show which trading partner supplied these products to a given industry.

As a first step, we map the list of tariffed CN codes and their associated tariff rates to the six-digit CPA product categories using correspondence tables provided by the European Commission. As the CPA product data in the FIGARO tables is aggregated to the CPA two-digit level, we aggregate the products and their tariff rates accordingly. To do this, we compute an

[12] For example, Minton and Somale (2025) construct measures of the import share of PCE categories and multiply them by tariff rates. Cavallo, Llamas, and Vazquez (2025) match prices of US retailers to country-product tariff rates while Amiti, Heise, and Weinstein (2026) map CPI item prices to them.

average tariff rate, τ, for each two-digit CPA product, weighted by the respective US import shares of the subsumed six-digit CPA products.

Next, to construct a tariff exposure for each PPI NACE Rev. 2 industry, $\bar{T}_k$, we map the average tariff rates from two-digit CPA products to NACE industries as

$$\bar{T}_k = \sum_i \sum_j \omega_{ijk} \, \tau_{ij} \tag{3}$$

where

$$\omega_{ijk} = \frac{s_{ijk}}{\sum_i \sum_j s_{ijk}} \tag{4}$$

In these equations, ω_{ijk} represents the import weight, calculated as the value of two-digit CPA product i from country j used by industry k (s_{ijk}) as a share of total use. τ_{ij} is the tariff rate applyinh to product i from country j.[13]

Consumer Prices The EU's Harmonized Index of Consumer Prices (HICP) is categorized according to the Classification of Individual Consumption According to Purpose (COICOP) framework. To construct COICOP category specific tariff exposure measures, we start from the CPA two-digit product specific tariff rates, τ, which we computed above, and use the correspondence tables provided by Cai and Vandyck (2020). These map 63 out of 64 CPA products into 34 out of 36 two-digit COICOP categories. Thus, using data on import shares by country provided in the FIGARO tables, we compute a weighted average tariff exposure for each consumption category l given by

$$\bar{T}_l = \sum_i s_{il} \, \omega_i^{US} \, \tau_i^{US} \tag{5}$$

where s_{il} is the share of CPA two-digit product i in category l, ω_i^{US} is the share of US imports in product i and τ_i^{US} is the product specific tariff rate for the US. Stated simply, the COICOP specific tariff exposure measure $\bar{T}_l$ considers both how much each product factors into a given category and also how much of that product is imported from the US.

4.2 Estimating Price Effects

EU-level Price Effects We first evaluate whether the retaliatory tariffs left noticeable traces in aggregate EU prices. To this end, we estimate panel local projections a la Jordà (2005) of cumulative producer (PPI) and consumer (HICP) price changes on the tariff exposure mea-

[13] We set tariff rates on all products that are not tariffed and imported from the US to zero.

sures constructed above; since the retaliation came into force on a single common date, our specification corresponds to the local projections difference-in-differences estimator of Dube, Girardi, Jordà, and Taylor (2025). The estimates, reported in Appendix E, across all horizons, show no evidence that the retaliation increased producer or consumer prices: point estimates are economically negligible, there are no differential pre-event trends, and the consumer price estimates are sufficiently precise to reject full passthrough of tariffs to consumer prices during the first six months after implementation (Appendices E.1 and E.2). These findings are consistent with the retaliation's design: the tariffs were small and targeted products with low US import dependence. However, this aggregate analysis remains hampered by sparse and coarse data (there are only 31 PPI and 34 COICOP categories in our sample) which limits the statistical precision of the analysis.

Country-Category Price Effects To overcome this limitation, we exploit exposure variation across the 27 EU member states and construct country-category exposures for all available COICOP categories. Applying equation (5) to country-level data yields 913 country-category tariff exposures, $\bar{T}_{l,c}$. Appendix Figure E2 shows the distribution.[14]

Even at this granular level, average exposure remains small. In fact, even under the assumption of instant and full passthrough, no substitution and constant prices of non-tariffed products, the retaliation would have only increased the month-over-month aggregate EU inflation index by 0.006 percentage points. To compute the analogous maximum effect at the country-category level, we stratify the exposure sample and designate observations in the upper quartile as "high exposure" and the remainder as "low exposure."[15]

Figure 2a visualizes the evolution of inflation across these two groups from June 2017 to June 2019. Both series are constructed from the weighted country-category HICP data and are indexed to 100 in May 2018. Solid lines show historical data while dashed lines indicate that the tariffs could only lift the June-July 2018 price index growth by negligible numbers for the high and low exposure groups, respectively; for the high exposure group, the corresponding data print was 0.14 percent in month-over-month terms (1.565 percent in annualized terms) of which 0.02 percent would have been attributable to the tariffs. Thus, even under the extreme assumptions of the maximum effect calculation, the tariffs would have only resulted in minor

[14]While the aggregate EU tariffed import share was 1.5 percent, the within-EU country level exposure ranged from 0.45 percent (Austria) up to 24.85 percent (Malta), as shown in Table E2 in Appendix E.3. Note that not all of the COICOP category data are available for all countries.

[15]Appendix Tables E3 and E4 show the respective assignments and data moments and demonstrate that mean exposure in the "low exposure" group was 0.001, i.e. effectively zero.

inflationary pressures, even for the most exposed consumer products.

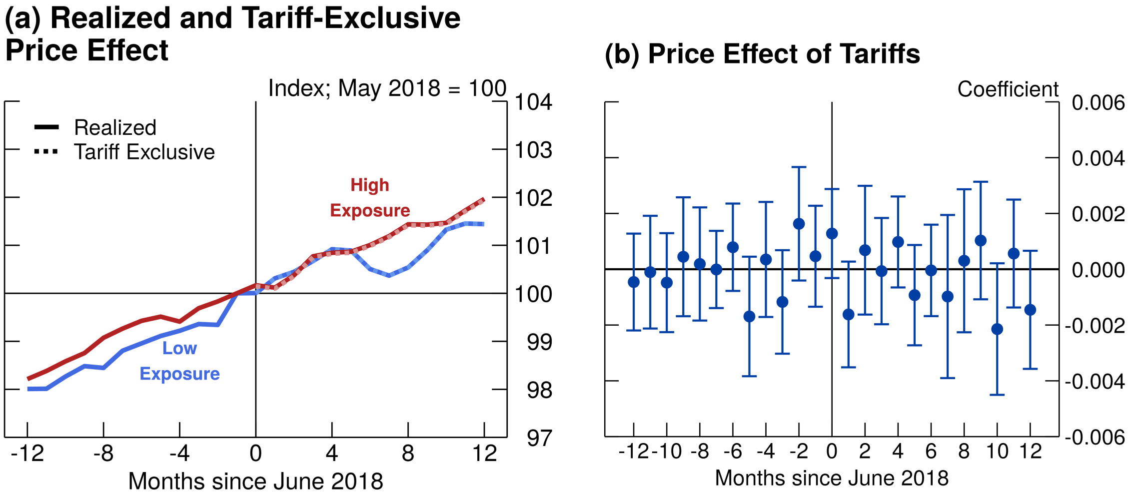

Figure 2: *(a) "Realized" shows month-over-month price changes of the high and low exposure country-category HICP groups (indexed to May 2018). "High Exposure" ("Low Exposure") refers to exposures above (below) the 75th percentile of the* $\bar{T}_{I,c}$ *distribution. "Tariff exclusive" is computed by subtracting the country-category tariff exposure in June 2018, reflecting the assumption of immediate, full passthrough. All four lines are constructed using country-category specific HICP weights. (b) Estimates of* β_t *from equation (6). Standard error bars represent the 95 level of statistical significance.*

Both groups exhibited parallel price trends prior to tariff implementation. The notable divergence six months post-implementation was driven by a sharp drop in oil prices which had a stronger imprint on the low than the high exposure group (due to the COICOP category "transportation"). To control for this and other non-tariff confounding shocks, we estimate the following event study to isolate the domestic price effect of the EU's retaliation:

$$\Delta \ln P_{ict} = \sum_{t \neq \text{June 2018}} \beta_t (High\ Exposure_{ic} \times \mathbb{I}(T = t)) + \delta_{it} + \gamma_{ct} + \epsilon_{ict} \tag{6}$$

where $\Delta \ln P_{ict}$ is the log change in prices of category i in country c between months t and $t-1$. The model includes category-month (δ_{it}) and country-month (γ_{ct}) fixed effects to absorb all country- and category-specific time-varying shocks. The coefficients of interest, β_t, shown in Figure 2b, identify the differential price changes for the high-exposure group relative to the low-exposure group due to the tariff retaliation.

We observe no statistically significant difference in inflation trends between the two groups, neither in the pre- nor the post-treatment periods. While some of the estimates differ from zero at low levels of significance, all point estimates are economically negligible (the largest post-treatment coefficient implies a conditional price increase difference of just 0.001 percentage points in the month-over-month space) and their signs fluctuate randomly.

In sum, even the most exposed country-COICOP categories experienced no meaningful inflationary pressure which confirms our earlier aggregate findings: the EU's 2018 tariff retaliation did not increase domestic prices.[16]

4.3 Predicted Price Effects of the 2025 Retaliation Proposal

We apply the same methodology to estimate the maximum inflationary impact of the EU's retaliation proposal against the US "reciprocal tariffs" of 2025. While the EU ultimately chose not to implement this retaliation, the combined target value of its four packages, which were scheduled to be implemented between August 2025 and February 2026, was notably larger than the 2018 retaliation ($109bn vs. $3bn), implying potentially much larger inflationary pressures.[17]

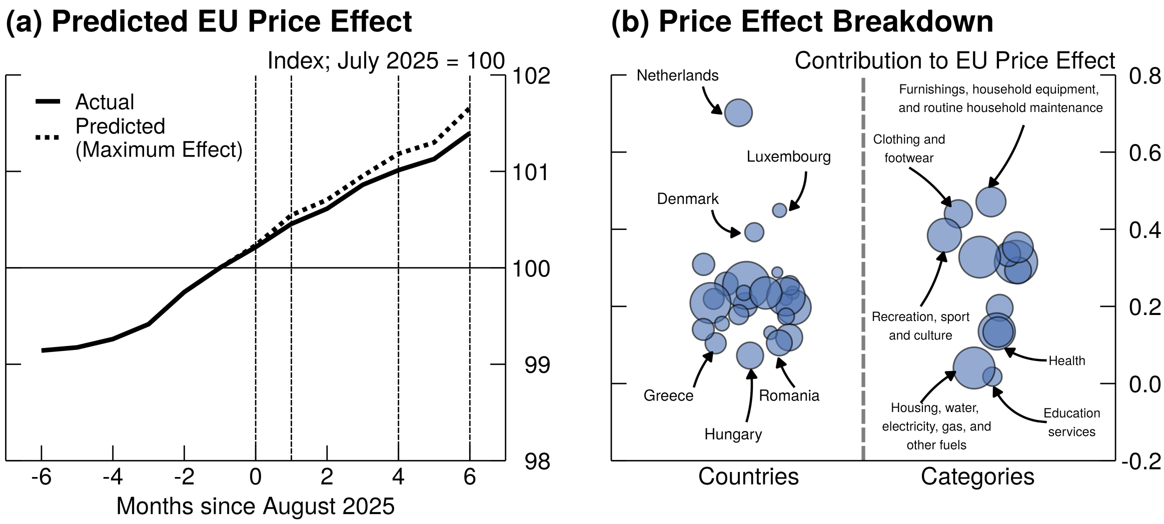

Figure 3: *(a) Data are aggregated from country-specific seasonally adjusted 2-digit COICOP 2018 categories, chain-weighted through annual expenditure weights. "Actual" refers to the headline HICP and "Predicted" adds four one-time price level increases based on the theoretical package-specific aggregate tariff exposures. Differences between "Actual" and Eurostat's published HICP aggregate index are due to seasonal adjustment. (b) Difference between predicted price level and actual price level as of February 2026 by EU countries and COICOP categories. Excludes Ireland. See appendix Figure F2.*

As shown in Figure 3a), actual inflation between July 2025 (one month before the retaliation would have started) and February 2026 (when it would have ended) was 1.40 percent. Under the same partial equilibrium assumptions as before, our counterfactual prediction is that, if the retaliation had been implemented, inflation would have grown by 1.66 percent, lifting the EU headline inflation rate by 0.26 percentage points. In annualized terms, this implies that

[16]These null results are robust to alternative specifications, including varying the exposure percentiles, using non-discretized continuous exposures, or setting the reference month to May 2018 to capture anticipatory effects due to the publication of the initial list of retaliatory tariffs in EU Regulation 2018/724 (Appendix Figure E3).

[17]See Appendix A.2 for a comprehensive description for the 2025 retaliation proposal.

the retaliation would have added sizable extra-growth of 0.45 percentage points to the actual inflation rate of 2.41 percent.[18]

Figure 3b) illustrates the distribution of country and category-specific contributions to the predicted aggregate EU price effect. Due to their large import shares of tariffed US products, the Netherlands, Luxembourg and Denmark would experience the largest price increases. Conversely, those consumer categories which primarily include services, utilities and fuels would experience the least inflationary pressures as the tariffs targeted US imports of consumer goods.

5 Conclusion

Little is known about the effects of tariff retaliation on the retaliator. This stands at odds with the increasingly relevant role of retaliation in a less multilateral trade order. Addressing this gap, we study the domestic effects of the EU's 2018 tariff retaliation against US steel and aluminum tariffs. This retaliation was minor in scope and highly diversified. Its design targeted intermediate and final goods in about equal proportions and focused on goods which EU importers could easily obtain from non-US suppliers.

We find that the retaliation had an asymmetric and scarring effect on most of the tariffed US import categories. They decreased notably in the wake of the tariffs and did not recover after the retaliatory tariffs were lifted. Moreover, even though the tariff costs were rapidly and fully passed through to European importers, our analysis shows that they did not lead to upward pressure on domestic producer or consumer prices. This finding is based on a novel concordance linking EU tariff data to domestic price indices and is consistent with the small size of the retaliation, as well as its careful targeting, and the rapid substitution to non-US suppliers of tariffed products.

Finally, we apply the same methodology to estimate an upper bound for the inflationary effect of the much larger retaliation package which the EU proposed in 2025 and might implement during future US-EU trade tensions. We find that it would notably accelerate EU domestic inflation, with heterogeneous effects across countries and consumer product categories. This result underscores that, despite careful calibration, domestic inflationary effects are closely related to the targeted import volume of retaliatory tariffs.

[18] Appendix F.1 explains how we link the January 2026 transition from COICOP 1999 to 2018 definitions.

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Supplemental Appendix

The appendix to "The Design and Effect of Tariff Retaliation: Evidence from the EU" (Fisgin, Fleck and Richards, 2026) is organized as follows:

- Appendix A provides additional details on all tariff retaliations the EU implemented against the US between 2018 and 2022 as well as the 2025 proposal.
- Appendix B shows a breakdown of the products the EU tariffed in its 2018 retaliation by granular BEC categories.
- Appendix C illustrates the change in US import values to the EU, for products subject and not subject to the EU's 2018 retaliation. It also reports the demand elasticity estimates of tariff implementation and suspension, separately for steel and aluminum and all other imports subject to tariff retaliation.
- Appendix D explains the construction of tariff exposures for aggregate and category-specific EU price indices (PPI and HICP).
- Appendix E contains detailed results of the response of EU aggregate price indicators to the 2018 tariff retaliation, summary materials on the country-category tariff exposure measure as well as the result of alternative estimation specifications on the inflationary effect of the tariff retaliation.
- Appendix F clarifies how we link the 1999 and 2018 COICOP classifications to construct consistent time series for the EU HICP data between 2025 and 2026 and also shows additional results of our prediction regarding the inflationary impact of the EU's 2025 retaliation proposal

A EU Tariff Retaliations against US Imports

A.1 Between 2018 and 2022

The 2018 Annex 2 tariffs were scheduled to complement the Annex 1 tariffs from June 2021 unless the US tariffs had been suspended by then. The Annex 2 tariffs applied to an additional 158 products, according to the CN classification, with tariff rates of 10, 25 and 50 percent, respectively, and targeted another €3.6bn ($4.2 bn) in US imports, bringing the total retaliation to €6.4bn ($7.5bn) worth of US imports. See EU Regulation 2018/886 for details. Yet, as the US and EU had entered negotiations aiming to remove mutual trade barriers in early 2021, the EU postponed the implementation of the Annex 2 tariffs on May 28, 2021, and suspended them indefinitely on January 1, 2022, together with the Annex 1 tariffs. The EU implemented two other tariff retaliation packages against the US while the 2018 Annex 1 tariffs were in place but they took effect on May 2020 or later and both targeted distinct products.

While the retaliatory tariffs of June 2018 were active, the EU implemented two sets of additional retaliatory tariffs against US imports. Both of these additional retaliation packages were implemented about two years later, in May and November 2020, and applied to products other than those included in the 2018 package. Figure A1 provides a timeline and illustrates the relative magnitudes of each retaliation episode (left panel) as well as their specific and cumulative tariff rates and their effects on the EU's overall ("world") realized effective tariff rate (right panel). We provide further details on the implementation and design of the two additional retaliatory episodes in the next two paragraphs.

Effective from February 8, 2020, the US imposed new tariffs on derivative steel and aluminum imports from the EU. These imports were worth about $44.7 mio and the expected additional duty collections amounted to about $10.2 mio. On April 7, 2020, the EU retaliated with regulation EU Regulation 2020/502. This regulation applied tariffs on three US import products in two annexes. Annex 1 applied 20 percent and 7 percent on lighters and plastic fittings from May 8, 2020, worth about $36.5 mio in imports and $4.3 mio in additional duties. Annex 2 applied 4.4 percent on imported plastic fittings from February 8, 2023, worth about $132.4 in imports and $5.8 mio in additional duties. Like the 2018 Annex 1 tariffs, the first set of these additional tariffs were suspended indefinitely from January 1, 2022. The second set had not yet been implemented and was equally suspended. See EU Regulation 2021/2083.

On November 10, 2020, as part of the WTO dispute regarding US subsidies to Boeing, the EU implemented additional retaliatory tariff measures, unrelated to US steel and aluminum tariffs. See EU Regulation 2020/1646 and European Commission (2020a). Again, they were published in two annexes and Annex 1 listed tariffs of 15 percent on "Aeroplanes and other aircraft" while Annex 2 applied 25 percent to accessories, agricultural and manufactured products as well as to agricultural utility vehicles and leisure items. Together, they were applying to imports worth about $4bn, resulting in additional duties of about $1bn.[19] They were suspended from July 9, 2021, for a period of five years, following a joint US-EU statement of understanding on a cooperative framework for large civil aircraft disputes. See EU Regulation 2021/1123.

[19] See here https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds353_e.htm

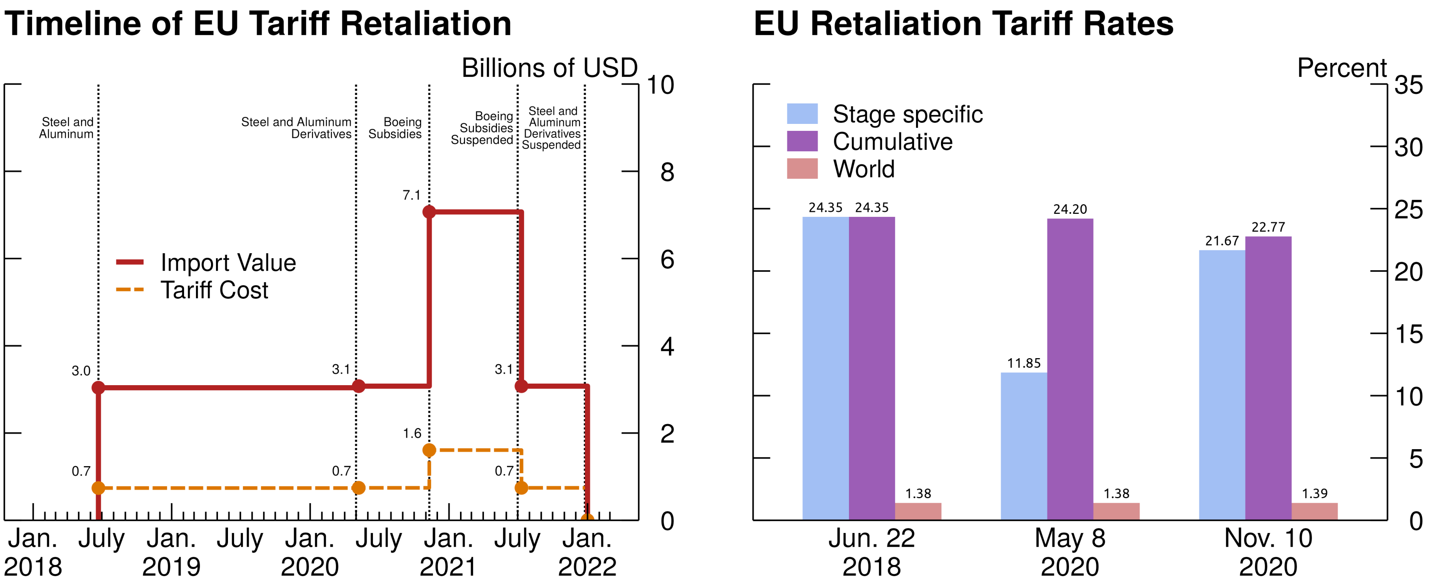

Figure A1: *Left: Import values and tariff costs are computed using 2017 Comtrade data. Right: Stage-specific shows tariff costs divided by import values of each tariff package. Cumulative refers to the total cost of all active packages divided by their total import value. World is the sum of the EU's 2017 realized effective tariff rate (RETR, 1.38 percent) and the cumulative tariff cost divided by total 2017 imports. Source: UN Comtrade, EU Regulation 2018/886, EU Regulation 2020/502, EU Regulation 2020/1646. Authors calculations.*

Note 1: We compute the import value of the June 2018 tariff retaliation ($3.0bn) from Comtrade data which we use throughout our analysis. The pertinent number computed from Eurostat, and stated by the European Commission, is slightly larger ($3.3bn). This is due to minor differences in data processessing. For example, Comtrade omits data for some imports at the original customs level due to confidentiality reasons.

Note 2: To compute the EU's RETR, we obtain data from Eurostat on customs collected by EU institutions and add back the share which member states retain to cover their administrative cost of customs collection. In 2017, this share was 20 percent. See 3.2. (Traditional Own Resources) of the "Annual Accounts of the European Union, 2017": https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0521&from=EN

Note 3: Annex 1 of the Boeing Subsidies package of November 2020 uses 10-digit TARIC codes (8-digit CN and two more digits of specification). See EU Regulation 2020/1646. However, UN Comtrade data is only disaggregated to the 8-digit CN level. To avoid inflating the import value and tariff cost of this package, we obtain the WTO's upper estimate on the package volume ($3.993bn), subtract the import value of Annex 2 ($2.7bn) and consider the residual as the import value of Annex 1 (about $1.2bn). All products in Annex 1 faced a uniform 15% tariff rate, making computation of the tariff cost straightforward.

A.2 The 2025 Proposal

In early 2025, the US administration initiated a series of aggressive trade measures. On February 10, 2025, it expanded Section 232 to impose a 25 percent duty on additional steel and aluminum products. This was followed by a 25 percent tariff on passenger vehicles and auto parts announced on March 26, and a 25 percent duty on the aluminum content of certain beer and empty cans on April 4. Furthermore, on April 2, 2025, the US announced "Reciprocal" Tariffs, imposing a universal 10 percent baseline tariff on all imports, which was slated to escalate to 20 percent for the EU.

As a first response to the new US tariffs, EU Regulation 2025/778 was implemented on April 14 which re-activated, amended and expanded the 2018 retaliation framework (see EU Regulation 2018/886). However, the EU simultaneously maintained a path towards de-escalation; on the same day, it published EU Regulation 2025/786, which temporarily suspended the first batches of tariffs until mid-July 2025. This pause was intended to support ongoing trade negotiations between the EU and the US.

On July 25, the EU then implemented regulation EU Regulation 2025/1564 which consolidated the earlier retaliatory tariff measures into a massive, multi-stage retaliation plan designed to rapidly scale up over several months. The products and tariff rates listed in the annexes of this regulation are the source for the EU's 2025 proposed retaliation we consider in our analysis regarding its inflationary impact.[20] As illustrated by the panels of Figure A2, the EU's proposed retaliation was structured in four escalating stages which aimed to create "leverage windows" for the ongoing EU-US negotiations.

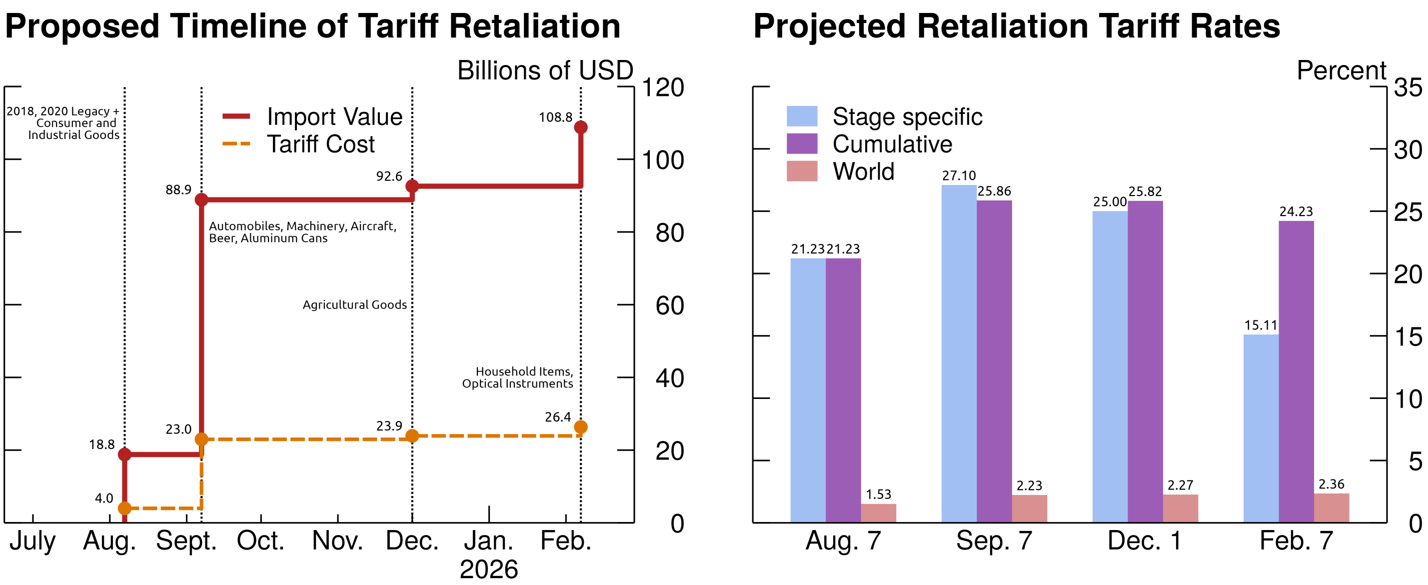

Figure A2: *Left: Import values and tariff costs are computed using 2024 Comtrade data. Right: Stage-specific shows tariff costs divided by import values of each tariff package. Cumulative refers to the total cost of all active packages divided by their total import value. World is the sum of the EU's 2024 realized effective tariff rate (RETR, 1.38 percent) and the cumulative tariff cost divided by total 2024 imports. Source: UN Comtrade, EU Regulation 2025/1564. Authors calculations.*
Note: To compute the EU's RETR, we obtain data from Eurostat on customs collected by EU institutions and add back the share which member states retain to cover their administrative cost of customs collection. In 2025, this share was 25 percent: https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027/revenue/own-resources/customs-duties_en

- August 2025: The first stage targeted $18.8bn in imports, primarily focusing on products which had already been targeted in the 2018 and 2020 retaliations, such as agricultural products, steel and aluminum articles as well as beverages, apparel and manufactured products. Using 2024 trade data, we estimate a stage-specific tariff cost of $4.0bn and a stage-specific tariff rate of 21.2 percent.

- September 2025: This stage represented a substantial step up in the retaliation. We estimate that it would have brought the total targeted import value to $88.9bn as it added a large set of additional products, including Automobiles, Machinery, Aircraft, Beer, Aluminum Cans, additional agricultural products as well as aircraft parts. The stage-specific tariff rate would have hit 27.1 percent and the cumulative tariff costs $23.0bn.

- December 2025: In this stage, nuts and soybeans would have been included in the retaliatory tariff list. We estimate this would have pushed the total targeted import value to $92.6bn, with cumulative tariff costs reaching $23.9bn.

- February 2026: The final proposed stage would have added more agricultural products to the retaliatory tariff set but also household items (soap, appliances) as well as wood products and optical instruments. This would

[20] A unique feature of 2025/1564 was the introduction of export restrictions (not just import tariffs) on certain EU-origin goods destined for the US (like scrap metal and specific green-tech components). This was a new measure which was not part of earlier packages and we abstract from it in our analysis.

bring the total targeted import value to \$108.8 bn, with a cumulative retaliation tariff rate of 24.23 percent and total projected tariff costs of \$26.4bn.

Before these sweeping tariffs were implemented, US President Trump and European Commission President Ursula von der Leyen reached a political agreement on July 27, 2025, known as the "Turnberry Deal." This agreement established a 15 percent tariff ceiling for most EU exports to the US and eliminated EU duties on US industrial goods. Consequently, the EU delayed its countermeasures, utilizing safeguard and suspension clauses to monitor US compliance and reserving the right to reimpose the retaliatory tariffs if the US should breach the agreed-upon 15 percent ceiling. As result, the EU suspended the activation of the proposed retaliatory tariffs in EU Regulation 2025/1727 on August 5, 2026, just two days before the first stage of the retaliatory package were scheduled to take effect. This suspension was legally binding for only six months (expiring February 6, 2026) but the EU extended the suspension by EU Regulation 2026/295 on February 4, 2026 to prevent the snap back until August 6, 2026.

B Additional Materials on the Design of the EU's 2018 Tariff Retaliation Package

Figure B1 provides a breakdown of the tariffed products by BEC category beyond intermediate, final, and capital/investment goods.

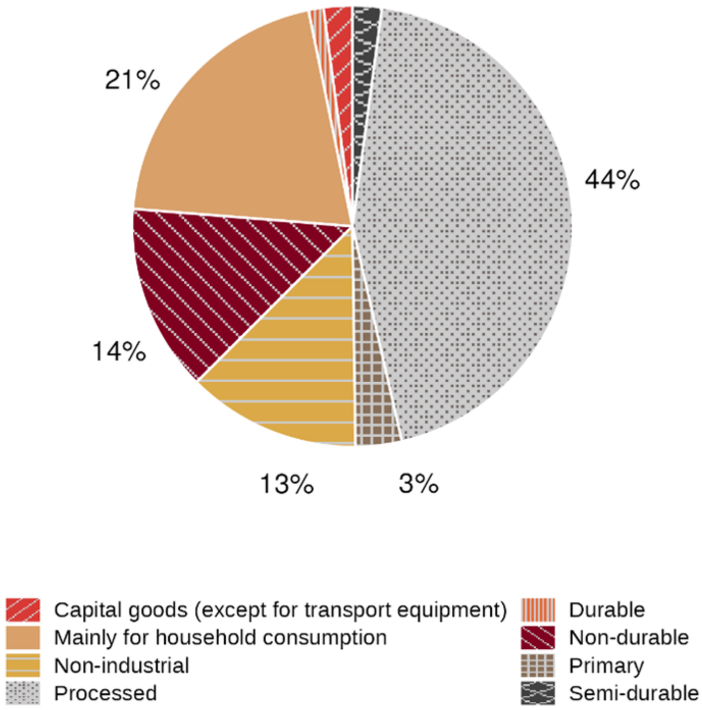

Figure B1: *Breakdown of the EU's 2018 Annex 1 tariffs on US imports using 2017 trade values as classified under Broad Economic Categories (BEC). Data source: UN Comtrade.*

C Additional Results on the Effect of the EU's 2018 Tariff Retaliation on Imports

C.1 Aggregate Import Prices

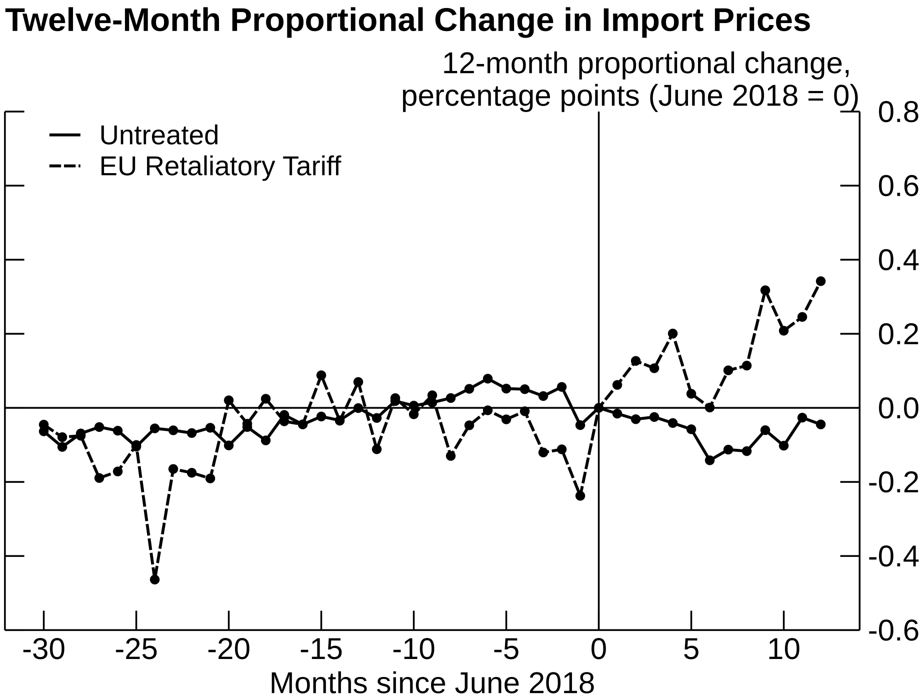

Figure C1: *"Untreated" includes all goods and countries that do not face retaliatory tariffs. June 2018 is set to month 0 as tariffs became effective on June 22, 2018, i.e. after the middle of the month. The change in import prices is the geometric mean of the 12-month tariff-inclusive unit value relative changes, weighted by the logarithmic mean of their import shares by value. Prices are normalized so that a zero is a price change that equals its value before the tariffs were implemented. Petroleum products (HS chapters 2709-2715) are removed. Source: UN Comtrade.*

C.2 Aggregate Import Values

Figure C2 shows the change in total import values of tariffed goods following the imposition of the EU's retaliation in June 2018. Two months prior to the imposition of the tariffs, there appears to be a spike in imports, potentially indicating tariff "front-running" by EU importers. However, given the historical volatility of the series, the conclusiveness of this evidence is limited. In contrast, year-over-year growth in total import values in the twelve months following the imposition of retaliatory tariffs was less than half of that seen in the month prior. At the same time, import values of untariffed products remained relatively steady, highlighting the contribution of the EU's retaliation in shifting imports away from tariffed US products.

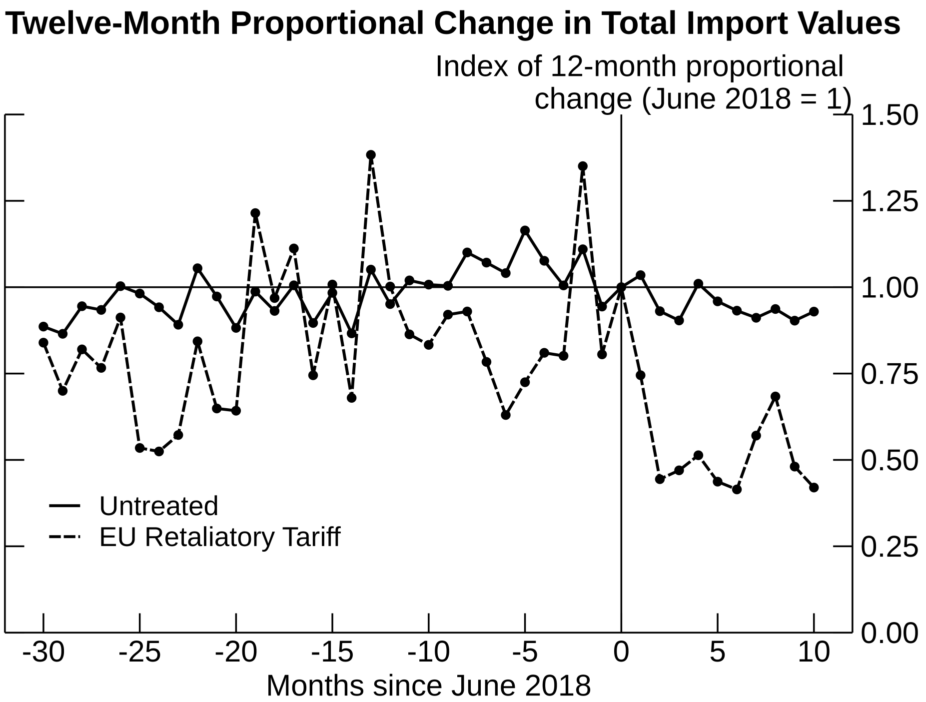

Figure C2: *"Untreated" includes all goods and countries that do not face retaliatory tariffs. June 2018 is set as month 0 as tariffs became effective on June 22, 2018, i.e. after the middle of the month. Import values are normalized to one in month zero so that import values are relative to the last month before the tariffs were implemented. Petroleum products (HS chapters 2709-2715) are removed. Source: UN Comtrade.*

C.3 Import Values and US Shares by six-digit HS6 Subheadings

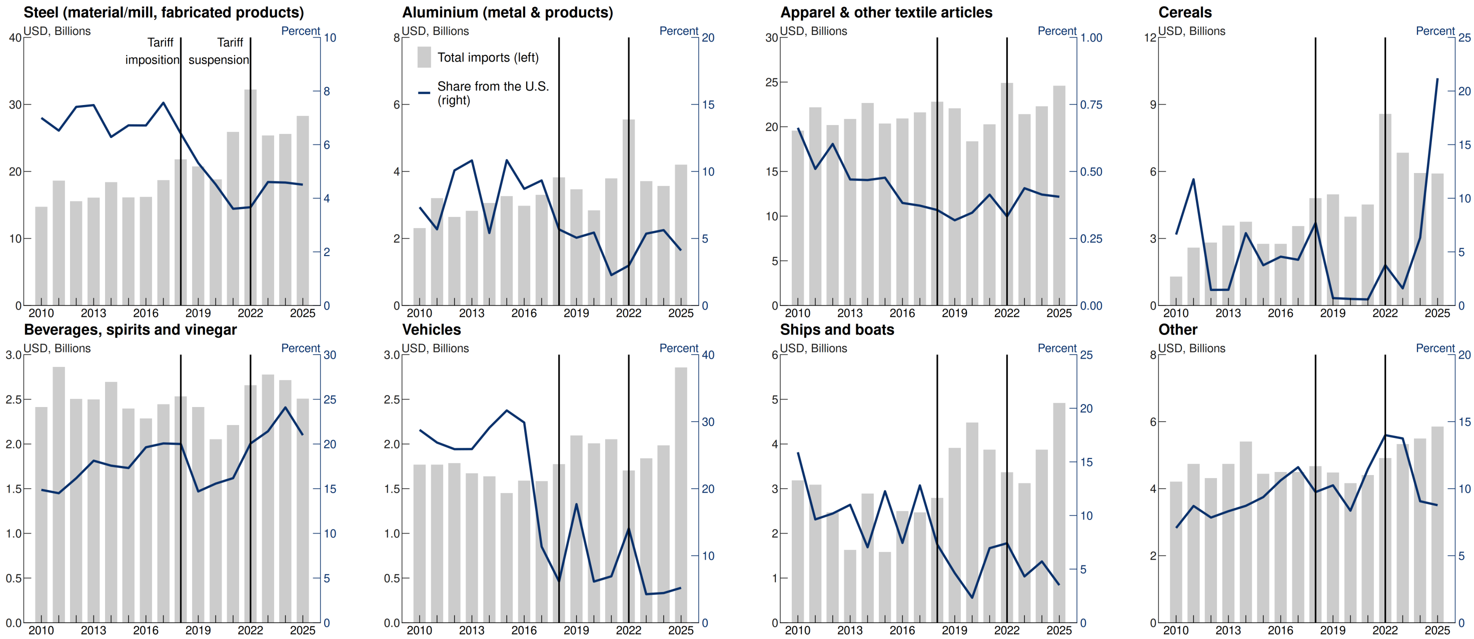

Figure C3: *Total import values from all partners and US import share of the EU's 2018 Annex 1 tariffed products using trade values at six-digit HS6 subheadings, concorded across HS 2007 to HS 2022 using WITS concordance tables. Due to Brexit, the U.K.'s values have been removed from pre-Brexit import values and counted as "extra-EU" trade where relevant. Croatia's trade has been included prior to its ascension in 2013 to keep a fixed EU-27 composition. Source: UN Comtrade.*

The gray bars in Figure C3 represent the value of total EU imports (from all partners, including the US) in current US-Dollars (left axis). The black line show US imports as a share of total category import values (right axis). The vertical black lines indicate the introduction of the EU's retaliatory tariffs in June 2018 and their suspension in January 2022.

C.4 Import Elasticities by Product Groups

Table C1: Effect of Retaliatory Tariffs on US Imports for Steel and Aluminum Products

	(1) *Log change import quantities*	(2) *IHS change import quantities*	(3) *Log change import values*	(4) *IHS change import values*
Panel A				
$\Delta \ln(1 + \text{Tariff}_{\text{it}})$	-2.781^{***}	-4.535^{**}	-3.643^{***}	-4.200^{**}
	(0.623)	(1.695)	(0.707)	(1.571)
Observations	7195	10 277	10 538	13 406
R^2	0.151	0.099	0.106	0.077
Panel B				
$-\Delta \ln(1 + \text{Tariff}_{\text{it}})$	1.413^{**}	2.839^{*}	1.552^{**}	3.779^{**}
	(0.518)	(1.269)	(0.522)	(1.236)
Observations	7499	10 725	10 584	13 581
R^2	0.114	0.209	0.090	0.204
Wald test: full reversal				
$\hat{\beta}_{\text{impl}} + \hat{\beta}_{\text{susp}} = 0$	-1.368^{*}	-1.696	-2.091^{**}	-0.421
	(0.810)	(2.117)	(0.879)	(1.999)

Source: UN Comtrade.
Note: Data are at the CN2018 product level with a monthly frequency. Due to Brexit, the U.K.'s import values are subtracted from the EU aggregate through January 2020, the last month in which UN Comtrade's EU reporter includes the U.K. Panel A is the period between June 2017 to June 2019, and Panel B is the period between December 2020 to December 2022. In Panel A, $\Delta \ln(1 + \text{Tariff}it)$ reflects tariff imposition; in Panel B, $-\Delta \ln(1 + \text{Tariff}it)$ reflects tariff suspension. EU Legislation 2018/886 Annex I tariffs were implemented on June 22, 2018, and suspended on January 1, 2022. IHS is the inverse of hyperbolic sine to handle zero-value trade data in t or *t-12*. Columns 1-3 exclude unit value ratios of t and $t - 12$ that are greater than 3 or less than 1/3. The final row reports a Wald test of H_0 which tests implementation effect + suspension effect = 0. Standard errors in parentheses and are clustered at the CN2018 eight-digit level, noted *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table C2: Effect of Retaliatory Tariffs on US Imports for Products Other than Steel and Aluminum

	(1)	(2)	(3)	(4)
	Log change import quantities	*IHS change import quantities*	*Log change import values*	*IHS change import values*
Panel A				
$\Delta \ln(1 + \text{Tariff}_{\text{it}})$	-1.974^{***}	-2.618^{*}	-2.211^{***}	-3.034^{**}
	(0.482)	(1.119)	(0.657)	(1.169)
Observations	102 149	130 430	137 967	164 027
R^2	0.115	0.101	0.086	0.080
Panel B				
$-\Delta \ln(1 + \text{Tariff}_{\text{it}})$	0.888	0.193	1.651^{*}	2.461^{*}
	(0.562)	(1.140)	(0.698)	(1.159)
Observations	107 776	137 704	143 579	170 691
R^2	0.123	0.214	0.096	0.218
Wald test: full reversal				
$\hat{\beta}_{\text{impl}} + \hat{\beta}_{\text{susp}} = 0$	−1.086	−2.425	−0.560	−0.573
	(0.740)	(1.597)	(0.959)	(1.646)

Source: UN Comtrade.
Note: Data are at the CN2018 product level with a monthly frequency. Due to Brexit, the U.K.'s import values are subtracted from the EU aggregate through January 2020, the last month in which UN Comtrade's EU reporter includes the U.K. Panel A is the period between June 2017 to June 2019, and Panel B is the period between December 2020 to December 2022. In Panel A, $\Delta \ln(1 + \text{Tariff}_{it})$ reflects tariff imposition; in Panel B, $-\Delta \ln(1 + \text{Tariff}_{it})$ reflects tariff suspension. EU Legislation 2018/886 Annex I tariffs were implemented on June 22, 2018, and suspended on January 1, 2022. IHS is the inverse of hyperbolic sine to handle zero-value trade data in t or t-12. The final row reports a Wald test of H_0 which tests implementation effect + suspension effect = 0. Columns 1-3 exclude unit value ratios of t and $t - 12$ that are greater than 3 or less than $1/3$. Standard errors in parentheses and are clustered at the CN2018 eight-digit level, noted *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

C.5 Event-Study Estimates of the Import-Share Response

Figure C3 documents the decline in US import shares descriptively, but does not formally capture the effect of tariffs on US import values in the EU. This appendix formalizes the comparison in two ways. The first compares tariffed products with non-tariffed products in the same sector, month by month, so that any shock affecting a sector as a whole is differenced out. The second compares US-sourced flows of tariffed products with the same products sourced elsewhere, so that any shock common to US-EU trade is absorbed. Both are estimated on monthly UN Comtrade data at the HS6 level from January 2016 to December 2024, and both hold the EU at fixed EU27 composition throughout. The results of both are reported in Figure C4 and demonstrate that, while the EU's retaliation lead to a notable decline in US imports, suspending the retaliation did not fully reverse the earlier decline, not even after several years (and after the Covid19 pandemic had passed).

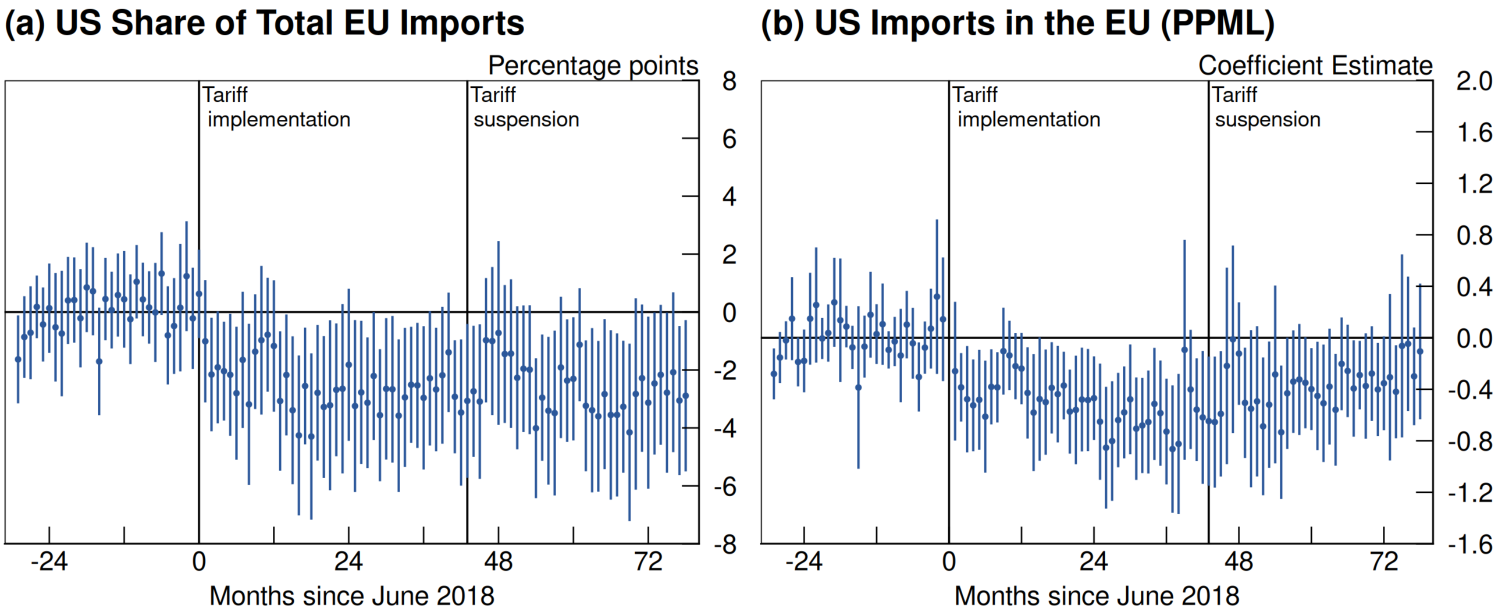

Figure C4: *Event-study estimates of the effect of the EU's retaliatory tariffs on US-sourced imports. Due to Brexit, the U.K.'s import values are subtracted from the EU aggregate through January 2020, the last month in which UN Comtrade's EU reporter includes the U.K. Panel (a) reports the differential US share of EU imports of tariffed products relative to non-tariffed products in the same sector, in percentage points. Panel (b) reports the PPML triple-difference coefficient on import values, in log points. Coefficients are normalized against the January 2016–May 2018 average. Vertical lines mark tariff implementation (June 2018) and suspension (January 2022). Whiskers are 95 percent confidence intervals.*

One concern is that the muted response to suspension reflects Covid19 pandemic disruption rather than a permanent reconfiguration of supply relationships. Importers may have wanted to return to US suppliers after January 2022 but been unable to while shipping capacity was constrained. If pandemic frictions delayed adjustment rather than preventing it, the return should have occurred once those frictions eased, and the shortfall should narrow as the post-suspension period progresses. If instead the retaliation induced permanent switching, the shortfall should be flat. We split the post-suspension window into an early period (2022) and a late period (2023–24), and test the two coefficients for equality. As shown in Table C3, neither specification exhibits a full recovery, while in both cases, the difference between the two sub-periods is statistically indistinguishable from zero ($p = 0.12$ and $p = 0.54$).

Table C3: Import-Share and Triple-Difference Estimates of the Post-Suspension Response

	(1) *US import share (percentage points)*	(2) *Import values, PPML (log points)*
β_1 Retaliation (Jul 2018–Dec 2021)	-2.476^{***}	-0.491^{***}
	(0.902)	(0.156)
β_2 Post-suspension (2022–2024)	-2.597^{***}	-0.371^{**}
	(0.987)	(0.160)
Early (2022)	-2.058^{**}	-0.416^{**}
	(0.989)	(0.179)
Late (2023–2024)	-2.867^{***}	-0.345^{**}
	(1.031)	(0.163)
Share of decline reversed	−4.9%	24.4%
H_0: early = late (p-value)	0.122	0.539

Note: Column 1 reports the differential US share of EU import of tariffed HS6 products relative to non-tariffed products in the same sector, in percentage points, with product and sector-by-month fixed effects. Column (2) reports a triple difference in import values estimated by PPML, in log points, with product-month, origin-month an product-origin fixed effects. Both are estimated on monthly data from January 2016 to December 2024, hold the EU at fixed EU27 composition, and cluster standard errors at the HS6 level. Coefficients are averages of monthly event-study estimates normalized against the January 2016–Ma 2018 mean. The share of the decline reversed is $1 - \hat{\beta}_2/\hat{\beta}_1$. Standard errors in parentheses, noted *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

D Concording Data Classifications

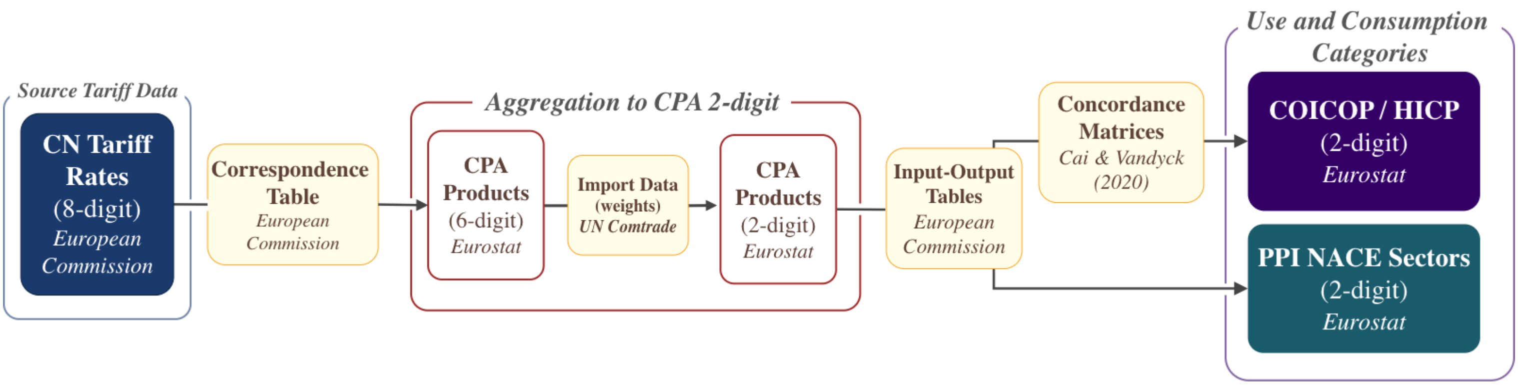

Figure D1: *Construction of Tariff Exposures: Schematic Illustration*

Figure D1 details how we transform the list of tariffed US import products to ultimately associate them with European producer and consumer price data. The initial tariff list, sourced from European Commission (2018b), is disseminated at the Common Nomenclature (CN) 8-digit level. To avoid inflating the tariff rate for a given product category by including all EU tariffs that were in place as of 2018, i.e. before the implementation of the retaliatory tariffs against select US imports, we define the tariff rate we are working with as the *additional* duties levied in the EU's 2018 tariff announcement. This results in tariff rates of zero percent for all products that are not tariffed and imported from the US.

The input-output (FIGARO) tables which we use to link statistical classification of products by activity (CPA) data to producer price categories are available for the CPA 2-digit level. The same is true for the concordance tables we use to map CPA data to consumer price categories. Using correspondence tables provided by the European Commission, we convert the tariffed goods from the 8-digit CN level to the 6-digit CPA level.[21] In order to collapse the tariff rates from the CPA 6-digit to the CPA 2-digit level, we compute a weighted average of the tariff rates of each 6 digit product within a 2-digit category, where the weight is the 2017 import share of a 6-digit product within a broader 2-digit category. This ensures that our CPA 2-digit tariff rates are not biased in cases where, for example, there are 100 6-digit products in a 2-digit category but only five of those goods have non-zero imports from the US. Put differently, a simple average tariff rate across all products would artificially deflate the CPA 2-digit tariff rates.

Once we have tariff rates for the 63 distinct CPA 2-digit products, our analysis branches off into intermediate (producer) and final (consumer) use. Starting with final use, we use concordance matrices provided by Cai and Vandyck (2020) to map the use of the 63 CPA products into the 34 categories of the Classification of Individual Consumption According to Purpose (COICOP) framework, according to which European inflation data are classified.[22] As detailed in equation (5), this gives us a category (and eventually country) specific tariff exposure based on which products are used in that consumption category and where those products originate. Symmetrically, we use the FIGARO tables from the European Commission to observe how CPA 2-digit products are used in the 64 distinct NACE Rev. 2 categories, which is the classification used to measure European producer prices (PPI).

Equations (3) and (5), which compute the tariff exposure for NACE sectors and COICOP categories, respectively, are

[21] Tables obtained from https://ec.europa.eu/eurostat/web/cpa/correspondence-tables

[22] See Cai and Rueda-Cantuche (2018) for details on the generation of this correspondence.

not identical because we do not observe where the CPA products in the COICOP correspondences come from. As a result, we opt to weight the COICOP category specific tariff exposures by the share of a product in that category and the US share of total supply of that product which we obtain from the FIGARO tables. Ultimately, although we have both highly disaggregated product and price data (six digit), the crosswalks that allow us to link these datasets together are only available at the two-digit level thereby restricting the scope and granularity of our analysis.

E Domestic Inflationary Effects of the 2018 EU Retaliation

E.1 Aggregate EU Producer Prices (PPI)

Producer price indices are not published by Eurostat for every sector and for many, collection began only in 2021. Thus, to study price changes in the aftermath of the June 2018 tariff implementation, we have to restrict our sample to 31 industries, which we observe at a quarterly frequency from 2017:Q1 to 2019:Q4. Using this panel, we estimate local projections of cumulative producer price changes on the industry-specific tariff exposures $\bar{T}_k$ for each horizon h relative to 2018:Q3, the first full quarter in which the retaliatory tariffs were in force.[23] Producer price tariff exposures are constructed as described in the main text and expressed in percentage points. They are small throughout: they average 0.009 percentage points and reach at most 0.036 percentage points, reflecting that the retaliation package targeted products with a low weight in EU industries' input purchases.

Our estimation specification is

$$100 \times \left[\ln P_{k,h} - \overline{\ln P_k^{\text{pre}}}\right] \;=\; \alpha_h + \beta_h \, \bar{T}_k + \varepsilon_{k,h} \tag{E1}$$

where $P_{k,h}$ is the price index of industry k at horizon h and $\overline{\ln P_k^{\text{pre}}}$ is the industry's average log price level over the pre-implementation sample.[24] Thus, the difference between these variables represents a measure for category-specific "excess" inflation. With exposure measured in percentage points, β_h captures the cumulative percentage-point response of industry k's price level to a one percentage point tariff exposure, so that $\beta_h = 1$ corresponds to full passthrough. Since equation (E1) is estimated on one observation per industry at each horizon, we conduct inference with a wild bootstrap (percentile-t, 9,999 Rademacher draws), which is robust to the small number of categories and equivalent to clustering by industry.

Figure E1a displays the estimates for horizons $h = -6, \ldots, 5$ quarters; Table E1 reports selected horizons. We find no statistically significant relationship between higher 2018 tariff exposure and producer price growth at any horizon: pre-event coefficients are flat (a Wald test of equality of all pre-event coefficients has $p = 0.32$), and all post-implementation confidence intervals include zero. The negative point estimates are driven by volatility in producer prices of coke and refined petroleum products and excluding this industry yields smaller coefficients which remain insignificant throughout. We note that PPI tariff exposures are tiny (at most 0.036 percentage points) and, consequently, even full and immediate passthrough of tariffs to prices would have raised the most exposed industry's price level by less than 0.04 percent. This is an order of magnitude below the typical within-industry quarterly price variation of 0.25 percent. The data are therefore uninformative about the passthrough rate itself, which is why the confidence intervals in Figure E1a are wide when scaled in passthrough units, but they do rule out that the retaliation left any economically noticeable imprint on producer prices.

[23] The tariffs took effect on June 22, 2018, in the final days of 2018:Q2, so the quarterly producer price index for 2018:Q2 reflects almost entirely pre-tariff prices. We therefore treat 2018:Q2 as the last pre-implementation quarter ($h = -1$) and 2018:Q3 as the impact quarter ($h = 0$).

[24] Normalizing by the pre-event average rather than a single reference period follows Dube, Girardi, Jordà, and Taylor (2025) and guards against idiosyncratic (e.g. seasonal) fluctuations in any individual base period; results using the last pre-implementation period as the base are very similar. When a single base period is used, the collected β_h are numerically identical to the coefficients of a two-way fixed effects event study of log prices on exposure-times-horizon interactions with industry and time fixed effects.

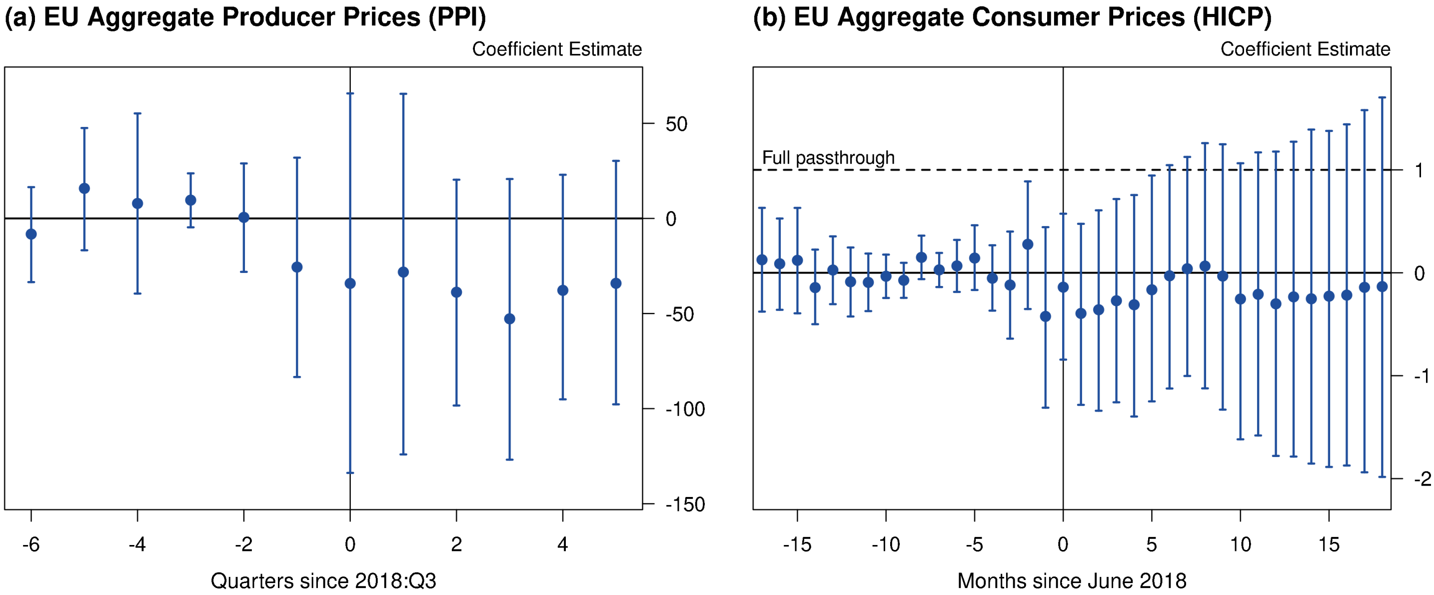

Figure E1: *Local projection estimates of equation (E1): cumulative price level response, in percentage points, to a one percentage point tariff exposure. A coefficient of one corresponds to full passthrough. In panel (a), the full passthrough line is omitted as it is visually indistinguishable from zero at the displayed scale. Bars are 95 percent wild bootstrap (percentile-t) confidence intervals. Vertical lines mark tariff implementation (June 22, 2018).*

PPI (quarterly)			*HICP (monthly)*		
h	β_h	95% CI	h	β_h	95% CI
0	-34.17	[-133.79, 65.73]	1	-0.39	[-1.28, 0.48]
1	-28.21	[-124.08, 65.51]	3	-0.27	[-1.26, 0.72]
2	-38.79	[-98.36, 20.35]	6	-0.03	[-1.12, 1.05]
3	-52.77	[-126.84, 20.73]	12	-0.30	[-1.78, 1.18]
5	-34.12	[-97.74, 30.26]	18	-0.13	[-1.98, 1.70]

Table E1: Local projection estimates of equation (E1) at selected horizons. h measured in quarters since 2018:Q3 (PPI) and months since June 2018 (HICP). 95 percent confidence intervals from a wild bootstrap (percentile-t, 9,999 Rademacher draws).

E.2 Aggregate EU Consumer Prices (HICP)

To assess the effect of the EU tariff retaliation on consumer prices, we estimate equation (E1) on the panel of 34 COICOP categories, which we observe monthly from January 2017 to December 2019, with horizons $h = -17, \ldots, 18$ months around implementation (June 2018). Exposure varies considerably across categories: while 14 of the 34 categories are essentially unexposed (below 0.1 percentage points), exposure reaches 1.9 percentage points in the most exposed categories (non-alcoholic beverages, alcoholic beverages and tobacco), which contain prominent retaliation targets.

Figure E1b displays the estimates. Pre-event coefficients are individually insignificant and show no differential trend between more and less exposed categories.[25] After implementation, all point estimates are economically negligible, between -0.40 and 0.07 percentage points per percentage point of exposure, implying that even the most exposed category's cumulative price change attributable to the tariffs was below one percent in absolute value over the following year and a half. Moreover, the estimates are indicative regarding short-term non-effects: for the first six months after

[25] A Wald test of equality of all pre-event coefficients yields $p = 0.05$, reflecting mild common seasonality in the (not seasonally adjusted) category indices rather than a differential trend: re-estimating the local projections in twelve-month differences, which removes category-specific seasonality in the spirit of the four-quarter excess inflation measures of Minton and Somale (2025), produces clean placebo horizons and post-implementation estimates very similar to the baseline.

implementation, the upper bounds of the 95 percent confidence intervals lie strictly below one, rejecting even a full passthrough of the retaliatory tariffs into consumer prices. At longer horizons, the intervals widen mechanically, but the point estimates remain centered on zero. These results are robust to excluding energy-intensive and strongly seasonal categories (electricity and fuels, operation of personal transport equipment, transport services, package holidays) and to using May 2018 as a single base period (Table E1, right panel, reports selected baseline horizons).

E.3 Country-Category Price Effects

Country	Tariffed US Import Share (%)
Austria	0.45
Belgium	0.83
Bulgaria	3.60
Croatia	4.70
Cyprus	6.59
Czechia	1.85
Denmark	1.57
Estonia	2.28
Finland	1.33
France	1.40
Germany	1.56
Greece	6.13
Hungary	2.08
Ireland	0.52
Italy	2.45
Latvia	3.30
Lithuania	3.66
Luxembourg	1.01
Malta	24.85
Netherlands	1.00
Poland	1.95
Portugal	3.00
Romania	2.38
Slovakia	1.25
Slovenia	1.63
Spain	1.94
Sweden	1.69

Table E2: Share of US goods imports subject to the EU's 2018 retaliatory tariffs. Computed from 2017 UNComtrade CN 6 digit trade data by dividing value of imports from the US subject to tariffs by value of total US imports.

Country	Low Exposure	High Exposure
Austria	27	7
Belgium	24	10
Bulgaria	27	7
Croatia	30	4
Cyprus	23	11
Czechia	26	8
Denmark	21	13
Estonia	22	11
Finland	22	12
France	22	12
Germany	21	13
Greece	27	7
Hungary	25	9
Ireland	20	14
Italy	27	7
Latvia	29	4
Lithuania	26	8
Luxembourg	23	11
Malta	27	7
Netherlands	17	16
Poland	28	6
Portugal	33	1
Romania	28	5
Slovakia	28	5
Slovenia	25	9
Spain	28	6
Sweden	22	12

Table E3: Number of COICOP categories assigned into the high and low tariff exposure groups. Low refers to tariff exposure values in the lowest three quartiles while treated refers to values in the upper quartile. Totals do not add up to the 34 COICOP categories for each country because some category data are missing for select countries.

	Mean	Min	Max	N
Full Sample	0.006	0	0.11	913
High Exposure	0.020	0.008	0.11	230
Low Exposure	0.001	0	0.0079	683

Table E4: Summary statistics of COICOP category tariff exposures: Summary Statistics. Low refers to tariff exposure values in the lowest three quartiles while treated refers to values in the upper quartile.

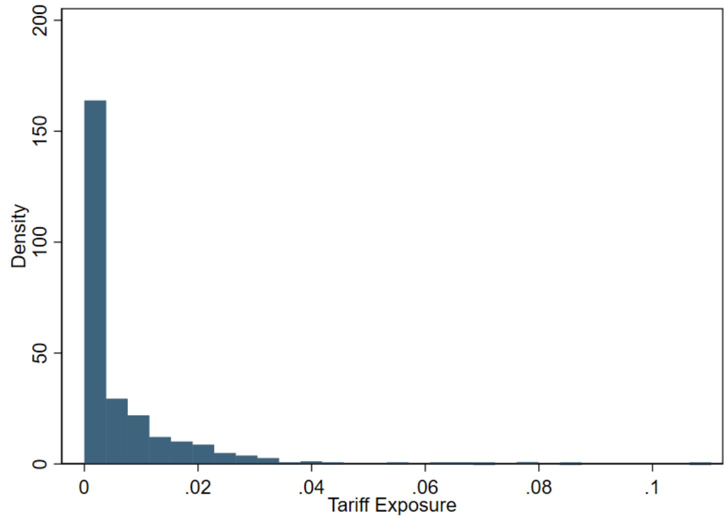

Figure E2: *Distribution of COICOP country-category tariff exposures. Computed as described in section 4.2.*

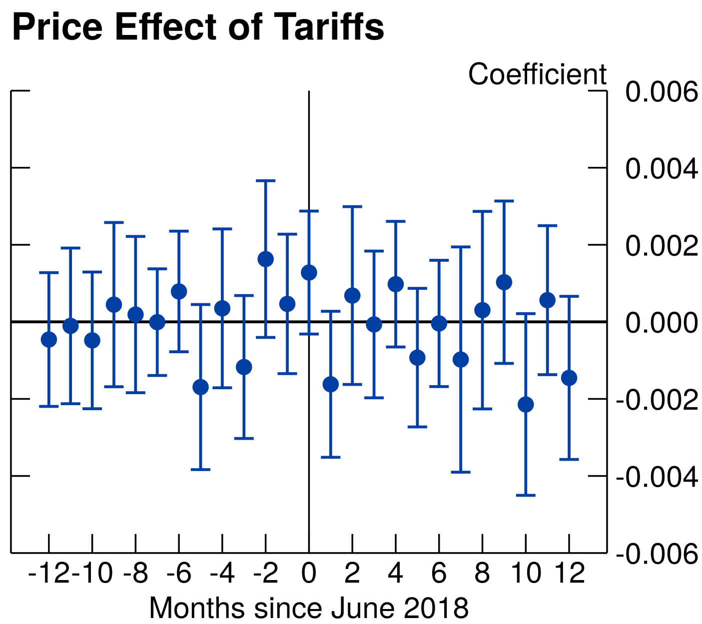

Figure E3: *Results of estimating equation (6) using May 2018 instead of June 2018 as a cutoff for tariff implementation.*

The EU already listed the Annex 1 and 2 product codes considered for retaliation in European Commission (2018a), which was published on May 16, 2018, i.e. about one month before the official implementation of the tariffs. Thus, it is possible that EU domestic prices might have adjusted already before the tariffs were implemented. To address this concern, we repeat the estimation of the price effect equation (6) but use May 2018 as a cutoff month. The results are reported in Figure E3. It shows that our findings are unchanged relative to the baseline estimation (shown in the right hand panel of Figure 2).

F Predicted Domestic Inflationary Effects of the 2025 EU Retaliation Proposal

F.1 Linking COICOP 1999 and 2018 Definitions

Our analysis of the price impact of the EU's 2025 retaliation proposal covers the period August 2025 to February 2026. Thus, it requires household consumption categories to be comparable across the transition from the *Classification of Individual Consumption According to Purpose* (COICOP) 1999 to COICOP 2018 which was implemented in the European HICP with effect from January 2026. The two vintages differ substantially: COICOP 2018 restructures divisions, moves content across them, and adds a new division. To construct a mapping between them, we use two inputs, all publicly available:

1. **The UNSD correspondence table** between COICOP 2018 and COICOP 1999 (United Nations Statistics Division, version dated 2 October 2024).[26] Each of its 688 rows links one COICOP 2018 category (at the 2 to 5 digit level) to one COICOP 1999 category, together with an explanatory note on the shared content. This table is the backbone of the mapping and is independent of any country or year. It also provides COICOP 2018 and COICOP 1999 classification descriptions (division titles and explanatory notes) which we use to label divisions and to resolve the counting unit.

2. **Eurostat HICP item weights in COICOP 2018** These are annual weights expressed in per mille (‰) of total household expenditure, such that the all items index sums to 1000. Crucially, Eurostat backcasts these weights into COICOP 2018 codes for the full history, so the 2018 division weights are published directly, i.e. we do not have to reconstruct them. We use the EU27 aggregate as the headline geography and additionally compute the mapping for each of the 27 member states (see below).

To construct the mapping, we have to make a few measurement decisions:

Counting unit Eurostat publishes weights at ragged depth: most branches reach the 5 digit subclass, but some are published only to the 3 or 4 digit level, and a handful of 2026 food items are broken to 6 digits. We therefore define the counting unit by a *top-down, completeness-checked partition*: starting from each COICOP division, we expand a node into its published children only if those children exist, lie at or above the 5 digit level, and sum to the parent (within a small tolerance); otherwise the node itself is kept as a terminal "leaf". This rule (i) caps the unit at the 5 digit level, which is the finest level the correspondence table resolves on the 2018 side, and (ii) prevents weight from leaking when a finer breakdown is only partial.[27] For the EU27 aggregate in 2026 this yields 293 leaves that partition the full 1000 ‰ exactly.

Assigning leaves to 1999 source divisions Each 2018 leaf is matched to its COICOP 1999 *source* division(s) through the correspondence table, using a prefix match in both directions (the weight tree reaches 5 digits while the correspondence 1999 column reaches only 4 digits, so a leaf may be a descendant of, or an ancestor of, a correspondence entry). A leaf that maps to a single 1999 division is assigned there exactly.

[26] Distributed as an Excel file; the operative worksheet is `Correspondence 2018-1999`: https://unstats.un.org/unsd/classifications/Econ/Download/COICOP2018_COICOP1999_correspondence_table_final.xlsx

[27] For example, in 2026 Eurostat splits "Fresh meat" into "Bovine, pig and poultry" at the 6 digit level but does not exhaust the 5 digit "meat" parent; our rule keeps the 5 digit parent rather than its incomplete children.

Equal-split assumption A minority of leaves map to *several* 1999 divisions—these are the genuinely many-to-many parts of the classification change (for instance, the 2018 category "delivery of goods" draws content that COICOP 1999 recorded "inside restaurant, furniture and grocery categories"). The weight data give us only the whole leaf's weight, not how it splits across sources. For these leaves we divide the weight equally among the mapped 1999 divisions. This is the sole assumption in the construction of the mapping and is inconsequential from a quantitative perspective.

Aggregation and shares Allocated leaf pieces are summed to the (2018 division × 1999 division) level. For each link we report its weight in per-mille and two complementary normalisations:

- `share_of_2018div`: the link divided by its 2018 division total. These sum to one across the 1999 sources of a given 2018 division and are the weights for reconstructing an intensive quantity, such as the tariff exposure, as a weighted average.
- `share_of_source_1999div`: the link divided by the 2018 weight tracing back to that 1999 division. These sum to one across the 2018 destinations of a given 1999 division (they are "outflow" fractions) and can be used to push an extensive quantity (for example expenditure in euros) forward by summation.

Results Figure F1 visualizes the mapping for the EU27 aggregate using 2026 weights. Of total household expenditure, 85.4 % stays within the same-numbered division, 8.0 % moves to a different division through a flow established exactly by the correspondence, and 6.6 % moves through a flow that rests on the equal-split assumption.

Table F1 reports, for each COICOP 2018 division, its 2026 EU27 weight and the share of that weight originating within the same-numbered 1999 division versus in other divisions. The classification change is concentrated: divisions including "Food", "Clothing", "Transport," "Recreation" and "Insurance" are essentially stable, whereas "Information and communication" (2018 division 08) draws 43 % of its weight from other 1999 divisions (principally audio-visual and IT goods moved out of "Recreation" and "Culture"), "Restaurants and accommodation services" (division 11) draws 36 % (mainly tobacco-adjacent and transport-adjacent items), and the new division 13 ("Personal care, social protection and miscellaneous goods and services") is assembled entirely from the old "Miscellaneous" division and a fragment of "Furnishings".

The construction of the mapping is identical for each EU member state since only the weights change while the correspondence table is country-independent. We compute the mapping for all 27 EU member states (plus the EU27 aggregate for reference). Every member state has 5 digit weight detail in 2026, so the provenance matrix is available for all of them; division-level weights are available as an annual series (member states from around 1998, the aggregate from 2000).

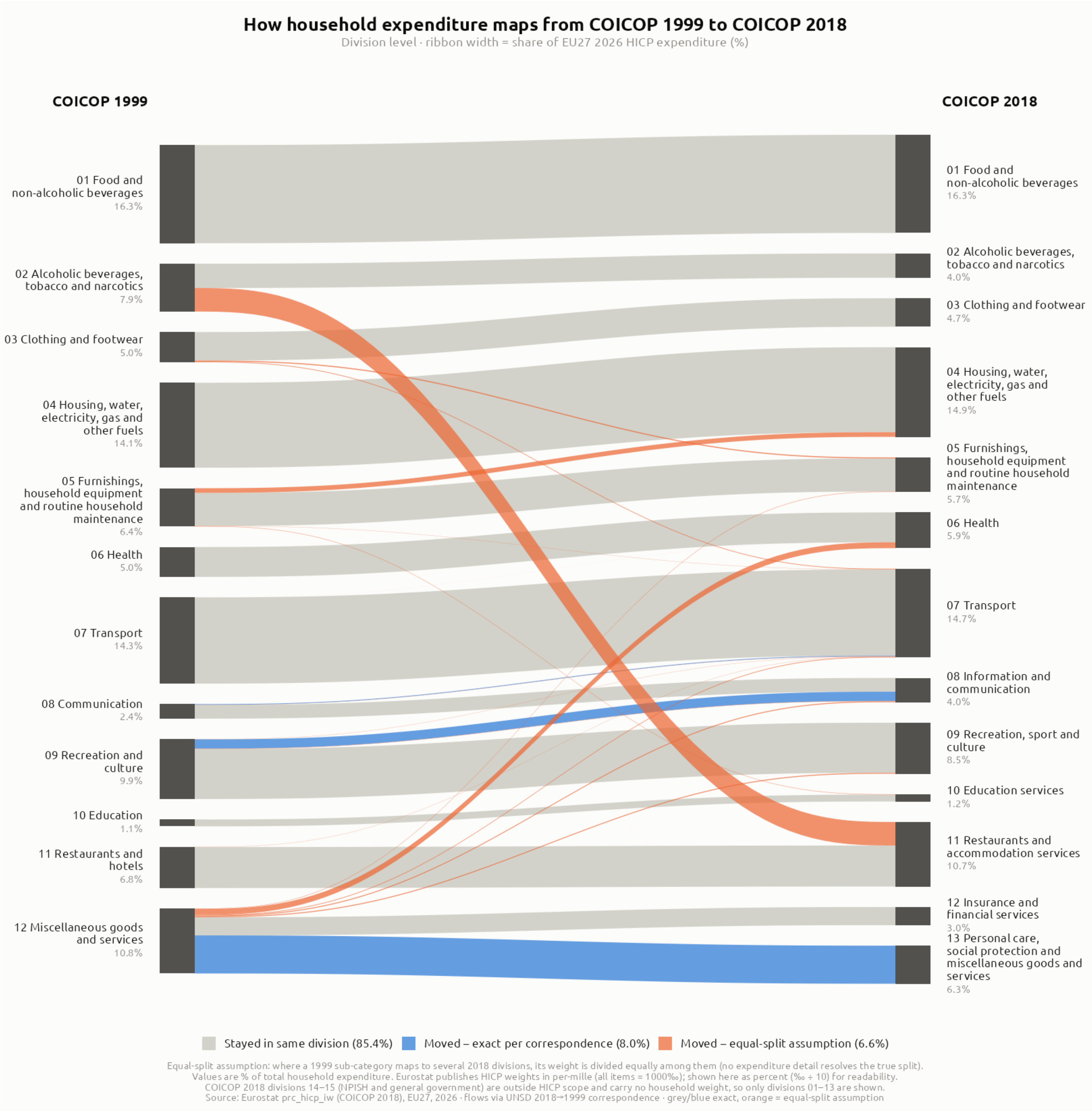

Figure F1: *Mapping of household expenditure from COICOP 1999 (left) to COICOP 2018 (right) at the division level, EU27, 2026 weights. Ribbon width is the share of total HICP expenditure. Grey ribbons stay in the same division; blue ribbons move to a different division through a flow established exactly by the UNSD correspondence; orange ribbons move through a flow allocated under the equal-split assumption. Values are shown as percentages of total household expenditure. COICOP 2018 divisions 14–15 (NPISH and general government) are outside HICP scope and carry no household weight, so only divisions 01–13 are shown.*

	COICOP 2018 division	Weight (%)	From own (%)	From other (%)
01	Food and non-alcoholic beverages	16.3	100	0
02	Alcoholic beverages, tobacco and narcotics	4.0	100	0
03	Clothing and footwear	4.7	100	0
04	Housing, water, electricity, gas, fuels	14.9	95	5
05	Furnishings, household equipment	5.7	96	4
06	Health	5.9	84	16
07	Transport	14.7	97	3
08	Information and communication	4.0	57	43
09	Recreation, sport and culture	8.5	98	2
10	Education services	1.2	95	5
11	Restaurants and accommodation services	10.7	64	36
12	Insurance and financial services	3.0	100	0
13	Personal care, social protection, misc.	6.3	0	100

Table F1: COICOP 2018 divisions, EU27 2026 HICP weights (as % of total household expenditure), and the share of each division's weight originating in the same-numbered 1999 division ("From own") versus in other 1999 divisions ("From other"). Shares are rounded to whole percentage points.

F.2 Country-Category Breakdown Including Ireland

Due to its outsized share of multinational companies and US subsidiaries, Ireland would experience the largest inflationary effect of any EU country as a result of the EU's 2025 tariff retaliation against US imports.

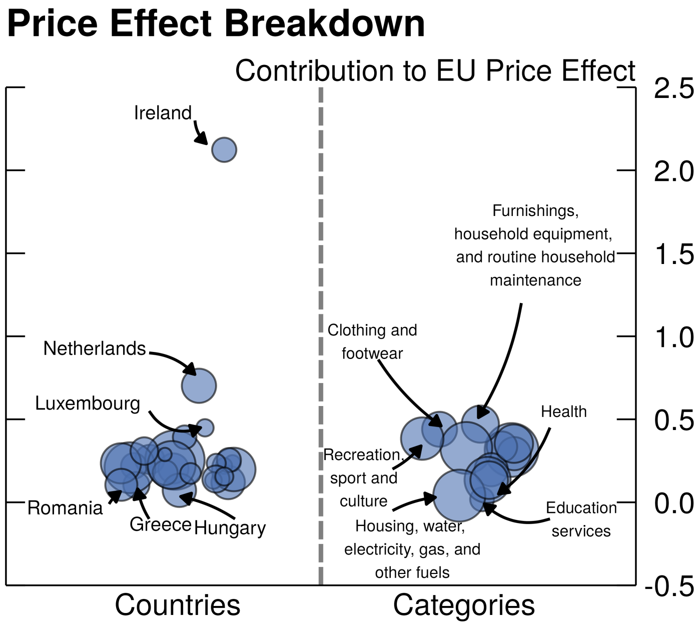

Figure F2: *Difference between predicted price level and actual price level as of February 2026 by EU countries and COICOP categories.*

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