Analysis of the COVID-19 Shock, Technology and Trade in Indonesia

Regression Results

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1. Firm-Product Level Regressions

1.1 Does Tech Adoption Affect Trade Outcomes?

These regressions analyze if technology adoption relates to trade outcomes (value of imports/exports, propensity to import/export) of specific type of products (online tradeable products/durable and consumption goods). The regression model is:

$$y_{ipt} = \alpha_0 + \alpha_1 tech_{it} \cdot pcategory_p + \alpha_2 tech_{it} + FE_p + FE_i + FE_t + \epsilon_{ipt} \tag{1}$$

Where y_{ipt} represents the trade outcome for the firm i product p in the month t. Specifically, the outcomes variable can be the logarithm of number of exports/imports for a product p of a firm i in the month t, or a dummy indicating if the product p of firm i in the month t is imported/exported or not, we define these variables as the import/export propensity. The variable $tech_{it}$ is a dummy indicating whether the firm i in month t used an adopted technology. The variable $pcategory_p$ is a dummy variable that describes the category of product p. We analyze 3 categories of products: a) Products traded online from eBay or from China e-commerce tax lists, b) BEC Classification of products to differentiate between durable, semi-durable and consumption goods, c) Products with different time-sensitivity (e.g., fresh products, frozen products).

The interaction term $tech_{it} \cdot ecommerce_p$ captures the relationship that exists between technology adoption and the trade outcomes for the online tradeable products.

Time fixed-effects control for unobserved variables that are constant at the firm-product level but vary over time. Firm fixed-effects control for unobserved time-and-product-invariant heterogeneities across firms. Similarly, product fixed-effects control for unobserved time-and-firm-invariant heterogeneities across products.

Results for eBay-tradable products/products in China e-commerce tax lists

Table 1: Indonesia - Regression Results for Log. Imports and Log. Exports: e-Bay tradable and China e-commerce products

	Dependent Variables									
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce	0.021	0.063	-0.037	0.038	0.005	0.073	-0.015	0.028	0.009	0.037
	(0.033)	(0.078)	(0.040)	(0.082)	(0.037)	(0.086)	(0.039)	(0.096)	(0.034)	(0.080)
E-payment or E-commerce × eBay-tradable			0.248***	0.113						
			(0.087)	(0.199)						
E-payment or E-commerce × China e-commerce					0.055	-0.037				
					(0.055)	(0.143)				
E-payment or E-commerce × China e-commerce upd.							0.083*	0.085		
							(0.046)	(0.153)		
E-payment or E-commerce × Diff. China e-commerce									0.082	0.210
									(0.074)	(0.196)
Num. Obs.	1,066,035	229,813	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812
R-squared	0.394	0.588	0.395	0.588	0.394	0.588	0.394	0.588	0.394	0.588
Adj.R-squared	0.389	0.575	0.389	0.575	0.389	0.575	0.389	0.575	0.389	0.575
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

E-payment/E-commerce adopters increased the value of imports for eBay tradeable products and products from the China ecommerce tax lists (updated). No statistically significant evidence for export values.

Table 2: Indonesia - Regression Results for Import/Export Propensity: e-Bay tradable and China e-commerce products

	Dependent Variables									
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce	-0.00002	-0.00004	-0.00011*	-0.00004	-0.00009	-0.00003	-0.00014**	-0.00006	-0.00006	-0.00005
	(0.00006)	(0.00008)	(0.00006)	(0.00007)	(0.00006)	(0.00007)	(0.00007)	(0.00007)	(0.00006)	(0.00008)
E-payment or E-commerce × eBay-tradable			0.00052***	0.00001						
			(0.00016)	(0.00012)						
E-payment or E-commerce × China e-commerce					0.00036***	-0.00001				
					(0.00013)	(0.00011)				
E-payment or E-commerce × China e-commerce upd.							0.00046***	0.00007		
							(0.00014)	(0.00011)		
E-payment or E-commerce × Diff. China e-commerce									0.00055**	0.00025
									(0.00023)	(0.00016)
Num. Obs.	679,137,660	384,524,914	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593
R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Adj.R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

Results for BEC products classification

Table 3: Indonesia - Regression Results for Log. Imports and Log. Exports: BEC products classification

	Dependent Variables											
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce	0.121***	-0.051	0.018	0.044	0.009	0.059	0.005	0.037	0.018	0.039	0.005	0.030
	(0.045)	(0.114)	(0.033)	(0.080)	(0.035)	(0.079)	(0.035)	(0.082)	(0.033)	(0.081)	(0.035)	(0.083)
E-payment or E-commerce × Parts	-0.148***	0.167										
	(0.050)	(0.136)										
E-payment or E-commerce × Consumable and Durable			0.327	0.533								
			(0.267)	(0.336)								
E-payment or E-commerce × Consumable and Semi-durable					0.183	0.076						
					(0.129)	(0.311)						
E-payment or E-commerce × Consumable							0.215*	0.295				
							(0.129)	(0.245)				
E-payment or E-commerce × Durable									0.350	0.634*		
									(0.262)	(0.360)		
E-payment or E-commerce × Semi-durable											0.220*	0.353
											(0.128)	(0.237)
Num. Obs.	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812
R-squared	0.395	0.588	0.394	0.588	0.394	0.588	0.394	0.588	0.394	0.588	0.394	0.588
Adj.R-squared	0.389	0.575	0.389	0.575	0.389	0.575	0.389	0.575	0.389	0.575	0.389	0.575
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

There is statistically significant evidence that E-payments/E-commerce adopters increased the value of imports for consumable and semi-durable goods and the value of exports for durable goods. In the same way, the value

of imports of products that are classified as "Parts and Accessories" was reduced by E-payments/E-commerce adopters.

Table 4: Indonesia - Regression Results for Import/Export Propensity: BEC products classification

	Dependent Variables													
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce	0.00019**	-0.00005	-0.00003	-0.00005	-0.00004	-0.000007	-0.00004	-0.00003	-0.00002	-0.00004	-0.00003	-0.00006	-0.00005	-0.00003
	(0.00008)	(0.00010)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)
E-payment or E-commerce × Parts	-0.00034***	0.00003												
	(0.00010)	(0.00008)												
E-payment or E-commerce × Consumable and Durable			0.00025*	0.00067*										
			(0.00014)	(0.00035)										
E-payment or E-commerce × Consumable and Semi-durable					0.00023	-0.00032**								
					(0.00021)	(0.00015)								
E-payment or E-commerce × Consumable							0.00024	-0.00007						
							(0.00018)	(0.00016)						
E-payment or E-commerce × Transport									0.00010	0.00011				
									(0.00012)	(0.00020)				
E-payment or E-commerce × Durable											0.00022*	0.00057**		
											(0.00013)	(0.00028)		
E-payment or E-commerce × Semi-durable													0.00024	-0.00006
													(0.00017)	(0.00015)
Num. Obs.	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593
R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Adj.R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

E-payments/E-commerce adopters were more likely to import and export *Durable and Consumable* goods, less likely to export *Consumable and Semi-durable* goods.

Results for time-sensitive products

Table 5: Indonesia - Regression Results for Log.Imports and Log.Exports: Time-sensitive Products

	Dependent Variables											
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce	0.015	0.049	0.014	0.060	0.014	0.060	0.005	0.039	0.021	0.063	0.028	0.052
	(0.034)	(0.081)	(0.033)	(0.079)	(0.033)	(0.079)	(0.036)	(0.081)	(0.033)	(0.078)	(0.034)	(0.079)
E-payment or E-commerce × Component	-0.020	0.073										
	(0.055)	(0.216)										
E-payment or E-commerce × Fresh			-0.176	-0.393								
			(0.152)	(0.540)								
E-payment or E-commerce × Frozen					-0.176	-0.393						
					(0.152)	(0.540)						
E-payment or E-commerce × Hummels Time-Sensitive							0.119	0.231				
							(0.106)	(0.323)				
E-payment or E-commerce × Agricultural Time-Sensitive									0.043			
									(0.184)			
E-payment or E-commerce × Hummels and Schaur Time-Sensitive											-0.050	0.087
											(0.052)	(0.200)
Num. Obs.	1,026,511	216,798	1,026,511	216,798	1,026,511	216,798	1,066,034	229,812	1,066,034	229,812	1,066,034	229,812
R-squared	0.398	0.591	0.398	0.591	0.398	0.591	0.394	0.588	0.394	0.588	0.394	0.588
Adj.R-squared	0.392	0.578	0.392	0.578	0.392	0.578	0.389	0.575	0.389	0.575	0.389	0.575
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

No statistically significant evidence that time sensitivity of products matters for value of imports/exports.

Table 6: Indonesia - Regression Results for Import/Export Propensity: Time-sensitive Products

	Dependent Variables											
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce	-0.00003	-0.00006	-0.00002	-0.00003	-0.00002	-0.00003	-0.00007	-0.00007	-0.00002	-0.00004	-0.00003	-0.00005
	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)	(0.00006)	(0.00008)
E-payment or E-commerce × Component	0.00016	0.00025**										
	(0.00021)	(0.00013)										
E-payment or E-commerce × Fresh			-0.00003	-0.00023*								
			(0.00011)	(0.00012)								
E-payment or E-commerce × Frozen					-0.00003	-0.00023*						
					(0.00011)	(0.00012)						
E-payment or E-commerce × Hummels Time-Sensitive							0.00071***	0.00043**				
							(0.00027)	(0.00021)				
E-payment or E-commerce × Agricultural Time-Sensitive									0.00054	-0.00002		
									(0.00040)	(0.00007)		
E-payment or E-commerce × Hummels and Schaur Time-Sensitive											0.00008	0.00012
											(0.00011)	(0.00009)
Num. Obs.	646,134,210	365,270,072	646,134,210	365,270,072	646,134,210	365,270,072	678,990,978	384,429,593	678,990,978	384,429,593	678,990,978	384,429,593
R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Adj.R-squared	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017	0.016	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

E-payments/E-commerce adopters were more likely to export time sensitive *component* goods, less likely to export time sensitive fresh and frozen products. Similarly, E-payments/E-commerce adopters were more likely to export and import products classified as time-sensitive by Hummels (2007).

Results for other HS products classification

Table 7: Indonesia - Regression Results for Log.Exports and Log.Imports: COVID impacted Products

	Dependent Variables							
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce	0.011	0.086	-0.775***	-0.135	0.556***	0.526	-0.281***	0.026
	(0.044)	(0.112)	(0.251)	(0.588)	(0.205)	(0.553)	(0.098)	(0.246)
E-payment or E-commerce × Letter Credit Use	-0.124	0.237						
	(0.344)	(1.006)						
E-payment or E-commerce × Mean Remote Work ISIC			5.132***	1.404				
			(1.610)	(4.016)				
E-payment or E-commerce × Relationship Stickiness					-0.175***	-0.154		
					(0.067)	(0.184)		
E-payment or E-commerce × Fraction inputs not sold on exchange and not ref priced							0.562***	0.090
							(0.169)	(0.486)
Num. Obs.	1,061,654	228,594	1,056,609	225,228	1,065,831	229,775	1,050,209	219,252
R-squared	0.394	0.588	0.392	0.586	0.394	0.588	0.389	0.575
Adj.R-squared	0.389	0.575	0.386	0.573	0.389	0.575	0.384	0.562
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Produce FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

E-commerce or E-payment adoption with remote work flexibility seems to have had a positive impact on the value of imports, while relationship stickiness a negative impact. Likewise, the value of imports of products with a greater fraction of inputs not sold on exchange was positive affected by the e-commerce or e-payment adoption.

Table 8: Indonesia - Regression Results for Import/Export Propensity: COVID impacted Products

	Dependent Variables			
	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce	-0.00026	-0.00050***	-0.00043**	-0.00016
	(0.00027)	(0.00018)	(0.00017)	(0.00011)
E-payment or E-commerce × Relationship Stickiness	0.00009	0.00016**		
	(0.00009)	(0.00007)		
E-payment or E-commerce × Fraction inputs not sold on exchange and not ref priced			0.00086**	0.00026
			(0.00034)	(0.00023)
Num. Obs.	676,350,702	383,381,062	626,038,776	357,072,466
R-squared	0.016	0.017	0.017	0.018
Adj.R-squared	0.016	0.017	0.017	0.018
Firm FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Produce FE	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
* p < 0.1, ** p < 0.05, *** p < 0.01

1.2 Does Existing Tech Use Mitigate COVID Impacts?

The objective of these regressions is to analyze if companies that adopted e-payments/e-commerce before 2019 were able to mitigate the COVID impacts on products' trade outcomes. The specification is as follows:

$$y_{ipt} = \alpha_0 + \alpha_1 tech_i \cdot covid_t + \alpha_2 tech_i \cdot covid_t \cdot vulnerable_p + \alpha_3 covid_t \cdot vulnerable_p + FE_p + FE_i + FE_t + \epsilon_{ipt} \quad (2)$$

Trade outcomes y_{ipt} are the same as in equation (1). The variable $tech_i$ is a dummy variable that indicates whether the company adopted e-commerce/e-payments before 2019, $covid_t$ captures COVID timing using the monthly *Stringency Index* and, $vulnerable_p$ is a dummy variable describing whether the product p is a COVID vulnerable product.

The triple interaction term $tech_i \cdot covid_t \cdot vulnerable_p$ captures if adopted e-commerce/e-payments technology (pre-2019) mitigates the effect of COVID on trade outcomes for vulnerable products. The interaction term $tech_i \cdot covid_t$ describes whether adoption of e-commerce/e-payments technology before 2019 mitigates the effect of COVID on products' trade outcomes (not distinguishing by products' vulnerability), while

$covid_t \cdot vulnerable_p$ describes the effect of COVID on vulnerable products' trade outcomes (not distinguishing by pre-2019 firms' incorporation of e-commerce/e-payments). Finally, it is included fixed-effects for product, firm and month.

Tech Mitigation of COVID impacts for eBay-tradable products/products in China e-commerce tax lists

Table 9: Indonesia - Regression Results for Log. Exports and Log.Imports: e-Bay tradable and China e-commerce products

	Dependent Variables							
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.001*	-0.001	0.000	0.000	-0.001	0.000	0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Monthly Avg. Stringency Index × eBay-Tradable	-0.001**	0.002						
	(0.001)	(0.001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × eBay-Tradable	0.006***	0.002						
	(0.002)	(0.003)						
Monthly Avg. Stringency Index × China e-commerce			0.000	0.000				
			(0.000)	(0.001)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × China e-commerce			0.001	-0.002				
			(0.001)	(0.003)				
Monthly Avg. Stringency Index × China e-commerce upd.					0.000	0.001		
					(0.000)	(0.001)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × China e-commerce upd.					0.001	0.000		
					(0.001)	(0.003)		
Monthly Avg. Stringency Index × Diff. China e-commerce							0.000	0.001
							(0.000)	(0.002)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Diff. China e-commerce							0.001	0.004
							(0.002)	(0.004)
Num. Obs.	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199
R-squared	0.391	0.587	0.391	0.586	0.391	0.586	0.391	0.587
Adj.R-squared	0.385	0.574	0.385	0.574	0.385	0.574	0.385	0.574
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Pre-2019 users of E-payments or E-commerce increased the value of imports of online tradeable products. Little evidence for export values.

Table 10: Indonesia - Regression Results for Export/Import Propensity: e-Bay tradable and China e-commerce products

	Dependent Variables							
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.000001	-0.000002	-0.0000008	-0.000001	-0.000003*	-0.000002	0.0000002	-0.000002
	(0.000002)	(0.000002)	(0.000002)	(0.000002)	(0.000002)	(0.000001)	(0.000001)	(0.000002)
Monthly Avg. Stringency Index × eBay-Tradable	-0.000002***	0.000001						
	(0.0000007)	(0.000001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × eBay-Tradable	0.00002***	0.000002						
	(0.000005)	(0.000002)						
Monthly Avg. Stringency Index × China e-commerce			-0.000001	0.000001				
			(0.0000006)	(0.000001)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × China e-commerce			0.00001***	-0.0000001				
			(0.000004)	(0.000002)				
Monthly Avg. Stringency Index × China e-commerce upd.					-0.000002***	0.000001		
					(0.0000007)	(0.000002)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × China e-commerce upd.					0.00002***	0.000001		
					(0.000004)	(0.000002)		
Monthly Avg. Stringency Index × Diff. China e-commerce							-0.000003***	0.000001
							(0.000001)	(0.000001)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Diff. China e-commerce							0.00002***	0.000005*
							(0.000007)	(0.000003)
Num. Obs.	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736
R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Adj.R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Tech Mitigation of COVID impacts for products in BEC classification

Table 11: Indonesia - Regression Results for Log. Exports and Log.Imports: BEC products classification

	Dependent Variables													
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0.003***	0	0.000	-0.001	0.000	-0.001	0.000	-0.002	0.000	0.000	0.000	-0.001	0.000	-0.002
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Monthly Avg. Stringency Index × Parts	0.002***	0												
	(0.000)	(0.001)												
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Parts	-0.004***	0												
	(0.001)	(0.003)												
Monthly Avg. Stringency Index × Consumable and Durable			-0.002	0.001										
			(0.002)	(0.002)										
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable and Durable			0.007	0.005										
			(0.004)	(0.005)										
Monthly Avg. Stringency Index × Consumable and Semi-durable					-0.002	-0.001								
					(0.001)	(0.002)								
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable and Semi-durable					0.007***	0.008*								
					(0.003)	(0.004)								
Monthly Avg. Stringency Index × Consumable							-0.002	-0.001						
							(0.001)	(0.001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable							0.007***	0.008***						
							(0.002)	(0.003)						
Monthly Avg. Stringency Index × Transport									0.000	-0.010				
									(0.004)	(0.009)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Transport									0.016**	0.045**				
									(0.006)	(0.021)				
Monthly Avg. Stringency Index × Durable											-0.002	0.000		
											(0.002)	(0.003)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Durable											0.007*	0.009		
											(0.004)	(0.006)		
Monthly Avg. Stringency Index × Semi-Durable													-0.002	-0.001
													(0.001)	(0.001)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Semi-Durable													0.007***	0.010***
													(0.002)	(0.003)
Num. Obs.	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199
R-squared	0.391	0.586	0.391	0.587	0.391	0.587	0.391	0.587	0.391	0.587	0.391	0.587	0.391	0.587
Adj.R-squared	0.385	0.574	0.385	0.574	0.385	0.574	0.385	0.574	0.385	0.574	0.385	0.574	0.385	0.574
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Pre-2019 users of E-payments or E-commerce increased the value of imports or exports of durable or consumption goods.

Table 12: Indonesia - Regression Results for Export/Import propensity: BEC products classification

	Dependent Variables													
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0.000004*	-0.000001	0.000002	-0.000002	0.000001	-0.0000009	0.000001	-0.000001	0.000002	-0.000001	0.000002	-0.000002	0.000001	-0.000001
	(0.000002)	(0.0000012)	(0.000001)	(0.000002)	(0.000002)	(0.000002)	(0.000002)	(0.000002)	(0.000001)	(0.000002)	(0.000001)	(0.000002)	(0.000002)	(0.000002)
Monthly Avg. Stringency Index × Parts	0.000027***	-0.0000003												
	(0.0000004)	(0.0000055)												
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Parts	-0.000003	0.0000001												
	(0.000003)	(0.000001)												
Monthly Avg. Stringency Index × Consumable and Durable			-0.000007***	-0.000001										
			(0.0000006)	(0.000001)										
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable and Durable			0.0000002	0.00001**										
			(0.0000004)	(0.000007)										
Monthly Avg. Stringency Index × Consumable and Semi-durable					-0.000001	0.000001								
					(0.000001)	(0.000002)								
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable and Semi-durable					0.000013	-0.00005*								
					(0.000008)	(0.000003)								
Monthly Avg. Stringency Index × Consumable							-0.000001*	0.0000008						
							(0.0000009)	(0.000001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Consumable							0.000003	0.0000003						
							(0.000006)	(0.000003)						
Monthly Avg. Stringency Index × Transport									-0.0000003	-0.000001				
									(0.0000006)	(0.000001)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Transport									-0.000006*	0.000003				
									(0.000003)	(0.000005)				
Monthly Avg. Stringency Index × Durable											-0.000001**	-0.000001*		
											(0.0000005)	(0.0000007)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Durable											-0.000009	0.00001**		
											(0.000003)	(0.000006)		
Monthly Avg. Stringency Index × Semi-Durable													-0.000001*	0.0000007
													(0.0000008)	(0.000001)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Semi-Durable													0.000002	0.0000005
													(0.000006)	(0.000003)
Num. Obs.	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736
R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Adj.R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Tech Mitigation of COVID impacts for time-sensitive products

Table 13: Indonesia - Regression Results for Log. Imports and Log.Exports: Time-sensitive Products

	Dependent Variables											
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Monthly Avg. Stringency Index × Component	0	0.003										
	(0.000)	(0.002)										
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Component	0	-0.001										
	(0.001)	(0.004)										
Monthly Avg. Stringency Index × Fresh			0.000	-0.001								
			(0.001)	(0.002)								
adopted_pay_or_ecom_before_2019:month_mean_stringency_index:fresh			-0.001	-0.001								
			(0.004)	(0.005)								
Monthly Avg. Stringency Index × Frozen					0.000	-0.001						
					(0.001)	(0.002)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Frozen					-0.001	-0.001						
					(0.004)	(0.005)						
Monthly Avg. Stringency Index × Hummels Time-Sensitive							0.000	0.005***				
							(0.001)	(0.002)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Hummels Time-Sensitive							0.003	0.003				
							(0.002)	(0.005)				
Monthly Avg. Stringency Index × Agricultural Time-Sensitive									0.005	-0.017		
									(0.004)	(0.013)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Agricultural Time-Sensitive									-0.002			
									(0.004)			
Monthly Avg. Stringency Index × Hummels and Schaur Time-Sensitive											0.000	0.002
											(0.000)	(0.001)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Hummels and Schaur Time-Sensitive											-0.001	0.000
											(0.001)	(0.003)
Num. Obs.	1,056,710	219,949	1,056,710	219,949	1,056,710	219,949	1,097,890	233,199	1,097,890	233,199	1,097,890	233,199
R-squared	0.394	0.59	0.394	0.59	0.394	0.59	0.391	0.587	0.391	0.586	0.391	0.587
Adj.R-squared	0.389	0.577	0.389	0.577	0.389	0.577	0.385	0.574	0.385	0.574	0.385	0.574
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

No statistically significant evidence that time sensitivity matters for changes in value of imports or exports.

Table 14: Indonesia - Regression Results for Import/Export Propensity: Time-sensitive Products

	Dependent Variables											
	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0.0000007	-0.0000002	0.0000002	-0.0000001	0.0000002	-0.0000001	-0.0000002	-0.0000002	0.0000002	-0.0000001	0.0000001	-0.0000002
	(0.0000041)	(0.0000002)	(0.0000041)	(0.0000002)	(0.0000041)	(0.0000002)	(0.0000041)	(0.0000002)	(0.0000041)	(0.0000002)	(0.0000041)	(0.0000002)
Monthly Avg. Stringency Index × Component	-0.0000027***	-5e-08										
	(0.0000009)	(0.0000008)										
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Component	0.0000027***	0.0000002**										
	(0.0000006)	(0.0000003)										
Monthly Avg. Stringency Index × Fresh			0.0000003	-0.0000004								
			(0.0000055)	(0.0000011)								
adopted_pay_or_ecom_before_2019:month_mean_stringency_index:fresh			-0.0000009***	-0.0000004								
			(0.0000003)	(0.0000002)								
Monthly Avg. Stringency Index × Frozen					0.0000003	-0.0000004						
					(0.0000005)	(0.0000001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Frozen					-0.0000009***	-0.0000004						
					(0.0000003)	(0.0000002)						
Monthly Avg. Stringency Index × Hummels Time-Sensitive							-0.0000007	2e-09				
							(0.0000001)	(0.0000009)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Hummels Time-Sensitive							0.0000037***	0.0000019**				
							(0.0000009)	(0.0000004)				
Monthly Avg. Stringency Index × Agricultural Time-Sensitive									-0.0000001	-0.0000001		
									(0.0000001)	(0.0000001)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Agricultural Time-Sensitive									-0.0000005	-0.0000001		
									(0.0000006)	(0.0000002)		
Monthly Avg. Stringency Index × Hummels and Schaur Time-Sensitive											-0.0000017***	-0.0000002
											(0.0000005)	(0.0000004)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Hummels and Schaur Time-Sensitive											0.0000079**	0.0000037*
											(0.0000043)	(0.0000022)
Num. Obs.	652,898,576	368,747,008	652,898,576	368,747,008	652,898,576	368,747,008	686,054,160	388,068,736	686,054,160	388,068,736	686,054,160	388,068,736
R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Adj.R-squared	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Tech Mitigation of COVID impacts for COVID impacted products

Table 15: Indonesia - Regression Results for Log. Imports Log. Exports: COVID impacted Products

	Dependent Variables							
	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports	Log.Imports	Log.Exports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.001	-0.002	-0.014***	-0.006	0.014***	0.009	-0.005***	0.000
	(0.001)	(0.002)	(0.004)	(0.009)	(0.005)	(0.012)	(0.002)	(0.005)
Monthly Avg. Stringency Index × Letter Credit Use	-0.003	-0.006						
	(0.002)	(0.007)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Letter Credit Use	-0.014*	-0.016						
	(0.007)	(0.018)						
Monthly Avg. Stringency Index × Feasibility Remote Work			-0.018**	0.043				
			(0.007)	(0.034)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Feasibility Remote Work			0.091***	0.038				
			(0.028)	(0.060)				
Monthly Avg. Stringency Index × Relationship Stickiness					0.001***	0.001		
					(0.000)	(0.001)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Relationship Stickiness					-0.004***	-0.003		
					(0.002)	(0.004)		
Monthly Avg. Stringency Index × Fraction inputs not sold on exchange and not ref priced							-0.003***	0.004
							(0.001)	(0.003)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Fraction inputs not sold on exchange and not ref priced							0.010***	0.000
							(0.003)	(0.009)
Num. Obs.	1,093,261	231,977	1,088,388	228,541	1,097,686	233,162	1,082,009	222,626
R-squared	0.391	0.587	0.388	0.584	0.391	0.586	0.385	0.573
Adj.R-squared	0.385	0.574	0.382	0.571	0.385	0.573	0.38	0.56
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Table 16: Indonesia - Regression Results for Import/Export Propensity: COVID impacted Products

	Dependent Variables			
	Import Propensity	Export Propensity	Import Propensity	Export Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.00002***	-0.000007*	-0.00001***	-0.000005**
	(0.000007)	(0.000004)	(0.000005)	(0.000002)
Monthly Avg. Stringency Index × Relationship Stickiness	-0.0000008**	9e-08		
	(0.0000004)	(0.0000004)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Relationship Stickiness	0.000008***	0.000002		
	(0.000003)	(0.000001)		
Monthly Avg. Stringency Index × Fraction inputs not sold on exchange and not ref priced			-0.000005***	0.0000006
			(0.000001)	(0.000002)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Fraction inputs not sold on exchange and not ref priced			0.00003***	0.000008*
			(0.000009)	(0.000005)
Num. Obs.	683,389,872	387,011,328	632,620,384	360,480,000
R-squared	0.017	0.017	0.017	0.018
Adj.R-squared	0.017	0.017	0.017	0.018
Firm FE	Yes	Yes	Yes	Yes
Product FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes

Clustered-standard errors at the firm-product level.
The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

2. Industry Level Regressions

2.1 Does Existing Technology Use Mitigate COVID Sectorial Impacts?

The purpose of these regressions is to explore the effects of sectorial exposures to COVID on trade outcomes for those sectors with firms that adopted e-payments/e-commerce technologies before 2019. The proposed regression is:

$$y_{ist} = \alpha_0 + \alpha_1 tech_i \cdot covid_t + \alpha_2 tech_i \cdot covid_t \cdot vulnerable_s + \alpha_3 covid_t \cdot vulnerable_s + FE_i + FE_t + \epsilon_{ist}. \quad (3)$$

Where y_{ist} are the trade outcomes for firm i of sector s in the month t. Variables $tech_i$ and $covid_t$ are the same as in equation (2) and, $vulnerable_s$ can be different sector level indicators that measure sectorial exposure to COVID.

The triple interaction term captures the effect of COVID on trade outcomes based on the sectorial COVID exposure for those companies that adopted e-payments/e-commerce before 2019. The interaction term $tech_i \cdot covid_t$ describes whether adoption of e-commerce/e-payments technology before 2019 mitigates the effect of COVID on trade outcomes, while $covid_t \cdot vulnerable_s$ describes the effect of COVID on trade outcomes depending on the sectorial exposure.

Sector level indicators from NAICS Classifications and CDC Essential Industries

Table 17: Indonesia - Regression Results for Log. Exports: NAICS and CDC sector level indicators

	Dependent Variables							
	Log.Exports	Log.Exports	Log.Exports	Log.Exports	Log.Exports	Log.Exports	Log.Exports	Log.Exports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0.001	0.001	0.000	0.003	0.003***	0.002	0.003**	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
E-payment or E-commerce 2019 × Philadelphia Fed CISA	0.002***							
	(0.001)							
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Philadelphia Fed CISA	0.001							
	(0.002)							
Monthly Avg. Stringency Index × Teleworkable Employment		0.001						
		(0.002)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Employment		0.002						
		(0.006)						
Monthly Avg. Stringency Index × Teleworkable Wage			0.000					
			(0.002)					
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Wage			0.003					
			(0.005)					
Monthly Avg. Stringency Index × Teamwork Share				-0.022**				
				(0.009)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teamwork Share				-0.013				
				(0.022)				
Monthly Avg. Stringency Index × Costumer Share					0.002			
					(0.003)			
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Costumer Share					-0.012			
					(0.008)			
Monthly Avg. Stringency Index × Presence Share						-0.001		
						(0.004)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Presence Share						-0.001		
						(0.010)		
Monthly Avg. Stringency Index × Communication Share							-0.003	
							(0.004)	
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Communication Share							-0.009	
							(0.008)	
Monthly Avg. Stringency Index × Affected Share								0.000
								(0.003)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Affected Share								-0.009
								(0.006)
Num. Obs.	51,169	50,877	50,877	50,322	50,322	50,322	50,322	50,322
R-squared	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj.R-squared	0.82	0.819	0.819	0.819	0.819	0.819	0.819	0.819
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Overall, there are no significant triple interaction effects.

Table 18: Indonesia - Regression Results for Export Propensity: NAICS and CDC sector level indicators

	Dependent Variables							
	Export Propensity	Export Propensity	Export Propensity	Export Propensity	Export Propensity	Export Propensity	Export Propensity	Export Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	0.00059	0.00034	0.00039	0.00024	0.00020	0.00025	0.00026	0.00046
	(0.00036)	(0.00034)	(0.00040)	(0.00038)	(0.00023)	(0.00031)	(0.00029)	(0.00039)
E-payment or E-commerce 2019 × Philadelphia Fed CISA	0.00067***							
	(0.00014)							
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Philadelphia Fed CISA	-0.00071*							
	(0.00041)							
Monthly Avg. Stringency Index × Teleworkable Employment		0.00044						
		(0.00033)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Employment		-0.00096						
		(0.00086)						
Monthly Avg. Stringency Index × Teleworkable Wage			0.00052*					
			(0.00030)					
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Wage			-0.00084					
			(0.00079)					
Monthly Avg. Stringency Index × Teamwork Share				-0.00109				
				(0.00169)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teamwork Share				-0.00188				
				(0.00388)				
Monthly Avg. Stringency Index × Costumer Share					0.00006			
					(0.00056)			
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Costumer Share					-0.00120			
					(0.00159)			
Monthly Avg. Stringency Index × Presence Share						0.00056		
						(0.00068)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Presence Share						-0.00142		
						(0.00218)		
Monthly Avg. Stringency Index × Communication Share							-0.00014	
							(0.00059)	
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Communication Share							-0.00122	
							(0.00167)	
Monthly Avg. Stringency Index × Affected Share								0.00037
								(0.00051)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Affected Share								-0.00150
								(0.00141)
Num. Obs.	96,128	95,776	95,776	94,848	94,848	94,848	94,848	94,848
R-squared	0.655	0.655	0.655	0.654	0.654	0.654	0.654	0.654
Adj.R-squared	0.644	0.644	0.644	0.643	0.643	0.643	0.643	0.643
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Table 19: Indonesia - Regression Results for Log. Imports: NAICS and CDC sector level indicators

	Dependent Variables							
	Log.Imports	Log.Imports	Log.Imports	Log.Imports	Log.Imports	Log.Imports	Log.Imports	Log.Imports
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.001	0.002	0.002	0.001	0.000	-0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
E-payment or E-commerce 2019 × Philadelphia Fed CISA	0.001							
	(0.001)							
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Philadelphia Fed CISA	0.001							
	(0.001)							
Monthly Avg. Stringency Index × Teleworkable Employment		0.002*						
		(0.001)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Employment		-0.004						
		(0.003)						
Monthly Avg. Stringency Index × Teleworkable Wage			0.002**					
			(0.001)					
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Wage			-0.003					
			(0.003)					
Monthly Avg. Stringency Index × Teamwork Share				-0.010				
				(0.007)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teamwork Share				-0.004				
				(0.016)				
Monthly Avg. Stringency Index × Costumer Share					-0.004**			
					(0.002)			
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Costumer Share					-0.001			
					(0.003)			
Monthly Avg. Stringency Index × Presence Share						-0.006*		
						(0.003)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Presence Share						0.008		
						(0.006)		
Monthly Avg. Stringency Index × Communication Share							-0.006***	
							(0.002)	
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Communication Share							-0.001	
							(0.004)	
Monthly Avg. Stringency Index × Affected Share								-0.006***
								(0.002)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Affected Share								0.002
								(0.004)
Num. Obs.	90,674	90,464	90,464	89,680	89,680	89,680	89,680	89,680
R-squared	0.755	0.755	0.756	0.755	0.756	0.756	0.756	0.756
Adj.R-squared	0.741	0.741	0.741	0.741	0.741	0.741	0.741	0.741
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

Table 20: Indonesia - Regression Results for Import Propensity: NAICS and CDC sector level indicators

	Dependent Variables							
	Import Propensity	Import Propensity	Import Propensity	Import Propensity	Import Propensity	Import Propensity	Import Propensity	Import Propensity
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index	-0.00063**	-0.00020	-0.00018	-0.00034	-0.00029	-0.00041*	-0.00037	-0.00054*
	(0.00031)	(0.00030)	(0.00035)	(0.00033)	(0.00019)	(0.00024)	(0.00023)	(0.00031)
E-payment or E-commerce 2019 × Philadelphia Fed CISA	-0.00017							
	(0.00013)							
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Philadelphia Fed CISA	0.00046							
	(0.00034)							
Monthly Avg. Stringency Index × Teleworkable Employment		-0.00071***						
		(0.00025)						
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Employment		-0.00012						
		(0.00068)						
Monthly Avg. Stringency Index × Teleworkable Wage			-0.00041*					
			(0.00023)					
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teleworkable Wage			-0.00014					
			(0.00064)					
Monthly Avg. Stringency Index × Teamwork Share				-0.00400***				
				(0.00140)				
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Teamwork Share				0.00119				
				(0.00315)				
Monthly Avg. Stringency Index × Costumer Share					-0.00146***			
					(0.00048)			
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Costumer Share					0.00068			
					(0.00094)			
Monthly Avg. Stringency Index × Presence Share						-0.00102**		
						(0.00046)		
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Presence Share						0.00130		
						(0.00149)		
Monthly Avg. Stringency Index × Communication Share							-0.00190***	
							(0.00051)	
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Communication Share							0.00099	
							(0.00100)	
Monthly Avg. Stringency Index × Affected Share								-0.00162***
								(0.00038)
E-payment or E-commerce 2019 × Monthly Avg. Stringency Index × Affected Share								0.00109
								(0.00094)
Num. Obs.	146,682	146,334	146,334	145,087	145,087	145,087	145,087	145,087
R-squared	0.567	0.568	0.568	0.569	0.569	0.569	0.569	0.569
Adj.R-squared	0.552	0.553	0.552	0.553	0.553	0.553	0.553	0.553
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The variable E-payment or E-commerce 2019 means that the company adopted the E-payment or E-commerce technology before 2019.
* p < 0.1, ** p < 0.05, *** p < 0.01

2.2 Sector measures of likelihood of online trade

The objective of this regression is to analyze the effect of sectorial trade tech adoption on trade outcomes. The proposed regression is:

$$y_{its} = \alpha_0 + \alpha_1 tech_{it} + \alpha_2 tech_{it} \cdot ecommerce_s + FE_i + FE_t + \epsilon_{its}$$

Where y_{ist} are the trade outcomes for a firm i of sector s in the month t, $tech_{it}$ is a dummy variable that is indicating whether the firm i in month t used an adopted e-commerce/e-payments technology and, $ecommerce_s$ is the e-commerce revenue share for sector s. The interaction term captures the effect on trade outcomes of the magnitude of e-commerce revenue share in sector s for those companies that have an e-commerce/e-payments technology. Fixed effects for firm and month are also included.

Table 21: Indonesia - Regression Results for Log.Imports and Log.Exports: Sector Likelihood of Online Trading

	Dependent Variables	
	Log.Imports	Log.Exports
E-payment or E-commerce	-0.005	0.409*
	(0.094)	(0.234)
E-payment or E-commerce × E-commerce Revenue Share	0.000	-0.008**
	(0.002)	(0.004)
Num. Obs.	84,374	48,204
R-squared	0.764	0.834
Adj.R-squared	0.75	0.823
Firm FE	Yes	Yes
Month FE	Yes	Yes

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

Table 22: Indonesia - Regression Results for Import/Export Propensity: Sector Likelihood of Online Trading

	Dependent Variables	
	Import Propensity	Export Propensity
E-payment or E-commerce	-0.039**	0.024
	(0.018)	(0.024)
E-payment or E-commerce × E-commerce Revenue Share	0.001*	0.000
	(0.000)	(0.000)
Num. Obs.	132,240	87,737
R-squared	0.569	0.659
Adj.R-squared	0.553	0.648
Firm FE	Yes	Yes
Month FE	Yes	Yes

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