International Broadband Scorecard

Includes EU5 and EU28 Broadband Scorecard

Research Document

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International Broadband Scorecard

This report includes comparisons of the EU5, EU28 and 17 international countries on a number of broadband metrics. It is important to note that some of the results shown here may not comparable to those in previous Broadband Scorecards and/or Ofcom's *Connected Nations*[1] reports as they are based on different data.

1.1 Summary

We have benchmarked the UK against the EU5 countries as summarised in Figure 1.1.

Figure 1.1 **Broadband Scorecard: UK's rank relative to EU5 countries: 2017**

		2017		2016	
		Value	Rank (out of 5)	Value	Rank (out of 5)
Coverage	ADSL	>99%	1=	>99%	1=
	Cable	50%	2	48%	3
	Fibre (including FTTC & FTTP full fibre)	91%	1	87%	1
	FTTC	88%	1	85%	1
	FTTP (full fibre)	3%	5	2%	5
	Fixed broadband with an *advertised* speed ≥10Mbit/s	98%	1	98%	1
	Fixed broadband with an *advertised* speed ≥30Mbit/s	98%	1	94%	1
	Fixed broadband with an *advertised* speed ≥100Mbit/s	53%	3	50%	3
	Fixed broadband with an *advertised* speed ≥300Mbit/s	53%	2	2%	5
Connections	ADSL as a proportion of all fixed broadband lines	44%	4	52%	4
	Cable as a proportion of all fixed broadband lines	20%	2	19%	2
	Fibre (FTTC & FTTP) as a proportion of all fixed broadband lines	36%	2	29%	2
	Full-fibre (FTTP) as a proportion of all lines	1.2%	5	0.8%	5
	Fixed broadband with advertised speed ≥10Mbit/s	98%	1	93%	3
	Fixed broadband with advertised speed ≥30Mbit/s	58%	2	49%	2
	Fixed broadband with advertised speed ≥300Mbit/	4%	3	1%	4
	3G or 4G (service and device) as % of all mobile subscriptions	89%	2	89%	2
	4G (service and device) as % of all mobile subscriptions	63%	1	57%	1
Usage	Fixed data per capita per month (GB)	74	1	50	1
	Mobile data per capita per month (GB)	2.4	2	1.6	1
Choice	New entrant provider's share of fixed broadband lines	64%	1	64%	1
	Mobile market HHI	2,318	1	2,361	1

[1] https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research

	2018		2017	
	Value	**Rank**	**Value**	**Rank**
Average price to receive 'unlimited' broadband with advertised speed <30Mbit/s and a voice line	**£31**	**2**	**£32**	**3**
Average price to receive 'unlimited' broadband with advertised speed ≥30Mbit/s and <300Mbit/s and a voice line	**£35**	**4**	**£40**	**4**
Average price to receive 'unlimited' broadband with advertised speed ≥300Mbit/s and a voice line	**£50**	**4**	**£50**	**4**

Source: IHS MARKIT / industry data / Ofcom
Notes: (1) For the purposes of this table most of the figures have been rounded to the nearest whole number. (2) Coverage and connections data are for the year-end 2017. (3) The fixed broadband coverage data in this report is based on the availability of different fixed broadband technologies, and the 'full-fibre' availability figure in this report differs from that in the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018), which shows that 6% of premises were able to receive 'full-fibre' FTTP services in September 2018. (4) The fixed broadband coverage by speed data in this table refers to the proportion of homes able to receive services with the relevant advertised speed – these figures differ from the coverage figures stated in our Connected Nations 2018 report, which are calculated based on detailed premise-level data inputs relating to estimated connection speeds provided by UK communications providers in September 2018, and show 98% premise coverage for speeds ≥10Mbit/s, 94% for speeds ≥30Mbit/s and 50% for speeds ≥300Mbit/s. (5) weighted average prices, including promotional discounts, based on dual-play bundles with unlimited data usage and national calls based on the tariffs offered by the largest providers in each country - please see the International Price Benchmarking chapter of the 2017 Communications Market report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/cmr/cmr-2017/international) for details of the methodology that has been used to derive the pricing figures show above.

1.2 Coverage

At the end of 2017, the UK ranked first among the EU5 for household availability of fibre-based broadband networks, which includes technologies such as fibre-to-the-cabinet (FTTC) and full-fibre FTTP services, these services being available to 91% of homes.[2]

The UK was also joint first for ADSL and FTTC broadband availability (at over 99% and 88% of homes respectively), however, it ranked last for the availability of 'full-fibre' FTTP networks (3%).[3]

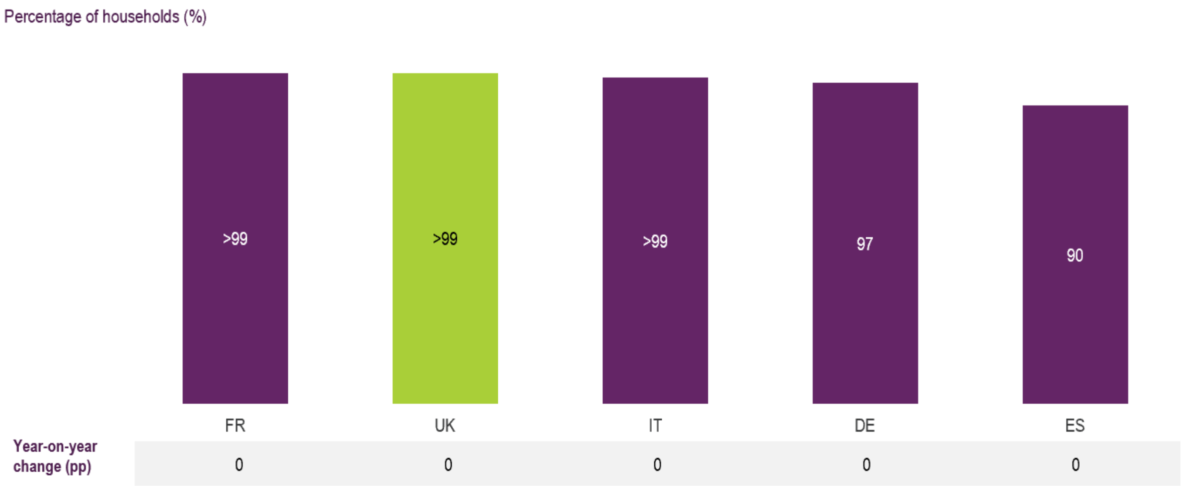
The UK continued to lead the EU5 in both standard and superfast broadband coverage. Standard fixed broadband products with advertised speeds of 'up to' 10Mbit/s or more were available to 98%

[2] It is important to note that some premises in ADSL-enabled areas may not be able to receive broadband services, or may only be able to do so at very low speeds due to reasons such as long length, or poor quality, of the copper telephone line from the premises to the local exchange.
[3] In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018), we say that 6% of UK premises could receive 'full-fibre' FTTP services in 2018. A number of providers of varying scale and reach are committed to deploying full fibre services, and we would expect to see coverage continue to increase over the coming year.

households in the UK, as were superfast broadband products with an *advertised* speed of 'up to' 30Mbit/s or more.[4]

The UK ranked third for the availability of broadband with advertised speeds of 100Mbit/s or more (53%), behind Spain (84%) and Germany (66%). From fifth place in 2016, the UK jumped to second place in the EU5 for availability of ultrafast broadband products with an advertised of 300Mbit/s or higher (58%). This was largely due to package changes made by Virgin Media, which launched an 'up to' 300Mbit/s service in March 2017.[5]

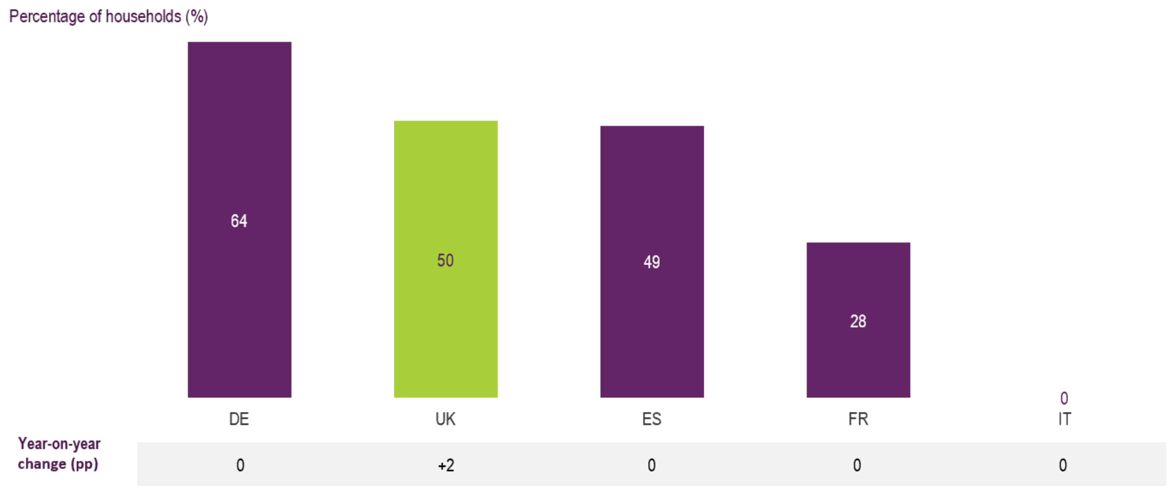
Figure 1.2 **Percentage of households in areas served by ADSL broadband: end 2017 (EU5)**



Source: IHS MARKIT
Notes: *(1)* All figures have been rounded to the nearest whole number. (2) It is important to note that some premises in ADSL-enabled areas may not be able to receive broadband services, or may only be able to do so at very low speeds.

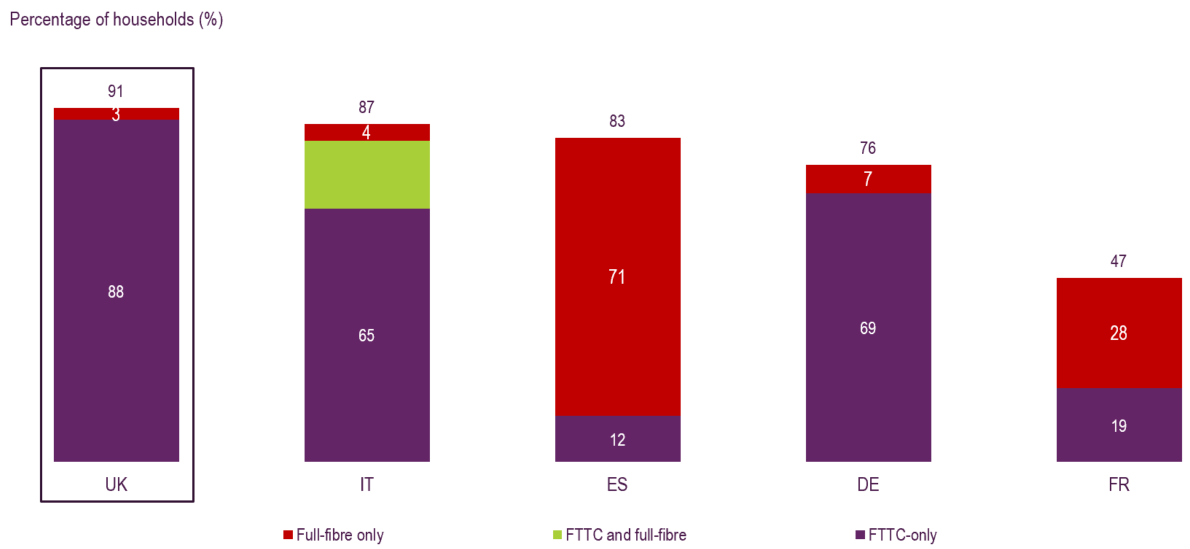
[4] In the Connected Nations 2018 report, we say that 98% of UK premises could receive an estimated download speed ≥10Mbit/s in September 2018, while 94% could receive an estimated speed ≥30Mbit/s.
[5] In the Connected Nations 2018 report, we say that 50% of UK premises could receive an estimated download speed ≥300Mbit/s in September 2018.

Figure 1.3 **Percentage of households in areas served by cable broadband: end 2017 (EU5)**



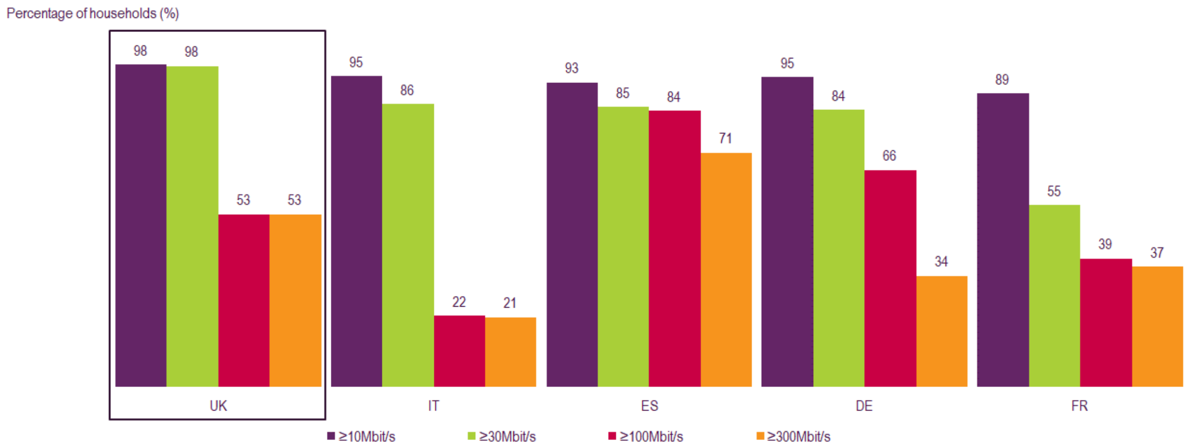
Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that 50% of UK premises had access to cable broadband services in May 2018.

Figure 1.4 **Percentage of households in areas served by fibre-based broadband networks (including FTTC and FTTP): end 2017 (EU5)**



Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that 6% of UK premises had access to 'full-fibre' FTTP services in September 2018.

Figure 1.5 **Percentage of households passed by fixed broadband networks, by available advertised speeds: end 2017 (EU5)**



Source: IHS MARKIT / industry data / Ofcom
Note: All figures have been rounded to the nearest whole number; in the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that, in September 2018, 98% of UK premises had access to services offering estimated download speeds ≥10Mbit/s, 94% had access to estimated speeds ≥30Mbit/s and 50% had access to estimated speeds ≥300Mbit/s; countries are ordered by the proportion of homes able to receive fixed broadband with an advertised speed of 'up to' 30Mbit/s or higher.

1.3 Connections and usage

Among the EU5, the UK had the second-highest share of broadband connections with an advertised speed of 30Mbit/s or more (58%), behind Spain (63%). Spain had the highest share of connections with an advertised speed of 100Mbit/s or higher, due to widespread deployment of FTTP. The UK came third in the EU5 on this metric, with 14% of connections being at an advertised speed of 100Mbit/s or higher.

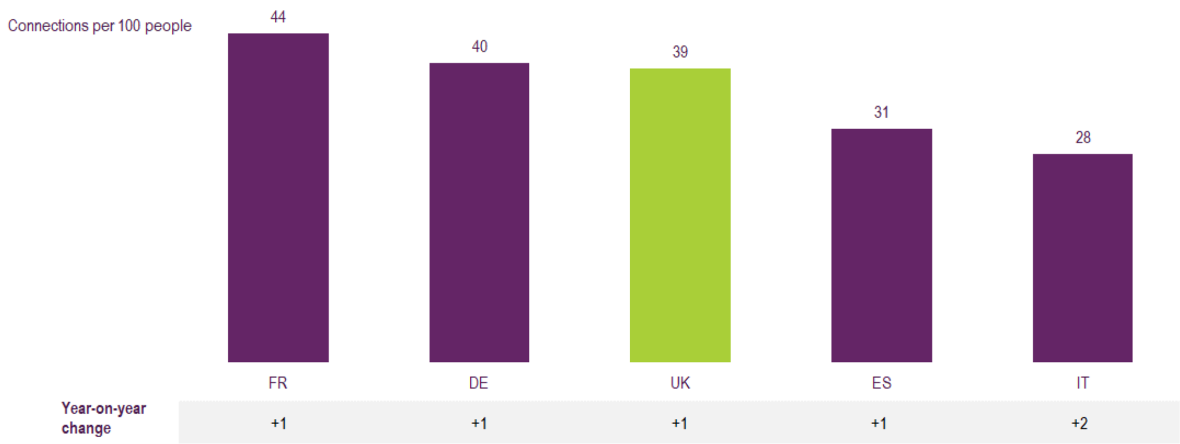
At the end of 2017, the UK had the second lowest proportion of connections that were provided using ADSL broadband (44%), as UK customers continue to migrate to superfast broadband. The UK had the second highest proportion of connections that were provided using fibre-based technologies (36%) behind Spain (62%). However, the large majority of the UK's fibre connections were provided using fibre-to-the-cabinet (FTTC). Only 1.2% of UK broadband connections were provided over fibre-to-the-premises (FTTP; 'full fibre'), the lowest among the EU5.

Among the EU5, the UK had the largest share of mobile connections that were 4G services on a 4G-enabled device (63%) and the highest number of per-capita 4G connections at 88 per 100 people.

The UK also led in terms of average data volumes consumed per capita for fixed broadband (74GB per month) – more than double that in any of the other EU5 countries – and ranked second (behind France) for monthly mobile data use, with an average of 2.4GB per month. [6]

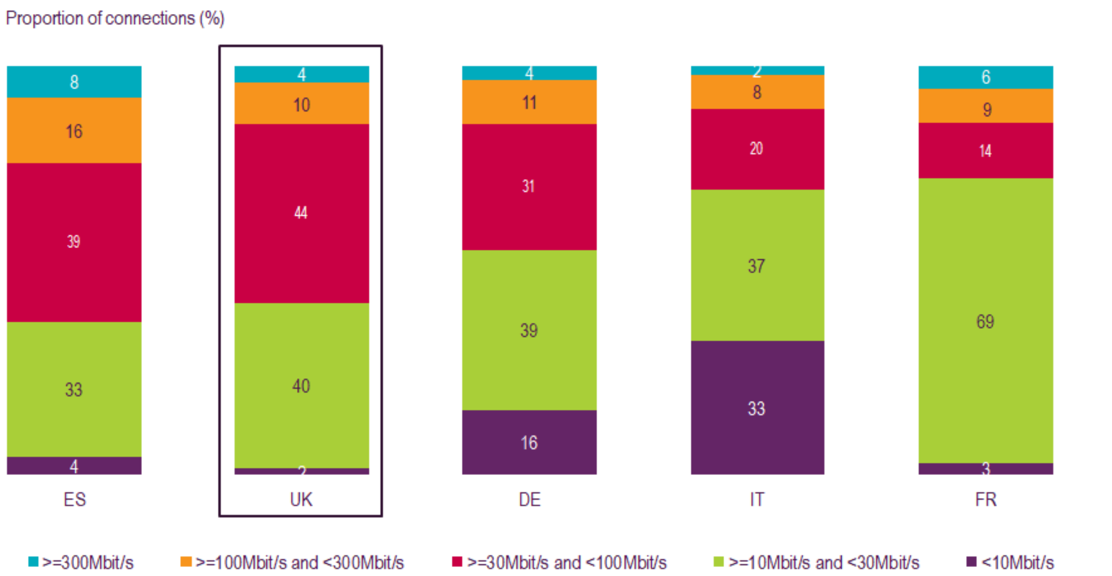
[6] In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we report that average data use per UK residential

Figure 1.6 **Fixed broadband connections per 100 people: end 2017 (EU5)**



Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) Includes business and residential lines.

Figure 1.7 **Proportion of fixed broadband connections, by advertised speed: end 2017 (EU5)**



Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) Countries are ranked by total figure for >=30Mbit/s.

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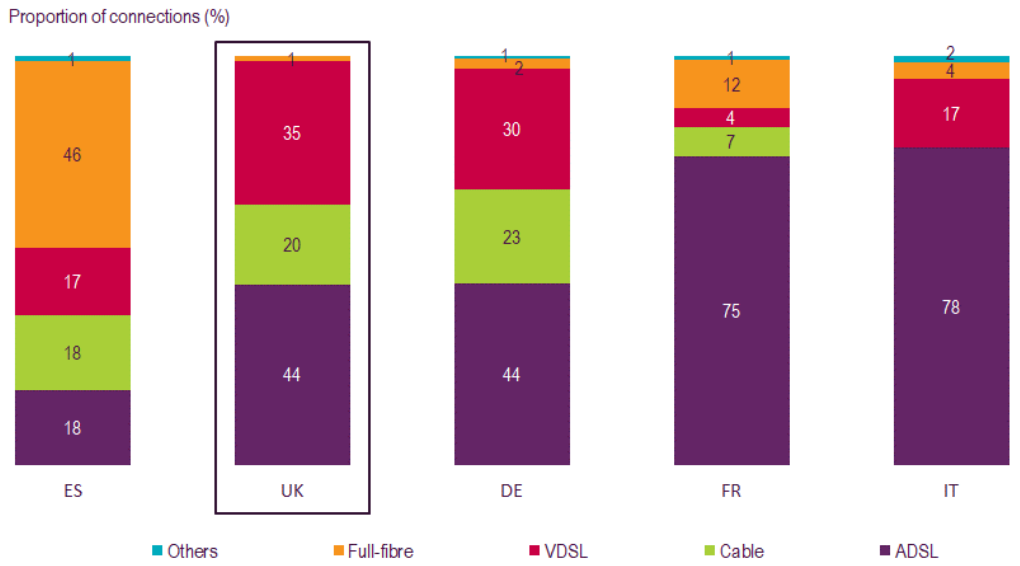
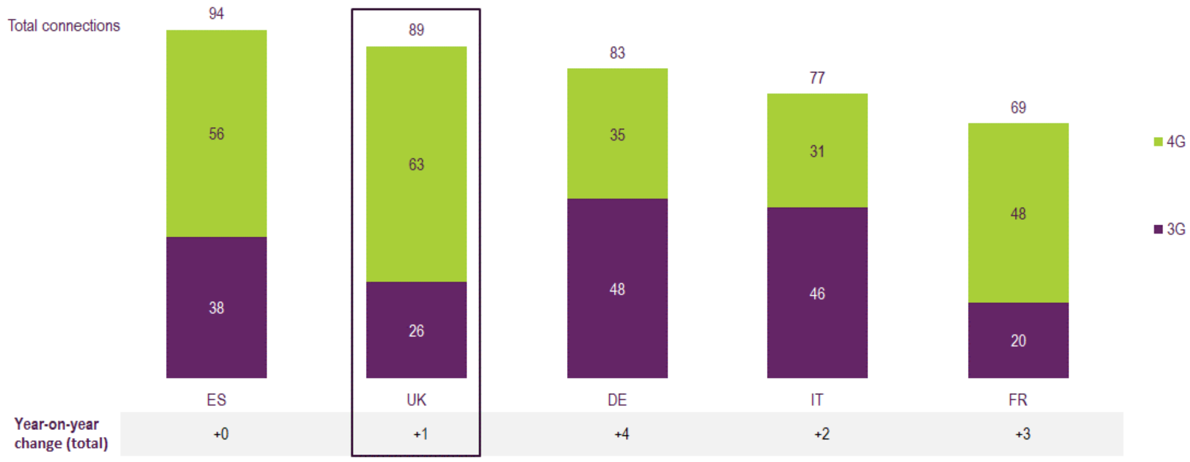
fixed broadband connection was 239GB in May 2018, while that total volume of mobile data consumed in the UK in the same month was 213PB.

Figure 1.8 **Percentage of fixed broadband connections, by technology: end 2017 (EU5)**



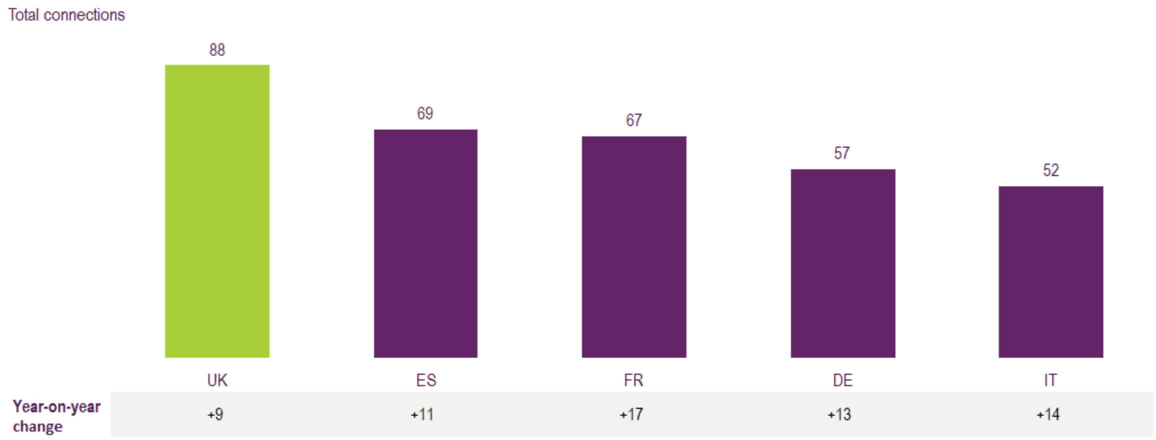
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) 'Other' connection include fixed broadband technologies such as fixed wireless technologies (WiMAX, BWFA), satellite and/or powerline connections. (3) Countries are ranked by total figure of NGA connections (cable plus FTTx).

Figure 1.9 **3G and 4G connections as a proportion of total mobile connections: end 2017 (EU5)**



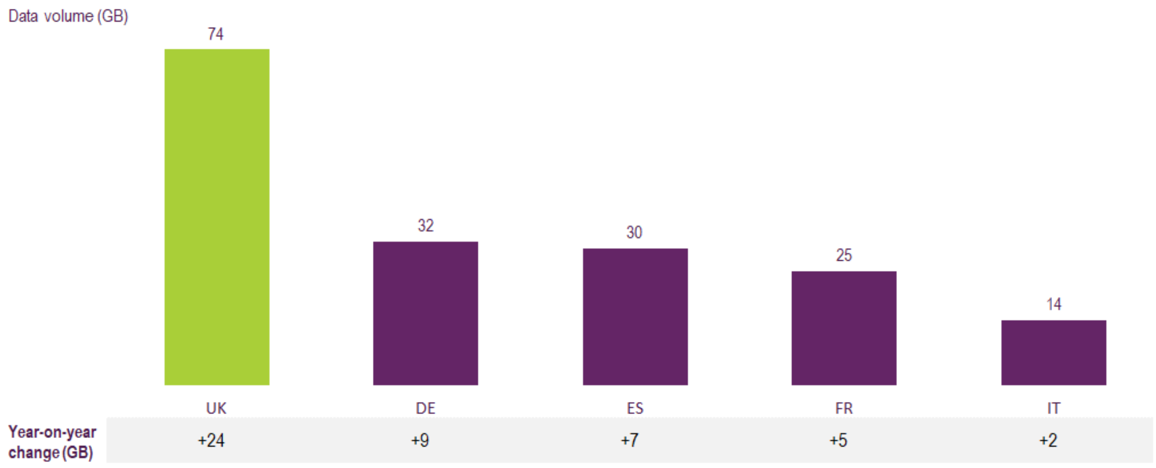
Source: IHS MARKIT

Figure 1.10 **4G mobile connections per 100 people: end 2017 (EU5)**



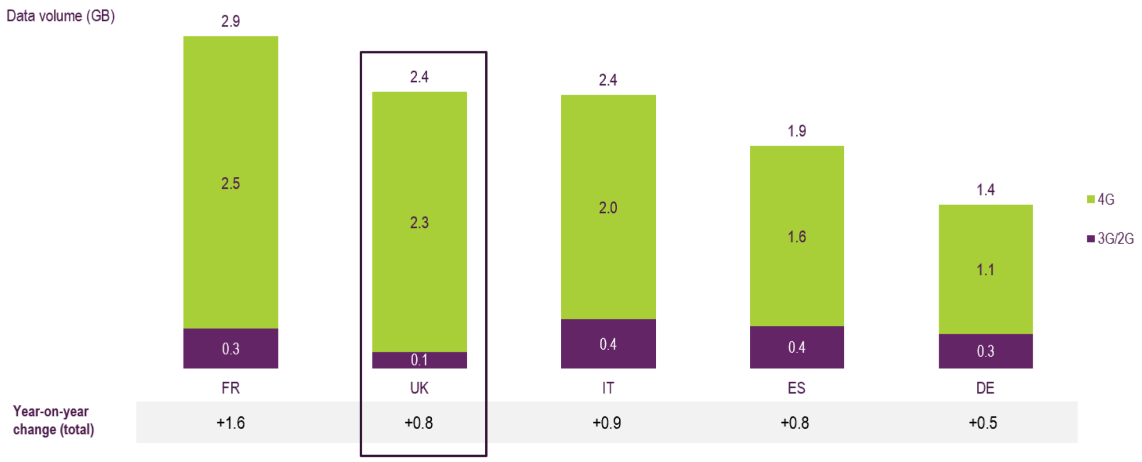
Source: IHS MARKIT
Notes: (1) All figure have been rounded to the nearest whole number. (2) Mobile broadband includes all data connections made on cellular networks, including those made via mobile handsets and using dedicated mobile data dongles and SIMs.

Figure 1.11 **Fixed data volume per capita per month: 2017**



Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that in average data use per residential fixed broadband connection was 240GB in May 2018.

Figure 1.12 **Mobile data volume per capita per month (GB): 2017 (EU5)**



Source: IHS MARKIT / industry data / Ofcom
Note: In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that the total volume of mobile data consumed in the UK in May 2018 was 213PB.

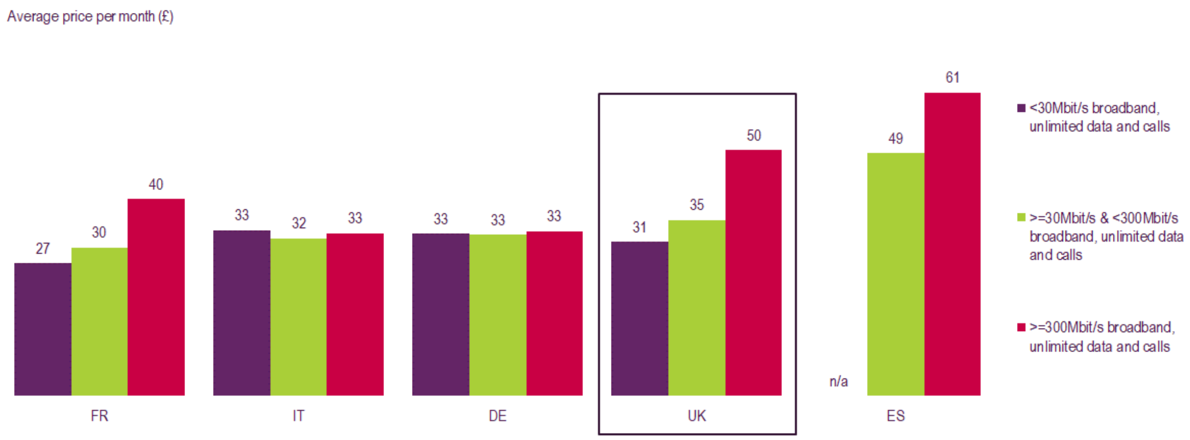
1.4 Price

In order to compare the price of fixed broadband services, we calculate the weighted average price of three baskets of fixed voice and fixed broadband services based on the tariffs offered by the largest providers in each country.

This analysis includes promotional discounts, and details of the methodology that has been used to derive the pricing figures below can be found in the International Price Benchmarking chapter of the 2017 Communications Market report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/cmr/cmr-2017/international).

Overall, the UK ranked fourth among the EU5 countries based on the average price of three baskets of dual-play fixed broadband and landline services, after Germany and France.

Figure 1.13 **Weighted average price for dual-play fixed broadband and landline bundles: 2017 (EU5)**



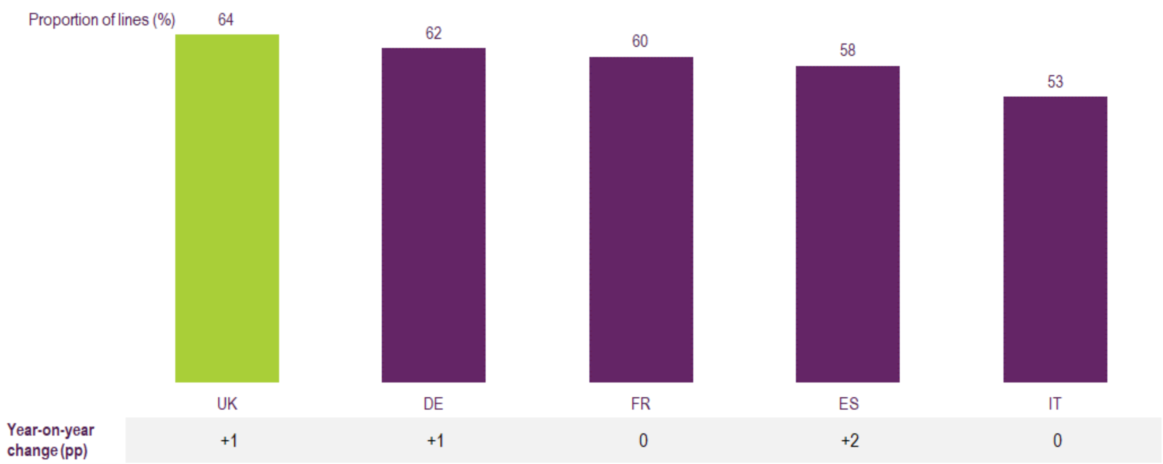
Source: Ofcom, using data provided by Teligen

1.5 Choice

In all of the EU5 countries the incumbent telecoms operator is the largest telecoms operator by market share. In the UK, new entrants had the highest share of fixed broadband lines of any EU5 country, at 64%.

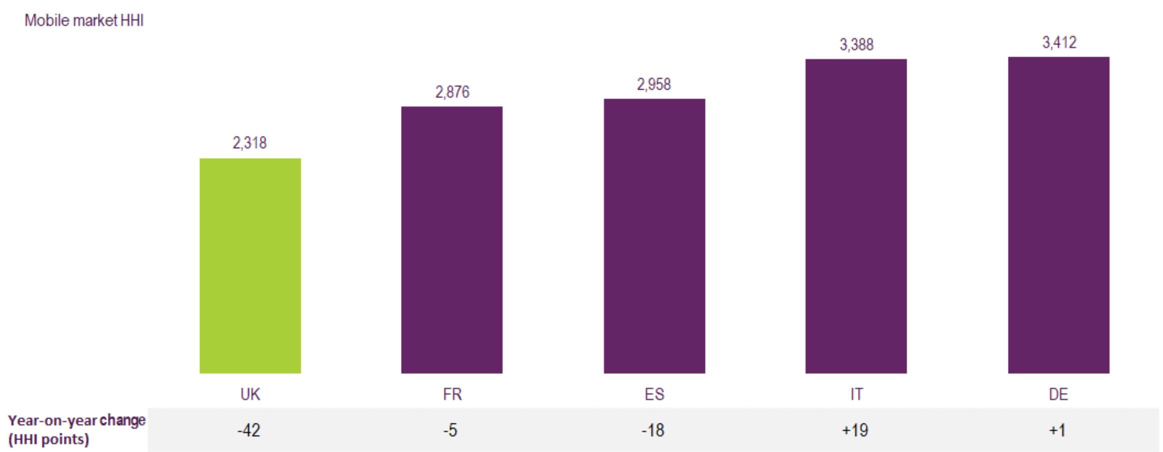
We use the Herfindahl-Hirschman index (HHI) to measure market concentration in mobile markets. The UK had the lowest value in the EU5 (2,618), indicating that it is the least concentrated market in terms of mobile providers.

Figure 1.14 **Percentage of fixed broadband lines operated by new entrant providers: end 2017 (EU5)**



Source: *IHS Markit* / operator data / Ofcom

Figure 1.15 **Mobile market HHI,[7] MNOs (including wholesale and hosted MVNO): end 2017**



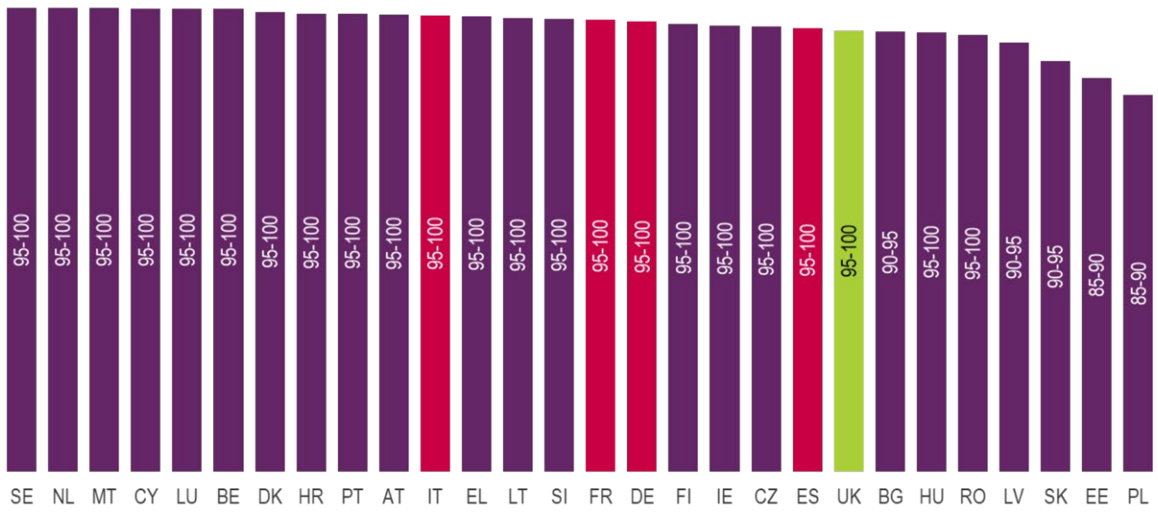
[7] We have used HHI in order to compare concentration in mobile markets. This index is estimated by taking the absolute value of the market share of each firm in the industry (e.g. 25 if the market share is 25%) and then squaring this number. The sum of these values for all firms is the HHI, and can theoretically range from close to zero for a market with a large number of firms of equal size, to 10,000 for a monopoly. As the calculation is based on market shares for a specific period, even small changes in market share can impact the HHI value, and the overall rankings.

Source: IHS MARKIT

Broadband Scorecard: EU28 comparisons

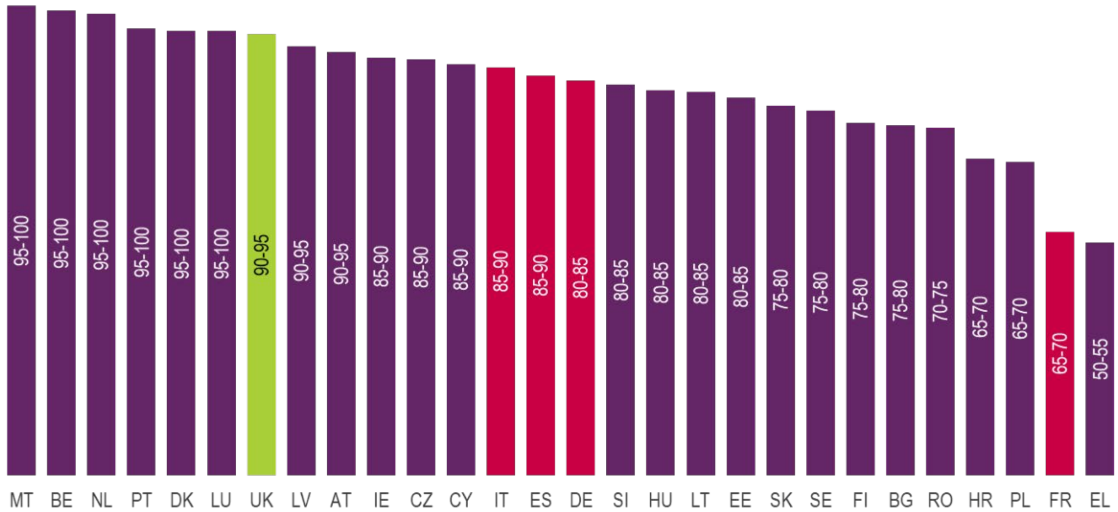
In this section, we update the comparisons of broadband-related metrics for EU28 countries that have been published in previous European Broadband Scorecard reports.

Figure 1.16 **Percentage of households in areas served by fixed broadband with advertised speeds of at least 2Mbit/s: July 2017**



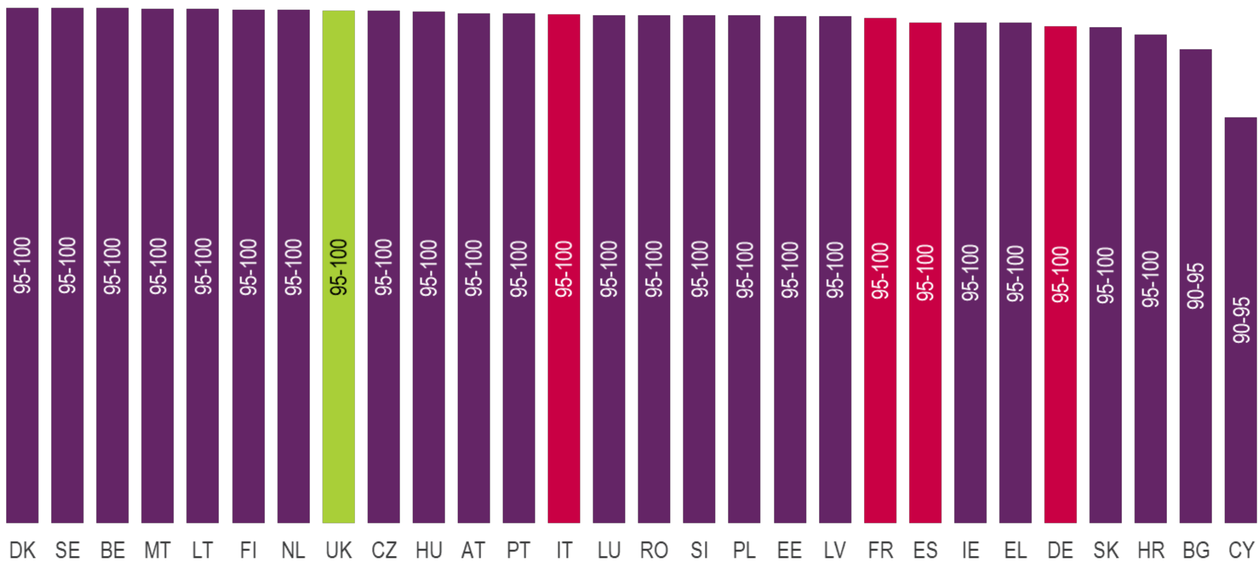
Source: European Comission , Study for EC: Broadband coverage in Europe 2017 - SMART Dataset (https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017)
Notes: (1) Data refer to June 2017. (2) Ofcom has banded EC's figures within a range between the nearest integers divisible by 5. (3) Fixed broadband coverage includes availability of DSL (including FTTC/VDSL), cable (including DOCSIS 3.0), FTTP, and WiMax technologies capable of providing headline speeds of at least 2Mbit/s.

Figure 1.17 **Percentage of households in areas served by NGA broadband: July 2017**



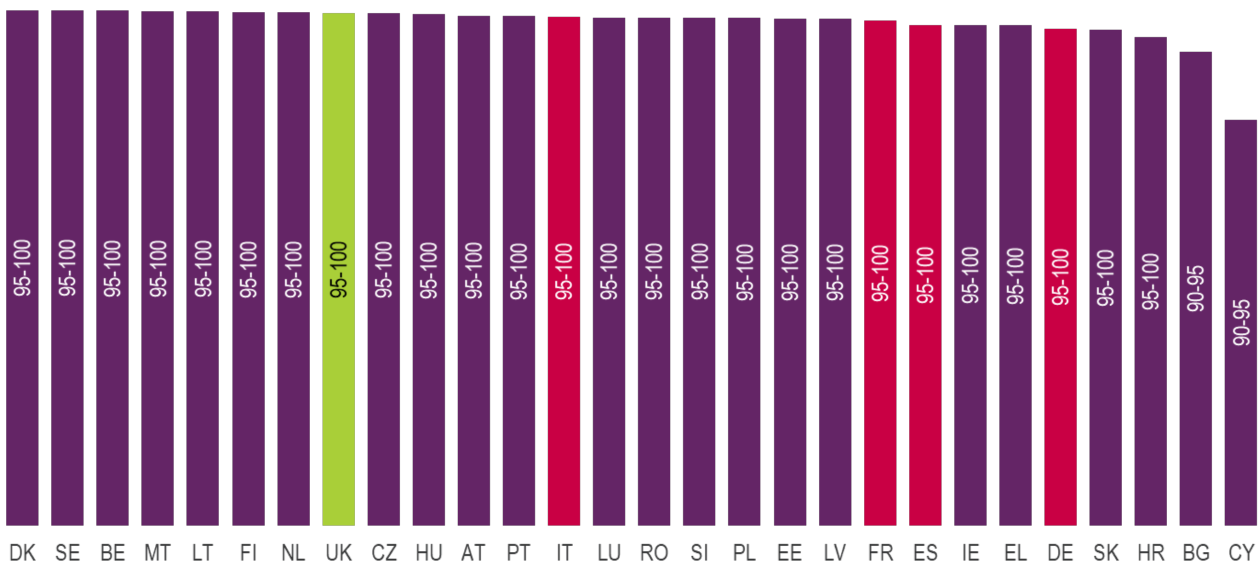
Source: European Comission , Study for EC: Broadband coverage in Europe 2017 - SMART Dataset (https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017)
Notes: (1) Data refer to June 2017. (2) Ofcom has banded EC's figures within a range between the nearest integers divisible by 5. (3) NGA broadband' refers to NGA technologies, including FTTC/VDSL, FTTP and DOCSIS3.0 cable, those needed to provide 30Mbit/s download speeds for end-users.

Figure 1.18 **Percentage of households in areas served by HSPA 3G mobile broadband: July 2017**



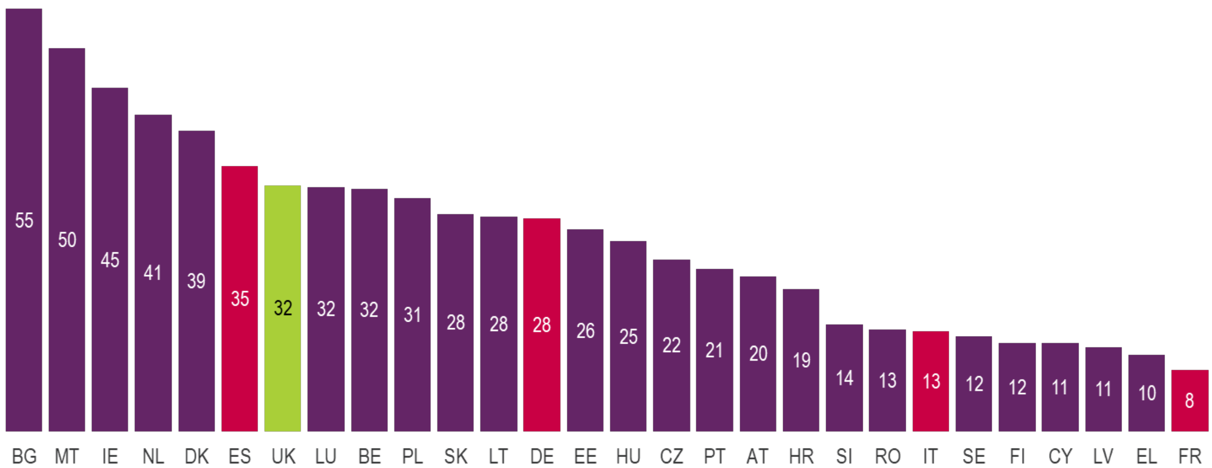
Source: European Comission , Study for EC: Broadband coverage in Europe 2017 - SMART Dataset (https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017)
Notes: (1) Data refer to June 2017 (2) Ofcom has banded Point Topic's figures within a range between the nearest integers divisible by 5. (3) 'HSPA 3G mobile broadband' refers to coverage by at least one HSPA-upgraded 3G mobile network.

Figure 1.19 **Percentage of households in areas served by 4G mobile broadband: July 2017**



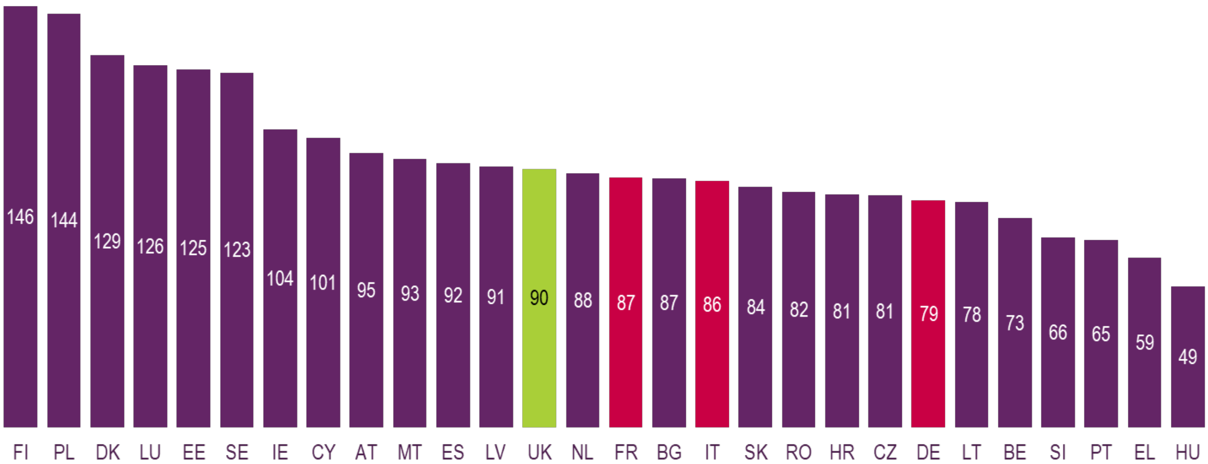
Source: European Comission , Study for EC: Broadband coverage in Europe 2017 - SMART Dataset (https://ec.europa.eu/digital-single-market/en/news/study-broadband-coverage-europe-2017)
Notes: (1) Data refer to June 2017. (2) Ofcom has banded figures within a range between the nearest integers divisible by 5. (4) '4G mobile broadband' refers to coverage by advanced fourth generation mobile broadband (LTE protocol).

Figure 1.20 **Proportion of fixed broadband connections with a headline speed of 'more than or equal to' 30Mbit/s: June 2017**



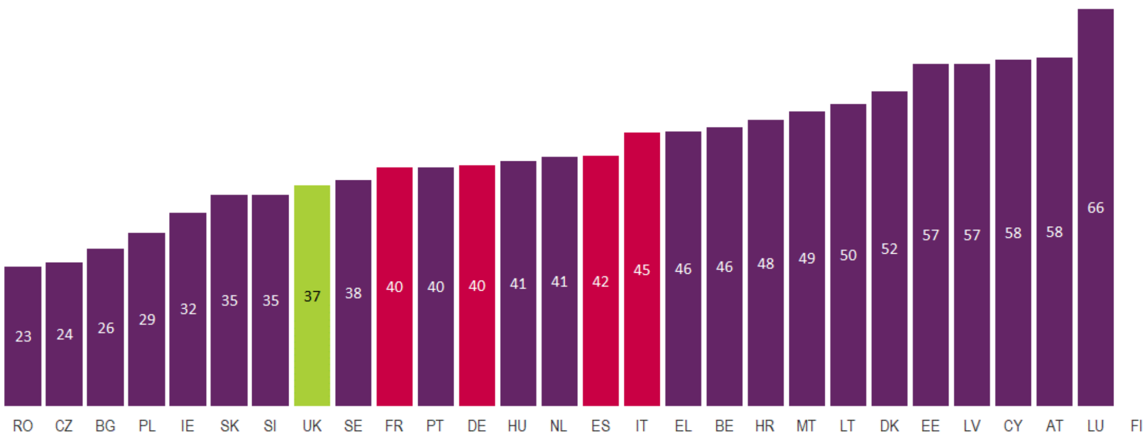
Source: European Commission, Digital Agenda Scoreboard 2018, Eurostat (https://ec.europa.eu/digital-single-market/digital-scoreboard)
Note: (1) Data refer to June 2017. (2) '30+Mbit/s broadband' refers to NGA technologies, including FTTC/VDSL, FTTP and DOCSIS3.0 cable, those needed to provide 30Mbit/s download speeds for end-users. (2) Based on advertised download speeds.

Figure 1.21 **Mobile broadband connections per 100 people: June 2017**



Source: European Commission, Digital Agenda Scoreboard 2018, Eurostat (https://ec.europa.eu/digital-single-market/digital-scoreboard)
Notes: (1) Data refer to June 2017. (2) Data combine the number of subscriptions that have connected to the internet in the preceding 90 days through a standard mobile subscription, the number of subscriptions to dedicated data services over a mobile network that are purchased separately from voice services as a stand-alone service (modem/dongle), and the number of subscriptions to dedicated data services over a mobile network that are purchased separately from voice services as an add-on data package requiring an additional subscription. (3) Mobile broadband connections may use technologies including 3G, HSPA and LTE.

Figure 1.22 **Percentage of fixed broadband lines operated by incumbent provider: June 2017**



Source: European Commission, Digital Agenda Scoreboard 2018, Eurostat (https://ec.europa.eu/digital-single-market/digital-scoreboard)
Notes: (1) Data refer to June 2017. (2) These data refer to all forms of fixed line broadband, including standard and 30+Mbit/s connections. (3) No data available for Finland.

Broadband Scorecard: International comparisons

In this section, we report on a variety of broadband-related metrics for selected international countries, covering the major developed markets, including the EU5.

Figure 1.23 **Broadband Scorecard: UK's rank relative to selected international countries: 2017**

		2017		2016	
		Value	Rank (out of 18)	Value	Rank (out of 18)
Coverage	ADSL	>99%	1=	>99%	1=
	Cable	50%	7	48%	8
	Fibre (including FTTC & FTTP full fibre)	91%	6	87%	6
	FTTC	88%	3	85%	3
	FTTP (full fibre)	3%	18	2%	18
	Fixed broadband with an *advertised* speed ≥10Mbit/s	98%	6	98%	6
	Fixed broadband with an *advertised* speed ≥30Mbit/s	98%	4	94%	5
	Fixed broadband with an *advertised* speed ≥100Mbit/s	53%	11	50%	11
	Fixed broadband with an *advertised* speed ≥300Mbit/s	53%	10	2%	15
Connections	ADSL as a proportion of all fixed broadband lines	44%	6	52%	7
	Cable as a proportion of all fixed broadband lines	20%	8	19%	9
	Fibre (FTTC & FTTP) as a proportion of all fixed broadband lines	36%	11	29%	10
	Full-fibre (FTTP) as a proportion of all lines	1.2%	17	0.8%	18
	Fixed broadband with advertised speed ≥10Mbit/s	98%	5	93%	8
	Fixed broadband with advertised speed ≥30Mbit/s	58%	8	49%	9
	Fixed broadband with advertised speed ≥300Mbit/	4%	12	1%	13
	3G and 4G (service and device) as % of all mobile subscriptions	89%	9	89%	8
	4G (service and device) as % of all mobile subscriptions	63%	8	57%	5
Usage	Fixed data per capita per month (GB)	74	1	50	3
	Mobile data per capita per month (GB)	2.4	9	1.6	8
Choice	New entrant provider's share of fixed broadband lines	64%	3	64%	3
	Mobile market HHI	2,318	2	2,361	2

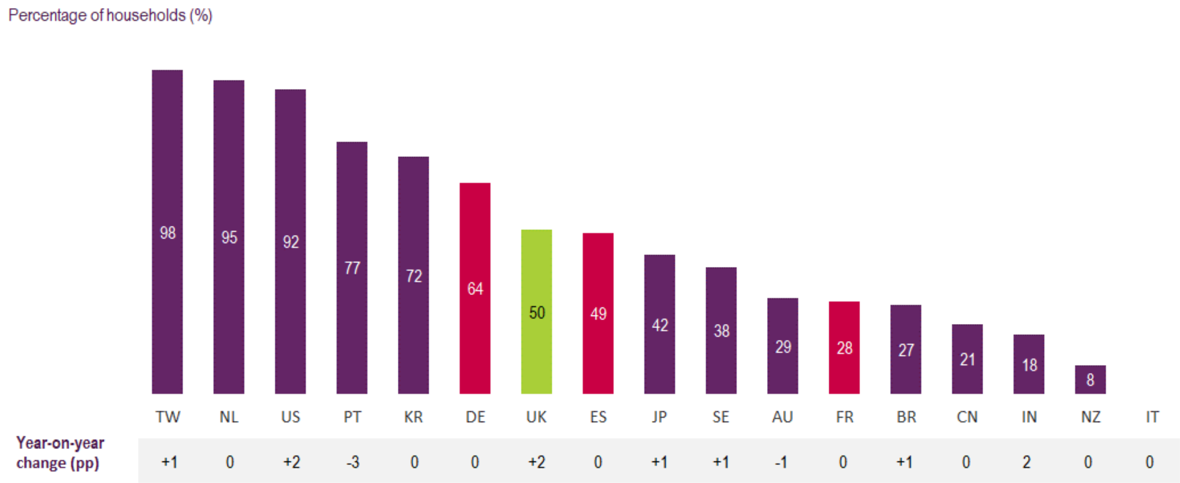
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) For the purposes of this table most of the figures have been rounded to the nearest whole number. (2) Coverage and connections data are for the year-end 2017. (3) The fixed broadband coverage data in this report is based on the availability of different fixed broadband technologies, and the 'full-fibre' availability figure in this report differs from that in the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018), which shows that 6% of premises were able to receive 'full-fibre' FTTP services in September

2018. (4) The fixed broadband coverage by speed data in this table refers to the proportion of homes able to receive services with the relevant advertised speed – these figures differ from the coverage figures stated in our Connected Nations 2018 report, which are calculated based on detailed premise-level data inputs relating to estimated connection speeds provided by UK communications providers in September 2018, and show 98% premise coverage for speeds ≥10Mbit/s, 94% for speeds ≥30Mbit/s and 50% for speeds ≥300Mbit/s. (5) there is no national incumbent fixed provider in the US, meaning that the non-incumbent provider share of fixed broadband lines rank is out of 17 countries rather than 18.

Figure 1.24 **Percentage of households in areas served by ADSL broadband: end 2017**

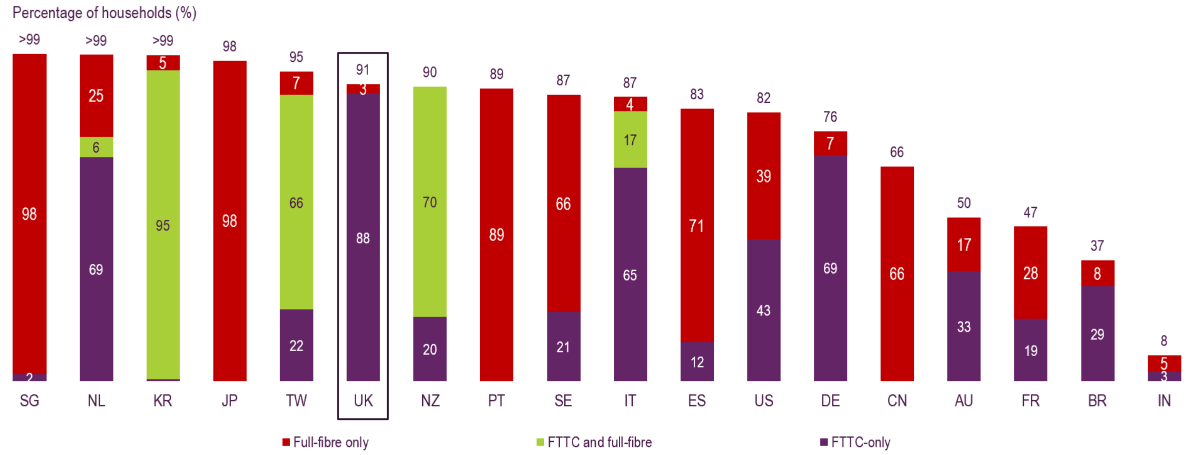
Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) It is important to note that some premises in ADSL-enabled areas may not be able to receive broadband services, or may only be able to do so at very low speeds.

Figure 1.25 **Percentage of households in areas served by cable broadband: end 2017**



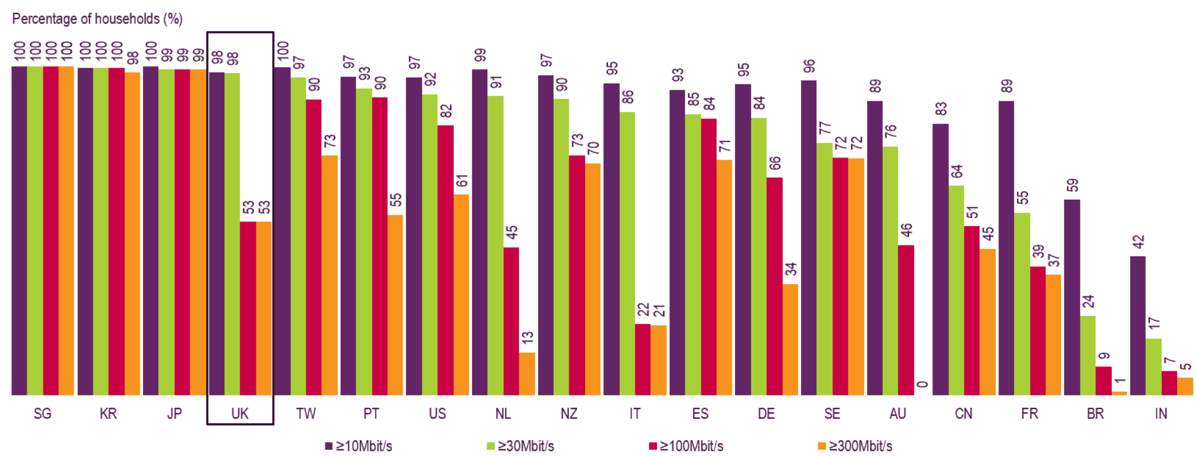
Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that 50% of UK premises had access to cable broadband services in May 2018.

Figure 1.26 **Percentage of households in areas served by fibre-based broadband networks (including FTTC and FTTP): end 2017**



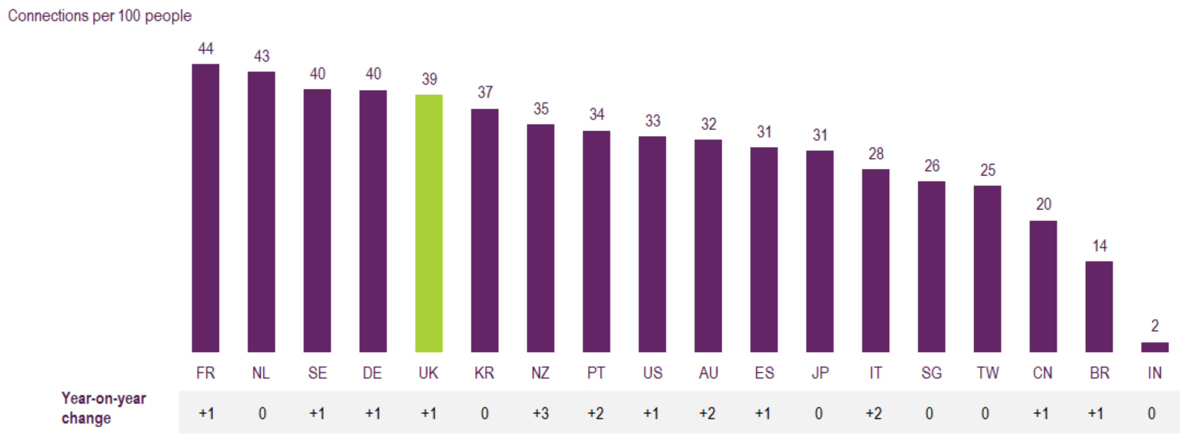
Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that 6% of UK premises were able to receive 'full-fibre' FTTP services in September 2018.

Figure 1.27 **Percentage of households passed by fixed broadband networks, by available advertised speeds: end 2017**



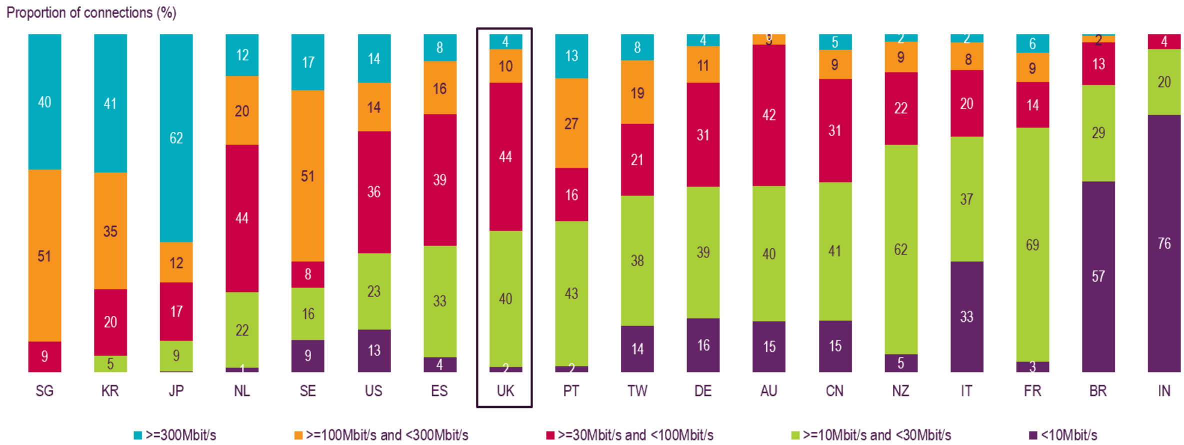
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that, in September 2018, 98% of UK premises had access to services offering estimated download speeds ≥10Mbit/s, 94% had access to estimated speeds ≥30Mbit/s and 50% had access to estimated speeds ≥300Mbit/s; countries are ordered by the proportion of homes able to receive fixed broadband with an advertised speed of 'up to' 30Mbit/s or higher.

Figure 1.28 **Fixed broadband connections per 100 people: end 2017**



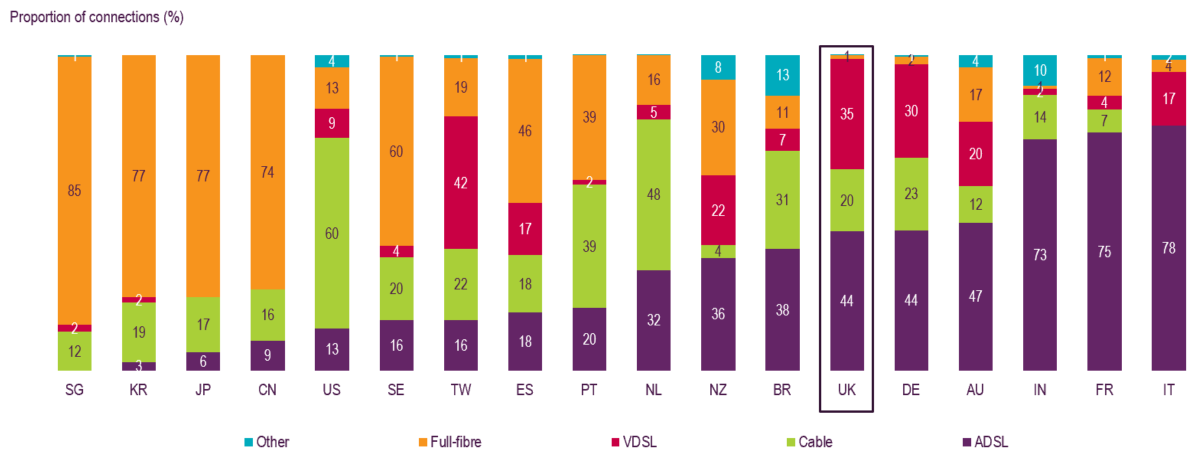
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) Includes business and residential lines.

Figure 1.29 **Proportion of fixed broadband connections, by advertised speed: end 2017**



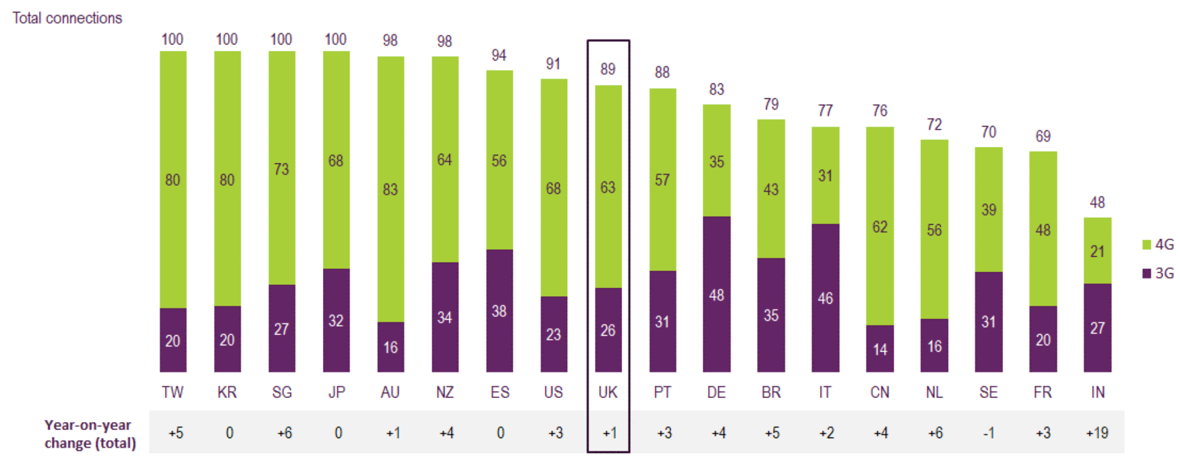
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) Countries are ranked by total figure for >=30Mbit/s.

Figure 1.30 **Percentage of fixed broadband connections, by technology: end 2017**



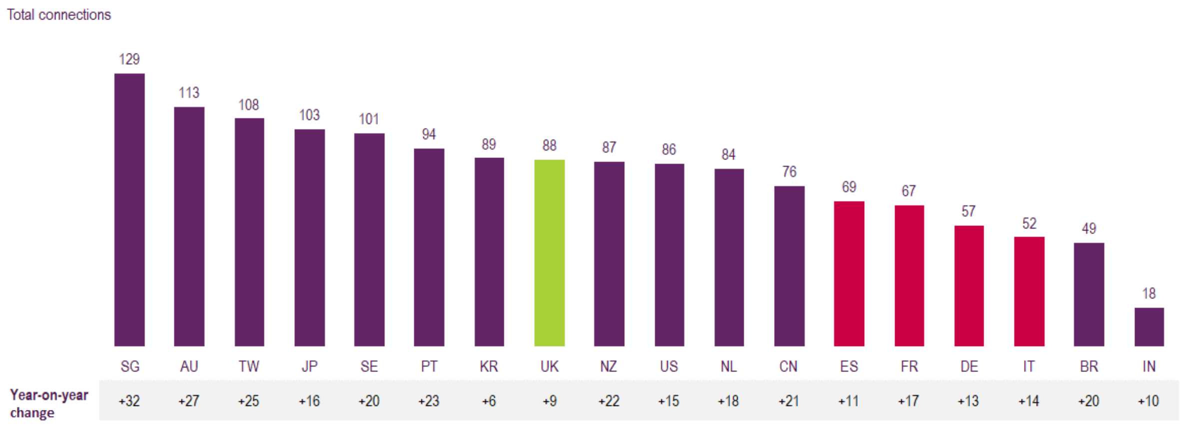
Source: IHS MARKIT / industry data / Ofcom
Notes: (1) All figures have been rounded to the nearest whole number. (2) 'Other' connection include fixed broadband technologies such as fixed wireless technologies (WiMAX, BWFA), satellite and/or powerline connections. (3) Countries are ranked by the proportion of connections that are provided using ADSL.

Figure 1.31 **3G and 4G connections as a proportion of total mobile connections: end 2017**



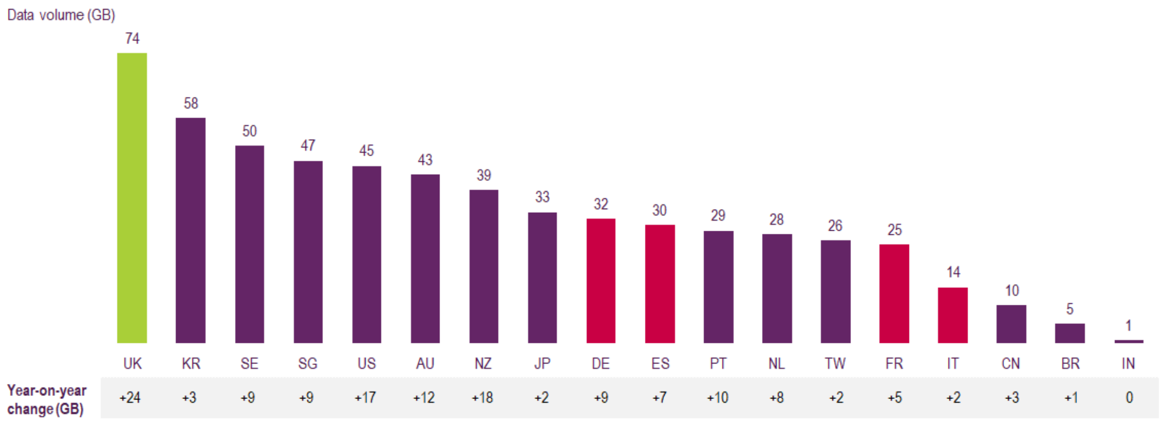
Source: IHS MARKIT
Note: Countries are ranked by combined 3G and 4G connections as a proportion of total mobile connections.

Figure 1.32 **4G mobile connections per 100 people: end 2017**



Source: IHS MARKIT
Notes: (1) Mobile broadband includes all data connections made on cellular networks, including those made ia mobile handsets and using dedicated mobile data dongles and SIMs. (2) Excludes M2M; all figures have been rounded to the nearest whole number.

Figure 1.33 **Fixed data volume per capita per month: 2017**

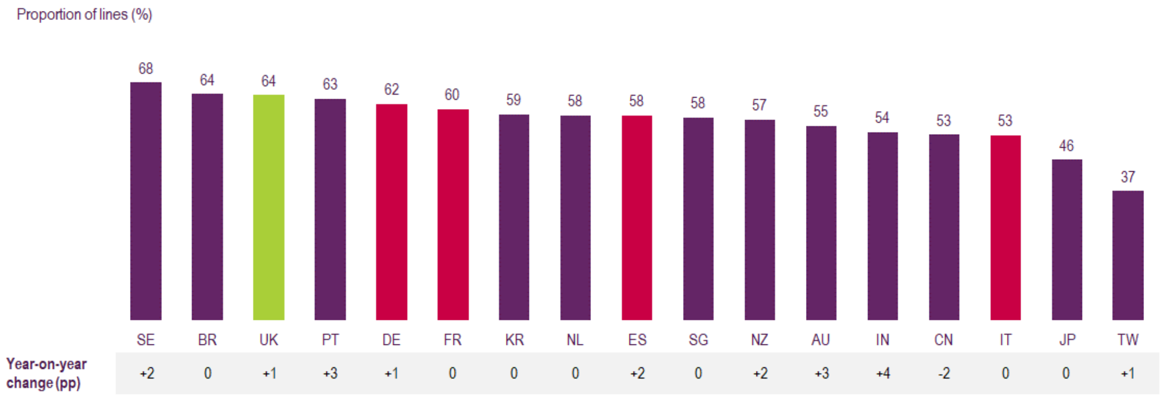


Source: IHS MARKIT
Notes: (1) All figures have been rounded to the nearest whole number. (2) In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that in average data use per residential fixed broadband connection was 240GB in May 2018.

Figure 1.34 **Mobile data volume per capita per month (GB): 2017**

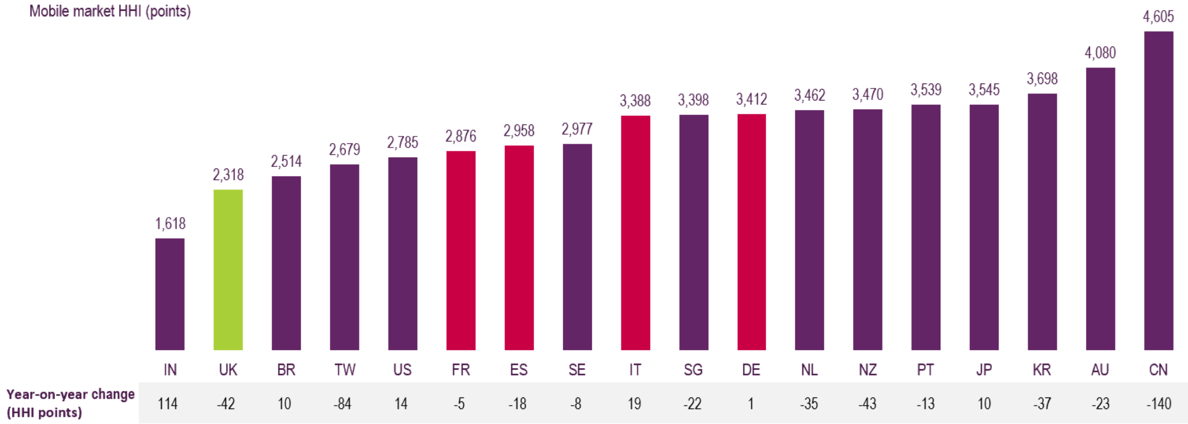
Source: IHS MARKIT / industry data / Ofcom
Note: In the Connected Nations 2018 report (https://www.ofcom.org.uk/research-and-data/multi-sector-research/infrastructure-research/connected-nations-2018) we found that the total volume of mobile data consumed in the UK in May 2018 was 213PB.

Figure 1.35 **Percentage of fixed broadband lines operated by new entrant providers: end 2017**



Source: IHS / operator data / Ofcom
Note: The US is excluded from this analysis as there is no national fixed incumbent provider

Figure 1.36 **Mobile market HHI,[8] MNOs (including wholesale and hosted MVNO): end 2017**



Source: IHS MARKIT

[8] We have used HHI in order to compare concentration in mobile markets. This index is estimated by taking the absolute value of the market share of each firm in the industry (e.g. 25 if the market share is 25%) and then squaring this number. The sum of these values for all firms is the HHI, and can theoretically range from close to zero for a market with a large number of firms of equal size, to 10,000 for a monopoly. As the calculation is based on market shares for a specific period, even small changes in market share can impact the HHI value, and the overall rankings.