

ICT Prices 2017



ICT PRICES

2017



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As the use of ICTs is growing exponentially, with a rising demand for data and a decline in consumption of traditional voice and SMS services, the price of ICT services remains a barrier to adoption as well as a limiting factor for those who cannot make use of ICTs as much as they would like.

Mobile-cellular prices have been on the decline since 2008, but seem to have plateaued since 2015. The average cost of a mobile-cellar basket including 30 calls and 100 SMS messages per month has converged in Least Developed Countries (LDCs), developing economies and developed economies at around PPP\$ 21.

From a regional perspective, the decline in the mobile cellular sub-basket has been most significant in the case of Africa. In 2008, Africa had the highest basket price as a percentage of GNI per capita at 28 per cent, triple the world average. While it still maintains the same ratio to the world average, in 2016 the mobile-cellular sub-basket had declined to 9 per cent of GNI per capita. It is noteworthy that some LDCs – such as Angola, Bangladesh, Bhutan, Myanmar, Nepal and Sudan – have succeeded in bringing mobile-cellular prices below the threshold of 5 per cent of GNI per capita, thus making them affordable for large segments of the population.

Mobile-broadband prices in developing countries continued to decline from 2015 to 2016, thus closing the affordability gap with developed countries. By the end of 2016, seven of ten developing countries offered mobile-broadband plans that represented 5 per cent or less of GNI per capita, the target set by the Broadband Commission for Sustainable Development for 2015. The list of countries with affordable mobile-broadband plans includes LDCs such as Angola, Bangladesh, Bhutan, Cambodia, Rwanda, Sao Tome and Principe, Sudan and Tanzania. Improvements in the affordability of mobile-broadband services go hand in hand with the rise of Internet access via mobile broadband (17 per cent growth in active mobile-broadband subscriptions from 2015 to 2016).

From 2015 to 2016, increases in monthly data allowances of mobile-broadband plans were observed in many countries. Moreover, increases in the monthly data allowance led to cost reductions of more than 50 per cent in the price of the prepaid handset-based mobile-broadband basket (500 MB/month) in Bahamas, Libya, Niger and Nigeria. The same downward trend was observed in the postpaid computer-based mobile-broadband sub-basket (1 GB/month): 14 economies experienced a 50 per cent or higher reduction caused by price reductions or increases in the data allowances of the plans.

Fixed-broadband prices in developing economies, including LDCs, have been on the decline since 2008, with further price reductions observed from 2015 to 2016. Moreover, several countries upgraded entry-level speeds in 2016, particularly in the developing world. In 2016, more than 45 per cent of developing countries offered entry-level speeds above 1 Mbit/s (compared with about 35 per cent in 2015).

The change from unlimited to lower-cost data-limited plans has helped to make fixed-broadband services more affordable in countries such as Côte d'Ivoire, Guinea, Togo and Uganda. Nevertheless, fixed-broadband remains unaffordable in many African countries, as well as in a number of Small Island Developing States (SIDS). Nevertheless, SIDS such as Fiji, Nauru, Papua New Guinea and Tonga demonstrate that it is possible to offer fixed-broadband plans whose prices represent less than 5 per cent of GNI per capita, even in countries with challenging geographic contexts.

1 Introduction

The information and communication technology (ICT) sector has changed dramatically over the last decade, from both the demand and the supply side. The use of ICTs is growing exponentially, with a rising demand for data and a clear decline in consumption of traditional voice and short message service (SMS).¹ Device innovation, technological advances and declining prices afford increased connectivity; yet prices are still quoted as one of the key barriers to access in developing economies.² Also prominent, among other reasons, is the proportion of those who do not use the Internet because they do not see the need and lack knowledge of how to use it (Chart 1). This highlights not only the gap in terms of affordability, but also the lack of comprehension on the benefits of use.

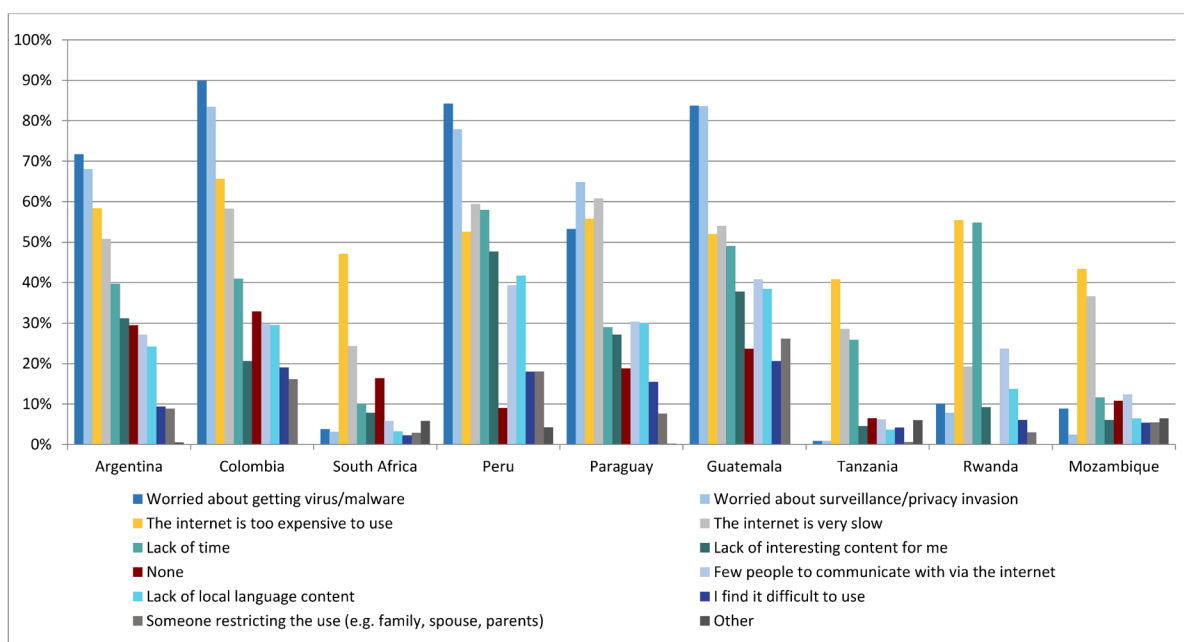
Other research complements these findings in emphasizing not only the lack of awareness, knowledge and cost, but also the lack of access to devices that are necessary for access, despite the growing availability of low-cost smartphones in developing economies. For example, in Rwanda, 48 per cent of the population own mobile phones, of which only 9 per cent own smartphones. In Bangladesh, of the 73.5 per cent who own mobile phones, only 23 per cent own smartphones. The

majority of mobile phone owners in most African and Asian countries surveyed use a basic handset, which in itself is a barrier to accessing the Internet (DIRSI, LIRNEAsia, Research ICT Africa, 2017). The same research found that, among those who do use the Internet, there were multiple limitations that curtailed use. Cybersecurity, privacy, cost and quality of services were among the top limitations cited in the nationally representative household surveys (Chart 2).

International targets, such as those of the Connect 2020 agenda and the 2025 Targets of the Broadband Commission for Sustained Development,³ call for targets on prices and affordability to be met, thereby requiring global price benchmarks to inform these processes.

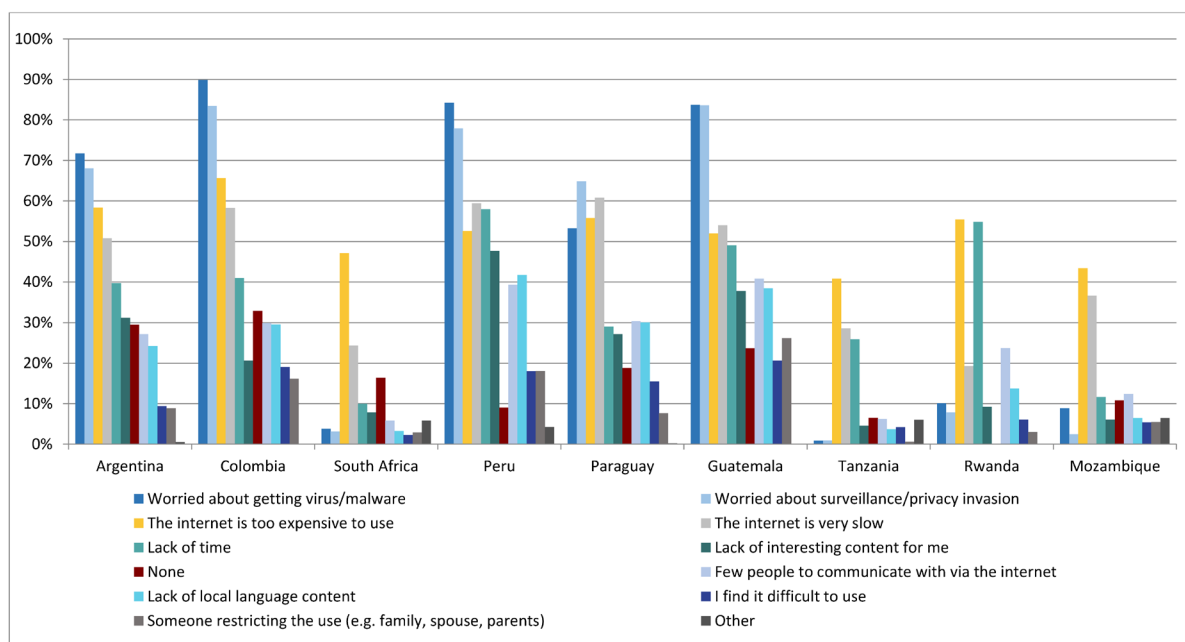
Data on mobile-cellular and fixed-broadband services have been collected by ITU since 2008, and for mobile-broadband since 2013. Global averages clearly illustrate a downward trend in prices. Some of the reasons that were seen as drivers of price reductions are mentioned in Box 1. In addition, market liberalization, which in most countries was started more than a decade ago, continues to be a critical factor that leads to various shifts in the telecom sector that eventually results in positive impact on prices. An example is the case of the liberalization of Myanmar's

Chart 1: Proportion of individuals not using the Internet, by type of reason, 2016



Note: Data for Iran (Islamic Republic of) and Singapore refer to 2015 and 2017, respectively.
Source: ITU.

Chart 2: Limitations to Internet use as a percentage of Internet users citing them, 2017



Note: Data refer to the age range of 15–65 years.

Source: DIRSI, LIRNEasia, Research ICT Africa, nationally representative household surveys. Available at www.afteraccess.net

telecom sector, which led to a drastic positive change. Indeed, SIM cards, which used to be extremely expensive commodities afforded only by the elite, have become nearly free of charge, and mobile operators continue to invest in the development sector, increasing competition and creating a virtuous circle.

While declining prices intuitively signal an improvement in affordability, in order to ascertain how affordable a given price is in a country, prices need to be put into the perspective of people's income. In the absence of global official data on household incomes and expenditures, affordability is assessed in this report using the proxy indicator of prices as a percentage of gross national income (GNI) per capita. According to the Broadband Commission's targets for 2025: "By 2025, entry-level broadband services should be made affordable in developing countries at less than 2 per cent of monthly Gross National Income (GNI) per capita." For this report, however, since the focus is on the analysis of price data from 2016, the previous Broadband Commission threshold value of 5 per cent of GNI per capita is maintained as the benchmark.

This report analyses prices of ICT services for 2008–2016, to arrive at an understanding of affordability. Countries are grouped by the level

of development, based on the United Nations development classifications of least developed countries (LDCs), and developing and developed economies. Thereafter, the trends of the sub-baskets – namely mobile-cellular, fixed-broadband, mobile-broadband accessed via mobile handset with a cap of 500 MB, and mobile-broadband accessed via USB dongle with a cap of 1 GB – are discussed separately, highlighting the variation in prices within and between regions.⁴

Prices in this report are expressed in three complementary units:

- In United States dollars (USD), using the International Monetary Fund annual rates of exchange.
- In international dollars (PPP\$), using purchasing power parity (PPP) conversion factors instead of market exchange rates. The use of PPP exchange factors helps to screen out price and exchange rate distortions, thus providing a measure of the cost of a given service, taking into account the purchasing power equivalences between countries.⁵
- As a percentage of countries' monthly GNI per capita (Atlas method).⁶ Prices are expressed as a percentage of GNI per capita in order

Box 1: Factors affecting prices

Prices are affected by a multitude of factors, some having a bigger impact than others.

Changes in tax regimes

The continued growth of mobile access and use of data has meant that taxation on mobile services has been an importance source of income for some governments. GSMA reports that taxes on mobile services represent about 30 per cent of Pakistan's mobile industry value and these rates keep rising (GSMA, 2015a). A similar example is Jordan, which applies a Special Tax on mobile data (GSMA, 2015b). Unsurprisingly, in both these cases, consumer prices have crept up, although they have been only marginal in certain years. Beyond Asia, Brazil is a prime example of high sector-specific telecom taxes, with the industry paying almost 48 per cent of its revenue in taxes in 2014 (GSMA, 2015c).

Changes in regulatory environments

Controlled for other changes, ministries and regulatory authorities can shift the trajectory of the average market price through various policy implementations. In Turkey, for example, the regulatory authority relaxed the minimum price rule on the incumbent operator Turkcell, which led to a marginal increase in prices (TeleGeography, 2016). Such deregulations, however, do not always lead to an increase in prices, as long as the relaxation of rules occurs in a climate where healthy competition exists, as evidenced by the fall in prices in Romania, despite deregulation of access to the local loop of the incumbent's fixed network (Anacom, 2017). In Nigeria, the removal of the data price floor in October 2015 led to a sharp decline in mobile data prices, despite minimal changes in the telecom tax regime (TechSuplex, 2015).

Changes in market players

Prices of mobile services tend to change based on the market structure and the behaviour of new entrants attempting to gain market share. India's large consumer base is a prime target for new entrants, especially conglomerates, and has been a constant battleground for customers. The entry of Reliance to India's market (under the brand name Jio) caused a fall in prices in 2016. Based solely on LTE networks, a controversial campaign that offered users with unlimited access for six months disrupted the market (Bell, 2017).

Highly saturated markets such as Hong Kong (China) tend to have low scope for price reductions. Yet the entry of Hong Kong Broadband Network into the mobile telephony market, after a successful run in the broadband market, means that competitive pressures are slowly driving prices down (Bushell-Embling, 2016). Meanwhile, markets such as Indonesia that are recovering from recent price wars attempt to regain their profitability by rebalancing their tariffs (Mittal and Simadiputra, 2016).

to show them relative to the size of the economy of each country, thus pointing to the affordability of each ICT service at the country level.

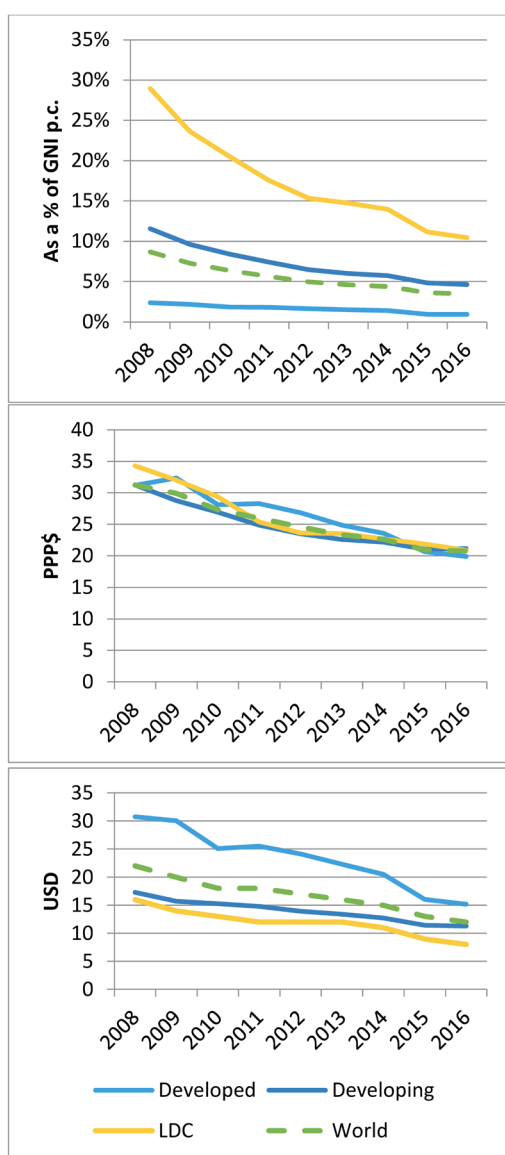
price baskets presented in this report can be found in Annex 1.

The prices collected for each service correspond to the least expensive plan offered by the dominant operator that fulfils the usage requirements of each basket. The methodological details of the

2 Mobile-cellular prices

The mobile-cellular sub-basket includes only voice and SMS. The price basket comprises 30

Chart 3: Mobile-cellular sub-basket, as a percentage of GNI per capita (top), in PPP\$ (middle) and in USD (bottom), 2008-2016



Note: Simple averages. Based on 140 economies for which data on mobile-cellular prices were available for 2008-2016.
Source: ITU.

calls (equating to approximately 50 minutes) and 100 SMS messages per month, and includes both on-net and off-net pricing, as well as peak, off-peak and weekend pricing variations. Prices are collected for the least expensive prepaid plan offered by the mobile operator with the highest market share.

Over the years, mobile-cellular prices have been on the decline (Chart 3), but seem to be plateauing from 2015 onwards, with only marginal differences in terms of average price in USD, purchasing power

parity (PPP\$) and as a percentage of GNI per capita. Although there is a convergence of LDCs, developing countries and developed countries at around PPP\$ 21 per month as in 2015, differences are apparent when prices as a percentage of GNI per capita are analysed.

More than 70 per cent of the world's economies offer mobile-cellular price baskets that correspond to less than 5 per cent of GNI per capita (Table 1). Of the mobile-cellular sub-basket prices that correspond to more than 5 per cent of the GNI per capita, the highest in 2016 was Liberia at 51 per cent of the country's GNI per capita. In absolute terms, 30 calls and 100 SMS messages in Liberia cost USD 16 per month, which is not more expensive than the cost of the basket in many other countries, particularly from the developed world (e.g. the highest cost for a mobile-cellular sub-basket is found in Monaco at USD 39.9). However, such a cost per month in low-income economies such as Liberia tends to be unaffordable to large segments of the population. According to data from the World Bank's World Development Indicators, 2017, more than 50 per cent of the population in ten economies in Africa (including Liberia)⁷ live under the poverty line, defined in 2011 as PPP\$ 1.90/day. The cost of an entry-level mobile-cellular plan in relation to the generalized average income of over half the population of these economies highlights the unaffordability of the service. Thus, price remains an obstacle for further mobile-cellular adoption in these countries.⁸

Table 1: Mobile-cellular sub-basket, 2016

Rank	Economy	Mobile-cellular sub-basket as% of GNI p.c.	USD	PPP\$	Tax rate included (%)	GNI p.c., USD, 2015*
1	Macao, China	0.10	5.67	7.05	0.0	67,180
2	Austria	0.17	6.50	6.87	20.0	47,260
3	Hong Kong, China	0.17	5.76	7.00	0.0	41,000
4	Singapore	0.18	7.92	9.15	7.0	52,090
5	United Arab Emirates	0.19	6.70	8.80	0.0	43,090
6	Estonia	0.22	3.32	5.01	20.0	18,320
7	Norway	0.22	17.39	14.36	25.0	93,530
8	Liechtenstein	0.23	26.55		8.0	139,608
9	New Zealand	0.23	7.77	6.92	15.0	40,020
10	Slovenia	0.24	4.37	6.04	22.0	22,250
11	Sweden	0.24	11.56	10.60	25.0	57,900
12	Lithuania	0.26	3.21	5.80	21.0	15,080
13	Iceland	0.26	10.82	8.43	24.0	50,110
14	Qatar	0.27	18.68	24.59	0.0	83,990
15	Finland	0.28	11.02	10.18	24.0	46,560
16	Brunei Darussalam	0.28	9.00	15.32	0.0	38,010
17	Monaco	0.29	39.92		20.0	165,871
18	Germany	0.29	11.05	11.93	19.0	45,790
19	Australia	0.29	14.59	12.64	10.0	60,050
20	Sri Lanka	0.31	0.99	3.00	49.7	3,800
21	Cyprus	0.32	6.78	8.50	19.0	25,810
22	Luxembourg	0.35	22.75	20.78	17.0	77,480
23	United Kingdom	0.37	13.50	12.58	20.0	43,700
24	Greece	0.40	6.69	8.66	38.9	20,270
25	Russian Federation	0.40	3.87	10.83	18.0	11,720
26	Kuwait	0.40	14.14	22.14	0.0	42,150
27	Kazakhstan	0.41	3.87	13.16	12.0	11,390
28	San Marino	0.41	14.30	16.65	0.0	41,938
29	Iran (Islamic Republic of)	0.41	1.74	4.78	9.0	5,053
30	Switzerland	0.43	30.20	20.75	8.0	84,550
31	Costa Rica	0.49	4.29	6.18	13.0	10,400
32	Latvia	0.50	6.24	9.98	21.0	14,990
33	Ireland	0.51	22.12	19.92	23.0	52,550
34	Italy	0.53	14.38	15.80	22.0	32,830
35	Mauritius	0.61	4.98	9.07	15.0	9,780
36	Oman	0.62	8.73	16.81	0.0	16,910
37	China	0.63	4.17	7.25	0.0	7,900
38	Bahrain	0.65	10.72	17.77	0.0	19,840
39	Malaysia	0.66	5.84	14.71	6.0	10,570
40	Canada	0.67	26.42	26.08	13.0	47,250
41	Belarus	0.67	3.63		20.0	6,470
42	Poland	0.68	7.55	15.95	23.0	13,310
43	Netherlands	0.69	27.94	28.38	21.0	48,850
44	Cayman Islands	0.69	32.33			56,282
45	Romania	0.70	5.53	12.03	20.0	9,510
46	Denmark	0.70	35.20	27.67	25.0	60,270
47	Saudi Arabia	0.72	14.13	27.99	0.0	23,550
48	Namibia	0.75	3.26	8.03	0.0	5,190
49	Egypt	0.76	2.11	8.66	6.0	3,340
50	United States	0.77	35.73	35.73	8.9	55,980
51	Turkmenistan	0.80	4.89		15.0	7,380
52	Belgium	0.81	30.15	31.47	21.0	44,510
53	Malta	0.82	16.25	22.29	18.0	23,900
54	Mongolia	0.83	2.69	6.87	10.0	3,870
55	Mexico	0.85	6.87	13.17	19.0	9,710
56	Azerbaijan	0.86	4.71		18.0	6,560
57	Slovakia	0.91	13.38	22.26	20.0	17,570
58	Thailand	0.92	4.38	11.93	7.0	5,720
59	Croatia	0.92	9.81	16.46	25.0	12,760
60	Andorra	0.93	30.91			39,896
61	Tunisia	0.94	3.06	8.13	23.9	3,930
62	Armenia	0.95	3.06	7.27	20.0	3,880
63	Portugal	0.98	16.69	22.40	23.0	20,470
64	France	0.99	33.57	35.29	20.0	40,710
65	Japan	1.01	32.76	32.56	8.0	38,840
66	Trinidad and Tobago	1.05	15.42	18.43	12.5	17,640
67	Maldives	1.05	6.08	7.77	6.0	6,950
68	Czech Republic	1.05	15.89	26.81	21.0	18,150
69	Seychelles	1.08	13.26	19.99	15.0	14,680
70	Bahamas	1.09	18.79	16.26	7.5	20,740
71	Israel	1.10	32.92	28.91	17.0	35,770
72	Ukraine	1.15	2.53	12.30	20.0	2,640
73	Korea (Rep. of)	1.24	28.35	31.72	10.0	27,450
74	Spain	1.27	29.92	35.76	21.0	28,380
75	Panama	1.28	12.64	21.30	7.0	11,880
76	Anguilla	1.28	23.36		7.0	21,905
77	Uruguay	1.28	16.77	23.38	22.0	15,720
78	Bhutan	1.29	2.55	7.93	5.0	2,380
79	Libya	1.29	6.31		0.0	5,870
80	Botswana	1.32	7.11	15.02	12.0	6,460
81	Aruba	1.37	27.87	32.11	3.5	24,445
82	Brazil	1.38	11.46	19.57	40.2	9,990
83	Georgia	1.44	4.93	13.83	27.1	4,120
84	South Africa	1.49	7.55	18.63	14.0	6,080
85	Palau	1.55	15.78		0.0	12,180
86	Jordan	1.61	6.27	13.14	46.2	4,680
87	Montenegro	1.61	9.68	19.84	19.0	7,220
88	Suriname	1.63	12.71	37.41	8.0	9,360
89	Chile	1.65	19.36	31.64	19.0	14,100
90	Paraguay	1.69	5.89	13.21	10.0	4,190
91	Nigeria	1.76	4.09	9.57	5.0	2,790
92	Bangladesh	1.76	1.75	4.49	21.0	1,190
93	Albania	1.81	6.44	14.90	20.0	4,280
94	India	1.81	2.40	8.35	15.0	1,590
95	Sudan	1.89	3.03	5.08	31.3	1,920

Rank	Economy	Mobile-cellular sub-basket			Tax rate Included (%)	GNI p.c., USD, 2015*
		as% of GNI p.c.	USD	PPP\$		
96	Myanmar	1.91	1.85	6.96	5.0	1,160
97	Hungary	1.97	21.31	41.43	27.0	12,970
98	Saint Kitts and Nevis	2.00	25.10	32.21		15,060
99	Peru	2.03	10.35	20.60	18.0	6,130
100	Argentina	2.03	21.09		21.0	12,450
101	Pakistan	2.04	2.45	8.18	33.5	1,440
102	Nauru	2.04	20.18		15.0	11,850
103	Curacao	2.10	34.56	43.19	6.0	19,772
104	Iraq	2.10	10.20	19.78	0.0	5,820
105	Puerto Rico	2.11	32.72		11.5	18,603
106	Colombia	2.15	12.79	30.23	20.0	7,140
107	Gabon	2.17	16.62	26.61		9,200
108	Syrian Arab Republic	2.20	2.75			1,502
109	South Sudan	2.24	1.47		13.0	790
110	Jamaica	2.27	9.32	14.77	25.0	4,930
111	Uzbekistan	2.29	4.12		20.0	2,160
112	Kenya	2.30	2.57	5.90	26.0	1,340
113	Barbados	2.33	28.15	22.91		14,510
114	Bosnia and Herzegovina	2.35	9.15	19.82	17.0	4,670
115	Ghana	2.44	3.01	8.87	23.5	1,480
116	The Former Yugoslav Rep. of Macedonia	2.46	10.56	25.69	18.0	5,140
117	Algeria	2.50	10.12	30.30	17.0	4,850
118	Viet Nam	2.58	4.28	10.83	10.0	1,990
119	Lebanon	2.59	16.62		10.0	7,710
120	Dominican Rep.	2.64	13.71	28.42	30.0	6,240
121	Tonga	2.71	9.67	13.30	15.0	4,280
122	Antigua and Barbuda	2.72	30.12	36.53	15.0	13,270
123	Grenada	2.99	21.55	29.09	15.0	8,650
124	Serbia	3.02	13.95	32.20	6240.0	5,540
125	Angola	3.21	11.19	18.41		4,180
126	Philippines	3.23	9.57	22.61	12.0	3,550
127	Indonesia	3.31	9.50	25.92	10.0	3,440
128	Turkey	3.41	28.28	56.27	43.0	9,950
129	Cuba	3.42	21.53			7,552
130	Ecuador	3.47	17.43	28.86	14.0	6,030
131	Moldova	3.67	6.84	20.88	16.7	2,240
132	Dominica	3.73	21.13	28.68	15.0	6,800
133	Tajikistan	3.74	3.99		23.0	1,280
134	Nepal (Republic of)	3.80	2.31	7.29	24.0	730
135	Eswatini	3.83	10.46	31.37	14.0	3,280
136	Guyana	3.91	13.31	20.86	16.0	4,090
137	Kyrgyzstan	4.05	3.95	13.22	17.0	1,170
138	Bulgaria	4.07	25.36	59.45	20.0	7,480
139	Bolivia (Plurinational State of)	4.13	10.32	21.24	13.0	3,000
140	El Salvador	4.13	13.57	26.18	18.0	3,940
141	Fiji	4.32	17.37	29.07	6.0	4,830
142	Morocco	4.44	11.22	26.26	20.0	3,030
143	Saint Lucia	4.50	27.56	33.83	15.0	7,350
144	Lao P.D.R.	4.73	6.85	17.22	10.0	1,740
145	Saint Vincent and the Grenadines	4.85	26.79	36.70	15.0	6,630
146	Palestine	4.97	12.48	18.56	16.0	3,011
147	Samoa	5.05	16.52	22.82	15.0	3,930
148	Congo (Rep. of the)	5.31	11.25	20.15	18.0	2,540
149	Kiribati	5.53	15.64			3,390
150	Marshall Islands	5.59	22.22		0.0	4,770
151	Zambia	5.67	7.04	22.56	16.0	1,490
152	Mozambique	6.01	2.95	11.12	17.0	590
153	Yemen	6.22	5.91		5.0	1,140
154	Tanzania	6.35	4.87	13.60	32.5	920
155	Ethiopia	6.47	3.18	7.91	15.0	590
156	Lesotho	7.08	7.55	25.02	5.0	1,280
157	Djibouti	7.28	12.67	20.94	10.0	2,089
158	Timor-Leste	7.36	14.04	20.98		2,290
159	Honduras	7.39	14.05	27.69	15.0	2,280
160	Belize	7.41	27.74	48.40	12.5	4,490
161	Cambodia	7.68	6.85	17.22	10.0	1,070
162	Sao Tome and Principe	7.92	11.62	19.75	5.0	1,760
163	Rwanda	8.38	4.89	14.20	28.0	700
164	Cabo Verde	8.71	23.81	50.57	15.0	3,280
165	Papua New Guinea	8.77	19.55	24.66	10.0	2,676
166	Solomon Islands	8.90	14.24	14.24	10.0	1,920
167	Micronesia	9.45	28.03		0.0	3,560
168	Afghanistan	9.45	4.80	16.31	0.0	610
169	Vanuatu	9.77	22.28	20.33	12.5	2,736
170	Uganda	9.92	5.78	16.68	18.0	700
171	Guatemala	10.22	30.56	55.10	12.0	3,590
172	Benin	11.57	8.10	21.03	18.0	840
173	Haiti	11.57	7.81	19.63	10.0	810
174	Côte d'Ivoire	11.93	14.12	35.41	18.0	1,420
175	Cameroon	12.16	13.37	33.02	19.3	1,320
176	Guinea	13.35	5.23	11.70	11.0	470
177	Comoros	13.99	9.09	20.08		780
178	Gambia	15.84	6.03	18.91	21.3	457
179	Mauritania	16.28	15.98	45.83	18.0	1,178
180	Senegal	17.31	14.14	35.48	23.0	980
181	Burkina Faso	18.23	9.72	26.01	18.0	640
182	Zimbabwe	18.75	13.44		20.0	860
183	Nicaragua	19.23	31.09	80.82	15.0	1,940
184	Mali	19.49	12.35	32.42	18.0	760
185	Chad	21.43	15.71	32.46	18.0	880
186	Togo	22.34	10.05	25.40	18.0	540
187	Sierra Leone	23.25	12.01	29.67	15.0	620
188	Somalia	25.12	2.91		10.0	130

Rank	Economy	Mobile-cellular sub-basket			Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$		
189	Malawi	26.37	7.47	30.93	16.5	340
190	Dem. Rep of the Congo	27.62	9.44	26.0	26.0	410
191	Niger	33.36	10.84	28.80		390
192	Guinea-Bissau	34.54	16.98	41.41	15.0	590
193	Burundi	35.00	7.58	19.33	18.0	260
194	Central African Rep.	41.71	11.47	14.51	19.0	330
195	Madagascar	44.91	15.72	58.20	20.0	420
196	Liberia	51.13	16.19	22.09	14.0	380
	Saint Helena**		22.59		10.0	

Notes: * Data correspond to GNI per capita (Atlas method) in 2015 or latest available year adjusted with international inflation rates. ** Country not ranked because data on GNI per capita are not available. Source: ITU. GNI per capita and PPP\$ values are based on World Bank data.

At the country level, Iceland and Armenia have experienced some of the largest price drops, more than 50 per cent since 2015 (both in terms of USD and PPP\$ values). In Iceland, on-net SMS was offered at no cost to the consumer, and in Armenia there was a significant drop in all voice and SMS tariffs, along with the introduction of a new entry-level prepaid plan. In contrast, some price basket increases have been observed since 2015. It is not uncommon for mobile operators to include a call connection charge – a one-time fee at the beginning of a call on top of the tariff for minutes consumed. In the case of Turkey, a simple increase in call connection charge (which impacts the 30 calls in the basket) and SMS tariffs (which impacts 100 SMS messages included in the basket) bumped up the sub-basket value by more than 50 per cent from 2015 to 2016.

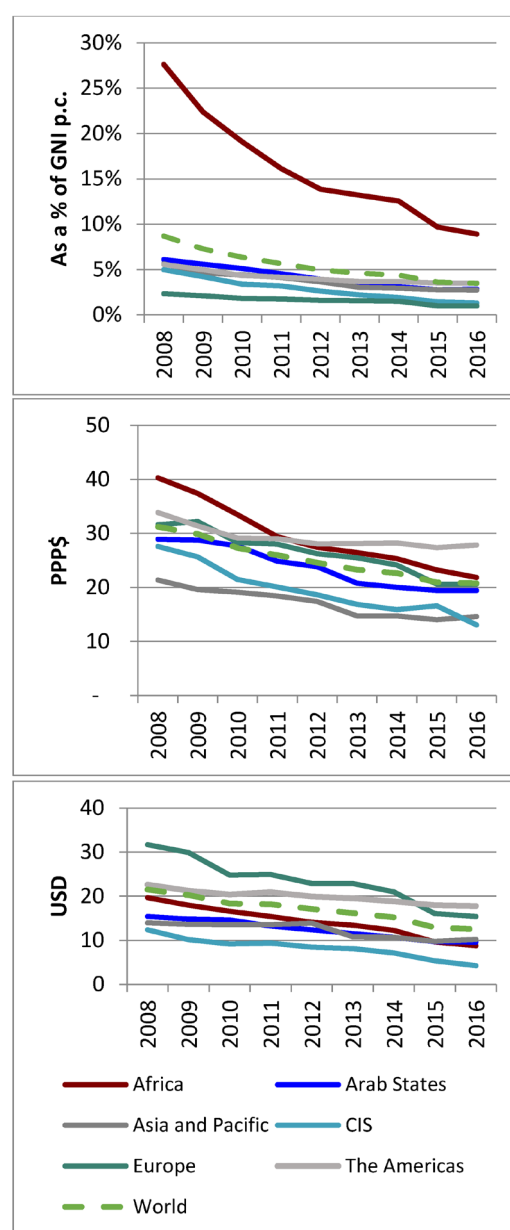
2.1 Mobile-cellular regional trends

From a regional perspective, the decline in the mobile-cellular sub-basket is most significant in the case of Africa. In 2008, Africa had the highest basket price both in terms of PPP\$ and as a percentage of GNI per capita at 28 per cent, three times higher than the world average. While it still maintains the same ratio to the world average (Chart 4), in 2016 the mobile-cellular sub-basket declined to 9 per cent of GNI per capita, from 28 per cent in 2008. In fact, in absolute terms it is among the lowest, USD 3.8 less than the world average. The steady decline in prices can be attributed to the changes in the telecommunication sector in Africa as a region in general, with new entrants boosting competition and foreign investment on telecom infrastructure (ITU, 2017; GSMA, 2016). Other regional averages are far less dispersed from the global average and represent between 1 to 3 per cent of the respective GNI per capita. In absolute terms, Europe was the highest by a considerable margin,

with average prices of USD 32 per month in 2008, USD 10 higher than the world average, although prices have dropped since 2014, and Europe is no longer the most expensive region.

When considering the price basket in terms of PPP\$, the Arab States, Europe and Africa converge at around PPP\$ 20, but the lowest rates are maintained in the regions of CIS and Asia and the Pacific. Nonetheless, there have been decreases

Chart 4: Mobile-cellular sub-basket by region, as a % of GNI per capita (top), in PPP\$ (middle) and in USD (bottom), 2008-2016



Note: Simple averages. Based on 140 economies for which data on mobile-cellular prices were available for 2008-2016. Source: ITU.

Table 2: Five least expensive countries for mobile-cellular services in each region, PPP\$, 2016

Africa		Arab States		Asia and the Pacific	
Country	PPP\$	Country	PPP\$	Country	PPP\$
Kenya	5.9	Sudan	5.1	Sri Lanka	3
Ethiopia	7.9	Tunisia	8.1	Bangladesh	4.5
Namibia	8	Egypt	8.7	Iran (Islamic Republic of)	4.8
Ghana	8.9	United Arab Emirates	8.8	Mongolia	6.9
Mauritius	9.1	Jordan	13.1	New Zealand	6.9
CIS		The Americas		Europe	
Country	PPP\$	Country	PPP\$	Country	PPP\$
Armenia	7.3	Costa Rica	6.2	Estonia	5
Russian Federation	10.8	Mexico	13.2	Lithuania	5.8
Ukraine	12.3	Paraguay	13.2	Slovenia	6
Kazakhstan	13.2	Jamaica	14.8	Austria	6.9
Kyrgyzstan	13.2	Bahamas	16.3	Iceland	8.4

Source: ITU.

in basket values across all regions, and this is evident when comparing the five countries with the lowest PPP\$ prices from 2015 and 2016 (Table 2). A closer look at prices at the country level in PPP\$ terms reveals only a marginal change in the five least expensive economies per region compared with the same in 2015. One of the most common features among these economies (with the exception of Ethiopia) is that there are a number of significant market players in each country that drive the Herfindahl-Hirschman Index down, indicating a lower market concentration and relatively high levels of competition – a known driver of price reductions.⁹

From an affordability perspective, the least affordable prices are from Africa, which is also the region with the highest number of LDCs. Yet it is noteworthy that LDCs such as Angola (Africa), Sudan (Arab States), Bhutan, Bangladesh, Myanmar and Nepal (Republic of) (Asia and the Pacific) are below the threshold of 5 per cent of GNI per capita (Chart 5).

2.1.1 Africa

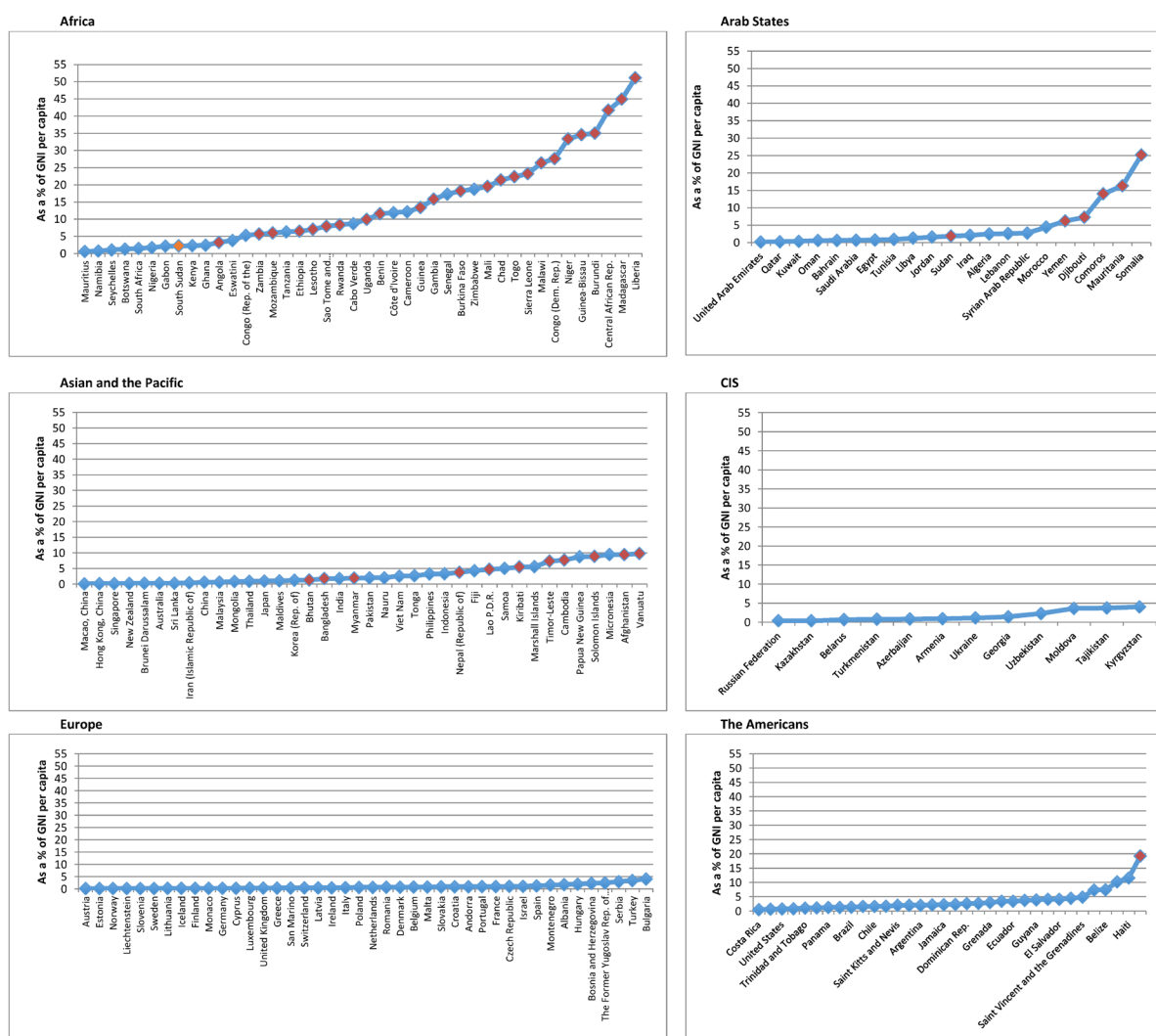
The price of the mobile-cellular basket ranges from USD 1.5 (South Sudan) to USD 23.8 (Cabo Verde), with an average value of USD 9.5/month. However, when analysed as a percentage of GNI per capita, the range is from 0.6 per cent of GNI per capita (Mauritius) to 51 per cent GNI per capita (Liberia). The majority of the African economies

(30 economies) are above the 5 per cent of GNI per capita threshold, which hints at how costly mobile-cellular prices still are in comparison to the world average.

A sizeable decline in prices was noted, for example, in Mozambique, where the reduction of mobile termination rates and increased competition impacted retail tariffs (Research ICT Africa, 2014) and a 50 per cent reduction of off-net tariffs during off-peak times in Kenya resulted in a 26 per cent reduction (in terms of PPP\$) of the mobile-cellular price basket.

Cameroon's mobile-cellular sub-basket value was among those with the highest variation in the period 2013–2016, with significant increases and decreases in prices alternating. This type of fluctuation is not uncommon in markets that have not yet reached maturity. At 80 mobile subscriptions per 100 inhabitants in 2016 (up from 33 per cent in 2008), with reported multiple subscriber identification module (SIM) ownership (Media Intelligence, 2016), a recent new entrant in the mobile market (Nexttel) and the impending launch of mobile number portability (TeleGeography, 2017) are causing a shift in market dynamics that may prompt dominant mobile operators to discontinue the existing and introduce new pricing plans at a faster pace than what is typically observed. The price baskets over the last few years for Cameroon have been based on different offers, and thereby more fluctuation is observed in comparison with other countries.

Chart 5: Mobile-cellular sub-basket, as a percentage of GNI per capita, by region, 2016



Note: Red dots indicate LDCs.
Source: ITU.

2.1.2 Arab States

In absolute terms, the mobile-cellular sub-basket ranges from USD 2.1 (Egypt) to USD 18.7 (Qatar). The regional average remains the same, with a marginal decline since 2014. The most significant increase was seen in Jordan, which rose from PPP\$ 10.2 in 2015 to PPP\$ 13.1 in 2016, and had the effect of a 39 per cent increase in terms of basket price as a percentage of GNI per capita. The prime cause for this shift is the tax-on-tax regime employed in the country (GSMA, 2015b).¹⁰ While the tax regime was the prime reason for an increase in the sub-basket price in Jordan, it is also the reason for the decrease in the sub-basket price in Egypt. Though there is a total of 21 per cent tax applicable on mobile services (table tax of 8 per cent and value-added tax of 13 per cent),

15 per cent of the total considered as sales tax is absorbed by the mobile operator and only an effective tax rate of 6 per cent is passed on to the end user.

The Arab State with the most significant drop in prices in absolute terms was Yemen, with a 30 per cent decline in the sub-basket's USD value. This is attributed to the flat tariff structure offered in 2016 on SMS for both on-net and off-net, whereas in previous year off-net SMS cost twice as much as on-net SMS. Given the sub-basket composition of 100 SMS messages, of which 50 are based on off-net tariffs, the change in price affected the total sub-basket value substantially.

In terms of affordability, the Arab States fare comparatively well, with only 5 of 21 economies in

the region with sub-basket prices above 5 per cent of their GNIs per capita. All five economies are classified as LDCs.

2.1.3 Asia and the Pacific

The regional average of the mobile-cellular price basket for Asia and the Pacific is USD 10.3, ranging from USD 1 (Sri Lanka) to USD 32.8 (Japan). However, when the Small Island Developing States (SIDS) in the Asia and the Pacific region are analysed as a separate subgroup, the average for Asia drops to USD 7.2, with the average for SIDS in Asia and the Pacific at USD 16.4. Although there has been significant progress in recent years in the telecommunication sectors of these States, their geographic positioning poses challenges that often result in high-cost interconnectivity. Therefore, prices in SIDS remain high in comparison with other Asian countries of similar development status. The highest prices were observed in Japan and Korea (Republic of) in terms of USD and PPP\$, but these are also the only two economies in the region that report postpaid plans,¹¹ one of which is a bundled offer that has a higher value for money, as opposed to the prepaid plans offered by other economies in the region. Of the countries that had lower sub-basket values since 2015, one that stands out is Kiribati, where a change in ownership of the sole communications provider and a subsequent joint venture resulted in reduced tariffs across the board, impacting the overall price basket (TeleGeography, 2015a).

2.1.4 Commonwealth of Independent States (CIS)

The Commonwealth of Independent States (CIS) region has the lowest average values in comparison with other regions at USD 4.1/month. The sub-basket price ranges between USD 2.5 (Ukraine) and USD 6.8 (Moldova), which does not portray a vast disparity, unlike in other regions, due to the homogeneity of the economies within the CIS region. Mobile network operators such as MTS have a regional presence that also accounts for similar price structures across economies, to some extent.¹² The biggest drop in sub-basket values was observed in Armenia, where the introduction of a new and less expensive prepaid plan led to a reduction in the sub-basket price of more than 50 per cent.

CIS is second only to Europe in terms of prices relative to GNI per capita, with all economies under the 5 per cent threshold. The highest in the region is Kyrgyzstan, with a sub-basket value corresponding to 4 per cent of GNI per capita. In contrast, the Russian Federation, Kazakhstan, Turkmenistan, Azerbaijan, Armenia and Belarus have prices that represent less than 1 per cent of their respective GNI per capita.

2.1.5 The Americas

Mobile operators often upgrade and introduce new plans, some more frequently than others, which causes fluctuations in prices. Nonetheless, price decreases were observed even in countries where the dominant mobile operator and the plan remained the same over years. For example, in Suriname, prices declined from 2015 to 2016 (for the same plan offered by the same operator). The market had three mobile network operators reduced to two in 2016, with Digicel acquiring the third player, Uniq, creating a shift in market dynamics (TeleGeography, 2015b). Meanwhile, the most significant increases in prices in both USD and PPP\$ were observed in Guatemala, Nicaragua, Paraguay, Antigua and Barbuda, and Saint Kitts and Nevis. Overall, the mobile-cellular sub-basket averages USD 18 with a range of USD 4.3 (Costa Rica) to USD 35.7 in the United States of America.

In reference to the basket price as a percentage of GNI per capita, as a region, the majority of countries perform well below the 5 per cent threshold.

2.1.6 Europe

Mobile-cellular sub-basket prices range from USD 3 (Lithuania) to USD 40 (Monaco); however, given the GNI per capita in both instances, prices are only 0.3 per cent of GNI per capita. Some of the largest price reductions were observed in Iceland, Slovenia, San Marino, Ireland, Bosnia and Herzegovina, Italy, Malta and Romania, all reporting cost reductions of more than 15 per cent since 2015. On the other end of the spectrum, Bulgaria, Portugal, the Czech Republic, Latvia and Turkey had increased prices by more than 15 per cent since 2015. Nonetheless, prices in all economies correspond to less than the 5 per cent

per GNI per capita threshold, with Bulgaria being the highest at 4.1 per cent.

LDCs, Bhutan, Cambodia and Lao P.D.R. are below this 5 per cent threshold for the two mobile-broadband sub-baskets (Table 3 and Table 4).

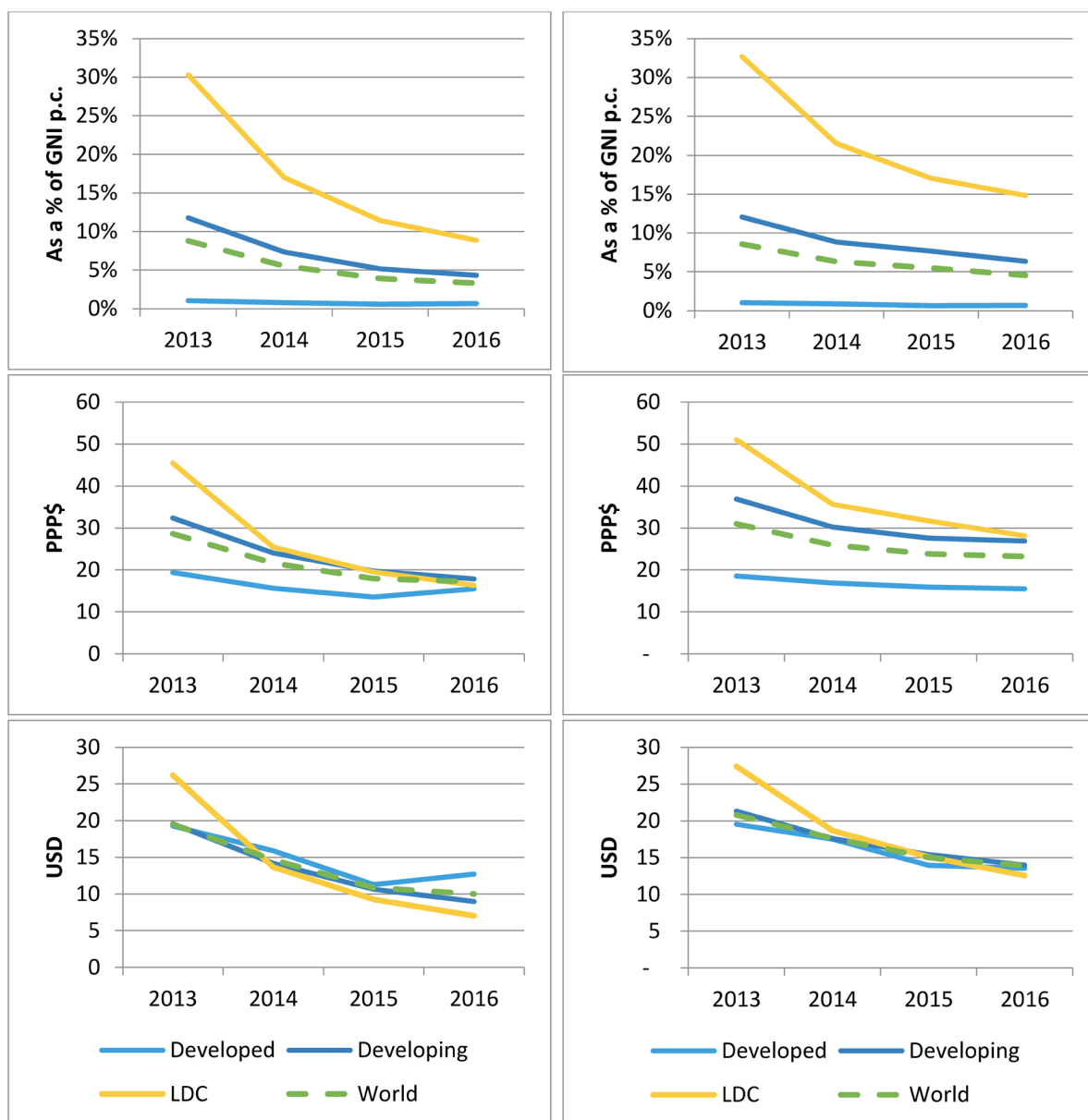
3 Mobile-broadband prices

ITU collects data for two types of mobile-broadband services: (a) prepaid handset-based mobile-broadband plans with a data allowance of 500 megabytes (MB) per month, and (b) postpaid computer-based mobile-broadband plans with a data allowance of 1 gigabyte (GB) per month. The latter requires a SIM card-enabled Universal Serial Bus (USB) dongle to be plugged in to a computer. The data allowance with a 30-day validity period is the minimum requirement for both sub-baskets.¹³ Prices are collected for the least expensive plan fulfilling these criteria offered by the mobile operator with the highest market share.

Access to the Internet via mobile-broadband continued to rise, with approximately 17 per cent growth from 2015 to 2016.¹⁴ This comes as no surprise with the proliferation of affordable smart phones and the rise in the use of apps that provide a more cost-effective alternative to traditional voice and SMS, and those that provide local content on social media, health, news and entertainment, among others.

The general price trends had been on the decline for the two mobile-broadband sub-baskets until 2015 (Chart 6). From 2015 to 2016 however, there appear to have been some price hikes that caused a slight upward trend in developed countries. Although prices have increased both in terms of USD and PPP\$, the services offered by mobile operators in developed economies (e.g. Ireland, Monaco, Bulgaria, Iceland, Norway and Australia, to name a few) have also been upgraded, with much higher monthly data allowances included in 2016. In relation to prices as a percentage of GNI per capita, developed economies maintain their position, with approximately 0.7 per cent on average for both sub-baskets. Although there is a gap between LDCs, developing economies and developed economies in terms of prices as a percentage of GNI per capita, even among developing economies (LDCs included) approximately 70 per cent are below the Broadband Commission's target of entry-level broadband plans being priced at 5 per cent or less of GNI per capita.¹⁵ It is noteworthy that among

Chart 6: 500 MB handset-based (left) and 1 GB computer-based (right) sub-basket, as a % of GNI per capita (top), in PPP\$ (middle) and in USD (bottom), 2013-2016



Note: Simple averages. Based on 152 and 146 economies for which 2013-2016 data on handset-based and computer-based mobile-broadband prices are available, respectively.
Source: ITU.

Table 3: Mobile-broadband sub-basket, prepaid handset-based, 500 MB, 2016

Rank	Economy	Mobile-broadband, prepaid handset-based (500 MB)			Monthly data allowance (GB)	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$			
1	Poland	0.11	1.27	2.68	500	23.0	13,310
2	Sweden	0.12	5.72	5.25	500	25.0	57,900
3	Norway	0.12	9.40	7.77	1024	25.0	93,530
4	Macao, China	0.13	7.25	9.01	600	0.0	67,180
5	Austria	0.14	5.53	5.84	1024	20.0	47,260
6	Estonia	0.14	2.21	3.34	500	20.0	18,320
7	Singapore	0.17	7.24	8.37	1024	7.0	52,090
8	Luxembourg	0.17	11.06	10.10	500	17.0	77,480
9	Finland	0.19	7.30	6.75	500	24.0	46,560
10	Liechtenstein	0.19	22.12		1024	8.0	139,608
11	Brunei Darussalam	0.23	7.24	12.33	1024	0.0	38,010
12	Uruguay	0.25	3.32	4.62	512	22.0	15,720

Rank	Economy	Mobile-broadband, prepaid handset-based (500 MB)			Monthly data allowance (GB)	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$			
13	Iceland	0.26	10.68	8.31	1024	24.0	50,110
14	Lithuania	0.26	3.32	6.00	1536	21.0	15,080
15	Switzerland	0.27	19.29	13.25	600	8.0	84,550
16	Kuwait	0.28	9.93	15.55	204800	0.0	42,150
17	Hong Kong, China	0.29	9.79	11.91	600	0.0	41,000
18	Germany	0.29	11.05	11.93	750	19.0	45,790
19	Russian Federation	0.31	2.98	8.35	2250	18.0	11,720
20	Monaco	0.31	43.14		10240	20.0	165,871
21	Qatar	0.31	21.98	28.94	3000	0.0	83,990
22	Netherlands	0.33	13.27	13.48	500	21.0	48,850
23	Spain	0.33	7.74	9.25	600	21.0	28,380
24	Belarus	0.34	1.81		500	20.0	6,470

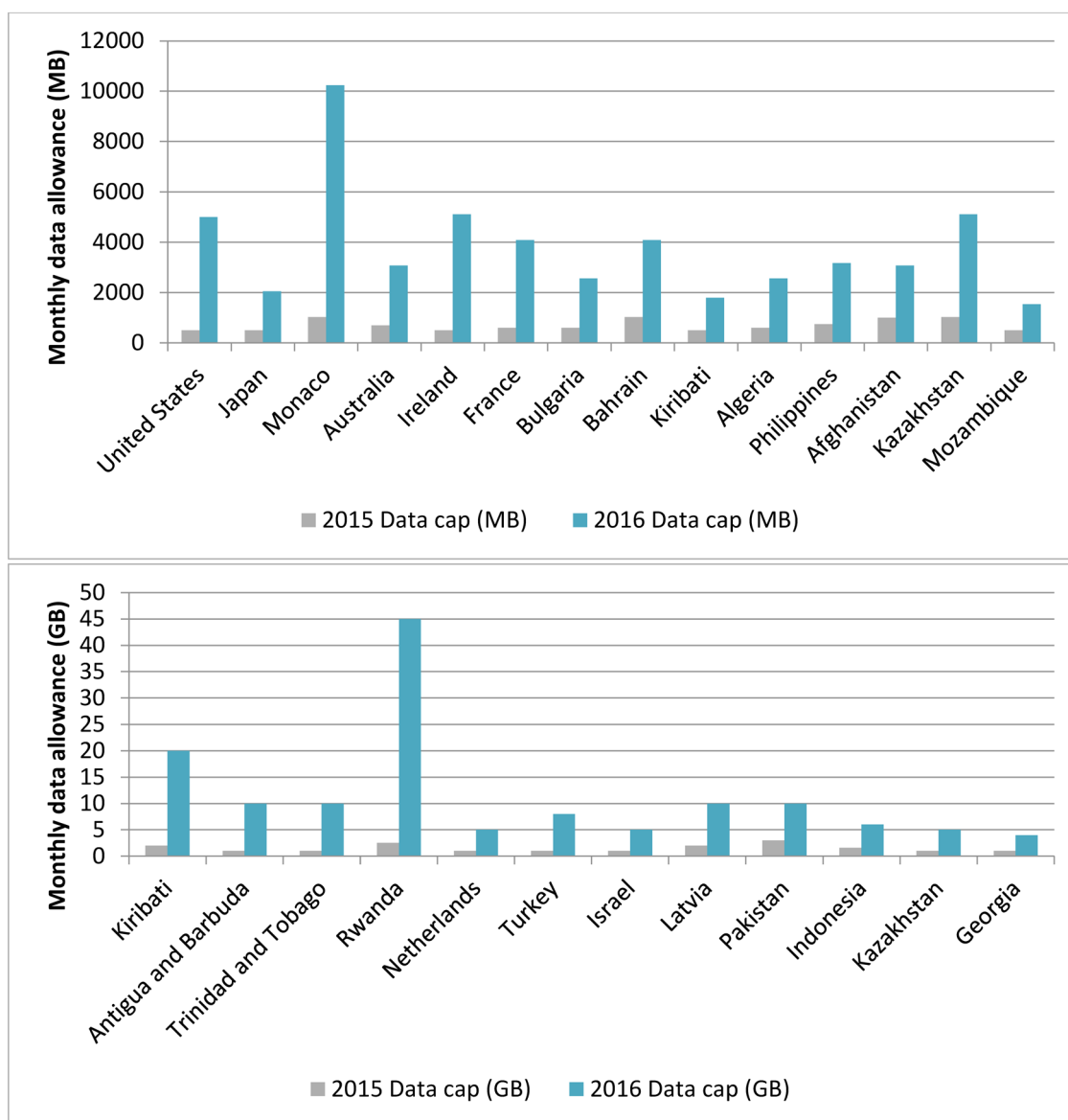
Rank	Economy	Mobile-broadband, prepaid handset-based (500 MB)			Monthly data al- lowance (GB)	Tax rate includ- ed (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$			
25	Azerbaijan	0.34	1.88		500	18.0	6,560
26	Georgia	0.37	1.27	3.55	500	18.0	4,120
27	United Kingdom	0.37	13.50	12.58	500	20.0	43,700
28	New Zealand	0.40	13.22	11.76	750	15.0	40,020
29	Canada	0.43	17.06	16.84	500	13.0	47,250
30	Australia	0.45	22.30	19.32	3072	10.0	60,050
31	United Arab Emirates	0.45	16.34	21.46	500	0.0	43,090
32	Kazakhstan	0.46	4.35	14.83	5120	12.0	11,390
33	Slovenia	0.48	8.85	12.24	500	22.0	22,250
34	Chile	0.50	5.91	9.66	500	19.0	14,100
35	Ireland	0.51	22.12	19.92	5120	23.0	52,550
36	Portugal	0.52	8.84	11.86	1024	23.0	20,470
37	Israel	0.52	15.62	13.72	500	17.0	35,770
38	Slovakia	0.53	7.72	12.84	700	20.0	17,570
39	Latvia	0.53	6.63	10.60	600	21.0	14,990
40	Iran (Islamic Republic of)	0.54	2.26	6.24	600	8.0	5,053
41	Croatia	0.55	5.88	9.86	500	25.0	12,760
42	Turkey	0.56	4.64	9.22	500	23.0	9,950
43	Sri Lanka	0.56	1.77	5.37	1200	31.7	3,800
44	Italy	0.61	16.59	18.23	2048	22.0	32,830
45	Bahamas	0.62	10.75	9.30	2048	7.5	20,740
46	San Marino	0.63	22.12	25.76	2048	0.0	41,938
47	Cayman Islands	0.65	30.49		2048	19.0	56,282
48	France	0.65	22.12	23.26	4096	20.0	40,710
49	Hungary	0.65	7.07	13.74	500	27.0	12,970
50	Andorra	0.67	22.12		2000	4.5	39,896
51	Mauritius	0.68	5.51	10.05	800	15.0	9,780
52	China	0.69	4.52	7.85	500	6.0	7,900
53	Argentina	0.69	7.21		1500	21.0	12,450
54	Romania	0.70	5.53	12.03	1024	24.0	9,510
55	Egypt	0.72	2.00	8.20	800	15.0	3,340
56	Denmark	0.75	37.43	29.43	1500	25.0	60,270
57	Belgium	0.75	27.65	28.86	500	21.0	44,510
58	Malta	0.80	15.93	21.85	500	18.0	23,900
59	Bhutan	0.80	1.59	4.94	500	5.0	2,380
60	Czech Republic	0.81	12.23	20.64	500	21.0	18,150
61	Malaysia	0.81	7.16	18.04	3072	6.0	10,570
62	Oman	0.92	12.99	25.01	1024	0.0	16,910
63	Greece	0.92	15.62	20.22	500	24.0	20,270
64	Costa Rica	0.93	8.07	11.63	500	13.0	10,400
65	Anguilla	0.93	17.04		1024	7.0	21,905
66	Saudi Arabia	0.95	18.67	36.98	500	0.0	23,550
67	Bahrain	0.97	15.96	26.45	4096	0.0	19,840
68	Serbia	0.97	4.49	10.37	800	20.0	5,540
69	Cyprus	0.98	21.02	26.36	540	19.0	25,810
70	Korea (Rep. of)	0.99	22.75	25.46	650	10.0	27,450
71	Kyrgyzstan	1.03	1.00	3.35	500	17.0	1,170
72	Brazil	1.03	8.59	14.68	600	40.2	9,990
73	The Former Yugoslav Rep. of Macedonia	1.04	4.47	10.87	1024	18.0	5,140
74	Moldova	1.08	2.01	6.13	500	16.7	2,240
75	Curacao	1.08	17.77	22.20	750	6.0	19,772
76	Saint Kitts and Nevis	1.09	13.70	17.59	1024	17.0	15,060
77	Pakistan	1.11	1.34	4.47	1500	19.5	1,440
78	Cambodia	1.12	1.00	2.51	500	10.0	1,070
79	United States	1.17	54.44	54.44	5000	8.9	55,980
80	Antigua and Barbuda	1.17	12.96	15.72	700	15.0	13,270
81	Maldives	1.18	6.83	8.73	500	6.0	6,950
82	Thailand	1.18	5.64	15.36	1024	7.0	5,720
83	Seychelles	1.22	14.94	22.53	1024	15.0	14,680
84	Barbados	1.24	15.00	12.21	1536	17.5	14,510
85	Albania	1.24	4.43	10.24	1000	20.0	4,280
86	Ukraine	1.25	2.74	13.31	1000	20.0	2,640
87	Jordan	1.26	4.93	10.33	500	8.0	4,680
88	Cabo Verde	1.28	3.51	7.46	500	15.0	3,280
89	Sudan	1.30	2.07	3.47	500	30.0	1,920
90	Mexico	1.32	10.72	20.53	700	16.0	9,710
91	South Africa	1.33	6.73	16.61	500	14.0	6,080
92	Trinidad and Tobago	1.33	19.59	23.42	1200	15.0	17,640
93	Indonesia	1.38	3.94	10.77	600	10.0	3,440
94	Aruba	1.39	28.34	32.64	3096	3.5	24,445
95	Turkmenistan	1.39	8.57		500	15.0	7,380
96	Paraguay	1.41	4.94	11.08	1200	10.0	4,190
97	Guyana	1.42	4.84	7.59	500	16.0	4,090
98	Tunisia	1.42	4.66	12.36	2304	23.0	3,930
99	Bosnia and Herzegovina	1.45	5.66	12.26	500	17.0	4,670
100	Libya	1.47	7.19		500	0.0	5,870
101	Japan	1.50	48.64	48.34	2048	8.0	38,840
102	Panama	1.51	14.99	25.26	1024	7.0	11,880
103	Mongolia	1.59	5.14	13.15	1126	10.0	3,870
104	Saint Vincent and the Grenadines	1.68	9.26	12.69	500	15.0	6,630
105	Nigeria	1.70	3.94	9.24	1536	5.0	2,790
106	Lao P.D.R.	1.70	2.46	6.18	540	10.0	1,740
107	Lebanon	1.71	11.00		500	10.0	7,710
108	Peru	1.74	8.89	17.69	500	18.0	6,130
109	India	1.91	2.53	8.83	500	15.0	1,590
110	Morocco	2.02	5.10	11.94	5120	20.0	3,030
111	Namibia	2.03	8.77	21.58	800	0.0	5,190
112	Viet Nam	2.04	3.38	8.56	500	10.0	1,990
113	Gabon	2.09	16.02	25.66	500	18.0	9,200
114	Iraq	2.09	10.15	19.68	500	0.0	5,820
115	Philippines	2.13	6.30	14.88	3174	12.0	3,550
116	Dominican Rep.	2.17	11.29	23.40	1024	30.0	6,240
117	Tonga	2.19	7.79	10.73	1024	15.0	4,280
118	Angola	2.19	7.64	12.57	500	10.0	4,180
119	Bolivia (Plurinational State of)	2.32	5.79	11.92	500	13.0	3,000
120	Bangladesh	2.32	2.30	5.89	500	21.0	1,190
121	Nauru	2.33	23.05		1800	15.0	11,850
122	Colombia	2.36	14.05	33.21	2048	16.0	7,140
123	Grenada	2.36	17.03	22.99	1024	15.0	8,650

Rank	Economy	Mobile-broadband, prepaid handset-based (500 MB)			Monthly data al- lowance (GB)	Tax rate includ- ed (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$			
124	Saint Lucia	2.42	14.81	18.18	1024	15.0	7,350
125	Myanmar	2.46	2.38	8.98	800	5.0	1,160
126	Suriname	2.47	19.26	56.72	7168	8.0	9,360
127	Montenegro	2.56	15.38	31.52	12288	19.0	7,220
128	Armenia	2.57	8.32	19.79	5000	20.0	3,880
129	Algeria	2.60	10.51	31.45	2560	17.0	4,850
130	Bulgaria	2.71	16.91	39.63	2560	20.0	7,480
131	Puerto Rico	2.76	42.80		500	7.0	18,603
132	Fiji	2.84	11.44	19.13	3200	9.0	4,830
133	Tanzania	3.00	2.30	6.42	500	18.0	920
134	Cameroon	3.07	3.37	8.33	500	19.3	1,320
135	Sao Tome and Principe	3.08	4.51	7.67	600	5.0	1,760
136	Vanuatu	3.29	7.51	6.85	800	12.5	2,736
137	Uzbekistan	3.33	6.00		500	20.0	2,160
138	Dominica	3.53	20.02	27.17	1536	15.0	6,800
139	Jamaica	3.79	15.59	24.71	3072	16.5	4,930
140	Ecuador	3.98	20.00	33.12	1600	14.0	6,030
141	Belize	4.01	15.00	26.17	1200	12.5	4,490
142	Tajikistan	4.19	4.47		1500	23.0	1,280
143	El Salvador	4.26	14.00	27.01	2000	13.0	3,940
144	Guatemala	4.35	13.03	23.49	2048	12.0	3,590
145	Rwanda	4.36	2.54	7.39	750	18.0	700
146	Kenya	4.41	4.93	11.29	700	26.0	1,340
147	Ghana	4.46	5.51	16.22	600	17.5	1,480
148	Palestine	4.69	11.78	17.51	500	16.0	3,011
149	Samoa	4.76	15.59	21.54	960	15.0	3,930
150	Botswana	5.11	27.52	58.13	500	12.0	6,460
151	Mozambique	5.16	2.54	9.55	1536	17.0	590
152	Timor-Leste	5.24	10.00	14.94	600	0.0	2,290
153	Kiribati	5.26	14.87		1800		3,390
154	Eswatini	5.70	15.57	46.69	500	14.0	3,280
155	Nicaragua	6.05	9.78	25.43	1500	15.0	1,940
156	Solomon Islands	6.33	10.13	10.13	800	10.0	1,920
157	Lesotho	6.37	6.80	22.53	1024	5.0	1,280
158	Côte d'Ivoire	7.34	8.68	21.79	1024	18.0	1,420
159	Yemen	7.35	6.98		500		1,140
160	Zambia	7.81	9.70	31.08	500	16.0	1,490
161	Syrian Arab Republic	7.81	9.78		600	0.0	1,502
162	Congo (Rep. of the)	8.07	17.08	30.59	1024	18.0	2,540
163	Senegal	8.26	6.75	16.93	800	23.0	980
164	Ethiopia	8.58	4.22	10.49	500	15.0	590
165	Guinea	8.98	3.52	7.87	900	20.0	470
166	Honduras	9.22	17.52	34.52	1024	15.0	2,280
167	Burkina Faso	9.49	5.06	13.53	500	18.0	640
168	Nepal (Republic of)	9.51	5.78	18.22	1000	13.0	730
169	Benin	9.64	6.75	17.52	500	18.0	840
170	Papua New Guinea	9.73	21.70	27.39	1229	10.0	2,676
171	Uganda	10.02	5.85	16.87	500	18.0	700
172	Micronesia	10.11	30.00		2048	0.0	3,560
173	Afghanistan	10.15	5.16	17.51	3072	0.0	610
174	Niger	10.38	3.37	8.96	750	19.0	390
175	Haiti	10.53	7.10	17.86	2500	10.0	810
176	Chad	11.50	8.43	17.42	500	18.0	880
177	Mali	12.51	7.93	20.81	500	18.0	760
178	Liberia	12.63	4.00	7.56	500	15.0	380
179	Gambia	12.75	4.85	15.22	500	21.3	457
180	South Sudan	14.14	9.31		500	13.0	790
181	Comoros	14.53	9.44	20.85	600		780
182	Malawi	14.83	4.20	17.40	500	16.5	340
183	Madagascar	15.11	5.29	19.58	1050	20.0	420
184	Djibouti	16.16	28.13	46.49	500	10.0	2,089
185	Togo	18.74	8.43	21.30	1500	18.0	540
186	Sierra Leone	21.69	11.21	27.69	500	15.0	620
187	Burundi	22.32	4.83	12.32	500	18.0	260
188	Zimbabwe	27.91	20.00		750	20.0	860
189	Mauritania	29.19	28.65	82.17	Unltd	18.0	1,178
190	Dem. Rep. of the Congo	43.90	15.00		500	13.0	410
191	Guinea-Bissau	102.89	50.59	123.35	1024	15.0	590
192	Somalia	129.50	15.00		600	10.0	133

Table 4. Mobile-broadband sub-basket, postpaid computer-based, 1 GB, 2016

Rank	Economy	Mobile-broadband, postpaid computer-based (1 GB)			Monthly data allowance (GB)	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$			
1	Luxembourg	0.09	5.53	5.05	1.00	17.0	77,480
2	Austria	0.14	5.53	5.84	1.00	20.0	47,260
3	Denmark	0.14	7.28	5.72	2.00	25.0	60,270
4	Liechtenstein	0.18	21.02		1.00	8.0	139,608
5	Norway	0.20	15.36	12.68	1.00	25.0	93,530
6	Australia	0.22	11.15	9.66	1.00	10.0	60,050
7	Qatar	0.24	16.48	21.70	1.00	0.0	83,990
8	Sweden	0.24	11.56	10.60	5.00	25.0	57,900
9	Iceland	0.26	10.68	8.31	1.00	24.0	50,110
10	Germany	0.29	11.05	11.93	1.00	19.0	45,790
11	San Marino	0.32	11.06	12.88	1.00	0.0	41,938
12	Monaco	0.32	44.24		10.00	20.0	165,871
13	France	0.33	11.05	11.62	2.00	20.0	40,710
14	Ireland	0.33	14.37	12.94	3.00	23.0	52,550
15	Singapore	0.33	14.40	16.65	2.00	7.0	52,090
16	United States	0.35	16.32	16.32	1.00	8.9	55,980
17	Lithuania	0.35	4.42	8.00	2.00	21.0	15,080
18	Italy	0.40	11.06	12.16	2.00	22.0	32,830
19	Korea (Rep. of)	0.41	9.48	10.61	1.00	10.0	27,450
20	Slovenia	0.41	7.69	10.63	1.00	22.0	22,250
21	Israel	0.43	12.76	11.20	5.00	17.0	35,770
22	United Kingdom	0.44	16.19	15.09	2.00	20.0	43,700
23	Andorra	0.45	15.03		1.00	4.5	39,896
24	Azerbaijan	0.46	2.51		1.00	18.0	6,560
25	Kazakhstan	0.46	4.35	14.83	5.00	12.0	11,390
26	Romania	0.47	3.70	8.04	10.00	24.0	9,510
27	Russian Federation	0.53	5.22	14.60	3.00	18.0	11,720
28	Czech Republic	0.54	8.14	13.74	1.50	21.0	18,150
29	Estonia	0.54	8.29	12.50	1.50	20.0	18,320
30	Netherlands	0.54	22.12	22.47	5.00	21.0	48,850
31	Malta	0.56	11.06	15.17	5.00	18.0	23,900
32	Uruguay	0.56	7.29	10.16	3.00	22.0	15,720
33	Switzerland	0.56	39.59	27.20	10.00	8.0	84,550
34	Kuwait	0.57	19.87	31.11	250.00	0.0	42,150
35	Sri Lanka	0.57	1.80	5.46	2.00	31.7	3,800
36	Belgium	0.60	22.11	23.08	2.00	21.0	44,510
37	Saudi Arabia	0.60	11.73	23.24	1.00	0.0	23,550
38	Spain	0.61	14.38	17.18	1.00	21.0	28,380
39	Portugal	0.62	10.50	14.09	3.00	23.0	20,470
40	Latvia	0.62	7.80	12.48	10.00	21.0	14,990
41	Finland	0.62	24.23	22.39	Unltd	24.0	46,560
42	Brunei Darussalam	0.64	20.28	34.52	2.00	0.0	38,010
43	New Zealand	0.65	21.57	19.19	1.00	15.0	40,020
44	Macao, China	0.67	37.27	46.31	1.00	0.0	67,180
45	Belarus	0.68	3.66		4.00	20.0	6,470
46	Poland	0.69	7.61	16.08	30.00	23.0	13,310
47	Hong Kong, China	0.75	25.51	31.04	1.00	0.0	41,090
48	United Arab Emirates	0.75	26.95	35.40	1.00	0.0	43,090
49	Slovakia	0.75	11.05	18.38	1.50	20.0	17,570
50	Iran (Islamic Republic of)	0.77	3.23	8.91	2.00	8.0	5,053
51	Cyprus	0.77	16.59	20.81	1.00	19.0	25,810
52	Hungary	0.88	9.56	18.57	3.00	27.0	12,970
53	Ukraine	0.89	1.96	9.51	1.95	20.0	2,640
54	Egypt	0.90	2.49	10.25	1.50	15.0	3,340
55	Bulgaria	0.90	5.60	13.13	1.50	20.0	7,480
56	Oman	0.92	12.99	25.01	1.00	0.0	16,910
57	Canada	0.97	38.38	37.89	3.00	13.0	47,250
58	Argentina	0.98	10.16		1.00	27.0	12,450
59	Greece	0.98	16.62	21.51	2.00	24.0	20,270
60	Mexico	0.99	7.98	15.30	1.00	16.0	9,710
61	South Africa	1.01	5.10	12.58	1.00	14.0	6,080
62	Mauritius	1.03	8.41	15.33	1.00	15.0	9,780
63	Croatia	1.09	11.61	19.47	2.00	25.0	12,760
64	Tunisia	1.14	3.72	9.89	2.00	23.0	3,930
65	China	1.14	7.53	13.08	1.00	6.0	7,900
66	Saint Kitts and Nevis	1.15	14.44	18.54	1.00	17.0	15,060
67	Serbia	1.16	5.37	12.41	1.00	20.0	5,540
68	Cayman Islands	1.17	54.88		3.00	19.0	56,282
69	Thailand	1.18	5.64	15.36	1.00	7.0	5,720
70	Montenegro	1.19	7.18	14.72	2.00	19.0	2,200
71	Georgia	1.23	4.22	11.85	4.00	18.0	4,120
72	Albania	1.24	4.43	10.24	1.00	20.0	4,280
73	Chile	1.24	14.62	23.90	1.00	19.0	14,100
74	The Former Yugoslav Rep. of Macedonia	1.25	5.36	13.06	1.00	18.0	5,140
75	Malaysia	1.39	12.27	30.92	3.00	6.0	10,570
76	Mongolia	1.45	4.67	11.96	1.00	10.0	3,870
77	Costa Rica	1.46	12.67	18.26	3.00	13.0	10,400
78	Japan	1.50	48.64	48.34	2.00	8.0	38,840
79	Bahamas	1.56	26.88	23.26	1.00	7.5	20,740
80	Seychelles	1.59	19.43	29.29	1.46	15.0	14,680
81	Bahrain	1.61	26.60	44.09	20.00	0.0	19,840
82	Nigeria	1.70	3.94	9.24	1.50	5.0	2,790
83	Bosnia and Herzegovina	1.70	6.62	14.34	2.00	17.0	4,670
84	Barbados	1.74	21.00	17.09	2.00	17.5	14,510
85	Curacao	1.76	29.02	36.26	3.00	6.0	19,772
86	Turkey	1.80	14.90	29.65	8.00	23.0	9,950
87	Suriname	1.84	14.38	42.35	3.00	8.0	9,360
88	Aruba	1.96	39.90	45.96	9.00	3.5	24,445
89	Indonesia	1.97	5.64	15.38	6.00	10.0	3,440
90	Ecuador	1.99	10.00	16.56	1.00	14.0	6,030
91	Colombia	2.00	11.92	28.19	1.00	16.0	7,140
92	Panama	2.02	19.95	33.62	1.00	7.0	11,880
93	Philippines	2.13	6.30	14.88	3.50	12.0	3,550
94	Puerto Rico	2.16	33.45		3.00	11.5	18,603
95	Libya	2.21	10.79		1.00	0.0	5,870
96	Cambodia	2.24	2.00	5.03	1.20	10.0	1,070
97	Armenia	2.25	7.28	17.31	5.00	20.0	3,880
98	Trinidad and Tobago	2.29	33.60	40.17	10.00	15.0	17,640
99	Brazil	2.31	19.19	32.79	2.00	40.2	9,990
100	Grenada	2.36	17.04	23.00	1.00	15.0	8,650
101	Maldives	2.37	13.73	17.55	2.00	6.0	6,950
102	Bhutan	2.37	4.71	14.64	0.98	0.0	2,380
103	Turkmenistan	2.56	15.71		1.00	15.0	7,380
104	Peru	2.61	13.33	26.53	1.00	18.0	6,130
105	Iraq	2.62	12.69	24.60	1.00	0.0	5,820
106	Saint Lucia	2.78	17.04	20.91	1.50	15.0	7,350
107	Fiji	2.81	11.31	18.93	8.00	9.0	4,830
108	Namibia	2.81	12.17	29.94	2.00	0.0	5,190
109	Anguilla	2.82	51.48		3.50	7.0	21,905
110	Bolivia (Plurinational State of)	2.89	7.24	14.90	1.00	13.0	3,000
111	Jamaica	2.92	11.99	19.01	2.00	16.5	4,930
112	Moldova	2.96	5.52	16.85	7.00	16.7	2,240
113	Paraguay	3.03	10.58	23.74	1.00	10.0	4,190
114	El Salvador	3.04	9.99	19.27	2.00	13.0	3,940
115	Gabon	3.08	23.61	37.81	1.00	18.0	9,200
116	Dominican Rep.	3.23	16.79	34.81	2.00	30.0	6,240
117	India	3.23	4.28	14.91	1.00	15.0	1,590
118	Viet Nam	3.24	5.37	13.58	1.50	10.0	1,990
119	Lebanon	3.25	20.90		1.75	10.0	7,710
120	Belize	3.34	12.50	21.80	1.00	12.5	4,490
121	Saint Vincent and the Grenadines	3.35	18.52	25.37	1.50	15.0	6,630
122	Tonga	3.50	12.47	17.16	1.00	15.0	4,280
123	Jordan	3.61	14.08	29.53	5.00	8.0	4,680
124	Dominica	3.92	22.22	30.16	1.00	15.0	6,800
125	Morocco	4.00	10.09	23.64	10.00	20.0	3,030
126	Tajikistan	4.19	4.47		1.46	23.0	1,280
127	Lao P.D.R.	4.24	6.15	15.45	5.00	10.0	1,740
128	Kyrgyzstan	4.40	4.29	14.38	1.00	17.0	1,170
129	Kenya	4.41	4.93	11.29	1.00	26.0	1,340
130	Ghana	4.46	5.51	16.22	1.00	17.5	1,480
131	Guayana	4.69	15.98	25.04	1.00	16.0	4,090
132	Syrian Arab Republic	4.77	5.97		1.00	0.0	1,502
133	Mozambique	5.16	2.54	9.55	1.00	17.0	590
134	Bangladesh	5.24	5.20	13.32	1.50	21.0	1,190
135	Antigua and Barbuda	5.33	58.89	71.42	10.00	15.0	13,270
136	Samoa	5.36	17.54	24.23	1.00	15.0	3,930
137	Tanzania	5.39	4.13	11.55	1.00	18.0	920
138	Algeria	5.43	21.93	65.64	1.00	17.0	4,850
139	Sudan	5.46	8.74	14.64	2.00	30.0	1,920
140	Myanmar	5.72	5.53	20.84	2.00	5.0	1,160
141	Cabo Verde	5.84	15.95	33.88	5.50	15.0	3,280
142	Palestine	5.90	14.80	22.00	1.00	16.0	3,011
143	Pakistan	5.97	7.16	23.95	10.00	14.0	1,440
144	Cameroon	6.13	6.75	16.65	1.50	19.3	1,320
145	Angola	6.14	21.39	35.19	1.00	10.0	4,180
146	Timor-Leste	6.55	12.50	18.68	1.20	0.0	2,290
147	Senegal	7.23	5.90	14.81	1.00	23.0	980
148	Lesotho	7.97	8.50	28.17	1.00	5.0	1,280
149	Dem. Rep. of the Congo	7.97	16.86	30.21	1.00	18.0	2,540
150	Nicaragua	8.54	13.80	35.88	1.00	15.0	1,940
151	Guatemala	8.75	26.18	47.21	4.00	12.0	3,590
152	Nepal (Republic of)	9.51	5.78	18.22	1.00	13.0	730
153	Eswatini	9.92	27.12	81.36	1.50	14.0	3,280
154	Afghanistan	10.15	5.16	17.51	3.00	0.0	610
155	Zambia	10.15	12.61	40.40	1.00	16.0	1,490
156	Botswana	11.45	61.65	130.22	1.20	12.0	6,460
157	Burkina Faso	13.28	7.08	18.95	1.00	18.0	640
158	Honduras	13.32	25.30	49.86	5.00	15.0	2,280
159	Papua New Guinea	14.17	31.60	39.87	1.60	10.	

Chart 7: Increase in data allowances, prepaid handset-based 500 MB plans (top) and postpaid computer-based 1 GB plan (bottom), selected economies, 2015 and 2016



Source: ITU.

3.1 Trends in mobile broadband pricing

An increase in monthly data caps from 2015 to 2016 was observed in many countries. Chart 7 illustrates the economies that more than doubled monthly data allowances for entry-level mobile-broadband plans. In some instances, this is because the service plans selected year-on-year changed, even if prices were collected for the least expensive plan for a common set of criteria. With the trend towards larger monthly data allowances, there is an improvement in value for money that

is being offered to consumers for both mobile-broadband sub-baskets.

A few years ago, operators often advertised the theoretical maximum speed that corresponded with the device and network capabilities (e.g. USB dongle on a 3G network at 7.2 megabits per second (Mbit/s)). Recognizing that these indications are not very informative of actual quality of service, it is something that is now being publicized far less frequently on operator websites. Yet quality of service is pivotal in influencing value for money (see Box 2).

Diversity in how plans are being advertised stems from innovative service offers that are increasingly popular in developing economies. These include hourly time-based offers (whereby users may be charged daily, weekly or monthly) that have differential pricing based on the time of day or for use only at night, and specific social media plans that provide access to certain websites (similar to zero-rated services that offer free access to certain apps and websites without consuming the data allowance). Such innovations provide a range of price points and options to low-income customers in a manner that is affordable to them.

Although the sub-baskets are meant to highlight the price differences for access via a handset vs. access via a USB dongle connected to a computer, it is becoming less common to find plans advertised particularly for use via a specific device. Given that the underlying technology remains the same (i.e. Internet access via the mobile network irrespective of whether the SIM card is inserted into a USB dongle or a mobile handset), many mobile operators do not differentiate any more based on the device used.

3.2 Mobile-broadband regional trends

In absolute values, prices for the 500 MB sub-basket have shown a downward trend, with the difference across regions closing (Chart 8). The most significant drop in prices was observed in Africa in 2013 and 2014, due to severe price reductions in Sao Tome and Principe, Angola, Senegal and Liberia. A drop in prices is not the only way in which price basket values are reduced. Changes in monthly data allowance can also influence the basket value, as was observed in the Bahamas, where it was 50 per cent less expensive in 2016 than in 2015. This was caused by the data allowances for the same plan being increased from 400 MB in 2015 to 2 GB in 2016.¹⁶ The same was noted in Libya, where in 2015 the plan offered only 100 MB and thus had to be multiplied by a factor of five to arrive at the methodological requirements of the basket's minimum data allowance. However, in 2016, the plan offered 500 MB per month and therefore did not have to be multiplied to calculate the sub-basket value, resulting in a cost reduction of 80 per cent from 2015 to 2016.

The same downward trend is observed in the postpaid computer-based mobile-broadband

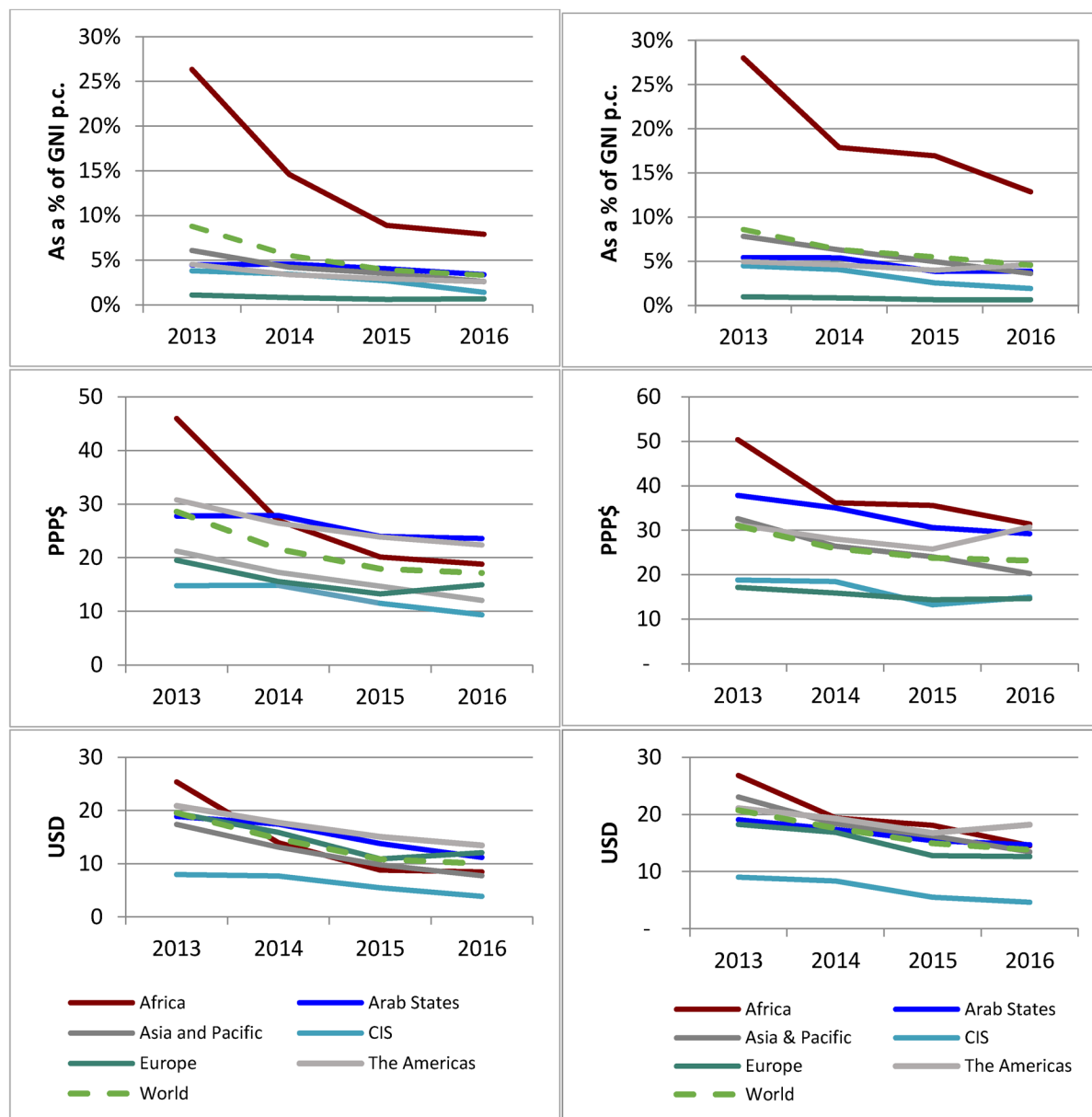
Box 2: Quality as a factor that influences mobile-broadband value-for-money and perceived affordability

In the 1 GB mobile-broadband sub-basket category, Finland is the only economy that offers unlimited entry-level data plans. Research carried out by Net Radar shows the average monthly consumption in Finland is 11.5 GB, among the highest in the world. In terms of speed, the average from the Net Radar measurements was 21.2 Mbit/s, the highest among 13 European economies. However, for approximately 27 per cent of the time, the network was inaccessible (due to congestion, network errors, etc.), causing a bottleneck by restricting the available bandwidth. The highest percentages of such instances where the use of the network was limited were 40 per cent in Portugal (average speeds of 10.2 Mbit/s) and 30 per cent in Estonia (average speeds of 18.9 Mbit/s). Based on the corresponding sub-basket values, the average price per GB is approximately USD 8 per GB in Portugal and USD 4 per GB in Estonia.

For comparison, in Myanmar, measurements carried out revealed approximately 8 per cent of network errors, thereby limiting use. The average price per GB in Myanmar is USD 3, with average download speeds of approximately 7 Mbit/s, comparable to the experience of developed economies in Europe. Taking into account the price per GB and network limitations, however, the mobile-broadband sub-baskets from Myanmar are less expensive and offer more value for money. But quality of service is multi-faceted and a user's experience is affected by other factors, such as latency, which in the case of Myanmar was not within the ideal range.

Source: Manner (2017) and LIRNEasia (2017).

Chart 8: 500 MB handset-based (left) and 1 GB computer-based (right) sub-basket, as a % of GNI per capita (top), in PPP\$ (middle) and in USD (bottom), by region, 2013-2016



Note: Simple averages. Based on 152 and 146 economies for which 2013-2016 data on handset-based and computer-based mobile-broadband prices are available, respectively.

Source: ITU.

sub-basket with a monthly data cap of 1 GB. Approximately 15 economies saw a 50 per cent or higher reduction caused by price reductions or increases in the data allowances of the plans offered by dominant mobile operators in these countries.

While regional averages converge, differences within each region cannot be ignored. As illustrated in Table 5, differences between the least and most expensive offers are significant

in all regions, as are differences in monthly data allowances in some cases.

When looking at prices as a percentage of GNI per capita, the time series for this analysis begins in 2013, when prices in most regions corresponded to close to 5 per cent. The exception was Africa, where the gap was approximately 20 percentage points higher for both the 500 MB and 1 GB baskets, but decreased to a much narrower gap in 2016. For the prepaid handset-based mobile-broadband sub-basket, Asia and the Pacific, Arab

Table 5: Countries with the most and least expensive mobile-broadband services in each region, PPP\$, 2016

Economy	Mobile Broadband sub-basket via Handset 500 MB				Mobile Broadband sub-basket via Handset 1 GB			
	Minimum Price (PPP\$)	Data allowance (MB)	Maximum Price (PPP\$)	Data Allowance (MB)	Minimum Price (PPP\$)	Data allowance (GB)	Maximum Price (PPP\$)	Data Allowance (GB)
Africa	6.4 (Tanzania)	500	123.4 (Guinea Bissau)	1024	9.2 (Nigeria)	1.5	195.1 (Gambia)	1
Arab States	3.5 (Sudan)	500	82.2 (Mauritania)	Unlimited	9.8 (Tunisia)	2	82.16 (Mauritania)	1
Asia and the Pacific	2.5 (Cambodia)	500	48.3 (Japan)	2,048	5 (Cambodia)	1.2	48.34 (Japan)	2
CIS	3.3 (Kyrgyzstan)	500	19.8 (Armenia)	5,000	9.5 (Ukraine)	2	17.3 (Armenia)	5
Europe	2.7 (Poland)	500	39.6 (Bulgaria)	2,560	5 (Luxembourg)	1	29.6 (Turkey)	8
The Americas	4.6 (Uruguay)	512	56.7 (Suriname)	7,168	10 (Uruguay)	3	71.4 (Haiti)	10

States and the Americas average 3 per cent, CIS and Europe 1 per cent, while Africa is at 8 per cent of GNI per capita (Chart 8). Moreover, when considering the affordability of these plans, equipment costs (or the costs of accessing it) need to be added on top of service costs. Indeed, mobile-broadband handset-based plans require only a data-enabled handset, whereas postpaid computer-based mobile-broadband plans require a USB dongle and access to a computer. These factors need to be taken into consideration when calculating the overall affordability of the service.

The following sections take a closer look at mobile-broadband prices within each region.

3.2.1 Africa

In comparison with the other ITU sub-baskets, Africa performs well on mobile-broadband prices (USD): they are below the world average at approximately USD 8 and USD 15 for the prepaid handset-based and postpaid computer-based sub-baskets respectively. Nigeria and Cameroon saw a significant price reduction of more than 50 per cent from 2015 to 2016 in the two mobile-broadband sub-baskets, due to the availability of price plans that better met the sub-baskets criteria than before in terms of volume of data included and validity of plan (30 days). In terms of affordability, the countries with the most significant reduction in price as a percentage of GNI per capita in prepaid handset-based mobile-broadband sub-basket were Malawi, South Sudan, Ethiopia, Madagascar, Niger and Guinea-Bissau, where it was reduced by 10–24 percentage points from 2015, a noteworthy achievement.

3.2.2 Arab States

Average basket prices were reduced by approximately USD 3 in both sub-baskets, with the most significant reductions observed in Kuwait, Yemen and Libya, where prices declined by 40–80 per cent from 2015 to 2016 in the prepaid handset-based mobile-broadband sub-basket. The highest price reductions in the postpaid computer-based mobile-broadband sub-basket were observed in Kuwait, Tunisia and Comoros. In Kuwait, apart from the reduction in price, there was also a significant increase in the monthly data allowance for the prepaid handset-based sub-basket, from 5 120 MB (5 GB) to a staggering 204 800 MB (200 GB), and from 100 GB to 250 GB for the postpaid computer-based mobile-broadband sub-basket, resulting in a very high value proposition.

3.2.3 Asia and the Pacific

Average prices for the region remained stable between 2015 and 2016. However, at the country level, Solomon Islands, Macao (China), Brunei Darussalam and the Lao People's Democratic Republic were the economies with sub-basket value reductions of more than 60 per cent for prepaid handset-based mobile-broadband. In comparison with other regions, where positive effects were observed with the introduction of plans with higher data allowances or validity periods, the reverse is observed in Asia and the Pacific. In countries with the highest prices (USD and PPP\$), reductions were driven by less expensive plans with shorter validity or lower data caps. Even though such plans have to be taken several times to meet the 500 MB and 30-day

validity criteria, they were still less expensive than plans that included 500 MB over a month. This type of really basic, entry-level pricing mechanism, if combined with transparent information for the customer, can improve the affordability for those at the base of the economic pyramid.

3.2.4 Commonwealth of Independent States

The general price trends seen in other regions are followed here too for the prepaid handset-based mobile-broadband sub-basket, with a decline in average prices (USD and PPP\$) in 2016. A slight increase, however, is observed in average prices (USD and PPP\$) for the postpaid computer-based mobile-broadband sub-basket. This can be explained partly by changes in the dominant mobile operator in some countries and new plans that drove prices up. In the case of Uzbekistan, the computer-based plan included a USB dongle and, as a result, the service price could not be disaggregated from the device cost, thus driving prices up. On the other hand, price reductions of more than 50 per cent were observed in Azerbaijan and Tajikistan for both sub-baskets. Average prices in relation to GNI per capita in these two countries were among the lowest in comparison with developing economies of other regions.

3.2.5 The Americas

Steady, year-on-year comparable prices where the dominant mobile operator and the least expensive plan are consistent over a period of years are not common. Postpaid computer-based mobile-broadband prices in Mexico, however, have declined for the same plans offered in 2015. Similar to the CIS region, in the Americas some new plans selected in 2016 included the cost of the USB dongle in the postpaid computer-based plan, and drove prices for the regions slightly upwards from 2015. However, a number of countries – such as Haiti, Antigua and Barbuda, and Trinidad and Tobago – increased the data allowances by a significant margin, increasing the value for money from a user's perspective. The majority of the countries in the region (85–90 per cent), have average prices that are less than 5 per cent in relation to GNI per capita, with Guatemala, Nicaragua and Honduras just above the threshold,

and Haiti significantly higher in the postpaid computer-based sub-basket.

3.2.6 Europe

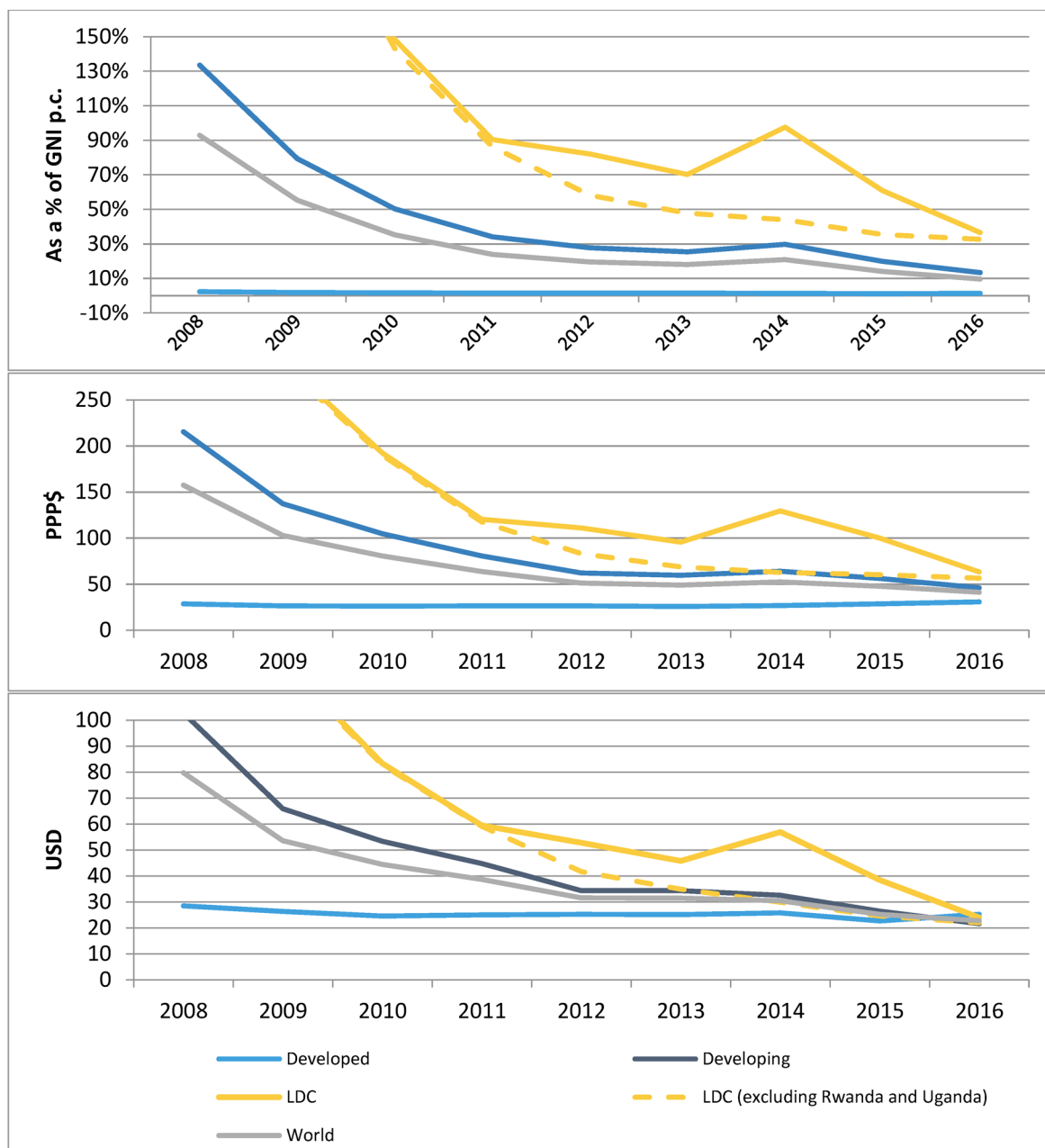
Europe is home to the most developed economies and therefore performs the best in comparison with other regions when average prices are compared in relation to GNI per capita. In absolute terms, average prices are approximately USD 12 per month in both sub-baskets. In the prepaid handset-based mobile-broadband sub-basket, a number of economies had significantly higher sub-basket prices than in 2015, including Iceland, Bulgaria, Belgium, Monaco and Ireland. However, in all cases, the plans had also been upgraded with higher data allowances. The fact that higher data caps are being offered for entry-level plans (e.g. from 500 MB in 2015 to 5 GB in 2016 in Ireland, and from 1 Gb to 10 GB in Monaco) resonates with the general growth in mobile-broadband data consumption. Bundled plans, which include voice and SMS together with the data allowance, are increasingly common in Europe, thereby increasing the value for money for the user but also entry-level prices.

4 Fixed-broadband prices

The ITU fixed-broadband sub-basket refers to the monthly price for an entry-level fixed-broadband plan with a minimum monthly data allowance of 1 GB and for a minimum advertised download speed of 256 kilobits per second (kbit/s).

The general price trend for fixed-broadband services has been on the decline since 2008. Unlike in other sub-baskets, where developed economies tend to have higher prices in absolute terms (USD), in the fixed-broadband sub-basket, developed economies maintain the lowest prices on average in terms of USD, PPP\$ and as a percentage of GNI per capita (Chart 9). Prices in developing economies, including LDCs, have been on the decline since 2008, with further reductions from 2015 to 2016 in USD prices. This price reduction had a positive impact on affordability, with more developing economies having fixed-broadband sub-basket prices that correspond to less than 5 per cent of GNI per capita (Table 6).

Chart 9: Fixed-broadband sub-basket, as a percentage of GNI per capita (top), in PPP\$ (middle) and in USD (bottom), by development level, 2008-2016



Note: Simple averages. Based on 142 economies for which data on fixed-broadband prices were available for the years 2008-2016. It should be noted that the 2014 price hike in the LDCs is partially the result of very substantial price increases in only two countries (Uganda and Rwanda), which had a sizeable impact on the LDC average (especially because complete price data for the period 2008-2016 are only available for 25 LDCs). The dotted line in the chart shows the evolution of the average in LDCs without these two countries.

Source: ITU.

Table 6: Fixed broadband sub-basket, 2016

Rank	Economy	Fixed-broadband sub-basket			Speed in Mbit/s	Cap per month in GB	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$				
1	Macao, China	0.14	7.88	9.79	3.0	Unltd	0	67,180
2	United Kingdom	0.22	8.10	7.55	17.0	12.0	20	43,700
3	Kuwait	0.30	10.50	16.43	0.5	Unltd	0	42,150
4	Liechtenstein	0.32	37.61		5.0	Unltd	8	139,608
5	Mauritius	0.35	2.81	5.13	0.5	2.0	15	9,780
6	Monaco	0.40	55.20		200.0	Unltd	20	165,871
7	Norway	0.50	39.17	32.35	6.0	Unltd	25	93,530
8	Singapore	0.50	21.64	25.02	300.0	Unltd	7	52,090
9	Andorra	0.52	17.35		0.5	2.0	5	39,896
10	United Arab Emirates	0.52	18.79	24.68	0.3	Unltd	0	43,090
11	San Marino	0.53	18.42	21.44	20.0	Unltd	0	41,938
12	Brunei Darussalam	0.57	18.10	30.82	1.0	25.0	0	38,010
13	Switzerland	0.57	40.10	27.55	2.0	Unltd	8	84,550
14	Austria	0.59	23.40	24.70	8.0	Unltd	20	47,260
15	Kazakhstan	0.59	5.64	19.21	1.0	10.0	12	11,390
16	Russian Federation	0.61	5.97	16.69	30.0	Unltd	18	11,720
17	Japan	0.62	20.05	19.93	12.0	900.0	8	38,840
18	Hong Kong, China	0.63	21.64	26.33	100.0	Unltd	0	41,000
19	France	0.68	23.23	24.42	15.0	Unltd	20	40,710
20	Luxembourg	0.70	45.35	41.41	20.0	Unltd	17	77,480
21	Denmark	0.71	35.50	27.91	5.0	Unltd	25	60,270
22	Belarus	0.74	3.97		10.0	20.0	6	6,470
23	Bahrain	0.80	13.30	22.04	3.0	40.0	0	19,840
24	Uruguay	0.81	10.61	14.78		15.0	22	15,720
25	Belgium	0.82	30.42	31.75	50.0	100.0	21	44,510
26	Cyprus	0.82	17.74	22.25	3.0	Unltd	19	25,810
27	Finland	0.82	31.97	29.54	10.0	Unltd	24	46,560
28	United States	0.82	38.10	38.10	15.0	Unltd	9	55,980
29	Iceland	0.87	36.42	28.35	50.0	50.0	24	50,110
30	Romania	0.87	6.90	15.01	100.0	Unltd	20	9,510
31	Sweden	0.89	43.10	39.50	100.0	Unltd	25	57,900
32	Poland	0.91	10.12	21.40	80.0	Unltd	23	13,310
33	Czech Republic	0.94	14.28	24.09	2.0	Unltd	21	18,150
34	Netherlands	0.95	38.72	39.33	20.0	Unltd	21	48,850
35	Qatar	0.98	68.68	90.42	1.0	Unltd	0	83,990
36	Germany	1.01	38.66	41.74	16.0	Unltd	19	45,790
37	Lithuania	1.02	12.79	23.12	100.0	Unltd	21	15,080
38	Turkey	1.04	8.61	17.13	1.0	1.0	23	9,950
39	Ukraine	1.07	2.34	11.39	5.0	Unltd	20	2,640
40	Israel	1.09	32.54	28.58	15.0	Unltd	17	35,770
41	Saudi Arabia	1.09	21.33	42.26	2.0	20.0	0	23,550
42	Malaysia	1.10	9.71	24.48	1.0	1.0	6	10,570
43	Australia	1.11	55.76	48.29	8.0	100.0	10	60,050
44	Malta	1.11	22.12	30.35	15.0	Unltd	18	23,900
45	Slovakia	1.13	16.59	27.59	2.0	300.0	20	17,570
46	Spain	1.13	26.64	31.83	1.0	5.0	21	28,380
47	Azerbaijan	1.15	6.27		1.0	Unltd	18	6,560
48	Estonia	1.16	17.70	26.71	10.0	Unltd	20	18,320
49	Greece	1.16	19.58	25.35	4.0	Unltd	24	20,270
50	Iran (Islamic Republic of)	1.17	4.94	13.60	1.0	4.0	9	5,053
51	Seychelles	1.24	15.11	22.78	1.0	3.0	15	14,680
52	Ireland	1.26	55.31	49.80	100.0	Unltd	23	52,550
53	Syrian Arab Republic	1.39	1.74		0.3	Unltd		1,502
54	Croatia	1.40	14.90	25.00	4.0	1.0	25	12,760
55	Cuba	1.40	14.90	25.00	0.3	Unltd	25	7,552
56	Trinidad and Tobago	1.40	20.55	24.57	3.0	Unltd	13	17,640
57	Canada	1.41	55.39	54.68	15.0	75.0	13	47,250
58	Tunisia	1.41	4.61	12.24	4.0	Unltd	12	3,930
59	Sri Lanka	1.43	4.51	13.69	4.0	3.5	32	3,800
60	Korea (Rep. of)	1.49	34.13	38.19	100.0	Unltd	10	27,450
61	Portugal	1.49	25.43	34.13	12.0	Unltd	23	20,470
62	Latvia	1.55	19.36	30.97	10.0	Unltd	21	14,990
63	Italy	1.61	44.14	48.50	7.0	Unltd	22	32,830
64	Bulgaria	1.62	10.07	23.60	20.0	Unltd	20	7,480
65	Viet Nam	1.65	2.74	6.92	3.4	0.4	10	1,990
66	Bosnia and Herzegovina	1.70	6.62	14.34	2.0	2.0	17	4,670
67	Bahamas	1.74	29.99	25.95	1.0	Unltd		20,740
68	New Zealand	1.77	59.14	52.62	24.0	60.0	15	40,020
69	Egypt	1.79	4.99	20.51	1.0	10.0	0	3,340
70	Slovenia	1.79	33.13	45.82	10.0	Unltd	22	22,250
71	Hungary	1.87	20.25	39.36	10.0	Unltd	27	12,970
72	Tonga	1.90	6.78	9.33	2.0	Unltd	15	4,280
73	Curacao	1.96	32.37	40.44	0.3	Unltd	6	19,772
74	Cayman Islands	2.05	96.34		12.0	5.0		56,282
75	Brazil	2.06	17.16	29.32	4.0	50.0	40	9,990
76	Mongolia	2.07	6.68	17.10	1.0	Unltd	10	3,870
77	Costa Rica	2.08	17.99	25.93	1.0	Unltd	13	10,400
78	Montenegro	2.16	12.98	26.60	1.0	1.0	19	7,220
79	Panama	2.16	21.35	35.97	4.0	Unltd	7	11,880
80	Puerto Rico	2.16	33.44		12.0	Unltd	12	18,603
81	Mexico	2.31	18.70	35.83	10.0	Unltd	16	9,710
82	Chile	2.39	28.05	45.85	8.0	500.0	19	14,100
83	China	2.42	15.95	27.73	50.0	Unltd		7,900
84	Anguilla	2.54	46.29		0.3	Unltd	7	21,905
85	Peru	2.55	13.04	25.94	1.0	Unltd	18	6,130
86	Armenia	2.57	8.32	19.79	4.0	Unltd	20	3,880
87	Barbados	2.69	32.50	26.46	15.0	Unltd		14,510

Rank	Economy	Fixed-broadband sub-basket			Speed in Mbit/s	Cap per month in GB	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$				
88	Albania	2.71	9.66	22.33	2.0	4.0	20	4,280
89	Lebanon	2.73	17.51		2.0	40.0	10	7,710
90	Oman	2.76	38.96	75.02	4.0	20.0	0	16,910
91	Saint Kitts and Nevis	2.80	35.19	45.15	2.0	Unltd		15,060
92	Aruba	2.81	57.24	65.94	4.0	Unltd	4	24,445
93	Serbia	3.02	13.92	32.13	10.0	Unltd	20	5,540
94	Gabon	3.08	23.61	37.81	0.5	Unltd		9,200
95	Suriname	3.08	24.03	70.75	2.0	Unltd	8	9,360
96	Colombia	3.19	18.96	44.82	5.0	Unltd	16	7,140
97	Georgia	3.20	10.98	30.80	10.0	Unltd	18	4,120
98	Uzbekistan	3.21	5.78		0.3	1.2	20	2,160
99	Argentina	3.27	33.88		3.0	Unltd	21	12,450
100	Turkmenistan	3.27	20.14		2.0	0.5	15	7,380
101	Belize	3.34	12.50	21.81	0.3	Unltd	0	4,490
102	The Former Yugoslav Rep. of Macedonia	3.35	14.34	34.89	4.0	30.0	18	5,140
103	Maldives	3.45	20.00	25.57	4.0	Unltd	6	6,950
104	Nauru	3.54	34.94		0.5	5.0	15	11,850
105	South Africa	3.61	18.29	45.13	1.0	1.0	14	6,080
106	Algeria	3.62	14.62	43.76	1.0	Unltd	17	4,850
107	Cabo Verde	3.63	9.93	21.09	12.0	5.0	15	3,280
108	Thailand	3.81	18.16	49.46	20.0	Unltd	7	5,720
109	Bhutan	3.93	7.80	24.25	2.0	4.0	5	2,380
110	Fiji	3.93	15.83	26.49	10.0	10.0	15	4,830
111	Morocco	4.00	10.09	23.64	4.0	Unltd	20	3,030
112	Ecuador	4.08	20.52	33.98	4.0	Unltd	14	6,030
113	Grenada	4.08	29.44	39.74	12.0	Unltd	15	8,650
114	Papua New Guinea	4.15	9.26	11.68	24.0	1.0	10	2,676
115	Iraq	4.36	21.15	41.00	0.3	Unltd	0	5,820
116	Libya	4.41	21.58		0.5	20.0	0	5,870
117	Bangladesh	4.43	4.40	11.27	0.3	Unltd	15	1,190
118	Antigua and Barbuda	4.81	53.24	64.57	1.0	Unltd	15	13,270
119	India	4.84	6.42	22.37	2.0	1.5	15	1,590
120	Botswana	4.94	26.61	56.21	0.5	Unltd	12	6,460
121	Pakistan	4.97	5.97	19.96	1.0	10.0	14	1,440
122	Jamaica	5.33	21.89	34.70	1.0	Unltd	17	4,930
123	Moldova	5.38	10.04	30.63	100.0	Unltd	17	2,240
124	Dominican Rep.	5.40	28.07	58.20	2.0	Unltd	30	6,240
125	Saint Lucia	5.50	33.70	41.37	2.0	Unltd	15	7,350
126	Dominica	5.68	32.20	43.70	2.0	Unltd	15	6,800
127	Bolivia (Plurinational State of)	5.73	14.33	29.49	0.7	Unltd	13	3,000
128	Saint Vincent and the Grenadines	6.09	33.65	46.10	2.0	Unltd		6,630
129	El Salvador	6.47	21.23	40.95	2.0	Unltd	18	3,940
130	Guatemala	6.55	19.61	35.35	2.0	Unltd	12	3,590
131	Paraguay	6.57	22.93	51.44	3.0	Unltd	10	4,190
132	Philippines	7.11	21.04	49.70	5.0	Unltd	12	3,550
133	Sudan	7.22	11.55	19.36	0.5	15.0	30	1,920
134	Yemen	7.72	7.33		0.3	4.0	5	1,140
135	Jordan	7.76	30.28	63.48	4.0	Unltd	8	4,680
136	Namibia	7.84	33.92	83.47	0.5	Unltd	0	5,190
137	Tajikistan	8.26	8.81		0.5	10.0	18	1,280
138	Kyrgyzstan	8.45	8.24	27.60	0.5	Unltd	12	1,170
139	Guyana	8.52	29.05	45.51	1.5	Unltd	16	4,090
140	Angola	8.59	29.92	49.23	0.3	Unltd		4,180
141	Palestine	9.27		34.58	8.0	75.0	16	3,011
142	Equatorial Guinea	9.47	101.18	173.84	0.3	Unltd		12,820
143	Lesotho	9.56	10.20	33.80	16.0	2.0	5	1,280
144	Mauritania	9.98	9.80	28.10	0.5	Unltd	14	1,178
145	Uganda	10.02	5.85	16.87	0.5	1.0	18	700
146	Nepal (Republic of)	10.27	6.25	19.68	0.5	7.0	13	730
147	Indonesia	10.62	30.43	83.05	10.0	Unltd	10	3,460
148	Micronesia	11.12	33.00		0.3	Unltd	0	3,550
149	Samoa	11.79	38.60	53.30	2.0	3.0	15	3,930
150	Marshall Islands	12.57	49.95		0.3	Unltd	0	4,770
151	Nigeria	13.40	31.16	72.99	20.0	20.0	5	2,790
152	Cambodia	13.46	12.00	30.16	4.0	Unltd	10	1,070
153	Nicaragua	14.84	23.99	62.37	0.5	Unltd	15	1,940
154	Eswatini	15.59	42.62	127.84	0.25	6.0	14	3,280
155	Laos P.D.R.	16.54	23.99	60.27	1.0	Unltd	10	1,740
156	Honduras	16.84	32.00	63.07	1.0	Unltd	12	2,280
157	Myanmar	18.62	18.00	67.85	0.5	Unltd	5	1,160
158	Sao Tome and Principe	18.85	27.65	47.00	1.0	12.0	5	1,760
159	Ghana	18.97	23.40	68.95	4.0	20.0	24	1,480
160	Zambia	19.52	24.24	77.69	2.0	10.0	16	1,490
161	Senegal	20.03	16.36	41.05	0.5	Unltd	23	980
162	Zimbabwe	20.93	15.00		1.0	4.0	20	860
163	Mozambique	20.97	10.31	38.80	1.0	Unltd	17	590
164	Guinea	22.54	8.83	19.76		3.0	20	470
165	Cameroon	22.84	25.13	62.03	2.0	Unltd	19	1,320
166	Vanuatu	24.50	55.86	50.96	0.5	Unltd	13	2,736
167	Malawi	24.72	7.00	29.00	10.0	2.0	17	340
168	Ethiopia	25.24	12.41	30.86	0.5	2.0	15	590
169	Timor-Leste	25.68	49.00	73.22	2.0	6.0		2,290
170	South Sudan	25.83	17.00	255.06	5.0	20.0		790
171	Mali	26.36	16.69	43.84	0.3	Unltd	18	760
172	Côte d'Ivoire	26.42	31.26	78.43	0.5	500.0	18	1,420

Rank	Economy	Fixed-broadband sub-basket			Speed in Mbit/s	Cap per month in GB	Tax rate included (%)	GNI p.c., USD, 2015*
		as % of GNI p.c.	USD	PPP\$				
173	Afghanistan	28.99	14.73	50.02	0.3	Unltd	0	610
174	Palau	31.53	320.00		1.0	10.0	0	12,180
175	Djibouti	32.00	55.71	92.06	3.0	50.0	10	2,089
176	Tanzania	35.95	27.56	77.00	1.0	Unltd	33	920
177	Benin	36.14	25.29	65.70	0.5	Unltd	18	840
178	Congo (Rep. of the)	38.53	81.55	146.09	0.3	Unltd	16	2,540
179	Sierra Leone	38.86	20.08	49.59	1.0	5.0	15	620
180	Kenya	39.69	44.32	101.58	15.0	Unltd	26	1,340
181	Comoros	51.89	33.73	74.48	0.5	Unltd		780
182	Togo	56.21	25.29	63.90	0.5	7.0	18	540
183	Kiribati	65.80	185.87		0.3	Unltd	0	3,390
184	Burkina Faso	69.56	37.10	99.25	0.3	Unltd	18	640
185	Haiti	70.93	47.87	120.32	1.0	0.0	10	810
186	Gambia	98.06	37.34	117.07	0.3	Unltd	21	457
187	Madagascar	152.01	53.20	196.99	8.0	Unltd	20	420
188	Rwanda	152.60	89.02	258.52	10.0	Unltd	18	700
189	Niger	154.36	50.17	133.25	0.3	Unltd	19	390
190	Solomon Islands	237.39	379.82	379.74	0.3	Unltd	10	1,920
191	Guinea-Bissau	240.09	118.04	287.82	0.3	5.0	15	590
192	Somalia	258.99	30.00		0.5	10.0	10	139
193	Burundi	362.62	78.57	200.26	0.3	Unltd	18	260
194	Chad	577.18	423.27	874.39	0.3	Unltd	18	880
195	Central African Rep.	1772.17	487.35	616.28	0.3	Unltd		330

Unltd: Unlimited

Note: * Data correspond to the GNI per capita (Atlas method) in 2015 or latest available year adjusted with international inflation rates.

Source: ITU. GNI p.c. and PPP\$ values are based on World Bank data.

Service offers for fixed-broadband have been changing over the years with more lower-cost, limited-capacity offers. Of those countries that did offer plans with capped data in 2015, a few moved to offering unlimited plans in 2016. The caveat in most cases with unlimited offers is the fair use policy that may curtail use in some way, more commonly by limiting the speed at which access is granted. Conversely, some economies that offered unlimited plans in 2015 have switched to plans with relatively high data caps (Table 7).

Variations are also observed in advertised speed from 2015 to 2016. According to the ITU methodology, 256 kbit/s is the minimum speed for broadband. Therefore, although there are plans being offered with slower advertised speeds in some developing economies, they are not included in the sub-basket, as they do not meet the minimum speed requirement. In 2016, there were fewer instances where service providers did not advertise speeds in comparison with 2015, with several countries upgrading entry-level speeds in 2016, particularly in the developing world and in LDCs (Chart 10).

But even with higher speeds and better data allowances, in developing markets and in economies with low fixed-network coverage, mobile-broadband has been more effective in terms of network roll-out and getting users online. The very nature of the fixed-broadband network and the investment it requires makes it difficult to extend its reach to rural areas. To

mitigate this in developing economies, facilities such as community centres or telecentres have been adopted as an approach to provide Internet access to otherwise marginalized communities. Mostly government-funded, such facilities are often equipped with fixed-broadband connectivity, thereby creating a proxy for entry-level users. Developed economies also face this challenge, with some employing incentive-based mechanisms to encourage and increase the number of users (Box 3).

4.1 Fixed-broadband regional trends

Compared with other sub-baskets, the reduction of the price gap in the fixed-broadband sub-basket across regions has been greater over the last few years. The following sections take a closer look at fixed-broadband price trends within each region.

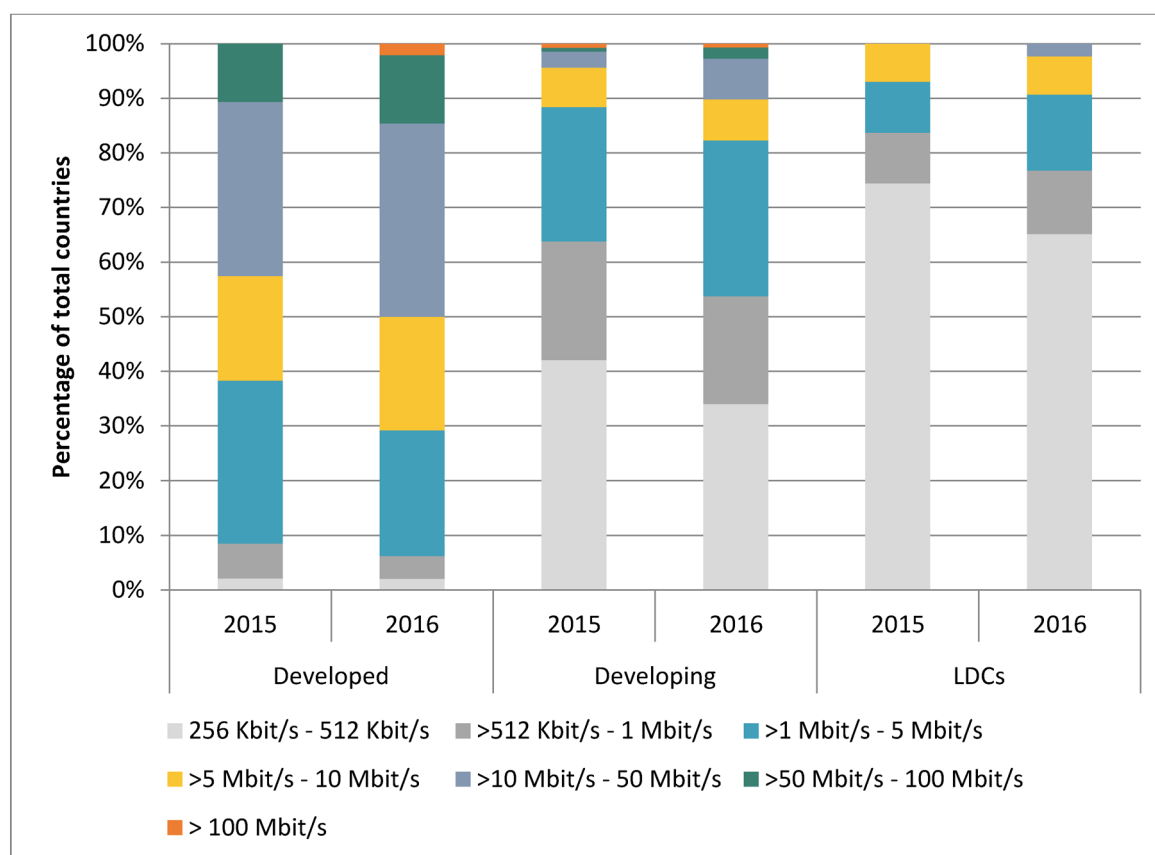
4.1.1 Africa

Average prices in Africa remain the highest of all regions, but the decline since 2008 has been tremendous, bringing it closer to the averages observed in other regions in 2016. Although Africa has the highest prices in both absolute and relative terms, a number of economies in the region achieved significant price reductions in 2016, thus contributing to the downward trend of the regional average. It is noteworthy that, of these economies, some – such as Uganda, Guinea, Togo and Côte d'Ivoire – changed from unlimited (in 2015) to lower-cost data-limited plans (in 2016).

Table 7: Changes in fixed-broadband data allowances, 2015 – 2016

Economy	Data Cap 2015 (GB)	Data Cap 2016 (GB)
Côte d'Ivoire	Unlimited	500
Brazil	Unlimited	50
Saudi Arabia	Unlimited	20
Oman	Unlimited	20
Belarus	Unlimited	10
Togo	Unlimited	7
Guinea-Bissau	Unlimited	5
Guinea	Unlimited	3
Uganda	Unlimited	1
Turkmenistan	Unlimited	0.5
Tonga	5	Unlimited
Jordan	10	Unlimited
Luxembourg	2	Unlimited
Syria Arab Republic	3	Unlimited

Chart 10: Changes in entry-level advertised speeds of fixed-broadband plans, 2015 – 2016



Source: ITU.

In terms of monthly data allowance, Côte d'Ivoire offers the most value for the money, with 500 GB a month for USD 31. However, in comparison with the country's GNI per capita, prices remain relatively high at 26 per cent. In fact, only six economies in Africa offer fixed-broadband plans that represent no more than 5 per cent of GNI per capita, namely Mauritius, Seychelles, Gabon, South Africa, Cabo Verde and Botswana (Chart 11).

Some economies that had advertised speeds of 256 kbit/s in 2015 have now increased them to 512 kbit/s or 2 Mbit/s. Lesotho and Nigeria, whose entry-level plans were advertised at 1 Mbit/s in 2015, increased the advertised speed significantly to 16 Mbit/s and 20 Mbit/s, while monthly data allowances also increased to 2 GB and 20 GB, respectively.

4.1.2 Arab States

As a region, the average absolute price for fixed-broadband did not change from 2015 to 2016.

Within the region, however, more than 40 per cent price reductions were observed in the United Arab Emirates and in Saudi Arabia. In the case of the latter, a less expensive plan was available in 2016 for a lower speed and data cap (2 Mbit/s, 20 GB) in comparison to the 10 Mbit/s, unlimited data plan offer from 2015. Conversely, the service previously offered in Oman switched from being unlimited to one with a 20 GB cap, but with a price hike from USD 7 to USD 15 a month, while advertised speeds remained the same.

In terms of affordability, the majority of the countries in the region have relatively low sub-basket values that correspond to less than 5 per cent of GNI per capita (Chart 12). An exception is Somalia, where fixed-broadband services cost USD 30 per month, which represented more than 100 per cent of the GNI per capita in the country. Nonetheless, other LDCs in the region (Sudan and Yemen) perform well despite their low incomes, with sub-basket prices representing about 7 per cent of their GNI per capita.

Box 3: Creating incentives for fixed-broadband use in North America

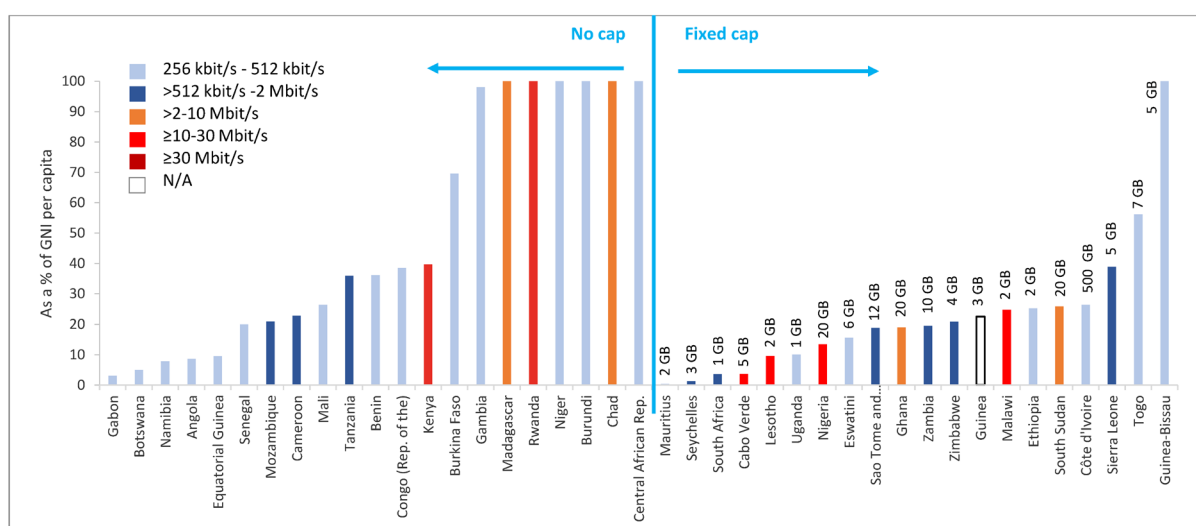
The digital divide is not limited to the developing world. Even in developed economies such as Canada, which have in the past created a conducive policy and regulatory environment to ensure basic fixed-line services are available to all with subsidies for rural communities, affordability is being cited as one of the main reasons for not getting online. Indeed, lack of access and affordability are being cited as deterrents to equality in an environment in which education, employment, civic participation and government services, among others, are being delivered via the Internet. Recognizing the value of being online, most Canadian low-income citizens are foregoing a portion of their budget allocated for otherwise essential needs, such as food and recreation, to pay for high-speed home Internet.

Addressing the issues around social exclusion and mandating access to high-speed Internet as a basic service, the Government of Canada has taken steps in the form of allocating federal reserves to facilitate the provision of low-cost access to high-speed Internet services to low-income families. This initiative is aimed at addressing the affordability divide among users, while infrastructure and access disparities among urban and rural dwellers remain.

In the same light, the communication regulator in the United States (the Federal Communications Commission) launched the LifeLine programme of broadband subsidies for low-income users. A value of USD 9.25 per month is offered as a subsidy, which is only a portion of the cost of an entry-level fixed-broadband plan in the country (USD 38). Yet realizing the economic benefit of the Internet, this programme is aimed at getting the otherwise marginalized online with the understanding that even a slight discount or subsidy would encourage low-income families to get online, with potentially exponential benefits to individuals and to society as a whole.

Source: Geist (2016), Greenberg (2015).

Chart 11: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, Africa, 2016



Note: Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

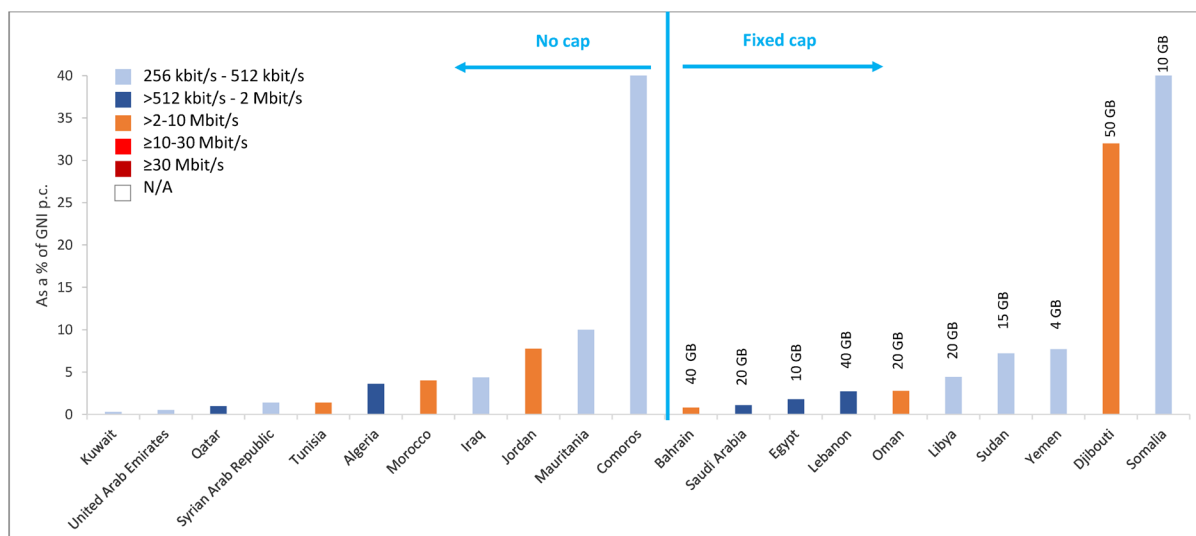
Source: ITU. GNI p.c. values are based on World Bank data.

4.1.3 Asia and the Pacific

Compared with other regions, Asia and the

Pacific has the second highest regional average after Africa. However, if prices in the Small Island Developing States (SIDS) within the region are

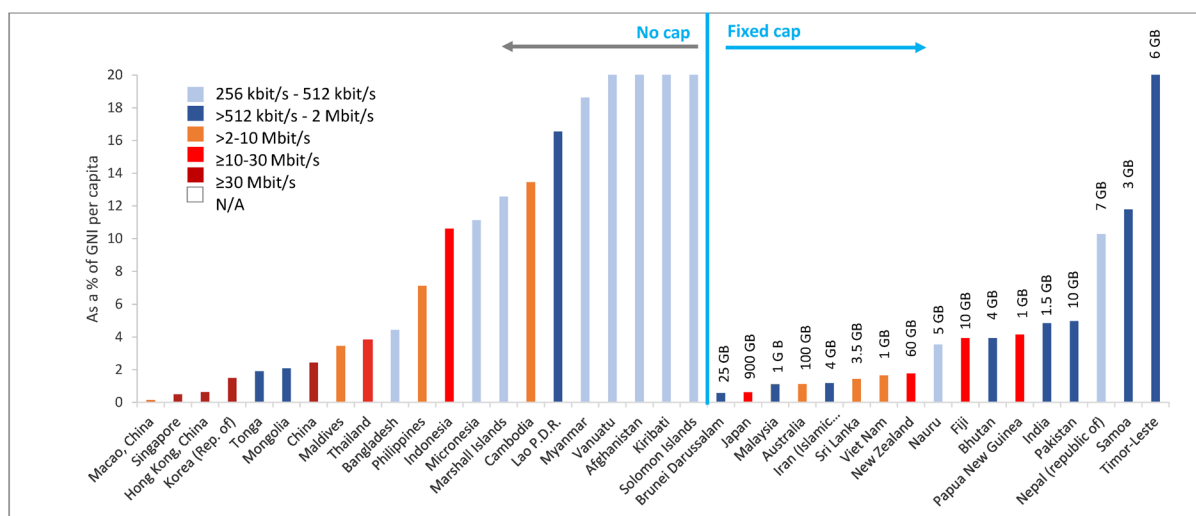
Chart 12: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, Arab States, 2016



Note: Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

Source: ITU. GNI p.c. values are based on World Bank data.

Chart 13: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, Asia and the Pacific, 2016



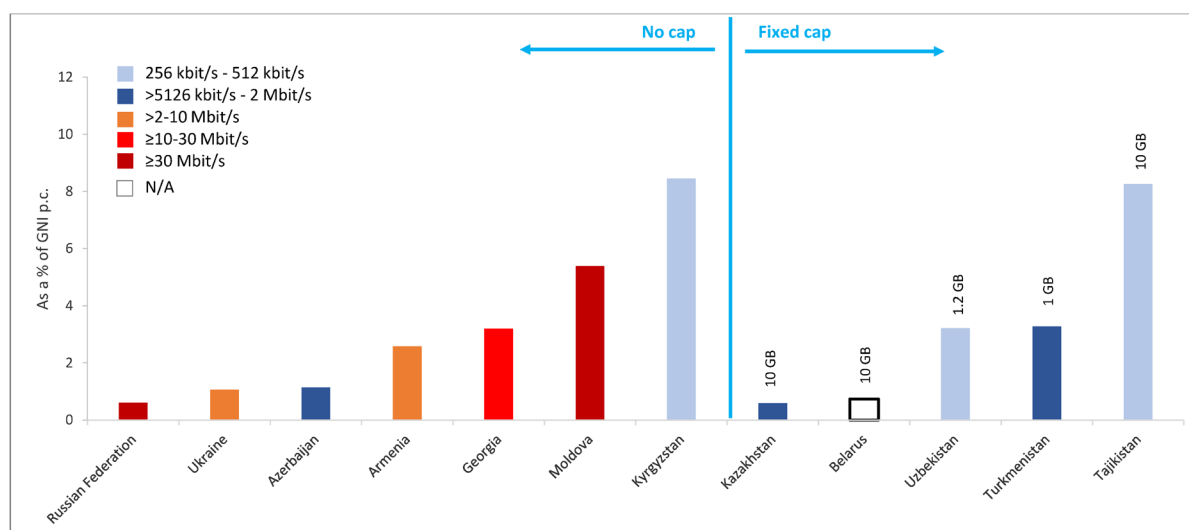
Note: Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

Source: ITU. GNI p.c. values are based on World Bank data.

analyzed separately for their homogeneity, the regional average reduces by approximately a quarter. Fixed-broadband services rely on connectivity to submarine cable networks and other cost-heavy infrastructure. This has a severe impact on the cost of service delivery in SIDS that are far away from the main international connectivity routes and span across vast geographic spaces. Many SIDS are also LDCs, and their low incomes make fixed-broadband prices even less affordable when presented as a

percentage of GNI p.c. For example, Kiribati and Solomon Islands have fixed-broadband plans that cost more than USD 100 per month, which makes the service unaffordable for most of the population in these countries. On the other hand, Tonga, Fiji, Nauru and Papua New Guinea are among those SIDS with the most affordable sub-basket prices, below five per cent of GNI p.c. Many other economies in the region which are not SIDS are also below the 5 per cent threshold (Chart 6).

Chart 14: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, CIS, 2016



Note: Georgia exited the CIS on 18 August 2009, but was included in the ITU/BDT administrative region for the CIS countries until June 2018. From 1 June 2018, the country is classified in the ITU/BDT administrative region for Europe. Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

Source: ITU. GNI per capita values are based on World Bank data.

4.1.4 Commonwealth of Independent States

CIS has the lowest regional averages in absolute and relative terms at USD 8 and PPP\$ 22.30. Among the countries in the region, there is little variation in terms of speed and monthly data allowances in entry-level plans in 2016. The exception is Moldova, where speeds have doubled since 2015, from 50 Mbit/s to 100 Mbit/s. The country was also the only economy within the region with a marginal price increase (7 per cent in 2016). Given the value addition of high-speed Internet, this increase in price is negligible. The most significant decline in prices was observed in Belarus, where a more cost-effective plan with a data cap (previously unlimited) was available in 2016. Only 3 of the 12 economies (Moldova, Tajikistan and Kyrgyzstan) have sub-basket prices over the threshold of 5 per cent of GNI per capita (Chart 14).

4.1.5 The Americas

The regional average has not changed since 2015. However, approximately a third of the countries offer higher speeds in 2016 than in 2015 for entry-level fixed-broadband plans, thus having increased the value for money. The biggest changes are observed in Mexico (5 Mbit/s in 2015 to 10 Mbit/s in 2016, with a 15 per cent reduction in sub-basket price), Grenada (2 Mbit/s in 2015 to 12 Mbit/s

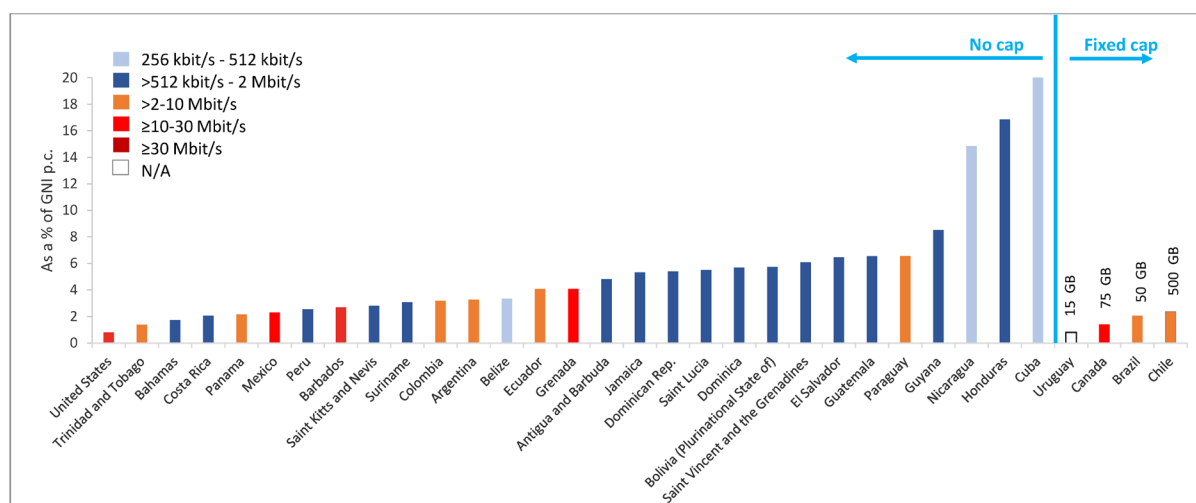
in 2016, with a 4 per cent increase in sub-basket price) and Barbados (2 Mbit/s in 2015 and 15 Mbit/s in 2016, with an 8 per cent increase in sub-basket price).

In relation to income, Uruguay offers the most affordable entry-level fixed-broadband plan, with the sub-basket price at 0.8 per cent in relation to the GNI per capita (Chart 15). Although the United States has a basket that corresponds to the same value as a percentage of GNI per capita, the monthly price is significantly higher in absolute and relative terms at USD/PPP\$ 38.10 per month (over three times the price of Uruguay). The same comparison can be made with the next best performing developing economy in the region, Trinidad and Tobago, where the sub-basket price is 1.4 per cent relative to GNI per capita – the same value as Canada. Yet Canada's sub-basket price in absolute and relative terms is double that of Trinidad and Tobago at approximately USD/PPP\$ 55 per month. In both instances, though, entry-level fixed-broadband plans in the developed economies correspond to significantly higher advertised speeds.

4.1.6 Europe

In comparison with all other regions, Europe performs the best with the lowest average price in relation to income, ranging from 0.22 to 3.35

Chart 15: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, Americas, 2016



Note: Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

Source: ITU. GNI p.c. values are based on World Bank data.

per cent of the countries' GNI per capita (Chart 16). Although there was not a significant variation in the regional average from 2015 to 2016, value additions in terms of advertised speed and increased data allowances were observed. For example, there was a 100 per cent increase in advertised speed in Monaco (from 100 Mbit/s in 2015 to 200 Mbit/s in 2016) without a change in the monthly price. Similarly, in Poland, the advertised speed increased eight-fold from 10 Mbit/s in 2015 to 80 Mbit/s in 2016, with only a marginal change in sub-basket price. The majority of European economies have increasingly seen bundled offers that include other services such as fixed voice, Internet Protocol television and mobile, thereby increasing the value proposition.

4.2 Value for money in fixed-broadband offers

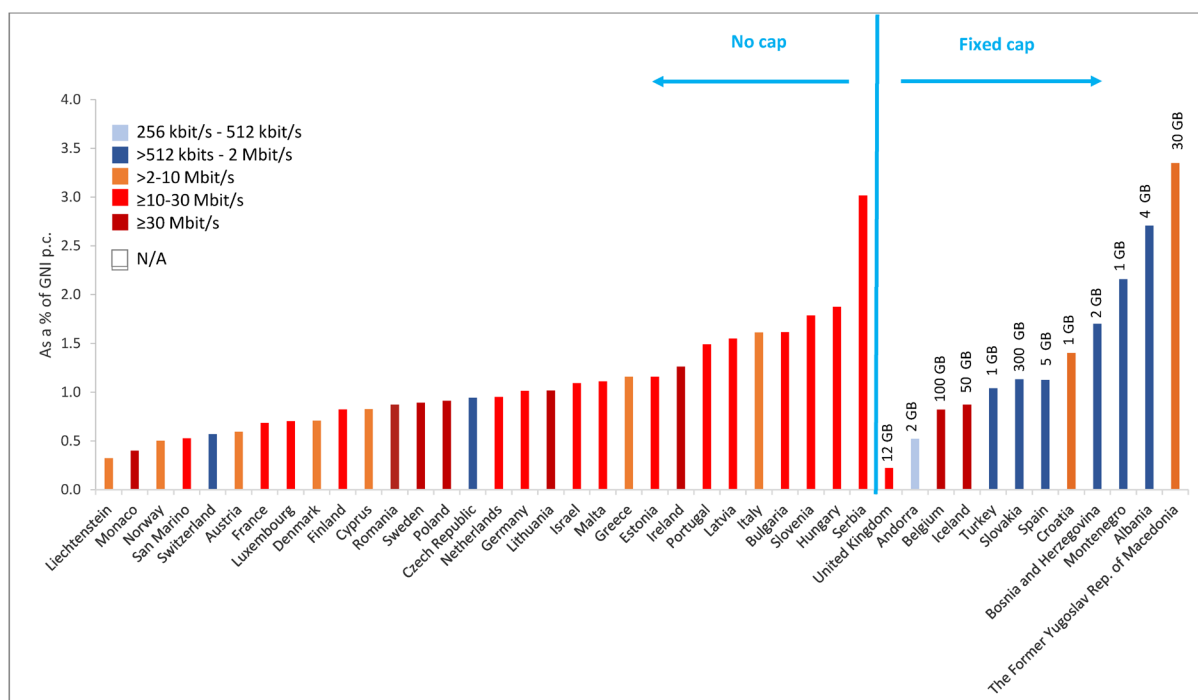
While relative prices and comparisons made against income are indicators of affordability, there are complimentary aspects relevant to Internet access, such as speed and data allowance, which are worthwhile to explore to assess the overall value proposition.

Advertised speeds are not always a good proxy indicator of quality of service, but assuming advertised speeds are a given, the price per Mbit/s can be used to compare the value for money aspect among economies. For example, monthly sub-basket prices appear to be high in economies

such as Belgium, Iceland, Nigeria, Japan and New Zealand, but they offer the cheapest per Mbit/s price (Chart 17). The efficacy of carrying out such an analysis would be enhanced if the cost per Mbit/s could be calculated based on the average *actual* speed as opposed to the advertised speed.

Another angle to consider is the monthly allowance that can increase a user's sense of value for money. As mentioned above, at first glance unlimited plans may seem the most appealing. However, attention needs to be paid to fair usage policies that may curtail use and decrease the value of a plan for the price being paid. On the other hand, data limited plans, if compared by the per GB cost, can change a user's perception of value for money. For example, in Europe, Slovakia, Iceland and Belgium are among the more expensive plans in the region with data caps. However, they offer far more value for money in terms of the per GB price and advertised speed (Slovakia: 300 GB/month, 2 Mbit/s; Iceland: 50 GB/month, 50 Mbit/s; Belgium: 100 GB/month, 50 Mbit/s). Similarly, among the services that are based on a limited data plan, Japan offers the highest monthly allowance with 900 GB/month and a daily limit of 30 GB. Chile, Côte d'Ivoire, Australia, Canada, New Zealand, Brazil and Djibouti are among the countries offering 50 GB or more per month, the most in terms of value for money (Chart 18).

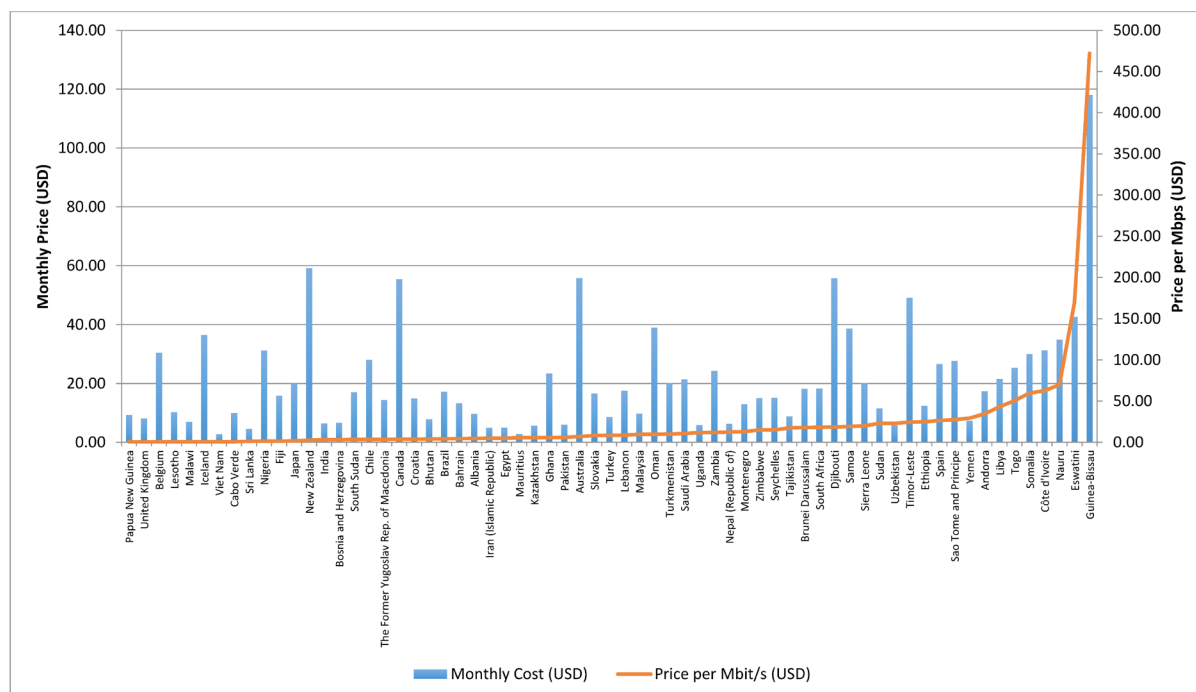
Chart 16: Fixed-broadband prices as a percentage of GNI per capita, speeds and caps, Europe, 2016



Note: Broadband speeds and caps/month refer to the advertised speeds and the amount of data included in the entry-level fixed-broadband subscription.

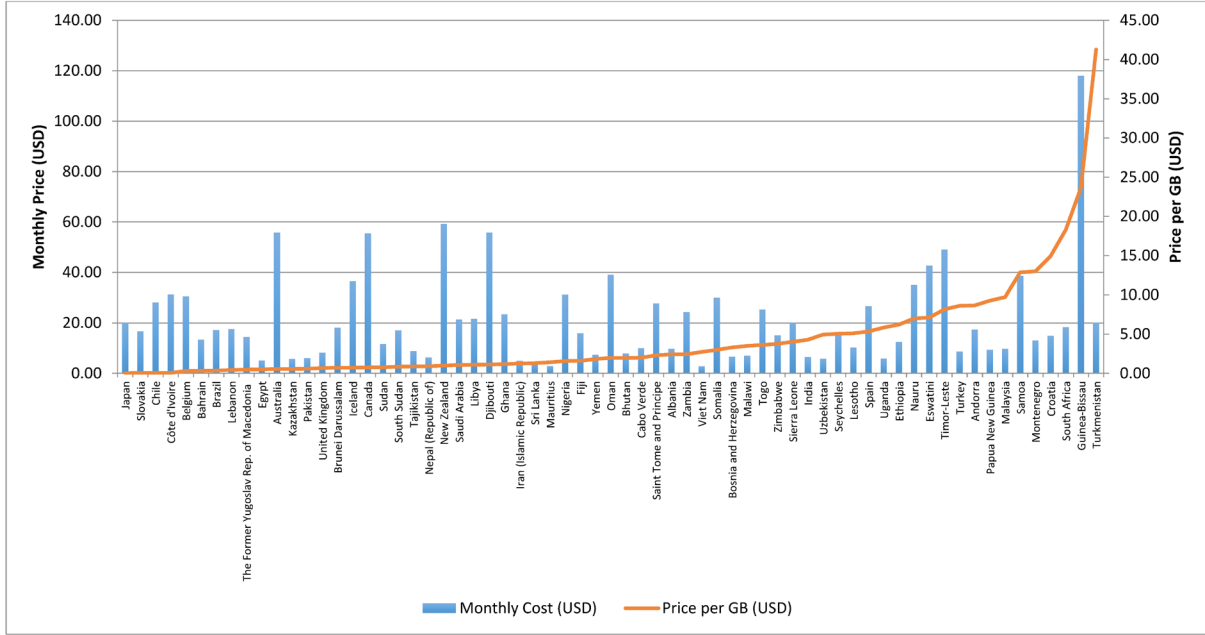
Source: ITU. GNI p.c. values are based on World Bank data.

Chart 17: Fixed-broadband price per Mbit/s and monthly price in USD, selected economies, 2016



Source: ITU.

Chart 18: Fixed-broadband price per GB and monthly price in USD, selected economies, 2016



Source: ITU

Endnotes

- ¹ There was a reduction of approximately 44 per cent in SMS consumption and 28 per cent in that of voice, on average, from 2015 to 2016.
- ² As indicated by data collected by ITU on “Proportion of individuals not using the Internet, by type of reason” and confirmed by the data on limitation of Internet use in Africa, produced by DIRSI, LIRNEasia, and RIA on the basis of nationally representative surveys in 2017. For more information, see www.afteraccess.net.
- ³ For instance, Goal 2 of the Connect 2020 targets states that “the affordability gap between developed and developing countries should be reduced by 40 per cent by 2020”. Target 2 of the Broadband Commission’s 2025 Targets reads as follows: “By 2025, entry-level broadband services should be made affordable in developing countries at less than 2 per cent of monthly Gross National Income (GNI) per capita.” – For more information on the Connect 2020 Targets and the Broadband Commission’s 2025 Targets, see <https://www.itu.int/en/connect2020/Pages/default.aspx> and <http://broadbandcommission.org/Documents/publications/wef2018.pdf>, respectively.
- ⁴ The countries included in each regional grouping of ITU’s Telecommunication Development Bureau are listed at www.itu.int/en/ITU-D/Statistics/Pages/definitions/regions.aspx. Palestine is not an ITU Member State; the status of Palestine in ITU is the subject of Resolution 99 (Rev. Busan, 2014) of the ITU Plenipotentiary Conference.
- ⁵ For example, if country A and country B have the same price in United States dollars (USD) for any given ICT service, but in country A prices of other products are in general less expensive (in USD), then applying PPP exchange rates to the price of the ICT service in country A will make this service more expensive. That is so because, compared with country B, in country A the same amount of USD (exchanged into national currency at market exchange rates) can buy more products or services. Therefore, the ICT service in country A is more expensive in terms of what could be bought with that amount in each country. The International Comparison Program is the major global initiative to produce internationally comparable price levels. For more information on the PPP methodology and data, see <http://icp.worldbank.org>.
- ⁶ GNI takes into account all production in the domestic economy (i.e. gross domestic product) plus the net flows of factor income (such as rents, profits and labour income) from abroad. The Atlas method smooths exchange-rate fluctuations by using a three-year moving average, price-adjusted conversion factor. For more information, see: <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD>.
- ⁷ According to the poverty and shared prosperity map that shows the percentage of the population living on less than 2011 PPP\$1.90/day in 2013 (available from <https://data.worldbank.org/products/wdi-maps>), more than 50 per cent of the population in the Central African Republic, the Democratic Republic of the Congo, Guinea-Bissau, Liberia, Lesotho, Mali, Malawi, Mozambique, Madagascar and Togo live below the poverty line.
- ⁸ There were 68 mobile-cellular subscriptions per 100 inhabitants in Liberia in 2016, compared with 75 per 100 inhabitants in Africa in the same year.
- ⁹ Data on market structure sourced from ITU (2017) and GSMA Intelligence.
- ¹⁰ In past years, both applicable tax components (special tax at 24 per cent and general tax at 16 per cent) were simply added on to the reported tariff. However, the effective tax is in fact based on a tax-on-tax regime; i.e. the general tax of 16 per cent is applied on the 24 per cent tax-inclusive base tariff. Available from www.gsma.com/publicpolicy/wp-content/uploads/2016/09/GSMA2015_Report_DigitalInclusionAndMobileSectorTaxationInJordan.pdf.
- ¹¹ Both economies have a very low percentage (below 5 per cent) of prepaid mobile users. Therefore, as per the ITU ICT Price Basket methodology, the plans reported in both instances were the least costly postpaid plans.
- ¹³ In cases where the minimum data allowances of 500 MB or 1 GB for either sub-basket is not met, or if the validity period is less than a month, the plan is taken several times or combined with other packages in order to fulfil the minimum criteria set for each sub-basket.
- ¹⁴ Based on the ITU number of active mobile-broadband subscriptions.
- ¹⁵ In 2010, the Broadband Commission for Digital Development (later renamed Broadband Commission for Sustainable Development), the ITU/United Nations Educational, Scientific and Cultural Organization-led initiative to increase awareness about the importance of broadband for achieving international development goals, identified four specific ICT targets. Target 2 was about making broadband affordable: “By 2015, entry-level broadband services should be made affordable (less than 5 per cent of average monthly income) in developing countries through adequate regulation and market forces.” This 5 per cent is the threshold used as a reference for affordable broadband prices in this publication. In 2018, the Broadband Commission for Sustainable Development agreed on new targets for 2025, including the new Target 2: “By 2025, entry-level broadband services should be made affordable in developing countries at less than 2 per cent of monthly Gross National Income (GNI) per capita.” For more information on the 2025 targets, see <http://broadbandcommission.org/Documents/publications/wef2018.pdf>.
- ¹⁶ According to ITU methodology, for a 500 MB mobile-broadband basket, if the entry-level plan does not include a minimum of 500 MB per month, the package has to be combined with add-ons or other packages, or taken as many times as needed to meet the minimum data allowance requirement. This can result in high basket prices in countries where available mobile-broadband plans include only small data allowances or are based on pay-as-you-go schemes.

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Annex 1: ICT price data methodology

Price data collection and sources

The price data presented in this report were collected in the fourth quarter of 2016. With the exception of the data on mobile-broadband prices, which were collected by ITU directly from operators' websites, all data were collected through the ITU ICT Price Basket Questionnaire, which was sent to the administrations and statistics contacts of all 193 ITU Member States in October 2016.¹ Through the questionnaire, contacts were requested to provide 2016 data for fixed-telephone, mobile-cellular and fixed-broadband prices; the 2014 and 2015 prices were included for reference, where available. For those countries that did not reply to the ITU ICT Price Basket Questionnaire and for mobile-broadband services, price data were collected directly from operators' websites and/or through direct correspondence. Price data were collected from the operator with the largest market share, as measured by the number of subscriptions. Insofar as, for many countries, it is not clear which Internet service provider (ISP) has the dominant market share, preference was given to prices offered by the (former) incumbent telecommunication operator. In some cases, especially where prices were not clearly advertised or were indicated only in the local language, and where operators did not respond to queries, alternative operators were chosen. All prices were converted into United States dollars using IMF's average annual rate of exchange for 2016, and into PPP\$ using World Bank conversion factors for 2015 (as published in February 2017). Prices are also presented as a percentage of countries' monthly gross national income per capita (GNI p.c.) using GNI p.c. values from the World Bank (Atlas method) for 2015 (as published in February 2017) or the latest available year adjusted in accordance with international inflation rates. Price data for 2008, 2009, 2010, 2011, 2012, 2013, 2014 and 2015, which are also shown and used in this chapter, were collected in previous years (always during the second half of the respective year), in national currencies, and converted using the average annual rates of exchange.

The mobile-cellular sub-basket

The mobile-cellular sub-basket refers to the price of a standard basket of mobile monthly usage for 30 outgoing calls per month (on-net/off-net to a fixed line and for peak and off-peak times) in predetermined ratios, plus 100 SMS messages.² It is calculated as a percentage of a country's average monthly GNI p.c. and is also presented in USD and PPP\$. The mobile-cellular sub-basket is based on prepaid prices, although postpaid prices are used for countries where prepaid subscriptions make up less than two per cent of all mobile-cellular subscriptions.

The mobile-cellular sub-basket is largely based on, but does not entirely follow, the 2009 methodology of the OECD low-user basket, which is the entry-level basket with the smallest number of calls included (OECD, 2010). Unlike the 2009 OECD methodology, which is based on the prices of the two largest mobile operators, the ITU mobile sub-basket uses only the largest mobile operator's prices. Nor does the ITU mobile-cellular sub-basket take account of calls to voicemail (which in the OECD basket represent four per cent of all calls) or non-recurring charges, such as the one-time charge for a SIM card. The basket gives the price of a standard basket of mobile monthly usage in USD determined by OECD for 30 outgoing calls per month in predetermined ratios, plus 100 SMS messages.³ The cost of national SMS is the charge to the consumer for sending a single SMS text message. Both on-net and off-net SMS prices are taken into account. The basket considers on-net and off-net calls as well as calls to a fixed telephone⁴ and, since the price of a call often depends on the time of day or week it is made, peak, off-peak and weekend periods are also taken into consideration. The call distribution is outlined in Annex Table 2.1.

Prepaid prices were chosen because they are often the only payment method available to low-income users, who might not have a regular income and will thus not qualify for a postpaid subscription. Rather than reflecting the cheapest option available, the mobile-cellular sub-basket therefore corresponds to a basic, representative (low-usage)

Annex Table 2.1: OECD mobile-cellular low-user call distribution (2009 methodology)

	To fixed	On-net	Off-net	TOTAL	Call distribution by time of day (%)
Call distribution (%)	17.0	56.0	26.0	100.0	100.0
Calls	5.2	16.9	7.9	30.0	
Peak	2.4	7.8	3.6	13.8	46.0
Off-peak	1.5	4.9	2.3	8.7	29.0
Weekend	1.3	4.2	2.0	7.5	25.0
Duration (minutes per call)	2.0	1.6	1.7		
Duration (total minutes of calls)	10.4	27.0	13.4	50.9	N/A
Peak	4.8	12.4	6.2	23.4	46.0
Off-peak	3.0	7.8	3.9	14.8	29.0
Weekend	2.6	6.8	3.4	12.7	25.0
Calls	30 calls per month				
SMS	100 SMSs per month (50 on-net, 50 off-net)				

Source: ITU, based on OECD (2010).

package available to all customers. In countries where no prepaid offers are available, the monthly fixed cost (minus the free minutes of calls included,

if applicable) of a postpaid subscription is added to the basket. To make prices comparable, a number of rules are applied (see Annex Box 2.1).

Annex Box 2.1: Rules applied in collecting mobile-cellular prices

1. The prices of the operator with the largest market share (measured by the number of subscriptions) are used. If prices vary between different regions of the country, prices refer to those applied in the largest city (in terms of population) or in the capital city.
2. Price data should be collected in the currency in which the prices are advertised, including taxes. If prices are not advertised in local currency, a note should be added specifying the currency.
3. Prices refer to prepaid plans. Where the operator offers different packages with a certain number of calls and/or SMS messages included, the cheapest one on the basis of 30 calls and 100 SMSs should be selected. If, instead of a pay-per-use plan, a package is selected for the whole basket (e.g. a bundle including 100 SMSs, 60 minutes and 100MB) or for some of its elements (e.g. a package including 100 SMSs), this should be indicated in the notes. In countries where prepaid subscriptions account for less than 2 per cent of the total subscription base, postpaid prices may be used. In this case, the monthly subscription fee, plus any free minutes, will be taken into consideration for the calculation of the mobile-cellular sub-basket.
4. If per-minute prices are only advertised in internal units rather than in national currency, the price of the top-up/refill charge is used to convert internal units into national currency. If there are different refill prices, then the “cheapest/smallest” refill card is used. If different refill charges exist depending on the validity period, the 30-day validity period (or that closest to 30 days) is used.

5. Prices refer to a regular (non-promotional) plan and exclude special or promotional offers, limited discounts or options such as special prices to certain numbers or restricted to new customers, or plans where calls can only be made during a limited number of (or on specific) days during the month.
6. If subscribers can chose “favourite” numbers (for family, friends, etc.) with a special price, this special price will not be taken into consideration, irrespective of the quantity of numbers involved.
7. Prices refer to outgoing local calls. If different rates apply for local and national calls, then the local rate is used. If different charges apply depending on the mobile operator called, the price of calls to the operator with the second largest market share (measured by the number of subscriptions) should be used, indicating in the notes the rates for calling to other mobile operators. If charges apply to incoming calls, these are not taken into consideration.
8. If prices vary between minutes (1st minute = price A, 2nd minute = price B, 3rd minute = price C), the sum of the different prices is divided by the number of different prices (e.g. price per minute = $(A+B+C)/3$).
9. If prices vary beyond three minutes, the average price per minute is calculated based on the first three minutes.
10. If there is a connection cost per call, then this is taken into consideration in the formula for the mobile-cellular sub-basket, based on 30 calls.
11. If there are different off-peak prices, then the one that is the cheapest before midnight is used. If the only off-peak period is after midnight, then this is not used. Instead, the peak price is used.
12. If there are different peak prices, the most expensive one during the daytime is used.
13. If there are different weekend prices, the price that applies to Sundays during the daytime is used (or the equivalent day in countries where weekends are not on Sundays).
14. If there is no weekend price, the average peak and off-peak price that is valid during the week is used.
15. If peak and off-peak SMS prices exist, the average of both is used for on-net and off-net SMSs.
16. If calls are charged by call or by hour (and not by the minute), the mobile-cellular sub-basket formula will be calculated on the basis of 30 calls or 50.9 minutes. Similarly, if calls are charged by call or by number of minutes for a specific network/time of the day, this will be taken into account for that particular network/time of the day.
17. If monthly, recurring charges exist, they are added to the sub-basket.

Source: ITU.

The fixed-broadband sub-basket

The fixed-broadband sub-basket refers to the price of a monthly subscription to an entry-level fixed-broadband plan. It is calculated as a percentage of a country's average monthly GNI p.c., and is also presented in USD and PPP\$. For comparability reasons, the fixed-broadband sub-basket is based on a monthly data usage of (a minimum of) 1 GB. For plans that limit the monthly amount of data transferred by including data volume caps below 1 GB, the cost for the additional bytes is added to the sub-basket. The minimum speed of a broadband connection is 256 kbit/s.

Where several offers are available, preference is given to the cheapest available connection that offers a speed of at least 256 kbit/s and 1 GB of

data volume. Where providers set a limit of less than 1 GB on the amount of data that can be transferred within a month, then the price per additional byte is added to the monthly price in order to calculate the cost of 1 GB of data per month. Preference is given to the most widely used fixed-broadband technology (DSL, fibre, cable, etc.). The sub-basket does not include the installation charges, modem prices or telephone-line rentals that are often required for a DSL service. The price represents the broadband entry plan in terms of the minimum speed of 256 kbit/s, but does not take into account special offers that are limited in time or to specific geographical areas. The plan does not necessarily represent the fastest or most cost-effective connection since the price for a higher-speed plan is often cheaper in relative terms (i.e. in terms of the price per Mbit/s) (see Annex Box 2.2).

Annex Box 2.2: Rules applied in collecting fixed-broadband Internet price data

1. The prices of the operator with the largest market share (measured by the number of fixed-broadband subscriptions) should be used.
2. Price data should be collected in the currency in which the prices are advertised, including taxes. If prices are not advertised in local currency, a note should be added specifying the currency.
3. Only residential, single-user price data should be collected. If prices vary between different regions of the country, prices applying to the largest city (in terms of population) should be provided. If that information is not available, prices applying to the capital city should be reported. The selected city should be mentioned in a note in the monthly subscription indicator.
4. From all fixed-broadband plans meeting the above-mentioned criteria, the cheapest plan on the basis of a 1 GB monthly usage and an advertised download speed of at least 256 kbit/s should be selected. If there is a price distinction between residential and business tariffs, the residential tariff should be used.
5. If the plan selected places no limit on the monthly data usage, the cap should be set at 0 and a note added to that indicator specifying "unlimited".
6. If operators propose different commitment periods, the 12-month plan (or the one closest to this commitment period) should be used. If the plan selected requires a longer commitment (i.e. over 12 months), it should be indicated in the note regarding the monthly subscription. Furthermore, if different prices apply (e.g. a discount price for the first year, and a higher price as of the 13th month), then the price after the discount period should be selected (e.g. the price as of the 13th month). The discount price charged during the initial period should be indicated in a note regarding the monthly subscription charge. This is because the initial price paid is considered a limited/discount price, whereas the price subsequently charged is the regular price.

7. Price data should be collected for the fixed (wired)-broadband technology with the greatest number of subscriptions in the country (DSL, cable, etc.).
8. The same price plan should be used for collecting all the data specified. For example, if Plan A is selected for the fixed-broadband service, according to the criteria mentioned above, the elements in Plan A shall be taken into account in regard to the monthly subscription, the excess-charge price, the volume of data that can be downloaded, etc.
9. Price data should be collected for regular (non-promotional) plans and should not include promotional offers or limited or restricted discounts (e.g. for students only, for existing customers, etc.).
10. With convergence, operators are increasingly providing multiple (bundled) services such as voice telephony, Internet access and television reception over their networks. They often bundle these offers into a single subscription. This can present a challenge for price data collection, since it may not be possible to isolate the prices for one service. It is preferable to use prices for a specific service (i.e. unbundled); if this is not possible, then the additional services that are included in the price plan should be specified in a note.

The cost of a fixed-telephone line should be excluded if it can be used for other services as well. If a monthly rental for the physical line is not required (e.g. naked DSL), this should be mentioned in a note. If a monthly rental of a fixed-telephone line is required, this should also be explained in a note.

Source: ITU.

Mobile-broadband prices

ITU has been collecting mobile-broadband price data through its annual ICT Price Basket Questionnaire since 2012. The collection of mobile-broadband price data from ITU Member States was agreed upon by the Expert Group on Telecommunication/ICT Indicators (EGTI)⁵ in 2012, and revised by EGTI in 2013 in the light of the lessons learned from the first data collection exercise. The revised methodology was endorsed by the eleventh World Telecommunication/ICT Indicators Symposium held in December 2013 in Mexico City, and was applied in the 2014 data collection.

To capture the prices of different data packages, covering both prepaid and postpaid services and support by different devices (handset and computer), mobile-broadband price data were collected for two different data thresholds, based on a set of rules (see Annex Box 2.3)⁶.

For plans that were limited in terms of validity (less than 30 days), the price of the additional days was calculated and added to the base package in order to obtain the final price. Two possibilities exist, depending on the operator, for extending a plan that is limited in terms of data allowance (or validity). The customer either (i) continues to use the service and pays an excess usage charge for additional data,⁷ or (ii) purchases an additional (add-on) package. Thus, for some countries, prices presented in this chapter reflect the price of the base package plus an excess-usage charge (e.g. a base package including 400 MB plus the price for 100 MB of excess usage for a monthly usage of 500 MB), or a multiplication of the base package price (e.g. twice the price of a 250 MB plan for a monthly usage of 500 MB).

The plans selected represent the least expensive offers that include the minimum amount of data for each respective mobile-broadband plan. The guiding principle is to base each plan on what customers could and would purchase given the data allowance and validity of each plan.

Annex Box 2.3: Rules applied in collecting mobile-broadband prices

1. Price data should be collected based on one of the following technologies: UMTS, HSDPA+/HSDPA, CDMA2000 and IEEE 802.16e. Prices applying to WiFi or hotspots should be excluded.
2. Price data should be collected in the currency in which they are advertised, including taxes. If prices are not advertised in local currency, a note should be added specifying the currency.
3. Only residential, single-user prices should be collected. If prices vary between different regions of the country, prices applying to the largest city (in terms of population) or to the capital city should be provided.
4. Price data should be collected for both: a) handset-based mobile-broadband subscriptions and b) computer-based mobile-broadband subscriptions.
5. Mobile-broadband price data should be collected from the operator with the largest market share measured by the number of mobile-broadband subscriptions. If this information is not available, mobile-broadband price data should be collected from the mobile-cellular operator with the largest market share (measured by the number of mobile-cellular subscriptions) in the country.
6. Different operators can be chosen for different mobile-broadband services if: a) there are different market leaders for specific segments (postpaid, prepaid, computer-based, handset-based); b) there is no offer available for a specific sub-basket.
7. Price data should be collected for prepaid services (handset-based plan) and postpaid services (computer-based plan). If there are several plans, the cheapest plan satisfying the indicated data volume requirement should be used.
8. Where operators propose different commitment periods for postpaid mobile-broadband plans, the 12-month plan (or the plan closest to this commitment period) should be selected. A note should be added if only longer commitment periods are offered.
9. Price data should be collected for the cheapest plan, with a data volume allowance of a minimum of:
 - i. 1GB for USB/dongle (computer-based) postpaid subscription
 - ii. 500MB for the handset-based prepaid subscription

The selected plan should not necessarily be the one with the cap closest to 500 MB or 1 GB, but include a minimum of 500 MB/1 GB. This means, for example, that if an operator offers a 300 MB and an 800 MB plan, the 800 MB plan or twice the 300 MB plan (if the package can be purchased twice for a monthly capacity of 600 MB) should be selected for the 500 MB sub-sub-basket. The cheapest option should be selected.

Data volumes should refer to both upload and download data volumes. If prices are linked to “hours of use” and not to data volumes, this information should be added in a separate note (ITU will not be able to include these cases in a comparison).

10. The validity period considered for the basket is 30 days or four weeks. If a plan with a validity of 15 days is selected, it will be taken into consideration twice to cover the whole period. Likewise, if a plan with a validity of a day or a week is selected, it will be taken into consideration as many times as necessary to cover a period of four weeks. The cheapest plan on the basis of a validity period of 30 days or four weeks should be selected.
11. Preference should be given to packages (including a certain data volume). Pay-as-you-go offers should be used when they are the cheapest option for a given basket or the only option available. If operators charge different pay-as-you-go rates depending on the time of the day (peak/off-peak), then the average of both should be recorded. Night-time data allowances will not be considered.
12. Even if the plan is advertised as “unlimited”, the fine print should be read carefully since the data volumes are usually limited, either by throttling (limiting the speed) or by cutting off the service.
13. Data on non-recurrent fees, such as installation/set-up fees, are not collected.
14. Preference should be given to the cheapest available package even if this is bundled with other services (e.g. with voice services). If the plan chosen includes other services besides mobile-broadband access, these should be specified in a note.
15. Prices refer to a regular (non-promotional) plan and exclude promotional offers and limited discounts or special user groups (e.g. existing clients). Special prices applying to a certain type of phone (iPhone/Blackberry, iPad) should be excluded. Night-time allowances are not included.

Endnotes

- ¹ Data for fixed-telephone, mobile-cellular and fixed-broadband have been collected since 2008 through the ITU ICT Price Basket Questionnaire, which is sent out annually to all ITU Member States/national statistics contacts.
- ² On-net refers to a call made to the same mobile network, while off-net and fixed-line refer to calls made to other (competing) mobile networks and to a fixed-telephone line, respectively.
- ³ See OECD (2010).
- ⁴ See footnote 3.
- ⁵ EGTI was created in May 2009 with the mandate to revise the list of ITU supply-side indicators (i.e. data collected from operators), as well as to discuss outstanding methodological issues and new indicators. EGTI is open to all ITU members and experts in the field of ICT statistics and data collection. It works through an online discussion forum (<http://www.itu.int/ITU-D/ict/ExpertGroup/default.asp>) and face-to-face meetings. EGTI reports to the World Telecommunication/ICT Indicators Symposium (WTIS).
- ⁶ These rules were presented to EGTI in September 2012. In the 2013 revision, EGTI agreed that ITU should collect prepaid and postpaid prices, for both handset- and computer-based services, with the following volume allowances: 1 GB for computer-based and 500 MB for handset-based usage. The EGTI proposals to measure mobile-broadband prices were endorsed by the eleventh World Telecommunication/ICT Indicators Symposium held in December 2013 in Mexico City. Source: ITU.
- ⁷ Some operators throttle speeds after the data allowance included in the base package has been reached. Customers can then pay an excess-usage charge in order to continue to have full-speed connections. In some cases, even throttled speeds are still considered to be broadband (i.e. equal to or greater than 256 kbit/s, according to ITU's definition).

Annex 2: ICT prices tables

Fixed-broadband prices 2016

	Economy	Notes	Residential Monthly subscription		Speed in Mbit/s	Cap (GB)	ISP
			USD	PPP\$			
1	Afghanistan		14.73	50.02	0.25	Unlimited	Afghan Telecom
2	Albania		9.66	22.33	2	4	ALBtelecom
3	Algeria		14.62	43.76	1	Unlimited	Algérie Telecom
4	Andorra	1	17.35	N/A	0.5	2	STA
5	Angola		29.92	49.23	0.25	Unlimited	Angola Telecom
6	Antigua and Barbuda		53.24	64.57	1	Unlimited	APUA Inet
7	Argentina	2	33.88	N/A	3	Unlimited	Telefónica de Argentina – Speedy
8	Armenia		8.32	19.79	4	Unlimited	ArmenTel Beeline
9	Australia		55.76	48.29	8	100	Telstra
10	Austria	3	23.40	24.70	8	Unlimited	A1 Telekom Austria AG
11	Azerbaijan		6.27	N/A	1	Unlimited	Aztelekom
12	Bahamas		29.99	25.95	1	Unlimited	Batelnet
13	Bahrain		13.30	22.04	3	40	Batelco
14	Bangladesh		4.40	11.27	0.25	Unlimited	Bangladesh Telecommunications Company Limited
15	Barbados		32.50	26.46	15	Unlimited	Flow
16	Belarus		3.97	N/A	N/A	10	ByFly. RUE Beltelecom
17	Belgium		30.42	31.75	50	100	Proximus
18	Belize		12.50	21.81	0.25	Unlimited	BTL
19	Benin		25.29	65.70	0.5	Unlimited	Benin Telecoms
20	Bhutan		7.80	24.25	2	4	Bhutan Telecom Ltd.
21	Bolivia (Plurinational State of)	4	14.33	29.49	0.7	Unlimited	Cotas Net
22	Bosnia and Herzegovina		6.62	14.34	2	2	BH Telecom
23	Botswana		26.61	56.21	0.5	Unlimited	BTC
24	Brazil		17.16	29.32	4	50	Vivo
25	Brunei Darussalam		18.10	30.82	1	25	Telekom Brunei Berhad
26	Bulgaria		10.07	23.60	20	Unlimited	Bulgarian Telecommunication Company EAD
27	Burkina Faso		37.10	99.25	0.25	Unlimited	Onatel
28	Burundi		78.57	200.26	0.26	Unlimited	ONATEL
29	Cambodia		12.00	30.16	4	Unlimited	Metfone
30	Cameroon		25.13	62.03	2	Unlimited	Camtel
31	Canada		55.39	54.68	15	75	Bell Canada
32	Cabo Verde		9.93	21.09	12	5	Cabo Verde Telecom (CVMultimedia)
33	Central African Rep.		487.35	616.28	0.25	Unlimited	Orange Centrafrique
34	Chad		423.27	874.39	0.25	Unlimited	Sotel
35	Chile		28.05	45.85	8	500	Movistar
36	China		15.95	27.73	50	Unlimited	China Unicom
37	Colombia		18.96	44.82	5	Unlimited	Telmex
38	Comoros		33.73	74.48	0.5	Unlimited	Comores Telecom
39	Congo (Rep. of)		81.55	146.09	0.25	Unlimited	Congo Telecom
40	Costa Rica		17.99	25.93	1	Unlimited	ICE
41	Côte d'Ivoire		31.26	78.43	0.5	500	Aviso (Orange)
42	Croatia	5	14.90	25.00	4	1	T-Com
43	Cuba		180.00	N/A	0.26	Unlimited	ETECSA
44	Cyprus		17.74	22.25	3	Unlimited	CYTA
45	Czech Republic		14.28	24.09	2	Unlimited	O2 Czech Republic a.s.
46	Denmark		35.50	27.91	5	Unlimited	YouSee

	Economy	Notes	Residential Monthly subscription		Speed in Mbit/s	Cap (GB)	ISP
			USD	PPP\$			
47	Djibouti		55.71	92.06	3	50	Djibouti Telecom
48	Dominica		32.20	43.70	2	Unlimited	Flow
49	Dominican Rep.		28.07	58.20	2	Unlimited	Claro (Codetel)
50	Ecuador		20.52	33.98	4	Unlimited	CNT EP
51	Egypt		4.99	20.51	1	10	TE Data
52	El Salvador	6	21.23	40.95	2	Unlimited	Claro
53	Equatorial Guinea		101.18	173.84	0.25	Unlimited	Orange
54	Estonia		17.70	26.71	10	Unlimited	Telia Eesti AS
55	Ethiopia		12.41	30.86	0.5	2	Ethio Telecom
56	Fiji		15.83	26.49	10	10	Connect Fiji Ltd
57	Finland		31.97	29.54	10	Unlimited	Elisa
58	France		23.23	24.42	15	Unlimited	Orange
59	Gabon		23.61	37.81	0.5	Unlimited	Gabon Telecom
60	Gambia		37.34	117.07	0.25	Unlimited	Gamtel
61	Georgia		10.98	30.80	10	Unlimited	Silknet
62	Germany	7	38.66	41.74	16	Unlimited	Telekom Deutschland GmbH
63	Ghana		23.40	68.95	4	20	Vodafone Ghana
64	Greece		19.58	25.35	4	Unlimited	OTE
65	Grenada		29.44	39.74	12	Unlimited	Flow
66	Guatemala		19.61	35.35	2	Unlimited	Claro
67	Guinea		8.83	19.76	N/A	3	Orange Guinea
68	Guinea-Bissau		118.04	287.82	0.25	5	MTN Guinea-Bissau
69	Guyana		29.05	45.51	1.5	Unlimited	GT&T
70	Haiti	8	55.00	138.24	1	0	Natcom
71	Honduras		32.00	63.07	1	Unlimited	Millicom (TIGO-HOME)
72	Hong Kong, China	9	21.64	26.33	100	Unlimited	PCCW-HKT Telephone Ltd. and Hong Kong Telecommunications (HKT) Ltd.
73	Hungary		20.25	39.36	10	Unlimited	Magyar Telekom (T-Home)
74	Iceland	10	36.42	28.35	50	50	Síminn
75	India		6.42	22.37	2	1.5	Bharat Sanchar Nigam Limited (BSNL)
76	Indonesia		30.43	83.05	10	Unlimited	PT. Telekomunikasi Indonesia, Tbk.
77	Iran (Islamic Republic of)		4.94	13.60	1	4	TCI
78	Iraq		21.15	41.00	0.25	Unlimited	State Company for Internet Services (SCIS)
79	Ireland		55.31	49.80	100	Unlimited	eir
80	Israel	11	32.54	28.58	15	Unlimited	Bezeq
81	Italy		44.14	48.50	7	Unlimited	Tim
82	Jamaica		21.89	34.70	1	Unlimited	FLOW
83	Japan		20.05	19.93	12	900	Open Computer Network
84	Jordan		30.28	63.48	4	Unlimited	Orange Internet
85	Kazakhstan		5.64	19.21	1	10	Kazakhtelecom JSC
86	Kenya		44.32	101.58	15	Unlimited	Wananchi Group
87	Kiribati		185.87	N/A	0.25	Unlimited	Telecom Services Kiribati Limited
88	Korea (Rep. of)	12	34.13	38.19	100	Unlimited	KT
89	Kuwait		10.50	16.43	0.5	Unlimited	Zajil Telecom
90	Kyrgyzstan		8.24	27.60	0.5	Unlimited	Kyrgyz Telekom/JET
91	Lao P.D.R.		23.99	60.27	1	Unlimited	Unitel
92	Latvia		19.36	30.97	10	Unlimited	Latttelecom
93	Lebanon		17.51	N/A	2	40	Ogero Telecom
94	Lesotho		10.20	33.80	16	2	Econet Telecom Lesotho
95	Libya		21.58	N/A	0.5	20	Libya Telecom & Technology (LTT)
96	Liechtenstein		37.61	N/A	5	Unlimited	Telecom Liechtenstein AG
97	Lithuania		12.79	23.12	100	Unlimited	TEO LT, AB
98	Luxembourg		45.35	41.41	20	Unlimited	Post Luxembourg (Post Telecom)
99	Macao, China		7.88	9.79	3	Unlimited	Companhia de Telecomunicações de Macau S.A.R.L. (CTM)

	Economy	Notes	Residential Monthly subscription		Speed in Mbit/s	Cap (GB)	ISP
			USD	PPP\$			
100	Madagascar		53.20	196.99	8	Unlimited	Telecom Malagasy (Telma)
101	Malawi		7.00	29.00	10	2	Malawi Telecommunication Limited
102	Malaysia		9.71	24.48	1	1	Telekom Malaysia Berhad (TM)
103	Maldives		20.00	25.57	4	Unlimited	Dhiraagu
104	Mali		16.69	43.84	0.25	Unlimited	SOTELMA
105	Malta	13	22.12	30.35	15	Unlimited	Go plc
106	Marshall Islands		49.95	N/A	0.25	Unlimited	National Telecommunications Authority Marshall Is. (NTAMAR)
107	Mauritania		9.80	28.10	0.5	Unlimited	Mauritel
108	Mauritius		2.81	5.13	0.5	2	Mauritius Telecom (Orange)
109	Mexico		18.70	35.83	10	Unlimited	Telmex
110	Micronesia		33.00	N/A	0.25	Unlimited	FSM Telecommunications Corporation
111	Moldova		10.04	30.63	100	Unlimited	Moldtelecom
112	Monaco	14	55.20	N/A	200	Unlimited	Monaco Telecom
113	Mongolia		6.68	17.10	1	Unlimited	Micom
114	Montenegro		12.98	26.60	1	1	Crnogorski Telekom
115	Morocco		10.09	23.64	4	Unlimited	Maroc Telecom
116	Mozambique		10.31	38.80	1	Unlimited	TDM
117	Myanmar	15	18.00	67.85	0.5	Unlimited	MPT
118	Namibia		33.92	83.47	0.5	Unlimited	Telecom Namibia
119	Nauru		34.94	N/A	0.5	5	Digicel Nauru
120	Nepal		6.25	19.68	0.5	7	Nepal Doorsanchar Company Limited
121	Netherlands	16	38.72	39.33	20	Unlimited	KPN
122	New Zealand		59.14	52.62	24	60	Spark New Zealand Limited
123	Nicaragua	17	27.59	71.72	0.5	Unlimited	claro
124	Niger		50.17	133.25	0.25	Unlimited	Sonitel
125	Nigeria		31.16	72.99	20	20	ipNX Nigeria
126	Norway	18	39.17	32.35	6	Unlimited	Telenor
127	Oman		38.96	75.02	4	20	Oman Telecommunications Company (Omantel)
128	Pakistan	19	5.97	19.96	1	10	Pakistan Telecommunication Company Limited (PTCL)
129	Palestine		37.75	56.14	8	75	Paltel (access) + Internet
130	Panama		21.35	35.97	4	Unlimited	Cable & Wireless Panama
131	Papua New Guinea		9.26	11.68	24	1	Telikom PNG
132	Paraguay		22.93	51.44	3	Unlimited	Tigo
133	Peru		13.04	25.94	1	Unlimited	Movistar
134	Philippines		21.04	49.70	5	Unlimited	Philippine Long Distance Telephone Company (PLDT)
135	Poland	20	12.66	26.76	80	Unlimited	Orange Polska S.A.
136	Portugal	21	25.43	34.13	12	Unlimited	MEO
137	Qatar		68.68	90.42	1	Unlimited	Ooredoo
138	Romania		6.90	15.01	100	Unlimited	S.C. RCS & RDS S.A.
139	Russian Federation		5.97	16.69	30	Unlimited	Rostelecom
140	Rwanda		89.02	258.52	10	Unlimited	Liquid Telecom (former Rwandatel)
141	Sao Tome and Principe		27.65	47.00	1	12	CST-Companhia Santomense de Telecomunicações
142	Samoa		38.60	53.30	2	3	Bluesky Samoa
143	San Marino		18.42	21.44	20	Unlimited	Telecom Italia San Marino
144	Saudi Arabia		21.33	42.26	2	20	STC
145	Senegal		16.36	41.05	0.5	Unlimited	Orange Senegal
146	Serbia		13.92	32.13	10	Unlimited	Telekom Srbija
147	Seychelles		15.11	22.78	1	3	Cable and Wireless (Seychelles) Limited
148	Sierra Leone		20.08	49.59	1	5	Sierratel
149	Singapore		21.64	25.02	300	Unlimited	Starhub
150	Slovakia		16.59	27.59	2	300	Slovak Telekom, a.s.
151	Slovenia		33.13	45.82	10	Unlimited	Telekom Slovenije, d.d.
152	Solomon Islands		379.82	379.74	0.25	Unlimited	Solomon Telekom
153	Somalia		30.00	N/A	0.5	10	Hormuud Telecom

	Economy	Notes	Residential Monthly subscription		Speed in Mbit/s	Cap (GB)	ISP
			USD	PPP\$			
154	South Africa		18.29	45.13	1	1	Telkom
155	South Sudan		17.00	255.06	5	20	RCS
156	Spain		26.64	31.83	1	5	Movistar
157	Sri Lanka		4.51	13.69	4	3.5	Sri Lanka Telecom
158	Saint Kitts and Nevis		35.19	45.15	2	Unlimited	FLOW
159	Saint Lucia		33.70	41.37	2	Unlimited	Flow
160	Saint Vincent and the Grenadines		33.65	46.10	2	Unlimited	Flow
161	Sudan		11.55	19.36	0.5	15	Sudatel
162	Suriname		24.03	70.75	2	Unlimited	Telesur
163	Eswatini		42.62	127.84	0.25	6	SPTC
164	Sweden	22	43.10	39.50	100	Unlimited	Telenor
165	Switzerland	23	40.10	27.55	2	Unlimited	Swisscom
166	Syrian Arab Republic		1.74	N/A	0.25	Unlimited	Tarassul
167	Tajikistan		8.81	N/A	0.5	10	Tajik Telecom
168	Tanzania		27.56	77.00	1	Unlimited	TTCL
169	The Forer Yugoslav Rep of Macedonia	24	14.34	34.89	4	30	T-Home
170	Thailand		18.16	49.46	20	Unlimited	TrueOnline
171	Timor-Leste		49.00	73.22	2	6	Timor Telecom
172	Togo		25.29	63.90	0.5	7	Togo Telecom
173	Tonga		6.78	9.33	2	Unlimited	Tonga Communications Corporation
174	Trinidad and Tobago		20.55	24.57	3	Unlimited	Flow Tinidad Limited
175	Tunisia		4.61	12.24	4	Unlimited	Topnet
176	Turkey		8.61	17.13	1	1	TTNET AS
177	Turkmenistan		17.14	N/A	2	0.5	Turkmen Telecom
178	Uganda		5.85	16.87	0.5	1	Uganda Telecom Ltd (UTL)
179	Ukraine		2.34	11.39	5	Unlimited	Ukrtelecom
180	United Arab Emirates		18.79	24.68	0.26	Unlimited	Etisalat
181	United Kingdom	25	8.10	7.55	17	12	BT
182	United States		38.10	38.10	15	Unlimited	Time Warner
183	Uruguay		10.61	14.78	N/A	15	Antel
184	Uzbekistan		5.78	N/A	0.25	1.2	Uzbektelecom
185	Vanuatu		55.86	50.96	0.5	Unlimited	Telecom Vanuatu Limited
186	Viet Nam		0.89	2.26	3.42	0.4	Vietnam Posts and Telecommunications Group (VNPT)
187	Yemen		7.33	N/A	0.25	4	TeleYemen
188	Zambia		24.24	77.69	2	10	Zamtel
189	Zimbabwe		15.00	28.67	1	4	TelOne

Note : *Palestine is not an ITU Member State; the status of Palestine in ITU is the subject of Resolution 99 (Rev. Busan, 2014) of the ITU Plenipotentiary Conference.

Source: ITU.

Mobile-cellular prices 2016, to fixed telephone, SMS

Economy	Notes	Per minute local call, to fixed telephone						Local SMS			
		Peak		Off-peak		Weekend/evening		On-net SMS		Off-net SMS	
		USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$
1	Afghanistan	0.05	0.00	0.05	0.00	0.05	0.00	0.01	0.00	0.04	0.00
2	Albania	1	0.23	0.00	0.23	0.00	0.23	0.00	0.10	0.00	0.10
3	Algeria		0.09	0.00	0.09	0.00	0.09	0.00	0.05	0.00	0.06
4	Andorra	2	0.37	N/A	0.17	N/A	0.17	N/A	0.14	N/A	0.14
5	Angola		0.16	0.00	0.12	0.00	0.12	0.00	0.05	0.00	0.05
6	Antigua and Barbuda		0.35	0.16	0.35	0.16	0.35	0.16	0.12	0.05	0.12
7	Argentina		0.28	N/A	0.28	N/A	0.28	N/A	0.07	N/A	0.07
8	Armenia		0.07	0.00	0.07	0.00	0.07	0.00	0.01	0.00	0.01
9	Australia		0.11	0.10	0.11	0.10	0.11	0.10	0.09	0.08	0.09
10	Austria		0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
11	Azerbaijan		0.04	N/A	0.04	N/A	0.04	N/A	0.03	N/A	0.03
12	Bahamas		0.35	0.31	0.16	0.14	0.22	0.19	0.05	0.05	0.05
13	Bahrain		0.08	0.13	0.08	0.13	0.08	0.13	0.07	0.11	0.07
14	Bangladesh		0.02	0.05	0.02	0.05	0.02	0.05	0.01	0.02	0.01
15	Barbados		0.40	0.33	0.40	0.33	0.40	0.33	0.10	0.09	0.10
16	Belarus		0.07	N/A	0.07	N/A	0.07	N/A	0.01	N/A	0.01
17	Belgium		0.33	0.35	0.33	0.35	0.33	0.35	0.13	0.14	0.13
18	Belize		0.26	0.46	0.26	0.46	0.26	0.46	0.14	0.25	0.14
19	Benin		0.10	0.26	0.10	0.26	0.10	0.26	0.02	0.04	0.04
20	Bhutan		0.04	0.14	0.04	0.14	0.04	0.14	0.01	0.02	0.01
21	Bolivia (Plurinational State of)		0.17	0.36	0.08	0.16	0.17	0.36	0.03	0.06	0.03
22	Bosnia and Herzegovina		0.11	0.25	0.11	0.25	0.11	0.25	0.03	0.07	0.03
23	Botswana		0.11	0.23	0.06	0.12	0.06	0.12	0.02	0.04	0.04
24	Brazil	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	Brunei Darussalam		0.14	0.25	0.07	0.12	0.07	0.12	0.04	0.06	0.04
26	Bulgaria		0.22	0.52	0.22	0.52	0.22	0.52	0.14	0.33	0.14
27	Burkina Faso		0.10	0.27	0.10	0.27	0.10	0.27	0.02	0.05	0.03
28	Burundi		0.13	0.32	0.13	0.32	0.13	0.32	0.02	0.04	0.02
29	Cambodia		0.09	0.23	0.08	0.20	0.09	0.21	0.02	0.05	0.04
30	Cameroon		0.16	0.38	0.16	0.38	0.16	0.38	0.05	0.13	0.09
31	Canada		0.26	0.25	0.26	0.25	0.26	0.25	0.00	0.00	0.00
32	Cabo Verde		0.27	0.58	0.27	0.58	0.27	0.58	0.10	0.21	0.10
33	Central African Rep.		0.10	0.13	0.10	0.13	0.10	0.13	0.04	0.05	0.08
34	Chad		0.30	0.63	0.30	0.63	0.30	0.63	0.02	0.03	0.08
35	Chile		0.18	0.29	0.18	0.29	0.18	0.29	0.10	0.17	0.10
36	China		0.04	0.07	0.04	0.07	0.04	0.07	0.02	0.04	0.02
37	Colombia		0.11	0.27	0.11	0.27	0.11	0.27	0.04	0.11	0.09
38	Comoros		0.11	0.25	0.11	0.25	0.11	0.25	0.03	0.07	0.03
39	Dem. Rep. of the Congo		0.10	N/A	0.10	N/A	0.10	N/A	0.04	N/A	0.04
40	Congo (Rep. of the)		0.17	0.30	0.17	0.30	0.17	0.30	0.03	0.06	0.05
41	Costa Rica		0.07	0.11	0.07	0.11	0.07	0.11	0.01	0.01	0.01
42	Côte d'Ivoire		0.14	0.35	0.14	0.35	0.14	0.35	0.07	0.18	0.07
43	Croatia	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.06
44	Cuba	5	0.35	N/A	0.10	N/A	0.22	N/A	0.09	N/A	0.09
45	Cyprus		0.09	0.11	0.09	0.11	0.09	0.11	0.02	0.03	0.02
46	Czech Republic		0.16	0.27	0.16	0.27	0.16	0.27	0.08	0.13	0.08
47	Denmark		0.39	0.30	0.39	0.30	0.39	0.30	0.11	0.09	0.11
48	Djibouti		0.17	0.28	0.11	0.19	0.11	0.19	0.06	0.09	0.06
49	Dominica		0.34	0.46	0.34	0.46	0.34	0.46	0.06	0.09	0.06
50	Dominican Rep.		0.22	0.46	0.22	0.46	0.22	0.46	0.03	0.06	0.05
51	Ecuador		0.20	0.34	0.20	0.34	0.20	0.34	0.07	0.12	0.07

Economy	Notes	Per minute local call, to fixed telephone						Local SMS			
		Peak		Off-peak		Weekend/evening		On-net SMS		Off-net SMS	
		USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$
52	Egypt	0.01	0.06	0.01	0.06	0.01	0.06	0.01	0.06	0.01	0.06
53	El Salvador	0.10	0.20	0.10	0.20	0.10	0.20	0.06	0.12	0.08	0.16
54	Estonia	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05
55	Ethiopia	0.04	0.10	0.02	0.04	0.02	0.04	0.02	0.04	0.02	0.04
56	Fiji	0.22	0.37	0.19	0.32	0.19	0.32	0.07	0.11	0.09	0.14
57	Finland	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
58	France	0.44	0.47	0.44	0.47	0.44	0.47	0.11	0.12	0.11	0.12
59	Gabon	0.20	0.32	0.20	0.32	0.20	0.32	0.04	0.07	0.08	0.14
60	Gambia	0.08	0.26	0.08	0.26	0.08	0.26	0.01	0.04	0.03	0.09
61	Georgia	0.03	0.08	0.03	0.08	0.03	0.08	0.03	0.07	0.03	0.07
62	Germany	6	0.10	0.11	0.10	0.11	0.10	0.11	0.10	0.11	0.10
63	Ghana	0.04	0.11	0.04	0.11	0.04	0.11	0.01	0.04	0.02	0.04
64	Greece	7	0.65	0.84	0.65	0.84	0.65	0.84	0.21	0.27	0.21
65	Grenada	0.29	0.39	0.29	0.39	0.29	0.39	0.07	0.09	0.07	0.09
66	Guatemala	0.34	0.62	0.34	0.62	0.34	0.62	0.13	0.24	0.13	0.24
67	Guinea	0.08	0.18	0.08	0.18	0.08	0.18	0.01	0.03	0.02	0.05
68	Guinea-Bissau	0.27	0.66	0.27	0.66	0.27	0.66	0.05	0.12	0.10	0.25
69	Guyana	0.16	0.25	0.16	0.25	0.16	0.25	0.06	0.09	0.06	0.09
70	Haiti	0.08	0.21	0.08	0.21	0.08	0.21	0.02	0.05	0.05	0.13
71	Honduras	0.13	0.25	0.13	0.25	0.13	0.25	0.06	0.11	0.06	0.11
72	Hong Kong, China	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.11
73	Hungary	0.13	0.25	0.09	0.17	0.09	0.17	0.13	0.26	0.13	0.26
74	Iceland	8	0.17	0.13	0.17	0.13	0.17	0.13	0.00	0.00	0.12
75	India	0.02	0.06	0.02	0.06	0.02	0.06	0.01	0.05	0.01	0.05
76	Indonesia	0.21	0.57	0.10	0.29	0.16	0.43	0.02	0.05	0.02	0.05
77	Iran (Islamic Republic of)	0.02	0.07	0.02	0.07	0.02	0.07	0.00	0.01	0.00	0.01
78	Iraq	0.20	0.38	0.20	0.38	0.20	0.38	0.02	0.04	0.05	0.10
79	Ireland	0.39	0.35	0.39	0.35	0.39	0.35	0.17	0.15	0.17	0.15
80	Israel	0.31	0.27	0.31	0.27	0.31	0.27	0.17	0.15	0.17	0.15
81	Italy	9	0.32	0.35	0.32	0.35	0.32	0.35	0.21	0.23	0.21
82	Jamaica	0.10	0.16	0.10	0.16	0.10	0.16	0.03	0.05	0.04	0.06
83	Japan	0.36	0.36	0.36	0.36	0.36	0.36	0.03	0.03	0.03	0.03
84	Jordan	0.04	0.09	0.04	0.09	0.04	0.09	0.00	0.00	0.00	0.00
85	Kazakhstan	0.02	0.07	0.02	0.07	0.02	0.07	0.02	0.07	0.04	0.12
86	Kenya	0.04	0.09	0.02	0.05	0.03	0.07	0.01	0.02	0.01	0.02
87	Kiribati	0.19	N/A	0.13	N/A	0.13	N/A	0.07	N/A	0.07	N/A
88	Korea (Rep. of)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
89	Kuwait	0.17	0.26	0.17	0.26	0.17	0.26	0.07	0.10	0.07	0.10
90	Kyrgyzstan	0.07	0.23	0.07	0.23	0.07	0.23	0.02	0.08	0.02	0.08
91	Lao P.D.R.	0.10	0.25	0.10	0.25	0.10	0.25	0.01	0.03	0.02	0.06
92	Latvia	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
93	Lebanon	0.28	N/A	0.17	N/A	0.22	N/A	0.05	N/A	0.05	N/A
94	Lesotho	0.08	0.27	0.08	0.27	0.08	0.27	0.03	0.11	0.03	0.11
95	Liberia	0.22	0.35	0.22	0.35	0.22	0.35	0.05	0.08	0.05	0.08
96	Libya	0.06	N/A	0.06	N/A	0.06	N/A	0.04	N/A	0.04	N/A
97	Liechtenstein	11	0.08	N/A	0.08	N/A	0.08	N/A	0.17	N/A	0.17
98	Lithuania	12	0.15	0.28	0.15	0.28	0.15	0.28	0.03	0.06	0.03
99	Luxembourg	0.28	0.25	0.18	0.16	0.18	0.16	0.13	0.12	0.13	0.12
100	Macao, China	0.05	0.06	0.05	0.06	0.05	0.06	0.03	0.04	0.03	0.04
101	Madagascar	0.25	0.91	0.25	0.91	0.25	0.91	0.03	0.09	0.04	0.15
102	Malawi	0.13	0.54	0.08	0.32	0.10	0.43	0.02	0.09	0.03	0.14
103	Malaysia	0.06	0.15	0.06	0.15	0.06	0.15	0.03	0.07	0.03	0.07
104	Maldives	0.07	0.09	0.05	0.07	0.05	0.07	0.01	0.02	0.03	0.04
105	Mali	0.18	0.48	0.18	0.48	0.18	0.48	0.03	0.09	0.05	0.13

Economy	Notes	Per minute local call, to fixed telephone						Local SMS			
		Peak		Off-peak		Weekend/evening		On-net SMS		Off-net SMS	
		USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$
106	Malta	13	0.11	0.15	0.11	0.15	0.11	0.15	0.11	0.15	0.15
107	Marshall Islands		0.50	N/A	0.25	N/A	0.38	N/A	0.02	N/A	0.02
108	Mauritania		0.26	0.74	0.26	0.74	0.26	0.74	0.03	0.08	0.03
109	Mauritius		0.10	0.18	0.10	0.18	0.10	0.18	0.02	0.03	0.02
110	Mexico		0.05	0.09	0.05	0.09	0.05	0.09	0.05	0.09	0.05
111	Micronesia		0.50	N/A	0.30	N/A	0.15	N/A	0.10	N/A	0.10
112	Moldova		0.08	0.23	0.08	0.23	0.08	0.23	0.03	0.09	0.03
113	Monaco		0.71	N/A	0.39	N/A	0.39	N/A	0.13	N/A	0.13
114	Mongolia		0.04	0.10	0.04	0.10	0.04	0.10	0.01	0.02	0.01
115	Montenegro		0.14	0.28	0.14	0.28	0.14	0.28	0.03	0.06	0.03
116	Morocco	14	0.03	0.07	0.03	0.07	0.03	0.07	0.01	0.02	0.01
117	Mozambique		0.00	0.01	0.00	0.01	0.00	0.01	0.03	0.11	0.03
118	Myanmar		0.02	0.07	0.02	0.07	0.02	0.07	0.01	0.03	0.01
119	Namibia	15	0.07	0.17	0.07	0.17	0.07	0.17	0.03	0.07	0.03
120	Nauru		0.22	N/A	0.19	N/A	0.20	N/A	0.10	N/A	0.10
121	Nepal		0.02	0.07	0.02	0.07	0.02	0.07	0.01	0.04	0.01
122	Netherlands		0.33	0.34	0.33	0.34	0.33	0.34	0.11	0.11	0.11
123	New Zealand		0.14	0.12	0.14	0.12	0.14	0.12	0.01	0.01	0.01
124	Nicaragua		0.45	1.17	0.45	1.17	0.45	1.17	0.08	0.21	0.08
125	Niger		0.20	0.54	0.20	0.54	0.20	0.54	0.01	0.03	0.01
126	Nigeria		0.03	0.06	0.03	0.06	0.03	0.06	0.02	0.04	0.02
127	Norway		0.12	0.10	0.12	0.10	0.12	0.10	0.08	0.07	0.08
128	Oman		0.14	0.28	0.10	0.20	0.10	0.20	0.03	0.05	0.03
129	Pakistan		0.02	0.06	0.02	0.06	0.02	0.06	0.01	0.05	0.01
130	Palestine		0.16	0.23	0.13	0.19	0.14	0.21	0.06	0.09	0.09
131	Panama		0.12	0.20	0.12	0.20	0.12	0.20	0.05	0.08	0.07
132	Papua New Guinea		0.27	0.34	0.27	0.34	0.27	0.34	0.08	0.10	0.08
133	Paraguay		0.04	0.09	0.04	0.09	0.04	0.09	0.03	0.06	0.05
134	Peru		0.15	0.29	0.15	0.29	0.15	0.29	0.03	0.06	0.03
135	Philippines		0.16	0.37	0.16	0.37	0.16	0.37	0.02	0.05	0.02
136	Poland		0.07	0.16	0.07	0.16	0.07	0.16	0.04	0.08	0.04
137	Portugal		0.11	0.15	0.11	0.15	0.11	0.15	0.11	0.15	0.11
138	Qatar		0.15	0.20	0.15	0.20	0.15	0.20	0.11	0.14	0.11
139	Romania	16	0.24	0.52	0.24	0.52	0.24	0.52	0.00	0.00	0.07
140	Russian Federation		0.04	0.10	0.04	0.10	0.04	0.10	0.03	0.08	0.03
141	Rwanda		0.06	0.17	0.06	0.17	0.06	0.17	0.02	0.04	0.03
142	Sao Tome and Principe		0.11	0.19	0.11	0.19	0.11	0.19	0.05	0.08	0.05
143	Samoa		0.17	0.24	0.17	0.24	0.17	0.24	0.08	0.11	0.08
144	San Marino		0.09	0.10	0.09	0.10	0.09	0.10	0.10	0.12	0.10
145	Saudi Arabia		0.15	0.29	0.15	0.29	0.15	0.29	0.07	0.13	0.07
146	Senegal		0.20	0.51	0.18	0.46	0.19	0.48	0.03	0.08	0.05
147	Serbia		0.11	0.25	0.11	0.25	0.11	0.25	0.05	0.12	0.05
148	Seychelles		0.30	0.45	0.17	0.25	0.23	0.35	0.03	0.05	0.03
149	Sierra Leone		0.15	0.37	0.15	0.37	0.15	0.37	0.05	0.12	0.07
150	Singapore		0.12	0.13	0.06	0.07	0.06	0.07	0.04	0.04	0.04
151	Slovakia		0.13	0.22	0.13	0.22	0.13	0.22	0.07	0.11	0.07
152	Slovenia	17	0.20	0.28	0.20	0.28	0.20	0.28	0.13	0.18	0.13
153	Solomon Islands		0.19	0.19	0.19	0.19	0.19	0.19	0.06	0.06	0.06
154	Somalia		0.05	N/A	0.02	N/A	0.04	N/A	0.01	N/A	0.01
155	South Africa		0.08	0.20	0.08	0.20	0.08	0.20	0.03	0.08	0.03
156	South Sudan		0.02	0.32	0.02	0.32	0.02	0.32	0.01	0.09	0.01
157	Spain		0.07	0.08	0.07	0.08	0.07	0.08	0.20	0.24	0.20
158	Sri Lanka		0.02	0.05	0.02	0.05	0.02	0.05	0.00	0.01	0.00
159	Saint Kitts and Nevis		0.33	0.42	0.33	0.42	0.33	0.42	0.08	0.11	0.08

Economy	Notes	Per minute local call, to fixed telephone						Local SMS			
		Peak		Off-peak		Weekend/evening		On-net SMS		Off-net SMS	
		USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$
160 Saint Lucia		0.35	0.43	0.35	0.43	0.35	0.43	0.09	0.10	0.11	0.14
161 Saint Vincent and the Grenadines		0.35	0.48	0.35	0.48	0.35	0.48	0.07	0.09	0.11	0.15
162 Sudan		0.04	0.06	0.04	0.06	0.04	0.06	0.01	0.02	0.01	0.02
163 Suriname		0.18	0.53	0.18	0.53	0.11	0.32	0.04	0.13	0.04	0.13
164 Eswatini		0.12	0.37	0.08	0.24	0.10	0.31	0.05	0.16	0.05	0.16
165 Sweden	18	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07	0.08	0.07
166 Switzerland	19	0.29	0.20	0.29	0.20	0.29	0.20	0.15	0.10	0.15	0.10
167 Syrian Arab Republic		0.03	N/A	0.03	N/A	0.03	N/A	0.01	N/A	0.01	N/A
168 Tajikistan		0.05	N/A	0.03	N/A	0.04	N/A	0.02	N/A	0.03	N/A
169 Tanzania	20	0.20	0.56	0.20	0.56	0.20	0.56	0.03	0.09	0.03	0.09
170 The Former Yugoslav Rep. of Macedonia		0.07	0.17	0.07	0.17	0.07	0.17	0.07	0.17	0.07	0.17
171 Thailand		0.03	0.07	0.03	0.07	0.03	0.07	0.09	0.25	0.09	0.25
172 Timor-Leste		0.12	0.18	0.12	0.18	0.12	0.18	0.06	0.09	0.08	0.12
173 Togo		0.13	0.34	0.07	0.17	0.10	0.26	0.04	0.10	0.05	0.13
174 Tonga		0.08	0.11	0.08	0.11	0.08	0.11	0.05	0.06	0.05	0.07
175 Trinidad and Tobago		0.22	0.26	0.12	0.15	0.12	0.15	0.06	0.07	0.08	0.10
176 Tunisia		0.01	0.04	0.01	0.04	0.01	0.04	0.02	0.06	0.02	0.06
177 Turkey		0.04	0.08	0.04	0.08	0.04	0.08	0.17	0.33	0.17	0.33
178 Turkmenistan		0.04	N/A	0.04	N/A	0.04	N/A	0.03	N/A	0.03	N/A
179 Uganda		0.05	0.15	0.05	0.15	0.05	0.15	0.02	0.07	0.04	0.11
180 Ukraine		0.06	0.29	0.06	0.29	0.06	0.29	0.04	0.19	0.04	0.19
181 United Arab Emirates		0.04	0.05	0.04	0.05	0.04	0.05	0.05	0.06	0.05	0.06
182 United Kingdom	21	0.54	0.50	0.54	0.50	0.54	0.50	0.16	0.15	0.16	0.15
183 United States		0.27	0.27	0.27	0.27	0.27	0.27	0.22	0.22	0.22	0.22
184 Uruguay		0.27	0.37	0.27	0.37	0.27	0.37	0.03	0.05	0.03	0.05
185 Uzbekistan	22	0.03	N/A	0.03	N/A	0.03	N/A	0.01	N/A	0.01	N/A
186 Vanuatu		0.25	0.23	0.25	0.23	0.25	0.23	0.09	0.09	0.09	0.09
187 Viet Nam		0.05	0.13	0.05	0.13	0.05	0.13	0.01	0.03	0.02	0.04
188 Yemen		0.09	N/A	0.09	N/A	0.09	N/A	0.02	N/A	0.02	N/A
189 Zambia		0.13	0.41	0.08	0.26	0.08	0.26	0.02	0.07	0.03	0.09
190 Zimbabwe		0.16	N/A	0.16	N/A	0.16	N/A	0.05	N/A	0.05	N/A

Note: *Palestine is not an ITU Member State; the status of Palestine in ITU is the subject of Resolution 99 (Rev. Busan, 2014) of the ITU Plenipotentiary Conference.

Source: ITU.

Mobile-cellular prices 2016 (on-net)

Economy	Notes	Call connection charge		Per minute local call, on-net					
		USD	PPP\$	Peak		Off-peak		Weekend/evening	
				USD	PPP\$	USD	PPP\$	USD	PPP\$
1	Afghanistan			0.04	0.00	0.04	0.00	0.04	0.00
2	Albania	1		0.31	0.01	0.31	0.01	0.31	0.01
3	Algeria			0.09	0.00	0.09	0.00	0.09	0.00
4	Andorra	0.13	N/A	0.37	N/A	0.17	N/A	0.17	N/A
5	Angola			0.12	0.00	0.07	0.00	0.07	0.00
6	Antigua and Barbuda			0.35	0.16	0.35	0.16	0.35	0.16
7	Argentina	0.14	N/A	0.28	N/A	0.28	N/A	0.28	N/A
8	Armenia			0.01	0.00	0.01	0.00	0.01	0.00
9	Australia			0.11	0.10	0.11	0.10	0.11	0.10
10	Austria			0.04	0.05	0.04	0.05	0.04	0.05
11	Azerbaijan			0.03	N/A	0.03	N/A	0.03	N/A
12	Bahamas			0.35	0.31	0.16	0.14	0.22	0.19
13	Bahrain			0.08	0.13	0.08	0.13	0.08	0.13
14	Bangladesh			0.02	0.05	0.02	0.05	0.02	0.05
15	Barbados			0.30	0.24	0.30	0.24	0.30	0.24
16	Belarus	2		0.04	N/A	0.04	N/A	0.04	N/A
17	Belgium			0.33	0.35	0.33	0.35	0.33	0.35
18	Belize			0.26	0.46	0.26	0.46	0.26	0.46
19	Benin			0.10	0.26	0.10	0.26	0.10	0.26
20	Bhutan			0.03	0.09	0.02	0.07	0.03	0.08
21	Bolivia (Plurinational State of)			0.17	0.36	0.08	0.16	0.17	0.36
22	Bosnia and Herzegovina			0.11	0.25	0.11	0.25	0.11	0.25
23	Botswana			0.11	0.23	0.06	0.12	0.06	0.12
24	Brazil	3		0.00	0.00	0.00	0.00	0.00	0.00
25	Brunei Darussalam			0.14	0.25	0.07	0.12	0.07	0.12
26	Bulgaria			0.22	0.52	0.22	0.52	0.22	0.52
27	Burkina Faso			0.15	0.41	0.15	0.41	0.15	0.41
28	Burundi			0.10	0.26	0.10	0.26	0.10	0.26
29	Cambodia	4		0.08	0.19	0.05	0.14	0.06	0.16
30	Cameroon			0.10	0.26	0.10	0.26	0.10	0.26
31	Canada			0.26	0.25	0.26	0.25	0.26	0.25
32	Cabo Verde			0.27	0.58	0.27	0.58	0.27	0.58
33	Central African Rep.			0.10	0.13	0.10	0.13	0.10	0.13
34	Chad			0.13	0.26	0.13	0.26	0.13	0.26
35	Chile			0.18	0.29	0.18	0.29	0.18	0.29
36	China			0.04	0.07	0.04	0.07	0.04	0.07
37	Colombia			0.11	0.27	0.11	0.27	0.11	0.27
38	Comoros			0.11	0.25	0.11	0.25	0.11	0.25
39	Dem. Rep. of the Congo			0.10	N/A	0.10	N/A	0.10	N/A
40	Congo (Rep. of the)			0.11	0.20	0.11	0.20	0.11	0.20
41	Costa Rica			0.07	0.11	0.07	0.11	0.07	0.11
42	Côte d'Ivoire			0.14	0.35	0.14	0.35	0.14	0.35
43	Croatia	5	0.06	0.00	0.00	0.00	0.00	0.00	0.00
44	Cuba	6		0.35	N/A	0.10	N/A	0.22	N/A
45	Cyprus			0.09	0.11	0.09	0.11	0.09	0.11
46	Czech Republic			0.16	0.27	0.16	0.27	0.16	0.27
47	Denmark		0.15	0.39	0.30	0.39	0.30	0.39	0.30
48	Djibouti			0.17	0.28	0.11	0.19	0.11	0.19
49	Dominica			0.23	0.32	0.23	0.32	0.23	0.32
50	Dominican Rep.			0.17	0.35	0.17	0.35	0.17	0.35
51	Ecuador			0.20	0.34	0.20	0.34	0.20	0.34
52	Egypt			0.01	0.06	0.01	0.06	0.01	0.06

Economy	Notes	Call connection charge		Per minute local call, on-net					
				Peak		Off-peak		Weekend/evening	
		USD	PPP\$	USD	PPP\$	USD	PPP\$	USD	PPP\$
53	El Salvador			0.12	0.24	0.12	0.24	0.12	0.24
54	Estonia			0.03	0.05	0.03	0.05	0.03	0.05
55	Ethiopia			0.04	0.10	0.02	0.04	0.02	0.04
56	Fiji			0.19	0.32	0.16	0.27	0.16	0.27
57	Finland			0.07	0.07	0.07	0.07	0.07	0.07
58	France			0.44	0.47	0.44	0.47	0.44	0.47
59	Gabon			0.20	0.32	0.20	0.32	0.20	0.32
60	Gambia			0.07	0.23	0.07	0.23	0.07	0.23
61	Georgia	0.04	0.12	0.00	0.00	0.00	0.00	0.00	0.00
62	Germany	7		0.10	0.11	0.10	0.11	0.10	0.11
63	Ghana			0.03	0.09	0.03	0.09	0.03	0.09
64	Greece	8		0.65	0.84	0.65	0.84	0.65	0.84
65	Grenada			0.29	0.39	0.29	0.39	0.29	0.39
66	Guatemala			0.34	0.62	0.34	0.62	0.34	0.62
67	Guinea			0.06	0.13	0.06	0.13	0.06	0.13
68	Guinea-Bissau			0.11	0.27	0.11	0.27	0.11	0.27
69	Guyana			0.15	0.23	0.15	0.23	0.15	0.23
70	Haiti			0.08	0.21	0.08	0.21	0.08	0.21
71	Honduras			0.17	0.34	0.17	0.34	0.17	0.34
72	Hong Kong, China			0.02	0.02	0.01	0.01	0.01	0.01
73	Hungary			0.13	0.25	0.09	0.17	0.09	0.17
74	Iceland	9	0.08	0.06	0.00	0.00	0.00	0.00	0.00
75	India			0.02	0.06	0.02	0.06	0.02	0.06
76	Indonesia			0.13	0.36	0.12	0.33	0.14	0.38
77	Iran (Islamic Republic of)			0.02	0.07	0.02	0.07	0.02	0.07
78	Iraq			0.10	0.20	0.03	0.05	0.06	0.12
79	Ireland		0.10	0.09	0.39	0.35	0.39	0.35	0.35
80	Israel			0.30	0.26	0.30	0.26	0.30	0.26
81	Italy	10		0.32	0.35	0.32	0.35	0.32	0.35
82	Jamaica			0.10	0.16	0.10	0.16	0.10	0.16
83	Japan			0.36	0.36	0.36	0.36	0.36	0.36
84	Jordan			0.04	0.09	0.04	0.09	0.04	0.09
85	Kazakhstan			0.02	0.07	0.02	0.07	0.02	0.07
86	Kenya			0.04	0.09	0.02	0.05	0.03	0.07
87	Kiribati			0.19	N/A	0.13	N/A	0.13	N/A
88	Korea (Rep. of)			0.00	0.00	0.00	0.00	0.00	0.00
89	Kuwait			0.13	0.21	0.13	0.21	0.13	0.21
90	Kyrgyzstan			0.02	0.05	0.02	0.05	0.02	0.05
91	Lao P.D.R.			0.10	0.25	0.10	0.25	0.10	0.25
92	Latvia	11		N/A	N/A	N/A	N/A	N/A	N/A
93	Lebanon			0.28	N/A	0.17	N/A	0.22	N/A
94	Lesotho			0.08	0.27	0.08	0.27	0.08	0.27
95	Liberia			0.22	0.35	0.22	0.35	0.22	0.35
96	Libya			0.04	N/A	0.04	N/A	0.04	N/A
97	Liechtenstein	12		0.01	N/A	0.01	N/A	0.01	N/A
98	Lithuania	13		0.07	0.12	0.07	0.12	0.07	0.12
99	Luxembourg			0.18	0.16	0.18	0.16	0.18	0.16
100	Macao, China			0.05	0.06	0.05	0.06	0.05	0.06
101	Madagascar			0.25	0.91	0.25	0.91	0.25	0.91
102	Malawi			0.10	0.42	0.05	0.21	0.08	0.31
103	Malaysia			0.06	0.15	0.06	0.15	0.06	0.15
104	Maldives			0.07	0.09	0.05	0.07	0.05	0.07
105	Mali			0.18	0.48	0.08	0.21	0.13	0.35
106	Malta	14		0.11	0.15	0.11	0.15	0.11	0.15

Economy	Notes	Call connection charge		Per minute local call, on-net					
		USD	PPP\$	Peak		Off-peak		Weekend/evening	
				USD	PPP\$	USD	PPP\$	USD	PPP\$
107	Marshall Islands			0.50	N/A	0.25	N/A	0.38	N/A
108	Mauritania			0.26	0.74	0.26	0.74	0.26	0.74
109	Mauritius			0.03	0.06	0.03	0.06	0.03	0.06
110	Mexico			0.05	0.09	0.05	0.09	0.05	0.09
111	Micronesia			0.50	N/A	0.30	N/A	0.15	N/A
112	Moldova			0.08	0.23	0.08	0.23	0.08	0.23
113	Monaco			0.71	N/A	0.39	N/A	0.39	N/A
114	Mongolia			0.03	0.08	0.03	0.08	0.03	0.08
115	Montenegro			0.14	0.28	0.14	0.28	0.14	0.28
116	Morocco	15		0.03	0.07	0.03	0.07	0.03	0.07
117	Mozambique			0.00	0.01	0.00	0.01	0.00	0.01
118	Myanmar			0.02	0.07	0.02	0.07	0.02	0.07
119	Namibia	16		0.07	0.17	0.07	0.17	0.07	0.17
120	Nauru			0.22	N/A	0.19	N/A	0.20	N/A
121	Nepal (Republic of)			0.02	0.07	0.01	0.03	0.02	0.05
122	Netherlands			0.33	0.34	0.33	0.34	0.33	0.34
123	New Zealand			0.14	0.12	0.14	0.12	0.14	0.12
124	Nicaragua			0.45	1.17	0.45	1.17	0.45	1.17
125	Niger			0.18	0.48	0.18	0.48	0.18	0.48
126	Nigeria	0.04	0.09	0.03	0.06	0.03	0.06	0.03	0.06
127	Norway	0.11	0.09	0.12	0.10	0.12	0.10	0.12	0.10
128	Oman			0.14	0.28	0.10	0.20	0.10	0.20
129	Pakistan			0.02	0.06	0.02	0.06	0.02	0.06
130	Palestine			0.05	0.07	0.05	0.07	0.05	0.07
131	Panama			0.12	0.20	0.12	0.20	0.12	0.20
132	Papua New Guinea			0.19	0.24	0.19	0.24	0.19	0.24
133	Paraguay			0.04	0.09	0.04	0.09	0.04	0.09
134	Peru			0.15	0.29	0.15	0.29	0.15	0.29
135	Philippines			0.14	0.32	0.14	0.32	0.14	0.32
136	Poland			0.07	0.16	0.07	0.16	0.07	0.16
137	Portugal			0.11	0.15	0.11	0.15	0.11	0.15
138	Qatar			0.15	0.20	0.15	0.20	0.15	0.20
139	Romania	17		0.00	0.00	0.00	0.00	0.00	0.00
140	Russian Federation			0.00	0.00	0.00	0.00	0.00	0.00
141	Rwanda			0.06	0.17	0.00	0.00	0.06	0.17
142	Sao Tome and Principe			0.11	0.19	0.11	0.19	0.11	0.19
143	Samoa			0.17	0.24	0.17	0.24	0.17	0.24
144	San Marino			0.07	0.08	0.07	0.08	0.07	0.08
145	Saudi Arabia			0.15	0.29	0.15	0.29	0.15	0.29
146	Senegal			0.20	0.51	0.18	0.46	0.19	0.48
147	Serbia	0.11	0.25	0.11	0.25	0.11	0.25	0.11	0.25
148	Seychelles			0.21	0.32	0.09	0.14	0.15	0.23
149	Sierra Leone			0.09	0.22	0.09	0.22	0.09	0.22
150	Singapore			0.12	0.13	0.06	0.07	0.06	0.07
151	Slovakia			0.13	0.22	0.13	0.22	0.13	0.22
152	Slovenia	18		0.20	0.28	0.20	0.28	0.20	0.28
153	Solomon Islands			0.13	0.13	0.13	0.13	0.13	0.13
154	Somalia			0.05	N/A	0.02	N/A	0.04	N/A
155	South Africa			0.08	0.20	0.08	0.20	0.08	0.20
156	South Sudan			0.01	0.20	0.01	0.20	0.01	0.20
157	Spain	0.22	0.26	0.07	0.08	0.07	0.08	0.07	0.08
158	Sri Lanka			0.02	0.05	0.02	0.05	0.02	0.05
159	Saint Kitts and Nevis			0.33	0.42	0.33	0.42	0.33	0.42
160	Saint Lucia			0.35	0.43	0.35	0.43	0.35	0.43

Economy	Notes	Call connection charge		Per minute local call, on-net					
		USD	PPP\$	Peak		Off-peak		Weekend/evening	
				USD	PPP\$	USD	PPP\$	USD	PPP\$
161	Saint Vincent and the Grenadines			0.35	0.48	0.35	0.48	0.35	0.48
162	Sudan	0.01	0.02	0.03	0.04	0.03	0.04	0.03	0.04
163	Suriname			0.16	0.48	0.14	0.43	0.11	0.32
164	Eswatini			0.12	0.37	0.06	0.18	0.09	0.28
165	Sweden	19	0.12	0.08	0.07	0.08	0.07	0.08	0.07
166	Switzerland	20		0.29	0.20	0.29	0.20	0.29	0.20
167	Syrian Arab Republic			0.03	N/A	0.03	N/A	0.02	N/A
168	Tajikistan			0.03	N/A	0.02	N/A	0.02	N/A
169	Tanzania	21		0.16	0.46	0.16	0.46	0.16	0.46
170	The Former Yugoslav Rep. of Macedonia			0.07	0.17	0.07	0.17	0.07	0.17
171	Thailand			0.03	0.07	0.03	0.07	0.03	0.07
172	Timor-Leste			0.12	0.18	0.12	0.18	0.12	0.18
173	Togo			0.13	0.34	0.07	0.17	0.10	0.26
174	Tonga			0.08	0.11	0.08	0.11	0.08	0.11
175	Trinidad and Tobago			0.22	0.26	0.12	0.15	0.12	0.15
176	Tunisia			0.01	0.04	0.01	0.04	0.01	0.04
177	Turkey		0.16	0.04	0.08	0.04	0.08	0.04	0.08
178	Turkmenistan			0.04	N/A	0.04	N/A	0.04	N/A
179	Uganda			0.05	0.15	0.05	0.15	0.05	0.15
180	Ukraine			0.00	0.00	0.00	0.00	0.00	0.00
181	United Arab Emirates			0.04	0.05	0.04	0.05	0.04	0.05
182	United Kingdom	22		0.54	0.50	0.54	0.50	0.54	0.50
183	United States			0.27	0.27	0.27	0.27	0.27	0.27
184	Uruguay			0.27	0.37	0.27	0.37	0.27	0.37
185	Uzbekistan	23		0.01	N/A	0.01	N/A	0.01	N/A
186	Vanuatu			0.25	0.23	0.25	0.23	0.25	0.23
187	Viet Nam			0.05	0.13	0.05	0.13	0.05	0.13
188	Yemen			0.07	N/A	0.02	N/A	0.05	N/A
189	Zambia			0.10	0.34	0.05	0.17	0.05	0.17
190	Zimbabwe			0.16	N/A	0.16	N/A	0.16	N/A

Note: *Palestine is not an ITU Member State; the status of Palestine in ITU is the subject of Resolution 99 (Rev. Busan, 2014) of the ITU Plenipotentiary Conference.

Source: ITU.

Mobile-cellular prices 2016, off-net

	Economy	Notes	Per minute local call, off-net					
			Peak		Off-peak		Weekend/evening	
			USD	PPP\$	USD	PPP\$	USD	PPP\$
1	Afghanistan		0.05	0.00	0.05	0.00	0.05	0.00
2	Albania	1	0.23	0.00	0.23	0.00	0.23	0.00
3	Algeria		0.09	0.00	0.09	0.00	0.09	0.00
4	Andorra		0.37	N/A	0.17	N/A	0.17	N/A
5	Angola		0.16	0.00	0.12	0.00	0.12	0.00
6	Antigua and Barbuda		0.35	0.16	0.35	0.16	0.35	0.16
7	Argentina		0.28	N/A	0.28	N/A	0.28	N/A
8	Armenia		0.07	0.00	0.07	0.00	0.07	0.00
9	Australia		0.11	0.10	0.11	0.10	0.11	0.10
10	Austria		0.04	0.05	0.04	0.05	0.04	0.05
11	Azerbaijan		0.04	N/A	0.04	N/A	0.04	N/A
12	Bahamas		0.35	0.31	0.16	0.14	0.22	0.19
13	Bahrain		0.08	0.13	0.08	0.13	0.08	0.13
14	Bangladesh		0.02	0.05	0.02	0.05	0.02	0.05
15	Barbados		0.40	0.33	0.40	0.33	0.40	0.33
16	Belarus		0.07	N/A	0.07	N/A	0.07	N/A
17	Belgium		0.33	0.35	0.33	0.35	0.33	0.35
18	Belize		0.28	0.49	0.28	0.49	0.28	0.49
19	Benin		0.10	0.26	0.10	0.26	0.10	0.26
20	Bhutan		0.04	0.13	0.03	0.09	0.04	0.11
21	Bolivia (Plurinational State of)		0.17	0.36	0.08	0.16	0.17	0.36
22	Bosnia and Herzegovina		0.11	0.25	0.11	0.25	0.11	0.25
23	Botswana		0.14	0.29	0.07	0.15	0.07	0.15
24	Brazil	2	0.32	0.54	0.32	0.54	0.32	0.54
25	Brunei Darussalam		0.14	0.25	0.07	0.12	0.07	0.12
26	Bulgaria		0.22	0.52	0.22	0.52	0.22	0.52
27	Burkina Faso		0.15	0.41	0.15	0.41	0.15	0.41
28	Burundi		0.13	0.32	0.13	0.32	0.13	0.32
29	Cambodia		0.09	0.23	0.08	0.20	0.09	0.21
30	Cameroon		0.16	0.38	0.16	0.38	0.16	0.38
31	Canada		0.26	0.25	0.26	0.25	0.26	0.25
32	Cabo Verde		0.27	0.58	0.27	0.58	0.27	0.58
33	Central African Rep.		0.10	0.13	0.10	0.13	0.10	0.13
34	Chad		0.30	0.63	0.30	0.63	0.30	0.63
35	Chile		0.18	0.29	0.18	0.29	0.18	0.29
36	China		0.04	0.07	0.04	0.07	0.04	0.07
37	Colombia		0.11	0.27	0.11	0.27	0.11	0.27
38	Comoros		0.11	0.25	0.11	0.25	0.11	0.25
39	Dem. Rep. of the Congo		0.10	N/A	0.10	N/A	0.10	N/A
40	Congo (Rep. of the)		0.17	0.30	0.17	0.30	0.17	0.30
41	Costa Rica		0.07	0.11	0.07	0.11	0.07	0.11
42	Côte d'Ivoire		0.14	0.35	0.14	0.35	0.14	0.35
43	Croatia		0.07	0.12	0.07	0.12	0.07	0.12
44	Cuba	3	0.35	N/A	0.10	N/A	0.22	N/A
45	Cyprus	4	0.10	0.12	0.10	0.12	0.10	0.12
46	Czech Republic		0.16	0.27	0.16	0.27	0.16	0.27
47	Denmark		0.39	0.30	0.39	0.30	0.39	0.30
48	Djibouti		0.17	0.28	0.11	0.19	0.11	0.19
49	Dominica		0.36	0.49	0.36	0.49	0.36	0.49
50	Dominican Rep.		0.22	0.46	0.22	0.46	0.22	0.46
51	Ecuador		0.20	0.34	0.20	0.34	0.20	0.34
52	Egypt		0.01	0.06	0.01	0.06	0.01	0.06

	Economy	Notes	Per minute local call, off-net					
			Peak		Off-peak		Weekend/evening	
			USD	PPP\$	USD	PPP\$	USD	PPP\$
53	El Salvador		0.14	0.26	0.14	0.26	0.14	0.26
54	Estonia		0.03	0.05	0.03	0.05	0.03	0.05
55	Ethiopia		0.04	0.10	0.02	0.04	0.02	0.04
56	Fiji		0.23	0.38	0.20	0.34	0.20	0.34
57	Finland		0.07	0.07	0.07	0.07	0.07	0.07
58	France		0.44	0.47	0.44	0.47	0.44	0.47
59	Gabon		0.20	0.32	0.20	0.32	0.20	0.32
60	Gambia		0.08	0.26	0.08	0.26	0.08	0.26
61	Georgia		0.03	0.08	0.03	0.08	0.03	0.08
62	Germany	5	0.10	0.11	0.10	0.11	0.10	0.11
63	Ghana		0.04	0.11	0.04	0.11	0.04	0.11
64	Greece	6	0.65	0.84	0.65	0.84	0.65	0.84
65	Grenada		0.29	0.39	0.29	0.39	0.29	0.39
66	Guatemala		0.34	0.62	0.34	0.62	0.34	0.62
67	Guinea		0.08	0.18	0.08	0.18	0.08	0.18
68	Guinea-Bissau		0.27	0.66	0.27	0.66	0.27	0.66
69	Guyana		0.16	0.25	0.16	0.25	0.16	0.25
70	Haiti		0.08	0.21	0.08	0.21	0.08	0.21
71	Honduras		0.17	0.34	0.17	0.34	0.17	0.34
72	Hong Kong, China		0.02	0.02	0.01	0.01	0.01	0.01
73	Hungary		0.16	0.32	0.13	0.25	0.13	0.25
74	Iceland		0.17	0.13	0.17	0.13	0.17	0.13
75	India		0.02	0.06	0.02	0.06	0.02	0.06
76	Indonesia		0.23	0.63	0.12	0.31	0.17	0.47
77	Iran (Islamic Republic of)		0.03	0.09	0.03	0.09	0.03	0.09
78	Iraq		0.20	0.38	0.20	0.38	0.20	0.38
79	Ireland		0.39	0.35	0.39	0.35	0.39	0.35
80	Israel		0.31	0.27	0.31	0.27	0.31	0.27
81	Italy	7	0.32	0.35	0.32	0.35	0.32	0.35
82	Jamaica		0.14	0.23	0.14	0.23	0.14	0.23
83	Japan		0.36	0.36	0.36	0.36	0.36	0.36
84	Jordan		0.04	0.09	0.04	0.09	0.04	0.09
85	Kazakhstan		0.02	0.07	0.02	0.07	0.02	0.07
86	Kenya		0.04	0.09	0.02	0.05	0.03	0.07
87	Kiribati		0.19	N/A	0.13	N/A	0.13	N/A
88	Korea (Rep. of)		0.00	0.00	0.00	0.00	0.00	0.00
89	Kuwait		0.17	0.26	0.17	0.26	0.17	0.26
90	Kyrgyzstan		0.04	0.14	0.04	0.14	0.04	0.14
91	Lao P.D.R.		0.10	0.25	0.10	0.25	0.10	0.25
92	Latvia	8	N/A	N/A	N/A	N/A	N/A	N/A
93	Lebanon		0.28	N/A	0.17	N/A	0.22	N/A
94	Lesotho		0.08	0.27	0.08	0.27	0.08	0.27
95	Liberia		0.22	0.35	0.22	0.35	0.22	0.35
96	Libya		0.06	N/A	0.06	N/A	0.06	N/A
97	Liechtenstein	9	0.42	N/A	0.42	N/A	0.42	N/A
98	Lithuania	10	0.15	0.28	0.15	0.28	0.15	0.28
99	Luxembourg		0.18	0.16	0.18	0.16	0.18	0.16
100	Macao, China		0.05	0.06	0.05	0.06	0.05	0.06
101	Madagascar		0.25	0.91	0.25	0.91	0.25	0.91
102	Malawi		0.13	0.54	0.08	0.32	0.10	0.43
103	Malaysia		0.06	0.15	0.06	0.15	0.06	0.15
104	Maldives		0.10	0.13	0.10	0.13	0.10	0.13
105	Mali		0.18	0.48	0.18	0.48	0.18	0.48
106	Malta	11	0.11	0.15	0.11	0.15	0.11	0.15

	Economy	Notes	Per minute local call, off-net					
			Peak		Off-peak		Weekend/evening	
			USD	PPP\$	USD	PPP\$	USD	PPP\$
107	Marshall Islands		0.50	N/A	0.25	N/A	0.38	N/A
108	Mauritania		0.26	0.74	0.26	0.74	0.26	0.74
109	Mauritius		0.10	0.18	0.10	0.18	0.10	0.18
110	Mexico		0.05	0.09	0.05	0.09	0.05	0.09
111	Micronesia		0.50	N/A	0.30	N/A	0.15	N/A
112	Moldova		0.08	0.23	0.08	0.23	0.08	0.23
113	Monaco		0.71	N/A	0.39	N/A	0.39	N/A
114	Mongolia		0.04	0.10	0.04	0.10	0.04	0.10
115	Montenegro		0.14	0.28	0.14	0.28	0.14	0.28
116	Morocco	12	0.03	0.07	0.03	0.07	0.03	0.07
117	Mozambique		0.00	0.01	0.00	0.01	0.00	0.01
118	Myanmar		0.02	0.07	0.02	0.07	0.02	0.07
119	Namibia	13	0.07	0.17	0.07	0.17	0.07	0.17
120	Nauru		0.22	N/A	0.19	N/A	0.20	N/A
121	Nepal		0.02	0.07	0.02	0.07	0.02	0.07
122	Netherlands		0.33	0.34	0.33	0.34	0.33	0.34
123	New Zealand		0.14	0.12	0.14	0.12	0.14	0.12
124	Nicaragua		0.45	1.17	0.45	1.17	0.45	1.17
125	Niger		0.20	0.54	0.20	0.54	0.20	0.54
126	Nigeria		0.03	0.06	0.03	0.06	0.03	0.06
127	Norway		0.12	0.10	0.12	0.10	0.12	0.10
128	Oman		0.14	0.28	0.10	0.20	0.10	0.20
129	Pakistan		0.02	0.06	0.02	0.06	0.02	0.06
130	Palestine		0.16	0.23	0.16	0.23	0.16	0.23
131	Panama		0.16	0.27	0.16	0.27	0.16	0.27
132	Papua New Guinea		0.27	0.34	0.27	0.34	0.27	0.34
133	Paraguay		0.04	0.09	0.04	0.09	0.04	0.09
134	Peru		0.15	0.29	0.15	0.29	0.15	0.29
135	Philippines		0.16	0.37	0.16	0.37	0.16	0.37
136	Poland		0.07	0.16	0.07	0.16	0.07	0.16
137	Portugal		0.11	0.15	0.11	0.15	0.11	0.15
138	Qatar		0.15	0.20	0.15	0.20	0.15	0.20
139	Romania	14	0.24	0.52	0.24	0.52	0.24	0.52
140	Russian Federation		0.04	0.10	0.04	0.10	0.04	0.10
141	Rwanda		0.06	0.17	0.06	0.17	0.06	0.17
142	Sao Tome and Principe		0.20	0.33	0.20	0.33	0.20	0.33
143	Samoa		0.17	0.24	0.17	0.24	0.17	0.24
144	San Marino	15	0.11	0.13	0.11	0.13	0.11	0.13
145	Saudi Arabia		0.15	0.29	0.15	0.29	0.15	0.29
146	Senegal		0.20	0.51	0.18	0.46	0.19	0.48
147	Serbia		0.11	0.25	0.11	0.25	0.11	0.25
148	Seychelles		0.30	0.45	0.17	0.25	0.23	0.35
149	Sierra Leone		0.15	0.37	0.15	0.37	0.15	0.37
150	Singapore		0.12	0.13	0.06	0.07	0.06	0.07
151	Slovakia		0.13	0.22	0.13	0.22	0.13	0.22
152	Slovenia	16	0.20	0.28	0.20	0.28	0.20	0.28
153	Solomon Islands		0.19	0.19	0.19	0.19	0.19	0.19
154	Somalia		0.05	N/A	0.02	N/A	0.04	N/A
155	South Africa		0.08	0.20	0.08	0.20	0.08	0.20
156	South Sudan		0.02	0.32	0.02	0.32	0.02	0.32
157	Spain		0.07	0.08	0.07	0.08	0.07	0.08
158	Sri Lanka		0.02	0.05	0.02	0.05	0.02	0.05
159	Saint Kitts and Nevis		0.33	0.42	0.33	0.42	0.33	0.42
160	Saint Lucia		0.35	0.43	0.35	0.43	0.35	0.43

Economy	Notes	Per minute local call, off-net					
		Peak		Off-peak		Weekend/evening	
		USD	PPP\$	USD	PPP\$	USD	PPP\$
161	Saint Vincent and the Grenadines	0.35	0.48	0.35	0.48	0.35	0.48
162	Sudan	0.04	0.06	0.04	0.06	0.04	0.06
163	Suriname	0.20	0.58	0.20	0.58	0.20	0.58
164	Eswatini	0.12	0.37	0.06	0.18	0.09	0.28
165	Sweden	17	0.08	0.07	0.08	0.07	0.07
166	Switzerland	18	0.29	0.20	0.29	0.20	0.20
167	Syrian Arab Republic		0.03	N/A	0.03	N/A	0.02
168	Tajikistan		0.05	N/A	0.03	N/A	0.04
169	Tanzania	19	0.20	0.56	0.20	0.56	0.20
170	The Former Yugoslav Rep. of Macedonia		0.07	0.17	0.07	0.17	0.07
171	Thailand		0.03	0.07	0.03	0.07	0.03
172	Timor-Leste		0.19	0.28	0.19	0.28	0.19
173	Togo		0.13	0.34	0.10	0.26	0.12
174	Tonga		0.14	0.19	0.14	0.19	0.14
175	Trinidad and Tobago		0.22	0.26	0.12	0.15	0.12
176	Tunisia		0.01	0.04	0.01	0.04	0.01
177	Turkey		0.04	0.08	0.04	0.08	0.04
178	Turkmenistan		0.04	N/A	0.04	N/A	0.04
179	Uganda		0.05	0.15	0.05	0.15	0.05
180	Ukraine		0.02	0.11	0.02	0.11	0.02
181	United Arab Emirates		0.04	0.05	0.04	0.05	0.04
182	United Kingdom	20	0.54	0.50	0.54	0.50	0.54
183	United States		0.27	0.27	0.27	0.27	0.27
184	Uruguay		0.27	0.37	0.27	0.37	0.27
185	Uzbekistan	21	0.03	N/A	0.03	N/A	0.03
186	Vanuatu		0.25	0.23	0.25	0.23	0.25
187	Viet Nam		0.06	0.16	0.06	0.16	0.06
188	Yemen		0.09	N/A	0.09	N/A	0.09
189	Zambia		0.13	0.41	0.08	0.26	0.08
190	Zimbabwe		0.16	N/A	0.16	N/A	0.16

Note: *Palestine is not an ITU Member State; the status of Palestine in ITU is the subject of Resolution 99 (Rev. Busan, 2014) of the ITU Plenipotentiary Conference.

Source: ITU.

Notes

The notes are presented here as submitted by countries to ITU.

Fixed-broadband prices 2016

1) Incl. calls to fixed phones.2) First 12 months \$250. Months 12-15: \$375. After month 15: \$500.3) 24 month commitment. Tariff available for new customers only. Includes the monthly share of the annual 15 euro fee.4) Price corresponding to Santa Cruz. Average speed at Santa Cruz de La Sierra (Most populous city of the country).5) 80.94 HRK (up to 4Mbit/s) +20.49 HRK for 1GB traffic. Requires fixed-telephone line6) Advertised as USD 21.23.7) 19.95 for the first 12 months.8) Advertised in USD 55.9) 24-month contract. 10) 12 for ADSL, 50 for VDSL, 100 for VDSL with vectoring, 100 for GPON. Same monthly price for each access network.11) 95 ILS for the first 12 months.12) If users contract the fixed broadband internet plan for more than 3 years, a discount is applied (39,600KRW→28,050KRW).13) 24 months commitment.14) Incl. unlimited calls to fixed and mobile phones in Monaco and France.15) 50,000 annual fee (divided by 12) + 17,000 (monthly fee) + 5% tax16) 25 Euro for the first three months.17) Advertised as USD 23.99 + VAT.18) 299 NOK for the first three months.19) In addition, the plan requires a fixed-line rental (Rs. 250 taxes +14% Tax).20) 12 month contract.21) 14.99 Euro for the first three months.22) Discounted price (SEK 249) for the first 6 months.23) Bundled with TV.24) 12 months contract.25) 5 GBP plus 18.99 GBP monthly line rental.

Mobile-cellular prices 2016, to fixed telephone, SMS

1) The price for the bundle Vodafone Club Xtreme is used for the calculation of the basket. The prices per sms refer to Vodafone Club. 2) Average of peak (0.15 Euro) and off-peak (0.10 Euro) sms. 3) Unlimited calls to the fixed network of the same company (Vivo is the dominant fixed operator in São Paulo). Calls to other fixed networks consume the 25 minutes credit. Plan requires a minimum upfront payment of R\$39.99 / month. Out of this payment, users have 25 minutes for off-net calls, the rest covers the cost of the unlimited on-net calls and SMS. Incl. 1.5GB/month Internet access up to LTE speeds where available. 4) 0.49 HRK/min after 300 minutes included in the package. 5) Average between peak rate and off-peak rate. 6) Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. 7) Refers to basic charge after the package allowance. Minimum call charge of 1 min. For the calculation of the sub-basket COSMOKAPTA Extra 100 'to All (2.02 Euro) + 100 sms (4.03 Euro) are used. 8) Unlimited SMS for on-net messaging. 9) Refers to price per unit for Tim Base. For the calculation of the basket, Tim Special Voce (10 Euro/ per weeks)+ Opzione 500 SMS (3 Euro/ 4 weeks) is used. 10) LMT karte includes unlimited calls and SMS to the most popular Latvian networks for 1.41 EUR per week. 11) Postpaid. Refers to price per unit, once the minutes/ sms included in the subscription are used. 12) Per unit price refers to the plan "Pildyk". For the calculation of the basket "Planas Visiems" is used which includes 190 minutes and 10 000 sms. 13) Price per additional unit. 14) Calculated price per minute: Pass Jawal 50 DH, incl. 3 heures de communication vers toutes les destinations nationales. Le prix par minute calculé est fait à travers la division de 50 DH par 180 minutes de communications nationales. 15) Price after the 50 min/7 days incl. in the AwehGo add-on (N\$12). 16) Price in Euro. Refers to price per unit for the regular prepaid offer. For the calculation 5 Euro credit option, which includes unlimited on-net minutes and sms, 500 minutes to national and international fixed / mobile phones and national sms for 5 Euro per month. 17) Per minute prices refer to out-of-bundle rates. For the calculation of the basket Mobi 200 is used which includes 200 units (sms or minutes) for 3.95 Euro over a period of 30 days. Per minute prices refer to out-of-bundle rates. For the calculation of the basket Mobi 200 is used which includes 200 units (sms or minutes) for 3.95 Euro over a period of 30 days. Per minute prices refer to out-of-bundle rates. 18) Per minute price refers to Ladda Enkel Refill. For the calculation of the basket Ladda Fastpris is used (kr 99 for 100 min, unlimited SMS and 0.5GB). 19) Maximum 3 minutes per call are charged (up to 120 minutes). 20) Out of bundle rates. Cheka Bombastik package incl. 50 minutes, 200 sms and 20 MB for Tsh. 2000+tax for a period of 7 days. 21) Refers to per minute price for the standard prepaid offer. For the calculation of the basket, Talk and Text package is used (£10 for 150 minutes, unlimited sms and 500 MB of data with a validity of 30 days). 22) Advertised as USD 0.03. Daily subscription fee of USD 0.05.

Mobile-cellular prices 2016 (on-net)

1) The price for the bundle Vodafone Club Xtreme is used for the calculation of the basket. The prices per sms refer to Vodafone Club. The price for the bundle Vodafone Club Xtreme is used for the calculation of the basket. The prices per sms refer to Vodafone Club. The price for the bundle Vodafone Club Xtreme is used for the calculation of the basket. The prices per sms refer to Vodafone Club. 2) Rub. 700 is for the first 3 mins each day, thereafter it is Rb 250 a min. Rub. 700 is for the first 3 mins each day, thereafter it is Rb 250 a min. Rub. 700 is for the first 3 mins each day, thereafter it is Rb 250 a min. 3) Unlimited

on-net minutes. Plan requires a minimum upfront payment of R\$39.99 / month. Out of this payment, users have 25 minutes to off-net calls, the rest covers the cost of the unlimited on-net calls and SMS. Incl. 1.5GB/month Internet access up to LTE speeds where available. Unlimited on-net minutes. Plan requires a minimum upfront payment of R\$39.99 / month. Out of this payment, users have 25 minutes to off-net calls, the rest covers the cost of the unlimited on-net calls and SMS. Incl. 1.5GB/month Internet access up to LTE speeds where available. Unlimited on-net minutes. Plan requires a minimum upfront payment of R\$39.99 / month. Out of this payment, users have 25 minutes to off-net calls, the rest covers the cost of the unlimited on-net calls and SMS. Incl. 1.5GB/month Internet access up to LTE speeds where available. 4) Advertised as USD 7.5 cents Advertised as USD 5.5 cents 5) 0.49 HRK/min after 300 minutes included in the package 0.49 HRK/min after 300 minutes included in the package 6) Average between peak rate and off-peak rate. 7) Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. 8) Refers to basic charge after the package allowance. Minimum call charge of 1 min. For the calculation of the sub-basket COSMOKAPTA Extra 100 'to All (2.02 Euro) + 100 sms (4.03 Euro) are used. Refers to basic charge after the package allowance. Minimum call charge of 1 min. For the calculation of the sub-basket COSMOKAPTA Extra 100 'to All (2.02 Euro) + 100 sms (4.03 Euro) are used. Refers to basic charge after the package allowance. Minimum call charge of 1 min. For the calculation of the sub-basket COSMOKAPTA Extra 100 'to All (2.02 Euro) + 100 sms (4.03 Euro) are used. 9) 10 kr. for off-net calls, 0 kr. for on-net calls Unlimited minutes without setup fee for on-net calls Unlimited minutes without setup fee for on-net calls 10) Refers to price per unit for Tim Base. For the calculation of the basket, Tim Special Voce (10 Euro/ per weeks)+ Opzione 500 SMS (3 Euro/ 4 weeks) is used. Refers to price per unit for Tim Base. For the calculation of the basket, Tim Special Voce (10 Euro/ per weeks)+ Opzione 500 SMS (3 Euro/ 4 weeks) is used. Refers to price per unit for Tim Base. For the calculation of the basket, Tim Special Voce (10 Euro/ per weeks)+ Opzione 500 SMS (3 Euro/ 4 weeks) is used. 11) LMT karte includes unlimited calls and SMS to the most popular Latvian networks for 1.41 EUR per week. 12) Postpaid. Refers to price per unit, once the minutes/sms included in the subscription are used. Postpaid. 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For the calculation of the basket Ladda Fastpris is used (kr 99 for 100 min, unlimited SMS and 0.5GB). 20) Pay max. 3 min. per call (up to 120 minutes) Pay max. 3 min. per call (up to 120 minutes) 21) Out of bundle rates. Cheka Bombastik package incl. 50 minutes, 200 sms and 20 MB for Tsh. 2000+tax for a period of 7 days. Out of bundle rates. Cheka Bombastik package incl. 50 minutes, 200 sms and 20 MB for Tsh. 2000+tax for a period of 7 days. Out of bundle rates. Cheka Bombastik package incl. 50 minutes, 200 sms and 20 MB for Tsh. 2000+tax for a period of 7 days. 22) Refers to per minute price for the standard prepaid offer. For the calculation of the basket, Talk and Text package is used (£10 for 150 minutes, unlimited sms and 500 MB of data with a validity of 30 days). Refers to per minute price for the standard prepaid offer. For the calculation of the basket, Talk and Text package is used (£10 for 150 minutes, unlimited sms and 500 MB of data with a validity of 30 days). Refers to per minute price for the standard prepaid offer. For the calculation of the basket, Talk and Text package is used (£10 for 150 minutes, unlimited sms and 500 MB of data with a validity of 30 days). 23) Advertised as

USD 0.015. Daily subscription fee of USD 0.05. Advertised as USD 0.015. Daily subscription fee of USD 0.05. Advertised as USD 0.015. Daily subscription fee of USD 0.05.

Mobile-cellular prices 2016, off-net

1) The price for the bundle Vodafone Club Xtreme is used for the calculation of the basket. The prices per sms refer to Vodafone Club. 2) Plan requires a minimum upfront payment of R\$39.99 / month. Out of this payment, users have 25 minutes to off-net calls, the rest covers the cost of the unlimited on-net calls and SMS. Incl. 1.5GB/month Internet access up to LTE speeds where available. 3) Average between peak rate and off-peak rate. 4) Refers to MTN. 5) Refers to price per unit once the 200 sms/minutes included in Loop Smart M are finished. 6) Refers to basic charge after the package allowance. Minimum call charge of 1 min. For the calculation of the sub-basket COSMOKAPTA Extra 100 'to All (2.02 Euro) + 100 sms (4.03 Euro) are used. 7) Refers to price per unit for Tim Base. For the calculation of the basket, Tim Special Voce (10 Euro/ per weeks)+ Opzione 500 SMS (3 Euro/ 4 weeks) is used. 8) LMT karte includes unlimited calls and SMS to the most popular Latvian networks for 1.41 EUR per week. 9) Postpaid. Refers to price per unit, once the minutes/sms included in the subscription are used. 10) Per unit price refers to the plan "Pildyk". For the calculation of the basket "Planas Visiems" is used which includes 190 minutes and 10 000 sms. 11) Price per additional unit. 12) Calculated price per minute: Pass Jawal 50 DH, incl. 3 heures de communication vers toutes les destinations nationales. Le prix par minute calculé est fait à travers la division de 50 DH par 180 minutes de communications nationales. 13) Price after the 50 min/7 days incl. in the AwehGo add-on (N\$12). 14) Price in Euro. Refers to price per unit for the regular prepaid offer. For the calculation 5 Euro credit option, which includes unlimited on-net minutes and sms, 500 minutes to national and international fixed / mobile phones and national sms for 5 Euro per month. 15) Refers to calls to TIM. 16) Per minute prices refer to out-of-bundle rates. For the calculation of the basket Mobi 200 is used which includes 200 units (sms or minutes) for 3.95 Euro over a period of 30 days. 17) Per minute price refers to Ladda Enkel Refill. For the calculation of the basket Ladda Fastpris is used (kr 99 for 100 min, unlimited SMS and 0.5GB). 18) Maximum 3 minutes per call are charged (up to 120 minutes). 19) Out of bundle rates. Cheka Bombastik package incl. 50 minutes, 200 sms and 20 MB for Tsh. 2000+tax for a period of 7 days. 20) Refers to per minute price for the standard prepaid offer. For the calculation of the basket, Talk and Text package is used (£10 for 150 minutes, unlimited sms and 500 MB of data with a validity of 30 days). 21) Advertised as USD 0.03. Daily subscription fee of USD 0.05.

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