Impact of the 2025 United States Tariffs on Firm Export Behavior: Evidence from Asian Customs Data

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Awareness of Issues

- The global economy is navigating through uncertainty—affected by the continuing regional turbulence between Russia and Ukraine, constantly shifting geopolitical tensions in the Middle East, trade tensions between the US and the People's Republic of China (PRC), and the historically high US tariffs.
- The supply chain disruptions raise trade costs across the spectrum, reconfigure trade routes between importers and exporters, and realign private sector business' planning and production, especially for manufacturers and globalized firms, including small exporters.

Country-specific tariffs in the ASM countries

Country	Reciprocal tariff	Effective date
LAO	40%	7 August 2025[1]
BRU, IND, KAZ,	25%	7 August 2025[1]
BAN, SRI, VIE	20%	7 August 2025[1]
CAM, INO, MAL, PAK, PHI, THA	19%	7 August 2025[1]
ARM, AZE, FIJ, GEO, KYR, NEP, PNG, SAM, SIN[2], SOL, TAJ, TON, UZB.	10% baseline	5 April 2025

ASM = ADB's Asia SME Monitor.

[1] 10% baseline was applied before implementing the special rate.

[2] 25% for venezuelan oil (threatened).

Source: ReedSmith Trump 2.0 tariff tracker. Updated 24 September 2025.

Product-specific tariffs (US Section 232 tariffs)

	Month						
	2	3	4	5	6	7	8
Steel		25%, c			50%, c		
Aluminium		25%, c	c		50%		
Automobile			25%				
Automobile parts				25%			

c: Category expansion

Awareness of Issues

- Studies on the 2018 US tariffs imposed during the first Donald Trump presidency show that while increased tariffs passed mostly through to duty-inclusive prices (those from high trade barriers were generally borne by US customers and importers), foreign exporters to the US in industries such as steel largely lowered their export prices, absorbing part of the tariff increases through reduced profits.
- This heterogeneity raises a central question: **Who actually suffers from a trade barrier hike?**

References:

- Amiti, Mary, Stephen J. Redding, and David E. Weinstein. 2019. "The Impact of the 2018 Tariffs on Prices and Welfare." *Journal of Economic Perspectives* 33 (4): 187–210.
- Amiti, Mary, Stephen J. Redding, and David E. Weinstein. 2020. "Who's Paying for the US Tariffs? A Longer-Term Perspective." *AEA Papers and Proceedings* 110: 541–46.
- Asian Development Bank (ADB). 2025. Asia Small and Medium-Sized Enterprise Monitor 2025. Manila.
- Broda, C. and D. E. Weinstein. 2006. Globalization and the Gains from Variety. *Quarterly Journal of Economics*. Volume 121, Issue 2. May.
- Pablo D Fajgelbaum, Pinelopi K Goldberg, Patrick J Kennedy, Amit K Khandelwal, The Return to Protectionism, *The Quarterly Journal of Economics*, Volume 135, Issue 1, February 2020, Pages 1–55.

Objective and Research Questions

Objective:

- The study aims to provide a systematic assessment of how the new US tariff shock reshaped firm dynamics in developing Asia.

Research Questions:

- What are the impact of the new US tariffs on exporters in developing Asia?
- Does the impact differ across products?
  - ➢ Explicitly incorporating product-level elasticity of substitution (Broda and Weinstein 2006).
  - ➢ The higher elasticity of substitution, the easier substitution across suppliers.

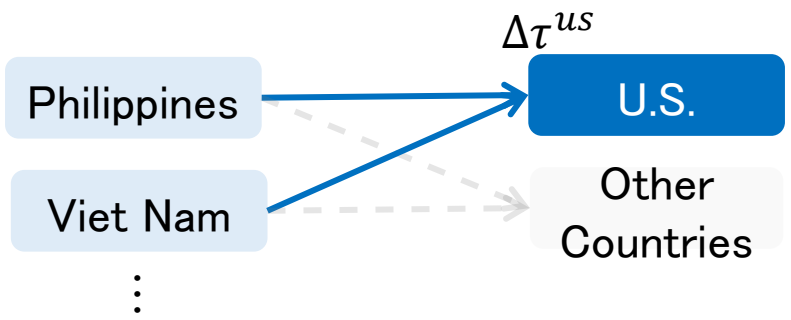
    ⇒ Stronger competitive pressure.

    ⇒ Exporters might be forced to cut prices to stay in the market, resulting in partial tariff absorption.

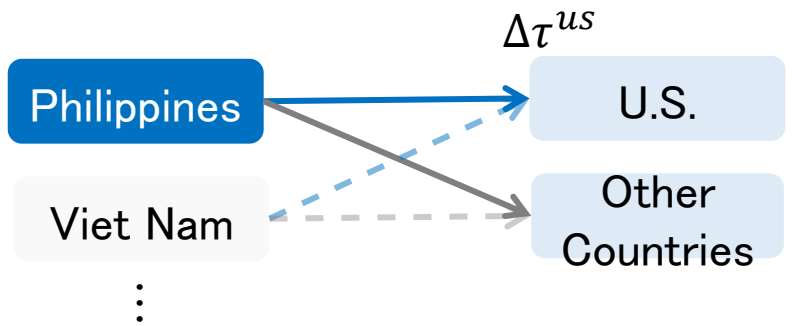
Data: Customs data (Panjiva)

- Shipment-level records including shipper / consignee IDs, shipping / arrival date, HS codes, shipment value (USD), weight (kg), ports.

U.S. import data
(August 1, 2023 - August 30, 2025)



Philippines export data
(January 1, 2024 - June 30, 2025)



Data: Elasticity of substitution

- Broda and Weinstein (2006) estimated product-specific substitution
  - Lower for differentiated goods, higher for commodities.

- Mapped the 1990-2001 HTS-based substitution elasticity to HS6 digits codes in Panjiva dataset.

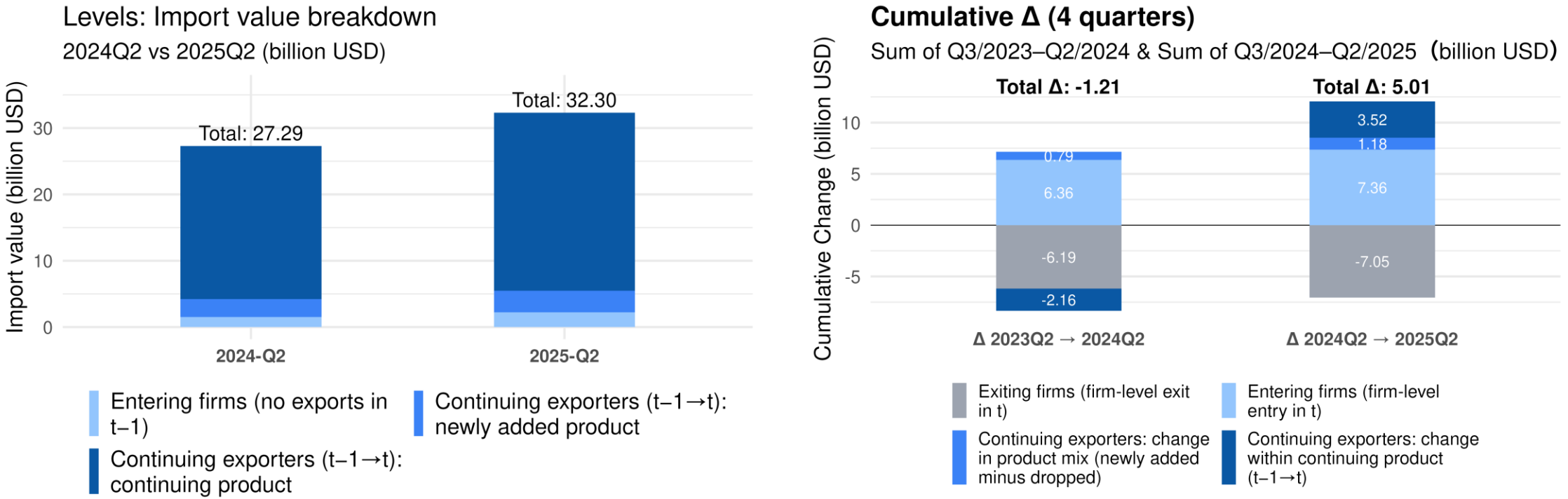
Table 1: Summary Statistics of HS6-level Elasticity of Substitution included in U.S. import (Mapped from Broda and Weinstein, 2006)

		Tariff shock category			
	Reciprocal	Steel	Aluminum	Automobile	Automobile parts
Product number	3,614	101	75	14	82
Elasticity of Substitution					
mean	7.3	3.4	5.3	26.3	3.6
s.d.	23.0	2.6	13.9	33.3	6.2
min	1.1	1.2	1.2	2.5	1.4
median	3.2	2.6	2.6	12.5	2.4
max	964.4	15.6	103.0	119.3	52.3

US import value change at macro-level

- Continuing exporters dominates total import value.
- Aggregate import value increased in 2025, possibly due to pre-contracted shipments or dominance of large firms masking MSME-level impacts.

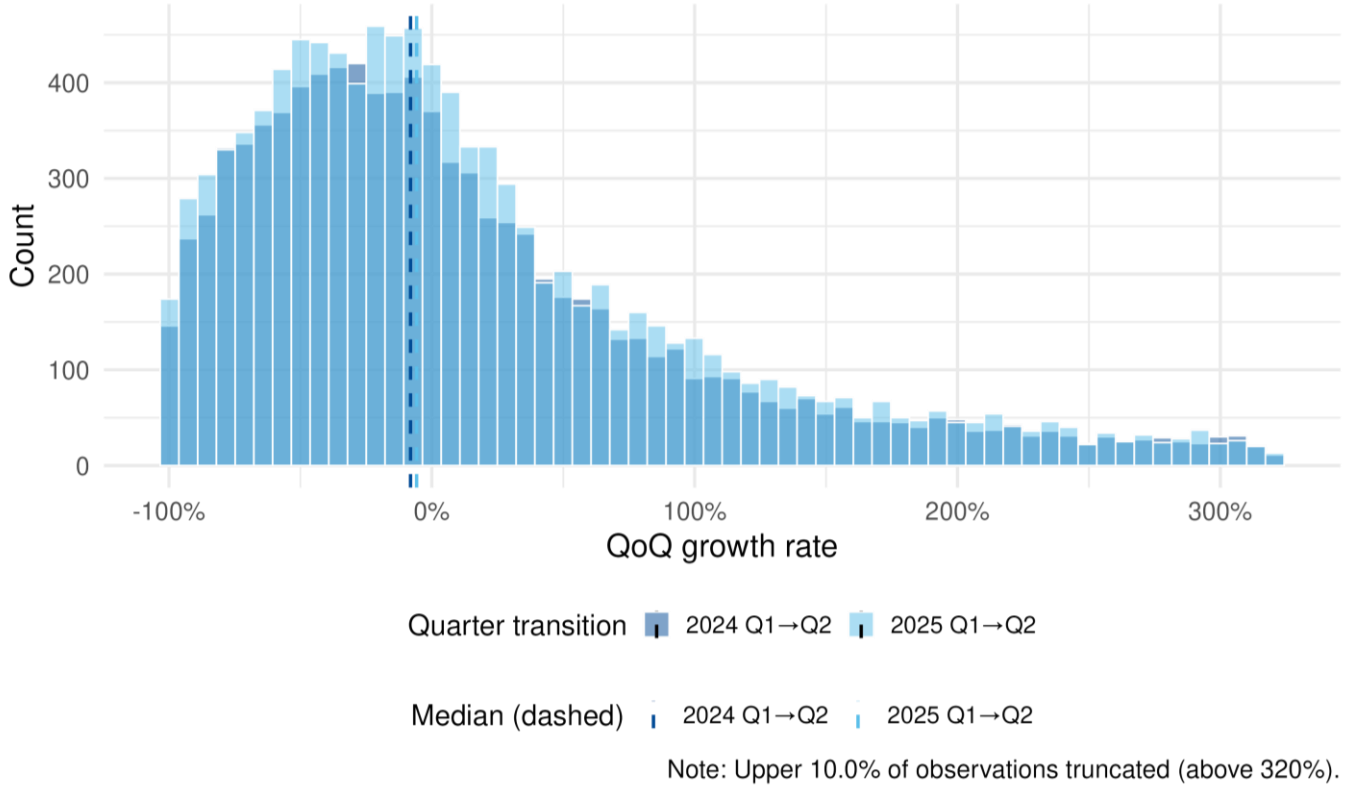
Figure 1: Import Dynamics based on Aggregate Data



Firm-level growth distribution

- Firm growth composition is similar between Q2 2024 and Q2 2025.
- Aggregate level increase was largely driven by a small set of large firms.

Figure 2: Firm-level Quarter-on-Quarter Growth Distribution



Empirical Approach 1: Pre-post analysis

Baseline analysis using US import data :

$$y_{ijpt} = \beta \cdot Post_{pt} + \boldsymbol{u}_i + \boldsymbol{\eta}_{jp} + \epsilon_{ijpt}$$

y_{ijpt}: unit price/quantity/ value (all in log) of HS 6digits product p at year-month t from firm i in origin country j

$Post_{pt}$: a dummy variable which takes 1 if $t - T_p \geq 0$, where T_p is defined as product p' s first tariff hike timing

$\boldsymbol{u}_i$: firm i fixed effect

$\boldsymbol{\eta}_{jp}$: origin country j and HS 6digits level product p fixed effect

Estimation Result 1: Response from exporters in 6 Asian countries

- Unit price fell by around 3% to 5 % after the new tariff introduction, but smaller than the tariff rates, while quantities mostly unchanged (only steel reduced).

Table 1: Pre-Post Analysis of Import Price, Quantity, and Value around the 2025 Tariff introduction

	Reciprocal	Steel	Aluminum	Automobile	Automobile parts
Panel A : ln(export price before tariff)					
Post period	-0.031**	-0.054*	-0.055+	-0.029***	-0.042*
	-0.007	-0.016	-0.027	-0.002	-0.011
Num.Obs.	1,501,684	121,991	141,101	2,871	187,496
R2 Adj.	0.882	0.711	0.812	0.677	0.898
Panel B : ln(export quantity)					
Post period	0.035*	-0.026**	-0.016	0.019	0.004
	-0.01	-0.004	-0.012	-0.068	-0.019
Num.Obs.	1,502,052	121,991	141,101	2,871	187,496
R2 Adj.	0.672	0.59	0.582	0.69	0.642
Panel C : ln(export value)					
Post period	0.004	-0.080***	-0.073***	-0.011	-0.046+
	-0.011	0	-0.008	-0.064	-0.02
Num.Obs.	1,501,684	121,991	141,101	2,871	187,496
R2 Adj.	0.55	0.49	0.552	0.687	0.59

Notes: Standard errors are clustered by origin country and HS-6. Significance: + 0.10, * 0.05, ** 0.01, *** 0.001. Sample: Imports arriving between August 2023 and August 2025 from firms located in Cambodia, Indonesia, the Lao PDR, the Philippines, Thailand, Viet Nam, and that recorded five or more export shipments after January 2024.

Empirical Approach 2: Difference-in-differences (DID)

Baseline analysis using the Philippines Export data:

$$y_{idpt} = \sum_{l \neq -1} \beta_l [treat_{dp} \cdot \{1\{t - T_p = l\}\}] + \boldsymbol{u}_i + \boldsymbol{\theta}_{dp} + \boldsymbol{\omega}_{pt} + \epsilon_{idpt}$$

y_{idpt}: Outcome of HS6 product p at year-month t from firm i to destination country d

Export volume (in log form), export value (in log form), unit price (in log form)

$treat_{dp}$: a dummy variable which takes 1 if destination country is US and HS 6digits level product p subjected to the tariff hike

$\{1\{t - T_p = l\}$: a dummy variable which takes 1 if $t - T_g = l$ where T_g is April 2025 for products subject to reciprocal tariff hike.

$\boldsymbol{u}_i$: firm i fixed effect

$\boldsymbol{\theta}_{dp}$: Destination country d and HS 6digits level product p fixed effect

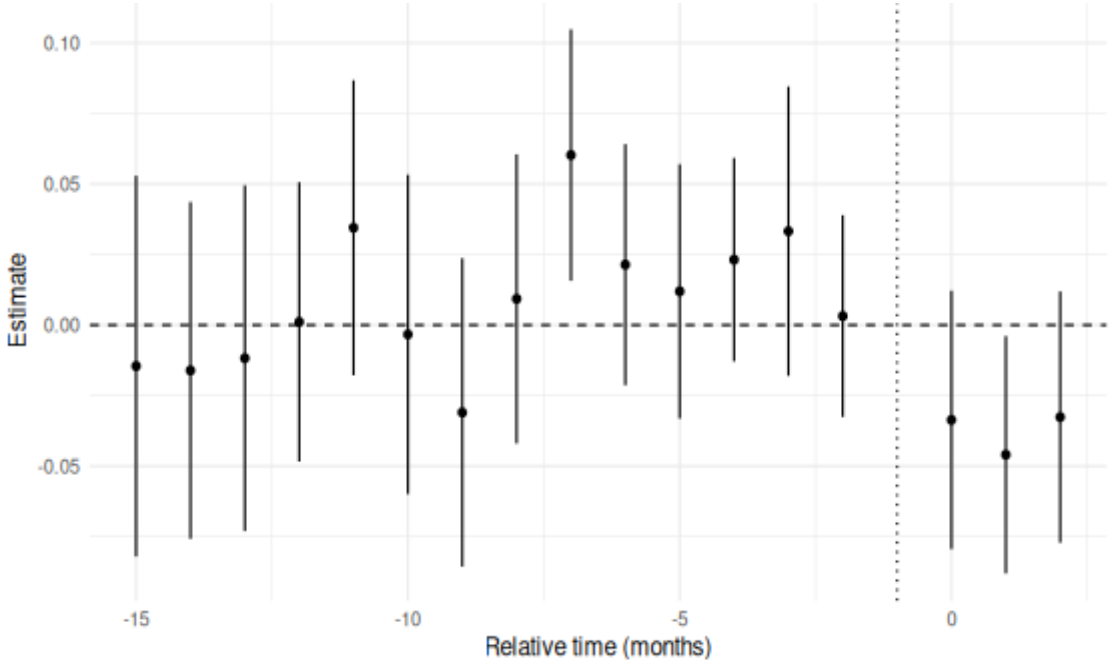
$\boldsymbol{\omega}_{dt}$: Destination country d and year-month t fixed effect

Estimation Result 2: Response from Philippines Exporters

- Export prices declined modestly (around 4%) after 10% reciprocal tariffs.
  - ➢No significant change in quantity and value.

- Implies at least short-run, exporting firms keep shipping to the US but accept lower margins.

Figure 3: Export Price Responses Over Time After the Reciprocal Tariff Introduction



Notes: Each point in the figure represents the log difference in export outcomes for affected product-destination pairs months before or after 10% tariff imposition, relative to the month immediately preceding the tariff (l= -1). The sample is restricted to HS6-level products subject to the reciprocal 10% tariff, excluding Section 232 products. The solid line shows point estimates and error bars show 95% confidence intervals.

Empirical Approach 2: DID

Heterogeneity, using the Philippine export data :

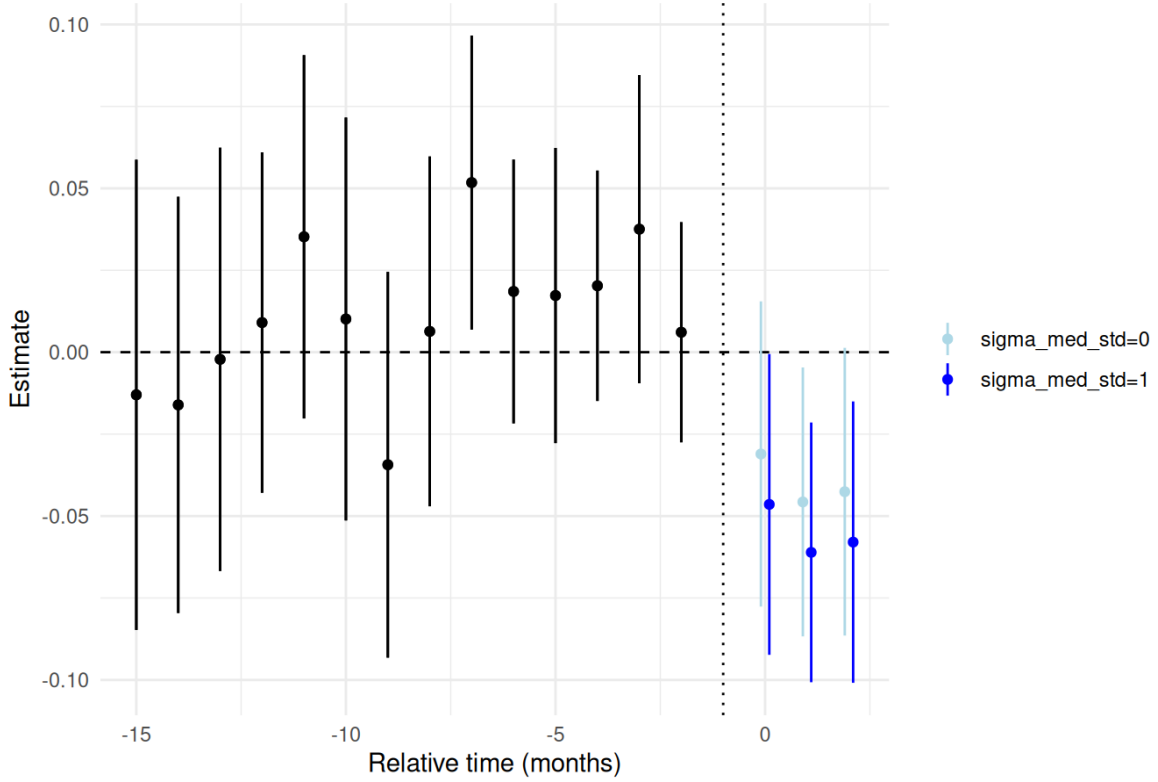
$$y_{idpt} = \sum_{l \neq -1} \beta_l [treat_{dp} \cdot \{1\{t - T_p = l\}\}] + \boldsymbol{\gamma}\left[\boldsymbol{treated_{dp}} \cdot \mathbf{1}\{\boldsymbol{t - T_p \geq 0}\} \cdot \boldsymbol{\sigma_p^{std}}\right] + \boldsymbol{u}_i + \boldsymbol{\theta}_{dp} + \boldsymbol{\omega}_{pt} + \epsilon_{idpt}$$

σ_p^{std}: Standardized elasticity of substitution at the HS6 product level

Estimation Result 2: Response from Philippines Exporters (heterogeneity)

- Price decline is relatively larger for less differentiated products.
- Indicates exporters of homogeneous goods absorbed more tariff cost to stay competitive.

Figure 4: Export Price Response Over Time After the Reciprocal Tariff Introduction



Notes: When the standardized σ equals zero (shown with light blue color in the figure), the products represent differentiated goods such as men's jackets, leather footwear, or processed foods, where branding or design matters.
By contrast, products included at one standard deviation above the mean (standardized $\sigma = +1$, shown with dark blue color) correspond to nearly homogeneous commodities, such as crude petroleum, refined copper, or vegetable seeds traded under internationally standardized specifications.

Initial Findings and Policy Implications

- Estimation results from pre-post analysis show that **export unit price** from 6 Asian countries to the US likely declined (3% to 5%) after implementing the new US tariffs.
- For **the reciprocal tariffs**, unit price down likely stimulates the increase in export volume (but not for value) to the US, while **for the product-specific tariffs** (steel, aluminum, automobile, and automobile parts), the price down is unlikely to contribute to the increase in export volume/value after the new tariffs implemented.
- Estimation results from DID show that tariffs led to small but significant price reductions, especially for less differentiated products.
- This study found that:
  - ✓ **Asian exporters partially absorb part of the increased tariffs through price-cuts, with limited demand response from the US at least in the short-run**.
  - ✓ **Firms exporting less-differentiated products to the US–many of which are MSME exporters–compress their profit margin after the new tariffs implemented.**
- Given that MSME exports in developing Asia contributed an average 40% of national export values in 2024 (ASM 2025), governments should be **proactive in easing any unfavorable effects** on the business environment by implementing needed regulatory reforms and applying appropriate policy support, including expanding trade finance, enhancing the awareness of the concessions available from various trade agreements and facilitating cross-border and behind-the-border procedures.

Initial Findings and Policy Implications

- **Next step and ongoing extensions:**
  - ✓ Heterogeneity by other exporter characteristics (e.g., firm size proxied by export experience).
  - ✓ Longer-term dynamics, extensive-margin, considering uncertainty of tariff permanence, etc.

Appendix

Table A1: Export Responses to the 2025 Reciprocal Tariff (Philippines Export)

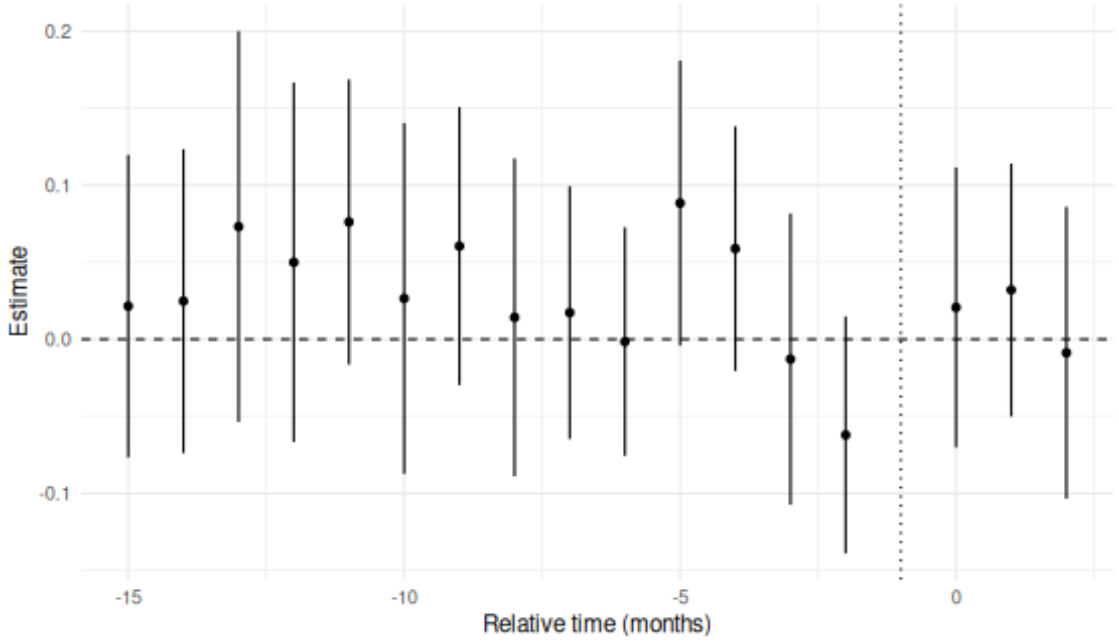
	(1)	(2)	(3)
	ln(export price)	ln(export quantity)	ln(export value)
Months after tariff hike = 0	-0.034	0.021	-0.020
	(0.023)	(0.046)	(0.059)
Months after tariff hike = 1	-0.046*	0.032	-0.028
	(0.021)	(0.042)	(0.056)
Months after tariff hike = 2	-0.033	-0.009	-0.058
	(0.023)	(0.048)	(0.064)
Firm FE	Yes	Yes	Yes
Destination country - HS6 product FE	Yes	Yes	Yes
HS6 produtct - time FE	Yes	Yes	Yes
Num Obs.	1,921,111	1,921,123	1,921,123
R2	0.935	0.917	0.752

Notes. Table reports the responses of export unit price before tariff in column (1), export quantity in column (2) , and value in column (3) against the introduction of reciprocal tariff in April 2025, controlling for firm fixed effect, destination country – HS6 product fixed effect, and HS6 product and year-month fixed effects. Standard errors are clustered by destination country and HS6 product. Significance: + 0.10, * 0.05, ** 0.01, *** 0.001. Sample: exports shipping between January 2024 and August 2025 from firms that recorded five or more export shipments after January 2024.

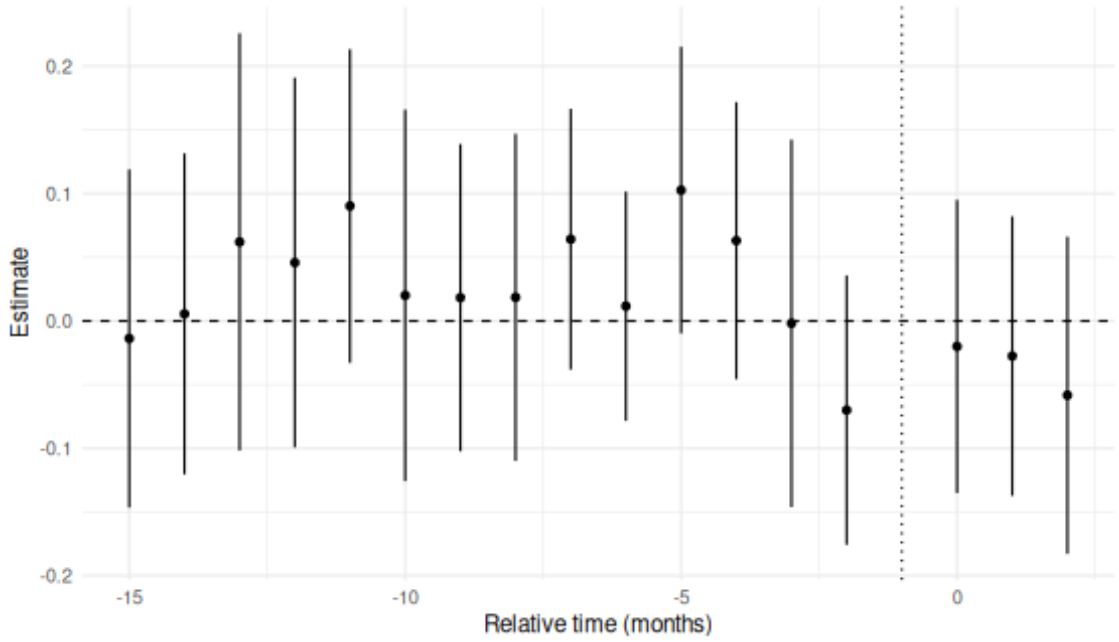
Appendix

Figure A1: Export Responses Over Time After the Reciprocal Tariff Introduction

Panel A : Log export quantity



Panel B : Log export value



Notes. Each point in the figure represents the log difference in export outcomes for affected product-destination pairs months before or after 10% tariff imposition, relative to the month immediately preceding the tariff (l= -1). The sample is restricted to HS6-level products subject to the reciprocal 10% tariff, excluding Section 232 products. The solid line shows point estimates and error bars show 95% confidence intervals.

Appendix

Table A2: Export Responses Heterogeneity to the 2025 Reciprocal Tariff(Philippines Export)

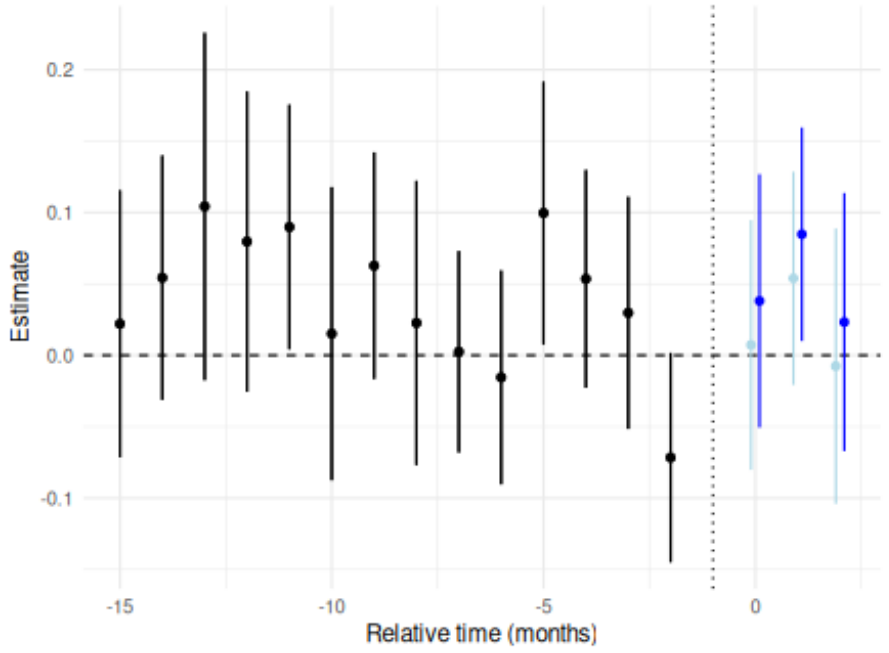
	(1) ln(export price)	(2) ln(export quantity)	(3) ln(export value)
Months after tariff hike = 0	-0.033	0.007	-0.018
	(0.024)	(0.045)	(0.048)
Months after tariff hike = 1	-0.051*	0.054	0.004
	(0.022)	(0.038)	(0.042)
Months after tariff hike = 2	-0.043+	-0.008	-0.051
	(0.023)	(0.049)	(0.06)
σ_p^{std} × Post tariff hike dummy	-0.015	0.031	0.015
	(0.009)	(0.019)	(0.021)
Firm FE	Yes	Yes	Yes
Destination country - HS6 product FE	Yes	Yes	Yes
HS6 produtct - time FE	Yes	Yes	Yes
Num Obs.	1,676,029	1,676,041	1,676,041
R2	0.94	0.916	0.746

Notes. Table reports the responses of export unit price before tariff in column (1), export quantity in column (2) , and value in column (3) against the introduction of reciprocal tariff in April 2025. The specification corresponds to Equation on page 13, where the post tariff indicator is interacted with the standardized elasticity of substitution at the HS6 level (from Broda and Weinstein 2006). All regression control for firm fixed effect, destination country – HS6 product fixed effect, and HS6 product and year-month fixed effects. Standard errors are clustered by destination country and HS6 product. Significance: + 0.10, * 0.05, ** 0.01, *** 0.001. Sample: exports shipping between January 2024 and August 2025 from firms that recorded five or more export shipments after January 2024.

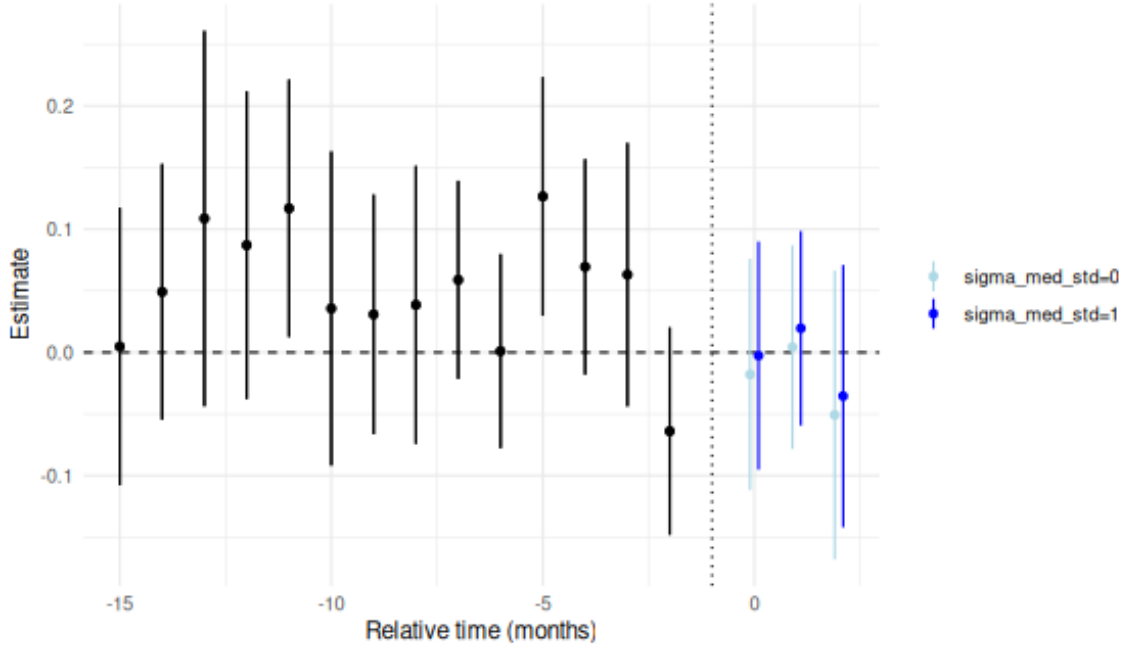
Appendix

Figure A2: Export Responses Heterogeneity Over Time After the Reciprocal Tariff Introduction

Panel A : Log export quantity



Panel B : Log export value



Note: In the figure, black line represents the baseline estimates where the interaction term (standardized elasticity,σ_p^{std}) equals 0, corresponding to the average treatment effect with post tariff dummy equals 0. The blue colored lines show fitted paths evaluated at $\sigma_p^{std} = 0$ and $\sigma_p^{std} = 1$ under post tariff dummy equals 1, illustrating how tariff effects associated with the degree of product differentiation. The sample is restricted to HS6-level products subject to the reciprocal 10% tariff, excluding Section 232 products. The solid line shows point estimates and error bars show 95% confidence intervals.

Thank you for your attention.