Appendix B: Composition and Computation of the Enabling Trade Index 2016

This appendix details the computation and composition of the Enabling Trade Index 2016 (ETI).

The ETI is composed of four main components, the subindexes:

A. Market access
B. Border administration
C. Infrastructure
D. Operating environment

The subindexes are subdivided into seven 'pillars':

1. Domestic market access
2. Foreign market access
3. Efficiency and transparency of border administration
4. Availability and quality of transport infrastructure
5. Availability and quality of transport services
6. Availability and use of ICTs
7. Operating environment

Each pillar is composed of a total of 57 indicators and subindicators.[1] Indicators and subindicators are drawn from various sources: the Global Express Association (GEA), the International Trade Centre (ITC), the United Nations Conference on Trade and Development (UNCTAD), the World Bank and the World Trade Organization (WTO). In addition, several indicators are derived from the World Economic Forum's Executive Opinion Survey. The Technical Notes and Sources at the end of the Report provide details and sources of each individual indicator and subindicator used in the ETI. The numbering of the indicators informs of their placement inside the ETI. The number preceding the dot indicates the pillar to which an indicator belongs (e.g. indicator 1.03 belongs to Pillar 1 and indicator 6.04 belongs to Pillar 6). For the sake of readability, subindicators are not numbered.

Indicators that are not derived from the Executive Opinion Survey have been assigned scores ranging from 1 to 7 using a minimum-maximum transformation prior to aggregation.[2] This is to align them with the scores of indicators derived from the Survey, which always range from 1 to 7. In both cases, a score of 1 and 7 corresponds to the worst and best possible outcome, respectively. In the structure below, Survey indicators are identified with an asterisk (*).

The computation of the ETI is based on successive aggregations of the scores from the indicator level (i.e. the most disaggregated level) all the way up to the overall ETI score. Unless noted otherwise, an arithmetic mean is used to aggregate the scores within a parent component (subindex, subpillar, pillar, or indicator).[3] The mean or aggregated score becomes the overall score for that component. In the structure below we report the weight of the main components within their respective immediate parent component. By construction, the scores of all indicators derived from the aggregation of underlying indicators are always measured on a 1–7 scale.

	Weight (%) within immediate parent category
SUBINDEX A: MARKET ACCESS	**25%**
Pillar 1: Domestic market access	**50%**
1.01 Tariff rate	
1.02 Complexity of tariffs index[4]	
Tariff dispersion	
Tariff peaks	
Specific tariffs	
Number of distinct tariffs	
1.03 Share of duty-free imports	
Pillar 2: Foreign market access	**50%**
2.01 Tariffs faced	
2.02 Index of margin of preference in destination markets	

	Weight (%) within immediate parent category
SUBINDEX B: BORDER ADMINISTRATION	**25%**
Pillar 3: Efficiency and transparency of border administration	**100%**
3.01 Customs services index	
3.02 Efficiency of the clearance process	
3.03 Time to import: documentary compliance	
3.04 Time to import: border compliance[5]	
3.05 Cost to import: documentary compliance[5]	
3.06 Cost to import: border compliance[5]	
3.07 Time to export: documentary compliance	
3.08 Time to export: border compliance[6]	
3.09 Cost to export: documentary compliance[5]	
3.10 Cost to export: border compliance[5]	
3.11 Irregular payments in exports and imports*	
3.12 Time predictability of import procedures*	
3.13 Customs transparency index	

(continued on next page)

Weight (%) within immediate parent category

SUBINDEX C: INFRASTRUCTURE 25%

Pillar 4: Availability and quality of transport infrastructure (1–7) 33⅓%

Subpillar 4a: Availability and quality of air transport infrastructure 25%
- 4.01 Available international airline seats kilometres/week
- 4.02 Quality of air transport infrastructure*

Subpillar 4b: Availability and quality of railroad infrastructure 25%
- 4.03 Quality of railroad infrastructure*

Subpillar 4c: Availability and quality of port infrastructure 25%
- 4.04 Liner Shipping Connectivity Index
- 4.05 Quality of port infrastructure*

Subpillar 4d: Availability and quality of road infrastructure 25%
- 4.06 Road quality index
- 4.07 Quality of roads*

Pillar 5: Availability and quality of transport services 33⅓%
- 5.01 Ease and affordability of shipment
- 5.02 Logistics competence
- 5.03 Tracking and tracing ability
- 5.04 Timeliness of shipments in reaching destination
- 5.05 Postal services efficiency*
- 5.06 Efficiency of transport mode change*

Pillar 6: Availability and use of ICTs 33⅓%
- 6.01 Mobile phone subscriptions
- 6.02 Individuals using Internet
- 6.03 Fixed broadband Internet subscriptions[7]
- 6.04 Active mobile broadband Internet subscriptions[7]
- 6.05 ICT use for business-to-business transactions*[8]
- 6.06 Internet use for business-to-consumer transactions*[8]
- 6.07 Government Online Service Index

Weight (%) within immediate parent category

SUBINDEX D: OPERATING ENVIRONMENT 25%

Pillar 7: Operating environment 100%
- 7.01 Protection of property index[9]
  - Property rights*
  - Intellectual property protection*
- 7.02 Efficiency and accountability of public institutions index[9]
  - Enforcing contracts
  - Diversion of public funds*
  - Ease of compliance with government regulation*
- 7.03 Access to finance index[9]
  - Financial services meeting business needs*
  - Affordability of financial services*
  - Ease of access to loans*
- 7.04 Openness to foreign participation index[9]
  - Ease of hiring foreign labour*
  - Business impact of rules on FDI*
  - Openness to multilateral trade rules
- 7.05 Index of physical security[9]
  - Reliability of police services*
  - Business costs of crime and violence*
  - Business costs of terrorism*
  - Homicide rate
  - Index of terrorism incidence

NOTES

1 Note the exception of Pillar 4, which is composed of four subpillars.

2 The standard formula for converting each value to a 1–7 scale is:

$$6 \times \left(\frac{\text{country value} - \text{sample minimum value}}{\text{sample maximum value} - \text{sample minimum value}} \right) + 1$$

The sample minimum and sample maximum values are the lowest and highest values in the entire sample, respectively. For those indicators for which a higher value indicates a worse outcome (e.g. tariff barriers, road congestion), we rely on a transformation formula that, in addition to converting the values to a 1–7 score, reverses it, so that 1 and 7 still correspond to the worst and best possible outcomes, respectively:

$$-6 \times \left(\frac{\text{country value} - \text{sample minimum value}}{\text{sample maximum value} - \text{sample minimum value}} \right) + 7$$

Appendix B identifies those indicators for which the second formula applies. In some instances, adjustments were made to account for outliers in the data and the overall distribution of the sample.

3 Formally, for a category i composed of K indicators, we have:

$$category_i = \frac{\sum_{k=1}^{K} indicator_k}{K}$$

4 The score of indicator 1.02 corresponds to the average score across the four composing subindicators.

5 When calculating the index, indicators 3.03, 3.04, 3.05 and 3.06 are combined to form a single indicator. The two pairs of time and cost indicators are combined into total time and total cost measures, normalized into a 1-to-7 score and then averaged to form a single indicator of the ease of importing.

6 When calculating the index, indicators 3.07, 3.08, 3.09 and 3.10 are combined to form a single indicator. The two pairs of time and cost indicators are combined into total time and total cost measures, normalized into a 1-to-7 score and then averaged to form a single indicator of the ease of exporting.

7 When calculating the index, indicators 6.03 and 6.04 are combined to form a single indicator. That is, the weight of each of these indicators is one half that of a normal indicator within pillar 6.

8 When calculating the index, indicators 6.05 and 6.06 are combined to form a single indicator. That is, the weight of each of these indicators is one half that of a normal indicator within pillar 6.

9 The score of indicators 7.01, 7.02, 7.03, 7.04 and 7.05 corresponds to the average score across their respective subindicators.