

Philip Thompson

Author

Lorenzo Montanari

Editor

With Contributions by:

Colin Grabow (USA) · Galuh Hatta (Indonesia) · Yuya Watase (Japan) · Matthiaus Bauer (EU) Anuki Premachandra (Sri Lanka) · Mauricio Freitas Bento (Brazil)

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After observing rising trade tensions across the world, the need was made clear for a tool that could center the debate on trade barriers—the diversity of forms they come in and the role they play in restricting individual choices. The Trade Barrier Index is the response to that need. It stands as sister index to the International Property Rights Index, both produced by Property Rights Alliance and dedicated to advancing free markets.

In total the TBI evaluates trade restrictions in 86 countries; representing 83 percent of the world's population, responsible for 91 percent of all traded goods and services, and 94 percent of world GDP.

Trade occurs between individuals, between consumers and producers, allowing supply to meet demand without prejudice of where they may come from on the globe. In this manner the freedom to trade compliments other natural rights such as the freedom to speak or the to pursue happiness by allowing individuals to practice their free-will without restricting the ability of others to do so as well. Unhampered by restraints, trade allows individuals to exchange ideas, social customs, goods, and services on mutually beneficial terms they determine. Trade encourages the most efficient use of resources and rewards innovations that result in value added—giving meaning to each action in the economic weal.

State governments, a third party in these exchanges, generally honor and protect the freedom to trade within their own borders. When trade is international, however, they revert to an outdated rulebook in an effort to limit competition, manage growth, and ultimately restrict human interaction in a way that would generally infringe domestic law if imposed on intra-country trade.

The Trade Barrier Index identifies three major types of restrictions on international trade: tariffs, non-tariff measures, and services restrictions. A fourth component, facilitation, captures other on-the-border and internal measures necessary to allow trade to happen: the protection of property rights, sound logistical infrastructure, membership in Regional Trade Agreements, and digital trade restrictions.

The Trade Barrier Index offers one more benefit: case studies from international think tanks sharing research and policy work on trade barriers in their home countries. Concentrated benefits and diffuse costs prevent the forming of targeted coalitions to rein in excessive barriers. In the spirit of the TBI, to focus the trade discourse on trade barriers, the authors were asked to highlight harms from restrictive trade policies and/or the benefits from reducing trade barriers. In this first edition the submissions are quite enlightening, and hopefully their stories will inspire similar research that can be used to overcome the public choice dilemma:

From the Cato Institute, in the U.S., Colin Grabow describes in "The Jones Act: Washington's Ultimate Swamp Creature" how a 99 year-old law preventing foreign owned ships from transporting goods within the country has led to American ships costing as much as five times more than foreign built ships.

Galuh Octania and M. Diheim Biru from the Center for Indonesian Policy Studies write about how tariff, non-tariff measures, and service restrictions meant to encourage domestic rice production, at

the expense of imported rice, have resulted in rice prices two times greater than the rest of the region.

With a rare case describing a unilateral trade barrier reduction Anuki Premachandra from Sri Lanka's Advocata Institute, submitted "A Sri Lanka Woman's Monthly Tax." Until 2018 taxes and tariffs on women's feminine hygiene products added up to 101.2%. Advocata's research on the issue played a large role in a public campaign that resulted in their reduction to 62.6%. However, "period poverty" a term that describes the lack of access to sanitary products due to financial constraints persists.

Internet-based businesses have grown worldwide providing jobs, markets, and access to information with very few domestic or international restrictions. Matthias Bauer, from the European Centre for International Political Economy, describes efforts in the EU to implement Digital Services Taxes and uses data to illustrate what "fair" may actually mean for e-businesses.

Yuya Watase and Keiun Satosh from Japan's Pacific Alliance Institute write about how Japan has used Regional Trade Agreements with the EU, The U.S, and the Trans-Pacific to open up Japan's agriculture market while also helping create new rules regarding privacy, digital trade, and state-owned enterprises.

Finally, PRA fellow Mauricio Mauricio Freitas Bento describes in "Open to the World: Brazil's Opportunities in a Free World" how import substitution policies have kept the eighth largest economy in the world isolated and what can be gained from opening Brazil's ports to foreign competition.

STRUCTURE AND METHODOLOGY

The TBI is composed of four pillars: Tariffs, Non-Tariff Measures, and Services restrictions represent the most direct, and often used, trade barriers. The fourth component, Facilitation, captures necessary components to allow trade to happen: membership in Regional Trade Agreements, restrictions on digital trade restrictions, the property rights ecosystem, and logistics performance.

The TBI, as a composite index, captures these elements from various internationally recognized measures and scales the scores on a range between 1 and 10. Where 1 indicates the least use of trade barriers and 10 indicates the most use. Each pillar includes sub-components as illustrated in Figure 1. Complete data sources can be found in Appendix I.

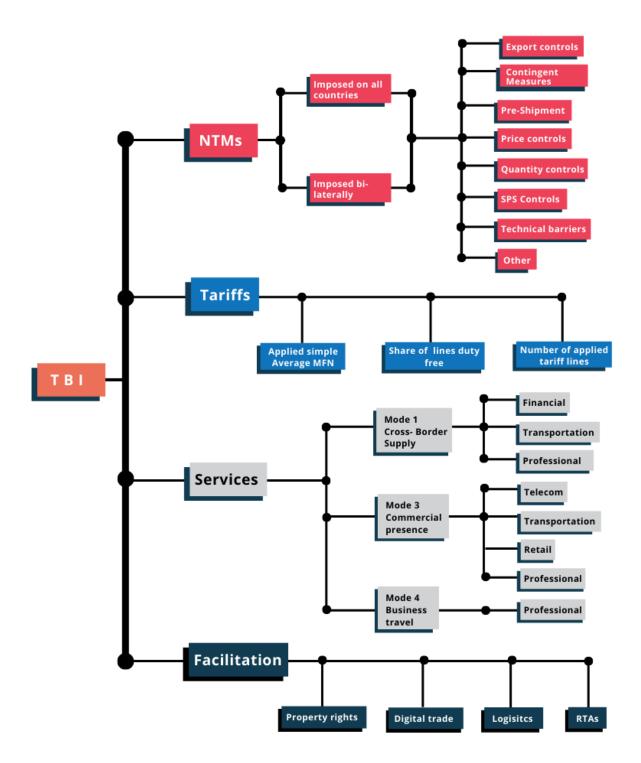


Figure 1: TBI Structure

TARIFFS

Perhaps the most well-known trade barrier is the direct imposition of a tax on imports at the border, known as a tariff.

Countries included in the 2019 TBI subscribe to The Harmonized Commodity Description and Coding System (HS), an international nomenclature that classifies 98 percent of traded goods into tariff codes up to six digits. Countries may add four more digits to create unique codes to further differentiate local goods. Tariff codes and their rate can be found on a nation's tariff schedule. In addition, countries measured in the TBI, as members of the World Trade Organization, subscribe to the Most-Favored-Nation principle which requires the lowest tariff rate applied to a good from a "most-favored" country to apply to all of the same HS coded goods originating from other trade partners- unless a comprehensive regional trade agreement applies.

In order to get a full picture of how each country uses tariffs as a discriminatory tool the TBI identified three tariff measures: the Applied Simple Average Most-Favored-Nation (MFN) Tariff rate, the actual number of MFN applied lines, and finally the share of tariff lines that are duty free. The data source for these measures comes from the latest year available on the World Trade Organization's (WTO) "World Tariff Profiles 2019" report.

Data for countries not available in the 2019 WTO report, namely Cameroon, Guatemala, Honduras, and Trinidad & Tobago was supplemented by the latest edition for which data was reported. Details on the year and source for tariff data can be found in Appendix II.

Below is an explanation for choosing each measure and the methodology used to normalize them into the TBI.

MFN simple average applied rate: This represents the country's the average tariff rate placed on imported goods before a lower rate from a Regional Trade Agreement (RTA) or Preferential Trade Agreement (PTA) is applied. It is normalized through the min max function, the max is set to 18.8 which is the highest tariff rate in the TBI group of countries, belonging to Algeria, and is three standard deviations away from the mean rate for the group which is 7.2 percent.

Number of MFN applied tariff lines: The latest HS revision has 5,388 six-digit tariff lines. Countries are not required to use all the six-digit lines or apply rates to them in their national tariff schedules. Neither are countries required to create tariff lines up to 10 digits that protect highly specific goods. Therefore, the number of tariff lines in use is a key indicator of how heavily tariffs are used as barriers to trade. The min-max method was used to normalize tariff lines in the TBI. Nepal uses the fewest tariff lines at 5,383 while Morocco uses the most at 18,274.

Share of MFN duty-free tariff lines: Not all tariff lines in use are assigned a tariff rate, some are duty free. Though, the tariff line is still applied to imports in order to apply non-tariff measures or for other administrative purposes. This measure rewards countries with higher shares of duty-free lines by inverting the number then normalizing it through standard min-max formulation to account for the

share of regulations that allow for tariff-free trade. Morocco and Pakistan have no lines duty free, while Singapore and Hong Kong have 100% of lines are duty free.

Tariff Score = (MFN AHS + MFN applied lines + Duty Free lines)/3

Source: WTO Tariff Profiles

NON-TARIFF MEASURES

Apart from tariffs on goods, non-tariff measures are known as regulatory barriers that impose additional import requirements that result in longer shipping times, extra financial burdens, and other bureaucratic obstacles that hamper the ability of goods to pass through customs and be competitive in the domestic market. The TBI uses the NTMs database developed by the UN Conference on Trade and Development (UNCTAD) Trade Analysis Information System (TRAINS) database which classifies NTM measures based on the taxonomy created by the Multi-Agency Support Team in 2012. The team included representatives from several international multi-lateral agencies including the WTO, OECD, IMF, World Bank, and the International Trade Centre.

The taxonomy classifies NTMs into eight parent categories: sanitary and phytosanitary (SPS), technical barriers to trade (TBT), pre-shipment inspection, contingent trade protective measures, quantity control measures, price control measures, export-related, and lastly a category for other measures.

The TBI-NTM score separates the total number of these measures applied bilaterally and those applied to all trade partners. The number of measures in each eight components in each group are normalized through the min-max function, unbounded. Finally, the sub-component scores Applied to All Partners and Applied Bilaterally are each the mean of the eight normalized scores of their component.

NTMs **Applied on All Partners** = (Contingent trade protective measures + Export-related measures + Other measures + Pre-shipment inspection + Price control measures + Quantity control measures + SPS + TBT)/8

NTMs **Applied Bilaterally**= (Contingent trade protective measures + Export-related measures + Other measures + Pre-shipment inspection + Price control measures + Quantity control measures + SPS + TBT)/8

NTM = (NTM All Partners + NTM Bilateral)/2

Source: https://trains.unctad.org/

SERVICES

Services increasingly account for a growing share of trade and world GDP. The TBI utilizes the Services Trade Restrictions Database (STRD) developed by the Development Economics Research Group at the World Bank. The STRD through extensive legal surveys measures services restrictions based on modes 1, 3, and 4 identified in the General Agreement on Trade in Services (GATS) agreement administered by the WTO. It further identifies restrictions in relation to major service industries: retail, telecom, financial, transportation, and professional.

Tariffs and NTMs address barriers to physical goods. The services economy broadly refers to the human roles involved in producing, designing, buying, and selling both physical and intangible products. Data on services trade and especially restrictions on services are beginning to gather more prominence; Just this year an experimental dataset on trade in services by mode of supply (TISMOS)¹ was published by the WTO. Below are short descriptions of the types of restrictions common to each mode that the STRD identifies and reflected in the TBI score.

Mode 1 restrictions on Cross-Border Supply: refers to restrictions on entry of services such as licensing requirements, commercial presence requirements, rules on providing services through telecommunications or e-mail.

Mode 3 restrictions on Commercial Presence: refers to limits on ownership of a business, limits on type of businesses allowed, the number of suppliers in the marketplace, restrictions on operations, and the regulatory regime for foreign businesses.

Mode 4 restrictions on Natural Persons: these are chiefly occupational licensing requirements, visa requirements, local staff quotas, and economic needs tests.

The TBI uses min-max methodology to normalize services restrictions scores for each industry and by the service mode applicable to them. The TBI-Services score is the mean of each mode.

Mode 1 (Cross Border) = (Financial mode 1 + Transportation mode 1 + Professional services 1)/3

Mode 3 (Commercial Presence) = (Financial mode 3 + Telecom mode 3 + Retail mode 3 + Transportation mode 3 + Professional services mode 3)/5

Mode 4 (Presence of Natural Persons) = mode 4 restrictions on presence

Services= (mode 1 + mode 3 + mode 4)/3

Source: http://iresearch.worldbank.org/servicetrade

¹ https://www.wto.org/english/res_e/statis_e/trade_datasets_e.htm

FACILITATION

It is necessary to acknowledge that trade barriers are not limited to direct trade-related interventions. For instance, language, culture, and geography act as barriers in themselves. Though, from a classical economics perspective it is not the place of proper role of the state to regulate social constructs, or physical distance. Government's should find a role in ensuring, in the most limited sense, that basic facilitative measures are working: that businesses can be formally established, ports operate in a timely and efficient manner, that the customs rules are clearly stipulated and readily available, that market participants can trade property and have access to independent courts to settle disputes are a few requirements identified by the TBI.

The TBI-facilitation component chose four measures to serve as a barometer for the facilitative environment in each country. These are property rights, logistics performance, participation in Regional Trade Agreements, and limited restrictions on digital trade. Below are a description of each measure and the index used.

The International Property Rights Index (IPRI): Inspired by renown economist Hernando de Soto, the IPRI asses the legal and political environment, physical property rights protection, and protection of intellectual property rights of 125 countries. The IPRI is a composite index based on data from the World Bank Doing Business Index, World Bank Governance Indicators, the Competitiveness Index from the World Economic Forum, the Park Patent Index, and the BSA Global Software Survey. The IPRI scores are already normalized to a 1 to 10 scale. They are inverted to match the TBI scoring of one (least trade restricting barriers) and ten (most restrictive).

Source: http://www.internationalpropertyrightsindex.org/

Logistics Performance Index (LPI): Created through a worldwide global survey of freight forwarders and express carriers as well as incorporating quantitative performance data the LPI measures essentials necessary to efficiently transport goods across borders: customs management, basic infrastructure, ease of arranging shipments, quality of logistics, ability to track and trace, and timeliness.

The LPI score is inversed then the min max formulation is applied to normalize the scores to a 1 to 10 scale.

Source: https://lpi.worldbank.org/

Digital Trade Restrictions Index (DTRI): Either through data flows or e-commerce transactions all trade is increasingly affected by a digital component, making it just as necessary as shipping routes and highway systems for 21st century trade. For this reason, the European Centre for International Political Economy (ECIPE) created the DTRI. It measures more than 100 different policy measures that exclusively address digital commerce. The TBI incorporates sections of the DTRI related to establishment of e-businesses, restrictions on data, and restrictions on e-commerce. These take into consideration cross-border data flows, data retention requirements, burdensome data privacy regulations, digital service taxes, bandwidth neutrality requirements, and the absence of a safe harbor intermediate liability framework as digital trade restrictions.

Scores for each section are normalized through the min-max function then averaged to create the digital component of the TBI facilitation score.

Source: https://ecipe.org/wp-content/uploads/2018/05/DTRI_FINAL.pdf

Regional Trade Agreements (RTA): Conceivably trade barriers can be reduced unilaterally and still provide considerable social and economic benefits. Political realities often make such actions unlikely. Most trade barriers are negotiated away, or considerably reduced, through trade agreements.

Therefore, it is necessary to include a trade agreement measurement in the TBI that acknowledged their barrier reducing and increased market-access properties. The measure chosen was the number of physical RTAs in force and notified to the WTO, and its predecessor the GATT. The number of RTAs were normalized through the min-max method.

Source: WTO Regional Trade Agreements Information System (RTA-IS) https://rtais.wto.org/UI/publicPreDefRepByCountry.aspx

IMPUTING SCORES

As a composite index the TBI is constructed from seven well-known international and authoritative indexes. It was decided to limit the TBI to countries that have 85 percent of data available, or included in all component indexes except for one. For countries that were missing scores in one index scores were imputed to replace the unavailable data.

The imputation process was completed by calculating the absolute distance between the country's available scores and all scores in its associated region and income group. The score from the group with the shortest absolute distance was chosen to replace the missing value. A complete list of countries requiring an imputed value along with their income and regional group scores before imputation can be found in Appendix III.

RESULTS

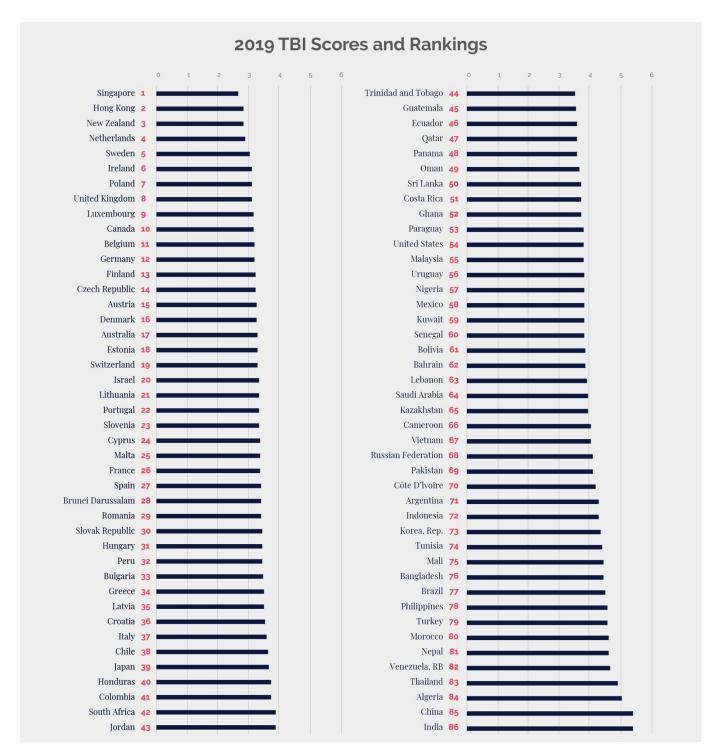


Figure 2. 2019 TBI Scores and Rankings

2019 INTERNATIONAL TRADE BARRIER INDEX RESULTS BY TBI AND COMPONENT SCORES

World Rank	Regional Rank	Country	ТВІ	Tariff Score	NTMs	Services	Facilitation
1	1	Singapore	2.7	1.94	1.67	4.03	3.17
2	2	Hong Kong	2.83	1.47	1.53	4.03	4.29
3	1	New Zealand	2.86	2.92	1.81	3.08	3.62
4	1	Netherlands	2.93	4.92	1.81	2.95	2.04
5	2	Sweden	3.07	4.92	1.81	3.44	2.12
6	3	Ireland	3.13	4.92	1.81	3.38	2.41
7	4	Poland	3.15	4.92	1.81	2.82	3.05
8	5	United Kingdom	3.17	4.92	1.81	3.79	2.15
9	6	Luxembourg	3.21	4.92	1.81	3.79	2.31
10	1	Canada	3.21	2.72	2.39	3.69	4.06
11	7	Belgium	3.22	4.92	1.81	3.79	2.37
12	8	Germany	3.23	4.92	1.81	3.68	2.52
13	9	Finland	3.23	4.92	1.81	4.05	2.16
14	10	Czech Republic	3.26	4.92	1.81	3.69	2.61
15	11	Austria	3.3	4.92	1.81	4.26	2.2
16	12	Denmark	3.3	4.92	1.81	4.19	2.27
17	2	Australia	3.32	3.08	2.49	3.71	4.01
18	13	Estonia	3.32	4.92	1.81	3.79	2.78
19	14	Switzerland	3.33	4.99	1.66	3.79	2.87
20	1	Israel	3.35	3.36	1.21	4.03	4.8
21	15	Lithuania	3.36	4.92	1.81	3.51	3.21
22	16	Portugal	3.38	4.92	1.81	4.13	2.66
23	17	Slovenia	3.39	4.92	1.81	3.79	3.05
24	18	Cyprus	3.41	4.92	1.81	3.79	3.11
25	19	Malta	3.41	4.92	1.81	3.79	3.14
26	20	France	3.42	4.92	1.81	3.95	2.98
27	21	Spain	3.43	4.92	1.81	4.11	2.89
28	3	Brunei Darussalam	3.45	2.48	1.44	4.03	5.84
29	22	Romania	3.45	4.92	1.81	3.59	3.47
30	23	Slovak Republic	3.46	4.92	1.81	3.79	3.33
31	24	Hungary	3.48	4.92	1.81	4.07	3.11
32	1	Peru	3.48	2.86	2.42	3.68	4.97
33	25	Bulgaria	3.49	4.92	1.81	3.83	3.4
34	26	Greece	3.5	4.92	1.81	3.84	3.42
35	27	Latvia	3.53	4.92	1.81	4.03	3.38
36	28	Croatia	3.55	4.92	1.81	4.03	3.42
<i>37</i>	29	Italy	3.6	4.92	1.81	4.71	2.96

World	Regional	Country	ТВІ	Tariff	NTMs	Services	Facilitation
Rank 38	Rank 2	Chile	3.63	Score 5.64	1.8	3.65	3.45
39	4	Japan	3.66	4.06	2.54	4.52	3.52
40	3	Honduras	3.76	3.81	1.24	4.32	5.65
41	4	Colombia		3.82	2.28		5.05
42	1	South Africa	3.77	3.02	2.20	3.79	5.17
		Jordan				4.47	
43	2		3.91	4.28	1.16	4.58	5.62
44	5	Trinidad & Tobago	3.91	5.72	1.56	2.4	5.96
45	6	Guatemala	3.93	3.81	1.21	4.7	6.01
46	7	Ecuador	4.03	5.47	1.66	2.93	6.07
47	3	Qatar	4.07	4.9	1.15	5.19	5.05
48	8	Panama	4.07	3.9	2.57	5.35	4.46
49	4	Oman	4.11	5.03	1.21	4.86	5.36
50	5	Sri Lanka	4.14	4.04	1.21	5.26	6.07
51	9	Costa Rica	4.16	4.46	1.24	6.08	4.84
52	2	Ghana	4.17	5.92	1.19	3.64	5.93
53	10	Paraguay	4.25	6.26	1.48	3.66	5.6
54	2	United States	4.26	4.58	4.5	4.05	3.9
<i>55</i>	6	Malaysia	4.28	4.34	1.69	6.05	5.06
56	11	Uruguay	4.3	6.69	2.04	3.16	5.3
<i>57</i>	3	Nigeria	4.31	5.92	1.06	3.8	6.47
58	12	Mexico	4.32	5.26	2.21	4.72	5.08
59	5	Kuwait	4.32	4.87	1.36	5.25	5.81
60	4	Senegal	4.33	5.96	1.15	3.88	6.32
61	13	Bolivia	4.37	6.17	1.18	3.44	6.69
62	6	Bahrain	4.37	4.98	1.74	5.23	5.54
63	7	Lebanon	4.39	3.85	1.72	5.82	6.18
64	8	Saudi Arabia	4.42	4.93	1.66	5.52	5.55
65	1	Kazakhstan	4.44	6.11	1.35	4.17	6.12
66	7	Vietnam	4.53	5.7	2.09	4.63	5.71
67	2	Russian Federation	4.57	6.12	1.41	4.57	6.18
68	5	Cameroon	4.53	6.85	1.24	3.8	6.24
69	9	Pakistan	4.6	6.33	1.21	4.59	6.26
70	6	Côte d'Ivoire	4.67	5.96	1.35	5.23	6.12
71	14	Argentina	4.79	7.03	2.19	4.2	5.74
72	8	Indonesia	4.8	6.12	2.12	5.14	5.83
<i>73</i>	9	Korea, Rep.	4.84	7.35	2.72	4.84	4.45
74	10	Tunisia	4.93	5.59	1.85	6.43	5.85
<i>75</i>	7	Mali	4.93	6	1.22	5.28	7.23
76	11	Bangladesh	4.95	6.45	1.31	5.65	6.39
77	15	Brazil	5.02	7.08	2.87	4.73	5.41

World Rank	Regional Rank	Country	ТВІ	Tariff Score	NTMs	Services	Facilitation
78	10	Philippines	5.08	6.09	2.96	5.9	5.38
<i>7</i> 9	3	Turkey	5.09	7.57	2.42	5.45	4.93
80	12	Morocco	5.16	8.8	1.26	4.62	5.94
81	11	Nepal	5.16	5.81	1.4	6.31	7.14
82	16	Venezuela, RB	5.21	7.36	1.77	4.74	6.96
83	12	Thailand	5.5	5.66	3.93	7.13	5.27
84	13	Algeria	5.61	9.54	1.15	5.31	6.44
85	13	China	5.96	6.8	5.78	5.53	5.74
86	14	India	6.01	8.11	3.61	7.17	5.16

The 2019 TBI ranks a total of 86 countries on their use of trade barriers (figure 2) and Table 1 for complete scores by category. The average TBI score is 4.0 on a 10 point scale, with 10 indicating the highest use of trade barriers. The seemingly low median score only highlights the fact that heavy use of trade barriers are generally an exception rather than a norm to be tolerated. The median score for tariffs is 5.17, Non-Tariff Measures 1.87, Services Restrictions 4.38, and Facilitation is 4.57 (figure 3).

TBI Distribution by Category

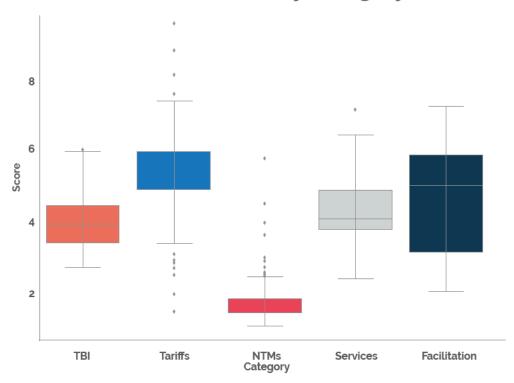


Figure 3. TBI Score Distribution by Category

Singapore with a TBI of 2.71 and Hong Kong with a TBI of 2.85 lead the index as the world's premier examples barrier-free trade. Both charge absolutely no duties on imports. They have very low scores for non-tariff measures (1.68 and 1.53), identical scores for Services Restrictions (4.04), and below average scores for Facilitation (3.18 and 4.30). Hong Kong is second due to the relatively small number of trade agreements it has signed resulting in a high facilitation score; however, it leads in the tariff component slightly because Hong Kong has less tariff lines (figure 4). Being second shouldn't detract from Hong Kong's ability, enabled by its free-trade orientation, to serve as a center for free speech and criticism of the central government in Beijing. For more information see "A Tribute to Hong Kong, Free Trade and Free Minds: Laissez-Faire Hong Kong Defends Liberty."

Tariff Score: Hong Kong and China

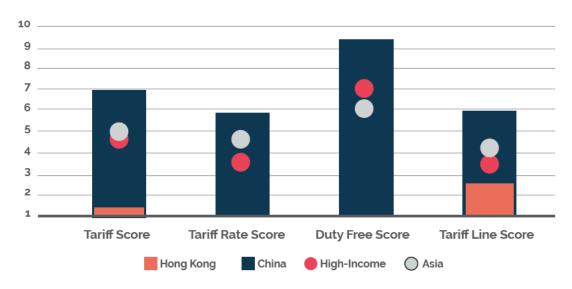


Figure 4: Comparing Hong Kong and China Tariff Component with Asia and High-Income Countries

Paradoxically, mainland China comes in second to last with a TBI score of 5.97 in the Index while India is the worst offender of trade liberalism at 86th with a score of 6.02. Their tariff scores are 8.12 (83rd in the world) for India and 6.81 (76th in the world) for China, both are far above the world average for tariffs considering the standard deviation for the range is 1.36. See Table 2 for Tariff ranking and its components.

TABLE 2: TBI TARIFF SCORES

Tariff Rank	TBI World Rank	TBI Regional Rank	Country	Tariff Score	Tariff Rate Score	Duty Free Score	Tariff Line Score
1	2	2	Hong Kong	1.47	1	1	2.41
2	1	1	Singapore	1.94	1	1	3.82
3	28	3	Brunei Darussalam	2.48	1.09	1.37	4.98
4	10	1	Canada	2.72	2.9	3.03	2.22
5	32	1	Peru	2.86	2.14	3.87	2.56
6	3	1	New Zealand	2.92	1.95	4.15	2.66
7	17	2	Australia	3.08	2.19	5.41	1.64
8	20	1	Israel	3.36	2.85	4.13	3.09
9	40	3	Honduras	3.81	3.71	5.43	2.28
10	45	6	Guatemala	3.81	3.66	5.64	2.14
11	41	4	Colombia	3.82	3.57	5.4	2.51
12	63	7	Lebanon	3.85	3.71	6.44	1.4
13	48	8	Panama	3.9	3.42	4.87	3.41
14	42	1	South Africa	3.96	4.66	4.56	2.65
15	50	5	Sri Lanka	4.04	5.42	4.39	2.31
16	39	4	Japan	4.06	3.09	5.23	3.85
17	43	2	Jordan	4.28	5.8	5.08	1.94
18	55	6	Malaysia	4.34	3.66	4.04	5.32
19	51	9	Costa Rica	4.46	3.66	5.35	4.38
20	54	2	United States	4.58	2.61	5.83	5.29
21	59	5	Kuwait	4.87	3.19	9.05	2.36
22	47	3	Qatar	4.9	3.28	9.05	2.36
23	15	11	Austria	4.92	3.47	7.48	3.8
24	11	7	Belgium	4.92	3.47	7.48	3.8
25	33	25	Bulgaria	4.92	3.47	7.48	3.8
26	36	28	Croatia	4.92	3.47	7.48	3.8
27	24	18	Cyprus	4.92	3.47	7.48	3.8
28	14	10	Czech Republic	4.92	3.47	7.48	3.8
29	16	12	Denmark	4.92	3.47	7.48	3.8
30	18	13	Estonia	4.92	3.47	7.48	3.8
31	13	9	Finland	4.92	3.47	7.48	3.8
32	26	20	France	4.92	3.47	7.48	3.8
33	12	8	Germany	4.92	3.47	7.48	3.8
34	34	26	Greece	4.92	3.47	7.48	3.8
35	31	24	Hungary	4.92	3.47	7.48	3.8
36	6	3	Ireland	4.92	3.47	7.48	3.8
37	37	29	Italy	4.92	3.47	7.48	3.8
38	35	27	Latvia	4.92	3.47	7.48	3.8

Tariff Rank	TBI World Rank	TBI Regional Rank	Country	Tariff Score	Tariff Rate Score	Duty Free Score	Tariff Line Score
39	21	15	Lithuania	4.92	3.47	7.48	3.8
40	9	6	Luxembourg	4.92	3.47	7.48	3.8
41	25	19	Malta	4.92	3.47	7.48	3.8
42	4	1	Netherlands	4.92	3.47	7.48	3.8
43	7	4	Poland	4.92	3.47	7.48	3.8
44	22	16	Portugal	4.92	3.47	7.48	3.8
45	29	22	Romania	4.92	3.47	7.48	3.8
46	30	23	Slovak Republic	4.92	3.47	7.48	3.8
47	23	17	Slovenia	4.92	3.47	7.48	3.8
48	27	21	Spain	4.92	3.47	7.48	3.8
49	5	2	Sweden	4.92	3.47	7.48	3.8
50	8	5	United Kingdom	4.92	3.47	7.48	3.8
51	64	8	Saudi Arabia	4.93	3.57	9.13	2.1
52	62	6	Bahrain	4.98	3.52	9.05	2.37
53	19	14	Switzerland	4.99	4.14	7.75	3.08
54	49	4	Oman	5.03	3.66	9.05	2.36
55	58	12	Mexico	5.26	4.33	5.53	5.93
56	46	7	Ecuador	5.47	6.85	6.84	2.71
<i>57</i>	74	10	Tunisia	5.59	6.52	5.06	5.2
58	38	2	Chile	5.64	3.85	9.93	3.12
59	83	12	Thailand	5.66	5.57	6.7	4.71
60	66	7	Vietnam	5.7	5.52	6.81	4.79
61	44	5	Trinidad & Tobago	5.72	6.09	9.57	1.5
62	81	11	Nepal	5.81	6.76	9.67	1
63	57	3	Nigeria	5.92	6.76	9.77	1.24
64	52	2	Ghana	5.92	6.66	9.73	1.39
65	70	6	Côte d'Ivoire	5.96	6.8	9.86	1.22
66	60	4	Senegal	5.96	6.8	9.86	1.22
67	75	7	Mali	6	6.76	9.84	1.39
68	78	10	Philippines	6.09	3.95	8.97	5.36
69	65	1	Kazakhstan	6.11	4.04	8.59	5.69
70	67	2	Russian Federation	6.12	4.23	8.56	5.58
71	72	8	Indonesia	6.12	4.85	8.82	4.71
72	61	13	Bolivia	6.17	6.61	9.37	2.54
73	53	10	Paraguay	6.26	5.66	8.75	4.35
74	69	9	Pakistan		6.76	10	2.25
<i>75</i>	76	11	Bangladesh		7.66	9.6	2.1
76	56	11	Uruguay		5.9	8.66	5.51
77	85	13	China	6.8	5.66	9.35	5.4

Tariff Rank	TBI World Rank	TBI Regional Rank	Country	Tariff Score	Tariff Rate Score	Duty Free Score	Tariff Line Score
<i>7</i> 8	68	5	Cameroon	6.85	9.57	9.94	1.04
<i>7</i> 9	71	14	Argentina	7.03	7.47	9.46	4.15
80	77	15	Brazil	7.08	7.38	9.54	4.32
81	73	9	Korea, Rep.	7.35	7.52	8.64	5.89
82	82	16	Venezuela, RB	7.36	7.57	9.55	4.96
83	79	3	Turkey	7.57	6.09	7.88	8.75
84	86	14	India	8.11	9.14	9.82	5.39
85	80	12	Morocco	8.8	6.42	10	10
86	84	13	Algeria	9.54	10	9.87	8.75

The Non-Tariff Measure score is split into two components: those Applied to All Partners and those Applied bilaterally, each composed of the same 10 categories identified by UNCTAD-TRAINS database. China is the most prevalent user of Non-Tariff Measures with a score of 5.79, followed by the United States with a score of 4.50. China has the worst score for export-related, other, preshipment and TBT non-tariff measures Applied to All Trade Partners (figure 5); as well as export-related NTMs Applied Bilaterally (figure 6) and tables 3 and 4 for complete NTM rankings.

TABLE 3: NTMS APPLIED TO ALL PARTNERS

Rank NTM Overall	World Rank NTMs All Partners	Country	NTMs Overall	NTMs All Partners	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	TBT
1	2	Nigeria	1.06	1.12	1	1.03	1	1.13	1.12	1.35	1.31	1.05
2	4	Qatar	1.15	1.26	1	1.17	1	1.13	1.5	1.71	1.28	1.29
3	3	Senegal	1.15	1.25	1	1.28	1	1.91	1.25	1.23	1.27	1.02
4	6	Algeria	1.15	1.31	1	1.17	1.15	1.26	1.12	1.8	1.7	1.27
5	9	Jordan	1.16	1.32	1	1.38	1.31	1	1.63	1.78	1.44	1.03
6	5	Bolivia	1.18	1.27	1	1.1	1.31	1.13	1.76	1.59	1.2	1.05
7	40	Ghana	1.19	1.37	1	1.43	1	1.91	1.88	1.61	1.12	1.05
8	42	Sri Lanka	1.21	1.42	1	1.72	1.15	1.52	1.88	1.64	1.34	1.09
9	10	Pakistan	1.21	1.33	1	1.47	1.15	2.17	1	1.64	1.19	1.05
10	7	Oman	1.21	1.32	1	1.27	1.63	1.13	1.38	1.9	1.11	1.14
11	43	Israel	1.21	1.43	1	1.3	1.47	1.65	1.5	1.47	1.98	1.06
12	44	Guatemala	1.21	1.43	1	1.44	1	1	1.63	2.64	1.58	1.16

Rank NTM Overall	World Rank NTMs All Partners	Country	NTMs Overall	NTMs All Partners	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	TBT
13	46	Mali	1.22	1.45	1	1.89	1.63	1.39	2.01	1.4	1.2	1.06
14	41	Cameroon	1.24	1.41	1	2.05	1	1	2.26	1.66	1.25	1.11
15	48	Honduras	1.24	1.47	1	1.48	1	1	1.5	3.09	1.6	1.08
16	45	Costa Rica	1.24	1.44	1	1.35	1	1.13	2.01	1.5	2.29	1.27
17	50	Morocco	1.26	1.53	1	1.55	1.15	1.52	1.76	1.83	2.24	1.2
18	51	Bangladesh	1.31	1.62	1	1.36	1	1.52	3.78	1.64	1.48	1.18
19	49	Kazakhstan	1.35	1.49	1	1.39	1.47	1.39	1.63	1.4	1.77	1.85
20	52	Côte d'Ivoire	1.35	1.7	5.5	1.18	1	1.13	1.5	1.19	1.09	1.01
21	8	Kuwait	1.36	1.32	1	1.23	1.31	1.26	1.63	1.88	1.2	1.05
22	39	Nepal	1.4	1.36	1	1.25	1.78	1	1.63	1.23	1.72	1.27
23	47	Russian Federation	1.41	1.46	1	1.31	1.15	1.91	1.5	1.42	1.72	1.69
24	55	Brunei Darussalam	1.44	1.85	1	1.77	1	1.13	4.04	2.28	2.06	1.55
25	57	Paraguay	1.48	1.94	1	1.35	1.15	1.39	1.76	6.57	1.2	1.11
26	54	Hong Kong	1.53	1.78	1	1.97	1	2.17	3.15	1.97	1.49	1.48
27	58	Trinidad & Tobago	1.56	2.03	1	2.5	2.1	2.3	3.66	2.14	1.31	1.26
28	56	Switzerland	1.66	1.92	1	1.6	1.15	3.47	3.4	1.88	1.44	1.41
29	65	Saudi Arabia	1.66	2.17	1	1.73	1.63	4	4.04	2.28	1.44	1.27
30	64	Ecuador	1.66	2.17	1	1.76	1.47	1.78	1.38	5	2.04	2.93
31	62	Singapore	1.67	2.14	1	1.71	1.15	1	6.45	2.28	1.83	1.68
32	63	Malaysia	1.69	2.17	1	2.68	1	1.65	4.54	2.02	2.62	1.83
33	60	Lebanon	1.72	2.08	1	1.68	2.1	4.52	1.88	2.16	2.01	1.27
34	69	Bahrain	1.74	2.37	1	2.28	1.47	3.86	5.18	2.33	1.62	1.23
35	71	Venezuela, RB	1.77	2.53	1	1.63	1.63	1.65	1.88	9.8	1.45	1.17
36	67	Chile	1.8	2.26	2.5	1.31	1	2.04	2.52	3.9	3.25	1.54
37	59	New Zealand	1.81	2.04	1	1.56	1.47	1.39	1.63	1.83	3.32	4.14
38	11	Austria	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
39	12	Belgium	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
40	13	Bulgaria	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
41	14	Croatia	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
42	15	Cyprus	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
43	16	Czech Republic	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
44	17	Denmark	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
45	18	Estonia	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
46	19	Finland	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59

Rank NTM Overall	World Rank NTMs All Partners	Country	NTMs Overall	NTMs All Partners	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	TBT
47	20	France	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
48	21	Germany	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
49	22	Greece	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
50	23	Hungary	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
51	24	Ireland	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
52	25	Italy	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
53	26	Latvia	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
54	27	Lithuania	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
55	28	Luxembourg	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
56	29	Malta	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
57	30	Netherlands	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
58	31	Poland	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
59	32	Portugal	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
60	33	Romania	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
61	34	Slovak Republic	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
62	35	Slovenia	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
63	36	Spain	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
64	37	Sweden	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
65	38	United Kingdom	1.81	1.35	1	1.02	1.31	1.52	1	1.78	1.59	1.59
66	74	Tunisia	1.85	2.64	1	2.06	2.89	3.73	6.83	1.83	1.51	1.25
67	75	Uruguay	2.04	2.81	1	2.31	1.63	1.91	1.88	10	2.34	1.39
68	68	South Africa	2.07	2.3	1.85	2.11	1.74	2.31	2.28	3.9	2.1	2.05
69	72	Vietnam	2.09	2.54	2.5	2.9	3.52	1.91	3.4	2.71	1.7	1.71
70	78	Indonesia	2.12	3.18	1	2.68	3.05	8.04	3.4	2.95	2.4	1.96
71	61	Argentina	2.19	2.08	1	1.46	1.63	2.3	3.02	3.14	2.56	1.59
72	70	Mexico	2.21	2.5	5.5	2.5	1.15	1.39	1.38	4.23	2.1	1.76
<i>73</i>	77	Colombia	2.28	3.07	4	1.96	1.94	2.43	2.64	8.26	1.85	1.46
74	73	Canada	2.39	2.61	1	2.01	1.31	2.04	5.05	3.59	2.25	3.6
<i>75</i>	1	Turkey	2.42	1	1	1	1	1	1	1	1	1
76	66	Peru	2.42	2.18	1	1.4	1	1.39	2.26	6.83	2.41	1.15
77	80	Australia	2.49	3.43	1	5.67	1.15	1.39	9.74	3.02	2.62	2.89
78	76	Japan	2.54	2.87	1	2.64	1.63	4.65	6.45	2.33	1.86	2.43
<i>7</i> 9	53	Panama	2.57	1.76	1	1.15	1	3.08	2.01	1.52	2.85	1.48
80	79	Korea, Rep.	2.72	3.38	1	3	1.15	4.13	10	3.14	2.09	2.53

Rank NTM Overall	World Rank NTMs All Partners	Country	NTMs Overall	NTMs All Partners	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	ТВТ
81	81	Brazil	2.87	3.47	10	1.25	1.47	1.91	1.25	6.76	2.71	2.43
82	82	Philippines	2.96	3.84	4	3.57	3.36	4	5.94	5.85	2.22	1.8
83	85	India	3.61	5.51	1	6.3	4.15	6.6	6.32	5.42	10	4.31
84	83	Thailand	3.93	4.14	2.5	5	1.15	6.34	6.83	3.52	4.37	3.38
85	84	United States	4.5	4.48	1	2.77	1.15	6.47	5.3	3.71	8.86	6.54
86	86	China	5.78	7.57	1	10	10	10	7.21	7.76	4.61	10

TABLE 4: NTMS APPLIED BILATERAL

World Rank NTMs	World Rank NTMs Bilateral	Country	NTMs Overall	NTMs Bilateral	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	ТВТ
1	1	Nigeria	1.06	1	1	1	1	1	1	1	1	1
2	16	Qatar	1.15	1.04	1	1.18	1	1.02	1	1	1.02	1.1
3	19	Senegal	1.15	1.06	1	1.02	1	1.43	1	1	1.05	1
4	9	Algeria	1.15	1	1	1	1	1.04	1	1	1	1
5	2	Jordan	1.16	1	1	1	1	1	1	1	1	1
6	24	Bolivia	1.18	1.1	1	1	1	1	1	1.14	1.28	1.42
7	10	Ghana	1.19	1	1	1.05	1	1	1	1	1	1
8	4	Sri Lanka	1.21	1	1	1	1	1	1	1	1	1
9	23	Pakistan	1.21	1.09	1	1.18	1	1.02	1.07	1.42	1.04	1
10	25	Oman	1.21	1.1	1	1.15	1	1.02	1	1.56	1.07	1.05
11	5	Israel	1.21	1	1	1	1	1	1	1	1	1
12	7	Guatemala	1.21	1	1	1	1	1	1	1	1.01	1
13	3	Mali	1.22	1	1	1	1	1	1	1	1	1
14	18	Cameroon	1.24	1.06	1	1.26	1	1	1	1.14	1	1.1
15	11	Honduras	1.24	1.01	1	1.1	1	1	1	1	1	1
16	17	Costa Rica	1.24	1.04	1.08	1	1	1	1	1	1.25	1

World Rank NTMs	World Rank NTMs Bilateral	Country	NTMs Overall	NTMs Bilateral	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	ТВТ
17	6	Morocco	1.26	1	1	1	1	1	1	1	1.01	1
18	8	Bangladesh	1.31	1	1	1.02	1	1	1	1	1	1
19	29	Kazakhstan	1.35	1.2	1	1.44	1	1.04	1	1.56	1.08	1.53
20	12	Côte d'Ivoire	1.35	1.01	1	1	1	1	1	1	1.12	1
21	38	Kuwait	1.36	1.4	1	1.1	3.25	1.06	1.14	1.42	1.15	1.1
22	39	Nepal	1.4	1.43	1	1.1	3.25	1	2.15	1	1	1
23	35	Russian Federation	1.41	1.35	1	1.57	1	1.18	1	2.54	1.19	1.32
24	15	Brunei Darussalam	1.44	1.02	1	1	1	1	1	1.14	1	1.05
25	14	Paraguay	1.48	1.01	1	1	1	1	1	1.14	1.01	1
26	33	Hong Kong	1.53	1.27	1	1.42	1	1.04	1.14	2.4	1.05	1.16
27	22	Trinidad and Tobago	1.56	1.08	1	1.02	1	1.12	1.21	1.28	1.06	1
28	37	Switzerland	1.66	1.39	1	1.81	1	1.04	1.21	2.82	1.07	1.21
29	27	Saudi Arabia	1.66	1.15	1	1.02	1	1.41	1	1.7	1.06	1.05
30	28	Ecuador	1.66	1.16	1	1.05	1	1	1.07	1.14	2.06	1
31	31	Singapore	1.67	1.21	1	1.39	1	1	1.07	2.26	1	1
32	30	Malaysia	1.69	1.21	1	1.31	1	1.02	1.07	1.84	1.13	1.32
33	36	Lebanon	1.72	1.35	1	1.1	3.25	1.04	1	1.14	1.06	1.26
34	26	Bahrain	1.74	1.11	1	1.18	1	1.04	1.07	1.42	1.07	1.1
35	13	Venezuela, RB	1.77	1.01	1	1.07	1	1	1	1	1	1.05
36	34	Chile	1.8	1.34	1.08	1.1	1	1	1	1	2.19	2.33
<i>37</i>	42	New Zealand	1.81	1.57	1	1.47	1	1.53	1	1.84	3.7	1.05
38	52	Austria	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
39	53	Belgium	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
40	54	Bulgaria	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
41	55	Croatia	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
42	56	Cyprus	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
43	57	Czech Republic	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
44	58	Denmark	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
45	59	Estonia	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
46	60	Finland	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
47	61	France	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
48	62	Germany	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
49	63	Greece	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
50	64	Hungary	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
51	65	Ireland	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55

World Rank NTMs	World Rank NTMs Bilateral	Country	NTMs Overall	NTMs Bilateral	Contingent Protection	Export-related	Other	Pre-shipment	Price controls	Quantity controls	SPS	ТВТ
52	66	Italy	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
53	67	Latvia	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
54	68	Lithuania	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
55	69	Luxembourg	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
56	70	Malta	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
57	71	Netherlands	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
58	72	Poland	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
59	73	Portugal	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
60	74	Romania	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
61	75	Slovak Republic	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
62	76	Slovenia	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
63	77	Spain	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
64	78	Sweden	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
65	79	United Kingdom	1.81	2.28	1	1.68	1	1.55	1	8.45	1	2.55
66	20	Tunisia	1.85	1.06	1	1.15	1	1	1	1.14	1.02	1.21
67	32	Uruguay	2.04	1.27	1.08	1.02	1	1.06	1	1.28	1.64	2.07
68	45	South Africa	2.07	1.84	1.91	1.87	1.67	1.42	1.51	2.73	1.68	1.94
69	43	Vietnam	2.09	1.63	1	3	3.25	1	1	1.56	1	1.26
70	21	Indonesia	2.12	1.06	1	1.05	1	1.02	1	1.14	1.02	1.32
71	80	Argentina	2.19	2.3	10	1.13	1	1	1.79	1.14	1.05	1.32
72	46	Mexico	2.21	1.92	6.91	1.65	1	1	1	1.84	1	1
<i>73</i>	40	Colombia	2.28	1.5	3.82	1.13	1	1.04	1.21	1.7	1.03	1.05
74	49	Canada	2.39	2.18	1	2.55	1	1.24	1	8.17	1.06	1.42
<i>75</i>	84	Turkey	2.42	3.84	1.17	1.73	10	4.21	1.72	8.45	1.06	2.39
76	81	Peru	2.42	2.67	2.02	1	1	1.08	1	2.4	7.8	5.07
77	41	Australia	2.49	1.54	1	2.81	1	1	1	3.25	1.03	1.26
78	50	Japan	2.54	2.2	1	2.76	3.25	1.08	1	4.93	1.28	2.33
79	82	Panama	2.57	3.39	1	1	1	2.14	1	1	10	10
80	47	Korea, Rep.	2.72	2.05	1	5.07	1	1.06	1	1.56	2.19	3.57
81	51	Brazil	2.87	2.26	9.05	1.05	1	1	1	1.56	1.93	1.53
82	48	Philippines	2.96	2.08	1	1.31	7.75	1.1	1.07	1.7	1.37	1.37
83	44	India	3.61	1.7	1	2.94	1	1.08	1.07	2.54	2.92	1.1
84	83	Thailand	3.93	3.73	1.25	4.89	1	3.8	10	2.54	2.6	3.78
85	86	United States	4.5	4.52	1	2.57	1	10	1.28	10	5.5	4.8
86	85	China	5.78	3.99	1	10	3.25	1.9	1.14	4.93	3.39	6.35

China NTMs Applied To All Partners

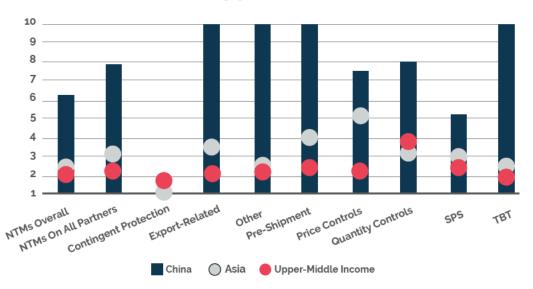


Figure 5: China NTMS on All Partners

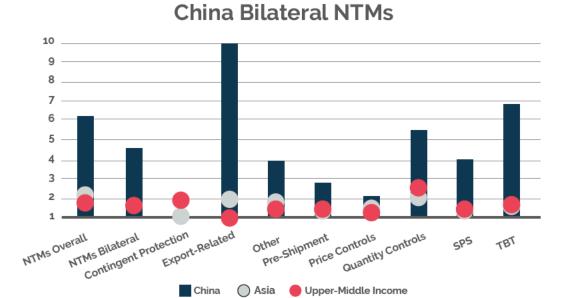


Figure 6: China NTMS on Bilateral Partners

Both China and the U.S. deploy an astronomical number of NTMs compared to the rest of the world, over 7,000 for China and over 6,000 by the United States. Before scaling for the TBI the median number of NTMs is only 502, only 7 countries deploy more than 2,000 NTMs.

Services are quickly becoming the driving force of many advanced economies, certainly that is the case in the United States which has the world's largest services trade surplus. The Services Restrictions measure in the TBI classifies barriers in the category by industry affected and by the service mode according to the General Agreement on Trade in Services. India at 7.17 overall has the worst scores in the component, mainly in restrictions to dissuade foreign professionals (Mode 4) from working and opening business of their own (Mode 3) in the country (figure 7) and table 5 and 6 with complete scores of Services Restrictions.

TABLE 5: SERVICES RESTRICTIONS BY MODE

Services World Rank	Country	Services Overall	M1 Cross Border	M3 Commercial Presence	M4 Presence of Natural Persons
1	Trinidad & Tobago	2.4	1.37	2.13	3.7
2	Poland	2.82	1.38	2.02	5.05
3	Ecuador	2.93	2.75	1	5.05
4	Netherlands	2.95	2.44	2.27	4.15
5	New Zealand	3.08	1.76	2	5.5
6	Uruguay	3.16	2.53	3.7	3.25
7	Ireland	3.38	2.63	2.01	5.5
8	Bolivia	3.44	3.66	1.62	5.05
9	Sweden	3.44	2.88	1.95	5.5
10	Lithuania	3.51	2.34	1.81	6.4
11	Romania	3.59	2.83	2.01	5.95
12	Ghana	3.64	2.62	2.8	5.5
13	Chile	3.65	1.77	2.8	6.4
14	Paraguay	3.66	5.52	2.21	3.25
15	Peru	3.68	4	1.99	5.05
16	Germany	3.68	2.63	2.9	5.5
17	Czech Republic	3.69	2.74	2.37	5.95
18	Canada	3.69	2.01	3.57	5.5
19	Australia	3.71	2.91	2.72	5.5
20	Croatia	3.79	2.79	2.43	6.15
21	Cyprus	3.79	2.79	2.43	6.15
22	Estonia	3.79	2.79	2.43	6.15
23	Latvia	3.79	2.79	2.43	6.15
24	Luxembourg	3.79	2.79	2.43	6.15
25	Malta	3.79	2.79	2.43	6.15
26	Slovak Republic	3.79	2.79	2.43	6.15
27	Slovenia	3.79	2.79	2.43	6.15

Services World Rank	Country	Services Overall	M1 Cross Border	M3 Commercial Presence	M4 Presence Of Natural Persons	
28	Switzerland	3.79	2.79	2.43	6.15	
29	United Kingdom	3.79	2.81	2.16	6.4	
30	Colombia	3.79	2.24	2.74	6.4	
31	Belgium	3.79	2.29	2.7	6.4	
32	Nigeria	3.8	1.75	3.25	6.4	
33	Cameroon	3.8	2.34	3.11	5.95	
34	Bulgaria	3.83	2.12	2.51	6.85	
35	Greece	3.84	2.91	2.22	6.4	
36	Senegal	3.88	3.52	2.62	5.5	
37	France	3.95	4.13	3.57	4.15	
38	Hong Kong	4.03	2.92	3.15	6.02	
39	Israel	4.03	2.92	3.15	6.02	
40	Singapore	4.03	2.92	3.15	6.02	
41	Finland	4.05	2.38	2.91	6.85	
42	United States	4.05	2.2	2.65	7.3	
43	Hungary	4.07	4.29	2.43	5.5	
44	Spain	4.11	3.13	1.91	7.3	
45	Portugal	4.13	3.55	2.43	6.4	
46	Kazakhstan	4.17	4.02	2.11	6.4	
47	Denmark	4.19	2.19	2.64	7.75	
48	Argentina	4.2	3.9	2.29	6.4	
49	Austria	4.26	2.38	2.64	7.75	
50	Honduras	4.32	4.69	2.79	5.5	
51	South Africa	4.47	1.37	4.29	7.75	
52	Japan	4.52	3.95	3.21	6.4	
53	Russian Federation	4.57	3.46	2.94	7.3	
54	Jordan	4.58	2.15	5.19	6.4	
55	Pakistan	4.59	4.54	3.28	5.95	
56	Morocco	4.62	4.81	2.65	6.4	
57	Vietnam	4.63	2.99	4.5	6.4	
58	Guatemala	4.7	6.61	2.01	5.5	
59	Italy	4.71	3.63	3.2	7.3	
60	Mexico	4.72	3.7	3.62	6.85	
61	Brazil	4.73	5.98	2.73	5.5	
62	Venezuela, RB	4.74	2.75	4.63	6.85	
63	Korea, Rep.	4.84	3.42	3.35	7.75	
64	Oman	4.86	3.28	5.35	5.95	

Services World Rank	Country	Services Overall	M1 Cross Border	M3 Commercial Presence	M4 Presence Of Natural Persons
65	Indonesia	5.14	2.23	5.89	7.3
66	Qatar	5.19	2.53	7.08	5.95
67	Côte d'Ivoire	5.23	4.76	3.19	7.75
68	Bahrain	5.23	5.87	5.69	4.15
69	Kuwait	5.25	4.77	6.4	4.6
70	Sri Lanka	5.26	2.98	4.62	8.2
71	Mali	5.28	4.02	4.09	7.75
72	Algeria	5.31	5.12	3.96	6.85
73	Panama	5.35	2.77	5.08	8.2
74	Turkey	5.45	3.49	3.33	9.55
<i>75</i>	Saudi Arabia	5.52	3.52	4.85	8.2
76	China	5.53	4.27	4.57	7.75
77	Bangladesh	5.65	5.38	4.27	7.3
78	Brunei Darussalam	5.68	4.17	4.96	7.91
<i>7</i> 9	Lebanon	5.82	4.15	5.1	8.2
80	Philippines	5.9	3.27	6.22	8.2
81	Malaysia	6.05	4.03	5.01	9.1
82	Costa Rica	6.08	6.06	3.08	9.1
83	Nepal	6.31	5.25	5.02	8.65
84	Tunisia	6.43	5.69	4.97	8.65
85	Thailand	7.13	6.34	5.05	10
86	India	7.17	7.09	7.12	7.3

TABLE 6: SERVICES RESTRICTIONS BY INDUSTRY

Services World Rank	Country	Services	Finance Mode 1	Finance Mode 3	Telecom Mode 3	Retail Mode 3	Transportation Mode 1	Transportation Mode 3	Professional Mode 1	Professional Mode 3	Professional Mode 4
1	Trinidad & Tobago	2.4	1	1	1	1	2.12	3.09	1	4.6	3.7
2	Poland	2.82	2.16	1	1	1	1	3.87	1	3.25	5.05
3	Ecuador	2.93	4.01	1	1	1	3.25	1	1	1	5.05
4	Netherlands	2.95	1.58	1	1	1	1	3.75	4.75	4.6	4.15
5	New Zealand	3.08	2.16	1	4.37	1	2.12	1.74	1	1.9	5.5

Services World Rank	Country	Services	Finance Mode 1	Finance Mode 3	Telecom Mode 3	Retail Mode 3	Transportation Mode 1	Transportation Mode 3	Professional Mode 1	Professional Mode 3	Professional Mode 4
6	Uruguay	3.16	4.49	4.62	6.62	1	2.12	5.24	1	1	3.25
7	Ireland	3.38	2.16	1	1	1	1	3.37	4.75	3.7	5.5
8	Bolivia	3.44	4.49	1.87	3.25	1	5.5	1	1	1	5.05
9	Sweden	3.44	2.16	1	1	3.25	3.25	1.74	3.25	2.8	5.5
10	Lithuania	3.51	1.29	1	1	1	3.25	3.25	2.5	2.8	6.4
11	Romania	3.59	2.74	2.16	1	1	3.25	1.74	2.5	4.15	5.95
12	Ghana	3.64	3.61	3.25	3.25	1	3.25	1	1	5.5	5.5
13	Chile	3.65	3.32	3.25	3.25	3.25	1	3.25	1	1	6.4
14	Paraguay	3.66	3.32	3.25	4.37	1	3.25	1	10	1.45	3.25
15	Peru	3.68	10	3.25	1	1	1	1.93	1	2.8	5.05
16	Germany	3.68	2.16	1	1	1	1	4.24	4.75	7.3	5.5
17	Czech Republic	3.69	5.5	1	1	1	1	4.27	1.74	4.6	5.95
18	Canada	3.69	2.16	3.25	5.5	1	2.12	3.5	1.74	4.6	5.5
19	Australia	3.71	1.87	4.91	3.25	1	4.37	2.12	2.5	2.35	5.5
20	Croatia	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
21	Cyprus	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
22	Estonia	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
23	Latvia	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
24	Luxembourg	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
25	Malta	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
26	Slovak Republic	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
27	Slovenia	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
28	Switzerland	3.79	2.26	1.27	3.85	1.78	2.06	3.85	4.03	4.1	6.15
29	United Kingdom	3.79	1.58	1	1	1	2.12	4.12	4.75	3.7	6.4
30	Colombia	3.79	3.61	3.25	5.5	1	2.12	1.18	1	2.8	6.4
31	Belgium	3.79	1.87	1	1	3.25	1	4.12	3.99	4.15	6.4
32	Nigeria	3.8	1	4.12	3.25	3.25	3.25	2.87	1	2.8	6.4
33	Cameroon	3.8	3.9	2.74	1	3.25	2.12	3.99	1	4.6	5.95
34	Bulgaria	3.83	1	1	3.25	1	4.37	1.37	1	5.95	6.85
35	Greece	3.84	1.87	1	1	1	2.12	5.75	4.75	2.35	6.4
36	Senegal	3.88	3.32	2.37	3.25	1	3.25	3.25	3.99	3.25	5.5
37	France	3.95	2.16	1	2.12	3.25	3.25	6	7	5.5	4.15
38	Hong Kong	4.03	2.91	2.23	2.65	2.45	2.25	4.03	3.6	4.37	2.92
39	Israel	4.03	2.91	2.23	2.65	2.45	2.25	4.03	3.6	4.37	2.92
40	Singapore	4.03	2.91	2.23	2.65	2.45	2.25	4.03	3.6	4.37	2.92
41	Finland	4.05	2.16	3.25	1	3.25	1	3.37	3.99	3.7	6.85

Services World Rank	Country	Services	Finance Mode 1	Finance Mode 3	Telecom Mode 3	Retail Mode 3	Transportation Mode 1	Transportation Mode 3	Professional Mode 1	Professional Mode 3	Professional Mode 4
42	United States	4.05	2.74	3.25	1	1	2.12	2.5	1.74	5.5	7.3
43	Hungary	4.07	1.87	1.87	1	1	3.25	5.5	7.75	2.8	5.5
44	Spain	4.11	2.16	1	1	1	3.25	3.75	3.99	2.8	7.3
45	Portugal	4.13	4.91	1	1	3.25	1	4.12	4.75	2.8	6.4
46	Kazakhstan	4.17	3.32	3.25	3.25	1	7.75	1.61	1	1.45	6.4
47	Denmark	4.19	1.58	1	1	3.25	1	3.37	3.99	4.6	7.75
48	Argentina	4.2	7.45	1	1	1	3.25	2.99	1	5.5	6.4
49	Austria	4.26	2.16	1	1	1	3.25	4.27	1.74	5.95	7.75
50	Honduras	4.32	6.08	1	5.5	1	1	4.56	7	1.9	5.5
51	South Africa	4.47	1	3.25	3.25	3.25	2.12	5.31	1	6.4	7.75
52	Japan	4.52	2.74	1	3.25	3.25	2.12	3.06	7	5.5	6.4
53	Russian Federation	4.57	3.9	5.5	5.5	1	5.5	1.74	1	1	7.3
54	Jordan	4.58	3.32	3.75	3.25	3.25	2.12	7.49	1	8.2	6.4
55	Pakistan	4.59	6.37	5.5	2.12	1	5.5	2.74	1.74	5.05	5.95
56	Morocco	4.62	6.08	1.87	3.25	1	4.37	2.99	3.99	4.15	6.4
<i>57</i>	Vietnam	4.63	4.73	4.62	5.5	5.5	3.25	4.99	1	1.9	6.4
58	Guatemala	4.7	8.83	1.87	1	1	1	2.5	10	3.7	5.5
59	Italy	4.71	2.16	2.16	1	3.25	1	4.99	7.75	4.6	7.3
60	Mexico	4.72	6.87	1.87	4.37	1	3.25	7.18	1	3.7	6.85
61	Brazil	4.73	4.7	4.04	1	1	3.25	2.12	10	5.5	5.5
62	Venezuela, RB	4.74	4.01	3.25	3.25	3.25	3.25	4.31	1	9.1	6.85
63	Korea, Rep.	4.84	3.03	1	5.5	1	3.25	2.87	3.99	6.4	7.75
64	Oman	4.86	4.49	4.12	6.62	5.5	4.37	5.05	1	5.5	5.95
65	Indonesia	5.14	2.45	3.25	3.25	5.5	3.25	7.49	1	10	7.3
66	Qatar	5.19	4.49	7.75	10	5.5	2.12	6.69	1	5.5	5.95
67	Côte d'Ivoire	5.23	2.16	2.37	3.25	1	6.62	2.5	5.5	6.85	7.75
68	Bahrain	5.23	7.75	5.5	5.5	5.5	2.12	6	7.75	5.95	4.15
69	Kuwait	5.25	3.32	5.5	7.75	5.5	5.5	5.5	5.5	7.75	4.6
70	Sri Lanka	5.26	4.7	3.25	5.5	3.25	3.25	5.62	1	5.5	8.2
71	Mali	5.28	3.32	2.95	5.5	1	7.75	1	1	10	7.75
72	Algeria	5.31	10	2.66	3.25	1	4.37	8.31	1	4.6	6.85
73	Panama	5.35	3.32	1	3.25	10	1	4.75	3.99	6.4	8.2
74	Turkey	5.45	2.85	1	1	1	2.12	4.12	5.5	9.55	9.55
<i>75</i>	Saudi Arabia	5.52	3.32	5.5	3.25	3.25	3.25	4.99	3.99	7.3	8.2
76	China	5.53	7.45	3.83	5.5	3.25	4.37	2.99	1	7.3	7.75

Services World Rank	Country	Services	Finance Mode 1	Finance Mode 3	Telecom Mode 3	Retail Mode 3	Transportation Mode 1	Transportation Mode 3	Professional Mode 1	Professional Mode 3	Professional Mode 4
<i>77</i>	Bangladesh	5.65	6.26	4.62	6.62	3.25	6.62	5.87	3.25	1	7.3
<i>7</i> 8	Brunei Darussalam	5.68	4.71	3.75	4.88	4.06	4.06	5.14	3.72	6.97	7.91
<i>7</i> 9	Lebanon	5.82	3.32	3.25	3.25	3.25	4.37	7.59	4.75	8.2	8.2
80	Philippines	5.9	5.57	4.62	5.5	5.5	3.25	5.5	1	10	8.2
81	Malaysia	6.05	3.72	5.5	3.25	3.25	4.37	6.24	3.99	6.85	9.1
82	Costa Rica	6.08	6.08	3.25	4.37	1	2.12	3.99	10	2.8	9.1
83	Nepal	6.31	4.01	3.25	5.5	3.25	7.75	5.39	3.99	7.75	8.65
84	Tunisia	6.43	6.08	4.12	3.25	3.25	3.25	6.49	7.75	7.75	8.65
85	Thailand	7.13	7.67	5.5	5.5	3.25	4.37	5.5	7	5.5	10
86	India	7.17	5.79	5.5	5.5	7.75	5.5	6.87	10	10	7.3

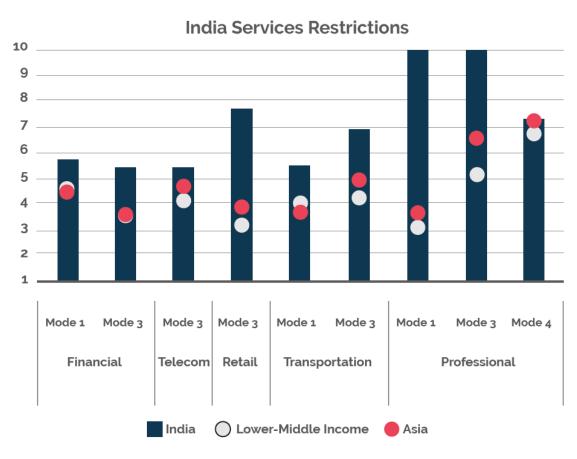


Figure 7: India Services Restrictions

Facilitation, the final component of the TBI, incorporates property rights, digital trade restrictions, logistics, and participation in regional trade agreements. Together they ensure individuals can own their property, conduct e-commerce, and utilize transport infrastructure to ship and receive goods from the world (figure 8) summarizes scores by region and table 7 includes all Facilitation scores.

TABLE 7: FACILITATION SCORE AND COMPONENTS

Facilitation World Rank	TBI Rank	Country	Facilitation	Property Rights	Logistics	Digital	RTAs
1	4	Netherlands	2.04	1.67	3.2	2.29	1
2	5	Sweden	2.12	1.6	3.13	2.8	1
3	8	United Kingdom	2.15	1.85	3.27	2.5	1
4	13	Finland	2.16	1.3	3.31	3.04	1
5	15	Austria	2.2	1.99	3.19	2.62	1
6	16	Denmark	2.27	1.83	3.26	2.98	1
7	9	Luxembourg	2.31	1.7	4.08	2.47	1
8	11	Belgium	2.37	2.32	3.16	3.01	1
9	6	Ireland	2.41	2.34	4.35	1.96	1
10	12	Germany	2.52	2.09	2.79	4.21	1
11	14	Czech Republic	2.61	3.02	3.96	2.47	1
12	22	Portugal	2.66	3.06	4.05	2.56	1
13	18	Estonia	2.78	2.81	4.79	2.53	1
14	19	Switzerland	2.87	1.38	3.47	3.16	3.47
15	27	Spain	2.89	3.48	3.62	3.46	1
16	37	Italy	2.96	4	3.83	3.01	1
17	26	France	2.98	2.81	3.59	4.54	1
18	7	Poland	3.05	3.9	4.28	3.01	1
19	23	Slovenia	3.05	3.91	4.79	2.53	1
20	24	Cyprus	3.11	3.76	5.16	2.53	1
21	31	Hungary	3.11	3.9	4.55	3.01	1
22	25	Malta	3.14	3.26	5.91	2.38	1
23	1	Singapore	3.17	1.59	3.25	2.8	5.05
24	21	Lithuania	3.21	3.57	5.46	2.83	1
25	30	Slovak Republic	3.33	3.72	5.43	3.16	1
26	35	Latvia	3.38	4.28	5.92	2.32	1
27	33	Bulgaria	3.4	4.6	5.42	2.59	1
28	34	Greece	3.42	4.73	5.03	2.92	1
29	36	Croatia	3.42	4.82	5.26	2.62	1
30	38	Chile	3.45	3.11	4.78	1.99	3.92
31	29	Romania	3.47	4.18	5.23	3.49	1
32	39	Japan	3.52	1.76	3.19	2.5	6.62

Facilitation World Rank	TBI Rank	Country	Facilitation	Property Rights	Logistics	Digital	RTAs
33	3	New Zealand	3.62	1.36	3.52	1.87	7.75
34	54	United States	3.9	1.87	3.5	2.95	7.3
35	17	Australia	4.01	1.67	3.8	3.04	7.52
36	10	Canada	4.06	1.7	3.86	3.4	7.3
37	2	Hong Kong	4.29	2.15	3.42	2.5	9.1
38	73	Korea, Rep.	4.45	3.55	4.12	3.76	6.4
39	48	Panama	4.46	4.16	4.87	1.96	6.85
40	20	Israel	4.8	2.87	4.8	2.89	8.65
41	51	Costa Rica	4.84	3.42	5.96	2.47	7.52
42	79	Turkey	4.93	4.71	5.17	4.57	5.27
43	32	Peru	4.97	4.77	6.19	2.53	6.4
44	47	Qatar	5.05	2.82	4.43	3.17	9.77
45	55	Malaysia	5.06	3.5	5	4.45	7.3
46	58	Mexico	5.08	4.82	5.38	3.49	6.62
47	42	South Africa	5.08	3.65	4.65	2.95	9.1
48	86	India	5.16	4.36	5.1	4.33	6.85
49	41	Colombia	5.17	4.48	5.63	3.07	7.52
50	83	Thailand	5.27	4.68	4.57	4.33	7.52
51	56	Uruguay	5.3	3.8	6.2	2.99	8.2
52	49	Oman	5.36	3.66	5.05	3.17	9.55
53	78	Philippines	5.38	4.78	5.71	2.86	8.2
54	77	Brazil	5.41	4.25	5.53	3.91	7.97
55	62	Bahrain	5.54	3.82	5.64	3.17	9.55
56	64	Saudi Arabia	5.55	3.81	5.47	3.17	9.77
<i>57</i>	53	Paraguay	5.6	5.48	5.98	2.53	8.42
58	43	Jordan	5.62	3.8	6.2	3.17	8.65
59	40	Honduras	5.65	5.27	6.39	2.99	7.97
60	66	Vietnam	5.71	4.92	4.88	5.32	7.75
61	85	China	5.74	4.09	4.13	7.66	7.07
62	71	Argentina	5.74	4.97	5.75	4.06	8.2
63	59	Kuwait	5.81	4.51	5.81	3.17	9.77
64	72	Indonesia	5.83	4.66	5.16	4.84	8.65
65	28	Brunei Darussalam	5.84	5.23	6.16	3.34	8.65
66	74	Tunisia	5.85	4.9	6.46	3.17	8.87
67	52	Ghana	5.93	4.36	6.47	3.11	9.77
68	80	Morocco	5.94	4.35	6.53	4.01	8.87
69	44	Trinidad and Tobago	5.96	4.28	6.81	2.99	9.77
70	45	Guatemala	6.01	4.99	6.81	2.99	8.42
<i>7</i> 1	50	Sri Lanka	6.07	4.76	6.4	4.01	9.1

Facilitation World Rank	TBI Rank	Country	Facilitation	Property Rights	Logistics	Digital	RTAs
72	46	Ecuador	6.07	5.28	5.76	3.91	9.32
<i>73</i>	65	Kazakhstan	6.12	5.16	5.92	4.97	8.42
74	70	Côte d'Ivoire	6.12	5.41	5.31	4.01	9.77
<i>75</i>	67	Russian Federation	6.18	5.11	6.04	5.38	8.2
76	63	Lebanon	6.18	5.65	6.13	3.17	9.77
77	68	Cameroon	6.24	5.67	6.41	3.11	9.77
78	69	Pakistan	6.26	6.36	6.8	3.46	8.42
79	60	Senegal	6.32	4.99	7.18	NA	10
80	76	Bangladesh	6.39	6.63	6.45	4.01	9.32
81	84	Algeria	6.44	5.86	6.74	3.17	10
82	57	Nigeria	6.47	6.07	6.55	3.28	10
83	61	Bolivia	6.69	6.02	6.94	4.01	9.77
84	82	Venezuela, RB	6.96	7.02	7.23	3.82	9.77
85	81	Nepal	7.14	5.05	6.59	NA	9.77
86	75	Mali	7.23	5.27	6.42	NA	10

Regional Facilitation Score

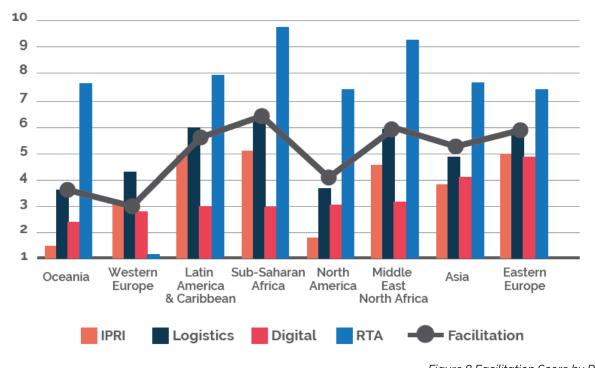


Figure 8 Facilitation Score by Region

It was particularly important to include digital trade restrictions due to the recent onslaught of countries promoting digital service taxes, excessive privacy regulations, as well as data localization measures. The worst abusers in this category are authoritarian regimes like China (74th), Russia (82nd), and Vietnam (81st), at the end are also France (77th) and Germany (73rd) who are not usually associated with such regimes (figure 9) yet advocate for digital trade barriers in Europe.

Digital Trade Restrictions

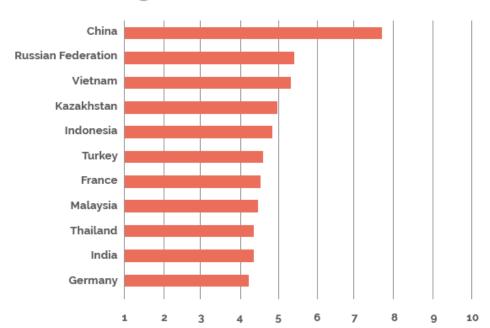


Figure 9: Leading Digital Restrictions

TRADE BARRIERS BY INCOME AND GEOGRAPHIC GROUPS

Countries were organized according to their World Bank income classification and their regional location.

INCOME CLASSIFICATION

Overall the High-income economies have the fewest trade restrictions identified by the TBI and trade restrictions increased in order of income with the Low-income countries deploying the most trade barriers (figure 10). The high scores for Low-income countries are mostly attributed to high tariff scores, weak facilitation of property rights, membership in few trade agreements; as well as market entry restrictions on foreign businesses.

TBI and Components by Income Group

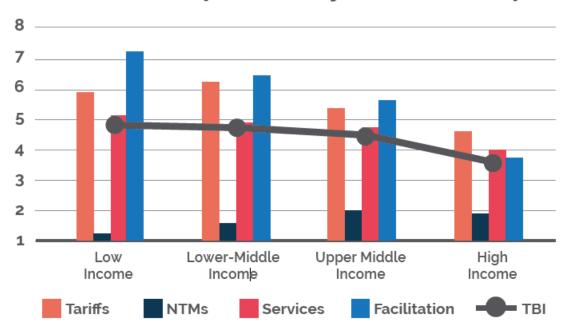


Figure 10: TBI and Components by income group

The only category in which the opposite occurred is in NTMs where Low-income countries have the least active measures. Most NTMs occur as Sanitary and Phytosanitary (SPS) regulations or Technical Barriers to Trade (TBT), this is true in all income categories, except on a different scale – in Low and Lower-Middle income countries the average number of TBT measures is only 179 while High-income and Upper-Middle income economies the average number is 383.

The larger number of NTMs in rich countries may indicate a greater institutional capacity to regulate imports. However, rich countries are known to use such measures in a protectionist fashion to block imports of competitive agricultural goods on grounds such as consumer safety that leave little recourse for affected industries. For instance, the EU deploys a number of SPS measures restricting the ability to import genetically modified food and live animals. The measures have resulted in a de facto moratorium on the products despite evidence that the regulations do not improve safety and only serve to protect vested interests.

The widest gap between Low-income and High-income economies occurs in Facilitation where the difference is 3.67 points between them. The greatest variation in scores (figure 11) occurs in the Upper-Middle income group where the best performer is Romania, the only member of the EU in the group. Many other members in the group are also the world's worst abusers of the trade barriers overall: China 85th, Algeria 84th, Thailand 83rd, Venezuela 82nd, Turkey 79th, and Brazil 77th.

TBI Distribution by Income Group

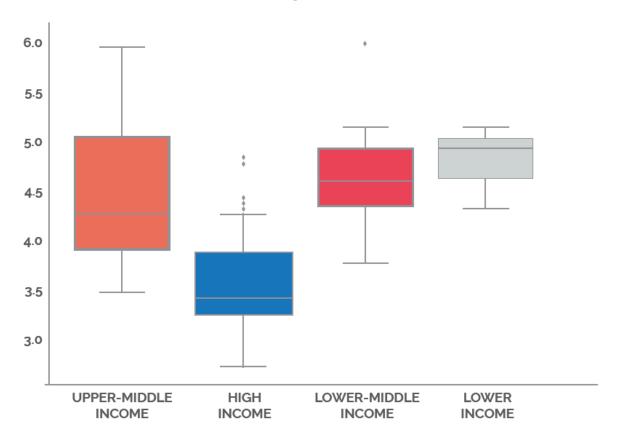


Figure 11: Distribution of TBI by Income Group

TBI BY REGION

According to regional classification (figure 12) Oceania and Western Europe utilize trade barriers the least. They also have similar institutions and historical roots. Oceania is New Zealand and Australia while Western Europe is composed of the members of the European Union plus Switzerland. They are followed closely by North America which is Canada and the United States.

Regions with the highest use of trade barriers are Eastern Europe, which includes Russia and Kazakhstan, and increasingly authoritarian Turkey; followed by Asia which includes China and India the last two countries in the TBI.



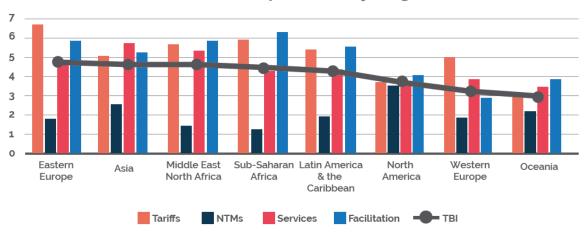


Figure 12: TBI and components by regional groups

Asia is also home to Hong Kong and Singapore, the leaders of the TBI, allowing it to display the widest variance in scores (figure 13). In Western Europe, where all members, including Switzerland, are bound by EU trade rules consequentially share scores for three out of the seven indexes that makeup the TBI, displays the least variance in scores.

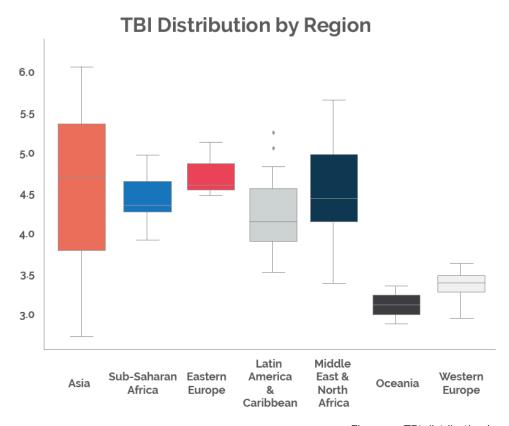


Figure 13: TBI distribution by regional group

TRADE BARRIERS AND PEOPLE

Trade is between people. In terms of individuals that enjoy the freedom to trade goods and services across borders without governments getting in the way, the number is strikingly few. Only half of one percent of the world's total population live in 4 countries with governments that practice a laissez faire trade regime. In the 3-4 range of the TBI, 38 percent of the world, occupying a total of 72 countries live under regimes that practice managed trade with barriers on key industries. The 5.0 to 6.0 range is populated by ten countries including India, China, Brazil, Turkey, and Thailand that together are home to almost a full half of the world's people—44.2 percent live under regimes that practice severe trade restrictions (figure 14).

Though only 14 percent of the world's population live in economies with the least trade barriers they contribute an outsized economic output than the rest of the world. Those 45 countries produce 35 Percent of the world's GDP, are responsible for 51 percent of exports, and 48 percent of the world's imports. While the 10 with the highest TBI scores only produce 23 percent of the world's GDP, 17 percent of exports, and 17 percent of the world's imports, yet are home to 44.2 percent of the world's people.

Percent of World Population in TBI Range

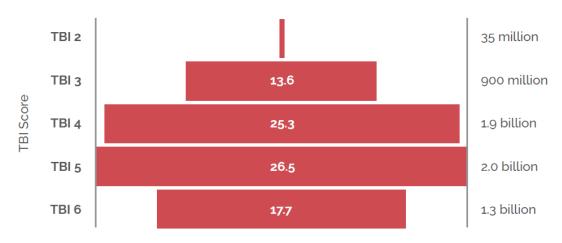


Figure 14: TBI and Population

CORRELATIONS WITH FREEDOM AND COMMERCE

To analyze the effectiveness of the TBI at capturing trade barriers as an abuse of liberty scores were correlated with established indexes dedicated to measuring freedom and other social indicators. The TBI correlated strongest with the Cato Institute's Human Freedom Index .78 and the Legatum Institute's Prosperity Index .76, both utilize a large number of indicators, 79 and 104 respectively. It demonstrates a clear relationship between the presence of trade barriers and the ability of countries to achieve greater levels of freedom and prosperity. Similarly, a robust correlation was found between the perception of corruption .71 and press freedom .68 with the TBI. The measures lend credibility to the arguments that reducing trade barriers allows ideas to be exchanged freely and

reduces the power of the well connected to advocate for protections at the expense of higher costs to diffuse others (figure 15).

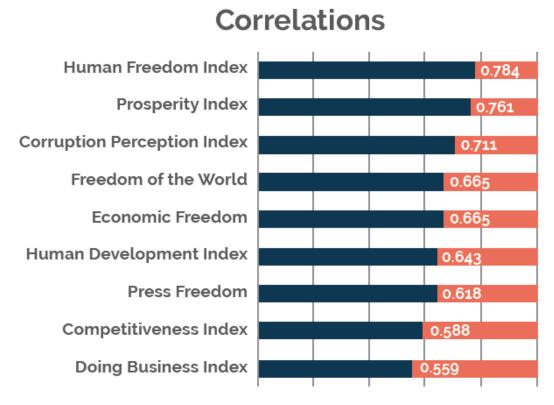


Figure 15: Correlations with TBI

FINAL REMARKS

This marks the end of the first edition of the International Trade Barrier Index. It collected data on 86 countries from seven sources and compiled it into four main categories of trade barriers. The countries accounted for 91.5 percent of world imports, 91.5 percent of world exports, 93.9 percent of world GDP, and 83.5 percent of the world's population.

In future editions we plan to track changes in the TBI scores over time. There are also several opportunities to expand the report to include further analysis of trade barriers and Regional Trade Agreements and as well as to perform more rigorous analysis services, NTMs, and digital restrictions as more data becomes available in these quickly expanding fields.

The real results of the 2019 Trade Barrier Index are yet to be revealed. At present, the United States and China, the world largest trading economies, are continuing to levy tit-for-tat tariffs in an on-going trade war. At the same time, the U.S. and the EU are raising tariffs on each other due to WTO cases regarding subsidies to national champion plane markers. Other trade disputes continue to add barriers to the exchange of goods and services worldwide: the rising prevalence of digital taxes and

privacy regulations, Brexit, the uncertain future of the WTO Appellate Board, a trade war between Japan and the Republic of Korea, while USMCA, RCEP, and Mercosur-EU trade agreements are stuck in limbo.

So far, the uncertainty generated by these trade conflicts have resulted in the <u>International Monetary Fund</u> downgrading its forecast for global growth and the <u>World Trade Organization</u> downgrading its forecast for merchandise trade. And resolution continues to depend on the political weather. Caste aside and left as collateral damage are the people and businesses that conduct trade. The Trade Barrier Index will show its real worth if it can help tie resolution to these trade disputes to reducing the barriers they face in day-to-day operations.

A TRIBUTE TO HONG KONG

FREE TRADE AND FREE MINDS: LAISSEZ-FAIRE HONG KONG DEFENDS LIBERTY

Hong Kong is a bastion for free-trade, transparent democracy, and independence in a region rife with quite the opposite, including state led enterprises. The recent, record-breaking protests warning against Beijing's increasing encroachment on local politics highlights the role free-trade plays in creating understanding and tolerance while trade barriers herald violence.

Besides specialization and comparative advantage that underpin the economic arguments for free trade, the moral argument is just as important. Trade allows ideas, sciences, and arts from far off corners of the globe to cross borders just as easily as goods. These voluntary exchanges allow different people to appreciate, understand, and adopt at their own pace whatever behaviors and new ideas they find they can benefit from. It is in this vein that Richard Cobden, the outspoken opponent of Britain's corn laws said that free trade would lead humanity to "become one family," as well as share common economic interests.

Perhaps nowhere is this more graphically evident than in the 1997 Pizza Hut commercial starring former Soviet Union leader Mikhail D. Gorbachev³. As the final leader of the USSR enters the American restaurant chain, famous for serving the iconic Italian food, fellow Muscovites argue over whether Russia is in a better place due to his resignation and the new capitalist orientation of the economy. Just before it breaks out into a fist fight an elderly woman cools down the warring crows by declaring something all sides can agree is a true positive "because of him we have things like Pizza Hut." All patrons proceed to raise slices of pie toasting "Hail to Gorbachev!"

²Quoted in John Chodes, "Richard Cobden: Creator of the Free Market," in *The Industrial Revolution and Free Trade*, ed. Burton W. Folsom (Irvington-on-Hudson, NY: Foundation for Economic Education, 1996), pp. 41–42.

³ https://youtu.be/fgm14D1jHUw



Of course, the opposite is also true. The quote "when goods cannot cross borders, armies will" is often attributed to 19th century liberal economist Frederic Bastiat. More bluntly, Cordell Hull, the longest serving U.S. Secretary of State, Nobel Prize winner for his role in founding the United Nations, and whose work ultimately led to the General Agreement on Trade and Tariffs, the precursor to the World Trade Organization, believed free trade was necessary for lasting peace.

"I have never faltered and I will never falter, in my belief that enduring peace and the welfare of nations are indissolubly connected with friendliness, fairness, equality and maximum practicable degree of freedom in international trade."

Of all the recently erected trade barriers, which spurred the need the for the Trade Barrier Index, nowhere are both pictures of free trade as a harbinger of peace, prosperity, and the sharing of ideas more apparent or the erection of barriers as a precursor to violence more prescient than Hong Kong, the #2 country in the 2019 TBI for least barriers.

John Cowperthwaite, Hong Kong's British financial secretary is credited with implementing positive non-interventionism in the 70s and resisting bureaucratic calls for higher taxes to fund defense and social projects. Hong Kong's import tariffs remained zero through Cowperthwaite's term and still are today. In his first budget speech he stated his belief that a free economy would better serve society's needs than an interventionist government.

⁴Cordell Hull, Economic Barriers to Peace (New York: Woodrow Wilson Foundation, 1937, p.14).

"In the long run, the aggregate of decisions of individual businessmen, exercising individual judgment in a free economy, even if often mistaken, is less likely to do harm than the centralised decisions of a government, and certainly the harm is likely to be counteracted faster."⁵

As a result, ideas of freedom, democracy, and openness that flowed through Hong Kong's ports and were protected by Hong Kong's courts became enshrined in the Basic Law. This set of laws is referred to as a mini-constitution for Hong Kong, it is the law of the land since Hong Kong returned to Chinese sovereignty in 1997 and was written in negotiations between Beijing and the United Kingdom.

The "one country, two systems" principle is outlined in Article 5 of the Basic Law "the socialist system and policies [of the mainland] shall not be practiced in the Hong Kong Special Administrative Region, and the previous capitalist system and way of life shall remain unchanged for 50 years [until 20147]."

Other key freedoms protected in the Basic Law include Article 6 which protects private property rights; Article 2 protects autonomy and guarantees Hong Kong's courts to have final adjudication rights; and Article 26 states Hong Kong residents have the right to vote and stand for election.

Crucially, Article 27 ensures "Hong Kong residents shall have freedom of speech, of the press and of publication; freedom of association, of assembly, of procession and of demonstration; and the right and freedom to form and join trade unions, and to strike."

At the time of this writing, thousands of paramilitary People's Armed Police Forces (PAP) are stationed outside of Hong Kong in the Shenzhen Bay Sports Center; many fear, awaiting orders to storm Hong Kong in an attempt to silence protestors. At the same time Beijing has signaled it is considering replacing Hong Kong's current Chief Administrator Carrie Lam.

The direct cause of the protest is an extradition bill that would allow Beijing to request Hong Kong to deliver wanted criminals. Fear of the Chief Executive's close ties to the Communist Party have led many to believe, if made law, Hong Kong would hand over all who use their free speech to voice dissent. After two million took to the streets to protest using umbrellas to shield their eyes from tear gas and faces from AI recognition software the bill has been removed.

However, the stakes have been raised with the central government warning that the protesters may look like "real terrorism." If such a determination is made it opens the door for the Chinese military and the PAP paramilitary group to play a role in the present or to quell future protests. All fear another Tiananmen square massacre is on the horizon.

Looking back, a coordinated campaign to raise trade barriers, particularly of books, may have been a sign of an inevitable clash.

⁵Obituary of Sir John Cowperthwaite, The Daily Telegraph, 26 January 2006.

⁶ https://www.ft.com/content/5ec723e0-bfd0-11e9-b350-db00d509634e

Beijing which operates a great online firewall that earned it the lowest ranking in Freedom House's Freedom of the Net Index⁷, a strict offline censorship regime, and a social credit system to incentivize "self-regulation" is worried democratic ideas and books detailing events like the 1989 Tiananmen Square protests, which are illegal in the mainland, may be imported from Hong Kong.

Since 1997 the flow of tourists from the mainland to Hong Kong increased 1,760% to 42 million in 2016.⁸ Their visits were made possible by rising incomes, the desire for un-tainted imported products like powdered milk, and many came as "democracy tourists" fueled with a desire to see what life, and ideas, were like outside the firewall.

Book stores in Hong Kong saw increasing sales on items forbidden in the mainland which reveal the Communist party behind the scenes. Books that offered information on purges, party dissent, news on the latest corruption cases, the 1989 Tiananmen square crackdown, and democracy flew off the shelves. Probably also along with complimentary reads about authentic Italian cooking.

Then suddenly in 2015 five booksellers associated with publisher Mighty Current and its shop Causeway Bay Books were separately arrested by mainland authorities. Their whereabouts and charges were kept from them, their family, and the public until they were forced to confess on Chinese state TV for fabricated crimes- including selling forbidden books without a license.

The former head of Causeway Bay Books Gui Minhai is still missing, he abduction appears to have occurred on his return from a vacation in Thailand. One of the abducted booksellers Lam Wing-Kee who was allowed to return to Hong Kong on bail, but never returned, is concerned that if the extradition law ever passes he will be one of the first on Beijing's list to go back.⁹

It sounds like a crime that could only exist in dystopian science fiction like Ray Bradbury's "Fahrenheit 451." In reality, Beijing did make a rule to require a license to import books from abroad. The regulation, which began early in 2017, requires government approval for all foreign imported books, games, and movies; sellers need an import certification declaring approval from censors for each item.¹⁰

Back in Hong Kong, the free-thought scene is nearly finished. The law in Hong Kong is clear, selling books banned by Beijing is perfectly legal. However, harassment and the threat of abduction has forced the surviving sellers to stop completely. That threat, coupled with the purchase of three of the largest bookstore chains in Hong Kong by the mainland Sino United Publishing (around the same times as the abductions) has put Beijing in control of 80 percent of the publishing in Hong Kong.¹¹ The Guardian reports that one of the last independent shops the People's Bookstore owned by Paul

⁷ https://freedomhouse.org/report/freedom-net/2018/china

⁸ https://www.ft.com/content/7e2422b8-5bb1-11e7-9bc8-8055f264aa8b

⁹ https://www.reuters.com/article/us-hongkong-taiwan-bookseller/specter-of-extradition-law-spreads-as-hong-kong-bookseller-flees-to-taiwan-idUSKCN1S51J3

¹⁰ https://www.rfa.org/english/news/china/permit-03102017115213.html

¹¹ https://www.rfa.org/english/news/china/hongkong-bookstores-05072018091716.html

Tang closed in 2018.¹² Surviving bookstores selling banned items have scurried to the "second floor," where they are out of public view. Their owners only reveal democratic items to known customers.

Economically, the requirement to have an import license for published media and to have all such items approved by the central authority is a small trade barrier with limited distortions in its wake. Non-economically, the harassment from Beijing on what booksellers in Hong Kong can sell, and who they can sell to, in effect restricting the free-market and free speech rights guaranteed in the Basic Law until 2047 has galvanized the umbrella movement protestors. They are fighting to prevent "one-country, one system" rule. Apparently that is precisely the de-facto system for Hong Kong's bookstores. Sadly, it seems, instead of Beijing welcoming Winnie-the-Pooh imports¹³ its trade barriers restricting thought and cultural exchange may continue to pave the way for continuing protests.

¹² https://www.theguardian.com/cities/2018/oct/31/a-chapter-closes-last-hong-kong-bookshop-selling-titles-banned-in-china-shuts

¹³ https://www.theguardian.com/world/2018/aug/07/china-bans-winnie-the-pooh-film-to-stop-comparisons-to-president-xi

APPENDIX

APPENDIX I

TBI-2019	Data	Download date	Original Scale	Year	Source	Link
SUBINDEX: TARIFFS	Simple Average MFN Applied	July 31, 2019	0-100		2019 WTO Tariff Profiles	https://www.wto.org /english/res_e/publi cations_e/world_tarif f_profiles19_e.htm
	Duty Free Score		0-100			
	Tariff Line Score		0- infinite			
	Non-Tariff Measures applied to all countries		o- infinite	As of Feb 4, 2019	UNCTAD, TRAINS NTMs database through	
SUBINDEX: NON-TARIFF MEASURES	Non tariff measures Applied Bilaterally	February 4, 2019	0- infinite		Integrated Trade Intelligence Portal (I-TIP), Extract made on 02/04/2019 16:38	
SUBINDEX: SERVICES RESTRICTINS	Mode 1	June 17, 2019	0-100	2018	The World Bank's Services Trade	https://datacatalog. worldbank.org/datas et/services-trade-
RESTRICTINS	Mode 4				Restrictions Database	restrictions-database
	Property Rights	August 14, 2019	0 to 10	2018	The 2019 International Property Rights Index	http://internationalpr opertyrightsindex.org
IPRI- FACILITATION	Logistics	June 19, 2019	0 to 5	2018	Logistics Performance Index (LPI),	https://lpi.worldbank. org/
	Digital Trade	July 25, 2019	0 to 1	2018	Digital Trade Restrictivenes s Index	http://ecipe.org/dte /dte-report/
	Regional Trade Agreements	July 5, 2019	o- infinite	As of July 5, 2019	WTO Regional Trade Agreement Database	http://rtais.wto.org/ UI/PublicMaintainRT AHome.aspx

TBI-2019	Data	Download date	Original Scale	Year	Source	Link
IPRI- POPULATION	Population	April 28, 2018	Thousan ds	2015 (2017 Revision)	United Nations. Population Division. World Population Prospects: The 2017 Revision.	-

APPENDIX II

Country/Territory	Year of WTO Profile report	Year of MFN applied tariff
Algeria	2019	2018
Argentina	2019	2018
Australia	2019	2018
Austria	2019	2018
Bahrain, Kingdom of	2019	2018
Bangladesh	2019	2018
Belgium	2019	2018
Bolivia, Plurinational State of	2019	2018
Brazil	2019	2018
Brunei Darussalam	2019	2018
Bulgaria	2019	2018
Cameroon	2014	2014
Canada	2019	2018
Chile	2019	2018
China	2019	2018
Colombia	2019	2018
Costa Rica	2019	2018
Côte d'Ivoire	2019	2018
Croatia	2019	2018
Cyprus	2019	2018
Czechia	2019	2018
Denmark	2019	2018
Ecuador	2019	2018
Estonia	2019	2018
Finland	2019	2018
France	2019	2018

Country/Territory	Year of WTO Profile report	Year of MFN applied tariff
Germany	2019	2018
Ghana	2019	2018
Greece	2019	2018
Guatemala	2015	2015
Honduras	2019	2018
Hong Kong, China	2019	2018
Hungary	2019	2018
India	2019	2018
Indonesia	2019	2018
Ireland	2019	2018
Israel	2019	2017
Italy	2019	2018
Japan	2019	2018
Jordan	2019	2018
Kazakhstan	2019	2018
Korea, Republic of	2019	2018
Kuwait, the State of	2019	2018
Latvia	2019	2018
Lebanese Republic	2019	2018
Lithuania	2019	2018
Luxembourg	2019	2018
Malaysia	2019	2017
Mali	2019	2018
Malta	2019	2018
Mexico	2019	2018
Morocco	2019	2017
Nepal	2019	2018
Netherlands	2019	2018
New Zealand	2019	2018
Nigeria	2016	2016
Oman	2019	2018
Pakistan	2019	2018
Panama	2019	2018
Paraguay	2019	2018
Peru	2019	2018
Philippines	2019	2018

Country/Territory	Year of WTO Profile report	Year of MFN applied tariff
Poland	2019	2018
Portugal	2019	2018
Qatar	2019	2018
Romania	2019	2018
Russian Federation	2019	2018
Saudi Arabia, Kingdom of	2019	2018
Senegal	2019	2018
Singapore	2019	2018
Slovakia	2019	2018
Slovenia	2019	2018
South Africa	2019	2018
Spain	2019	2018
Sri Lanka	2019	2018
Sweden	2019	2018
Switzerland	2019	2018
Thailand	2019	2017
Trinidad and Tobago	2013	2013
Tunisia	2016	2016
Turkey	2019	2018
United Kingdom	2019	2018
United States of America	2019	2018
Uruguay	2019	2018
Venezuela, Bolivarian Republic of	2019	2018
Viet Nam	2019	2018

APPENDIX III

	IMPUTED SCORES							
	Country Missing Distance to Group, S Value Group Impute				Imputed Score			
1	Algeria	Digital	1.268422044	REGION	3.175			
2	Bahrain	Digital	0.295174729	REGION	3.175			
3	Bangladesh	Digital	0.531575706	INCOME	4.015			

	IMPUTED SCORES							
	Country	Missing Value	Distance to Group	Nearest Group, Score Imputed	Imputed Score			
4	Bolivia	Digital	0.633694569	INCOME	4.015			
5	Brunei Darussalam	Services	1.296740283	INCOME	4.035868824			
6	Cameroon	Digital	0.473549671	REGION	3.115			
7	Côte d'Ivoire	Digital	0.277133707	INCOME	4.015			
8	Croatia	Services	0.245577288	INCOME	4.035868824			
9	Cyprus	Services	0.189361685	REGION	3.793309			
10	Estonia	Services	0.147151222	REGION	3.793309			
11	Ghana	Digital	0.235534861	REGION	3.115			
12	Guatemala	Digital	0.803890261	REGION	2.992			
13	Honduras	Digital	0.738760809	REGION	2.992			
14	Hong Kong	Services	1.300675527	INCOME	4.035868824			
15	Israel	Services	0.861062206	INCOME	4.035868824			
16	Jordan	Digital	0.607253338	REGION	3.175			
17	Kazakhstan	Digital	0.468392772	REGION	4.975			
18	Kuwait	Digital	0.237617513	REGION	3.175			
19	Latvia	Services	0.251390559	REGION	4.035868824			
20	Lebanon	Digital	0.732833958	REGION	3.175			
21	Luxembourg	Services	0.304848409	REGION	3.793309			
22	Mali	Digital	0.110035317	INCOME	X			
23	Malta	Services	0.144757726	REGION	3.793309			
24	Morocco	Digital	0.791469504	INCOME	4.015			
25	Nepal	Digital	0.475209856	INCOME	X			
26	Oman	Digital	0.367837427	REGION	3.175			
27	Qatar	Digital	0.443772279	REGION	3.175			
28	Saudi Arabia	Digital	0.314200694	REGION	3.175			
29	Senegal	Digital	0.266583104	REGION	X			
30	Singapore	Services	1.24852874	INCOME	4.035868824			
31	Slovak Republic	Services	0.234419121	REGION	3.793309			
32	Slovenia	Services	0.180325362	REGION	3.793309			
33	South Africa	NTMs	0.594698036	INCOME	2.073515223			
34	Sri Lanka	Digital	0.741833022	INCOME	4.015			
35	Switzerland	Services	0.115058299	REGION	3.793309			
36	Trinidad and Tobago	Digital	0.705786573	REGION	2.992			

	IMPUTED SCORES							
	Country Missing Distance to Value Group		Nearest Group, Score Imputed	Imputed Score				
37	Tunisia	Digital	0.693791405	REGION	3.175			
38	Uruguay	Digital	0.599455554	REGION	2.992			
39	Venezuela, RB	Digital	1.125917762	INCOME	3.822			