Appendix B: Composition of the Europe 2020 Competitiveness Index

This appendix provides details about the construction of the Europe 2020 Competitiveness Index.

The Index is composed of seven pillars: enterprise environment, digital agenda, innovative Europe, education and training, labour market and employment, social inclusion, and environmental sustainability. Each pillar has the same weight (1/7) in the overall Index score.

The pillars are organized also across three sub-indexes:

- **Smart growth**: composed of the enterprise environment, digital agenda, innovative Europe, and education and training pillars
- **Inclusive growth**: composed of the labour market and employment, and social inclusion pillars
- **Sustainable growth**: composed solely of the environmental sustainability pillar

The calculation of scores for each of the three sub-indexes provides additional insight for the analysis. However, these scores are not directly used as components of the overall Index score, which is an aggregate of the pillar-level results.

The Europe 2020 Competitiveness Index is based on both survey and external quantitative data. The survey data are mainly derived from the responses to the World Economic Forum’s Executive Opinion Survey, and range on a scale from 1 to 7. The external quantitative data are collected from various recognized sources, such as the World Bank, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Telecommunication Union (ITU) and the International Labour Organization (ILO). All datasets used are described in detail in this appendix, and technical notes and sources are in Appendix C. All of the data used in the calculation of the Europe 2020 Competitiveness Index can be found on the Report’s website: www.weforum.org/Europe2020.

To aggregate survey data and other quantitative indicators, the latter are normalized to a 1-to-7 scale using a max-min methodology. Each of the pillars has been calculated as an unweighted average of the individual component variables. In the case of the enterprise environment, digital agenda, education and training, and labour market and employment pillars, the indicators are first aggregated in sub-pillars using simple averages, and in a second step, the sub-pillars are averaged to obtain the pillar scores.

The variables and the composition of pillars are shown in “The Europe 2020 Competitiveness Index” listing that follows. An asterisk (*) identifies the indicators obtained from external sources.

THE EUROPE 2020 COMPETITIVENESS INDEX

<table>
<thead>
<tr>
<th>Pillar 1: Enterprise environment</th>
<th>14%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.01.01 Competition</td>
<td>25%</td>
</tr>
<tr>
<td>1.01 Intensity of local competition</td>
<td></td>
</tr>
<tr>
<td>1.02 Effectiveness of antitrust policy</td>
<td></td>
</tr>
<tr>
<td>1.03 Extent of market dominance</td>
<td></td>
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<tr>
<td>1.04 Agricultural policy costs</td>
<td></td>
</tr>
<tr>
<td>1.05 Impacts of rules on FDI</td>
<td></td>
</tr>
<tr>
<td>1.06 Distortive effect on competition of taxes and subsidies</td>
<td></td>
</tr>
<tr>
<td>1.07 Burden of government regulation</td>
<td></td>
</tr>
<tr>
<td>A.01.02 Clusters</td>
<td>25%</td>
</tr>
<tr>
<td>1.08 State of cluster development</td>
<td></td>
</tr>
<tr>
<td>1.09 Value chain breadth</td>
<td></td>
</tr>
<tr>
<td>A.01.03 Entrepreneurship</td>
<td>25%</td>
</tr>
<tr>
<td>1.10 Number of procedures to start a business*</td>
<td></td>
</tr>
<tr>
<td>1.11 Time required to start a business*</td>
<td></td>
</tr>
<tr>
<td>1.12 Extent and effect of taxation on incentives to invest</td>
<td></td>
</tr>
<tr>
<td>1.13 Attitudes towards entrepreneurial failure</td>
<td></td>
</tr>
<tr>
<td>A.01.04 Availability of financing</td>
<td>25%</td>
</tr>
<tr>
<td>1.14 Ease of access to loans</td>
<td></td>
</tr>
<tr>
<td>1.15 Venture capital availability</td>
<td></td>
</tr>
<tr>
<td>1.16 Local equity market access</td>
<td></td>
</tr>
</tbody>
</table>

(Cont’d)
Appendix B

Pillar 2: Digital agenda .................................................. 14%
A.02.01 ICT readiness .................................................. 33%
  2.01 Government strategy for ICT
  2.02 Mobile phone subscriptions*
  2.03 International internet bandwidth per internet user*
  2.04 Fixed broadband internet subscriptions*
  2.05 Mobile broadband subscriptions*
  2.06 Laws related to ICT
A.02.02 ICT usage ...................................................... 33%
  2.07 Government Online Service Index*
  2.08 Internet users*
  2.09 ICT use for business-to-business transactions
  2.10 Internet use for business-to-consumer transactions
A.02.03 ICT impact ...................................................... 33%
  2.11 ICT and access to basic services
  2.12 ICT and business model creations
  2.13 E-participation index
  2.14 Patent Cooperation Treaty (PCT) ICT patent applications*

Pillar 3: Innovative Europe ........................................... 14%
  3.01 R&D expenditure*
  3.02 Researchers in R&D*
  3.03 Availability of scientists and engineers
  3.04 Highly cited scientific articles*
  3.05 PCT patent applications*
  3.06 Firm-level technology absorption
  3.07 University-industry collaboration in R&D
  3.08 Capacity for innovation
  3.09 Government procurement of advanced technology products
  3.10 Availability of latest technologies
  3.11 Extent of marketing
  3.12 Willingness to delegate authority
  3.13 Industrial design counts in applications*
  3.14 Nature of competitive advantage

Pillar 4: Education and training ................................. 14%
A.04.01 Education .................................................. 50%
  4.01 Quality of the educational system
  4.02 PISA scores on education quality*
  4.03 Tertiary education enrolment rate*
  4.04 Secondary education enrolment rate*
A.04.02 Training ...................................................... 50%
  4.05 Availability of training services
  4.06 Quality of management schools
  4.07 Extent of staff training

Pillar 5: Labour market and employment ..................... 14%
B.05.01 Labour market ............................................. 50%
  5.01 Hiring and firing practices
  5.02 Cooperation in labour-employer relations
  5.03 Pay and productivity
  5.04 Extent and effect of taxation on incentives to work
B.05.02 Labour participation ....................................... 50%
  5.05 Labour participation activity rate*
  5.06 Female participation in labour force*
  5.07 Private-sector employment of women
  5.08 Youth unemployment*

Pillar 6: Social inclusion ............................................. 14%
  6.01 Accessibility of healthcare services
  6.02 Gini coefficient*
  6.03 Government effectiveness in reducing poverty and inequality
  6.04 Social safety net protection
  6.05 Social mobility

Pillar 7: Environmental sustainability ......................... 14%
  7.01 Share of renewable electricity production*
  7.02 Terrestrial biome protection*
  7.03 Environmental treaty ratification*
  7.04 Enforcement of environmental regulations
  7.05 Quality of natural environment
  7.06 CO2 intensity*
  7.07 Particulate matter (2.5) concentration*

The composition of the three sub-indexes:

**Smart growth**
Enterprise environment ........................................ 25%
Digital agenda .................................................. 25%
Innovative Europe .................................................. 25%
Education and training ........................................ 25%

**Inclusive growth**
Labour market and employment ............................ 50%
Social inclusion .................................................. 50%

**Sustainable growth**
Environmental sustainability ................................ 100%

* Indicators obtained from external sources.
Note: percentages denote rounded figures.