Resilience and Fragility in Bangladesh's Garment Global Value Chain

Evidence from COVID-19 Disruptions, Exchange-Rate Shocks, and Buyer Market Power

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Who absorbs systemic shocks in a buyer-driven garment value chain?

Motivation

Asia-Pacific growth is built on deep GVC integration — and systemic shocks have exposed the structural vulnerabilities of export-led models. COVID-19, followed by heightened macro-financial volatility, revealed the cost of high product concentration, dependence on powerful global buyers, and limited flexibility in supply-chain organization. Such disruption is now the "new normal" (Grossman and Helpman, 2021).

RESEARCH QUESTION AND SETTING

- **The question:** who absorbs a systemic shock — the global buyer or the domestic supplier?
- **Structure decides:** product concentration · buyer market power · supply-chain flexibility
- **Bangladesh — the right setting to test it**
  - Garments >80% of exports; world's second-largest exporter after China
  - >95% of RMG firms locally owned, yet foreign buyers invest in intangibles — design, specs, quality control, compliance — plus FDI in EPZs and upstream
  - LDC graduation ends preferences; Taka down sharply since 2022 (IMF, 2023)

RELATED LITERATURE

- **Large firms, large power** — Autor et al. (2020); De Loecker et al. (2020)
- **Buyer-driven governance** — lead firms set standards and terms for suppliers (Gereffi, 1999, 2001; Cajal-Grossi et al., 2023; Boudreau et al., 2023)
- **Buyer concentration** — exporters depend on a few multinationals whose sourcing and transport choices move trade (Bernard et al., 2018; Meixell and Norbis, 2008)
- **Measurement gap** — aggregate and input-output data miss firm size and buyer–seller ties (Timmer et al., 2019; Antràs, 2020; Ottaviano, 2011)

THIS PAPER'S CONTRIBUTION

- **Two shocks, one chain** — the COVID-19 supply-chain disruption and the 2022 Taka depreciation
- **Customs microdata — a methodological innovation to analyze both shocks:** GVC research relies on aggregate trade and intercountry input-output data, which lack the firm-level detail—firm size, buyer-seller relationships—needed to understand GVC structure and dynamics.
- **Fragility** — Bangladesh's collapse disproportionately large: specialization + buyer dependence + containment
- **Buyer power cushions pass-through** — intangible-investing lead firms influence markdowns (Juarez, 2024)

Policy stakes Does a depreciation reach domestic suppliers — and are diversification, logistics, and bargaining power the right levers?

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Why policymakers should care

Economic mechanism	Policy relevance
Export concentration	A single shock can dominate aggregate export performance.
Buyer market power	Exchange-rate gains may be captured by global buyers rather than domestic suppliers.
Logistics concentration	Port, customs, and transport bottlenecks become macro-relevant vulnerabilities.
Imported-input dependence	Output-side export resilience can be constrained by upstream input disruptions.

VALUE ADDED FOR POLICYMAKERS

Moves from aggregate trade statistics to buyer–seller transaction-level evidence.

Separates two policy-relevant margins: real supply-chain disruption and price adjustment after depreciation.

Shows why conventional models may overstate supplier gains from currency depreciation.

Identifies concrete levers: diversification, customs predictability, logistics resilience, supplier capabilities, and investment linkages.

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Two stress tests on transaction-level customs data

STRESS TEST I: COVID-19 DISRUPTION

Six garment-producing countries
Bangladesh · Ethiopia · India · Indonesia · Pakistan · Viet Nam
Transaction-level export customs records, Jan 2018–Dec 2020
Benchmarks Bangladesh's product concentration and its wider destination mix against peers

STRESS TEST II: EXCHANGE-RATE SHOCK

Bangladesh customs records
Jan 2018–Dec 2024, HS 61–62
Buyer–seller–destination–product–year panel
Tracks pass-through to domestic suppliers

CORE TRANSACTION FIELDS

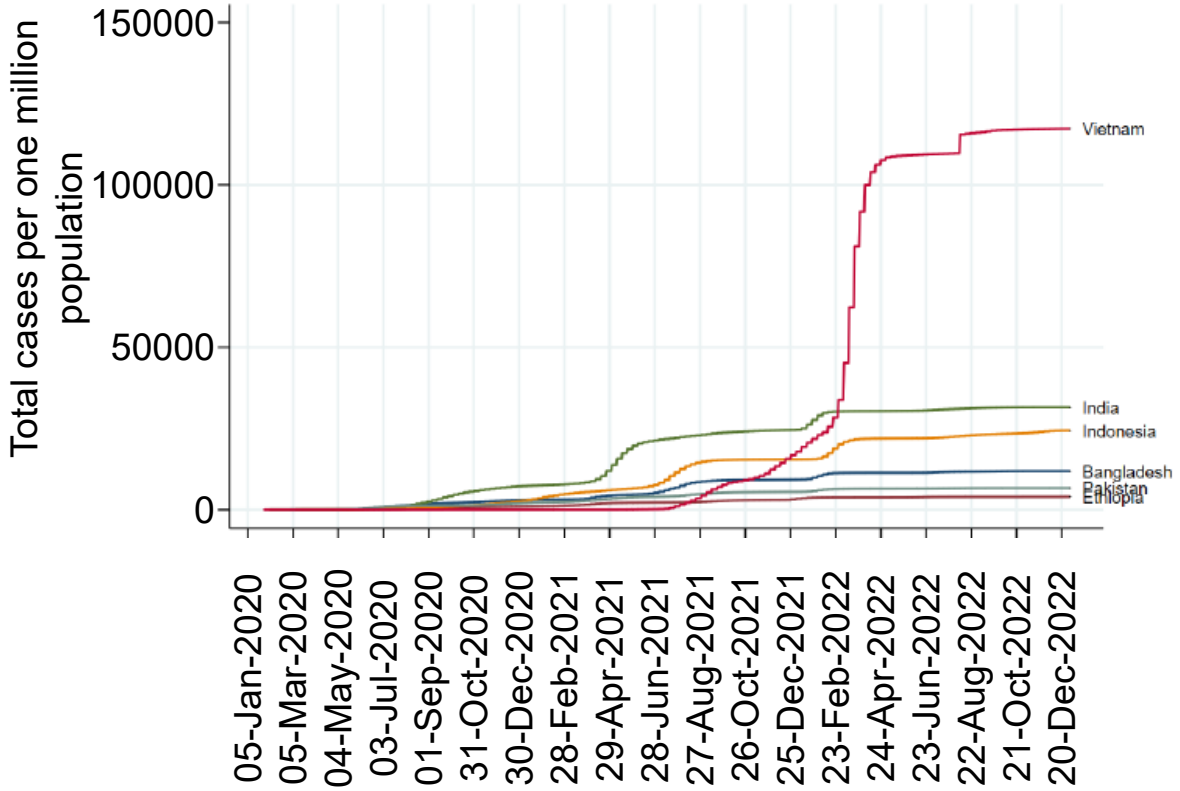
Dimension	Observed in customs data
Parties	International buyer; Bangladeshi seller
Product	HS6 within knit and woven garments
Market	Destination × product × year
Outcome	Export value, weight, unit value, price change
Logistics	Transport mode and point of exit

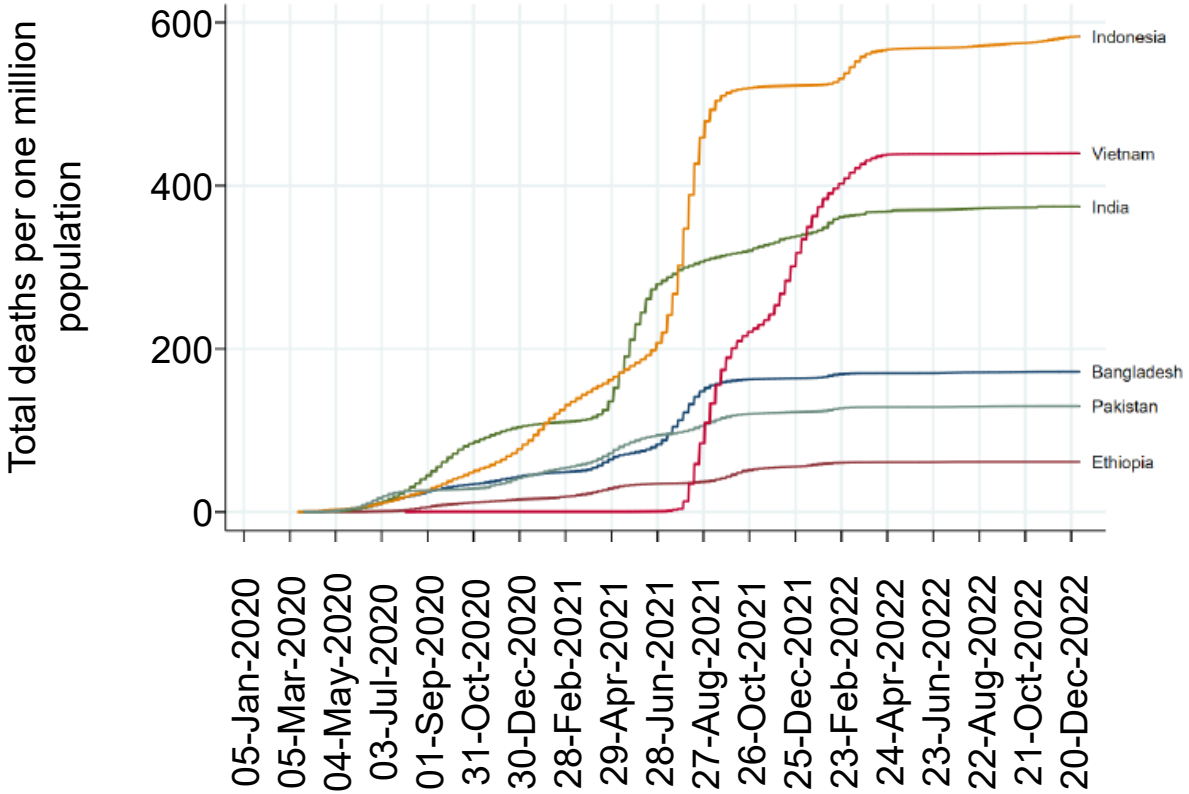
The design uses the pandemic to study aggregate export fragility, then the depreciation to study incidence and bargaining within GVC relationships.

Source: Del Prete and Rahman (2026), "Resilience and Fragility in Bangladesh's Garment Global Value Chain."

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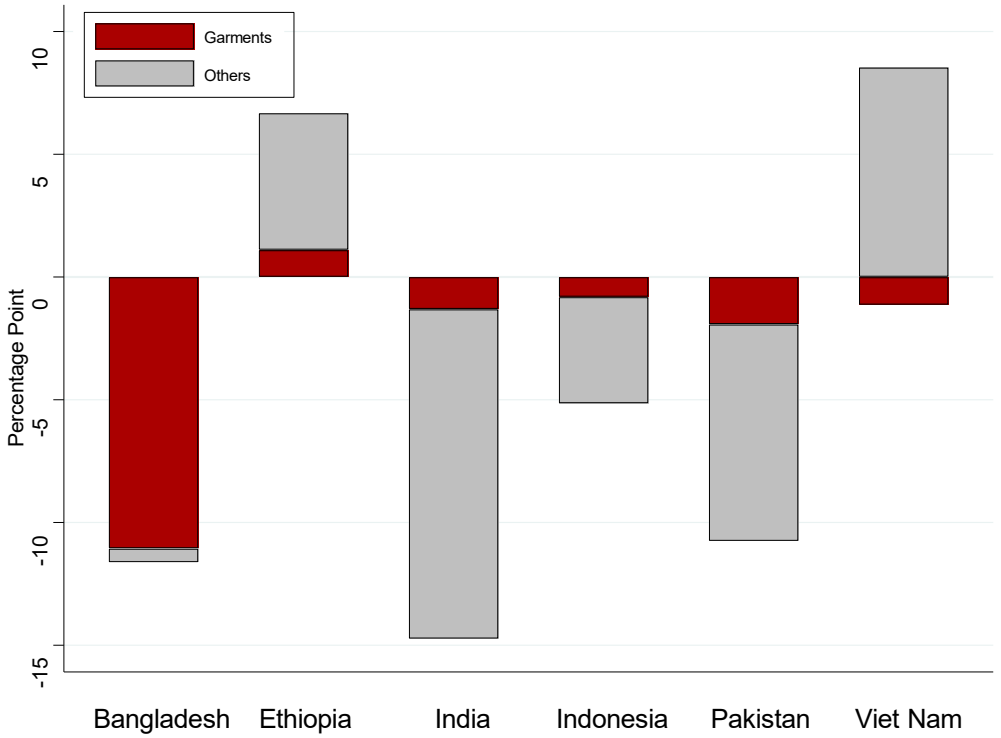
COVID-19 Cases and Deaths by Country





Supply Chain Responses to the Pandemic

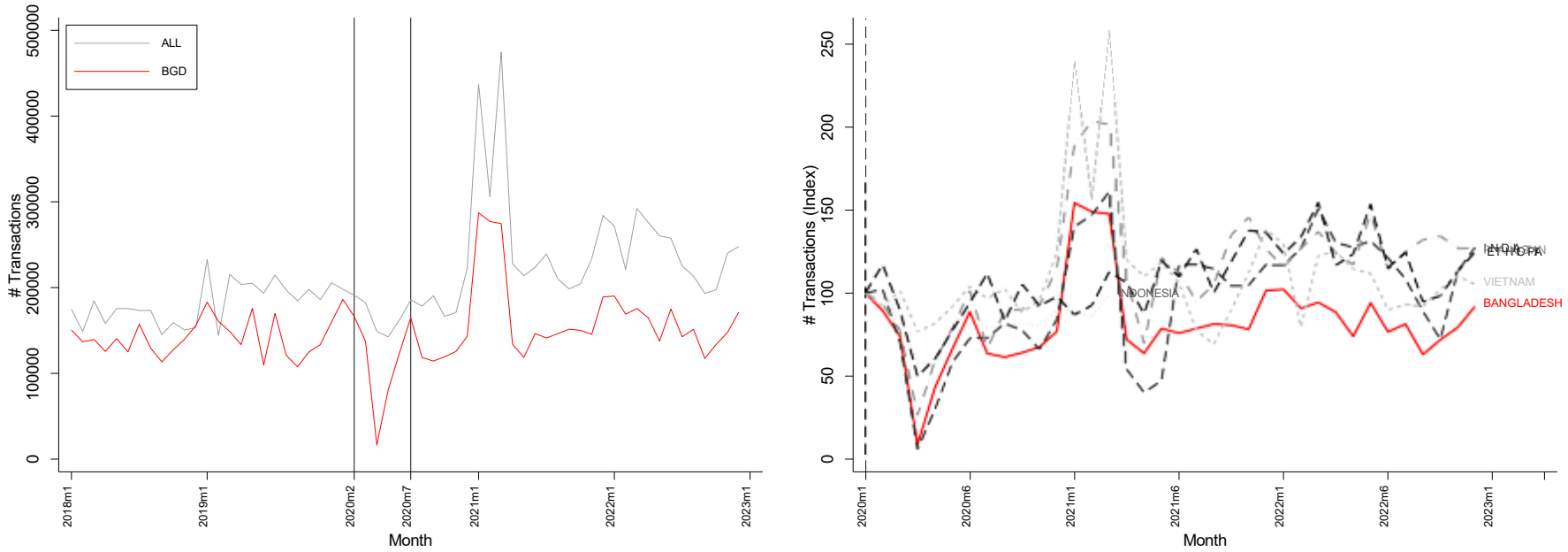
Figure: Sectoral contribution to total export variation between 2019 and 2020



Garments were responsible for 95% of the overall drop in Bangladeshi exports but only 10% of the variation on average across all other countries.

Supply Chain Responses to the Pandemic

Figure: Garments Trade in Covid-19 times



(a) Count **(b) Index**

The figure presents the evolution of monthly transactions, using 2018 to 2022 exports data (for HS 61 and 62 products). Panel (a) presents the total number of monthly transactions for Bangladesh and all other countries in the sample. Panel (b) presents the total number of monthly transactions by country, with each indexed to equal 100 on January 2020. For Indonesia, data are recorded for the period January 2018 to March 2021.

RMG Across Countries: Comparative Sector Profiles

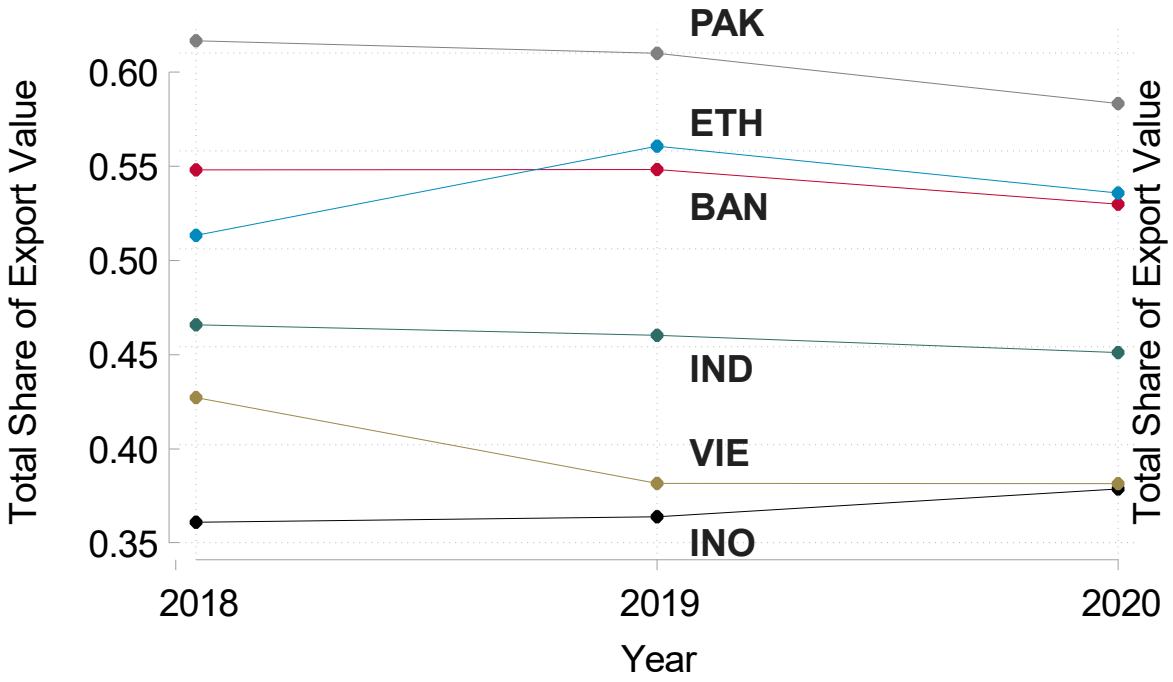
Garments are >80% of Bangladesh's export earnings; >95% of firms are domestically owned, working on foreign buyers' relationship-specific intangibles

A narrow product range sold widely: 2nd of six in product specialization, 6th in destination specialization (2018–2019 and 2020)

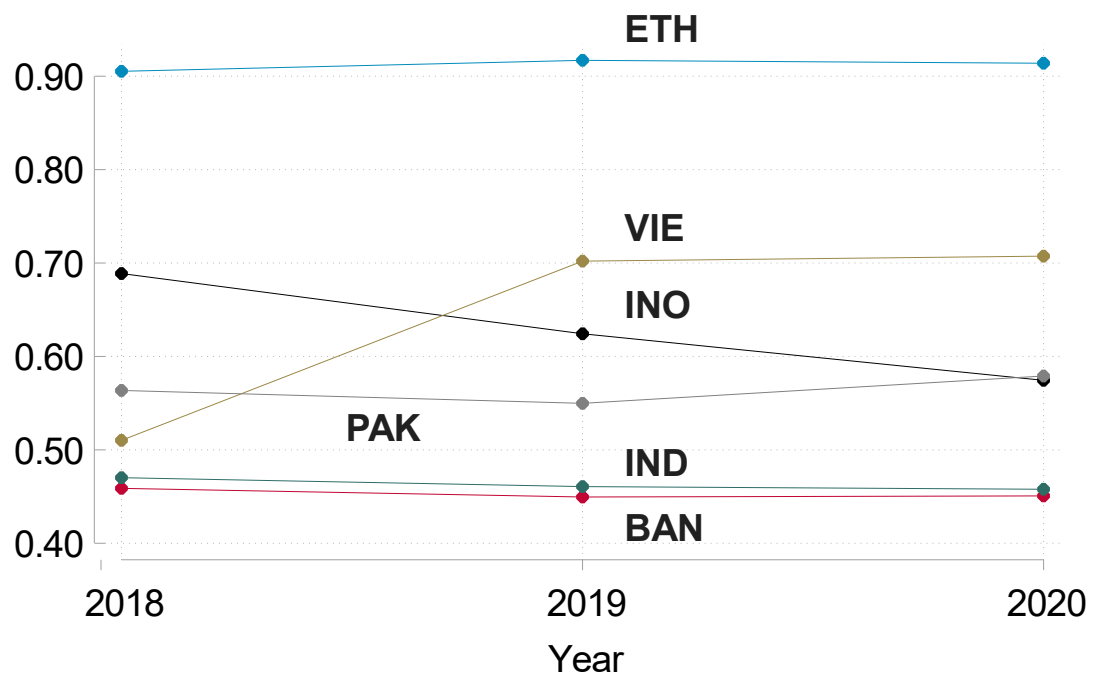
Variable	Unit	Bangladesh	Indonesia	Viet Nam	India	Pakistan	Ethiopia
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Annual export value (2018-2019)	billions of USD	2.488	2.818	1.847	1.097	0.358	0.011
Δ Exports (2019 to 2020)	%	-15.446	-10.315	-14.438	-22.951	-11.033	-10.399
Price of garment exports (2018-2019)	USD/kg	13.936	20.537	—	—	—	8.973
Product specialization (2018-2019)	%	54.040	36.180	40.215	45.853	60.303	52.965
Product specialization (2020)	%	52.280	37.740	38.012	44.704	57.420	52.848
Destination specialization (2018-2019)	%	45.419	65.654	60.612	46.546	55.671	91.115
Destination specialization (2020)	%	45.072	57.444	70.740	45.784	57.907	91.393
Destination GDP (2018-2019)	trillions of PPP $	0.629	1.023	0.970	0.711	0.849	1.589
Destination GDP per capita (2018-2019)	thousands of PPP $	49.512	55.217	51.211	51.115	53.487	59.965
Distance to destination (2018-2019)	thousands of km	8.537	10.560	7.589	7.591	7.647	9.840
Annual number of buyers (2018-2019)	simple count	1,896	1,940	2,596	6,146	1,480	77
Annual number of sellers (2018-2019)	simple count	3,744	680	3,502	8,866	1,391	46

RMG Across Countries: Comparative Sector Profiles

Exports concentrated in the top three products and top three destination



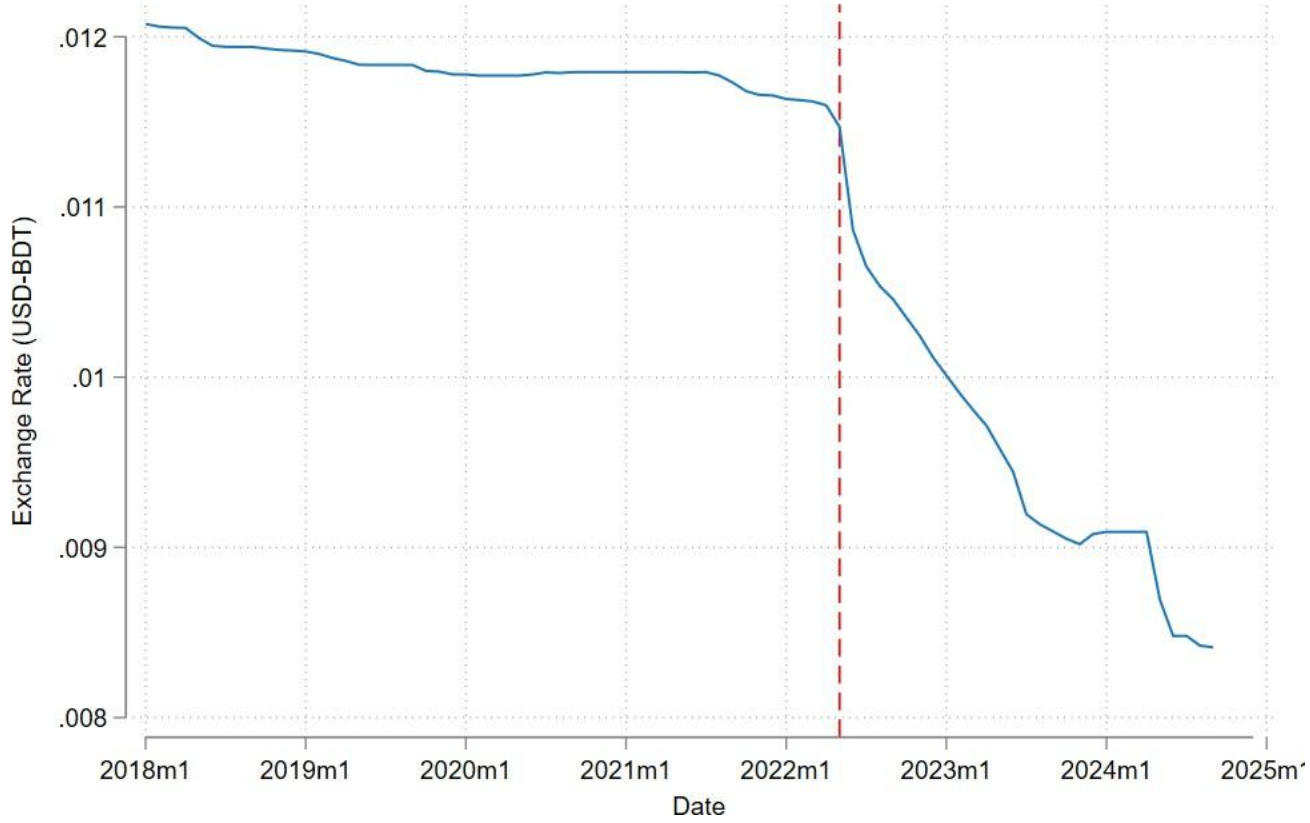
(a) Product Specialization



(b) Destination Specialization

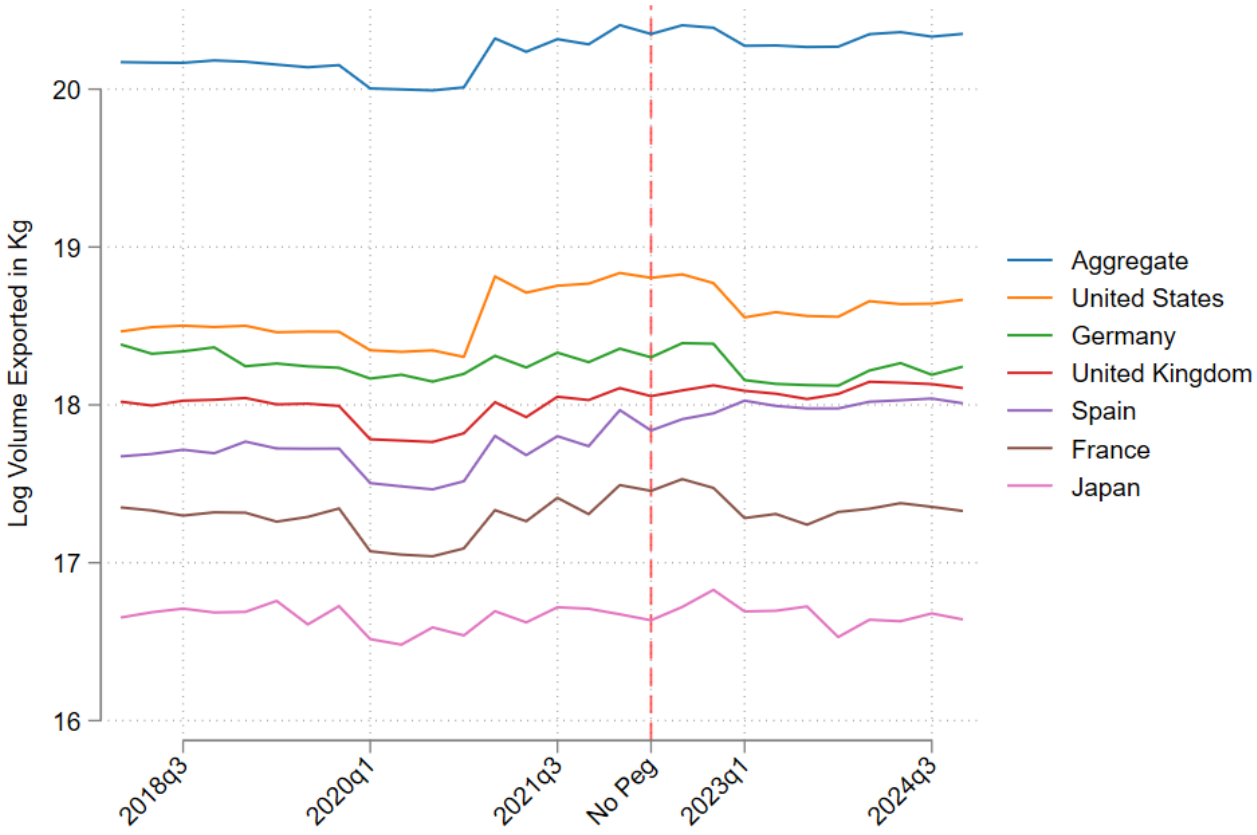
BDT Devaluation Against the US Dollar

Figure: Exchange rate between the BDT and the US dollar



Notes: Evolution of the exchange rate between BDT and USD from January 2018 to December 2024. The figure shows the nominal exchange rate expressed as US dollars per Bangladeshi Taka (BDT). Source: IMF International Financial Statistics.

Devaluation and Export Volumes



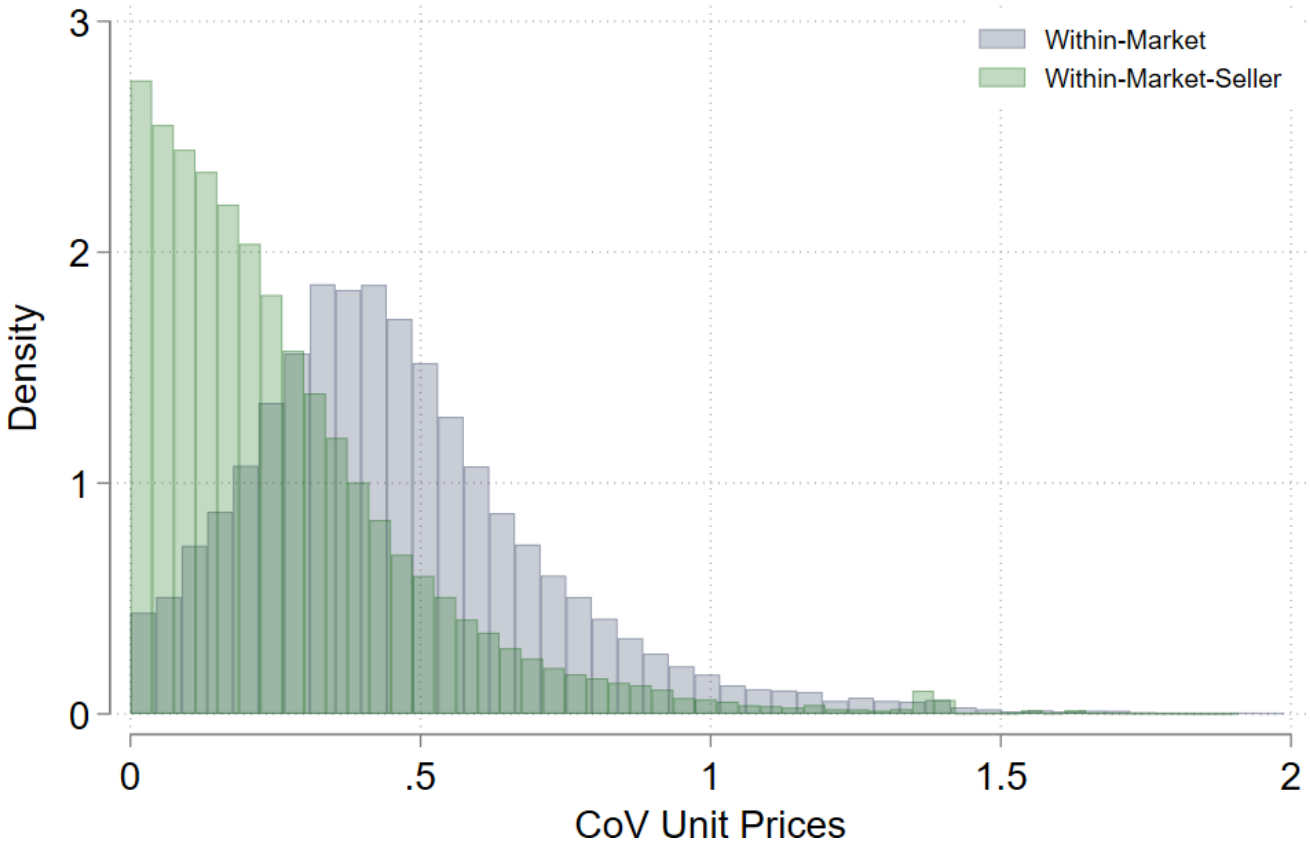
- The devaluation did not translate into higher export volumes to main partners
- Not a proper difference-in-differences, so the pattern could also reflect global demand

Large Buyers Have Market Power

Export market for RMG is dominated by a small number of large buyers that account for most of the market share.

Buyer	Market Share	Unit Value ($/kg)	Dhaka Share	Air Share
Hennes & Mauritz	7.838	18.003	5.740	2.396
Primark	2.743	11.528	4.147	2.746
C & A	2.484	16.546	6.515	5.127
Marks & Spencer	2.077	19.036	17.697	8.103
Bestseller	1.916	15.622	5.550	5.487
Inditex	1.681	13.341	40.738	40.183
Lpp	1.567	13.211	2.774	2.541
Walmart	1.349	11.694	16.145	2.151
Uniqlo	1.239	17.726	15.693	12.886
Next	1.181	16.254	6.002	3.614
Top 20	32.797	15.728	11.276	6.858
Top 100	57.537	15.817	12.128	9.168

Price Dispersion Across Buyers



- Market power allows buyers to negotiate distinct prices.
- Unit import prices show substantial dispersion
- Dispersion measured using the coefficient of variation (CoV) of unit import prices:
  - CoV calculated as total import value divided by quantity imported.
  - Defined for each market (HS6-destination-year).
- Average CoV across markets: ≈0.42; median: 0.37.
- Considerable dispersion persists even after controlling for exporter.
- Suggests importers within the same market can negotiate different prices from the same exporter.

Exchange Rate Pass-through

To identify the impact of exchange rate shocks on import prices, we estimate the following equation (Juarez, 2024):

$$\Delta p_{s,b,j,d,t} = (\alpha + \beta M_{b,j,d,t-1}) \times \Delta e_{d,t} + \mu_{d,j,t} + \epsilon_{s,b,j,d,t} \quad (1)$$

where:

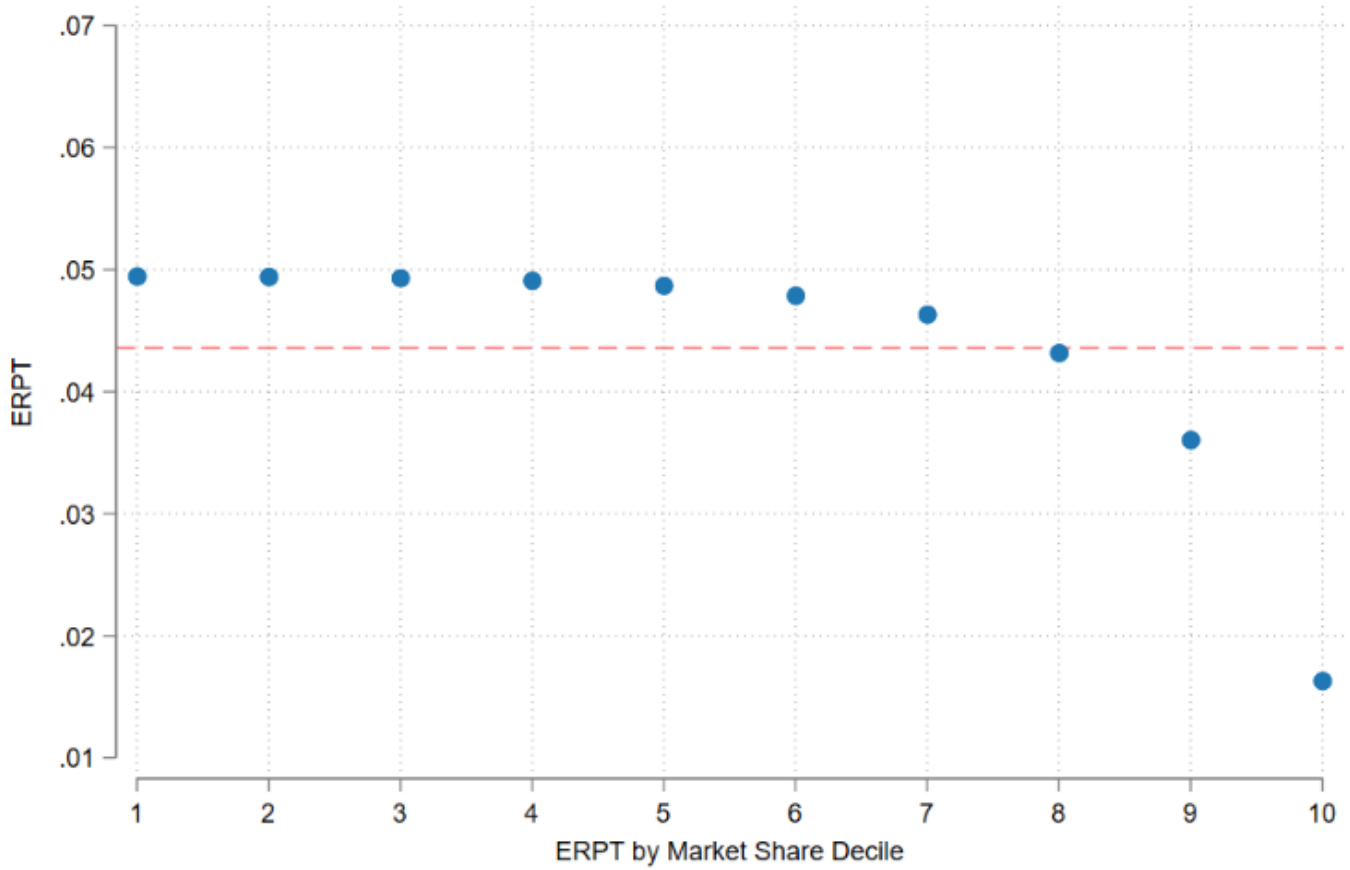
- $\Delta p_{s,b,j,d,t}$ is the log change in the export price of product j sold by seller s to buyer b in destination country d in year t.
- $\Delta e_{d,t}$ is the log change in the bilateral exchange rate.
- $M_{b,j,d,t-1}$ is the buyer's lagged market share.
- $\mu_{d,j,t}$ are market fixed effects, defined at the destination-HS6-year level.
- Standard errors are clustered at the country-year level.
- Expect the coefficient β to be negative: larger buyers face a smaller price adjustment in response to exchange rate shocks.
- Estimated via Ordinary Least Squares (OLS).

Buyer Market Power and Exchange Rate Pass-through

	Δ Log(Price)		
	(1)	(2)	(3)
ln(Δ*ER*)	0.038*	0.049**	
	(0.021)	(0.024)	
$_{M}t-1$		0.005	-0.015***
		(0.006)	(0.005)
ln(Δ*ER*) × M_{t-1}		-0.050	-0.150**
		(0.040)	(0.059)
Observations	252,743	252,743	252,743
R-squared	0.322	0.322	0.117
Time-Seller FE	✓	✓	
Destination-Product-Seller FE	✓	✓	
Destination-Time-Product FE			✓

Notes: This table reports the estimates for equation (1). The dependent variable corresponds to the log change of prices. Ln(Δ*ER*) is the bilateral exchange rate and M_{t-1} is the buyer market share in value. Products are defined at the HS6 level and a period is defined as a year. Standard errors in parentheses are clustered at the country-year level. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

ERPT Along the Buyers' Share Distribution



- **Larger effect for very large international buyers**
- ERPT **=** $\beta \ln(\Delta ER) - \beta \ln(\Delta ER) \times M_{t-1}$

Policy Implications

Policy pillar	Concrete recommendation
Product and input diversification	Support viable expansion into man-made and recycled fibers; rebalance incentives that restrict domestic supply of non-cotton inputs.
Trade facilitation and customs	Digitize and streamline customs and utilization-declaration processing while preserving bonded-warehouse controls.
Logistics resilience	Improve port reliability, inland connectivity, alternative logistics arrangements, and contingency capacity around Chittagong/Dhaka.
Buyer relationships and supplier capabilities	Strengthen supplier certification, quality assurance, traceability, and working-capital management; help match firms with longer-term buyers.
FDI and domestic linkages	Target investment in upstream textiles, fibers, recycling, dyes/chemicals, logistics, testing, renewable energy, and production technology.
Sustainability and market access	Invest in renewable energy, water efficiency, waste recovery, and compliance systems as market-access infrastructure.

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