

Analysis of the COVID-19 Shock, Technology and Trade

Foreign Trade Partners Analysis - Indonesia and USA

Simón Caicedo

April 4, 2023

We examine the bilateral relationship between three categories of industries in Indonesia and the US: Wholesale/Retail, Manufacturing, and a category termed ‘Rest,’ which encompasses various industries such as Agriculture, Construction and Mining, Services, Finance, Insurance and Real Estate, and Transport and Utilities. In this context, ‘Domestic industries’ refers to those in Indonesia, while ‘Foreign industries’ denotes those in the United States.

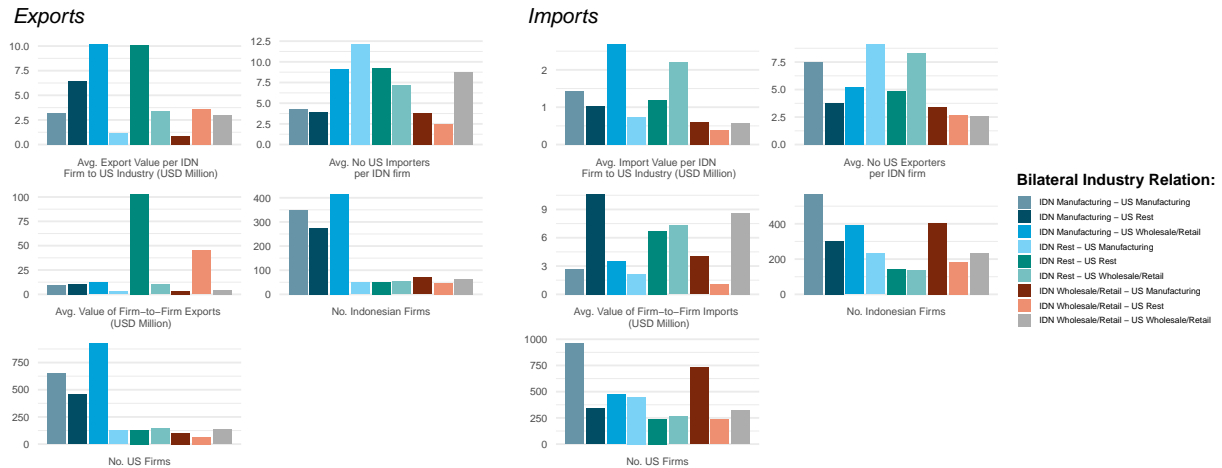
To gain insight into the bilateral relationship between industries in Indonesia and the US, we examine five variables:

1. Number of Indonesian Firms: Refers to the number of Indonesian firms in a specific industry trading (importing or exporting) with firms in a specific US industry.
2. Number of US firms: Indicates the number of US firms in a specific industry trading (importing or exporting) with firms in a specific Indonesian industry.
3. Average export/import value per Indonesian firm to/from US industry: This represents the average value of exports (to a US industry) or imports (from a US industry) for each individual Indonesian firm within a specific industry. For example, if there are three Indonesian firms in a particular industry with export values of \$10,000, \$15,000, and \$25,000 to a specific US industry, the average export value per Indonesian firm to that US industry would be $(\$10,000 + \$15,000 + \$25,000) / 3 = \$16,667$. Similarly, for imports from the US industry to Indonesian firms, the calculation would follow the same approach using the import values.
4. Average number of US importers/exporters per Indonesian firm: This represents the average number of US importers (for Indonesian exports) or exporters (for Indonesian imports) associated with each Indonesian firm within a specific industry.
5. Average value of firm-to-firm exports/imports: This refers to the mean total value of exports (from an Indonesian firm to a US firm) or imports (from a US firm to an Indonesian firm) for firms within specific industries in both countries. For example, consider three transactions between an Indonesian firm in industry A and three US firms in industry B, with export values of \$10,000, \$15,000, and \$25,000. The average value of firm-to-firm exports in this case would be $(\$10,000 + \$15,000 + \$25,000) / 3 = \$16,667$. The same approach would be applied to calculate the average value of firm-to-firm imports based on their respective import values.

1. Bilateral Industry Trade Patterns

In export terms, the highest average value per Indonesian firm and the greatest firm participation (number of US and Indonesian firms) are seen between Indonesia’s manufacturing industry and the US wholesale/retail sector. This pairing also ranks third in firm-to-firm export value and the average number of US importers per Indonesian firm. For exports, the lowest values are found between Indonesia’s wholesale/retail industry and the US manufacturing and ‘Rest’ categories.

For imports, the highest average value per Indonesian firm to a US industry is also observed in transactions between the Indonesian manufacturing industry and the US wholesale/retail industry. The Indonesian manufacturing industry’s bilateral relation with the ‘Rest’ category yields the highest average value of firm-to-firm imports, followed by the bilateral relation between the Indonesian wholesale/retail industry and US wholesale/retail industry. The US wholesale/retail and manufacturing industries have the highest average number of exporters to Indonesian industries. The broadest firm participation, regarding the number of US and Indonesian firms, occurs between the Indonesian manufacturing industry and the US manufacturing industry. In import terms, the lowest participation is between the Indonesian wholesail/retail industry and both the US manufacturing industry and US industries in the ‘Rest’ category.



2. Bilateral Industry Trade Patterns: Dissaggregated by Product Category

To determine if industry-to-industry patterns are primarily influenced by specific product types, we disaggregate our variables of interest by product type. For instance, we compute the average export/import value per Indonesian firm to/from US industry and the average value of firm-to-firm imports/exports for both consumable and non-consumable goods, examining each category separately. Next, we plot the differences in these variables between consumable and non-consumable goods, allowing us to determine the extent of participation for consumable goods within a particular bilateral industry relationship. We do this analysis for four product categories: consumable goods, durable goods, products in China E-commerce tax list and e-Bay tradable products.

2.1 Consumable Goods vs Non-Consumable Goods

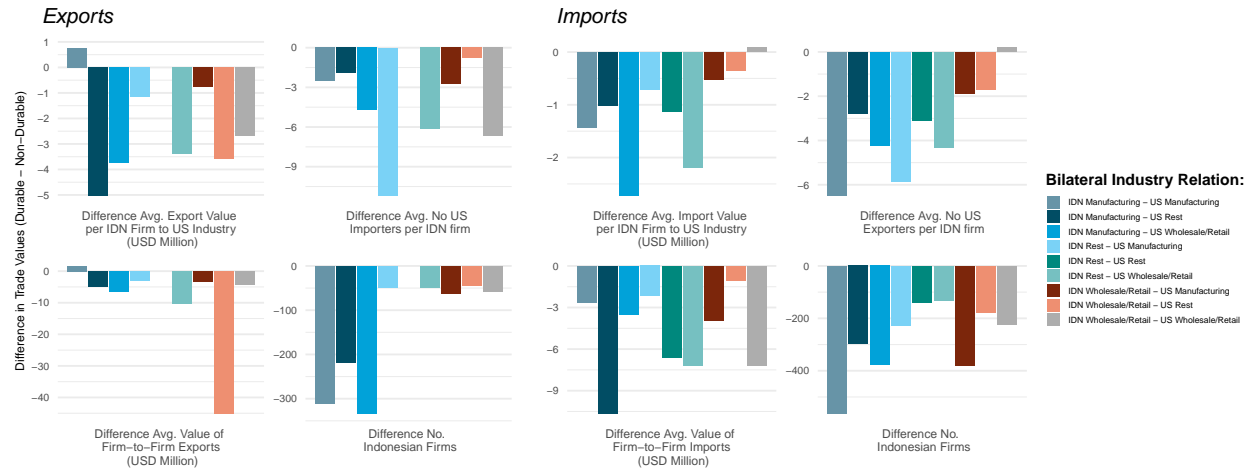
In export terms, both the average export value per Indonesian firm to US industry and firm-to-firm exports are larger for consumable goods compared to non-consumable goods in bilateral relations between: (1) Indonesian manufacturing and US wholesale/retail industries, and (2) Indonesian ‘Rest’ category and US manufacturing industry. For imports, the import value per Indonesian firm to US industry is larger for consumable goods than non-consumable goods in the bilateral relation between the Indonesian and US wholesale/retail industries.



2.2 Durable Goods vs Non-Durable Goods

In export terms, both the average export value per Indonesian firm to US industry and firm-to-firm exports are larger for durable goods compared to non-durable goods in the bilateral relation between the Indonesian and US manufacturing industries.

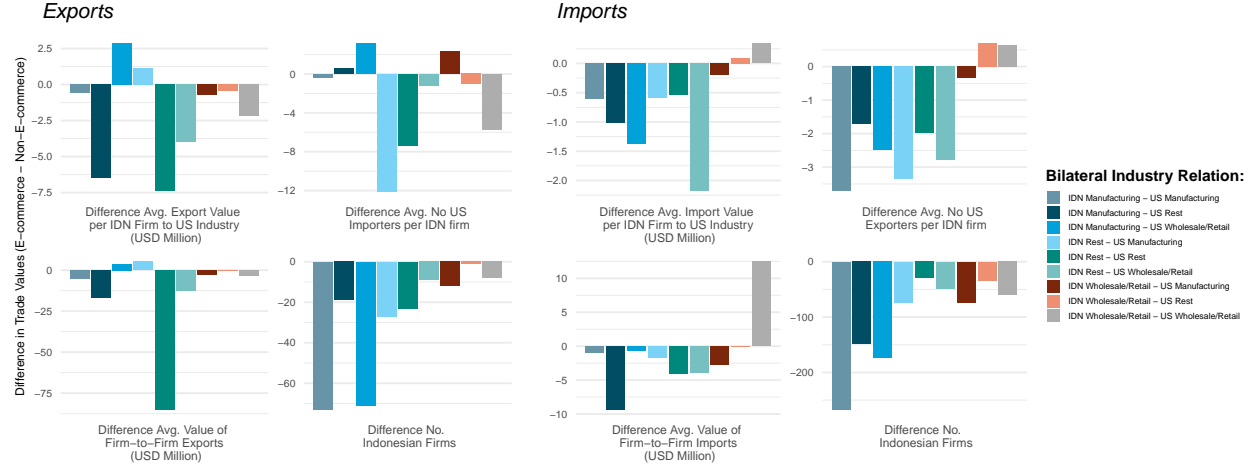
Similar to the consumable goods case, in terms of imports, the import value per Indonesian firm to US industry is larger for durable goods than non-durable goods in the bilateral relation between the Indonesian and US wholesale/retail industries.



2.3 Products in China E-commerce tax list vs Products not in China E-commerce tax list

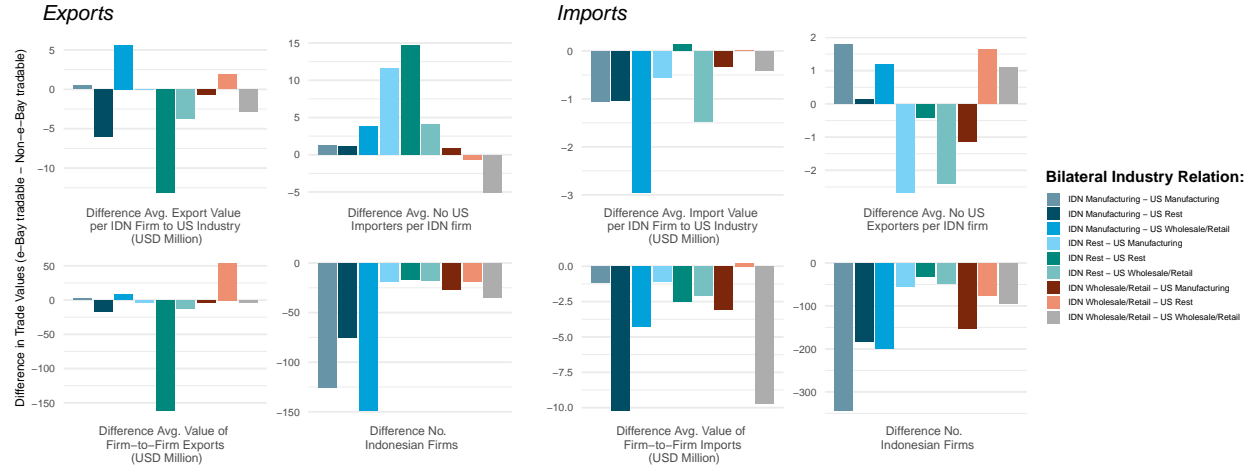
Similar to the consumable goods case, both the average export value per Indonesian firm to US industry and firm-to-firm exports are larger for products on the China E-commerce tax list compared to those not on the list in bilateral relations between: (1) Indonesian manufacturing and US wholesale/retail industries, and (2) Indonesian 'Rest' category and US manufacturing industry.

For imports, the bilateral relation between Indonesian and US wholesale/retail industries again plays a significant role, displaying larger values for both the average value of firm-to-firm imports and average import value per Indonesian firm to the US industry.



2.4 e-Bay tradable products vs Non-e-Bay tradable products

In export terms, both the average export value per Indonesian firm to US industry and firm-to-firm exports are significantly larger for e-Bay tradable products compared to non-e-Bay tradable products in bilateral relations between: (1) Indonesian manufacturing and US wholesale/retail industries, and (2) Indonesian wholesale/retail and US industries in the ‘Rest’ category. Interestingly, the average number of US importers per Indonesian firm is larger for e-Bay tradable products in almost all bilateral industry relations, except for the Indonesian wholesale/retail and US wholesale/retail industry pair.



3. Bilateral Industry Trade Patterns: Dissaggregated by Technology Adoption

To assess whether industry-to-industry patterns are mainly driven by the adoption of e-commerce or e-payment technologies, we disaggregate our variables of interest by technology adoption. Specifically, we calculate each variable for every bilateral industry relationship, separately for firms that adopted e-payment or e-commerce technologies and those that did not adopt either technology. Following this, we compute the difference between the values of firms that adopted e-payment or e-commerce technologies and those that did not adopt either technology to determine if technology adoption significantly impacts specific bilateral industry relationships.

As illustrated in the plot below, the average export value per Indonesian firm and the average value of firm-to-firm exports are significantly higher for firms that adopted e-payment or e-commerce technologies in the bilateral industry relations between 1) the Indonesian Manufacturing industry and the US industries in the ‘Rest’ category, and 2) the Indonesian wholesale/retail industry and the US industries in the ‘Rest’ category.

For imports, bilateral relations between the Indonesian wholesale/retail industry and both the ‘Rest’ category and US wholesale/retail industries have notably larger average import value per Indonesian firm and firm-to-firm imports for firms that adopted e-payment or e-commerce technologies. Except for the Indonesian wholesale/retail and US wholesale/retail relationship, all bilateral industry relations have a larger average number of US exporters per Indonesian firm for companies that adopted these technologies.



Appendix

In addition to the plots presented in this report, we have included an appendix containing detailed tables for each of the analyzed variables. This supplementary information is provided for those who wish to examine the values and relationships more closely or prefer a tabular representation of the data.

A.1. Bilateral Industry Trade Patterns

Table 1: Export Dynamics: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	No. IDN Firms in Industry	No. USA firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Rest	275	456	6,419,496.7	3.95	10,711,258
Wholesale/Retail	Wholesale/Retail	63	136	3,034,624.2	8.75	4,290,743
Manufacturing	Wholesale/Retail	417	926	10,216,809.7	9.17	12,192,914
Manufacturing	Manufacturing	350	651	3,212,822.8	4.26	9,521,782
Wholesale/Retail	Manufacturing	70	102	844,385.1	3.81	3,408,058
Rest	Wholesale/Retail	53	143	3,378,477.1	7.17	10,262,383
Wholesale/Retail	Rest	46	66	3,584,605.1	2.43	45,121,222
Rest	Rest	50	129	10,050,000.9	9.30	103,438,504
Rest	Manufacturing	49	122	1,154,454.8	12.17	2,937,302

Table 2: Import Dynamics: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	No. IDN Firms in Industry	No. USA firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	571	960	1,439,075.7	7.48	2,664,794
Manufacturing	Wholesale/Retail	391	475	2,694,835.2	5.21	3,504,222
Rest	Wholesale/Retail	139	266	2,218,562.6	8.36	7,308,599
Rest	Rest	145	240	1,188,126.7	4.90	6,699,339
Manufacturing	Rest	302	337	1,021,281.7	3.80	10,671,423
Wholesale/Retail	Manufacturing	403	731	598,624.9	3.43	4,006,286
Wholesale/Retail	Wholesale/Retail	235	324	582,467.4	2.55	8,619,691
Wholesale/Retail	Rest	184	238	393,679.2	2.69	1,117,697
Rest	Manufacturing	231	450	723,609.6	9.15	2,193,121

A.2 Bilateral Industry Trade Patterns: Dissaggregated by Product Category

A.2.1 Consumable Goods vs Non-Consumable Goods

Table 3: Exports Dynamics for Consumable Goods: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	Consumable Goods				Non-Consumable Goods			
		No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)	No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Manufacturing	106	2,444,495.22	2.28	6,722,495.93	287	3,015,231.6	4.69	9,170,602
Manufacturing	Rest	121	1,566,143.36	3.38	3,281,167.14	206	7,649,797.3	4.15	15,746,358
Manufacturing	Wholesale/Retail	153	11,497,925.14	9.74	13,005,291.99	344	7,271,009.0	7.64	9,937,287
Rest	Manufacturing	5	2,575,763.87	2.87	4,336,305.09	47	929,563.1	13.24	2,758,384
Rest	Rest	3	163,895.86	4.31	133,613.02	49	10,245,068.6	9.33	110,121,952
Rest	Wholesale/Retail	6	413,094.18	9.00	373,095.86	51	3,462,367.1	6.68	11,853,129
Wholesale/Retail	Manufacturing	12	90,029.12	2.98	85,292.52	64	906,665.7	3.88	3,619,629
Wholesale/Retail	Rest	6	432,304.35	1.21	433,789.19	43	3,774,372.2	2.51	47,002,517
Wholesale/Retail	Wholesale/Retail	12	933,145.28	3.64	673,616.27	58	3,103,165.2	10.63	5,650,431

Table 4: Import Dynamics for Consumable Goods: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	Consumable Goods				Non-Consumable Goods			
		No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)	No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	57	502,659.31	1.43	2,083,499.95	564	1,406,135.9	7.52	2,643,218
Manufacturing	Rest	32	17,348.51	1.47	13,091.16	291	1,057,979.1	3.79	10,919,136
Manufacturing	Wholesale/Retail	54	25,605.07	2.69	96,162.94	379	2,776,511.5	5.15	3,687,198
Rest	Manufacturing	32	26,658.26	2.33	87,017.83	229	726,204.2	9.10	2,157,629
Rest	Rest	15	39,882.71	1.57	108,803.99	145	1,184,000.9	4.85	6,660,212
Rest	Wholesale/Retail	23	99,758.04	3.30	422,676.35	138	2,218,012.9	8.30	6,851,305
Wholesale/Retail	Manufacturing	69	146,685.26	2.41	240,012.24	394	586,610.6	3.35	4,054,141
Wholesale/Retail	Rest	26	37,214.43	1.14	130,814.18	182	392,689.0	2.71	1,147,076
Wholesale/Retail	Wholesale/Retail	32	683,668.48	3.42	3,543,708.67	234	491,463.4	1.97	5,909,844

A.2.2 Durable Goods vs Non-Durable Goods

Table 5: Exports Dynamics for Durable Goods: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	Consumable Goods				Non-Consumable Goods			
		No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)	No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Manufacturing	26	3,823,502.23	1.93	10,089,690.85	336	3,050,824.1	4.43	8,436,878
Manufacturing	Rest	41	1,549,322.33	2.14	5,825,962.11	259	6,570,808.4	4.07	10,797,948
Manufacturing	Wholesale/Retail	62	6,081,703.65	4.89	5,979,238.39	396	9,806,424.3	9.61	12,330,632
Rest	Manufacturing	1	300.00	1.00	300.00	49	1,154,448.7	12.18	2,941,302
Rest	Rest	NA	NA	NA	NA	50	10,050,000.9	9.30	103,438,504
Rest	Wholesale/Retail	3	65,527.00	1.00	65,527.00	52	3,439,667.4	7.17	10,284,194
Wholesale/Retail	Manufacturing	6	84,697.33	1.13	128,704.95	68	861,746.6	3.86	4,054,141
Wholesale/Retail	Rest	2	2,415.94	1.67	1,610.63	46	3,584,500.0	2.42	45,154,598
Wholesale/Retail	Wholesale/Retail	4	364,063.31	2.47	209,633.23	62	3,060,081.8	9.14	4,563,161

Table 6: Import Dynamics for Durable Goods: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	Durable Goods				Non-durable Goods			
		No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)	No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	7	8,351.75	1.00	9,778.28	571	1,438,973.3	7.49	2,667,210
Manufacturing	Rest	3	13,655.93	1.00	23,614.80	301	1,024,538.5	3.77	10,685,893
Manufacturing	Wholesale/Retail	8	9,405.13	1.00	8,050.56	386	2,729,547.4	5.22	3,509,770
Rest	Manufacturing	5	20,625.99	3.29	21,860.62	231	723,163.2	9.13	2,185,936
Rest	Rest	5	59,701.81	1.73	106,971.60	145	1,186,068.0	4.84	6,692,921
Rest	Wholesale/Retail	6	32,682.50	3.95	62,327.07	139	2,217,151.9	8.28	7,275,645
Wholesale/Retail	Manufacturing	19	69,772.23	1.56	118,447.63	400	599,800.4	3.42	4,027,077
Wholesale/Retail	Rest	7	42,916.84	1.00	86,881.05	184	392,046.5	2.69	1,123,169
Wholesale/Retail	Wholesale/Retail	9	642,930.45	2.69	851,328.44	234	560,228.5	2.50	8,044,169

A.2.3 Products in China E-commerce tax list vs Products not in China-E-commerce tax list

Table 7: Exports Dynamics for products in China E-commerce tax list: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	China E-commerce Product				Non-China E-commerce Product			
		No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)	No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Manufacturing	176	2,302,457.5	3.58	4,079,189.2	249	2,888,576.1	3.95	9,166,136.4
Manufacturing	Rest	163	1,688,935.5	3.98	3,492,713.7	182	8,187,170.9	3.42	19,981,554.4
Manufacturing	Wholesale/Retail	228	9,701,121.7	9.80	12,538,993.4	299	6,851,350.8	6.67	8,738,858.6
Rest	Manufacturing	15	1,861,620.2	2.56	5,954,303.7	42	681,999.6	14.63	831,878.6
Rest	Rest	19	3,134,477.5	3.37	12,091,045.1	42	10,546,308.9	10.72	97,079,052.7
Rest	Wholesale/Retail	28	493,483.9	6.09	935,453.8	37	4,465,992.9	7.23	13,224,971.1
Wholesale/Retail	Manufacturing	37	261,627.3	4.93	341,954.1	49	1,008,709.0	2.65	3,355,937.1
Wholesale/Retail	Rest	28	2,654,213.3	1.43	22,336,388.5	29	3,123,236.6	2.46	22,915,556.4
Wholesale/Retail	Wholesale/Retail	37	1,121,550.6	3.94	1,392,985.1	45	3,326,310.1	9.64	5,033,821.2

Table 8: Import Dynamics for products in China E-commerce tax list: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	China E-commerce Product				Non-China E-commerce Product			
		No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)	No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	255	652,417.0	3.34	1,693,449.6	522	1,255,451.9	7.06	2,585,330.6
Manufacturing	Rest	116	107,121.6	1.88	294,111.8	265	1,116,984.7	3.58	9,633,454.3
Manufacturing	Wholesale/Retail	165	1,168,439.2	2.62	2,818,234.2	339	2,539,492.9	5.11	3,445,048.2
Rest	Manufacturing	131	139,776.9	5.02	353,017.1	205	726,063.6	8.39	2,100,951.7
Rest	Rest	87	541,292.8	2.66	1,526,399.3	116	1,079,188.8	4.65	5,627,846.5
Rest	Wholesale/Retail	74	213,183.0	5.12	1,729,603.0	122	2,398,398.9	7.91	5,703,660.4
Wholesale/Retail	Manufacturing	265	285,283.1	2.70	853,424.4	339	488,630.8	3.04	3,586,645.7
Wholesale/Retail	Rest	108	345,707.8	2.75	812,534.7	142	247,186.8	2.07	790,172.6
Wholesale/Retail	Wholesale/Retail	132	623,749.3	2.68	13,222,586.5	192	284,088.2	2.05	773,608.8

A.2.4 e-Bay tradable products vs Non-e-Bay tradable products

Table 9: Exports Dynamics for e-Bay tradable products: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	e-Bay tradable product				Non-e-Bay tradable product			
		No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)	No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Manufacturing	140	3,091,597.7	4.63	9,839,867.5	266	2,600,241.7	3.37	7,362,910
Manufacturing	Rest	122	1,835,489.1	4.29	2,907,900.4	197	7,824,527.5	3.15	19,678,112
Manufacturing	Wholesale/Retail	164	12,648,016.5	10.87	15,902,354.6	313	6,984,456.6	7.00	7,691,303
Rest	Manufacturing	20	914,187.2	16.44	1,089,646.0	39	981,654.9	4.79	4,999,701
Rest	Rest	20	300,989.5	18.04	264,414.8	37	13,418,385.3	3.27	161,933,162
Rest	Wholesale/Retail	23	360,426.6	9.78	1,597,237.1	41	4,165,109.2	5.66	13,907,359
Wholesale/Retail	Manufacturing	27	289,636.4	4.11	380,925.2	54	949,755.0	3.25	3,377,387
Wholesale/Retail	Rest	15	4,660,666.6	2.00	60,967,693.6	34	2,793,583.4	2.60	6,760,635
Wholesale/Retail	Wholesale/Retail	19	514,306.7	4.46	757,057.1	54	3,359,435.1	9.54	5,033,403

Table 10: Import Dynamics for e-Bay tradable products: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	e-Bay tradable product				Non-e-Bay tradable product			
		No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)	No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	188	356,930.74	7.63	1,498,250.1	532	1,418,438.5	5.85	2,643,938.2
Manufacturing	Rest	89	75,322.35	3.44	358,102.4	271	1,113,370.4	3.31	10,581,654.6
Manufacturing	Wholesale/Retail	138	130,752.66	5.15	303,724.2	336	3,082,252.0	3.96	4,564,020.4
Rest	Manufacturing	129	213,914.69	5.35	670,922.1	183	762,616.5	8.02	1,760,014.6
Rest	Rest	80	976,108.24	3.34	3,203,634.2	111	848,556.0	3.74	5,733,137.7
Rest	Wholesale/Retail	73	667,291.89	5.09	3,425,667.0	121	2,146,015.7	7.47	5,534,958.5
Wholesale/Retail	Manufacturing	197	238,525.81	2.26	683,948.5	349	556,608.2	3.39	3,770,971.8
Wholesale/Retail	Rest	79	319,840.26	3.50	1,029,763.2	154	306,296.1	1.85	798,800.7
Wholesale/Retail	Wholesale/Retail	102	190,116.23	3.07	831,370.2	196	599,428.5	1.98	10,555,645.3

A.3 Bilateral Industry Trade Patterns: Dissaggregated by Technology Adoption

Table 11: Exports Dynamics by Technology Adoption: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	E-commerce/E-payment Adopted				E-commerce/E-payment Not Adopted			
		No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)	No. IDN Firms in Industry	Avg. Export Value per IDN Firm to US Industry (\$)	Avg. No. US Importers per IDN firm	Avg. Value of Firm-to-Firm Exports (\$)
Manufacturing	Manufacturing	91	2,349,822.7	4.04	5,590,861.93	259	3,516,039	4.33	10,742,344
Manufacturing	Rest	79	16,364,713.2	4.62	28,717,096.24	196	2,410,966	3.70	3,968,389
Manufacturing	Wholesale/Retail	114	3,993,524.9	6.61	6,401,044.13	303	12,558,244	9.78	13,580,439
Rest	Manufacturing	15	106,831.4	24.00	79,541.74	34	1,616,642	4.65	4,751,248
Rest	Rest	23	7,652,439.7	16.40	5,378,723.65	27	12,092,368	4.16	174,381,194
Rest	Wholesale/Retail	23	489,146.2	6.73	1,869,389.76	30	5,593,631	7.35	13,686,302
Wholesale/Retail	Manufacturing	23	166,495.9	2.35	374,581.80	47	1,176,118	3.94	3,663,119
Wholesale/Retail	Rest	14	6,642,683.3	1.95	65,566,212.31	32	2,246,696	3.33	7,210,822
Wholesale/Retail	Wholesale/Retail	18	725,330.9	1.96	1,320,250.80	45	3,958,341	9.44	4,596,566

Table 12: Import Dynamics by Technology Adoption: Indonesia Industries Trading with USA Industries

IDN Industry	USA Industry	E-commerce/E-payment Adopted				E-commerce/E-payment Not Adopted			
		No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)	No. IDN Firms in Industry	Avg. Import Value per IDN Firm to US Industry (\$)	Avg. No. US Exporters per IDN firm	Avg. Value of Firm-to-Firm Imports (\$)
Manufacturing	Manufacturing	154	1,422,644.3	10.45	1,722,232.1	416	1,448,033.6	5.94	3,155,564.5
Manufacturing	Rest	94	331,531.7	4.66	511,470.1	208	1,332,995.6	3.34	16,149,036.2
Manufacturing	Wholesale/Retail	117	1,591,807.0	6.38	2,308,076.8	273	3,177,142.1	4.23	4,548,526.5
Rest	Manufacturing	64	1,262,391.4	12.85	2,025,371.8	167	517,130.3	6.42	2,316,748.0
Rest	Rest	48	1,694,096.7	5.04	4,152,929.4	96	947,497.4	4.68	10,789,317.8
Rest	Wholesale/Retail	38	1,821,264.6	10.19	9,999,978.7	101	2,368,041.1	4.57	1,730,320.5
Wholesale/Retail	Manufacturing	159	483,926.9	5.32	958,638.5	243	665,794.9	2.52	5,414,790.0
Wholesale/Retail	Rest	81	480,037.9	3.13	1,427,966.6	102	328,955.8	1.83	519,778.3
Wholesale/Retail	Wholesale/Retail	93	769,086.7	2.12	18,355,322.5	141	447,425.7	2.88	1,173,124.5