

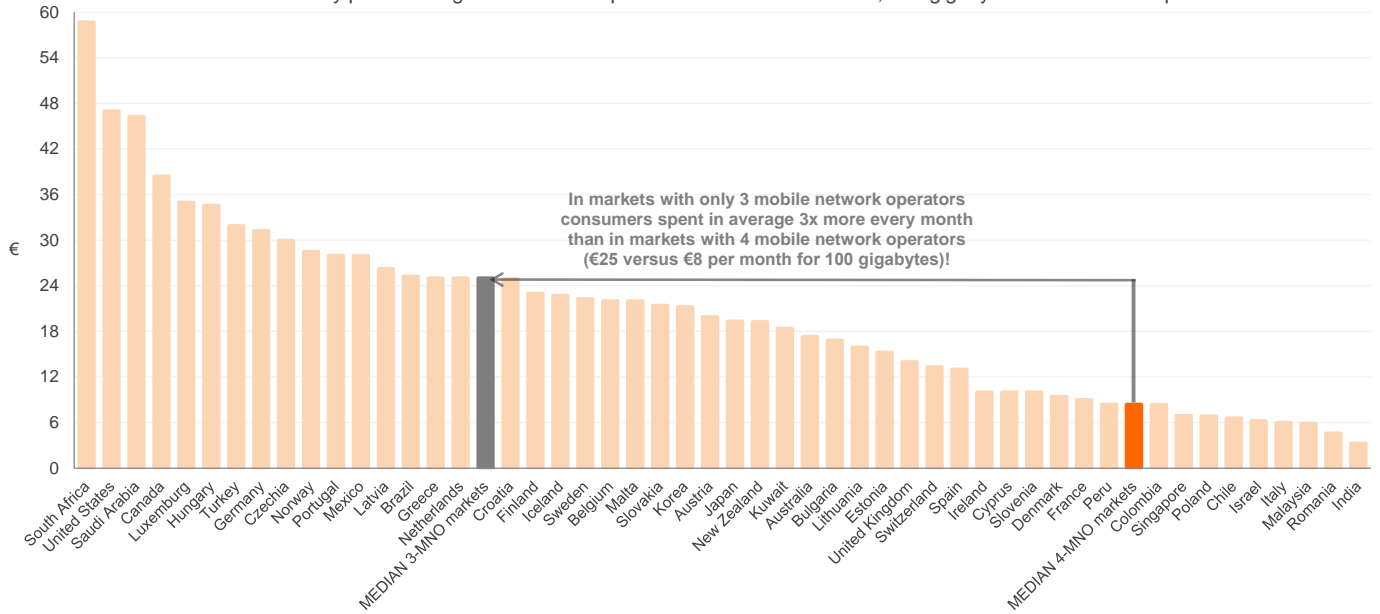
# The state of mobile and broadband pricing – 1H2024

Monthly prices are 2-3x higher and gigabyte prices are 5-6x higher in markets with only 3 mobile network operators. The effective competition in markets with 4 mobile network operators not only leads to much lower mobile prices, but as well to substantially lower fixed broadband prices. In markets with only 3 mobile network operators, consumers not only pay 3x more for mobile plans with 100 gigabytes they also pay 60% more every month to buy fixed broadband plans with Gigabit speeds.

Rewheel research PRO study – April 2024

## Mobile market competitiveness - MIN monthly price for 100 gigabytes - 1H2024

Minimum monthly price among mobile 5G&4G plans with at least 1000 mins, 100 gigabytes and 10 Mbit/s speed

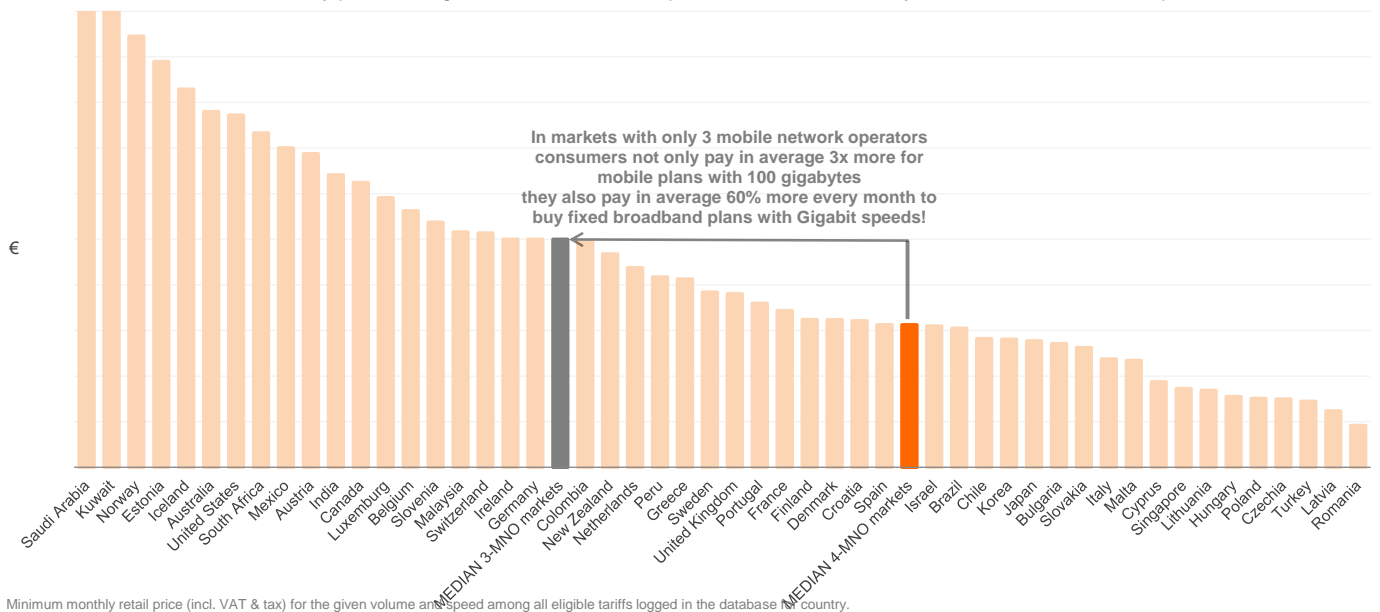


Minimum monthly retail price (incl. VAT & tax) for the given gigabyte volume and speed among all eligible tariffs logged in the database for country.

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## Broadband market competitiveness - MIN monthly price for 1 Gigabit speed - 1H2024

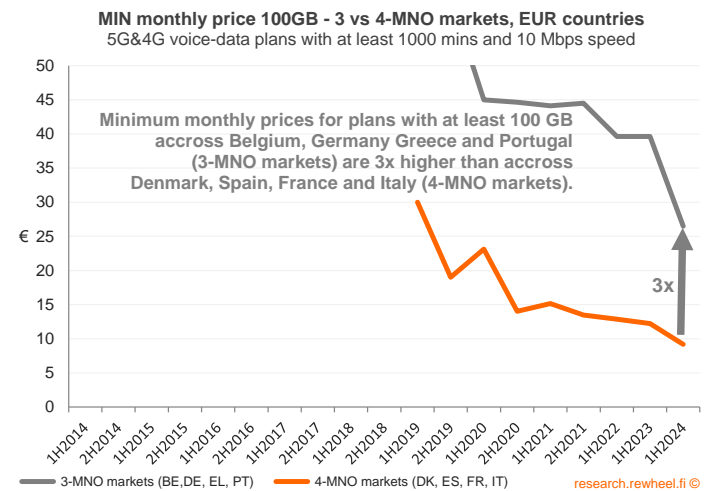
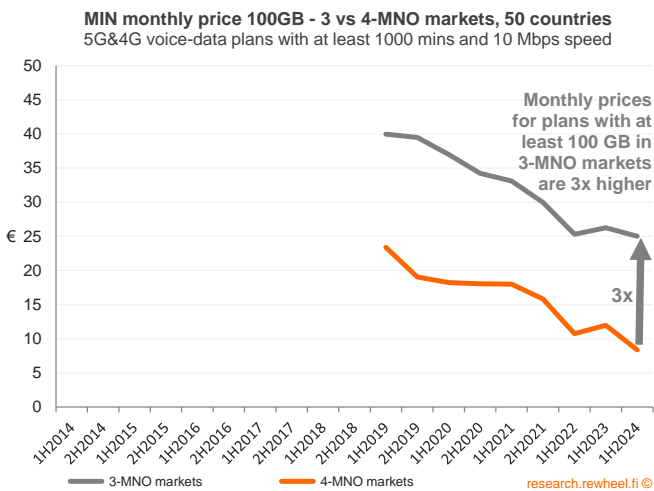
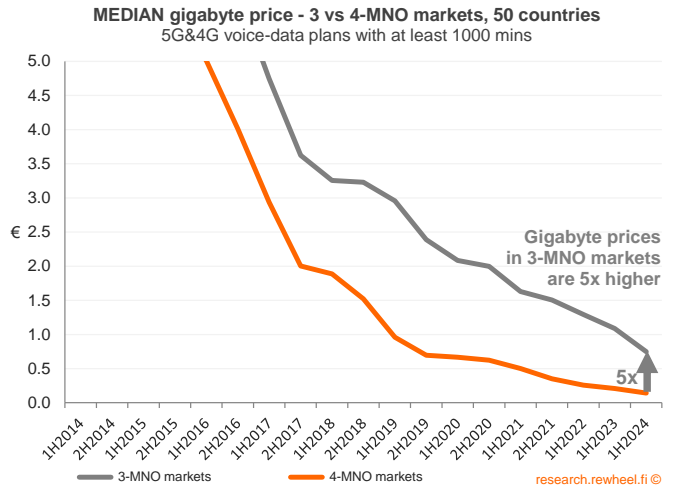
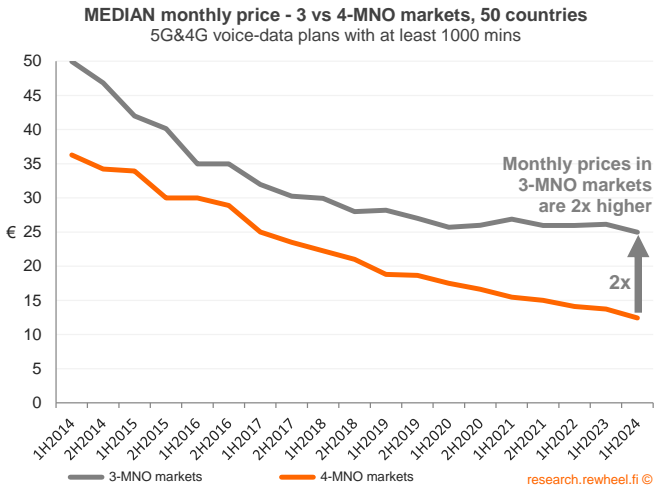
MIN monthly price among broadband FBB&MBB plans with at least 1 terabyte of volume and 1 Gbit/s speed



Minimum monthly retail price (incl. VAT & tax) for the given volume and speed among all eligible tariffs logged in the database for country. Fixed broadband (FBB) FTTx plans were plans delivered over VDSL, cable, FTTP, FTTN, FTTB, etc. or FTTH plans delivered over full fibre networks. Mobile broadband plans (MBB) plans were plans having full or restricted mobility (fixed wireless access, FWA) delivered over 4G or 5G networks.

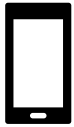
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Monthly prices are 2-3x lower and gigabyte prices are 5-6x lower in 4-MNO markets



## Monthly prices of mobile voice-data plans and as well mobile broadband plans continued to fall across most EU and OECD countries

### Mobile voice & data plans



Median monthly price €16 ↓  
Median gigabyte price €0.3 ↓

### Fixed broadband plans



Median monthly price €31 ↑  
Median Terabyte price €3.2 ↑

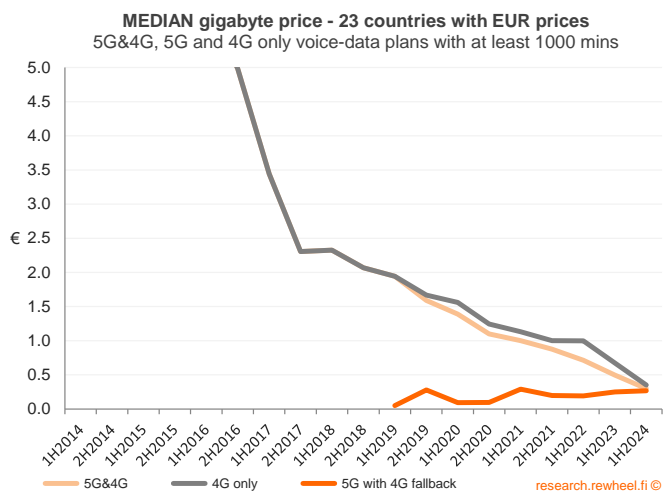
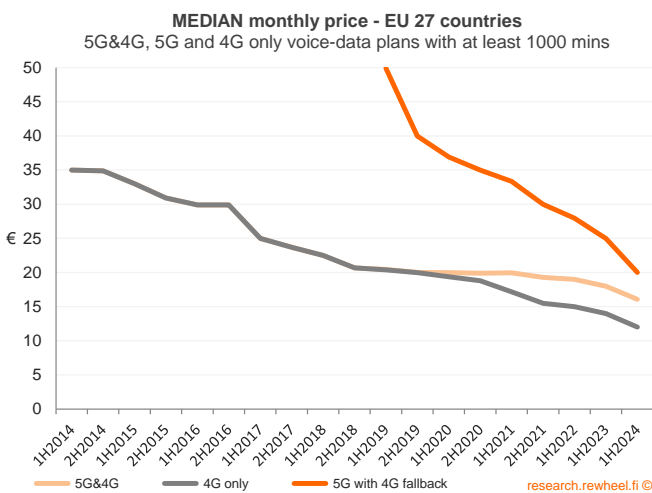
### Mobile broadband plans



Median monthly price €28 ↓  
Median Terabyte price €3.0 ↓

Monthly prices of mobile voice-data plans and as well mobile broadband plans continued to fall across most EU and OECD countries during the 1H2024. On the other hand, monthly prices of broadband plans were up compared to 1H2023.

- The median monthly price of mobile voice-data plans in EU fell to €16 in 1H2024 (was €18 in 1H2023 and €19 in 1H2022). The median gigabyte price fell to €0.3 in 1H2024 (was €0.5 in 1H2023 and €0.7 in 1H2022).
- The median monthly price of fixed broadband plans in EU rose to €31 in 1H2024 (was €30 in 1H2023). The median terabyte price rose to €3.1 in 1H2024 from €3.0 in 1H2023.
- The median monthly price of mobile broadband plans in EU fell to €28 in 1H2024 (was €30 in 1H2023). The median terabyte price fell to €3.0 in 1H2024 (was €3.1 in 1H2023).



### Annex I Country briefs: DE - Germany

Germany needs an effective 4<sup>th</sup> MNO competitor and an effective 4<sup>th</sup> MNO competitor needs spectrum

### Annex I Country briefs: DK - Denmark

Denmark, the country with the highest general price level in the EU, thanks to 4-MNOs, has among the lowest mobile prices

### Annex I Country briefs: ES - Spain

The entry of the maverick group DIGI as the new 4<sup>th</sup> MNO will lead to ultra-competitive €5-€10 monthly prices

### Annex I Country briefs: FR - France

France is an ultra-competitive market with a maverick 4<sup>th</sup> MNO (Iliad) that has among the lowest prices in EU

### Annex I Country briefs: IT - Italy

Italy is an ultra-competitive market with a maverick 4<sup>th</sup> MNO (Iliad) that has among the lowest prices in EU

### Annex I Country briefs: PL - Poland

Poland is an ultra-competitive 4-MNO market where the 4<sup>th</sup> MNO (Play) is owned by the French Iliad group

### Annex I Country briefs: PT - Portugal

Mobile monthly prices for 100 gigabytes will plummet below €9.99 and Gigabit broadband below €19.99 soon after DIGI's much anticipated 4<sup>th</sup> MNO entry in Portugal

### Annex I Country briefs: UK – United Kingdom

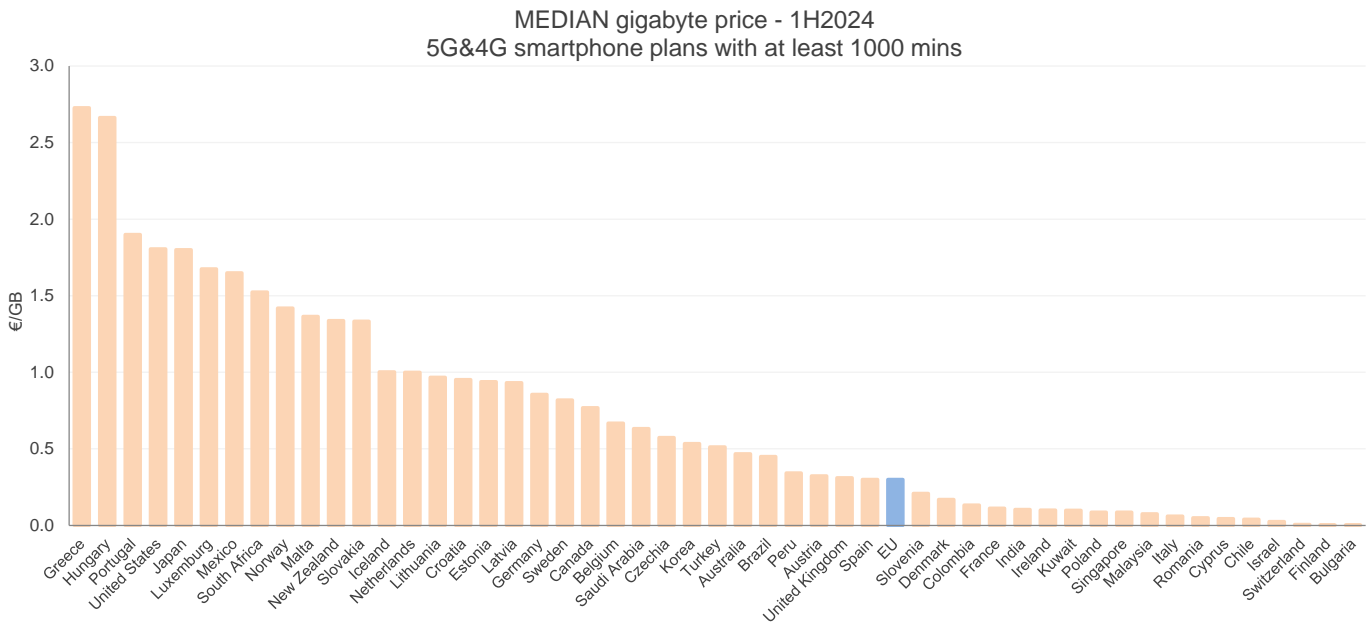
The proposed 4-to-3 Vodafone & Three merger has already pushed mobile prices higher

### Annex I Country briefs: US – United States

The Sprint / T-Mobile 4-to-3 mobile merger made the US one of the most expensive markets in the world

## Country and network operator price competitiveness highlights

- India was the country with the lowest minimum monthly price (€3.26) for mobile 5G&4G voice-data plans with at least 100 gigabytes. South Africa had the highest minimum monthly price for voice-data plans with 100 gigabytes.
- Bharti Airtel India was the mobile network operator with the lowest minimum monthly price (€3.26) for mobile voice-data plans with at least 100 gigabytes. In Europe DIGI Romania had the lowest minimum price (€4.58) for such plans.
- Vodacom’s South Africa lowest monthly price for mobile voice-data plan with at least 100 gigabytes was €107.75, a staggering 18x higher than Vodafone’s €6 monthly price in Romania.
- Greece had the highest median gigabyte price for mobile voice-data plans with at least 1000 national minutes.
- Romania was the country with lowest minimum monthly price (€7.33) for Gigabit fixed broadband plans. DIGI Romania was the operator with the lowest monthly price (€4.58) for mobile voice-data plans with 100 gigabytes in Europe and as well the lowest monthly price (€7.33) for Gigabit fixed broadband plans among all 50 countries included in the comparison.
- Saudi Arabia was the country with highest minimum monthly price (€230) for Gigabit fixed broadband plans. Mobily sold the cheapest Gigabit fixed broadband plan in Saudi Arabia for €230 per month. STC in Saudi Arabia was the network operator with the highest minimum monthly price (€258.75) for Gigabit fixed broadband plans among all 274 fixed network operators present across the 50 countries included in the comparison.
- The lowest monthly price for 5G broadband plans with at least 1 terabyte of volume and 100 Mbit/s was €9.56.

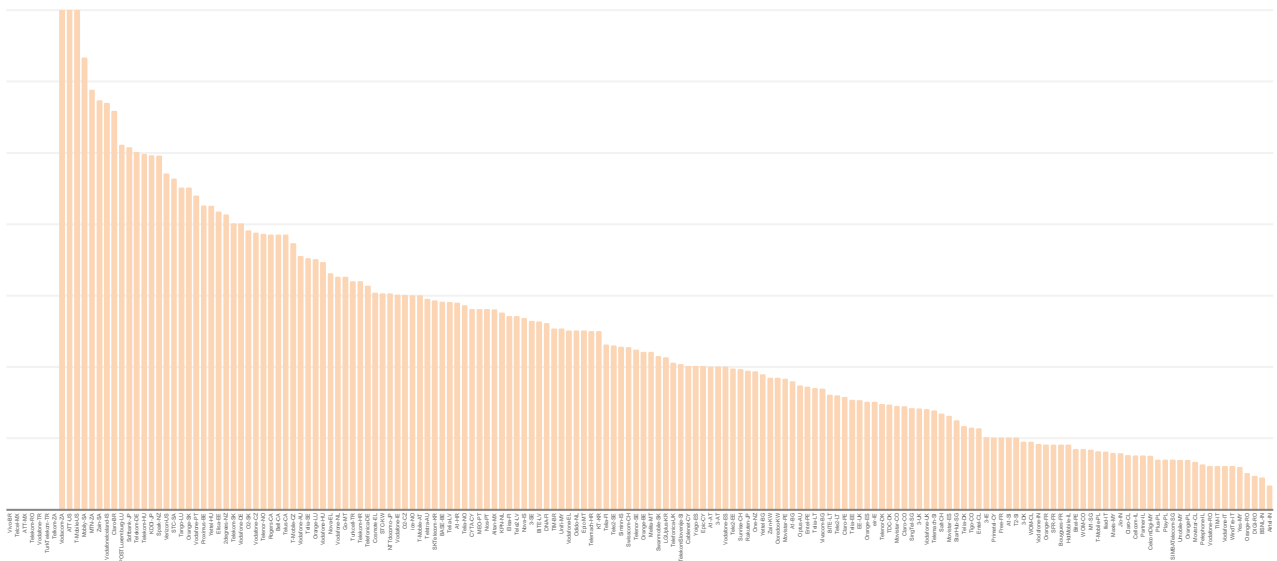


Fully allocated gigabyte price: tariff retail monthly price (incl. VAT & tax) divided by included gigabyte allowance.  
 Median fully allocated gigabyte price among all eligible tariffs logged in the database for country or group of countries.  
 Unlimited data volume tariffs that had no finite gigabyte volume (i.e. no throttling or deprioritization) were allocated 10000 gigabyte (10 terabytes) volume.

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## Mobile network operator competitiveness - MIN price for 100GB - 1H2024

MIN monthly price among 5G plans with at least 1000 mins, 100 gigabytes and 10 Mbit/s speed



Minimum monthly retail price (incl. VAT & tax) for the given gigabyte volume and speed among all eligible tariffs logged in the database for mobile network operator.

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MIN monthly price in EUR for 1, 2.5, 5, 10, 25, 50, 100, 250, 500 and 1000 gigabytes - 1H2024													
5G&4G voice-data plans with at least 1000 minutes and 10 Mbit/s peak speed													
EU	OECD	Country code	Country name	1 GB	2.5 GB	5 GB	10 GB	25 GB	50 GB	100 GB	250 GB	500 GB	1000 GB
Yes	Yes	AT	Austria	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	19.90	Subscribe	Subscribe	Subscribe
No	Yes	AU	Australia	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	17.28	Subscribe	Subscribe	Subscribe
Yes	Yes	BE	Belgium	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	22.00	Subscribe	Subscribe	Subscribe
Yes	No	BG	Bulgaria	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	16.82	Subscribe	Subscribe	Subscribe
No	No	BR	Brazil	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	25.24	Subscribe	Subscribe	Subscribe
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Yes	No	RO	Romania	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	4.58	Subscribe	Subscribe	Subscribe
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No	No	ZA	South Africa	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	58.70	Subscribe	Subscribe	Subscribe

Highest gigabyte volume allowance that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought - 1H2024																	
5G&4G voice-data plans with at least 1000 minutes and 10 Mbit/s peak speed (Unlimited volume data plans were designated 10000 gigabyte i.e., 10 terabyte volume)																	
EU	OECD	Country code	Country name	5 EUR	10 EUR	15 EUR	20 EUR	25 EUR	30 EUR	40 EUR	50 EUR	60 EUR	70 EUR	80 EUR	90 EUR	100 EUR	
Yes	Yes	AT	Austria	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
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No	No	ZA	South Africa	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	

MIN monthly price in EUR for 10, 25, 50, 100, 250, 500 Mbit/s and 1, 2.5, 5, 10 Gbit/s - 1H2024

FBB&MBB broadband plans with at least 1 terabyte of volume

EU	OECD	Country code	Country name	10 Mbps	25 Mbps	50 Mbps	100 Mbps	250 Mbps	500 Mbps	1 Gbps	2.5 Gbps	5 Gbps	10 Gbps
Yes	Yes	AT	Austria	16.11	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	AU	Australia	30.24	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	Yes	BE	Belgium	30.00	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	No	BG	Bulgaria	5.00	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	No	BR	Brazil	14.38	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	CA	Canada	20.71	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	CH	Switzerland	10.20	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
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Yes	No	HR	Croatia	17.68	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
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No	Yes	JP	Japan	22.14	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	KR	Korea	12.34	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	No	KW	Kuwait	15.10	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	No	LT	Lithuania	7.50	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	Yes	LU	Luxemburg	34.90	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	Yes	LV	Latvia	9.50	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	No	MT	Malta	18.74	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	MX	Mexico	19.54	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	No	MY	Malaysia	11.34	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
Yes	Yes	NL	Netherlands	29.63	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	NO	Norway	50.74	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	NZ	New Zealand	20.63	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
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No	Yes	UK	United Kingdom	22.52	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	Yes	US	United States	11.22	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe
No	No	ZA	South Africa	12.10	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe



Highest broadband download speed in Mbit/s that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought - 1H2024																	
FBB&MBB broadband plans with at least 1 terabyte of volume																	
EU	OECD	Country code	Country name	5 EUR	10 EUR	15 EUR	20 EUR	25 EUR	30 EUR	40 EUR	50 EUR	60 EUR	70 EUR	80 EUR	90 EUR	100 EUR	
Yes	Yes	AT	Austria	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	AU	Australia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	BE	Belgium	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	BG	Bulgaria	20	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	BR	Brazil	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	CA	Canada	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	CH	Switzerland	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	CL	Chile	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	CO	Colombia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	CY	Cyprus	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	CZ	Czechia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	DE	Germany	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	DK	Denmark	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	EE	Estonia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	EL	Greece	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	ES	Spain	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	FI	Finland	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	FR	France	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	HR	Croatia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	HU	Hungary	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	IE	Ireland	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	IL	Israel	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	IN	India	30	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	IS	Iceland	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	IT	Italy	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	JP	Japan	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	KR	Korea	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	KW	Kuwait	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	LT	Lithuania	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	LU	Luxemburg	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	LV	Latvia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	MT	Malta	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	MX	Mexico	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	MY	Malaysia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	NL	Netherlands	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	NO	Norway	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	NZ	New Zealand	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	PE	Peru	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	PL	Poland	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	PT	Portugal	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	No	RO	Romania	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	SA	Saudi Arabia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	SE	Sweden	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	SG	Singapore	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	SI	Slovenia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
Yes	Yes	SK	Slovakia	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	TR	Turkey	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	UK	United Kingdom	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	Yes	US	United States	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	
No	No	ZA	South Africa	0	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	Subscribe	



# Table of Contents

<b>1</b>	<b>Context and methodology</b>	<b>9</b>
1.1	50 European, American, Asia Pacific, Middle East and African countries included in the comparison	9
1.2	What mobile and broadband plan prices are tracked and analysed?	10
1.3	Detailed methodology	11
1.3.1	Mobile network operators (MNOs), fixed network operators (FNOs), service providers virtual network operators (VNOs)	11
1.3.2	Tariff numbers, collection methods and tariff eligibility rules	11
1.3.3	Eligibility rules for plans designated as unlimited data volume plans	14
1.3.4	Price metrics used to analyse the mobile and broadband plan prices	14
<b>2</b>	<b>Historic price development and latest pricing trends in EU and EUR countries</b>	<b>16</b>
<b>2.1</b>	<b>Mobile voice-data plans – 5G&amp;4G plans, 5G with 4G fallback plans and 4G only plans</b>	<b>17</b>
2.1.1	Median monthly prices of mobile voice-data plans	17
2.1.2	Median gigabyte prices of mobile voice-data plans	18
<b>2.2</b>	<b>Broadband plans – Fixed broadband (FBB) and mobile broadband (MBB) plans</b>	<b>19</b>
2.2.1	Median monthly prices of broadband plans	19
2.2.2	Median terabyte prices of broadband plans	19
<b>3</b>	<b>Mobile monthly prices are 2-3x lower and gigabyte prices are 5-6x lower in markets with 4-MNOs</b>	<b>20</b>
3.1	Historic development of prices in markets with 3 versus 4 mobile network operators – 50 countries	21
3.1.1	Median monthly and median gigabyte prices	22
3.1.2	Minimum monthly price for plans with at least 100 gigabytes	22
3.2	Historic development of prices in markets with 3 versus 4 mobile network operators – EU EUR countries	24
3.2.1	Median monthly and median gigabyte prices	24
3.2.2	Minimum monthly price for plans with at least 100 gigabytes	25
<b>4</b>	<b>Not only mobile but also fixed broadband prices are lower in markets with 4-MNOs</b>	<b>26</b>
<b>5</b>	<b>List of mobile, fixed and virtual network operators and all 432 service providers</b>	<b>27</b>
5.1	Mobile network operators that sold mobile voice-data or mobile broadband plans with named finite terabyte volumes	29
<b>6</b>	<b>Price competitiveness rankings – Countries 1H2024</b>	<b>31</b>
6.1	Mobile voice-data plans	31
6.1.1	Chart: MIN monthly price of 5G&4G voice-data plans with at least 1 gigabyte and 10 Mbit/s speed	31
6.1.2	Chart: MIN monthly price of 5G&4G voice-data plans with at least 2.5 gigabytes and 10 Mbit/s speed	31
6.1.3	Chart: MIN monthly price of 5G&4G voice-data plans with at least 5 gigabytes and 10 Mbit/s speed	32
6.1.4	Chart: MIN monthly price of 5G&4G voice-data plans with at least 10 gigabytes and 10 Mbit/s speed	32
6.1.5	Chart: MIN monthly price of 5G&4G voice-data plans with at least 25 gigabytes and 10 Mbit/s speed	33
6.1.6	Chart: MIN monthly price of 5G&4G voice-data plans with at least 50 gigabytes and 10 Mbit/s speed	33
6.1.7	Chart: MIN monthly price of 5G&4G voice-data plans with at least 100 gigabytes and 10 Mbit/s speed	34
6.1.8	Chart: MIN monthly price of 5G&4G voice-data plans with at least 250 gigabytes and 10 Mbit/s speed	34
6.1.9	Chart: MIN monthly price of 5G&4G voice-data plans with at least 500 gigabytes and 10 Mbit/s speed	35
6.1.10	Chart: MIN monthly price of 5G&4G voice-data plans with at least 1000 gigabytes and 10 Mbit/s speed	35
6.1.11	Summary table: MIN monthly price of 5G&4G voice-data plans with at least 1 to 1000 gigabytes and 10 Mbit/s speed	36
6.1.12	Summary table: Highest gigabyte volume allowance that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought	37
6.1.13	Chart: MEDIAN monthly price of 5G&4G voice-data plans	38
6.1.14	Chart: MEDIAN gigabyte price of 5G&4G voice-data plans	38
6.1.15	Chart: MIN monthly price of 5G voice-data plans with at least 1000 gigabytes and 100 Mbit/s speed	39
6.2	Broadband plans	40
6.2.1	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 10 Mbit/s speed	40
6.2.2	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 25 Mbit/s speed	40
6.2.3	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 50 Mbit/s speed	41
6.2.4	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 100 Mbit/s speed	41
6.2.5	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 250 Mbit/s speed	42

6.2.6	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 500 Mbit/s speed	42
6.2.7	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 1 Gbit/s speed	43
6.2.8	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte and 2.5 Gbit/s speed	43
6.2.9	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte at 5 Gbit/s speed	44
6.2.10	Chart: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte at 10 Gbit/s speed	44
6.2.11	Summary table: MIN monthly price of FBB&MBB broadband plans with at least 1000 gigabytes and 10Mbit/s to 10 Gbit/s speed	45
6.2.12	Summary table: Highest broadband download speed that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought	46
6.2.13	Chart: MEDIAN monthly price of FBB&MBB broadband plans	47
6.2.14	Chart: MEDIAN terabyte price of FBB&MBB broadband plans	47
6.2.15	Chart: MIN monthly price of 5G MBB broadband plans with at least 1 terabyte and 100 Mbit/s speed	48
<b>7</b>	<b>Price competitiveness rankings – Operators 1H2024</b>	<b>49</b>
7.1	Mobile network operators	49
7.1.1	Chart: MIN monthly price of 5G&4G voice-data plans with at least 100 gigabytes and 10 Mbit/s speed	49
7.1.2	Summary table: MIN monthly price of 5G&4G voice-data plans with at least 1 to 1000 gigabytes and 10 Mbit/s speed	49
7.1.3	Chart: MIN monthly price of 5G voice-data plans with at least 1000 gigabytes and 100 Mbit/s speed	52
7.1.4	Summary table: MIN monthly price of 5G voice-data plans with at least 1 to 1000 gigabytes and 100 Mbit/s speed	52
7.2	Broadband network operators	55
7.2.1	Summary table: MIN monthly price of FBB&MBB broadband plans with at least 1 terabyte of volume and 10 Mbit/s to 10 Gbit/s	55
7.2.2	Summary table: MIN monthly price of FBB broadband plans with at least 1 terabyte of volume and 10 Mbit/s to 10 Gbit/s speed	57
7.2.3	Summary table: MIN monthly price of MBB broadband plans with at least 1 terabyte of volume and 10 Mbit/s to 1 Gbit/s speed	59
<b>Annex I</b>	<b>Country briefs</b>	<b>61</b>
AT	Austria	61
AU	Australia	61
BE	Belgium	61
BG	Bulgaria	61
BR	Brazil	61
CA	Canada	61
CH	Switzerland	61
CL	Chile	61
CO	Colombia	61
CY	Cyprus	61
CZ	Czechia	61
DE	Germany	61
DK	Denmark	61
EE	Estonia	61
EL	Greece	61
ES	Spain	61
FI	Finland	61
FR	France	61
HR	Croatia	61
HU	Hungary	61
IE	Ireland	61
IL	Israel	61
IN	India	61
IS	Iceland	61
IT	Italy	61
JP	Japan	61
KR	Korea	62
KW	Kuwait	62
LT	Lithuania	62

LU – Luxemburg	62
LV – Latvia	62
MT – Malta	62
MX – Mexico	62
MY – Malaysia	62
NL – Netherlands	62
NO – Norway	62
NZ – New Zealand	62
PE – Peru	62
PL – Poland	62
PT – Portugal	62
RO – Romania	62
SA – Saudi Arabia	62
SE – Sweden	62
SG – Singapore	62
SI – Slovenia	62
SK – Slovakia	62
TR – Turkey	62
UK – United Kingdom	62
US – United States	62
ZA – South Africa	62
<b>About Rewheel</b>	<b>63</b>

## 1 Context and methodology

Rewheel has been tracking mobile prices since 2012. Rewheel first international comparison study<sup>1</sup> of mobile prices was conducted in December 2012. It tracked mobile prices across the 27 countries that were members of the European Union at the time. The main finding of our 2012 study “*Research shows that users pay up to ten times more to use their smartphones in those Member States where there is no challenger to the big European operators.*” was cited<sup>2</sup> by the former Vice President of the European Commission, Joaquin Almunia in a speech dated the 28<sup>th</sup> of February 2013.

Rewheel’s studies are the world’s most comprehensive mobile price comparison studies. Rewheel’s price comparison research aim is to measure the price differences across mobile and broadband markets, identify and quantify the competition factors (e.g., 4 versus 3 mobile network operators) that underpin the price differences.

In March 2023 we published<sup>3</sup> the 18<sup>th</sup> release of our 4G&5G price comparison series titled “*The state of 4G and 5G pricing, 1H2023 – Inflation edition*” with mobile voice-data, mobile broadband and wireless broadband plan prices from 50 European, American, Asia Pacific, Middle East and African countries.

In June 2023, for the first time, we published<sup>4</sup> a broadband price comparison study titled “*The state of broadband (FBB&FWA) pricing – 1H2023*” with fixed broadband and fixed-wireless access (FWA) broadband plan prices from 50 European, American, Asia Pacific, Middle East and African countries.

Starting from the 1H2024, i.e., this study, we will be examining the state of mobile pricing and as well the state of broadband pricing in one combine study published annually.

### 1.1 50 European, American, Asia Pacific, Middle East and African countries included in the comparison

Herein, we tracked and analysed mobile voice-data, mobile broadband and fixed broadband prices across 50 European, American, Asia Pacific, Middle East and African countries. The 50 countries include in the comparison are listed in the table below. The 50 countries are listed alphabetically following the two-letter country code abbreviation. The table contains information regarding the European Union (EU 27 countries) country membership and/or the Organization for Economic Development and Cooperation country membership (OECD 36 countries).

Please note that starting from 1H2024, i.e., this study, we will no longer track prices in China. We have replaced China with Singapore as it can be seen in the table below. The reason for this change is similar to our previous decision to replace Russia with Peru. The main aim of Rewheel price comparison studies, as stated above, is to measure the price differences between markets and identify the competition factors that underpin the price differences. Hence, one of the preconditions for including a market in the comparison is that the market must broadly operate with open market rules. Moreover, the state must not exert direct or indirect state control of all operators present. After following the developments in the Chinese mobile market and tracking Chinese mobile prices (prices have a very high degree of homogeneity which may be the outcome of coordination) for few years we came to the conclusion that the Chinese mobile market does not fulfil the open market precondition.

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<sup>1</sup>[https://research.rewheel.fi/downloads/Rewheel\\_EU27\\_smartphone\\_tariff\\_competitiveness\\_report\\_December\\_2012\\_HIGHLIGHTS.pdf](https://research.rewheel.fi/downloads/Rewheel_EU27_smartphone_tariff_competitiveness_report_December_2012_HIGHLIGHTS.pdf)

<sup>2</sup>[https://ec.europa.eu/commission/presscorner/detail/en/speech\\_13\\_168](https://ec.europa.eu/commission/presscorner/detail/en/speech_13_168)

<sup>3</sup>[https://research.rewheel.fi/downloads/The\\_state\\_of\\_4G\\_5G\\_pricing\\_18\\_release\\_1H2023\\_PUBLIC\\_VERSION.pdf](https://research.rewheel.fi/downloads/The_state_of_4G_5G_pricing_18_release_1H2023_PUBLIC_VERSION.pdf)

<sup>4</sup>[https://research.rewheel.fi/downloads/The\\_state\\_of\\_broadband\\_\(FBB\\_FWA\)\\_pricing\\_1H2023\\_PUBLIC\\_VERSION.pdf](https://research.rewheel.fi/downloads/The_state_of_broadband_(FBB_FWA)_pricing_1H2023_PUBLIC_VERSION.pdf)

EU	OECD	Country code	Country name
Yes	Yes	AT	Austria
No	Yes	AU	Australia
Yes	Yes	BE	Belgium
Yes	No	BG	Bulgaria
No	No	BR	Brazil
No	Yes	CA	Canada
No	Yes	CH	Switzerland
No	Yes	CL	Chile
No	Yes	CO	Colombia
Yes	No	CY	Cyprus
Yes	Yes	CZ	Czechia
Yes	Yes	DE	Germany
Yes	Yes	DK	Denmark
Yes	Yes	EE	Estonia
Yes	Yes	EL	Greece
Yes	Yes	ES	Spain
Yes	Yes	FI	Finland
Yes	Yes	FR	France
Yes	No	HR	Croatia
Yes	Yes	HU	Hungary
Yes	Yes	IE	Ireland
No	Yes	IL	Israel
No	No	IN	India
No	Yes	IS	Iceland
Yes	Yes	IT	Italy
No	Yes	JP	Japan
No	Yes	KR	Korea
No	No	KW	Kuwait
Yes	No	LT	Lithuania
Yes	Yes	LU	Luxemburg
Yes	Yes	LV	Latvia
Yes	No	MT	Malta
No	Yes	MX	Mexico
No	No	MY	Malaysia
Yes	Yes	NL	Netherlands
No	Yes	NO	Norway
No	Yes	NZ	New Zealand
No	No	PE	Peru
Yes	Yes	PL	Poland
Yes	Yes	PT	Portugal
Yes	No	RO	Romania
No	No	SA	Saudi Arabia
Yes	Yes	SE	Sweden
No	No	SG	Singapore
Yes	Yes	SI	Slovenia
Yes	Yes	SK	Slovakia
No	Yes	TR	Turkey
No	Yes	UK	United Kingdom
No	Yes	US	United States
No	No	ZA	South Africa

## 1.2 What mobile and broadband plan prices are tracked and analysed?

Herein, we tracked and analysed mobile voice-data, mobile broadband and fixed broadband plan prices.

We have included in the comparison the following eligible mobile voice-data plans;

- 5G plans (with a 4G fallback) having at least 1000 minutes, 1 gigabyte of data volume and 1 Mbit/s offered download speed
- 4G plans having at least 1000 minutes, 1 gigabyte of data volume and 1 Mbit/s offered download speed

We have included in the comparison the following eligible broadband plans;

- fixed broadband (FBB) FTTx plans delivered over VDSL, cable, FTTP, FTTN, FTTB, etc. or FTTH plans delivered over full fibre networks having at least 100 gigabyte of data volume and 10 Mbit/s offered download speed
- mobile broadband plans (MBB) plans with full or restricted mobility (e.g., fixed wireless access, FWA) delivered over 5G or 4G networks having at least 100 gigabyte of data volume and 10 Mbit/s offered speed

### 1.3 Detailed methodology

Rewheel's comparison methodology was designed from the onset to measure the price of mobile data connectivity both in plans that include voice and data connectivity and as well in data-only plans with full or restricted (e.g., fixed wireless access) mobility. Hence, by tracking the price of plans that include practically unlimited voice connectivity (i.e., 1000 or more national minutes) we could compare directly the price for mobile data connectivity and track the historic price development. Back in 2014<sup>5</sup> smartphone plans that included practically unlimited minutes/SMS were the de-facto monthly rolling plans in the majority of the EU28 & OECD countries.

By the 1H2024 in all of the 50 European, American, Asia Pacific, Middle East and African countries 5G voice-data plans that included practically unlimited national minutes had become the de-facto monthly rolling plans. In some ultra-competitive European 4-MNO markets such as France, Italy, Poland and Romania ultra-low (5 to 10 EUR/month) 5G priced plans with unlimited minutes/SMS and 50 to 500 gigabytes are the norm nowadays.

Similar to Rewheel's mobile price comparison methodology that was designed from the onset to measure the price of naked mobile data connectivity (no bundled prices tracked) our broadband price comparison methodology is design to measure the price of naked broadband connectivity. Surely, many operators prefer to sell plans – locking-in consumers to long contracts with a total higher monthly fee – that on top of broadband connectivity include fixed-line telephony and/or TV services and/or OTT video streaming services and/or mobile services but more often than not these additional services are either redundant (e.g., fixed-line telephony is redundant to most consumers having a mobile telephone), duplicate (e.g., telco-own video streaming services since most consumers subscriber to OTT video streaming services such as Netflix) or add little incremental value to a naked broadband connection.

It is important to note that for a subset of consumers (e.g., students, single person households, etc.) a 5G or even a 4G voice-data connection with large or unlimited (on-device & hotspot) data volume is their sole and essential mean of accessing the internet.

#### 1.3.1 Mobile network operators (MNOs), fixed network operators (FNOs), service providers virtual network operators (VNOs)

In this 19<sup>th</sup> release we tracked prices from a total of 432 mobile and/or broadband service providers. Among them there were 170 mobile network operators (MNOs), 297 broadband network operators (BNOs) of which 274 were fixed network operators (FNOs), 119 network operator sub-brands and 129 virtual network operators (VNOs). A list of all 432 service providers, MNOs, FNOs, sub-brands and VNOs can be found in Section 5 of the full report. 56 out of the 170 mobile network operators sold during the 1H2024 mobile voice-data or mobile broadband plans with named terabyte volume allowances ranging from 1 to 10 terabytes (1000 to 100000 gigabytes).

#### 1.3.2 Tariff numbers, collection methods and tariff eligibility rules

This 19<sup>th</sup> release 1H2024 contains over 2250 mobile voice-data and over 1850 broadband plan tariffs. The entire database includes over 40000 mobile and broadband tariff plans.

Tariffs were collected from the service provider websites during February, March and April 2023. We archived screenshots from every single service provider tariff that was used in the comparative analysis and as well downloaded and archived the tariff terms and conditions wherever needed and readily available.

Eligible mobile voice-data plans were 5G or 4G LTE plans with at least 1000 national (to all domestic mobile and fixed networks) minutes, 1 gigabyte of included data volume and 1 Mbit/s offered download speed.

5G or 4G LTE plans with a speed cap lower than 1 Mbit/s were not eligible. 5G or 4G LTE plans where the speed was throttled below 1 Mbit/s after the depletion of a high-speed volume were eligible but treated as tariffs with finite data volume. 3G plans, irrespective their speed cap limits were not eligible.

Please note that starting in this 19<sup>th</sup> release the mobile voice-data plan minimum required speed eligibility threshold was increased from 0.5 Mbit/s (minimum required speed in all 18 previous releases) to 1 Mbit/s.

Eligible broadband plans were fixed broadband (FBB) or mobile broadband (MBB) plans with at least 100 gigabyte of data volume and 10 Mbit/s offered download speed.

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<sup>5</sup>[http://research.rewheel.fi/insights/2014\\_june\\_ranking/](http://research.rewheel.fi/insights/2014_june_ranking/)



Fixed broadband (FBB) FTTx plans were plans delivered over VDSL, cable, FTTP, FTTN, FTTB, etc. or FTTH plans delivered over full fibre networks. Mobile broadband plans (MBB) plans were plans with full or restricted mobility (fixed wireless access, FWA) delivered over 5G or 4G networks.

Eligible plans were monthly rolling plans (both postpaid and prepaid plans with automatic 28- or 30-day renewal) that were available to all consumers. Plans will lower prices, higher gigabyte allowances or higher speeds offered to selected consumers such as youth, seniors, soldiers, additional family members, customers with PayPal accounts, etc. or plans bundled with other services (e.g., fixed broadband service, mobile voice service, mobile broadband service, TV services, etc.) were not eligible.

For mobile plans we logged all the SIM-only tariffs and in rare occasions tariffs with handset subsidies that included higher gigabyte volume allowance than the maximum possible that consumers could obtain with SIM-only tariffs.

The following parameters have been collected for each tariff: the date and time of collection, the country, the operator name, the service provider name, the service provider brand type (operator main or sub-brand or VNO), the price in local currency, the included data volume allowance, the included minute/SMS allowances for mobile voice-data plans, the offered peak download speed of data, the plan technology (5G or 4G for mobile voice-data plans, FTTx or FTTH for fixed broadband plans and 5G or 4G for mobile broadband plans, the tariff name together with any applicable options or subsidies and finally the URL of the operator.

Please note that while in all previous releases (releases 1 to 18<sup>th</sup>) we logged the mobile network operator maximum speed as the tariff offered peak download speed for all tariffs where the service providers did not specify the speed this is no longer the case in this 19<sup>th</sup> release. In this 19<sup>th</sup> release if the service provider did not sell tariffs tiered on speed (e.g., 10 Mbit/s for €10, 100 Mbit/s for €20 and 250 Mbit/s for €30) or did not state clearly the typical download speed offered we logged 50 Mbit/s as a typical 4G peak tariff speed and 100 Mbit/s as a typical 5G peak tariff speed. In the event the service provider sold a lower mobile voice-data price plan with a specified speed (e.g., 100 Mbit/s) and a more expensive plan where it indicated that consumers get up to the maximum network speed, we logged for that tariff the next available speed tier according to the following speed tiers (1, 10, 25, 50, 100, 250, 500 and 1000 Mbit/s).

All commercial promotions available at the time of collection were considered (e.g., 2 months free if purchased online or 10% off if purchased before a certain date). All discounts were calculated for a minimum period of 12 months or for the specified contract period if it was longer than 12 months. If a tariff was cheaper with longer contract duration, we logged in the database the lowest available price (e.g., 10% off with a 24-month contract).

The tariff monthly fee does not include one-off fees (activation, porting, installation, service, modem, etc). Such fees, with very few exceptions, do not significantly increase the monthly tariff fee for the duration of the contract or when they applied to a 12-month period in monthly rolling tariffs. Monthly reoccurring fees for the lease of a modem – for broadband tariffs where such fees were separately specified – were not included in the monthly price.

The database includes off-the-shelf tariffs (e.g., RED 2 Mbit/s, RED 10 Mbit/s, RED MAX Mbit/s) and as well in rare occasions data volume or speed add-ons that increase the monthly data volume allowance or the download speed. Only monthly rolling data volume or speed add-ons were eligible add-ons. One-time use add-ons that expired in the end of the billing cycle were excluded. Promotions that temporarily increased the volume allowance, speed or provided access to 5G were considered only if they were applicable for the entire contract duration or in case of monthly rolling contracts for minimum 12 months.

No Purchase Power Parity (PPP) operation has been performed on the raw tariff plan prices. Prices in EUR are the retail (VAT and other applicable taxes included where available) prices found on the service provider web sites. Prices in other national currencies have been converted to EUR by simply using the exchange rate displayed by Google on the day of collection.

Please note that in each release historic prices in countries that do not use EUR as their national currency are converted to EUR using the latest exchange rate (i.e., the exchange rate logged in the latest release). Hence, historic prices may vary from release to release. For example, the USD to EUR exchange rate has fluctuate from 0.74 to 0.95 as seen in the table below. In this latest release historic US prices (i.e., 2014 to 1H2024 prices) were converted to EUR using a flat 0.94 exchange rate.

EU	OECD	Country code	Country name	Currency	1H2014	2H2014	1H2015	2H2015	1H2016	2H2016	1H2017	2H2017	1H2018	2H2018	1H2019	2H2019	1H2020	2H2020	1H2021	2H2021	1H2022	1H2023	1H2024
No	Yes	US	United States	USD	0.7400	0.7900	0.8900	0.9100	0.8900	0.8900	0.9300	0.8500	0.8100	0.8600	0.8900	0.9100	0.9200	0.8600	0.8400	0.8500	0.9500	0.9300	0.9400

EU	OECD	Country code	Country name	Currency	1H2024
Yes	Yes	AT	Austria	EUR	1.0000
No	Yes	AU	Australia	AUD	0.6000
Yes	Yes	BE	Belgium	EUR	1.0000
Yes	No	BG	Bulgaria	BGN-EUR	0.5100
No	No	BR	Brazil	BRL	0.1800
No	Yes	CA	Canada	CAD	0.6800
No	Yes	CH	Switzerland	CHF	1.0300
No	Yes	CL	Chile	CLP	0.00094
No	Yes	CO	Colombia	COP	0.00024
Yes	No	CY	Cyprus	EUR	1.0000
Yes	Yes	CZ	Czechia	CZK	0.0400
Yes	Yes	DE	Germany	EUR	1.0000
Yes	Yes	DK	Denmark	DKK-EUR	0.1300
Yes	Yes	EE	Estonia	EUR	1.0000
Yes	Yes	EL	Greece	EUR	1.0000
Yes	Yes	ES	Spain	EUR	1.0000
Yes	Yes	FI	Finland	EUR	1.0000
Yes	Yes	FR	France	EUR	1.0000
Yes	No	HR	Croatia	EUR	1.0000
Yes	Yes	HU	Hungary	HUF	0.0025
Yes	Yes	IE	Ireland	EUR	1.0000
No	Yes	IL	Israel	ILS	0.2500
No	No	IN	India	INR	0.0110
No	Yes	IS	Iceland	ISK	0.0067
Yes	Yes	IT	Italy	EUR	1.0000
No	Yes	JP	Japan	YEN	0.0061
No	Yes	KR	Korea	WON	0.00068
No	No	KW	Kuwait	KWD	3.0200
Yes	No	LT	Lithuania	EUR	1.0000
Yes	Yes	LU	Luxemburg	EUR	1.0000
Yes	Yes	LV	Latvia	EUR	1.0000
Yes	No	MT	Malta	EUR	1.0000
No	Yes	MX	Mexico	MXN	0.0560
No	No	MY	Malaysia	MYR	0.1956
Yes	Yes	NL	Netherlands	EUR	1.0000
No	Yes	NO	Norway	NOK	0.0860
No	Yes	NZ	New Zealand	NZD	0.5500
No	No	PE	Peru	PEN	0.2500
Yes	Yes	PL	Poland	PLN	0.2300
Yes	Yes	PT	Portugal	EUR	1.0000
Yes	No	RO	Romania	EUR	1.0000
No	No	SA	Saudi Arabia	SAR	0.2500
Yes	Yes	SE	Sweden	SEK	0.0880
No	No	SG	Singapore	SGD	0.6900
Yes	Yes	SI	Slovenia	EUR	1.0000
Yes	Yes	SK	Slovakia	EUR	1.0000
No	Yes	TR	Turkey	TRY	0.0290
No	Yes	UK	United Kingdom	GBP	1.1700
No	Yes	US	United States	USD	0.9400
No	No	ZA	South Africa	ZAR	0.0490

Please note that the Bulgarian Lev (BGN) is pegged to the Euro while the Danish kroner (DKK) is semi-pegged to the Euro with a fluctuation band of +/- 2.25%. Herein, we have historically considered the Danish kroner to have a fixed exchange rate with the Euro of 0.13. The Romanian New Leu (RON) is scheduled to be replaced by the Euro in 2024. In light of that Romanian operators and service providers have been offering their services using Euro prices.

### 1.3.3 Eligibility rules for plans designated as unlimited data volume plans

Unlimited data volume plans were plans with no specified finite gigabyte volume limit for a given offered speed. Mobile voice-data plans that allowed unlimited on-device data volume but either completely restricted hotspot functionality or limited the allowed data volume over hotspot functionality to a finite volume were nevertheless considered as unlimited data volume plans.

Plans where the operators (e.g., Korean operators) included high speed for a specified finite gigabyte volume and lower speed (e.g., 1, 3, 5 or 10 Mbit/s) for an unlimited data volume that kicks-in after the depletion of the high-speed volume were treated as two separated tariffs; a tariff with a finite data volume with high speed and a tariff with an unlimited data volume with lower (i.e., the throttled) speed.

Plans where the operators (e.g., US operators) reserved the right to de-prioritized the traffic and throttled the speed at unspecified rates after a specified finite data volume was depleted (e.g., 50 gigabytes) were treated as a single tariff with a finite data volume with high speeds.

Plans with unlimited data volume where video streamed at a specified lower speed (e.g., US operator standard definition 480p 1.5 Mbit/s) and where the consumers could not turn off this feature were logged as tariffs with unlimited data volume at the video specified streaming lower speed (i.e., 1.5 Mbit/s).

While European operators do include WiFi hotspot functionality in mobile voice-data plans at no extra cost for the entire finite or unlimited data volume – obliged by the EU net neutrality rules<sup>6</sup> – many non-EU operators (e.g., US or Korean operators) block altogether this functionality in some plans, include a smaller data volume for hotspot/tethering than the on-device data volume or charge additional fees for enabling the WiFi hotspot functionality for finite data volumes. Hence, the like-for-like comparison of mobile voice-data plan prices between EU and non-EU operators if WiFi hotspot functionality were to be included would yield higher prices for non-EU operators that engage in such practice.

### 1.3.4 Price metrics used to analyse the mobile and broadband plan prices

The following price metrics were used to analyse the mobile voice-data plan prices.

- a) MIN monthly price for a given gigabyte volume and a given peak speed (e.g., 100 gigabytes and 10 Mbit/s): lowest monthly retail price (including VAT and other applicable taxes) per country or per network operator among all eligible tariffs that were logged in the database that included the given gigabyte volume and the specified peak speed.
- b) MEDIAN monthly price: median monthly retail price (including VAT and other applicable taxes) per country or group of countries among all tariffs logged in the database.
- c) MEDIAN gigabyte price: median gigabyte price (retail monthly price including VAT and other applicable taxes divided by the included gigabyte allowance) per country or group of countries among all tariffs logged in the database.
- d) MAX gigabytes that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought: highest gigabytes that a given monthly EUR amount bought per country among all eligible tariffs that were logged in the database that had a peak speed equal or higher than a specified speed (e.g., 10 Mbit/s).

The median gigabyte price metric has been calculated by assigning a finite volume to tariffs that included unlimited data volume. In each release we have assigned to tariffs that included unlimited data volume the maximum finite volume sold across all countries that were included in the release.

In this 19<sup>th</sup> 1H2024 unlimited data volume plans were assigned a finite volume of 10000 gigabytes (10 terabytes). During the 1H2024 in many countries' operators sold mobile voice-data or mobile broadband plans that included named finite data volumes ranging from 1000 to 10000 gigabytes (1 to 10 terabytes). See section 5.1 of the full report for more details.

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<sup>6</sup>[https://bereg.europa.eu/eng/document\\_register/subject\\_matter/berec/download/0/6160-berec-guidelines-on-the-implementation-b\\_0.pdf](https://bereg.europa.eu/eng/document_register/subject_matter/berec/download/0/6160-berec-guidelines-on-the-implementation-b_0.pdf)

The following price metrics were used to analyse the broadband plan prices.

- a) MIN monthly price for a given gigabyte volume and a given peak speed (e.g., 1 terabyte and 100 Mbit/s): lowest monthly retail price (including VAT and other applicable taxes) per country or per network operator among all eligible tariffs that were logged in the database that included the given gigabyte volume at the specified peak speed.
- b) MEDIAN monthly price: median monthly retail price (including VAT and other applicable taxes) per country or group of countries among all tariffs logged in the database.
- c) MEDIAN terabyte price: median terabyte price (retail monthly price including VAT and other applicable taxes divided by the included terabyte allowance) per country or group of countries among all tariffs logged in the database.
- d) MAX Mbit/s that 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90 or 100 EUR bought: highest speed in Mbit/s that a given monthly EUR amount bought per country among all eligible tariffs that were logged in the database that had a data volume allowance equal or higher than a specified volume allowance (e.g., 1000 gigabyte or 1 terabyte).

For example, a plan with a monthly price of 30 Euro that included 3 terabytes had a terabyte price of 10 Euro per terabyte while a plan of 30 Euro that included unlimited data volume had a terabyte price of 3 Euro per terabyte. Plans with unlimited data volume were designated the highest finite named data volume of 10 terabytes.

## About Rewheel

Mobile data and broadband pricing, mobile operator competitiveness rankings, market modelling & analysis, competition analysis (consolidation, 4 to 3 mobile mergers, effective remedies, new market entries), MNO near-zero marginal data cost, MVNO economics, mobile capacity-only play, mobile centric convergence (MCC) pro-competitive strategies and 4<sup>th</sup> MNO business case.

Founded in 2009 and incorporated in Finland, Rewheel is a privately owned independent telecom research firm and boutique management consultancy. Our clients are mobile network operators, telco groups, MVNO groups, competition authorities, telecom sector regulators, governments, global internet firms, mobile data-centric start-ups, PE and VC investors.

Rewheel has delivered management consultancy work for clients in the United Kingdom, United States, Germany, Ireland, Switzerland, Finland, Sweden, Belgium, Greece, Poland, Slovenia, Hungary, Russia, Romania.

The following authorities have acquired access to Rewheel's independent pricing, mobile market competitiveness, 4 to 3 merger analysis and remedy assessment research: The European Commission Directorate for Competition, the United States Department of Justice, the New York, California and many other US State Attorney General Offices, the national competition authorities of Canada, Australia, the Netherlands and Greece, the Ministry of Economic Affairs of the Netherlands, the Ministry of Industry and Trade of Czechia, the Korean Electronics and Telecommunication Research Institute, the sector regulators of the United Kingdom, Germany, France, the Netherlands, Ireland, Finland, Portugal, etc.

Rewheel's mobile data pricing, strategy, competition analysis, merger assessment, network economics, spectrum, profitability and competitiveness focused reports have been cited by OECD Economic Surveys, The Economist, The Financial Times, The New York Times, Reuters, Bloomberg, WSJ and publicly referenced by the UK telecoms regulator Ofcom, BIPT, Vodafone, Telefonica, Tele2, Elisa, DNA, GSMA, VPs of the EU Commission responsible for Competition, MEPs, IEEE, ITU.

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