


## In mobile markets with only 3 mobile network operators (3-MNO markets) consumers pay billions of Euros every year in excessive fees 'oligopoly rents'

In 3-MNO mobile markets where monthly prices for 5G&4G voice-data plans are in average 2-3x higher than in 4-MNO markets consumers pay every year billions of Euros in excessive fees 'oligopoly rents'. This is a massive wealth transfer from consumers to operator executives/shareholders.

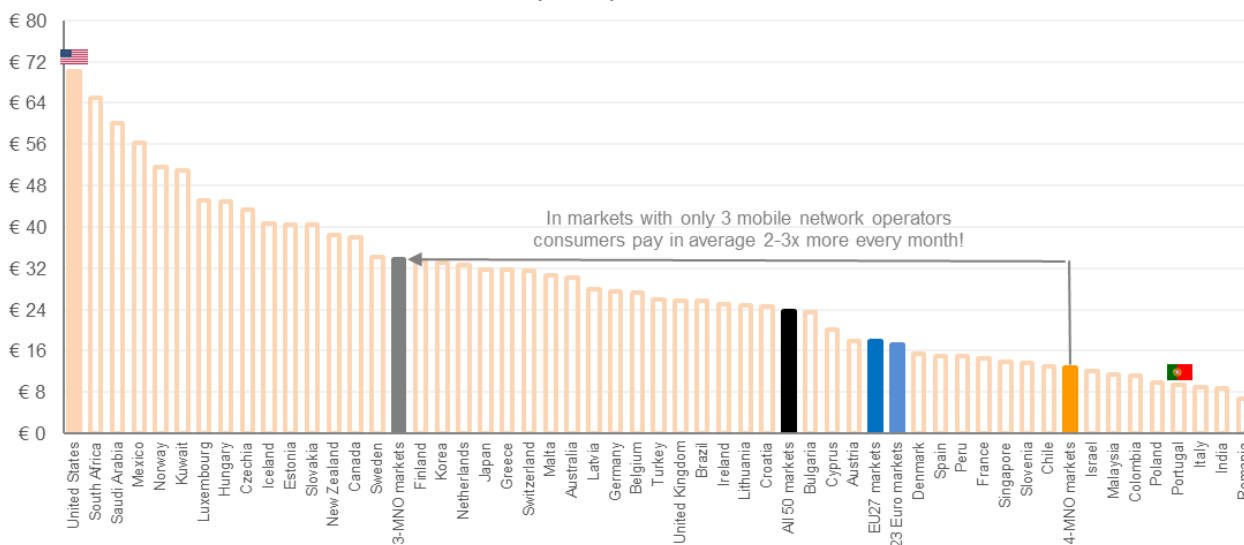
Rewheel research PRO study – April 2025

 The T-Mobile / Sprint 4-to-3 mobile merger had a devastating impact on US mobile market prices – it led to higher prices and caused substantial harm and financial losses to US consumers.

 On the contrary, the 4<sup>th</sup> MNO entry of DIGI transformed the 3-MNO Portuguese oligopoly to one of the most competitive mobile markets in 1H2025 and saved consumers billions of Euros in 'oligopoly rents'. Monthly prices fell by 57% in Portugal.

 Why does Israel, which is ranked as OECD's most expensive country has among the lowest mobile prices? €5 buys Israeli consumers 5G plans with 200 gigabytes, €10 buys 300 GB while €15 buys 1000 GB. 4-MNOs can make a huge difference in prices!

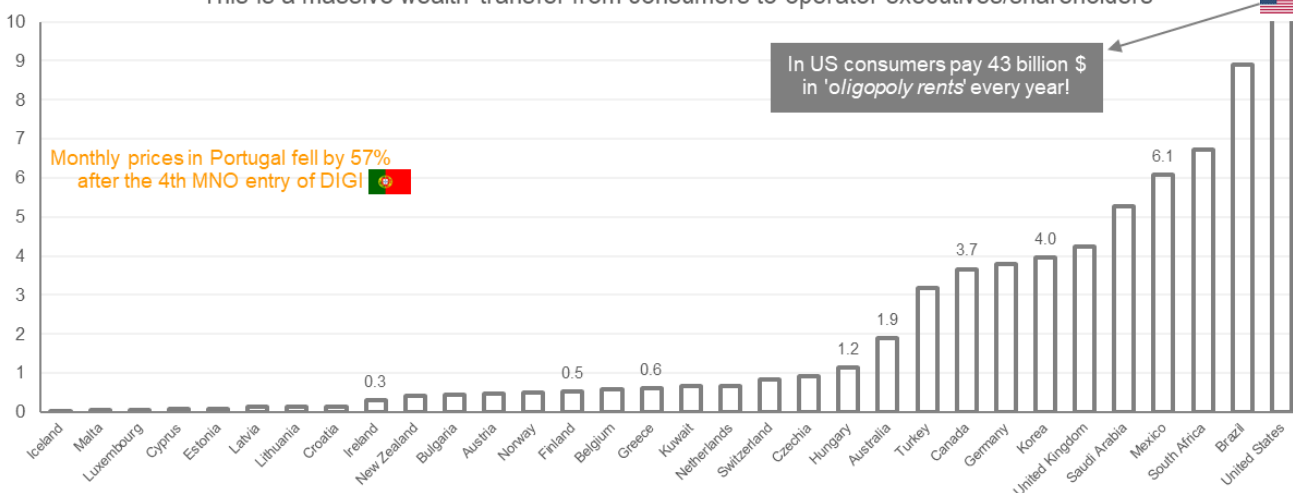
Median monthly price of 5G&4G plans with at least 1000 minutes, 50 gigabyte and 10 Mbit/s peak speed - 1H2025



Median monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU 27 mobile markets).

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In 3-MNO markets consumers pay billions of Euros every year in excessive fees 'oligopoly rents' This is a massive wealth transfer from consumers to operator executives/shareholders



Monthly prices in Portugal fell by 57% after the 4<sup>th</sup> MNO entry of DIGI 

In US consumers pay 43 billion \$ in 'oligopoly rents' every year!

The 'oligopoly rents' were calculated by assuming that in each 3-MNO mobile market consumers can conservatively save 25% every month if there was a 4th MNO. In US wireless service revenues of Verizon, ATT and T-Mobile climbed to 211 billion \$ in 2024.

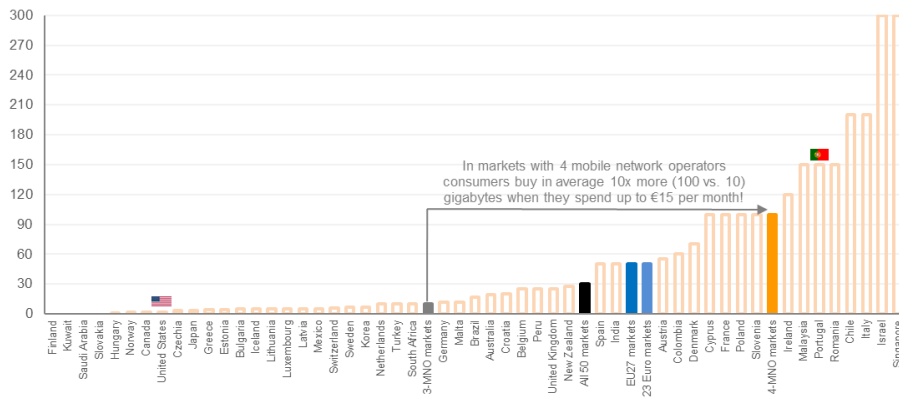
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Monthly prices are 2-3x lower and gigabyte prices are 5-6x lower in 4-MNO than in 3-MNO markets while the included gigabyte allowance in mass-market affordable plans that costs €15 or less is 10x higher (100 vs. 10 gigabytes). The prices differences between 4-MNO and 3-MNO markets are present across the 50 EU&OECD markets tracked by Rewheel, across the 30 markets tracked by Rewheel with prices dating back to 2014, across the EU27 markets (shown in previous Rewheel studies<sup>12</sup>) and as well across the 23 Euro markets.

<sup>1</sup>[https://research.rewheel.fi/downloads/Mobile\\_prices\\_2\\_to\\_5\\_times\\_lower\\_in\\_markets\\_with\\_4\\_MNOs\\_PUBLIC\\_VERSION.pdf](https://research.rewheel.fi/downloads/Mobile_prices_2_to_5_times_lower_in_markets_with_4_MNOs_PUBLIC_VERSION.pdf)

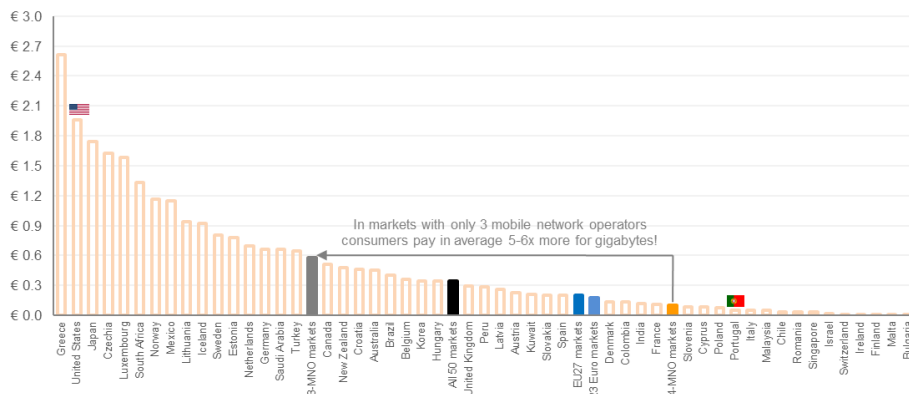
<sup>2</sup>[https://research.rewheel.fi/downloads/4G\\_5G\\_prices\\_2x\\_to\\_4x\\_lower\\_in\\_markets\\_with\\_4\\_MNOs\\_PUBLIC.pdf](https://research.rewheel.fi/downloads/4G_5G_prices_2x_to_4x_lower_in_markets_with_4_MNOs_PUBLIC.pdf)

Median gigabyte allowance of 5G&4G plans with at least 1000 minutes and a monthly price of €15 or less - 1H2025



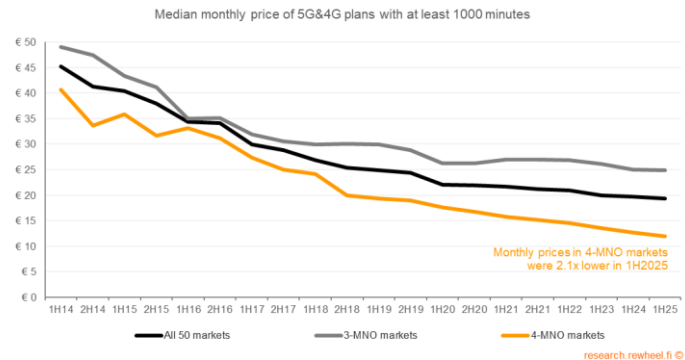
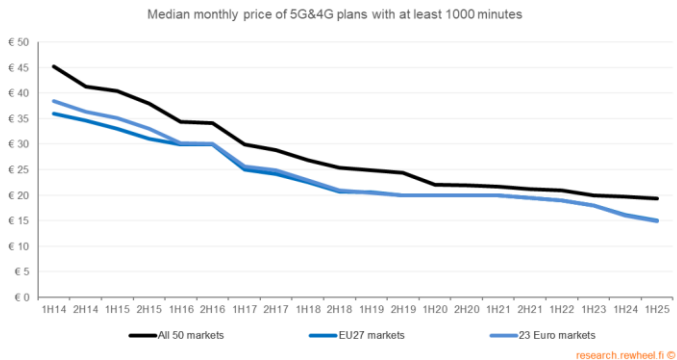
Median gigabyte allowance of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU 27 mobile markets). research.rewheel.fi ©

Median gigabyte price of 5G&4G plans with at least 1000 minutes - 1H2025



Median gigabyte price (monthly retail price incl. VAT & tax divided by included gigabyte allowance) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU 27 mobile markets). research.rewheel.fi ©

Monthly prices continue to fall faster in 4-MNO than in 3-MNO markets in the 1H2025



Report structure

The report of the 20<sup>th</sup> 1H2025 release of “The state of 5G&4G pricing in 50 EU&OECD mobile markets” study comprises of the context and methodology (Section 2) which is part of the public version of the report, a review and analysis of the latest pricing trends and historic price developments in the 50 EU&OECD, EU27 and Euro mobile markets (Section 2), an in-depth analysis of the massive differences in monthly prices, gigabyte allowances and gigabyte prices in 4-MNO vs. 3-MNO markets (Section 3), an analysis and estimation of the excessive fees ‘oligopoly rents’ paid by consumers every year in 3-MNO markets (Section 4) and market briefs containing price rankings and historic 2014-2025 price developments across the 50 EU&OECD markets tracked by Rewheel (Section 5).

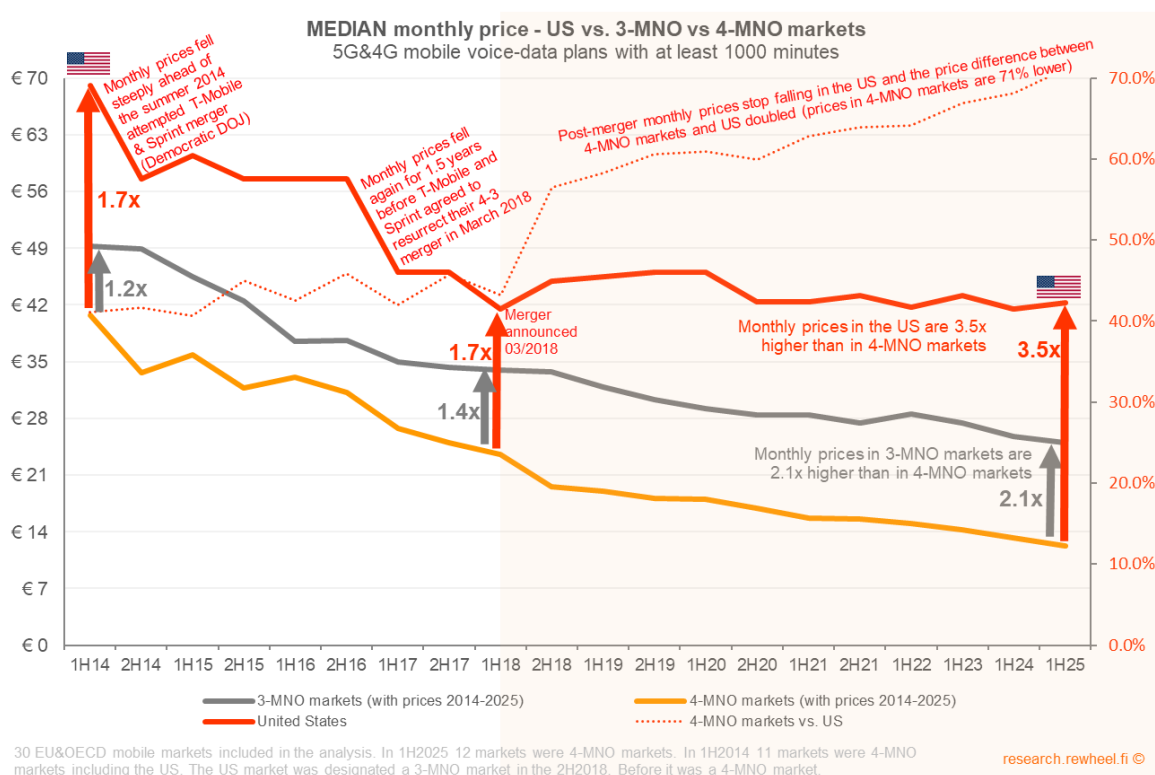
Moreover, this 20<sup>th</sup> 1H2025 release includes an in-depth analysis of the 4<sup>th</sup> MNO entry of DIGI in the Portuguese 3-MNO oligopoly (Section 5.40) and as well an in-depth analysis of the devastating impact that the T-Mobile / Sprint 4-to-3 merger had on US mobile market prices (Section 5.49). The key findings of the Portuguese and US market analysis are presented below in the public version of the report.

For the remaining 48 markets the report includes basic market information and a collection of charts that depict price rankings and historic price developments. Below in the public version of the report we have included the Finnish market brief.

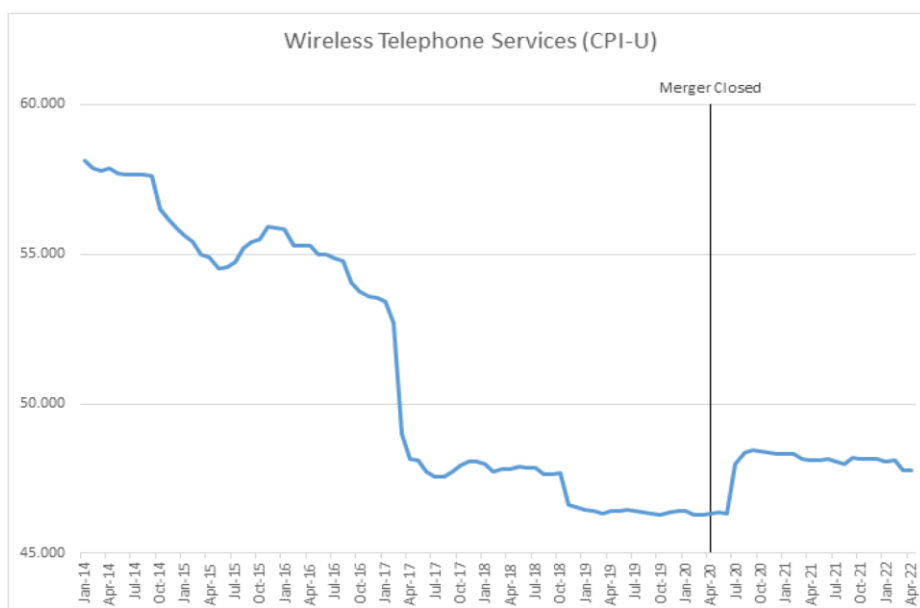
Upon request customized versions of the report with in-depth analysis of selected mobile markets and/or the entire spreadsheet database that contains more than 40000 5G&4G voice-data tariff plans dating back to 2014 could be delivered.

**The T-Mobile / Sprint 4-to-3 mobile merger had a devastating impact on US mobile market prices – it led to higher prices and caused substantial harm and financial losses to US consumers.**

While monthly mobile prices were falling across 3-MNO and across 4-MNO markets and while the same was true in the US mobile market prior to the T-Mobile / Sprint 4-to-3 mobile merger, after the merger announcement<sup>3</sup> in the 1H2018 monthly prices stop falling in the US while they continue to fall across 3-MNO markets and started to fall even faster across 4-MNO markets. The T-Mobile / Sprint 4-to-3 merger led to higher monthly prices (compare to the projected counterfactual prices i.e., absent of the merger) causing substantial harm and financial losses to US consumers.



Below we also present the Wireless Telephone Services CPI-U<sup>4</sup> (Consumer Price Index) compiled and published by the United States Bureau of Labor Statistics. According to the Bureau of Labor Statistics – which shows remarkable resemblance to Rewheel’s independent data presented above - wireless prices in the US fell sharply<sup>5</sup> in two distinct periods, in 2014-15 and again in 2017 and remained mostly flat after the merger.

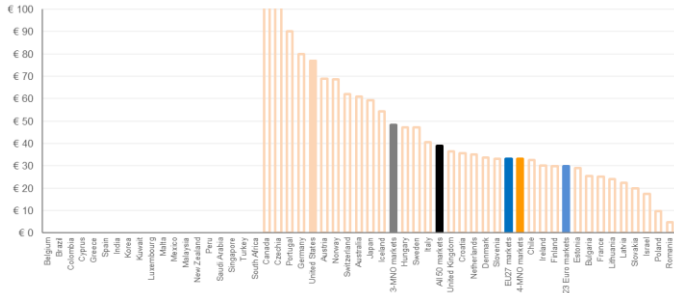


Source: Bureau of Lab. Stats., *CPI for All Urban Consumers (CPI-U), Wireless Telephone Services in U.S. City Average, All Urban Consumers, Not Seasonally Adjusted (2012-2022)*, [https://data.bls.gov/timeseries/CUUR0000SEED03?output\\_view=data](https://data.bls.gov/timeseries/CUUR0000SEED03?output_view=data) (last visited Apr. 2022).

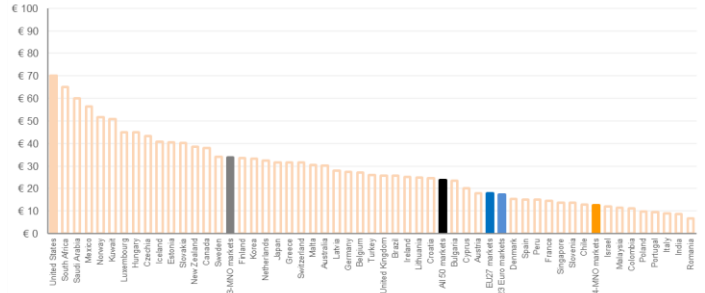
<sup>3</sup><https://www.t-mobile.com/news/press/5gforall>  
<sup>4</sup><https://www.bls.gov/cpi/factsheets/telecommunications.htm>  
<sup>5</sup>[https://data.bls.gov/timeseries/CUUR0000SEED03?output\\_view=data](https://data.bls.gov/timeseries/CUUR0000SEED03?output_view=data)

The US mobile market price rankings notably deteriorated following the T-Mobile / Sprint 4-to-3 mobile merger agreement in 2018. Prior to the merger, in the 1H2018, the US market ranked as the market with the 10<sup>th</sup>, 8<sup>th</sup>, 14<sup>th</sup>, 5<sup>th</sup> and 5<sup>th</sup> highest median monthly price of 5G&4G voice-data plans with at least 1000 minutes, 10 Mbit/s peak download speed (HD 1080p video streaming capability) and at least 10, 20, 30, 40 and 50 gigabytes respectively. Seven years later, in the 1H2025, the US mobile market became the market with the highest median monthly price of 5G&4G voice-data plans with at least 1000 minutes, 10 Mbit/s peak download speed (HD 1080p video streaming capability) and at least 20, 40 and 50 gigabytes and 2<sup>nd</sup> highest for plans with at least 10 and 30 gigabytes respectively.

Median monthly price of 5G&4G plans with at least 1000 minutes, 50 gigabyte and 10 Mbit/s peak speed - 1H2018



Median monthly price of 5G&4G plans with at least 1000 minutes, 50 gigabyte and 10 Mbit/s peak speed - 1H2025



Median monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU 27 mobile markets).

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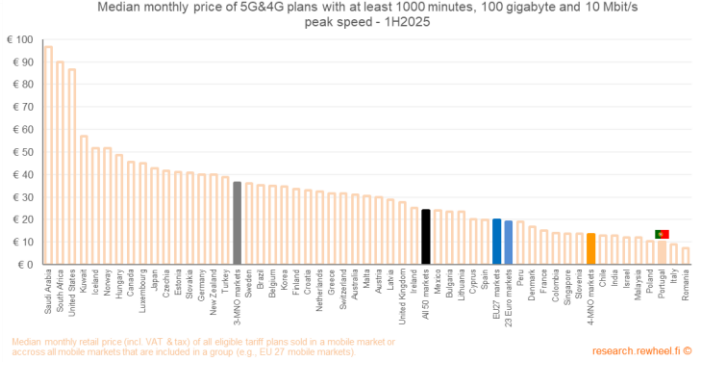
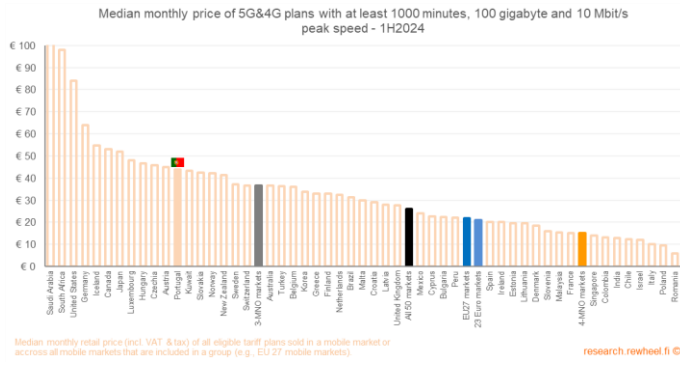
Median monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU 27 mobile markets).

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# The 4th MNO entry of DIGI turn the 3-MNO Portuguese mobile market to one of the most competitive markets in 1H2025.

What a difference an independent challenger 4th mobile network operator makes! Following DIGI's 4th MNO entry, monthly prices of 5G&4G voice-data plans more than halved and the mobile capacity of MEO, Vodafone and NOS miraculously grew, overnight, by 20x.

The 4th MNO entry of DIGI transformed the 3-MNO Portuguese oligopoly to one of the most competitive mobile markets in the 1H2025. Monthly prices of 5G&4G voice-data plans in the Portuguese mobile market, which was historically one of EU's most expensive 3-MNO markets, fell off a cliff in the 1H2025, in average by 57% and by as much as 82% compared to the 1H2024.



The Portuguese mobile market price rankings remarkably improved following the 4th MNO entry of DIGI in November 2024. Prior to the merger, in the 1H2019, the Portuguese market ranked as the market with the 4th, 6th, 5th, 3rd, 3rd and 4th highest median monthly price of 5G&4G voice-data plans with at least 1000 minutes, 10 Mbit/s peak download speed (HD 1080p video streaming capability) and at least 10, 20, 30, 40, 50 and 60 gigabytes respectively. Six years later, in the 1H2025, the Portuguese market became one of the most competitive markets with the 6th, 6th, 4th, 4th, 4th and 5th lowest median monthly price of 5G&4G voice-data plans with at least 1000 minutes, 10 Mbit/s peak download speed (HD 1080p video streaming capability) and at least 10, 20, 30, 40, 50 and 60 gigabytes respectively.

**Vodafone's Portugal plans in March 2024 in a 3-MNO market**

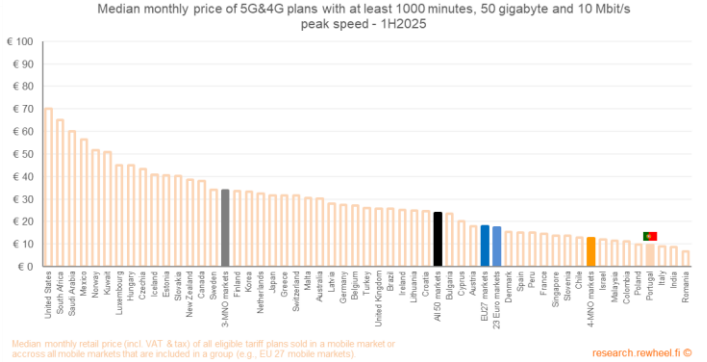
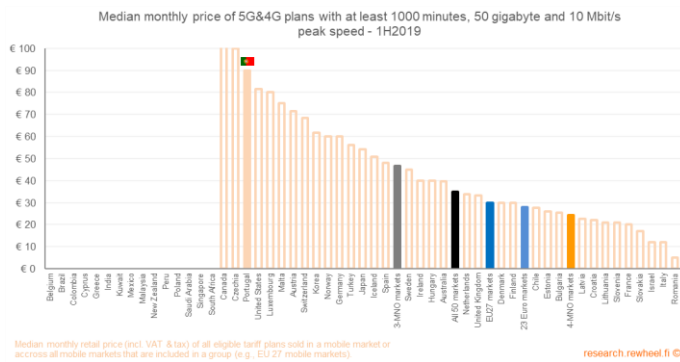
- Red 1 GB: €20,7/mês (1 GB, 3.500 min+3.500 SMS, 1 número)
- Red 5 GB: €28/mês (5 GB, 3.500 min+3.500 SMS, 1 número)
- Red 10 GB: €32,8/mês (10 GB, 3.500 min+3.500 SMS, 1 número)
- Red Infinity: €39,5/mês (ilimitados dados até 10 Mbps, minutos e SMS, 1 número)
- Red Infinity Giga: €49,5/mês (ilimitados dados até 1 Gbps, minutos e SMS, 1 número)

**Vodafone's Portugal plans in February 2025 in a 4-MNO market**

- Red e Red Infinity: €17,9/mês (250 GB, 3.500 min+3.500 SMS, 1 número)
- Red Infinity: €19,9/mês (ilimitados dados até 10 Mbps, minutos e SMS, 1 número)
- Red Infinity Giga: €24,9/mês (ilimitados dados até 1 Gbps, minutos e SMS, 1 número)

**DIGI TV, Net e Móvel**

- 4 €/mês: Móvel 50 GB (Dados acumuláveis, Chamadas ilimitadas nacionais)
- 5 €/mês: Móvel 100 GB (Dados acumuláveis, Chamadas ilimitadas nacionais)
- 6 €/mês: Móvel 150 GB (Dados acumuláveis, Chamadas ilimitadas nacionais)
- 9 €/mês: Móvel 200 GB (Dados acumuláveis, Chamadas ilimitadas nacionais, 400 minutos internacionais)



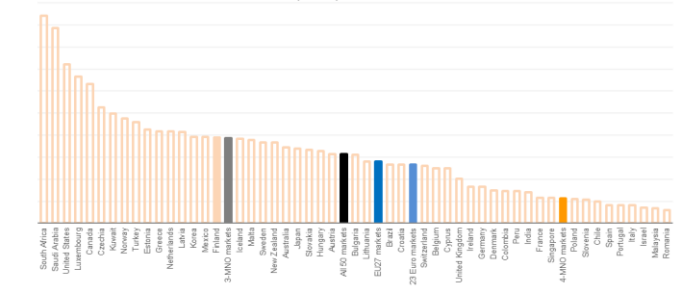
FI - Finland

Population: 5 617 310 Mobile market: 3 MNOs Elisa-FI, Telia-FI, DNA-FI

Mobile service providers: Elisa, Telia, DNA, Moi

Lowest monthly price for a 5G&4G voice-data plan with at least 1000 minutes, 100 gigabytes and 10 Mbit/s peak download speed (€23.28 sold by Telia).

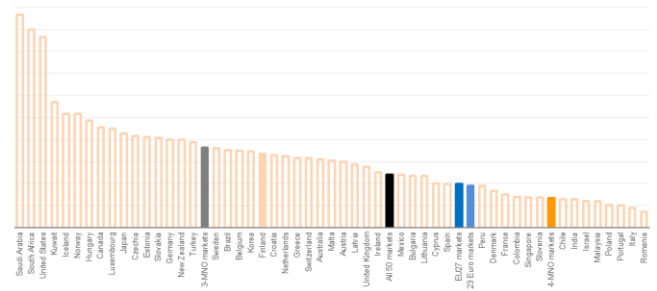
Minimum monthly price of 5G&4G plans with at least 1000 minutes, 100 gigabyte and 10 Mbit/s peak speed - 1H2025



Minimum monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market. For group of markets the bars depict the median among the market minimum monthly prices (e.g., EU27 mobile markets).

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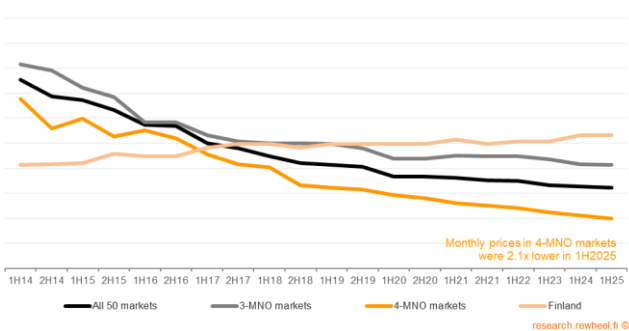
Median monthly price of 5G&4G plans with at least 1000 minutes, 100 gigabyte and 10 Mbit/s peak speed - 1H2025



Median monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU27 mobile markets).

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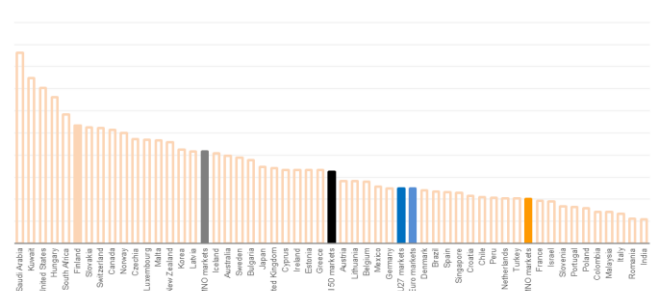
Median monthly price of 5G&4G plans with at least 1000 minutes



Monthly prices in 4-MNO markets were 2.1x lower in 1H2025

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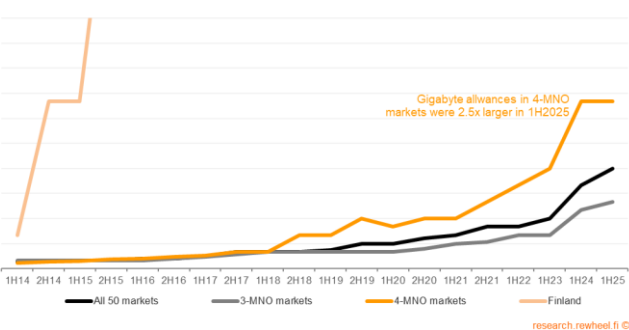
Median monthly price of 5G&4G plans with at least 1000 minutes - 1H2025



Median monthly retail price (incl. VAT & tax) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU27 mobile markets).

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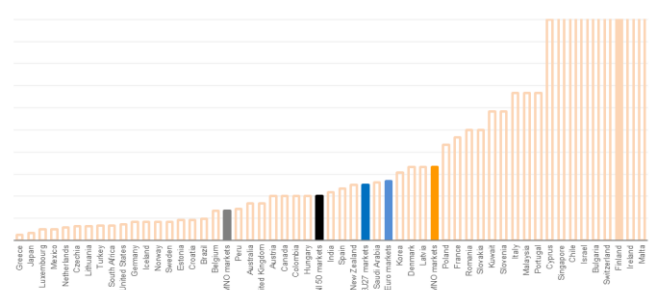
Median gigabyte allowance of 5G&4G plans with at least 1000 minutes



Gigabyte allowances in 4-MNO markets were 2.5x larger in 1H2025

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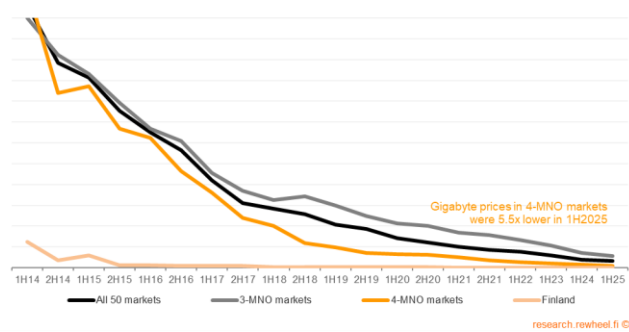
Median gigabyte allowance of 5G&4G plans with at least 1000 minutes - 1H2025



Median gigabyte allowance of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU27 mobile markets).

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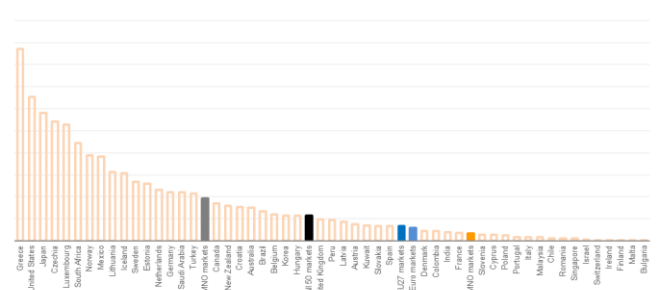
Median gigabyte price of 5G&4G plans with at least 1000 minutes



Gigabyte prices in 4-MNO markets were 5.5x lower in 1H2025

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Median gigabyte price of 5G&4G plans with at least 1000 minutes - 1H2025



Median gigabyte price (monthly retail price incl. VAT & tax divided by included gigabyte allowance) of all eligible tariff plans sold in a mobile market or across all mobile markets that are included in a group (e.g., EU27 mobile markets).

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## About Rewheel

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## 1 Context and methodology

Rewheel has been tracking mobile prices since 2012. Rewheel first international comparison study<sup>6</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>7</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>8</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>9</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.

In April 2024, we published<sup>10</sup> the 19<sup>th</sup> release of our 5G&4G price comparison series titled “*The state of mobile and broadband pricing – 1H2024*” with mobile voice-data, mobile broadband fixed broadband plan prices from 50 European, American, Asia Pacific, Middle East and African countries.

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

In this 20<sup>th</sup> release we tracked and analysed 5G&4G voice-data plan prices across 50 European, American, Asia Pacific, Middle East and African countries. The 50 countries included 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 the 19<sup>th</sup> release, i.e., (1H2024), we stopped tracking prices in China. We 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 prerequisites for including a market in the comparison is that the market should broadly operate with open market rules. Moreover, the state must not exert direct or indirect control on all or most 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.

<sup>6</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>7</sup>[https://ec.europa.eu/commission/presscorner/detail/en/speech\\_13\\_168](https://ec.europa.eu/commission/presscorner/detail/en/speech_13_168)

<sup>8</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>9</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)

<sup>10</sup>[https://research.rewheel.fi/downloads/The\\_state\\_of\\_mobile\\_and\\_broadband\\_pricing\\_1H2024\\_PUBLIC\\_REDACTED\\_VERSION.pdf](https://research.rewheel.fi/downloads/The_state_of_mobile_and_broadband_pricing_1H2024_PUBLIC_REDACTED_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 Mobile (wireless) voice-data plans tracked and analysed in this 20<sup>th</sup> release 1H2025

Herein, we tracked and analysed 5G&4G voice-data plan prices. We have included in the comparison the following eligible 5G&4G voice-data plans: 5G plans (with a 4G fallback) having at least 1000 national minutes, 1 gigabyte of data volume and 1 Mbit/s peak download speed and 4G plans having at least national 1000 minutes, 1 gigabyte of data volume and 1 Mbit/s peak download 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>11</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 1H2025 in all of the 50 European, American, Asia Pacific and Middle East countries (South Africa is an exception) 5G&4G 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, Portugal 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.

### 1.3.1 Mobile network operators (MNOs), network operator sub-brands and mobile virtual network operators (MVNOs)

In this 20<sup>th</sup> release 1H2025 we tracked prices from 169 mobile network operators (MNOs), 118 network operator sub-brands and 135 virtual network operators (VNOs). The MNOs, MNO main brands, sub-brands and MVNOs that were present in each market during the 1H2025 and which sold eligible plans are listed in the market brief section 5 of the full report.

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

This 20<sup>th</sup> release 1H2025 contains over 2775 5G&4G voice-data plan tariffs. The entire database includes well over 40000 tariff plans.

Tariffs were collected from the service providers' websites during February and March 2025. 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 5G&4G voice-data plans were 5G or 4G LTE plans with at least 1000 national minutes (to all domestic mobile and fixed networks), 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.

Please note that starting from the 19<sup>th</sup> release 1H2024 the 5G&4G 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 plans were monthly rolling plans (both postpaid and prepaid plans with automatic 28- or 30-day renewal) that were available to all consumers. Plans with 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 5G&4G voice-data plans, the offered peak download speed of data, the plan technology (5G or 4G for voice-data plans), the tariff name together with any applicable options or subsidies and finally the URL of the operator.

<sup>11</sup>[http://research.rewheel.fi/insights/2014\\_june\\_ranking/](http://research.rewheel.fi/insights/2014_june_ranking/)

Please note that starting with this 20<sup>th</sup> release (1H2025) we have retroactively apply a change in the way we logged the tariff plan speed to all previous releases. While in releases 1 (1H2014) to 18 (1H2023) 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 from the 19<sup>th</sup> release (1H2024) onwards 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 peak speed offered we logged 50 Mbit/s as a typical 4G peak tariff download speed and 100 Mbit/s a typical 5G peak tariff download speed. The new speed rule i.e., if the service provider did not specify a peak download speed, then 50 Mbit/s has been logged for 4G tariffs or 100 Mbit/s for 5G tariffs has now been applied across all (1-20) releases. Please note that for tariffs that the service provider restricted the peak download speed either for the entire data volume or after the depletion of a high-speed volume (e.g. 100 gigabytes) to a lower speed (e.g., 1 Mbit/s) both the unrestricted and restricted speeds were logged in the database.

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, 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.

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 and fees 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 non-Euro countries are converted to Euros 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 0.96 as seen in the table below. In this latest release historic US prices (i.e., 2014 to 1H2025 prices) were converted to EUR using a flat 0.96 exchange rate.

EU OECD		Code	Country Name	1H14	2H14	1H15	2H15	1H16	2H16	1H17	2H17	1H18	2H18	1H19	2H19	1H20	2H20	1H21	2H21	1H22	1H23	1H24	1H25
No	Yes	US	United States	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	0.9600

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 2026. In light of that Romanian operators and service providers have been offering their services using Euro prices.

EU	OECD	Code	Country Name	1H25
Yes	Yes	AT	Austria	1.0000
No	Yes	AU	Australia	0.6100
Yes	Yes	BE	Belgium	1.0000
Yes	No	BG	Bulgaria	0.5100
No	No	BR	Brazil	0.1600
No	Yes	CA	Canada	0.6700
No	Yes	CH	Switzerland	1.0500
No	Yes	CL	Chile	0.0010
No	Yes	CO	Colombia	0.0002
Yes	No	CY	Cyprus	1.0000
Yes	Yes	CZ	Czechia	0.0400
Yes	Yes	DE	Germany	1.0000
Yes	Yes	DK	Denmark	0.1300
Yes	Yes	EE	Estonia	1.0000
Yes	Yes	EL	Greece	1.0000
Yes	Yes	ES	Spain	1.0000
Yes	Yes	FI	Finland	1.0000
Yes	Yes	FR	France	1.0000
Yes	No	HR	Croatia	1.0000
Yes	Yes	HU	Hungary	0.0025
Yes	Yes	IE	Ireland	1.0000
No	Yes	IL	Israel	0.2700
No	No	IN	India	0.0110
No	Yes	IS	Iceland	0.0068
Yes	Yes	IT	Italy	1.0000
No	Yes	JP	Japan	0.0064
No	Yes	KR	Korea	0.0007
No	No	KW	Kuwait	2.9900
Yes	No	LT	Lithuania	1.0000
Yes	Yes	LU	Luxembourg	1.0000
Yes	Yes	LV	Latvia	1.0000
Yes	No	MT	Malta	1.0000
No	Yes	MX	Mexico	0.0470
No	No	MY	Malaysia	0.2074
Yes	Yes	NL	Netherlands	1.0000
No	Yes	NO	Norway	0.0860
No	Yes	NZ	New Zealand	0.5500
No	No	PE	Peru	0.2500
Yes	Yes	PL	Poland	0.2400
Yes	Yes	PT	Portugal	1.0000
Yes	No	RO	Romania	1.0000
No	No	SA	Saudi Arabia	0.2500
Yes	Yes	SE	Sweden	0.0900
No	No	SG	Singapore	0.6900
Yes	Yes	SI	Slovenia	1.0000
Yes	Yes	SK	Slovakia	1.0000
No	Yes	TR	Turkey	0.0250
No	Yes	UK	United Kingdom	1.2100
No	Yes	US	United States	0.9600
No	No	ZA	South Africa	0.0500

### 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. 5G&4G 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 were 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 were 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 were 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 5G&4G voice-data plans at no extra cost for the entire finite or unlimited data volume – obliged by the EU net neutrality rules<sup>12</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 definitions

The following price metrics were used to analyse the mobile voice-data plan prices. The price metrics were applied to mobile markets, groups of mobile markets (e.g. EU 27 mobile markets) or mobile network operators.

- a) Median monthly price for tariffs with a given gigabyte volume and a given peak speed (e.g., 100 gigabytes and 10 Mbit/s): median monthly retail price (including VAT and other applicable taxes and fees) among all eligible tariffs that were logged in the database that included the given gigabyte volume at the specified peak speed.
- b) Median gigabyte price for tariffs with a given gigabyte volume and a given peak speed (e.g., 100 gigabytes and 10 Mbit/s): median gigabyte retail price (retail monthly price including VAT and other applicable taxes and fees divided by the included gigabyte allowance) among all eligible tariffs that were logged in the database that included the given gigabyte volume at the specified peak speed.
- c) Minimum monthly price for tariffs with 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 and fees) among all eligible tariffs that were logged in the database that included the given gigabyte volume at the specified peak speed.
- d) Median gigabytes that 5, 10, 15, 20, 25, 30 EUR bought for tariffs with a given gigabyte volume and a given peak speed (e.g., 100 gigabytes and 10 Mbit/s): median gigabytes that a given monthly EUR amount bought among all eligible tariffs that were logged in the database that included the given gigabyte volume at the specified peak speed.

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 20<sup>th</sup> 1H2025 unlimited data volume plans were assigned a finite volume of 10000 gigabytes (10 terabytes). During the 1H2025 in many countries' operators sold mobile voice-data plans that included named finite data volumes ranging from 1000 to 3240 gigabytes (1 to 3.24 terabytes).

#### 1.3.5 Important notes

Please note that in this 20<sup>th</sup> 1H2025 release we have retroactively included across all 20 releases an estimated amount of taxes & fees to all US, Canadian and Indian mobile voice-data plans that did not already include taxes & fees and for which taxes & fees were applicable. Across these three markets because taxes and fees vary across states, regions and/or territories operators more often than not display the plan monthly fee without including the applicable amount of taxes & fees and in many cases without even notifying consumers that the listed price does not include taxes & fees.

We have used a 20% average<sup>13</sup> taxes & fees surcharge for US plans, 13% for Canadian plans (Ontario HST tax) and 18% for Indian post-paid plans.

Due to this retroactive operation please note that historic prices presented in this 20<sup>th</sup> release are not backward compatible with previous releases.

<sup>12</sup>[https://bereg.europa.eu/eng/document\\_register/subject\\_matter/bereg/download/0/6160-bereg-guidelines-on-the-implementation-b\\_0.pdf](https://bereg.europa.eu/eng/document_register/subject_matter/bereg/download/0/6160-bereg-guidelines-on-the-implementation-b_0.pdf)

<sup>13</sup><https://taxfoundation.org/data/all/state/wireless-taxes-cell-phone-tax-rates-by-state-2024/>



## 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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