

World Bank-WTO Services Trade Restrictions Index (STRI) Methodology

The World Bank-WTO Services Trade Restrictions Index (STRI) is a measure of the restrictiveness of an economy's regulatory and policy framework with respect to trade in services. It builds on the previous World Bank STRI and is based on the information contained in the Services Trade Policy Database (STPD)¹. Out of the broad set of regulations and measures available in the database, around 150 of them were selected to compute the index.²

Scoring

Services trade policies are assessed by looking at specific types of measures for each subsector and mode. To assess restrictiveness, the severity of individual measures in curtailing services trade is captured in the scores assigned to them. We generally consider 6 distinct levels of restrictiveness on a scale of 0 to 1, each of which attracts a different (monotonically increasing) score. Each individual measure is classified under one of the 6 categories depending on the level of restrictiveness imposed. Table 1 presents these six levels of restrictiveness and provides a concrete policy example for each level.

Table 1: Examples of measures, level of restriction and associated score

Level of Restriction	Examples	Score
Not restrictive	No restriction on the type of legal entity, no foreign equity limitation	0.00
Not restrictive, but minimal procedural/transparency issue	No provision for prior notice of, or comment on, regulatory changes	0.125
Minor restriction	Acquisition of land and real estate by foreigners prohibited	0.25
Neither minor nor major	Limit on number of suppliers	0.50
Major restriction	Services provided by a de facto monopoly or granted on an exclusive basis	0.75
Closed (service provision not possible)	Commercial presence is prohibited	1.00

Additionally, assigning a restrictiveness score to a single measure is insufficient in cases in which specific policies consist of bundles of intertwined measures that are recorded separately. The restrictiveness of those policies can only be assessed by considering the entire bundle of such measures. For example, difficulty in entering a market is most plausibly assessed by looking at the admissible combinations of entry options, rather than individual routes. For mode 3, foreign suppliers may establish commercial presence and supply services either through domestic acquisitions or via greenfield investment. Since these routes represent alternative entry options, we score restrictions for each route in isolation. We call such bundles 'synthetic' measures as they consist of two or more individual measures that are separate entries in the database, but whose impact on restrictiveness is scored jointly for the purposes of constructing the STRI. Details of mode 3 synthetic measures and their scores are provided in Table 4.

¹ Baiker, Laura; Borchert, Ingo; Magdeleine, Joscelyn; Marchetti, Juan (2023). "Services Trade Policies across Africa: New Evidence for 54 Economies.", Policy Research Working Papers; 10537. World Bank, Washington, DC.

² The list of measures selected for the construction of the STRI is provided in Table 3.

Thus, the overall restrictiveness score for a group of policy measures, e.g. at the subsector-mode level for a given economy, results both from the type as well as the number of measures applied. Only when the assessment of restrictiveness, i.e. scoring, is complete at the measure level including synthetic measures, does the process of aggregation start, which is described in the following section.

Aggregation

Individual measure scores are aggregated to higher levels, such as for a given sector-mode or a given broad sector, using the ‘Constant Elasticity of Substitution’ (CES) functional form. The CES function generically combines an array of $i = (1, \dots, N)$ elements x_i according to $X = \left(\sum_{i=1}^N x_i^\alpha \right)^{\frac{1}{\alpha}}$. Using the parameter (α), the CES function calibrates the marginal contribution of an additional restriction to the overall policy restrictiveness. For instance, adding a restrictive measure to a set of other restrictive measures should increase the overall restrictions index. At the same time, adding, say, a tenth restriction to a set of nine restrictions should conceivably have less of an impact on overall restrictiveness than applying the first or second restriction to an otherwise open sector. This is the equivalent to the property of ‘diminishing returns’ which in the context of policy restrictiveness implies that adding more and more restrictions should add progressively less and less to the overall index number. Against the backdrop of these intuitive underpinnings, we combine scores of individual measures m_i for group k according to the aggregator function in equation (1):

$$\text{STRI}^k = \left(\sum_{i=1}^N (m_i^{(k)})^{\rho_k} \right)^{\frac{1}{\rho_k}} \quad (1)$$

The parameter ρ_k governs the way in which constituent scores are combined. In other applications, these groups k are referred to as “CES nests” and different values of ρ can be assigned to group k depending on the context. Specifically, higher values of ρ will lead to smaller incremental contributions of additional measures to aggregate restrictiveness. Higher values of the ρ parameter are appropriate for aggregation if the policy measures in question have similar effects or are mostly substitutable. Conversely, if measures were regarded as adding significantly to the restrictiveness of already applied measures, their relatively high marginal contribution to overall policy restrictiveness can be modelled with a lower value of the aggregation parameter ρ . For any given value of the parameter ρ , the CES aggregation exhibits the following four properties that are crucial for the construction of plausible restrictiveness scores: (i) unlike a simple average, the aggregate score of any arbitrary bundle of restrictions does not depend on the total number of measures considered for quantification – it is independent of the number of measures carrying a 0 score; the restrictiveness score is (ii) increasing in the number of restrictions applied but (iii) at a decreasing rate, i.e. falling marginal restrictiveness of applied policies, and (iv) the marginal contribution to policy restrictiveness of a given measure is not fixed but depends on the co-existence of other applied measures i.e., adding a restrictive measure in the absence of other restrictions has a higher incremental impact on overall restrictiveness than adding that same measure to an existing set of already restrictive measures.

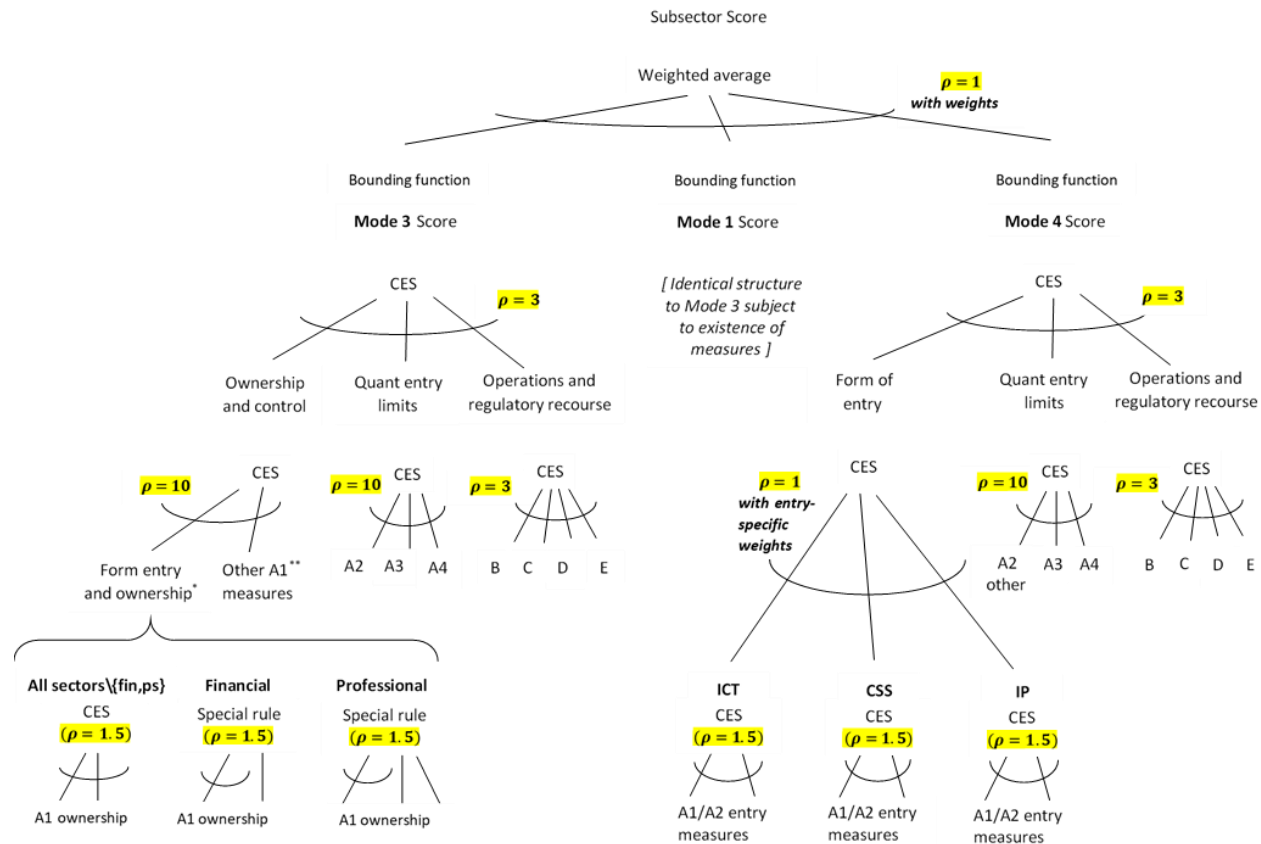
CES functions of the type outlined in equation (1) can be nested to accommodate different layers of aggregation, with each nest potentially having a different CES parameter. We take advantage of this modular property and break down the aggregation of scores across the universe of all measures into several steps, so that bundles of policy measures that bear a similar relationship with each other in terms of substitutability or complementarity correspond to a CES nest with a suitably chosen parameter. The conceptual classification of related measures is set out in Table 2 below. This is

because measures within a given category naturally share a similar relationship vis-à-vis each other, so that they form “nests” that can be aggregated with one suitable chosen ρ parameter. Figure 1 illustrates the structure of aggregation through multiple nests as well as their chosen ρ parameter.

Table 2: Classification of Measures in the Services Trade Policy Database (STPD)

STPD Classification of Measures	
A. Conditions on market entry	
A1	Forms of entry (including foreign equity limits)
A2	Quantitative measures (for firms and natural persons)
A3	Conditions on licensing/investment screening/qualifications relating to market entry
A4	Other conditions of market entry
B. Conditions on Operations	
B1	Conditions on supply of services
B2	Conditions on services suppliers
B3	Conditions on government procurement
B4	Other conditions on operations
C. Measures affecting Competition	
C1	Conditions on conduct of firms
C2	Governmental rights/prerogatives (including public ownership)
C3	Other measures affecting competition
D. Administrative Procedures and Regulatory Transparency	
D1	Administrative procedures
D2	Regulatory transparency (including licensing)
D3	Nature of regulatory authority (measures related to nature of regulator)
D4	International standards
D5	Other regulatory environment and administrative procedures
E. Miscellaneous	

Figure 1: Structure of multi-layered aggregation of measure scores³



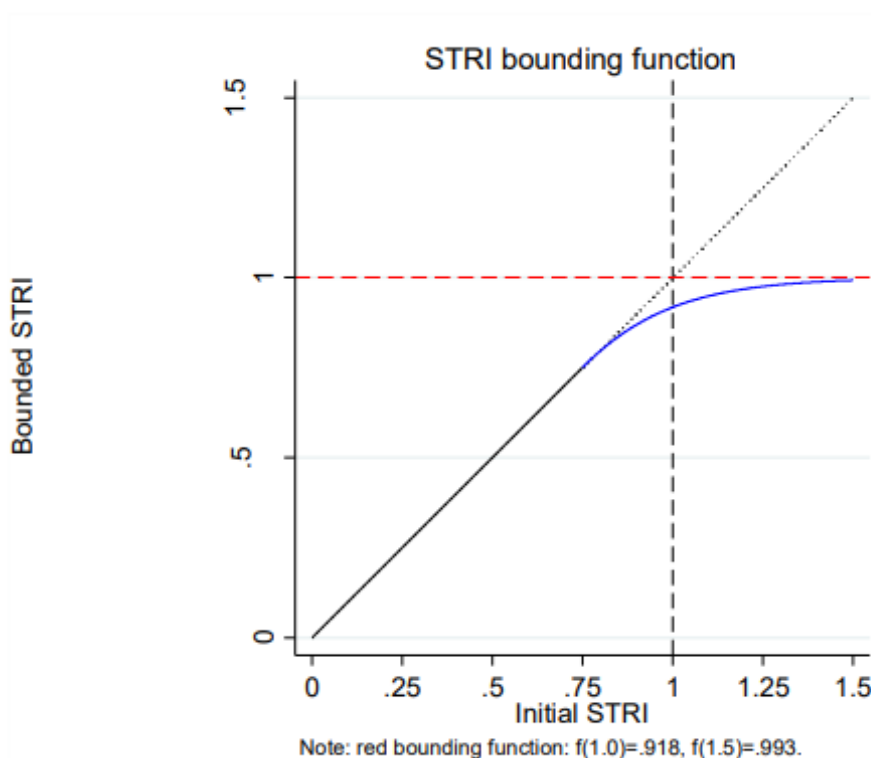
³ Source: authors' representation. Notes: *Policy measures (including synthetic measures) considered as part of 'entry and ownership' for mode 3 are greenfield entry and mergers and acquisitions entry, respectively, in all sectors, and branch entry for financial subsectors, and partnership and sole proprietorship in professional services subsectors. For mode 4, these relate to the different categories of natural persons allowed to enter the market (Intra-Corporate Transferees, Contractual Service Suppliers, Independent Professionals/self-employed). ** The letters A1 to E refer to the principal categories of the measure classification, as set out in Box 1. Thus, "A1" encompasses additional measures of market entry not already included in 'entry and ownership'; e.g. a joint venture requirement or majority of nationals (or residents) on the board of directors

At this stage we obtain one STRI value per subsector and mode (e.g., one value for banking Mode 3). Yet using the concave CES function to aggregate a set of individual measure scores yields a value that is in principle unbounded and could potentially exceed the admissible range for STRI. Thus, we apply a monotonic transformation to ensure that the CES index only approaches 1 in the limit. The generalised logistic function maps the positive real line into the unit interval. That function has 5 free parameters (denoted by A, B, K, Q, η) and takes the following form⁴,

$$f(x) = A + \frac{K-A}{(1+Qe^{-Bx})^{\frac{1}{\eta}}} \tag{2}$$

The transformation only applies to large STRI values, thereby leaving low STRI scores unaffected. We define a two-part bounding function and choose parameters so that the logistic function's concave part is tangential to the 45-degree line at the point where STRI scores would take a value of 0.75, thereby avoiding any discontinuity in the bounding function. At the same time, this causes no distortion to lower STRI values that are far from the value of 1 (a score of 1 continues to be reserved for closed subsector-modes and is not subject to bounding).

Figure 2: STRI Bounding Function and its Application



The next step is to combine the modal scores to one STRI value per subsector, all modes of supply combined. We employ a weighted arithmetic average, with a set of modal weights that differs across subsectors, reflecting the relative importance of the four modes for the provision of a given service (details of modal weights provided in Table 5).

⁴ In terms of the general form in equation (2), the function that we apply has parameter values $A = 0, K = 1, B = 5, Q = 5, 1/\eta = 2.58765$

In the final step, following a classification of subsectors into "broad sector" categories, subsector STRIs are further aggregated to arrive at scores for Communications, Computer, Construction, Finance, Health, Professionals, Tourism, Transport and Distribution sectors. Broad sector STRIs are constructed using value-added weights of services sectors of individual economies' total value added for 2021 (values of weights of individual subsectors in computing broad sector STRIs provided in Table 6).

Comparability between 2016 and 2019-22 STRIs

Comparability between 2016 and 2019-22 sector STRIs is affected by the substantive expansion of the subsector coverage for economies surveyed in 2019-22. Specifically, STRIs for the following subsectors are not available for economies surveyed in 2016: Architecture, Engineering, Computer, Construction, Health, Tourism, Audiovisual and Postal and courier services. Audiovisual and postal and courier services are not available for CEFTA parties surveyed in 2019, nor are road and rail freight transport, with the exception of the Republic of Moldova. Due to the different subsector coverage in 2016 and 2019-22, the composition of sector STRIs varies for Communications and Professional services, as well as for Transportation for CEFTA parties.

Notwithstanding the expansion of the subsector coverage, the comparability of subsector STRIs between 2016 and 2019-22 may be affected by slight changes in the modal composition for telecommunications and road freight transport as Mode 1 is now being considered, thereby altering the STRIs at the subsector level.

Furthermore, in 2016, a limited set of key restrictions, particularly concerning competition and pertaining to telecom services and road freight services, were not available for several economies. To ensure the comparability between the 2016 and 2019-22 STRIs, measures that were absent in 2016 have been estimated by integrating data from 2022. This meticulous imputation process, transparently documented in the comments section for each imputed measure, has been undertaken to bridge the gaps and create a coherent framework for evaluating STRIs across the specified years. Please refer to Table 7 for a comprehensive list of measures that have been imputed in 2016, including the corresponding subsectors and modes of supply affected.

Table 3: Scoring of measures

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
A -Market entry	A1	Forms of entry	Common	Cross-border supply prohibited	yes	1
A -Market entry	A1	Forms of entry	Common	Commercial presence requirement as a condition for cross-border supply of the service	yes	0.75
A -Market entry	A1	Forms of entry	Common	Requirement to use the services of a resident intermediary	yes	0.25
A -Market entry	A1	Forms of entry	Health	Consumption abroad prohibited	yes	1
A -Market entry	A1	Forms of entry	Financial	Commercial presence is required: deposit-taking	yes	0.25
A -Market entry	A1	Forms of entry	Financial	Commercial presence is required: Lending	yes	0.25
A -Market entry	A1	Forms of entry	Financial	Commercial presence is required: Payment services	yes	0.25
A -Market entry	A1	Forms of entry	Financial	Cross-border supply prohibited for MAT insurance	yes	1
A -Market entry	A1	Forms of entry	Financial	Commercial presence required to provide MAT insurance cross-border services	yes	0.75
A -Market entry	A1	Forms of entry	Financial	Residents must use services of resident insurance intermediary for MAT insurance	yes	0.25
A -Market entry	A1	Forms of entry	Professional	Requirement to use the services of a resident intermediary	yes	0.5
A -Market entry	A1	Forms of entry	Common	Foreign establishment prohibited	yes	1
A -Market entry	A1	Forms of entry	Common	Foreign establishment of (or investment in) locally incorporated company allowed	no	0.5
A -Market entry	A1	Forms of entry	Common	Greenfield: Max. foreign ownership allowed (%)	numeric	
A -Market entry	A1	Forms of entry	Common	Domestic entity acquisition: Max. aggregate foreign ownership allowed (%)	numeric	
A -Market entry	A1	Forms of entry	Common	Joint venture requirement for foreign entity	yes	0.5
A -Market entry	A1	Forms of entry	Common	Domestic entity acquisition allowed	no	0.5
A -Market entry	A1	Forms of entry	Distribution	Restrictions on franchising	yes	0.25
A -Market entry	A1	Forms of entry	Financial	Branches of foreign establishment locally allowed	no	0.25
A -Market entry	A1	Forms of entry	Financial	Restrictions on foreign branches	yes	0.25
A -Market entry	A1	Forms of entry	Professional	Foreign establishment of (or investment in) locally incorporated company allowed	no	0.25
A -Market entry	A1	Forms of entry	Professional	Domestic entity acquisition allowed	no	0.25
A -Market entry	A1	Forms of entry	Professional	Partnership with foreigner allowed	no	0.5
A -Market entry	A1	Forms of entry	Professional	Sole proprietorship allowed	no	0.125

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
A -Market entry	A1	Forms of entry	Professional	Majority of shareholders must be locally licensed	yes	0.25
A -Market entry	A1	Forms of entry	Professional	Commercial association prohibited between fully integrated practitioners and other professionals	yes	0.25
A -Market entry	A1	Forms of entry	Professional	Equity restrictions apply to non-locally licensed professionals/firms	parent child	
A -Market entry	A1	Forms of entry	Transport + Telecom + Television + Postal and courier	Limits on share of capital that can be acquired by foreign investors in publicly-controlled state-controlled firms	yes	0.25
A -Market entry	A1	Forms of entry	Common	Service-Supplying Employee (CSS) of a Firm Based Abroad – Allowed	no	1
A -Market entry	A1	Forms of entry	Common	Independent Professional as Contractual Service Provider (IP) - Allowed	no	1
A -Market entry	A1	Forms of entry	Common	Intra-Corporate Transferee (ICT) - Allowed	no	1
A -Market entry	A1	Forms of entry	Audiovisual; Mode 1	There are residency requirements for TV producers	yes	0.75
A -Market entry	A1	Forms of entry	Audiovisual; Mode 4	There are residency requirements for TV producers	yes	0.25
A -Market entry	A2	Quantitative measures	Financial	Demonstration of unavailability of service required	yes	0.75
A -Market entry	A2	Quantitative measures	Health	Insurance policy limit coverage if diagnosis and medical services provided cross-border	yes	0.25
A -Market entry	A2	Quantitative measures	Health	Domestic (either private or public) insurance policy cover health services if obtained while traveling abroad	no	0.25
A -Market entry	A2	Quantitative measures	Common	Limits on the total number of suppliers/licences (numerical) or monopoly	yes	0.5
A -Market entry	A2	Quantitative measures	Common	ENT on number of suppliers (including if implemented through licensing process)	yes	0.5
A -Market entry	A2	Quantitative measures	Distribution	Limit on total number of suppliers (numerical) - large stores	yes	0.5
A -Market entry	A2	Quantitative measures	Distribution	ENT on number of supplier - large stores	yes	0.5
A -Market entry	A2	Quantitative measures	Postal and courier	Service provision is reserved for statutory monopoly or granted on an exclusive basis	parent child	
A -Market entry	A2	Quantitative measures	Postal and courier	Number of available licences for courier firms limited	yes	0.50
A -Market entry	A2	Quantitative measures	Postal and courier	Reserved area - letters	yes	0.25
A -Market entry	A2	Quantitative measures	Postal and courier	Reserved area - parcels	yes	0.25
A -Market entry	A2	Quantitative measures	Postal and courier	Reserved area - express delivery	yes	0.25

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
A -Market entry	A2	Quantitative measures	Telecom + Rail + Television	Services provided by a de facto monopoly or granted on an exclusive basis	yes	0.75
A -Market entry	A2	Quantitative measures	Common	Limit on share of foreigners employed per company	yes	0.25
A -Market entry	A2	Quantitative measures	Common	Quantitative limit - Contractual service supplier	yes	0.5
A -Market entry	A2	Quantitative measures	Common	Quantitative limit - Independent Professionals	yes	0.5
A -Market entry	A2	Quantitative measures	Common	Quantitative limit - Intra-Corporate Transferees	yes	0.5
A -Market entry	A2	Quantitative measures	Common	ENT/LMT - Contractual service supplier	yes	0.5
A -Market entry	A2	Quantitative measures	Common	ENT/LMT - Independent professionals	yes	0.5
A -Market entry	A2	Quantitative measures	Common	ENT/LMT - Intra-Corporate Transferees	yes	0.5
A -Market entry	A3	Conditions on licensing and market entry	Road Transport	Regime of discretionary authorisation to carry out transport on a case-by-case basis	yes	0.5
A -Market entry	A3	Conditions on licensing/screening/qualifications	Common	Screening of investment: Subject to evidence of economic benefits	yes	0.25
A -Market entry	A3	Conditions on licensing/screening/qualifications	Common	Screening: approval unless contrary to national interest	yes	0.25
A -Market entry	A3	Conditions on licensing/screening/qualifications	Professional	Nationality or citizenship required for license to practice	yes	0.75
A -Market entry	A3	Conditions on licensing/screening/qualifications	Professional	Prior or permanent residency required for license to practice	yes	0.5
A -Market entry	A3	Conditions on licensing/screening/qualifications	Professional	Mandatory additional domestic education	yes	0.5
A -Market entry	A3	Conditions on licensing/screening/qualifications	Professional	Recognition of education and training/work experience	no	0.5
A -Market entry	A3	Conditions on licensing/screening/qualifications	Professional	Laws or regulations establish a process for recognising higher education degrees earned abroad	no	0.5
A -Market entry	A4	Other conditions of market entry	Audiovisual	Limitations on downloading and streaming affecting cross-border trade	yes	0.25

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
A -Market entry	A4	Other conditions of market entry	Horizontal	Acquisition and/or rental of land and real estate by foreigners prohibited	yes	0.25
A -Market entry	A4	Other conditions of market entry	Postal and courier	Scope of reserved area of designated postal operator clearly defined: Weight	no	0
A -Market entry	A4	Other conditions of market entry	Postal and courier	Scope of reserved area of designated postal operator clearly defined: Price	no	0
A -Market entry	A4	Other conditions of market entry	Postal and courier	Scope of reserved area of designated postal operator clearly defined: Type of activity (e.g. basic delivery, express)	no	0
A -Market entry	A4	Other conditions of market entry	Postal and courier	Scope of reserved area of designated postal operator clearly defined: Other	no	0
B - Operations	B1	Conditions on supply of services	Common	Limits on scope of service (numerical and non-numerical)	yes	0.25
B - Operations	B1	Conditions on supply of services	Financial	Approval by regulatory authority required for new products or services	yes	0.125
B - Operations	B1	Conditions on supply of services	Financial	Mandatory cession requirements (to domestic reinsurers)	parent child	
B - Operations	B1	Conditions on supply of services	Financial	Percentage of insurance to be ceded to a domestic re-insurer	numeric	
B - Operations	B1	Conditions on supply of services	Financial	Some banking services reserved for domestic suppliers	yes	0.25
B - Operations	B1	Conditions on supply of services	Postal and courier	Prices for postal services regulated	no	0.125
B - Operations	B1	Conditions on supply of services	Postal and courier	There is a designated postal operator providing universal postal services	parent child	
B - Operations	B1	Conditions on supply of services	Telecom	VoIP operation allowed	no	0.25
B - Operations	B1	Conditions on supply of services	Telecom	Interconnection prices and conditions are regulated	no	0.125
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Quota for private cargo: Bulk	yes	0.25
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Quota for private cargo: Liner	yes	0.25

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Obligation to use local maritime and port services	yes	0.25
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Obligation to use a local maritime port agent	yes	0.25
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Port services serving own-ships allowed	no	0.25
B - Operations	B1	Conditions on supply of services	Maritime Freight Transport	Restrictions on maritime auxiliary services	yes	0.5
B - Operations	B1	Conditions on supply of services	Air Transport	Slot trading - Barter trade allowed: Slots can be exchanged on a one-to-one basis	no	0.25
B - Operations	B1	Conditions on supply of services	Air Transport	Slot trading - Monetary trade allowed: Air carriers are allowed to commercially exchange slots	no	0.25
B - Operations	B1	Conditions on supply of services	Audiovisual	Broadcast time is regulated by quotas	yes	0.50
B - Operations	B1	Conditions on supply of services	Audiovisual	Memo : Quota for foreign channels is zero	yes	0.50
B - Operations	B1	Conditions on supply of services	Audiovisual	Numerical limit on the number or proportion of foreign channels	yes	0.50
B - Operations	B1	Conditions on supply of services	Audiovisual	Number of foreign channels or programmes subject to an economic needs test	yes	0.50
B - Operations	B1	Conditions on supply of services	Audiovisual	Screen quotas are in place	yes	0.50
B - Operations	B1	Conditions on supply of services	Audiovisual	Broadcast or other types of quotas with respect to foreign music/programming	yes	0.50
B - Operations	B1	Conditions on supply of services	Financial	Number of branches restricted	yes	0.25
B - Operations	B1	Conditions on supply of services	Commercial banking	Number of ATMs restricted	yes	0.25
B - Operations	B1	Conditions on supply of services	Construction	There are discriminatory qualification requirements for building permits to undertake construction work	yes	0.25
B - Operations	B1	Conditions on supply of services	Distribution	Zoning laws: Differential treatment	yes	0.25
B - Operations	B1	Conditions on supply of services	Distribution	Restrictions on the number of outlets	yes	0.5

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
B - Operations	B1	Conditions on supply of services	Health	Limit on the number of beds a hospital can have	yes	0.25
B - Operations	B1	Conditions on supply of services	Health	Restrictions on the location of the hospital	yes	0.25
B - Operations	B1	Conditions on supply of services	Telecom	Local loop unbundling prices regulated	no	0.125
B - Operations	B1	Conditions on supply of services	Professional	Restrictions on name	yes	0.25
B - Operations	B1	Conditions on supply of services	Road Transport	Limitation on a number of days a foreign driver may stay in a host country	yes	0.25
B - Operations	B1	Conditions on supply of services	Road Transport	Visas on arrival or visa exemption available for temporary entry/transit of crews	no	0.25
B - Operations	B1	Conditions on supply of services	Road Transport	Multiple entry visas allowed for foreign crews	no	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	Discriminatory treatment of foreigners for the protection of copyrights and related rights	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	Royalties collected distributed in an equitable and non-discriminatory manner	no	0.25
B - Operations	B2	Conditions on services suppliers	Common	Board of directors: majority must be nationals	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common	Board of directors: majority should be residents	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common	Managers must be nationals	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common	Foreign suppliers treated less favourably regarding taxes and/or eligibility for subsidies	yes	0.25
B - Operations	B2	Conditions on services suppliers	Professional	Board of directors: majority must be locally-licensed professionals	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common	National employees: Min. percentage required	yes	0.25
B - Operations	B2	Conditions on services suppliers	Professional	Hiring of locally licensed professionals as employees prohibited	yes	0.25
B - Operations	B2	Conditions on services suppliers	Telecom	Ownership and operation of an international gateway permitted	no	0.25

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
B - Operations	B2	Conditions on services suppliers	Commercial banking	Foreign branches allowed to take all types of deposit-taking and lending	no	0.25
B - Operations	B2	Conditions on services suppliers	Commercial banking	Foreign bank "branches" subject to endowment capital requirement	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common; Mode 3	International data transfer/access constrained or prohibited	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common; Mode 1	International data transfer/access constrained or prohibited	yes	0.5
B - Operations	B2	Conditions on services suppliers	Maritime + Road + Rail Transport Mode 1	International data transfer/access constrained or prohibited	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common; Modes 3 + 4	Local data storage precondition to supply services	yes	0.25
B - Operations	B2	Conditions on services suppliers	Common; Mode 1	Local data storage precondition to supply services	yes	0.5
B - Operations	B2	Conditions on services suppliers	Common	Cross-border data processing: establishment required	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	Local content: Limitations on cast and crew	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	TV channels receive discriminatory subsidies or tax breaks	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	There are discriminatory subsidies or tax breaks for the production of programmes	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	Subsidies and tax breaks for audiovisual work are subject to cultural tests	yes	0.25
B - Operations	B2	Conditions on services suppliers	Audiovisual	Local content: subsidies for film or television program making are conditioned on local content requirements for music	yes	0.25
B - Operations	B3	Conditions on government procurement	Maritime Freight Transport	Quota for government cargo: Bulk	yes	0.125
B - Operations	B3	Conditions on government procurement	Maritime Freight Transport	Quota for government cargo: Liner	yes	0.125
B - Operations	B4	Other conditions on operations	Horizontal	Limits on subsequent transfer of capital and investments	yes	0.25

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
B - Operations	B4	Other conditions on operations	Common	Limitations affecting cross-border consumption of services	yes	0.25
C- Competition	C1	Conditions on conduct of firms	Common	Competition policy applies	no	0.50
C- Competition	C1	Conditions on conduct of firms	Common	Cross-subsidization punished	no	0.25
C- Competition	C1	Conditions on conduct of firms	Common	Price-fixing punished	no	0.25
C- Competition	C1	Conditions on conduct of firms	Common	Dumping practices punished	no	0.25
C- Competition	C1	Conditions on conduct of firms	Common	Product-tying practices punished	no	0.25
C- Competition	C1	Conditions on conduct of firms	Transport	Carrier agreements exempt from competition law	yes	0.25
C- Competition	C1	Conditions on conduct of firms	Postal and courier	Accounting separation required for the designated postal operator	no	0.25
C- Competition	C1	Conditions on conduct of firms	Audiovisual	Anti-competitive behaviour such as cartels prohibited for sound recording services (e.g. preventing foreign artists from purchasing studio time)	no	0.25
C- Competition	C1	Conditions on conduct of firms	Telecom	Unbundling of the local loop required	no	0.25
C- Competition	C1	Conditions on conduct of firms	Telecom	Time and conditions for number portability regulated	no	0.25
C- Competition	C2	Governmental rights/prerogatives (including public ownership)	Common	Publicly-controlled firms subject to exclusion or exemption from general competition law	yes	0.50
C- Competition	C3	Measures affecting competition	Postal and courier	Designated postal operator obtains preferential tax or subsidy treatment	yes	0.25
C- Competition	C3	Measures affecting competition	Postal and courier	Designated postal operators obtain preferential treatment during customs clearance procedures	yes	0.25
C- Competition	C3	Measures affecting competition	Postal and courier	Designated postal operator obtains preferential treatment in access to and use of transport facilities	yes	0.25
C- Competition	C3	Measures affecting competition	Postal and courier	Accounting information made public	no	0.125

Category	Sub-category	Subcategory name	Sector/Common	Measure	Answer	Score
C- Competition	C3	Measures affecting competition	Road Transport	Industry representatives involved in setting entry and pricing regulations	yes	0.125
C- Competition	C3	Measures affecting competition	Rail Transport	Access to railway infrastructure mandated at national level	no	0.25
C- Competition	C3	Measures affecting competition	Telecom	Interconnection mandated	no	0.25
C- Competition	C3	Measures affecting competition	Telecom	Rates and conditions for resale by dominant firms of public telecommunications services to other suppliers of telecommunications services regulated	no	0.25
C- Competition	C3	Measures affecting competition	Telecom	Access to and use of public telecommunications service mandated	no	0.25
C- Competition	C3	Measures affecting competition	Postal and courier	Access to postal network granted on non-discriminatory basis	no	0.25
D- Administrative procedures and regulatory transparency	D1	Administrative procedures	Common	Right to appeal regulatory decisions	no	0.125
D- Administrative procedures and regulatory transparency	D1	Regulatory transparency	Financial	Obligation to inform applicants of reasons for license rejection	no	0.125
D- Administrative procedures and regulatory transparency	D2	Regulatory transparency	Common	Prior notice of regulatory changes	no	0.125
D- Administrative procedures and regulatory transparency	D2	Regulatory transparency	Telecom	Interconnection and/or access agreements made public	no	0.125
D- Administrative procedures and regulatory transparency	D5	Other regulatory environment and administrative procedures	Distribution	A de minimis regime for import duties is in place (in USD)	no	0.25

Mode 3 synthetic measures and scoring

The weights given to the different types of Mode 3 entries by sector are as follows,

- All sectors except Financial and Professional services:
 Greenfield investment 50%
 Acquisition 50%

- Financial services:
 Greenfield investment 37.5%
 Acquisition 37.5%
 Branches 25%

- Professional services:
 Greenfield investment 18.75%
 Acquisition 18.75%
 Partnership 50%
 Sole proprietorship 12.5%

Table 4: Mode 3 synthetic measures and scoring

Category	Sub-category	Sub-category name	Sub-sector	Type of Measures	Answer	No. of Answers	Score
B. Operations	B2	Conditions on services suppliers	Legal services	National employees: Min. percentage required, Hiring of locally-licensed professionals as employees prohibited	yes	2	0.5
B. Operations	B2	Conditions on services suppliers	Legal services	Hiring of locally-licensed professionals as employees prohibited	yes	1	0.25
B. Operations	B2	Conditions on services suppliers	Legal services	National employees: Min. percentage required	yes	1	0.25

Table 5: Subsector Modal Weights (%)

Sector	Subsector	Mode 1	Mode 2*	Mode 3	Mode 4
Professional	Legal services: Host country advisory services	0	0	50	50
	Legal services: Host country representation services	0	0	50	50
	Legal services: Home country law and/or third country law (advisory/representation)	20	0	40	40
	Accounting services	20	0	40	40
	Auditing services	20	0	40	40
	Architecture services	20	0	40	40
	Engineering services	20	0	40	40
Computer	Computer and Related Services	30	0	40	30
Communications	Postal and courier services	20	0	70	10
	Fixed-line telecommunication services	20	0	70	10
	Mobile telecommunication services	20	0	70	10
	Motion picture services	20	0	70	10
	Television services	20	0	70	10
	Sound recording services	20	0	70	10
Construction	Construction and related engineering services	0	0	50	50
Distribution	Wholesale trade services	20	0	70	10
	Retailing services	20	0	70	10
Financial	Life insurance	10	0	80	10
	Non-life insurance	10	0	80	10
	Reinsurance and retrocession	70	0	20	10
	Commercial banking	15	0	75	10
Health	Health services	10	20	50	20
Tourism	Hotel and other lodging services	20	0	70	10
	Travel agencies and tour operators services	20	0	70	10
	Tourist guides services	0	0	0	100
Transport	Maritime: Freight transportation	60	0	20	20
	Maritime cargo-handling, storage, warehousing and container station depot services	0	0	90	10
	Maritime intermediation auxiliary services	20	0	70	10
	Air passenger domestic	0	0	80	20
	Air passenger international	50	0	30	20
	Air freight domestic	0	0	80	20
	Air freight international	50	0	30	20
	Rail: Freight transportation	20	0	70	10
	Road: Freight transportation	30	0	40	30

* Note: Regulatory data on consumption abroad (mode 2) is available for health services only.

Table 6: Sectoral Weights

Sector	Subsector	Weight of Subsector within Sector (%) *
Professional	Legal services: Host country advisory services	8.89
	Legal services: Host country representation services	8.89
	Legal services: Home country law and/or third country law (advisory/representation)	8.89
	Accounting services	13.39
	Auditing services	13.39
	Architecture services	23.27
	Engineering services	23.27
	Computer	Computer and Related Services
Communications	Postal and courier services	17.54
	Fixed-line telecommunication services	30.70
	Mobile telecommunication services	30.70
	Motion picture services	7.02
	Television services	7.02
	Sound recording services	7.02
Construction	Construction and related engineering services	100
Distribution	Wholesale trade services	54.12
	Retailing services	45.88
Financial	Life insurance	6.75
	Non-life insurance	6.75
	Reinsurance and retrocession	6.75
	Commercial banking	79.82
Health	Health services	100
Tourism	Hotel and other lodging services	33.33
	Travel agencies and tour operators services	33.33
	Tourist guides services	33.33
Transport	Maritime: Freight transportation	6.34
	Maritime cargo-handling, storage, warehousing and container station depot services	16.90
	Maritime intermediation auxiliary services	16.90
	Air passenger domestic	1.94
	Air passenger international	1.94
	Air freight domestic	1.94
	Air freight international	1.94
	Rail: Freight transportation	26.06
	Road: Freight transportation	26.06

*Note: Given values indicate the weight attributed to individual subsectors when calculating broad sector STRIs. The cumulative percentage value for each broad sector adds up to 100.

Table 7: Imputed 2016 Measures for Comparative Analysis (2016 vs. 2019-22)

Measure	Subsector and Mode
Limitations affecting cross-border consumption of services	All sectors – Mode 1
Cross-border data processing: establishment required	All sectors – Modes 1 and 4
Anti-competitive practices punished (dumping, cross-subsidisation, product-tying, price-fixing)	All sectors – Modes 3
Rates and conditions for resale by dominant firms of public telecommunications services to other suppliers of telecommunications services regulated	Telecom – Modes 1 and 3
Access to and use of public telecommunications service mandated	Telecom – Modes 1 and 3
Interconnection prices and conditions are regulated	Telecom – Modes 1 and 3
Interconnection and/or access agreements made public	Telecom – Modes 1 and 3
Time and conditions for number portability regulated	Telecom – Modes 1 and 3
Unbundling of the local loop required	Telecom – Mode 3
Local loop unbundling prices regulated	Telecom – Mode 3
Visas on arrival or visa exemption available for temporary entry/transit of crews	Road Transport – Mode 4
Multiple entry visas allowed for foreign crews	Road Transport – Mode 4
Recognition of education and training/work experience	Road Transport – Mode 4
A de minimis regime for import duties is in place	Retailing – Mode 1

Subsector Definitions⁵

1. Professional

- a. **Legal advice on domestic law:** General counselling, advice and drafting of documents and other related legal services concerning domestic law (i.e. the law of the jurisdiction under review), whether criminal law or other than criminal. Also covered are advisory services in statutory procedures of quasi-judicial bodies. The following are excluded: activities in relation to the administration of public justice (such as judges); and notaries who typically perform their activities as public officials and are subject to a different regulatory regime.
- b. **Legal services: representation services on domestic law:** Court appearances/oral arguments: Legal representation of one party's interest against another party, before the courts or other domestic judicial or quasi-judicial bodies, whether concerning criminal law or other than criminal. Also covered are representation services in statutory procedures of quasi-judicial bodies. The following are excluded: activities in relation to the administration of public justice (such as judges); and notaries who typically perform their activities as public officials and are subject to a different regulatory regime.
- c. **Legal services: advice on foreign law (Legal advice/counseling):** General counselling, advice and drafting of documents and other related legal services concerning foreign or international law. International law includes advisory services in home country law (i.e. law of the country of the foreign supplier or foreign law), third country law, international law, as well as a right to appear in international commercial arbitration. It also covers advisory services in statutory procedures of quasi-judicial bodies. Excluded are activities in relation to the administration of public justice (such as judges); and notaries who typically perform their activities as public officials and are subject to a different regulatory regime.
- d. **Accounting:** The collection, recording and extraction of financial information, and the summary of it in the form of a periodic profit and loss account, a balance sheet and a cash flow statement in accordance with legal, professional, and capital market requirements (e.g. accounting review, compilation of financial statements). Bookkeeping services are included here as the difference in regulation between accountants and book-keepers are typically small or not existent. In most jurisdictions, book-keeping is synonymous with accounting and is not separately regulated.
- e. **Auditing:** The examination and assessment of the activities, controls, records and systems that underpin accounting information and reports. Financial audits are typically performed by firms of practicing accountants due to the specialist financial reporting knowledge they require.
- f. **Architecture:** The scope of architecture services includes several related activities, such as advisory and pre-design architectural services, architectural design, contract administration services, and urban planning and landscape architecture services.
- g. **Engineering:** Engineering services include several activities which are closely related, such as engineering and integrated engineering services, and engineering related scientific and technical consulting services. Technical testing and analysis services are not included.

2. Computer

Computer services: Computer programming, consultancy and related activities, as well as web search portals and data processing and hosting services. It includes activities of providing

⁵ Used at the time of collection of data in regulatory surveys

expertise in the field of information technologies: writing, modifying, testing and supporting software; planning and designing computer systems that integrate computer hardware, software and communication technologies; on-site management and operation of clients' computer systems and/or data processing facilities; and other professional and technical computer-related activities.

3. Communications

a. Postal and Courier services: Pick-up, transport, delivery (door-to-door delivery) services of letters, parcels, and express delivery services regardless of who provides services. These services include both addressed and unaddressed items. This definition does not distinguish courier and postal services by the type of activity.

b. Telecommunications – Fixed line: The transmission and reception of signals through wired networks. Fixed-line telecommunications covers local as well as long-distance telephony services.

c. Telecommunications – Mobile: The transmission and reception of signals through wireless networks.

d. Audiovisual services: Three lines of activities comprise the audiovisual services sector:

(1) Television: Production of TV programmes (e.g. series, telefilms, animated cartoons) as well as the transmission of these programmes (the broadcasting activity). It comprises the creation of complete television channel programmes, from purchased programme components (e.g. movies, documentaries etc.), self-produced programme components (e.g. local news, life reports) or a combination thereof. It may be of a general or specialized nature, may be made freely available to users or may be available only on a subscription basis. Broadcasting activities also cover non-linear media services such as on-demand and interactive TV delivered over a range of different networks and devices (including phones and computers).

(2) Motion picture: Production, distribution, and exhibition of films, as well as an array of auxiliary activities, such as dubbing and editing.

(3) Sound recording: Production of original sound recordings; sound recording services activities in a studio; music publishing (acquiring and registering copyright, authorizing the use of the music/compositions) and distribution of sound recording to wholesalers and retailers.

4. Construction

Construction services: Pre-erection work; new construction and repair, alteration, restoration and maintenance work on residential and non-residential buildings, as well as civil engineering works. They also include installation and assembly work, building completion and finishing work, as well as renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator.

5. Distribution

a. Wholesale trade: Resale of new and used goods to retailers, to industrial, commercial, institutional, or professional users, or to other wholesalers, or involves acting as an agent or

broker in buying goods for, or selling goods to, such persons or companies. Wholesale covers the activities of wholesale merchants or jobbers, industrial distributors, exporters, importers, and cooperative buying associations, sales branches, and sales offices (but not retail stores). Relevant are the laws, regulations rules, guidelines etc. which apply to the wholesale trade sector in general. Particular product regulations regarding the wholesale of specific types of products (e.g. primary agricultural or mining products, tobacco, alcohol, pharmaceutical products) are not taken into account.

- b. **Retail trade:** Resale of new and used goods mainly to the general public for personal or household consumption or utilization, by shops, department stores, stalls, mail-order houses, hawkers and peddlers, consumer cooperatives etc. Relevant are the laws, regulations rules, guidelines etc. which apply to the retail trade sector in general. Particular product regulations regarding the retail sale of specific types of products (e.g. tobacco, alcohol, pharmaceutical products) are not taken into account.

6. Financial

- a. **Life insurance services:** Insurance underwriting services consisting in making payments upon the death of the policy holder, or at the end of an agreed term, with or without a profit element. For the purpose of this exercise, accident and health insurance services are not covered.
- b. **Non-life insurance services:** Non-life insurance or general insurance, provide payments depending on the loss from a particular financial event. General insurance is typically defined as any insurance that is not determined to be life insurance. It typically includes motor vehicle insurance, fire and other property damage insurance, pecuniary loss insurance, and general liability insurance. Also covered is marine, aviation and transport (MAT) insurance, i.e. the insurance of risks comprising maritime shipping, commercial aviation, space launching and freight (including satellites).
- c. **Reinsurance:** Reinsurance is a financial transaction by which risk is transferred (ceded) from an insurance company (cedant) to a reinsurance company (reinsurer) in exchange of a payment (reinsurance premium). When it is a reinsurer that cedes risk to another reinsurer, the service is called retrocession. Providers of reinsurance are professional reinsurers which are entities exclusively dedicated to the activity of reinsurance (e.g. SwissRe). Also in most jurisdictions insurance companies are allowed to participate in reinsurance.
- d. **Commercial banking:** Most services supplied by banks, such as acceptance of deposits and other repayable funds from the public, lending of all types, financial leasing, guarantees and commitments, and payment and money transmission services. For the purposes of this exercise, commercial banking does not include the services typically supplied by investment banks, such as brokerage or trading of securities, securities underwriting services, and mergers and acquisitions (M&A) and corporate reorganization services.

7. Health

Medical and health services: Cover the provision of hospital services, services of health professionals (medical and dental services, midwives, nurses, physiotherapists and paramedical services). For mode 3, only hospital services are covered, which are defined as follows: Services delivered under the direction of medical doctors chiefly to in-patients, aimed at curing, reactivating

and/or maintaining the health status of a patient. Hospital services comprise medical and paramedical services, nursing services, laboratory and technical services including radiological and anaesthesiologic services, etc. Mode 4 covers the services of medical doctors and dentists, as well as the services of midwives, nurses, physiotherapists and paramedical personnel.

8. Tourism

- a. **Hotel services:** Hotel services cover lodging and related services typically provided by hotels. Related services comprise services normally furnished with and included in the lodging price and include room service, desk service, mail service and bellboy service. Hotels also generally make available other services such as parking, food, beverages, entertainment, swimming pools, banquet, convention and meeting facilities. Resort hotels may provide extensive recreational facilities. These various services are included if provided as a part of the price of lodging. If they are priced separately, they are classified according to the service provided.
- b. **Travel agencies and tour operators:** Services rendered for passenger travel by travel agencies tour operators, and similar services; travel information, advice and planning services; services related to arrangement of tours, accommodation, passenger and baggage transportation; ticket issuance services. These services are provided on a fee or contract basis.
- c. **Tourist guide services:** Include the services provided by tourist guides (whether through agencies or on own account).

9. Transport

- a. **Maritime freight shipping:** The sector covers the two main types of services offered by the maritime shipping industry, namely liner and tramp services, whether coastal or transoceanic. Cabotage is also considered. All types of goods transported should be covered (e.g. frozen or refrigerated goods; bulk liquids or gases; dry bulk goods such as cereals, flour, cement or sand; letters and parcels; goods that have been containerized for ease of transport). Rental services of freight ships with crew are also covered. Charter services are not covered to the extent that they are subject to a different regulatory regime. Mode 3 covers restrictions relating to the establishment of commercial presence for obtaining the national flag, and other forms of commercial presence.
- b. **Maritime cargo-handling, container station and depot, and storage and warehouse services:** In general, regulatory frameworks (laws, regulations, rules, guidelines, etc.) deal with maritime cargo handling, container depot station, and storage and warehouse activities as a package, given that these activities are often conducted jointly and in an integrated manner. Maritime cargo handling services are activities exercised by stevedore companies, including terminal operators, but not including the direct activities of Dockers, when this workforce is organized independently of the stevedoring or terminal operator companies. Container station and depot services means activities consisting in storing containers, whether in port areas or inland, with a view to their stuffing/stripping, repairing and making them available for shipments.
- c. **Maritime intermediation services:** Maritime agency, freight forwarding and customs clearance services are covered. In general, regulatory frameworks (laws, regulations, rules, guidelines, etc.) deal with these activities in conjunction, given that they are often conducted jointly and/or are substitutable. This refers to intermediaries/agents which are not related (i.e. no direct investment relationship) with the maritime shipping operators or ship owners.

- d. **Air freight domestic services:** Domestic air transport of freight on a scheduled basis. It covers air transportation of individual articles and packages assembled and shipped in specially constructed shipping containers designed for ease of handling in transport. It includes air transportation services of letters and parcels.
- e. **Air freight international services:** International air transport of freight on a scheduled basis. It covers air transportation of individual articles and packages assembled and shipped in specially constructed shipping containers designed for ease of handling in transport. It includes air transportation services of letters and parcels.
- f. **Air passenger international services:** International air transport of passengers on a scheduled basis (pre-determined international routes/schedules). It covers the accompanying passenger baggage and other items that may be carried at no extra cost.
- g. **Air passenger domestic services:** Domestic air transport of passengers on a scheduled basis (pre-determined domestic routes/schedules). It covers the accompanying passenger baggage and other items that may be carried at no extra cost.
- h. **Rail freight transport domestic and international services:** The sector rail freight service providers (or carriers). Covered items are rail freight transportation of frozen or refrigerated goods, transportation of bulk liquids and gases, transportation of containerized freight, mail transportation and other freight. Inter-urban rail transport of freight is also covered.
- i. **Road freight transport domestic and international services:** The sector covers freight transportation and relevant rental of commercial vehicles with operator. This definition entails transportation of frozen or refrigerated goods, transportation of bulk liquids or gases, transportation of containerized freight, transportation of furniture, mail transportation, freight transportation by man- or animal-drawn vehicles and transportation of other freight, whether domestically or internationally.