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## Working Paper

# Trade interdependencies in COVID-19-related essential medical goods: Role of trade facilitation and cooperation for the Asian economies

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## **ONLINE APPENDIX**

ADB Economics Working Paper No. 666

### **TRADE INTERDEPENDENCIES IN COVID-19-RELATED ESSENTIAL MEDICAL GOODS: ROLE OF TRADE FACILITATION AND COOPERATION FOR THE ASIAN ECONOMIES**

Sanchita Basu Das and Rahul Sen

July 2022

## APPENDIX

### Appendix 1: List of Six-Digit Level Codes in the Harmonized System, 2017

HS-2017	Short Product Description	HS-2017	Short Product Description
1	<i>Vaccine</i> 300220 Vaccines for human medicines (pharmaceuticals)	18	<i>Personal protective equipment</i> 340111 Hand soap
2	<i>Vaccine ingredients</i> 285210 Thimerosal (preservatives)	19	340130 Hand soap
3	283322 Aluminum salts (adjuvants- for stronger immune response)	20	340220 Other cleaning products
4	290544 Sorbitol (stabilizers- to keep the vaccine potent)	21	382499 Hand sanitizer
5	291211 Formaldehyde (inactivating ingredients – to kill viruses)	22	392690 Face masks
6	2941 Neomycin (antibiotics- to prevent contamination)	23	630790 Face masks
7	290613 Sterols (lipid nanoparticles in mRNA vaccines)	24	900490 Protective spectacles and visors
8	<i>Vaccine primary packaging</i> 701090 Vials (serum bottles)	25	902000 Face masks
9	401699 Stoppers (articles of vulcanized rubber)	26	<i>COVID-19-related testing and diagnostic kits</i> 382200 Diagnostic or laboratory reagents
10	<i>Vaccine secondary packaging: Storage and distribution</i> 4819 Insulated cartons	27	300215 Immunological products
11	901890 Vaccine carriers	28	382100 Prepared culture media
12	392310 Cold boxes	29	902780 Instruments for physical or chemical analysis
13	841850 Refrigerators/freezer chests		
14	841830 Freezers		
15	281121 Dry ice		
16	<i>Vaccine secondary packaging: administration</i> 901831 Syringes		
17	901839 Needles		

HS = harmonized system, mRNA = messenger ribonucleic acid, PPE = personal protective equipment.

Source: Authors' compilation from WTO. 2021. Trade in Medical Goods in the Context of Tackling COVID-19: Developments in 2020. Information Notice. June 30. World Trade Organization, Geneva; OECD. 2021. "Using Trade to Fight COVID-19: Manufacturing and Distributing Vaccines." OECD Policy Responses to Coronavirus (COVID-19). Paris: Organisation for Economic Co-operation and Development.

## Appendix 2: Top 20 Exporters of COVID-19-Related Essential Medical Goods, 2019

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
1	Switzerland	20.6	Belgium	30.7	PRC	33.4	Germany	14.4	US	17.7	US	21.1	PRC	18.4
2	Germany	18	Ireland	17.8	Switzerland	14.9	PRC	12.6	Germany	11.4	Netherlands	13.8	Germany	12.5
3	US	15	France	14.2	Italy	8.9	Italy	6.7	PRC	10.9	Ireland	11.4	US	10.1
4	Ireland	13.3	United Kingdom	11.4	India	8.4	Poland	5.5	Netherlands	7	Mexico	8.1	Japan	4.7
5	Italy	4.7	US	6.7	US	5.6	France	5.3	Mexico	5.5	Germany	7.9	France	4.6
6	Netherlands	4.2	Italy	3.7	Belgium	4.3	US	5.2	Italy	3.7	PRC	6.1	Italy	3.8
7	Belgium	4.1	India	2.6	Ireland	3	Spain	3.4	France	3	Costa Rica	4	Netherlands	3.5
8	United Kingdom	3.5	Netherlands	2	Singapore	2.7	Japan	3.3	Belgium	2.9	Japan	3	United Kingdom	2.7
9	France	2.4	Poland	2	Spain	2.4	Mexico	3	Switzerland	2.2	France	2.6	Poland	2.4
10	Singapore	1.9	Germany	1.7	Rep. of Korea	2.1	Turkey	2.8	Singapore	1.9	Belgium	2.2	Other Asia, nes	2.1
11	Japan	1.8	Canada	1.5	Denmark	1.8	Thailand	2.7	United Kingdom	1.9	Malaysia	2.1	Mexico	2.1
12	Austria	1.6	Austria	1.1	Netherlands	1.8	Czech Republic	2.2	Ireland	1.8	Singapore	1.7	Belgium	2.1
13	Sweden	1	Spain	0.9	Japan	1.7	Portugal	2.2	Poland	1.8	Switzerland	1.4	Rep. of Korea	2
14	Rep. of Korea	0.9	Rep. of Korea	0.5	Germany	1.1	India	2	Austria	1.6	Canada	1.2	PRC; Hong Kong, China	2
15	PRC	0.9	PRC	0.4	France	1	Belgium	2	Japan	1.5	Italy	1.1	Ireland	1.9
16	PRC; Hong Kong, China	0.8	Hungary	0.3	Hungary	1	Netherlands	1.8	Canada	1.4	United Kingdom	1	Czech Republic	1.8
17	Hungary	0.6	Australia	0.3	Brazil	0.5	Rep. of Korea	1.5	Rep. of Korea	1.4	Denmark	1	Canada	1.5
18	Spain	0.6	Indonesia	0.3	United Kingdom	0.5	United Kingdom	1.5	Turkey	1.3	India	1	Spain	1.4
19	Canada	0.6	Switzerland	0.3	Bulgaria	0.4	Slovakia	1.5	Spain	1.3	Viet Nam	0.9	Viet Nam	1.4
20	Denmark	0.4	Other Asia, nes	0.3	Indonesia	0.4	Romania	1.3	Israel	1.2	Honduras	0.8	Austria	1.4

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
	Top 20 as % of total exports	96.9	Top 20 as % of total exports	98.6	Top 20 as % of total exports	96	Top 20 as % of total exports	80.9	Top 20 as % of total exports	81.3	Top 20 as % of total exports	92.4	Top 20 as % of total exports	82.4

nes = not elsewhere specified, PRC = People's Republic of China, US = United States.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).

### Appendix 3: Top 20 Exporters of COVID-19-Related Essential Medical Goods, 2020

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
1	Switzerland	19.3	Belgium	37.9	PRC	36.6	Germany	14.6	US	16.6	US	19.5	PRC	38.8
2	Germany	16.6	Ireland	16.7	Switzerland	12.9	PRC	13.3	PRC	12.5	Netherlands	14.2	Germany	9.1
3	Ireland	13.7	France	14.4	India	9.0	Italy	6.8	Germany	11.6	Ireland	10.0	US	7.1
4	US	13.0	US	5.8	Italy	8.6	US	5.4	Netherlands	7.1	Mexico	8.5	Japan	3.3
5	Netherlands	5.2	Italy	5.8	US	5.4	France	5.1	Mexico	5.6	Germany	8.3	France	3.2
6	Belgium	4.4	United Kingdom	3.2	Belgium	4.0	Poland	5.0	Italy	3.6	PRC	6.9	Netherlands	2.8
7	PRC	3.4	India	2.4	Singapore	2.7	Spain	3.5	France	2.9	Costa Rica	4.1	Italy	2.6
8	Italy	3.3	Poland	2.3	Spain	2.6	Mexico	3.1	Belgium	2.7	France	3.0	United Kingdom	2.0
9	United Kingdom	3.2	Netherlands	2.0	Rep. of Korea	2.1	Turkey	3.0	Singapore	2.1	Japan	2.7	Poland	1.9
10	Rep. of Korea	2.8	Germany	1.8	Denmark	2.0	Japan	2.9	Switzerland	2.0	Belgium	2.2	PRC; Hong Kong, China	1.8
11	France	2.2	Canada	1.3	Japan	1.5	Thailand	2.3	Poland	1.8	Malaysia	2.0	Rep. of Korea	1.7
12	Japan	1.9	Austria	1.1	Netherlands	1.5	Belgium	2.3	United Kingdom	1.8	Switzerland	1.6	Viet Nam	1.7
13	Austria	1.7	Spain	1.0	France	1.3	Czech Republic	2.1	Canada	1.7	Singapore	1.5	Mexico	1.7
14	Singapore	1.7	PRC	0.9	Hungary	1.3	Portugal	2.1	Austria	1.6	Hungary	1.4	Other Asia, nes	1.6
15	PRC; Hong Kong, China	1.0	Rep. of Korea	0.6	Germany	1.2	Netherlands	1.8	Japan	1.5	United Kingdom	1.1	Belgium	1.6
16	Sweden	1.0	Hungary	0.4	Ireland	1.0	India	1.8	Ireland	1.4	Italy	1.1	Czech Republic	1.3
17	Hungary	0.8	Switzerland	0.3	United Kingdom	0.6	Slovakia	1.5	Turkey	1.4	Austria	1.1	Ireland	1.3
18	Lithuania	0.7	Australia	0.3	Portugal	0.5	Rep. of Korea	1.4	Spain	1.3	Denmark	1.0	Canada	1.1
19	Spain	0.6	Russian Federation	0.2	Brazil	0.5	United Kingdom	1.4	Costa Rica	1.3	India	0.9	Spain	1.1
20	Canada	0.6	Other Asia, nes	0.2	Bulgaria	0.4	Canada	1.3	Czech Republic	1.3	Viet Nam	0.9	Austria	1.1

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
	Top 20 as % of total exports	96.8	Top 20 as % of total exports	98.9	Top 20 as % of total exports	95.7	Top 20 as % of total exports	80.7	Top 20 as % of total exports	81.8	Top 20 as % of total exports	92.1	Top 20 as % of total exports	86.7

nes = not elsewhere specified, PRC = People's Republic of China, US = United States.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).

#### Appendix 4: Top 20 Importers of COVID-19-Related Essential Medical Goods, 2019

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
1	US	19.3	Belgium	24.0	Italy	12.0	US	13.8	US	17.9	US	19.9	US	13.3
2	Germany	10.0	US	23.4	India	10.6	Germany	8.3	Germany	7.2	Netherlands	10.5	Germany	8.3
3	PRC	8.7	United Kingdom	6.6	Germany	9.7	France	7.2	Netherlands	5.9	Germany	7.8	PRC	7.5
4	Japan	6.1	PRC	4.8	US	6.9	Italy	3.9	France	5.1	PRC	7.0	France	4.3
5	Italy	5.2	Germany	3.9	PRC	5.5	Mexico	3.6	Mexico	4.3	Japan	6.4	Japan	4.1
6	France	4.4	Brazil	2.4	France	5.0	PRC	3.6	PRC	4.1	France	4.9	Mexico	3.7
7	United Kingdom	4.1	France	2.4	Belgium	3.8	Spain	3.1	United Kingdom	3.6	Belgium	3.4	United Kingdom	3.7
8	Belgium	3.8	Poland	2.3	Japan	3.4	Canada	3.0	Japan	3.4	United Kingdom	3.3	Canada	3.0
9	Netherlands	3.7	Italy	1.8	Switzerland	2.8	Belgium	2.8	Belgium	3.3	Italy	3.0	Netherlands	2.7
10	Switzerland	3.6	Canada	1.7	Spain	2.6	United Kingdom	2.7	Canada	2.8	Mexico	2.2	Rep. of Korea	2.5
11	Canada	2.6	Spain	1.6	Brazil	2.4	Poland	2.6	Italy	2.7	Spain	2.0	Italy	2.5
12	Spain	2.4	Nigeria	1.6	United Kingdom	2.1	Japan	2.2	Switzerland	2.1	Ireland	1.9	Spain	2.2
13	Rep. of Korea	1.9	India	1.2	Viet Nam	2.1	Thailand	2.0	Australia	2.0	Canada	1.7	Czech Republic	1.9
14	Brazil	1.6	Japan	1.2	Rep. of Korea	1.9	Netherlands	2.0	Spain	1.9	Rep. of Korea	1.6	Poland	1.8
15	Australia	1.2	Australia	1.0	Netherlands	1.9	Czech Republic	1.8	Rep. of Korea	1.7	Switzerland	1.6	Viet Nam	1.8
16	Russian Federation	1.2	Turkey	1.0	Turkey	1.7	Russian Federation	1.8	Singapore	1.7	Brazil	1.2	Other Asia, nes	1.7
17	Austria	1.0	Saudi Arabia	0.9	Russian Federation	1.5	Brazil	1.7	Russian Federation	1.5	Singapore	1.2	Russian Federation	1.7
18	Ireland	0.9	Rep. of Korea	0.9	Canada	1.5	Switzerland	1.5	Poland	1.3	Saudi Arabia	1.1	Thailand	1.6
19	Singapore	0.9	Viet Nam	0.8	Mexico	1.3	India	1.4	PRC; Hong Kong, China	1.1	India	1.1	Belgium	1.6
20	India	0.8	Ireland	0.8	Greece	1.2	Australia	1.4	Austria	1.1	Australia	1.0	PRC; Hong Kong, China	1.5
	Top 20 as % of total imports	83.5	Top 20 as % of total imports	84.2	Top 20 as % of total imports	79.8	Top 20 as % of total imports	70.3	Top 20 as % of total imports	74.6	Top 20 as % of total imports	82.7	Top 20 as % of total imports	71.3

nes = not elsewhere specified, PRC = People's Republic of China, US = United States.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).



## Appendix 5: Top 20 Importers of COVID-19-Related Essential Medical Goods, 2020

Rank	COVID-19-Related Testing and Kits		Vaccines		Ingredients		Primary Packaging		Secondary Packaging: Storage and Distribution		Secondary Packaging: Vaccine Administration		Personal Protective Equipment	
	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)	Economy	Share (% of total)
1	US	20.5	Belgium	24.1	India	12.2	US	14.3	US	19.0	US	19.2	US	17.4
2	Germany	10.3	US	23.3	Italy	11.8	Germany	8.2	Germany	7.3	Netherlands	10.1	Germany	8.9
3	PRC	7.3	PRC	7.6	Germany	9.3	France	7.6	Netherlands	6.0	Germany	9.0	PRC	6.0
4	Japan	5.4	Germany	4.6	US	5.8	Italy	4.2	France	5.1	Japan	6.8	France	6.0
5	Italy	4.4	United Kingdom	3.8	France	5.2	PRC	4.0	PRC	4.4	PRC	6.4	United Kingdom	5.3
6	Switzerland	4.2	Poland	2.5	Spain	4.2	Canada	3.4	Mexico	4.0	France	5.3	Japan	4.6
7	France	4.1	Brazil	2.4	Belgium	3.5	Mexico	3.2	United Kingdom	3.8	Belgium	3.5	Italy	3.2
8	Netherlands	4.1	Italy	2.3	PRC	3.5	Belgium	3.0	Belgium	3.1	United Kingdom	3.4	Canada	3.2
9	United Kingdom	4.0	Spain	2.2	Brazil	3.3	United Kingdom	3.0	Japan	3.1	Italy	2.9	Spain	2.6
10	Belgium	3.7	France	2.2	Japan	3.1	Spain	2.9	Canada	2.8	Spain	2.2	Mexico	2.4
11	Canada	2.6	Japan	1.6	United Kingdom	2.5	Poland	2.6	Italy	2.4	Mexico	2.2	Netherlands	2.4
12	Spain	2.4	Canada	1.5	Viet Nam	2.3	Japan	2.2	Switzerland	2.1	Ireland	2.0	Rep. of Korea	1.9
13	Rep. of Korea	1.9	Viet Nam	1.3	Rep. of Korea	2.1	Netherlands	2.1	Australia	2.0	Switzerland	1.8	Australia	1.8
14	Brazil	1.5	Ireland	1.1	Russian Federation	1.8	Thailand	2.1	Singapore	2.0	Canada	1.8	Poland	1.8
15	Poland	1.2	Rep. of Korea	1.1	Turkey	1.7	Russian Federation	1.9	Spain	1.8	Rep. of Korea	1.7	Czech Republic	1.5
16	Australia	1.2	India	1.1	Netherlands	1.6	Switzerland	1.7	Rep. of Korea	1.7	Austria	1.2	Belgium	1.5
17	Hungary	1.1	Australia	0.9	Egypt	1.5	Czech Republic	1.7	Russian Federation	1.6	Australia	1.1	Viet Nam	1.5
18	Austria	1.1	Turkey	0.8	Mexico	1.4	Australia	1.5	Poland	1.6	Brazil	1.0	Russian Federation	1.4
19	Russian Federation	1.0	Argentina	0.8	Canada	1.4	Brazil	1.5	Austria	1.2	Singapore	1.0	Switzerland	1.3
20	Singapore	0.9	Pakistan	0.7	Switzerland	1.4	Austria	1.4	PRC; Hong Kong, China	1.1	Russian Federation	1.0	Austria	1.3
	Top 20 as % of total imports	82.6	Top 20 as % of total imports	85.8	Top 20 as % of total imports	79.7	Top 20 as % of total imports	72.4	Top 20 as % of total imports	76.3	Top 20 as % of total imports	83.5	Top 20 as % of total imports	76.3

PRC = People's Republic of China, US = United States.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).

**Appendix 6: Estimates of Two-Way (Intra-Industry) Trade in COVID-19-Related Essential Medical Goods Ranked by Top 20 Economies, 2019**

Vaccines for Human Medicines		Ingredients		Primary Packaging		Secondary Packaging (Distribution/Storage)		Secondary Packaging (Administration)		Personal Protective Equipment		COVID-19 Test Kits		Total COVID-19-Related Essential Medical Goods Trade	
Singapore	97.95	Rep. of Korea	99.72	Netherlands	96.63	US	99.61	India	99.45	France	97.78	Italy	97.97	Mexico	97.06
Indonesia	96.7	Belgium	99.59	Malaysia	92.61	Switzerland	96.49	Switzerland	97.31	Singapore	96.77	Poland	96.19	Belgium	94.62
Canada	91.42	New Zealand	94.77	Mexico	91.63	Belgium	94.3	PRC	97.14	India	95.08	UK	95.37	France	94.08
Poland	91.21	Netherlands	90.62	Singapore	89.43	Singapore	92.75	Poland	96.05	Japan	92.88	Belgium	92.58	Italy	92.76
Belgium	89.61	US	82.22	France	85.63	Viet Nam	91.25	Germany	95.67	Thailand	91.73	US	90.5	Thailand	90.15
Switzerland	85.12	India	81.69	Thailand	84.53	Thailand	90.95	US	93.54	Switzerland	88.86	Netherlands	90.36	UK	89.57
UK	75.32	Italy	78.49	Belgium	84.03	Netherlands	90.59	Canada	86.31	Rep. of Korea	88.83	France	73.35	US	89.49
Rep. of Korea	69.12	Japan	60.2	India	81.24	Rep. of Korea	90.16	Netherlands	83.08	Viet Nam	88.48	Germany	68.42	Netherlands	88.01
Italy	67.67	Singapore	54.57	Japan	80	Mexico	85.86	Thailand	82.74	Netherlands	87.38	Rep. of Korea	67.92	Poland	86.88
India	65.8	Indonesia	54.26	Viet Nam	72.96	Italy	82.96	Belgium	80.96	Belgium	86.52	Singapore	63.01	India	86.66
Germany	58.45	Malaysia	38	UK	72.61	Poland	81.79	Singapore	78.61	Malaysia	86.38	Japan	47.59	Malaysia	82.82
Australia	49.32	Mexico	37.86	Germany	72.5	Germany	76.23	France	73.71	Poland	86.21	Canada	37.95	Rep. of Korea	82.51
Netherlands	44.08	Switzerland	35.07	Italy	72.06	Malaysia	75.84	Philippines	71.73	US	86.19	India	33.75	Singapore	82.11
US	43.46	UK	32.46	Rep. of Korea	71.46	France	75.39	Japan	66.51	UK	84.87	New Zealand	28.24	Viet Nam	81.32
France	29.8	Thailand	32.38	Philippines	64.6	UK	68.73	Italy	55.43	Indonesia	82.02	Switzerland	27.96	PRC	81
Japan	27.21	PRC	31.65	Switzerland	64.03	India	67.64	New Zealand	52.15	Germany	79.89	Malaysia	27.14	Germany	77.57
Thailand	16.49	France	30.93	Poland	63.07	Canada	67.44	UK	50.85	Italy	78.75	Indonesia	25.97	Japan	75.34
PRC	13.93	Poland	18.22	Canada	57.61	Japan	60.45	Indonesia	45.53	Mexico	72.04	Mexico	22.71	Indonesia	63.31
New Zealand	2.9	Germany	17.38	US	55.15	PRC	53.65	Malaysia	43.37	Canada	65.91	PRC	19.73	Canada	60.91
Malaysia	0.4	Canada	14.63	Indonesia	46.09	Indonesia	51.59	Mexico	39.98	PRC	58.15	Australia	14.68	Philippines	45.11

PRC = People's Republic of China, UK = United Kingdom, US = United States.

Notes: Degree of trade interdependencies measured by the Grubel-Lloyd index takes values from 0 to 100; Color codes indicate degree of intra-industry trade involving the economies in each category. Orange color refers to high (index value between 70–100; yellow refers to medium (index

value between 50 and 70), and green refers to low (index values between 10 and 50). The economies without color codes show one-way or no trade interdependence in that product category.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).

**Appendix 7: Estimates of Two-Way (Intra-Industry) Trade in COVID-19-Related Essential Medical Goods Ranked by Top 20 Economies, 2020**

Vaccines for Human Medicines		Ingredients		Primary Packaging		Secondary Packaging (Distribution/Storage)		Secondary Packaging (Administration)		Personal Protective Equipment		COVID-19 Test Kits		Total COVID-19-Related Essential Medical Goods Trade	
Poland	93.1	Belgium	99.63	Malaysia	99.49	Thailand	99.46	Germany	99.58	Germany	99.16	France	98.62	Rep. of Korea	98.13
Canada	92.2	France	97.93	Mexico	99.10	Switzerland	98.41	Poland	99.37	Belgium	99.14	UK	90.82	Italy	97.25
Switzerland	89.5	Netherlands	95.30	Netherlands	94.86	Viet Nam	96.41	Switzerland	98.53	Malaysia	98.23	Belgium	89.05	Poland	95.93
UK	89.3	New Zealand	94.94	Thailand	93.54	Singapore	95.45	US	94.85	Poland	98.10	Italy	88.43	Mexico	93.95
Belgium	80.2	Rep. of Korea	94.62	Belgium	89.22	Belgium	94.60	PRC	92.21	Viet Nam	96.50	Netherlands	85.60	Viet Nam	92.61
France	72.8	US	90.79	France	84.75	France	94.55	India	87.43	Netherlands	93.77	US	80.05	Malaysia	91.14
Rep. of Korea	66.7	India	79.56	Japan	83.26	US	94.44	Belgium	82.08	Rep. of Korea	93.70	Rep. of Korea	77.86	Singapore	91.08
Indonesia	62.9	Italy	78.85	India	82.06	Netherlands	90.58	Netherlands	78.83	Thailand	89.68	Germany	74.16	Belgium	90.69
India	62.6	Japan	60.22	Singapore	80.92	Poland	90.18	Thailand	76.73	Italy	88.19	Singapore	65.52	Netherlands	87.14
Italy	59.2	Indonesia	55.20	Rep. of Korea	76.99	Rep. of Korea	84.68	Singapore	75.74	Indonesia	88.07	PRC	65.42	Thailand	86.20
Germany	55.2	Singapore	53.39	Viet Nam	76.43	Mexico	82.98	New Zealand	66.66	India	82.00	Japan	55.11	Germany	86.09
Australia	41.8	Malaysia	41.07	Italy	73.68	Malaysia	79.34	Philippines	61.33	Singapore	81.40	Poland	39.00	India	83.27
US	38.2	UK	38.32	Germany	69.55	Italy	78.96	Japan	60.18	Japan	81.08	India	38.16	France	81.37
Netherlands	30.4	Thailand	29.05	Poland	66.05	Germany	75.90	Italy	57.89	Mexico	80.10	Canada	37.32	US	75.49
New Zealand	23.4	Poland	26.06	UK	65.30	Canada	75.85	Indonesia	54.21	France	75.51	Switzerland	34.19	UK	69.43
PRC	20.7	Switzerland	21.32	Philippines	63.12	India	74.37	UK	53.84	Switzerland	68.85	New Zealand	30.51	Japan	68.92
Thailand	14.0	Germany	21.17	Switzerland	62.44	Japan	66.70	France	46.09	US	56.84	Malaysia	19.86	Indonesia	59.92
Japan	13.6	PRC	19.28	Indonesia	61.88	UK	65.15	Malaysia	39.42	Philippines	54.20	Mexico	19.82	Canada	53.82
Singapore	7.9	Canada	15.93	Canada	57.21	Indonesia	53.33	Viet Nam	38.30	UK	52.44	Thailand	17.37	Philippines	50.94
Malaysia	0.7	Philippines	15.66	US	56.62	PRC	51.06	Mexico	38.17	Canada	51.37	Australia	15.22	China	49.83
Viet Nam	0.2	Mexico	15.01	China	44.60	Philippines	46.83	Canada	31.29	New Zealand	32.20	Indonesia	10.20	Switzerland	49.26
Philippines	0.0	Viet Nam	4.80	New Zealand	39.91	New Zealand	46.54	Rep. of Korea	28.41	PRC	27.65	Philippines	6.25	New Zealand	38.47
Mexico	0.0	Australia	4.41	Australia	17.46	Australia	35.39	Australia	11.20	Australia	17.45	Viet Nam	4.61	Australia	21.92

PRC = People's Republic of China, UK = United Kingdom, US = United States.

Source: Authors' calculations using data from United Nations. UN Comtrade Database. <https://comtrade.un.org/> (accessed 30 December 2021).

Notes: Degree of trade interdependencies measured by the Grubel-Lloyd index takes values from 0 to 100; Color codes indicate degree of intra-industry trade involving the economies in each category. Orange color refers to high (index value between 70–100; yellow refers to medium (index value between 50 and 70), and green refers to low (index values between 10 and 50). The economies without color codes show one-way or no trade interdependence in that product category.