Trade Policy and Exporters' Resilience: Evidence from Indonesia[1]

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[1] The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily represent the views of the World Bank and the IMF.

Research question

How does trade policy affect firm-level export response to shocks?

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- We study how trade policies (NTMs and tariffs) on imports affect the ability of firms using imported inputs to adjust to sudden changes in demand
- We focus on Indonesian firms exporting to Japan facing competition of Chinese exporters when there are shocks to the yuan exchange rate
- We investigate how these shocks affect Indonesian exporters depending on (i) how exposed they are to Chinese competition in the export market and (ii) how exposed their imported inputs are to trade policies

Our contribution

- Firm resilience to shocks (e.g. Boehm et al. 2019; Espitia et al. 2019; Berthou and Stumpner, 2022):
  - Assess the role of trade policy variables in the response to shocks
- Economic effects of trade policy (e.g. Goldberg and Pavcnik, 2016; Fajgelbaum et al. 2020) particularly NTMs (Ederington and Ruta, 2016):
  - Establish causal relation between NTMs and trade outcomes
- Trade effects of exchange rate shocks (e.g. Berman et al. 2012; Gopinath et al. 2020) particularly on third country exports (e.g. Mattoo et al. 2017):
  - Assess the effects of exchange rate shocks on firms' exports depending on how exposed their imports are to trade policy

Summary of findings

- NTMs, unlike tariffs, reduce on average the ability of firms to adjust their export to sudden changes in demand
- The magnitude of the effects vary by the type of NTMs (significant for "protectionist" NTMs)
- Firms with less flexibility (smaller, less frequent importers, higher quality exporters) more negatively affected by NTMs

Data sources

- Monthly data on the universe of Indonesian exporters and importers from 2014-2018 confidentially shared by the Indonesian Directorate General of Customs
- Novel and comprehensive dataset on time-varying NTM exposure for exporters at HS-10 digit assembled for Indonesia through extensive regulatory checks, resulting in a total of 60 NTMs itemize
- Data on MFN import tariffs from UNCTAD Trade Analysis Information System
- Data on total imports and exports from China into Japan at monthly frequency at the HS-9 digit product level from the Ministry of Finance in Japan

Data: Linking firms to trade policy variables

- Our full data of exporters from 2014 has 22,915 exporters
- 8,353 firms exported to Japan between 2014-18 and 5,425 who import and export directly
- We link all products that are imported and exported by all individual firms from customs-level data at a monthly frequency to the NTM and import tariff data

Empirical strategy: Two crucial components

We will compare firm response to exchange rate shocks for firms that are exposed along two dimensions:

1. Measure of exposure to Chinese competition
2. Measure of exposure to trade policy (NTMs and tariffs)

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I. Exposure to Chinese competition

- I_{ig}: Index of competition between Chinese exports and those of Indonesia in HS-4 product g for firm i in Japan
- Following (Mattoo et. al. (2017)) we define the competition index as follows:

$$I_{ig} = \sum_{g'=1}^{G} \left(\frac{EX_{ig'}}{EX_{ig}} * MS_{g'}^{China} \right)$$

* $\frac{EX_{ig'}}{EX_{ig}}$: Measures the importance of HS-6 product g' in the total exports of the HS-4 product g exported to the destination country by Indonesian firm i
* $MS_{g'}^{China}$: China's share of product g' in the total imports of g' by the destination country

Empirical strategy: Two crucial components

We will compare firm response to exchange rate shocks for firms that are exposed along two dimensions:

1. Measure of exposure to Chinese competition
2. **Measure of exposure to NTMs**

II. Firm level measure of NTM (tariff) exposure for imports

$$\text{NTM Exposure}_{it} = \sum_{j} w_{ij} * NTM_{jt}$$

- $NTM_{jt} = 1$ if an NTM on HS-10 product j was in effect in month t and 0 otherwise
- $w_{ij} = \left(\frac{IMP_{ij}}{\sum_{j'} IMP_{ij'}} \right)$ is the share of import j in total import value for firm i in the baseline year
- The tariff exposure measure is defined in a similar way using the tariff rate on HS-10 product j was in effect in month t

Research design: Triple Difference Specification

$$ln(V_{igt}) = \alpha_1 I_{ig} * ln(E^{China}_{USD,t}) + \alpha_2 I_{ig} * ln(E^{China}_{USD,t}) * NTMExpo_{it} +$$
$$\alpha_3 I_{ig} * ln(E^{China}_{USD,t}) * TariffExpo_{it} + v_{ig} + S_{it} + \gamma_{gt} + \epsilon_{igt}$$

V_{igt} : The value of exports of HS-4 digit product g from firm i in Indonesia to Japan in month t

I_{ig}: The index of competition between Chinese exports and those of Indonesia in product g for firm i in destination country

$E^{China}_{USD,t}$: Yuan/USD

$NTM(tariff)Expo_{it}$: The measure of NTM (tariff) exposure of firm i selling product g in month t

Baseline Results: Effect of exchange rate shocks on Indonesian exports in Japan

	Dependent Variable : log exports		
	(1)	(2)	(3)
α_2 (NTM)	-0.2414**	-1.0293**	-1.0293***
	(0.1148)	(0.4534)	(0.2592)
α_3 (Tariffs)	-0.0150	-0.0079	-0.0079
	(0.1197)	(0.3953)	(0.2725)
Firm-product FE	Yes	Yes	Yes
Product-time FE	Yes	Yes	Yes
Firm-time FE	No	Yes	Yes
Clustering	firm-level	firm-level	product-level
Mean Exposure	0.428	0.428	0.428
Adjusted R2	0.993	0.993	0.993
N	303,348	249,043	249,043

Why are the effects significant for NTMs but not for tariffs?

- Tariffs involve costs proportionate to the import value so they are pure variable costs
- NTMs instead can involve per shipment costs (e.g. pre-shipment inspections) as well as fixed costs per input type (e.g. compliance with national standards)
- The partial fixed costs nature of these measures and the uncertainty on their application makes it more costly to switch inputs in case of a shock

Zooming in on specific NTMs

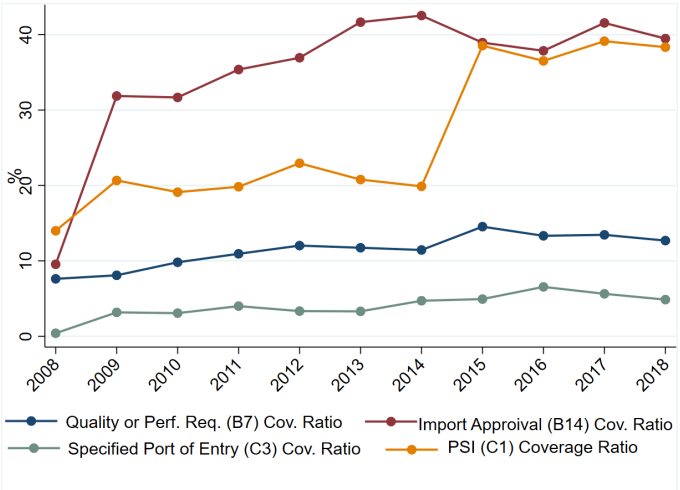
- NTMs reduce the resilience of exporters to exchange rate shocks, but they may be in place for a public policy reason
- Focus on "protectionist" NTMs—i.e. those in breach of key principles of WTO rules:
  - discriminate against imports
  - not necessary to achieve a non trade objective
  - likely to impose significant costs on imports
- At-least 25% of Indonesian exporters subject to this type of NTMs in the period of analysis

Types of "protectionist" NTMs

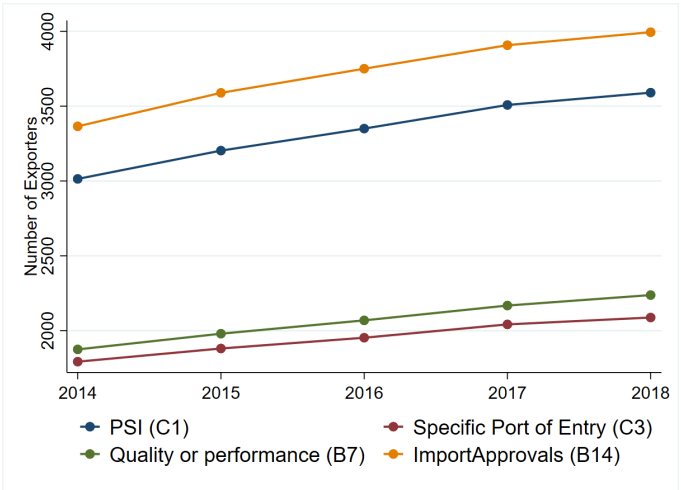
1. Product quality approval (b7)
   - Certification requires a visit to the factory premises by an Indonesian certifying agency
2. Import approval (b14):
   - Requirement of recommendation letters from sectoral ministries
3. Pre-shipment inspection (c1):
   - Shipments to be inspected at the port of departure before leaving to Indonesia
4. Port of entry (c3):
   - Indonesian regulations mandate that certain goods must go through designated ports

NTM incidence of specific measures have also been increasing, as has the number of exporters affected

Coverage ratio and Number of Exporters Affected



a.Coverage Ratio



b. No. of Firms Affected

Source: World Bank Staff Calculations

Effect of exchange rate shocks on Indonesian exports in Japan in the presence of specific NTMs

	Dependent Variable : log exports			
	(1)	(2)	(3)	(4)
β_2 (NTM)	-1.7479***	-0.9933**	-1.0094**	-1.0876
	(0.6217)	(0.4447)	(0.4776)	(0.9613)
β_3 (All other NTMs)	-0.7764*	-1.0744**	-1.0471**	-1.0264**
	(0.4330)	(0.5286)	(0.4689)	(0.4502)
β_4 (Tariff)	0.0237	0.0043	-0.0051	-0.0088
	(0.3929)	(0.3966)	(0.3970)	(0.3955)
Mean Exposure	0.097	0.230	0.203	0.020
Adjusted R2	0.993	0.993	0.993	0.993
N	249,043	249,043	249,043	249,043

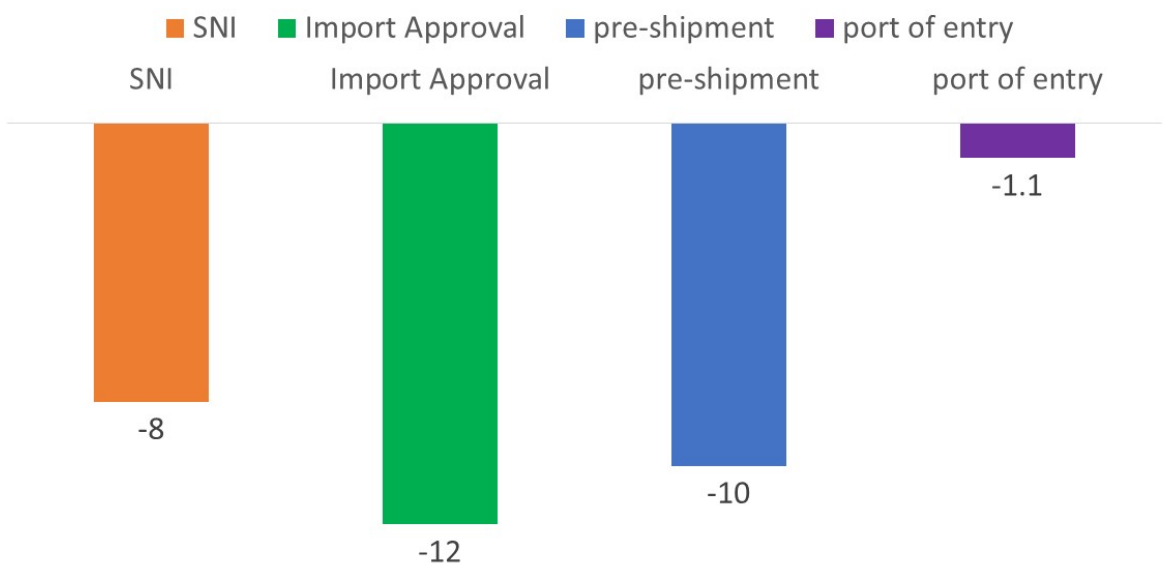
Columns (1) (2), (3), and (4) show the effects of SNI certification, import approval, pre-shipment inspection, and port of entry respectively, controlling for the effects of all other NTMs, on the exports of Indonesian firms. Standard errors clustered at the firm level. All regressions include firm time, firm product and product time FES. *** p<0.01, ** p<0.05, * p<0.1.

An example: A 10% depreciation

- Compare two firms, facing the exact same (mean) Chinese competition
- The firm below the median level of import approval NTM will face a .21% decline in its export value and the firm above the 90th percentile will face a 2% decline to the same percentage depreciation

$$\epsilon_{v,Ex,NTM_{mean}} = \frac{\frac{(\partial v_{igt})}{v_{igt}}}{\frac{(\partial E^{China}_{USD,t})}{E^{China}_{USD,t}}} = \beta_1 I_{ig} + \beta_2 I_{ig}(NTMExposure_{it})^{mean}$$

Percentage differences in elasticity of exports to exchange rate depreciation: Firms with mean level of NTM exposure vis-a-vis without



Compare to tariffs | Interpretation of β_1

Mechanism: Summary of findings

Key Mechanism: NTMs make it harder for exporters to adjust their imported inputs

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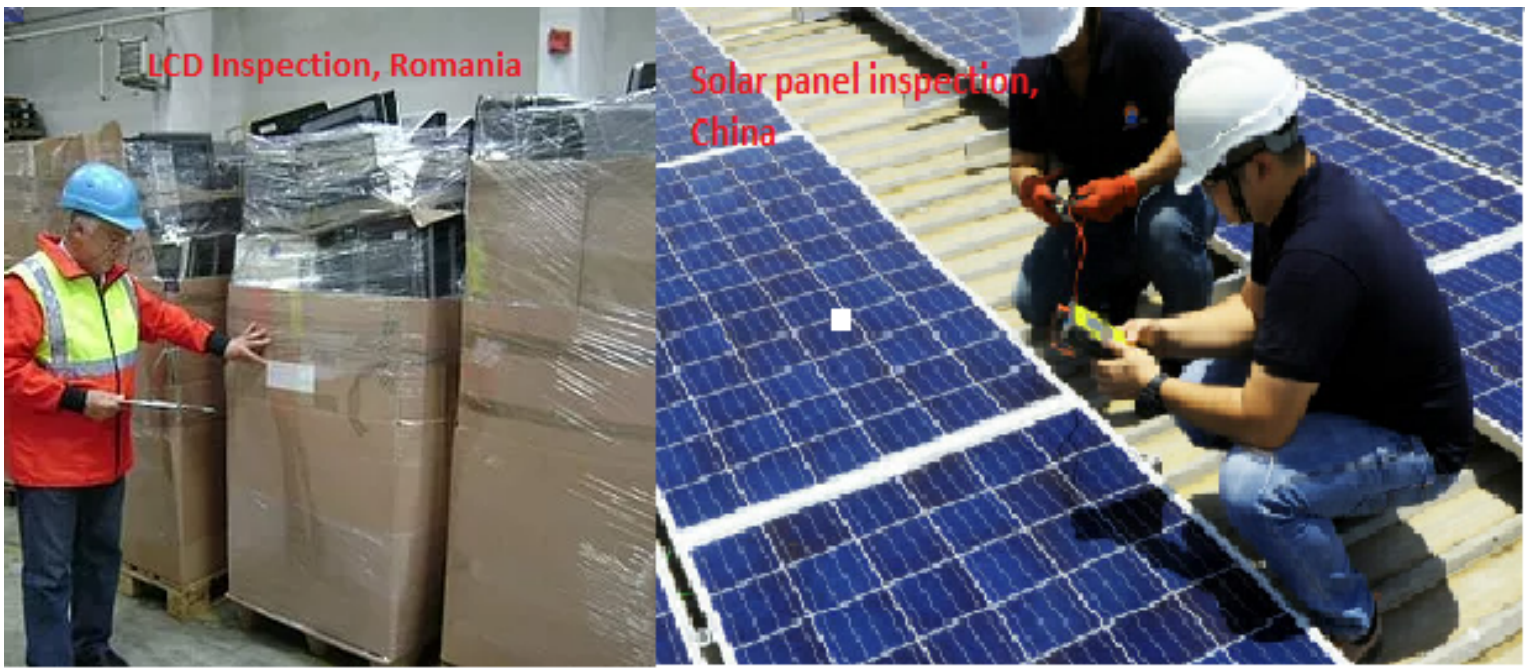
Adjustments could be harder for exporters who are *less flexible*:

1. Effects driven by firms who import less frequently Tables
2. Effects driven by smaller firms Tables
3. Effects driven by firms who produce goods with higher unit value Tables

An example NTM: Pre-Shipment Inspection

PSI, imposed on around a third of all imports and around 40% of intermediate imports, requires shipments to be inspected at the port of departure before leaving to Indonesia



Source: QTech Control and Sunshine Inspection

An example NTM: Pre-Shipment Inspection

Again, take the 10% depreciation example

- More and less frequent importers: For a more (less) frequent importer selling a product exposed to average Chinese Competition, the firm in the 90th percentile of PSI exposure witnesses a .10% (1.17%) decline in exports to exchange rate depreciations compared to a firm with no NTM exposure
- Large and small firms: The numbers are .75% and 1.48% respectively
- Firms selling high and low unit value products: The numbers are 1.87% and .23% respectively

Robustness

- Lobbying for NTMs is captured by firm-time and product-time FEs: different exercises to control for remaining endogeneity concerns (e.g. exclude top exporters)
- Indonesian firms importing inputs from China are affected by yuan shocks: Control for a time-varying measure of exposure to Chinese input
- Impact of yuan shock depends on exchange-rate pass-through: Account for market power of Chinese firms using HHI (Berman et al. 2012)

Robustness Tables

Conclusions

- We find evidence that NTMs on imports, unlike tariffs, make it more difficult for exporting firms to adjust their inputs in response to sudden economic shocks, such as exchange rate shocks
- Effects differ according to the type of NTM and the type of firm
  - Four "protectionist" NTMs are shown to negatively affect exporters' response to exchange rate shocks
  - Stronger impacts on firms who are small, import less frequently, and produce goods with higher unit value
- Targeted reform of NTMs could improve exporters' resilience

Thank You

Invoicing Currency Shares of Indonesia in Exports

	USD	EUR	Home	Other	Unclassified	Other
2010	93.9	1.1	0.7	3.2	1.0	5.0
2011	93.6	1.0	0.7	3.4	1.2	5.3
2012	92.9	1.1	0.6	3.9	1.5	6.1
2013	93.8	0.9	0.7	3.1	1.4	5.2
2014	93.7	1.2	0.8	2.9	1.5	5.2
2015	94.0	1.2	1.1	2.9	0.9	4.8
2016	93.6	1.2	1.4	2.9	0.8	5.2
2017	94.4	1.1	1.4	2.3	0.8	4.5
2018	94.2	1.0	1.4	2.3	1.1	4.8

Source: Boz et al. (2020)

NTM Data

- Building on the ERIA NTM 2015 and 2018 stock-take, we compiled all the relevant regulations on NTMs issued from 2008-2018 and collected more regulations not available in the ERIA 2015 and 2018 stock taking from several additional sources : i12 government repositories, hukumonline.com, and peraturan.go.id
- These are tracked forward and backwards to find when they are active or repealed and therefore create a time series panel
- For each regulation we assigned the NTM 3-digit codes (UNCTAD) emanating from that regulation and applied it to the HS codes included in the regulation
- Transform the matched dataset into a panel HS-month level data that trace the evolution of each NTM code applied in one particular 10-digit HS code product

Effect of exchange rate shocks on unit prices of Indonesian firms in Japan

	(1) log Unit Price at HS4
Share of Chinese imports at HS4 × log yuan/USD real ex	0.5127**
	(0.2402)
Constant	-0.8013***
	(0.2642)
Observations	344425

Standard errors in parentheses

Standard errors clustered at firm level

Regressions include firm, product, month, firm month, and firm product FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Interpretation: Compare two firms, in markets with varying levels of Chinese competition, and no NTM exposure

- Indonesian firms, in product markets with a larger Chinese MS, see a 2% increase in their export values compared to their counterparts in product markets with lower Chinese MS in response to a Yuan depreciation
- We find support for Berman et. al. (2012) mechanism:
  - Firms in markets with larger Chinese MS also see a lower fall in product prices, consistent with lower pass-through Result
  - Using a Chinese competition index, modified with the HHI for Chinese firms, shows that Indonesia firms exposed to markets with lower HHI see a fall in their export values Result
- These results are also consistent with Mattoo et. al. (2016) Result

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Chinese market share and pass-through

- China is an important presence in the Japanese market: On average 32% of Japanese imports are Chinese (for the set of products that Indonesia exports to Japan)
- A depreciation in Yuan leads to a price reduction by Chinese firms, but the extent of exchange-rate pass-through depends on:
  - Market power of Chinese firms (Berman et. al. 2012)
  - Elasticity of substitution between Chinese and other country's products
- A priori, the link between Chinese market share, exposure to Chinese competition, and Yuan depreciation is unclear

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Effect of exchange rate shocks on Indonesian exports in Japan using modified competition index

	(1) log export
CI JP HHI modified × log yuan/USD real ex	-0.8598***
	(0.2577)
CI Japan × log yuan/USD real ex	2.1871***
	(0.5551)
CI Japan × log yuan/USD real ex × import weighted b7	-1.7275***
	(0.6101)
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-0.7732*
	(0.4247)
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.0013
	(0.3842)
Constant	-7.3611***
	(0.1273)
Observations	249043

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effect of real exchange rate shocks (Yuan/Yen) on Indonesian exports in Japan at the country level

Table: Mattoo. et. al. (2016) specification

	(1) logexport
competitionindex × logRERYuanPerYen	-7.5298***
	(0.1935)
Constant	3.4016***
	(0.1428)
Observations	5092

Standard errors in parentheses

Robust standard errors are used

All regressions include product, month, and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by firms who import less frequently

Table: Sample: Firms with below median importing frequency on average

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	10.3515***	10.2910***	10.3061***	10.3786***
	(1.5295)	(1.5178)	(1.5204)	(1.4698)
CI Japan × log yuan/USD real ex × import weighted b7	-6.9459*			
	(4.0770)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-4.2924***			
	(1.5729)			
CI Japan × log yuan/USD real ex × import wieghted tariff	0.6236**	0.5533**	0.4631*	0.5357**
	(0.2458)	(0.2704)	(0.2380)	(0.2106)
CI Japan × log yuan/USD real ex × import weighted b14		-4.4577***		
		(1.6944)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-4.3318**		
		(1.9842)		
CI Japan × log yuan/USD real ex × import weighted c1			-4.9686***	
			(1.8420)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-3.7857**	
			(1.6290)	
CI Japan × log yuan/USD real ex × import weighted c3g				-10.2854***
				(2.5788)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-3.2389***
				(1.2327)
Constant	-13.0469***	-13.0537***	-13.0580***	-13.0669***
	(0.0726)	(0.0731)	(0.0719)	(0.0707)
Observations	147767	147767	147767	147767

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by firms who import less frequently

Table: Sample: Firms with above median importing frequency on average

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	0.6816***	0.6678***	0.6678***	0.6658***
	(0.2254)	(0.2226)	(0.2225)	(0.2225)
CI Japan × log yuan/USD real ex × import weighted b7	-0.5890*			
	(0.3018)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	0.0800			
	(0.2747)			
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.0230	-0.1162	-0.1075	-0.0901
	(0.5552)	(0.5743)	(0.5757)	(0.5724)
CI Japan × log yuan/USD real ex × import weighted b14		-0.1706		
		(0.2777)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-0.0680		
		(0.3018)		
CI Japan × log yuan/USD real ex × import weighted c1			-0.0371	
			(0.2952)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-0.2037	
			(0.2433)	
CI Japan × log yuan/USD real ex × import weighted c3g				0.3300
				(1.0193)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-0.1385
				(0.2316)
Constant	1.6276***	1.6480***	1.6447***	1.6423***
	(0.1430)	(0.1449)	(0.1430)	(0.1433)
Observations	87059	87059	87059	87059

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by smaller firms

Table: Sample: Firms with below median market share

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	9.4149***	9.5086***	9.7562***	9.5571***
	(1.8533)	(1.8653)	(1.8798)	(1.9004)
CI Japan × log yuan/USD real ex × import weighted b7	-8.8873***			
	(2.5597)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-4.0488*			
	(2.3550)			
CI Japan × log yuan/USD real ex × import wieghted tariff	1.7322	0.9618	-2.3359	0.4384
	(8.1473)	(8.0064)	(8.0774)	(7.9666)
CI Japan × log yuan/USD real ex × import weighted b14		-4.7305*		
		(2.5068)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-6.5109**		
		(2.5700)		
CI Japan × log yuan/USD real ex × import weighted c1			-3.9113	
			(2.4361)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-7.6495***	
			(2.4428)	
CI Japan × log yuan/USD real ex × import weighted c3g				-0.3136
				(4.4140)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-5.8083**
				(2.4434)
Constant	-13.4730***	-13.4704***	-13.4692***	-13.4731***
	(0.0379)	(0.0394)	(0.0377)	(0.0391)
Observations	172864	172864	172864	172864

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by smaller firms

Table: Sample: Firms with above median market share

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	0.3718*	0.3644*	0.3640*	0.3644*
	(0.2069)	(0.2053)	(0.2054)	(0.2050)
CI Japan × log yuan/USD real ex × import weighted b7	-0.4586*			
	(0.2669)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-0.1179			
	(0.1830)			
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.1092	-0.1415	-0.1229	-0.1616
	(0.7430)	(0.7435)	(0.7271)	(0.7360)
CI Japan × log yuan/USD real ex × import weighted b14		-0.1511		
		(0.1958)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-0.3122		
		(0.1955)		
CI Japan × log yuan/USD real ex × import weighted c1			-0.2856	
			(0.2034)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-0.1789	
			(0.1624)	
CI Japan × log yuan/USD real ex × import weighted c3g				-0.3535
				(0.3706)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-0.2200
				(0.1659)
Constant	9.5545***	9.5665***	9.5707***	9.5722***
	(0.1658)	(0.1642)	(0.1619)	(0.1624)
Observations	51146	51146	51146	51146

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by firms who produce goods with higher unit value

Table: Sample: Firms with above median unit value on average

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	2.3646***	2.3318***	2.3347***	2.3359***
	(0.7754)	(0.7683)	(0.7664)	(0.7670)
CI Japan × log yuan/USD real ex × import weighted b7	-2.3615**			
	(1.0242)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-1.1985**			
	(0.5317)			
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.1235	-0.2290	-0.2360	-0.2452
	(0.5805)	(0.5817)	(0.5824)	(0.5815)
CI Japan × log yuan/USD real ex × import weighted b14		-1.4375***		
		(0.5378)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-1.3923*		
		(0.7385)		
CI Japan × log yuan/USD real ex × import weighted c1			-1.4959**	
			(0.5855)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-1.3545**	
			(0.6338)	
CI Japan × log yuan/USD real ex × import weighted c3g				-3.1360***
				(0.9846)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-1.3097**
				(0.5797)
Constant	-7.1731***	-7.1629***	-7.1634***	-7.1625***
	(0.2013)	(0.2003)	(0.2001)	(0.2005)
Observations	129985	129985	129985	129985

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Effects driven by firms who produce goods with higher unit value

Table: Sample: Firms with below median unit value on average

	(1) log export	(2) log export	(3) log export	(4) log export
CI Japan × log yuan/USD real ex	1.8766***	1.8096***	1.8104***	1.8069***
	(0.5951)	(0.5801)	(0.5803)	(0.5830)
CI Japan × log yuan/USD real ex × import weighted b7	-1.4113*			
	(0.7399)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-0.0312			
	(0.5836)			
CI Japan × log yuan/USD real ex × import wieghted tariff	0.1022	0.1837	0.1829	0.1467
	(0.4936)	(0.4719)	(0.4634)	(0.4598)
CI Japan × log yuan/USD real ex × import weighted b14		-0.1670		
		(0.6684)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-0.7149		
		(0.6692)		
CI Japan × log yuan/USD real ex × import weighted c1			-0.1517	
			(0.6287)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-0.7420	
			(0.5892)	
CI Japan × log yuan/USD real ex × import weighted c3g				0.3048
				(1.4397)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-0.4963
				(0.5498)
Constant	-8.0846***	-8.0821***	-8.0765***	-8.0743***
	(0.1364)	(0.1435)	(0.1390)	(0.1415)
Observations	104917	104917	104917	104917

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Table: With Chinese input share

	(1) log export	(2) log export	(3) log export	(4) log export
log yuan/USD real ex	0.0323	0.0287	0.0301	0.0299
	(0.1464)	(0.1461)	(0.1463)	(0.1463)
CI Japan × log yuan/USD real ex	1.6432***	1.6082***	1.6066***	1.6066***
	(0.3584)	(0.3506)	(0.3498)	(0.3506)
CI Japan × log yuan/USD real ex × import weighted b7	-1.1744***			
	(0.4387)			
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-0.4553**			
	(0.2179)			
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.2930	-0.3238	-0.3432	-0.3461
	(0.3970)	(0.4062)	(0.4086)	(0.4077)
Imported inputs from China based on BEC classification × log yuan/USD real ex	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
shareImportChinaJPHS4 × log yuan/USD real ex	-0.3140	-0.2919	-0.2923	-0.2910
	(0.4379)	(0.4331)	(0.4333)	(0.4329)
CI Japan × log yuan/USD real ex × import weighted b14		-0.5341**		
		(0.2299)		
CI Japan × log yuan/USD real ex × import weighted all NTMs less b14		-0.6376**		
		(0.2784)		
CI Japan × log yuan/USD real ex × import weighted c1			-0.5529**	
			(0.2425)	
CI Japan × log yuan/USD real ex × import weighted all NTMs less c1			-0.6005**	
			(0.2522)	
CI Japan × log yuan/USD real ex × import weighted c3g				-0.5850
				(0.5884)
CI Japan × log yuan/USD real ex × import weighted all NTMs less c3g				-0.5761**
				(0.2339)
Constant	-5.3029***	-5.3132***	-5.3153***	-5.3161***
	(0.2254)	(0.2250)	(0.2251)	(0.2248)
Observations	312358	312358	312358	312358

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, year, firm year, firm product and product year FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Table: With all NTMs combined

	(1) log export
CI Japan × log yuan/USD real ex	2.0453***
	(0.1320)
CI Japan × log yuan/USD real ex × import weighted all ntm	-1.0293***
	(0.1318)
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.0079
	(0.1852)
Constant	-7.3455***
	(0.0339)
Observations	249043

Standard errors in parentheses

Robust standard errors are used

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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Table: Effect of exchange rate shocks on Indonesian exports in Japan using modified competition index

	(1) log export
CI JP HHI modified × log yuan/USD real ex	-0.8598***
	(0.2577)
CI Japan × log yuan/USD real ex	2.1871***
	(0.5551)
CI Japan × log yuan/USD real ex × import weighted b7	-1.7275***
	(0.6101)
CI Japan × log yuan/USD real ex × import weighted all NTMs less b7	-0.7732*
	(0.4247)
CI Japan × log yuan/USD real ex × import wieghted tariff	-0.0013
	(0.3842)
Constant	-7.3611***
	(0.1273)
Observations	249043

Standard errors in parentheses

Standard errors clustered at firm level

All regressions include firm, product, month, firm month, firm product and product time FES

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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