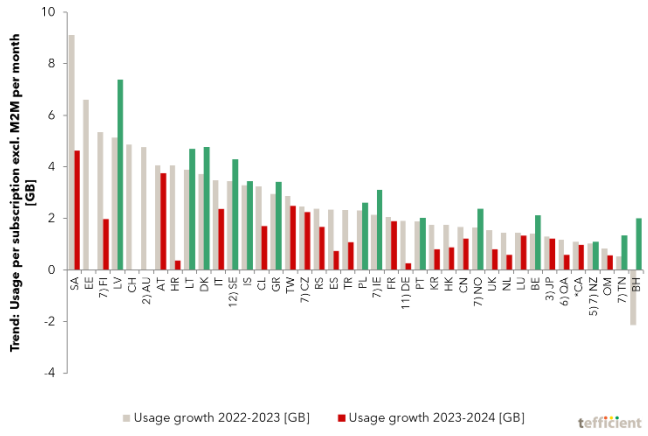
tefficient

Industry analysis #1 2025

Mobile data – full year 2024 – excluding M2M/IoT

The demand for additional mobile data is weaker than ever – ARPU growth softens



Tefficient's 44th public analysis of mobile data trends and drivers compares data from 40 countries, where M2M/IoT can be excluded from the total bases. Mobile data usage grew year-on-year in every country, with Saudi Arabia maintaining its position as the usage leader and Latvia emerging as the new runner-up.

However, growth rates have decelerated. Greece recorded the highest annual increase at 38%, while Croatia posted the lowest at just 2%. Even in absolute terms [incremental GB per subscription], most countries experienced slower growth in 2024 than in 2023. Overall, the demand for more mobile data is weaker than ever – although FWA is included in most figures.

Data-only subscriptions, while still representing a small share of the market, continue to drive average usage levels. Latvia led with 195 GB per month in 2024, followed by Austria with 132 GB and Sweden with 131 GB. In the pure FWA segment, Australia topped the chart with 469 GB per month in the first half of 2024, followed by Sweden with 331 GB and Ireland with 317 GB.

In contrast to data-only subscriptions, the impact of 5G on overall traffic remains limited – except in South Korea, Austria, Saudi Arabia, and Lithuania.

Mobile service revenue per gigabyte continued to decline, though at a slower pace than before. Greece saw the steepest drop at 26%. However, inflation-hit Turkey again saw a surge in revenue per gigabyte. For the first time, three other countries – Oman, Finland, and Croatia – also recorded increases.

Overall, 60% of the markets saw ARPU growth aligned with higher data usage – a softer outcome compared to the previous edition of this analysis.

The M2M/IoT reporting dilemma

This page is about methodology issues and can be skipped.

Regulators' reporting of M2M/IoT[1] subscriptions continues to create a challenge for the comparability between countries. To make this *excluding-M2M* analysis, we had to exclude countries where M2M subscriptions aren't broken out in the reporting of the respective regulator[2]: USA, Singapore, Romania, India, Mexico, Malaysia, Peru, Pakistan, Slovenia, and Cyprus.

To allow full comparability between countries in this excluding-M2M context, regulators must break out all these three data points in their reporting:

1. M2M subscriber base
2. M2M data traffic
3. M2M revenue

This is done in four countries: **Sweden**, **Norway**, **Greece**, and **Bahrain**. We appreciate that the regulators PTS, Nkom, EETT, and TRA have done this since it allows us to calculate the error that would be made if only the M2M subscriber base (but not the M2M data traffic nor M2M revenue) was reported.

Taiwan and **New Zealand** exclude M2M from all three data points and is therefore also fully correct and comparable. **Qatar** also excludes M2M from all three data points but only reports its base of data-enabled mobile subscriptions, excluding voice-only subscriptions.

For **Australia**, M2M base and M2M traffic are reported and as Telstra breaks out M2M revenue in its reporting, it has been excluded (but not the M2M revenue of the other two MNOs, Optus and TPG Telecom, as these aren't reported).

The regulators in the remaining countries most often only break out M2M subscriptions – not M2M data traffic and seldomly M2M revenue. For these markets, the consequence of this is:

- The **mobile data usage is slightly overstated** as the M2M data traffic is included, but not the M2M base.
- Since the M2M data traffic and the M2M revenue is included, the **revenue per GB is affected, likely overstated**.
- Since the M2M revenue is included, but not the M2M base, the **ARPU is slightly overstated**.

The error is estimated to be less than 1% on the usage side and 1-3% on the revenue side.

[1] Hereafter called M2M.
[2] In the case of USA, the industry association CTIA.

The FWA reporting dilemma

This page is also about methodology issues and can be skipped.

In addition to M2M/IoT, the reporting of FWA subscriptions create a challenge for the comparability between countries. Our ambition is to have **mobile-based FWA included** in this report as FWA subscribers generate traffic on the mobile networks and often substitute the more historical mobile broadband subscriptions (MBB) which always were regarded as mobile.

Most regulators also regard mobile-based FWA as a mobile broadband service, but some regard it as a fixed broadband service. The latter is no problem if the FWA subscription base, the FWA data traffic and the FWA revenue are reported. When can then reallocate FWA into mobile and get an apple-to-apple comparison with those countries that include it in mobile from the outset.

But there are a few countries that regard mobile-based FWA as a fixed broadband service – *without* reporting FWA subscription base, FWA data traffic and FWA revenue (or parts thereof).

Where it is impossible to add mobile-based FWA back into mobile, we have still included these countries but with a "7) Excl. FWA" note. At present, this is the case for **seven of our 40 countries**:

- Czechia
- Finland
- Germany
- Ireland
- New Zealand
- Norway
- Tunisia

But within this group of countries, there are still definition differences.

In **Finland**, only the FWA subscriptions that come with a performance commitment or where capacity has been reserved are excluded. This is a small subset of the overall FWA market in Finland.

For **Germany**, this is true only from 2024 onwards. This means, regretfully, that when we look at the German trends from 2023 to 2024, mobile-based FWA is included the first year, but not the latter year.

For **Ireland** we will, for some metrics, be able to show also the FWA-only value.

When excluding M2M, data usage is still growing year-on-year in all countries

Figure 1 shows the development of mobile data usage for 40 countries where regulators report mobile data traffic and where M2M subscribers can be excluded from the total mobile base. The usage is shown per mobile subscription[3] per month. Compared to the last version of this analysis, we added **Serbia, Oman, and Tunisia**[4].

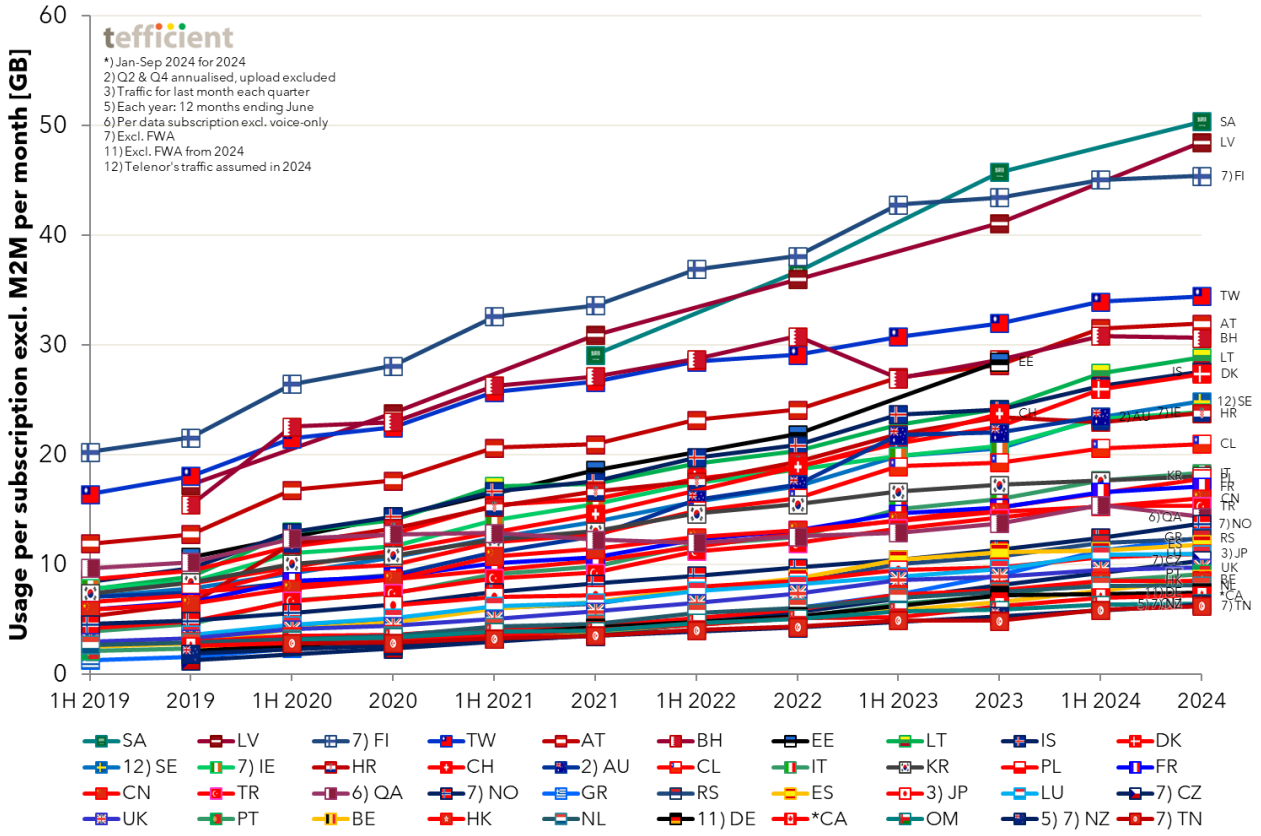


Figure 1. Development of mobile data usage per subscription (excl. M2M) per month – the legend shows the ranking[5]

Let's start from the top of the chart: The average mobile subscription in **Saudi Arabia** consumed **50.4 GB** of mobile data per month in 2024. **Latvia** is the new runner-up with 48.5 GB. **Finland**, the long-term historical leader in our analyses, is now third-ranked with its **45.4 GB** per month.

Finland excludes the traffic from about 60k fixed wireless access (FWA) subscribers with a performance commitment or capacity reservation, though. Since such FWA customers likely have very high usage,

[3] Including also mobile subscriptions without a subscription of mobile data (if any), i.e. the total mobile subscription base.
[4] Hungary and Brazil were retired due to detailed enough data not reported in a long time.
[5] Some countries will report full year/2H 2024 but haven't yet: Australia, Estonia, and Switzerland. Some countries have not yet reported 2024 revenues: Denmark, Czechia, Bahrain, and Serbia. For Canada, Q1-Q3 2024 is used since the full year of 2024 isn't reported in all details yet.

Finland could possibly have been higher ranked if that traffic was included, but it is not broken out of the regulator's reported fixed broadband traffic.

Taiwan is now a distant number four while **Austria** is fifth-ranked just ahead of **Bahrain**.

Looking for explanations to the high usage levels, **5G FWA** plays a key role in Saudi Arabia, but no numbers are reported specifically for FWA. FWA has for long been an important part of **Latvia**'s broadband base, but the introduction of 5G FWA has accelerated the traffic development since 2023. As to Finland, **86%** of the Finnish non-M2M subscriptions had **unlimited data volume** in December 2024. If we exclude voice-only subscriptions, that share grows to 89%. No other country is as unlimited as Finland.

Unlimited, not FWA, is behind **Taiwan**'s development since mid-2018, but usage growth slowed in the past years following attempts by the Taiwanese operators to bring rationality back into the market. The relatively late (mid-2020) introduction of 5G provided the Taiwanese operators with the tool they needed to turn the ARPU erosion around when the two challenger MNOs[6] couldn't follow pace in 5G. Unlimited is still very much a standard, but with 5G it comes with a tiered premium.

Austria is one of the older FWA markets globally and since Austria also is one of Europe's fibre roll-out laggards, it's interesting to speculate what the chicken is and what the egg is.

Although the legend below Figure 1 shows the ranking of the 40 countries, it's difficult to spot them all. Figure 2 offers an easier visualisation.

[6] There are now just three MNOs left in Taiwan. In 2023, Taiwan Mobile acquired Taiwan Star (T Star) and FarEasTone acquired APT (Gt).

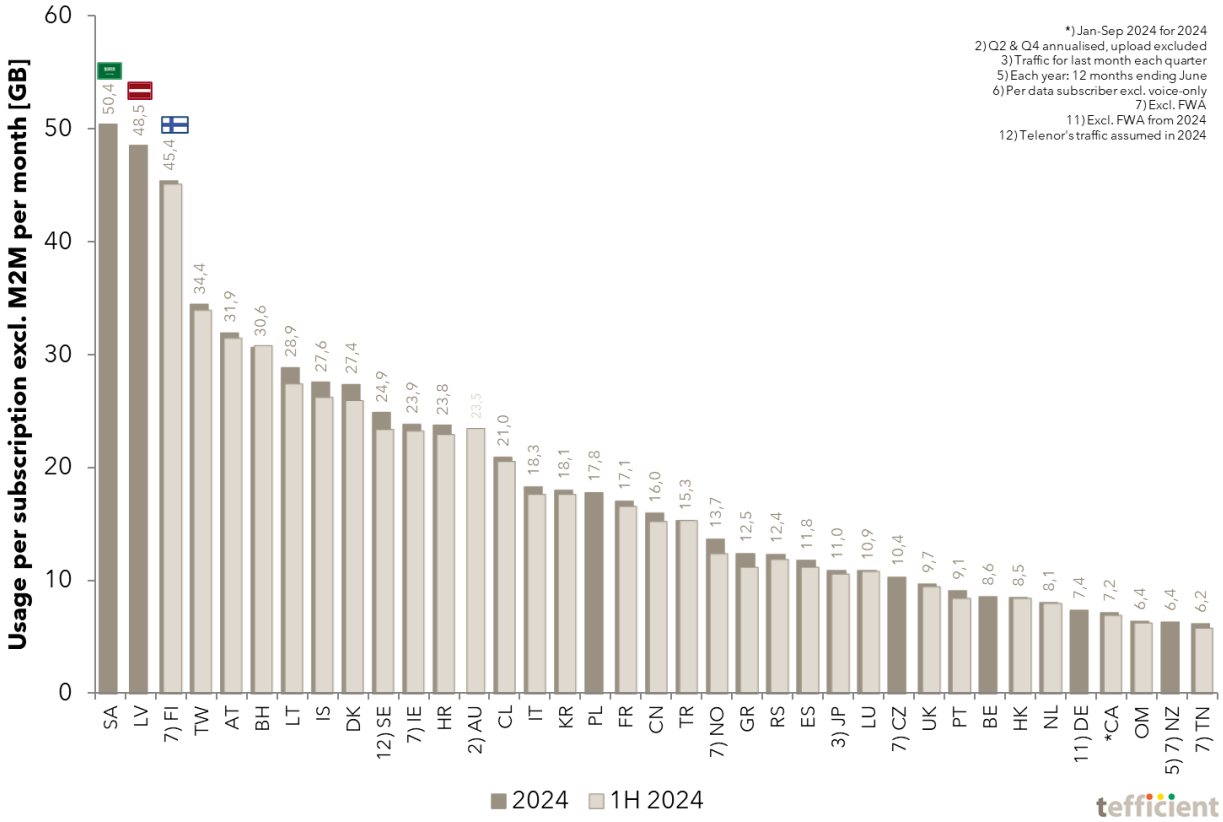


Figure 2. Mobile data usage per subscription (excl. M2M) per month, full year 2024 and first half of 2024

In comparison to our historical reports there's not much dark grey on top of the 1H 2024 light grey bars which shows that for most markets, there was little usage growth in the second half of 2024.

The markets with the lowest data usage in Figure 2 are **Tunisia**[7], **New Zealand**[8], **Oman**, **Canada**, **Germany**[9], the **Netherlands**, **Hong Kong**, **Belgium**, **Portugal**, and the **UK**.

Figure 3 is a zoom-in on the lower end of Figure 1.

[7] Note that FWA traffic is excluded from the reported mobile data traffic of the regulator.
[8] For the year to June 2024.
[9] Note that FWA traffic is excluded from the reported mobile data traffic of the regulator from 2024.

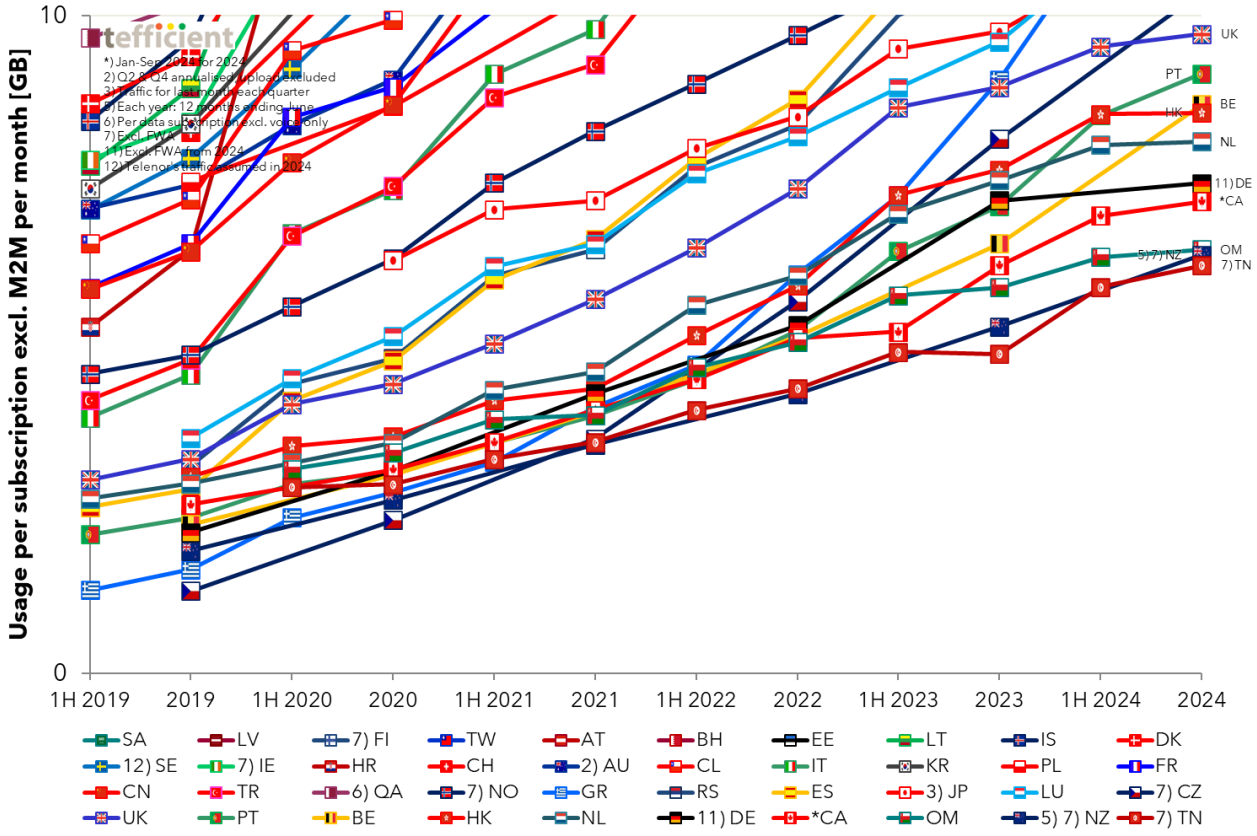


Figure 3. Development of mobile data usage per subscription (excl. M2M) per month [zoom-in on low end]

There are only ten countries left with a usage lower than 10 GB per month among our 40. Some of them, like **Belgium** with 32% and **Portugal**, **Tunisia**, and **Czechia** – all with 28% – show faster usage year-over-year growth than e.g. the **Netherlands** with just 8%.

Data usage growth once again fastest in Greece

Figure 4 shows the growth in average usage per subscription between 2023 and 2024.

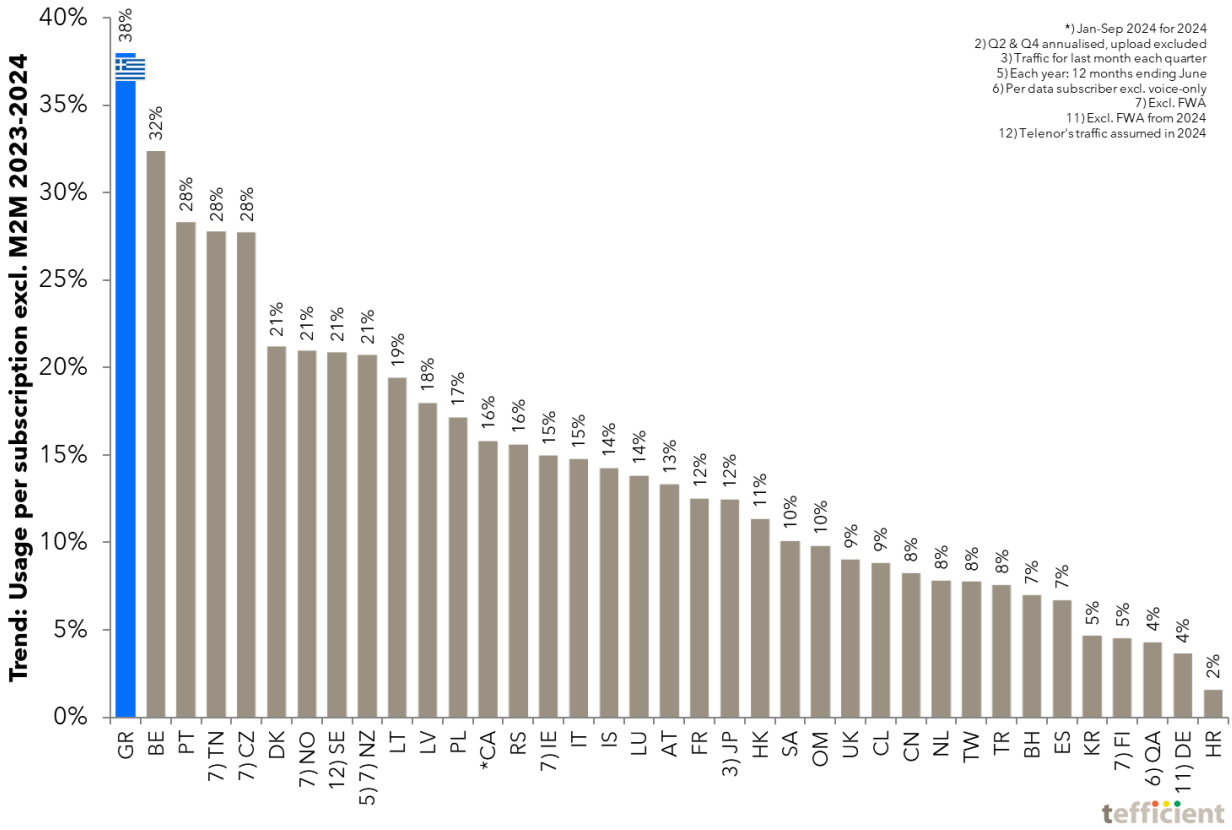


Figure 4. Development of mobile data usage per subscription (excl. M2M) 2023-2024 [in %]

Of the countries that have reported 2024 to date, **Greece** had the fastest growth in mobile data usage, **38%**. **Belgium** is the runner-up with 32%. Three countries, **Portugal**, **Tunisia**, and **Czechia**, follow with 28%.

At the right end of the scale, we find **Croatia** with a growth of just **2%**. **Germany**, **Qatar**, **Finland**, and **South Korea** grew marginally faster, 4-5%, but then we should remember that the German regulator for the first time omitted FWA from the mobile data traffic in 2024 which most certainly affected the growth rate negatively.

Croatia had the slowest usage growth, Greece the fastest.

If we compare the usage growth rates with that of the previous year, see Figure 5, we observe that usage growth rates most often have declined.

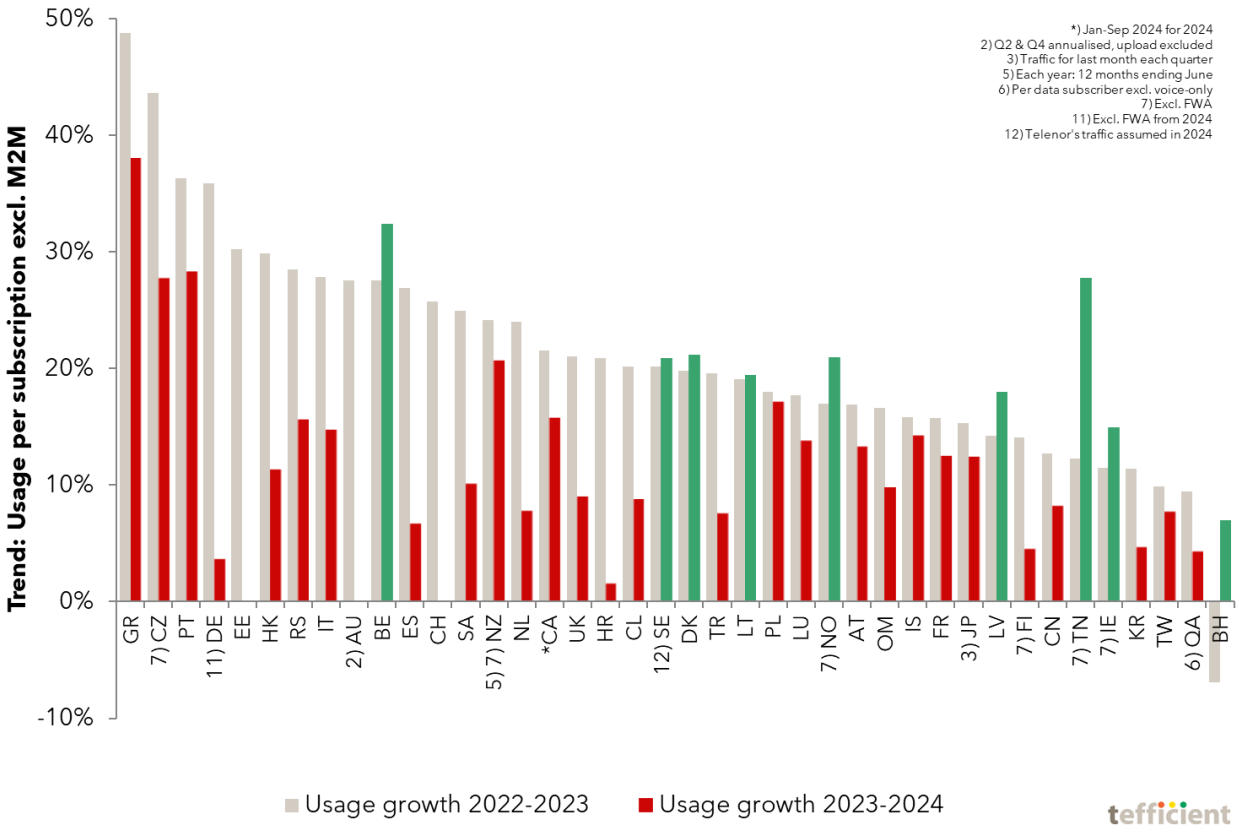


Figure 5. Development of mobile data usage per subscription (excl. M2M) 2023-2024 vs. 2022-2023 [in %]

Of our 40 countries, only 9 (green bars) exhibited an increase in the usage growth rate in 2024 compared to the previous year. In 28 countries (red bars), the usage growth rate was decelerating. 3 countries have not yet reported 2024.

But Figures 4 and 5 are showing relative growth. How would it look in absolute terms? Maybe the absolute growth [in GB] doesn't decline? Figure 6 shows how many *incremental* GB the average mobile subscription used in a month in 2024 vs. in 2023 – compared to 2023 vs. 2022.

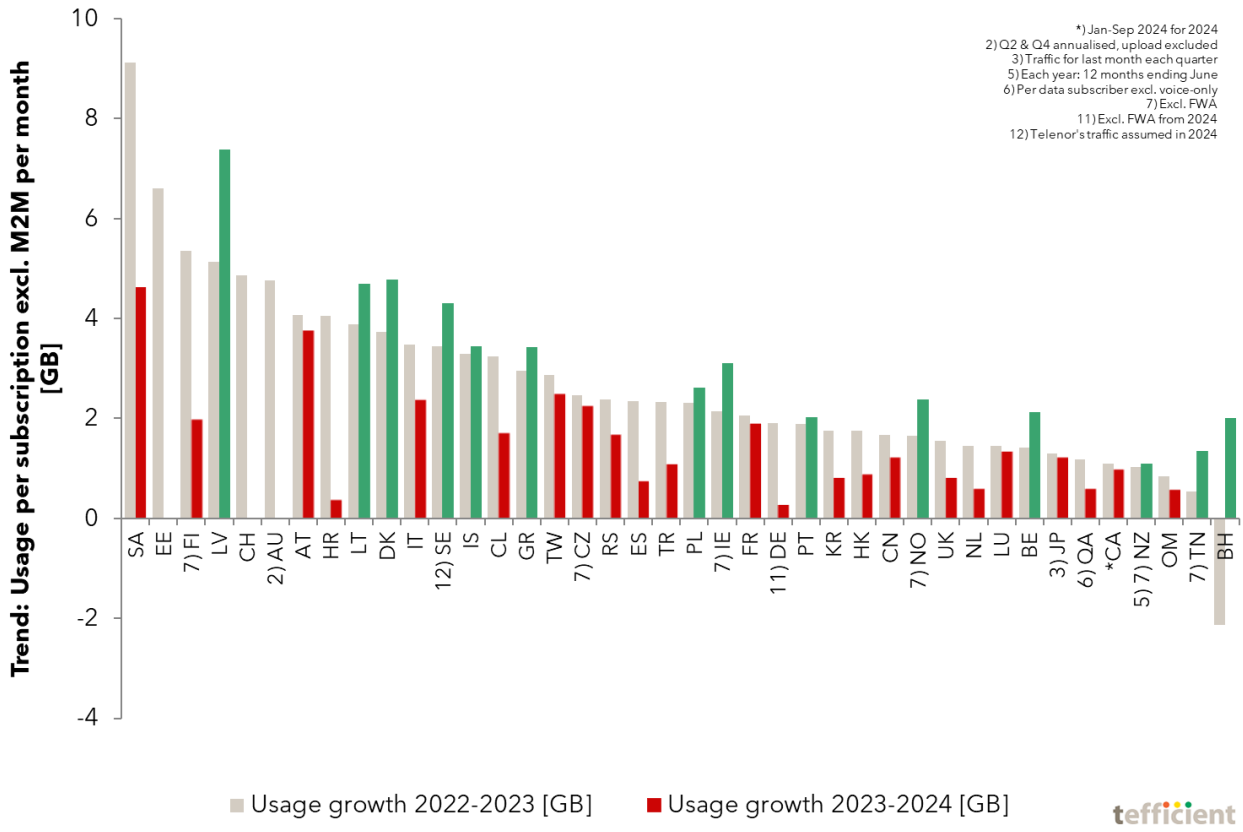


Figure 6. Development of mobile data usage per subscription (excl. M2M) per month 2023-2024 vs. 2022-2023 [in incremental GB]

It is still more red than green, regretfully:

- 23 of 40 countries had slower usage growth [in GB] in 2024 than in 2023
- 14 of 40 countries had faster usage growth [in GB]
- 3 of 40 countries haven't yet reported 2024

So regardless of how one presents it, the **mobile data usage growth is decelerating in a clear majority of countries**. This happens although FWA traffic is included for 33 of these 40 countries, i.e. even FWA appears to be an insufficient compensation for the weakening demand of additional mobile data. This is water to the mill for the believers of the S-curve theory.

This deceleration trend is bad news for mobile operators, and it appears to have a negative impact on the ARPU development – read on.

The mobile data usage growth is decelerating in a clear majority of countries.

Data-only rarely more than 20% of base, but defines average usage

Although **fixed wireless access** (FWA) experiences a renaissance with 5G, using mobile networks to substitute fixed broadband isn't something new. In some markets, like Finland and Austria, this was around for long. The take-up can be significant if the FWA/data-only offers are reasonably charged and without usage caps. It also helps if the fixed broadband offering is weak with much DSL in the mix.

In the second half of 2021, the Finnish regulator, Traficom, started to report also fixed data traffic, allowing a comparison with the mobile data traffic it had reported for long, see Figure 7. Initially the fixed data traffic was just marginally higher than the mobile data traffic, but in the first half of 2023, the reported fixed data traffic leaped. The fixed data traffic in 2021 and 2022 might however have been under-reported by one or several of the fixed providers.

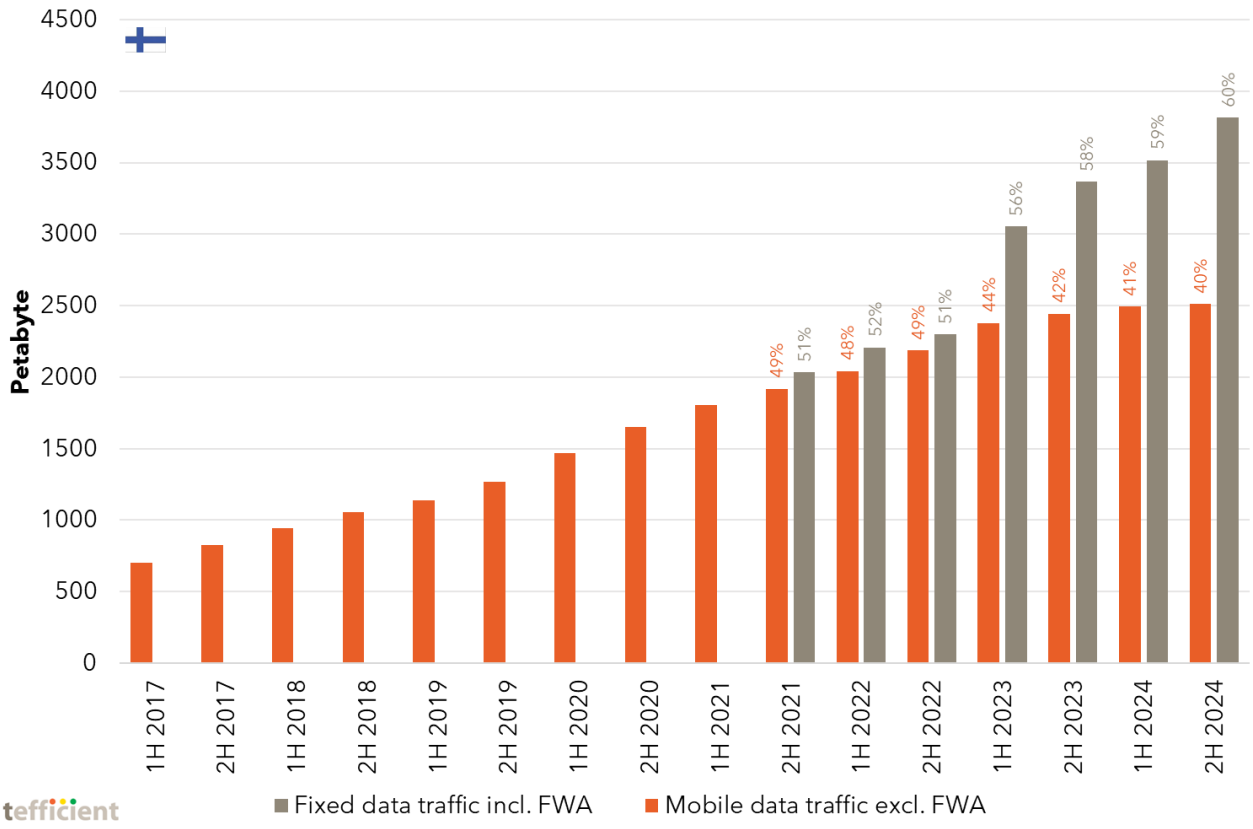


Figure 7. Development in reported mobile and fixed data traffic[10] in Finland, 1H 2017-2H 2024

In the second half of 2024, the fixed data traffic represented 60% of the total traffic in Finland, making mobile data traffic represent 40%. Based on the four last reported half-yearly figures, fixed data traffic

[10] Remember, as mentioned, that the traffic from about 60k FWA subscriptions with a performance commitment or capacity reservation is reported as fixed, not mobile, traffic in Finland.

takes 'market share' from mobile data traffic in Finland. The orange mobile data traffic curve starts to look like an S-curve and the explanations to the deceleration in the growth in Finland are:

- A growing number of Finnish households subscribe to fibre broadband. Compared to the rest of the Nordics, fibre take-up is still at a lower level in Finland, so this trend might continue.
- Since traffic from about 60k FWA subscriptions with a performance commitment or capacity reservation are included in fixed, not mobile, data traffic, the relatively late introduction of such FWA services might have contributed.
- The Finnish mobile market leader, Elisa, stopped reporting its mobile data traffic in 2025 after having explained that an optimised codec in their IPTV service had an impact on the mobile data traffic growth.

A 40/60% split between mobile and fixed data traffic is still quite evenly distributed if compared to other countries. But there's another market with a similar split and with a different trend: **Austria**.

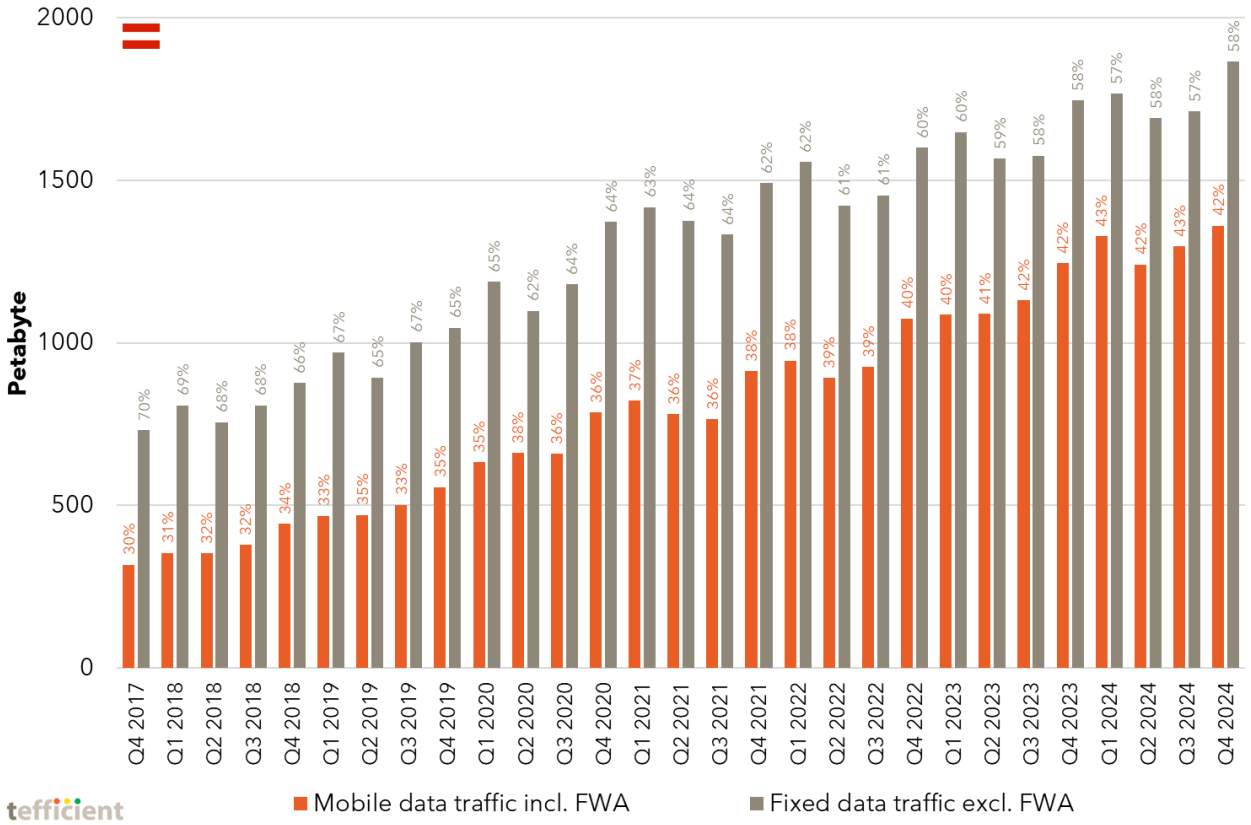


Figure 8. Development in reported mobile and fixed data traffic Austria, Q4 2017-Q3 2024

In the latest reported quarter by RTR, Q4 2024, the Austrian split was 42/58%, i.e. a bit more mobile-leaning than Finland. Unlike Finland, where the mobile data share of traffic is in decline, it continues to be stable (or even grow) in Austria. Austria seems not to have the end of the S-curve in sight[11].

Let's now put Finland and Austria into a chart comparing the data-only share of the country's mobile subscription base with all the other reporting countries.

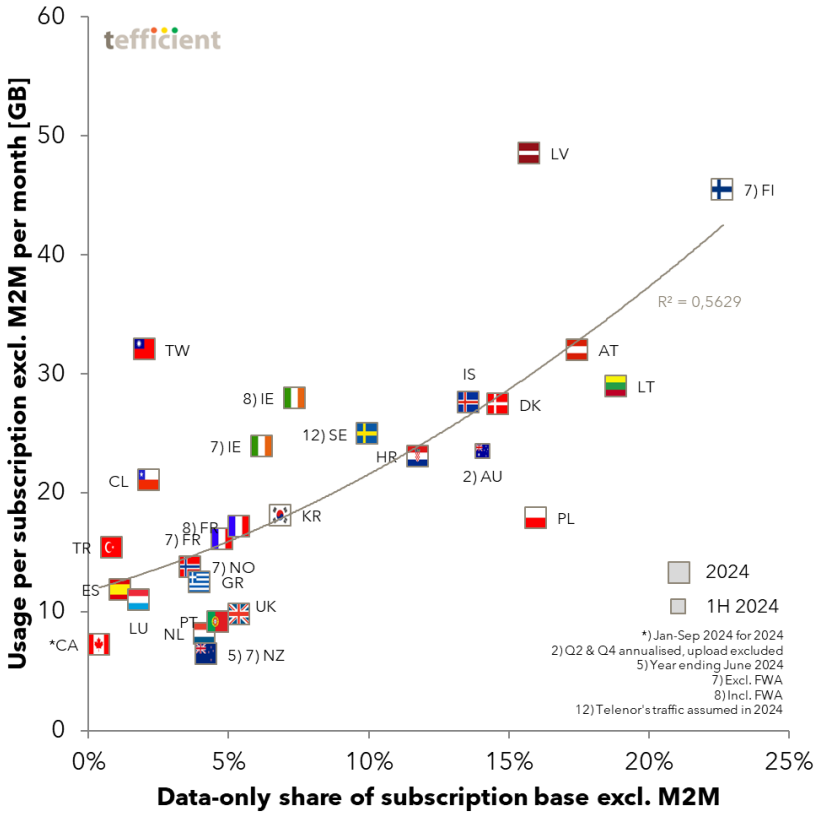


Figure 9. Mobile data usage vs. data-only share

In December 2024, **23%** of the subscription base in Finland was data-only[12]. That makes **Finland** the leader in data-only share of base – and the average mobile data usage is the third highest among our 40 countries. In **Lithuania**, data-only represented 19% of the base and the usage was lower than in Finland. **Austria** was at 17% but with a higher usage than Lithuania. **Poland** was at 16% with lower usage whereas **Latvia** also was at 16% but features the second highest overall usage among our countries.

Taiwan is an exception to the overall trend: Its mobile data usage is high although the data-only share of base was just 2%. Albeit at a bit lower usage level, also Chile has low data-only share of base.

[11] All traffic from mobile-based FWA is, unlike Finland, regarded as mobile data traffic in Austria. The Finnish regulator reports the traffic from about 60k FWA subscriptions with a performance commitment or capacity reservation as fixed data traffic.
[12] Excluding those about 60k FWA subscriptions with a performance commitment or capacity reservation.

Despite these exceptions, the adherence to the regression line is relatively strong. As in all previous reports we therefore conclude that **data-only penetration is a significant driver of the average mobile data usage**.

The easiest way for low-usage countries to grow data usage and expand the mobile market would be to **start addressing and monetising the data-only segment**. This seems to be effective particularly in markets where fast fixed broadband networks (FTTH, FTTB or HFC) aren't already available to a substantial share of the households and businesses.

Read about Tefficient's FWA Tracker – new edition in 2025

Figure 9 shows that even a relatively low share of data-only subscriptions could lift the average data consumption significantly.

Some of the countries in Figure 9 are also reporting the data-only traffic. For these countries, we can compare the data-only penetration of the subscription base to its share of the total mobile data traffic, see Figure 10.

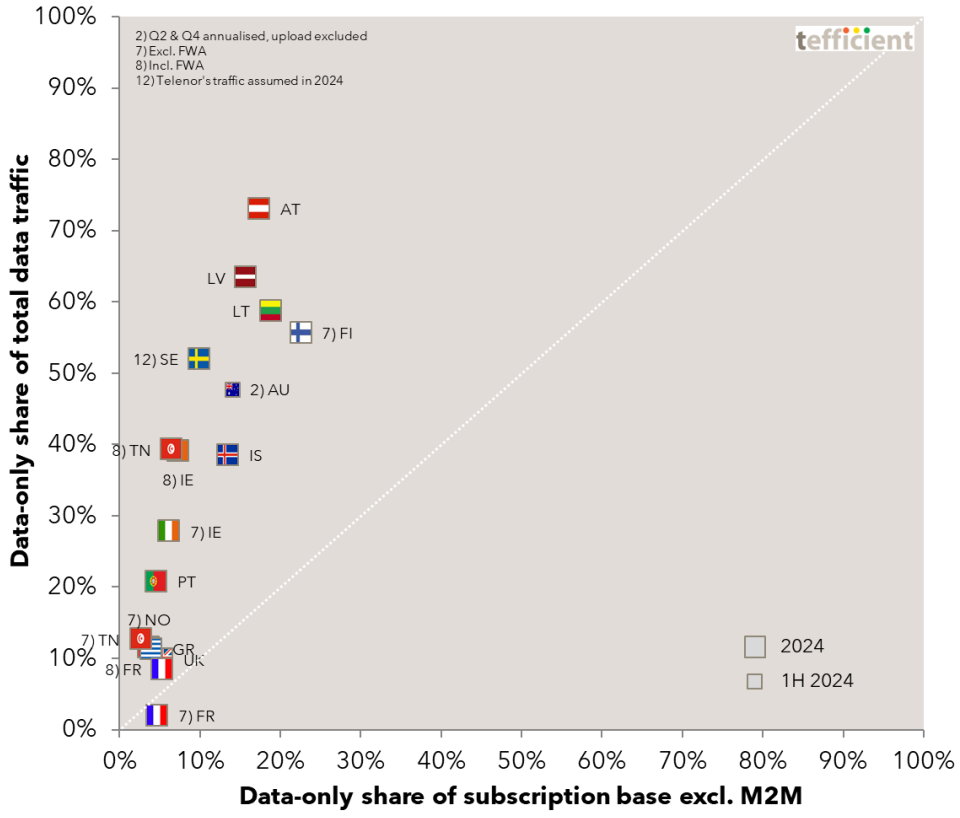


Figure 10. Data-only share of total traffic vs. data-only share of subscription base

Data-only subscriptions carry a disproportionally high share of the data traffic:

- Tunisia (incl. FWA) **6.0x** higher traffic per data-only subscription vs. any subscription
- Ireland (incl. FWA) **5.3x**
- Sweden (incl. FWA) **5.2x**
- Portugal (incl. FWA) **4.4x**
- Austria (incl. FWA) **4.2x**
- Latvia (incl. FWA) **4.0x**
- Australia (incl. FWA) **3.4x**
- Norway (excl. FWA) **3.1x**
- Lithuania (incl. FWA) **3.1x**
- Iceland (incl. FWA) **2.8x**
- Greece (incl. FWA) **2.8x**
- Finland (excl. FWA) **2.5x**
- UK (incl. FWA) **1.8x**
- France (incl. FWA) **1.6x**

For the countries that are reporting both data-only traffic and the number of data-only subscriptions, we can compare the average usage per *data-only* subscription, see Figure 11.

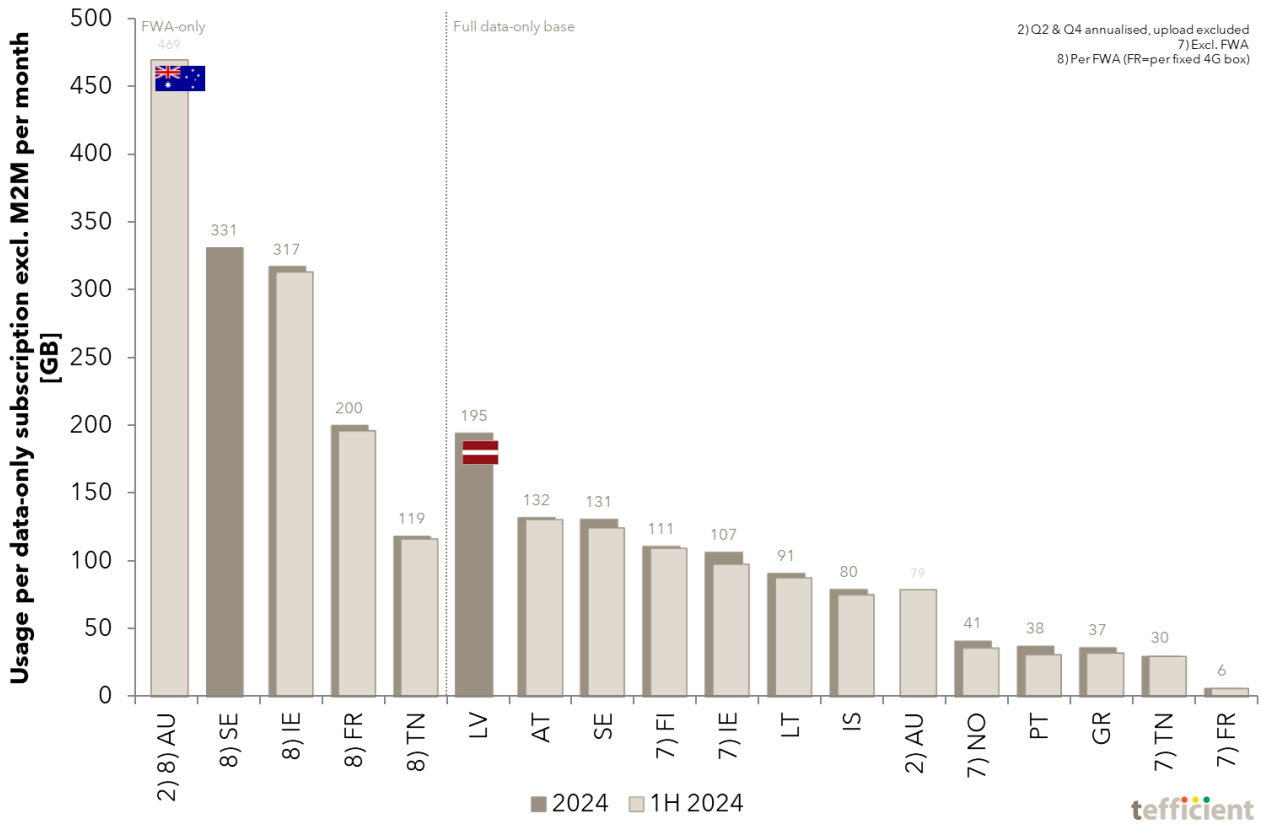


Figure 11. Mobile data usage per data-only subscription per month, full year 2024 and first half of 2024

Starting from the left, the average pure FWA subscription in **Australia**[13] carried **469 GB** of mobile data per month in the first half of 2024. In **Sweden**, the average FWA subscription carried **331 GB** of mobile data per month in 2024. **Ireland** follows with **317 GB**. In **France**, the average '4G box'[14] carried **200 GB** of mobile data per month in 2024. **Tunisia** ends the FWA-only listing with **119 GB** per month in 2024.

If instead looking at the whole data-only base (not just the pure FWA segment), **Latvia** leads with an average mobile data consumption per data-only subscription of **195 GB** per month in 2024. **Austria** and **Sweden** follow with **132 GB** and **131 GB** per month respectively. **Finland** had **111 GB** per month in 2024.

The average Latvian data-only subscription consumed a leading 195 GB per month in 2024.

In comparison to our previous reports, there's little dark grey on top of the first half of 2024 light grey bars which shows that for most markets, there was little usage growth in the second half of 2024.

If **5G FWA** should become the fibre-over-radio solution that e.g. T-Mobile USA, Verizon and India's Jio suggest, the data-only FWA usage figures of Australia, Sweden, and Ireland give a taste of the usage that the solution must at least manage. Fixed broadband usage is yet higher – often around 500 GB per month.

[13] Includes three categories: Wireless home broadband, NBN Wireless Plus, and non-NBN fixed wireless.
[14] Still called that in ARCEP's reporting although some of these today are 5G.

Unlike data-only, 5G adoption is seldom a driver of data traffic

Little by little, regulators are starting to report 5G subscriber bases. In a similar way as we correlated the data-only share of total mobile data with the data-only share of the subscription base, Figure 12 tries to do the same for 5G.

There are a few issues:

- In many countries, regulators reporting 5G subscribers aren't reporting 5G traffic (Chile, France, Croatia, Hong Kong, Taiwan, Iceland, and Japan).
- In Spain, Romania[15], India, Finland, and Saudi Arabia, regulators report 5G traffic, but not 5G subscribers.
- The definition of what a 5G subscriber is differs.
- The definition of what 5G traffic is differs.

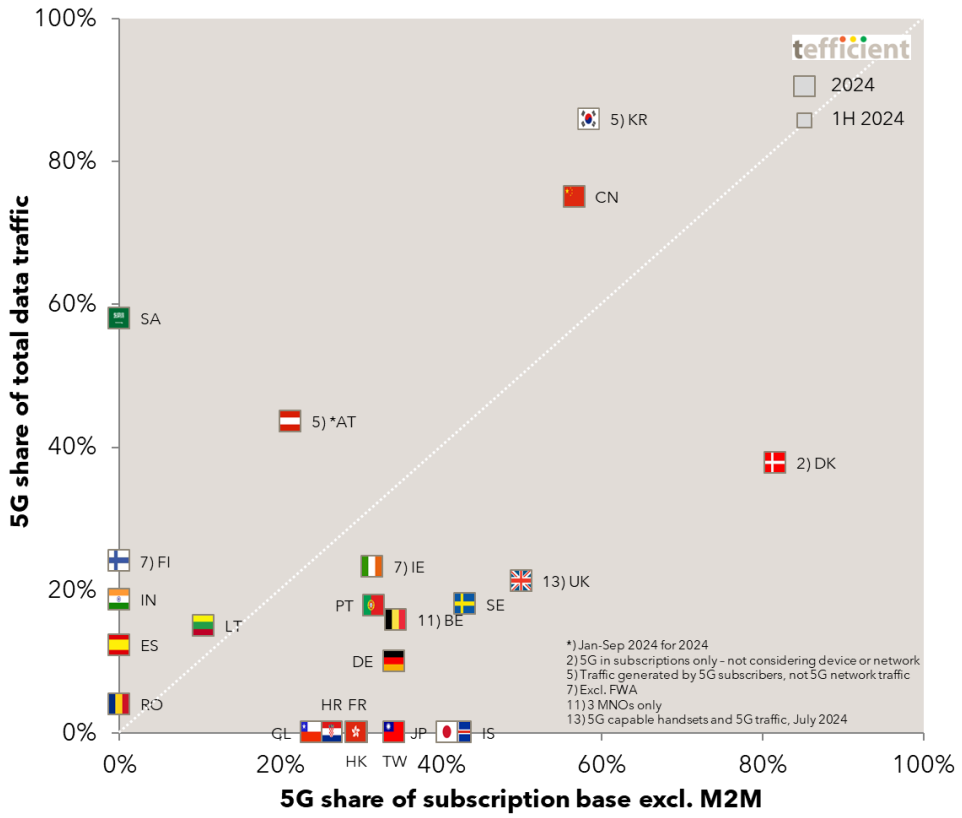


Figure 12. 5G share of total traffic vs. 5G share of subscription base

[15] For Romania, the 5G share of subscription base *including* M2M is available but since this report is excluding M2M, that share is not visualised here. We have deemed that M2M has no visible impact on the share of total data traffic (same assumption for India).

With these difficulties, it's hard to be firm on the conclusion on 5G, but Figure 12 isn't necessarily showing that 5G drives data traffic. There are a few countries above the white equilibrium line for which it is true – **Lithuania, Austria**[16]**, China, and South Korea** – but there are more countries below the line: Portugal, Germany, Belgium, Ireland, Sweden, the UK, and Denmark. If we compare to Figure 10 – the data-only graph – the difference is clear. Whereas data-only drives average data usage, 5G doesn't seem to.

South Korea, Austria, China, Austria, and Lithuania report disproportionally high 5G traffic.

Why not? One obvious explanation is **coverage** (or rather lack thereof). 5G subscribers with 5G devices need 5G coverage to generate 5G traffic. When 5G coverage is being rolled out further, the 5G share of traffic should increase. The quantum leap in speed and quality that 5G could offer comes through new, higher, spectrum bands (typically the C-band), though. Regretfully it doesn't propagate well into buildings from outdoor sites and since most of the mobile data traffic is consumed indoors, the lack of 5G C-band indoor coverage is a hinder for 5G's traffic dominance. Operators might have to level up on dedicated indoor solutions to get a disproportionately high share of traffic on 5G.

While that sounds both costly and slow, another option is to **target the FWA market using 5G**. The positions of **Austria**, **Lithuania**, and most likely **Saudi Arabia** in Figure 12 – where 5G's share of traffic is higher than 5G's share of subscriptions – could be a result of that. Since each FWA subscriber consumes so much more traffic than the average mobile data user, even a small amount of 5G FWA customers will move the needle. Through stand-alone and slicing, 5G also offers the possibility to set monetisable thresholds for the speeds and quality of FWA.

Before closing this section, let's introduce a simpler version of Figure 12 which only shows the 5G share of traffic. It visualises how far the 5G journey has come in **South Korea and China**. But the high ranking of **Saudi Arabia** and **Austria**[17] also shows how important 5G FWA could be to drive the overall 5G traffic.

[16] The reported 5G traffic in Austria is the traffic generated by 5G *subscribers*, but not necessaily carried on 5G networks. The same applies to South Korea.
[17] Austria's traffic is reported as the total traffic generated by 5G subscriptions, but not necessarily carried on 5G networks. It's the case also for South Korea.

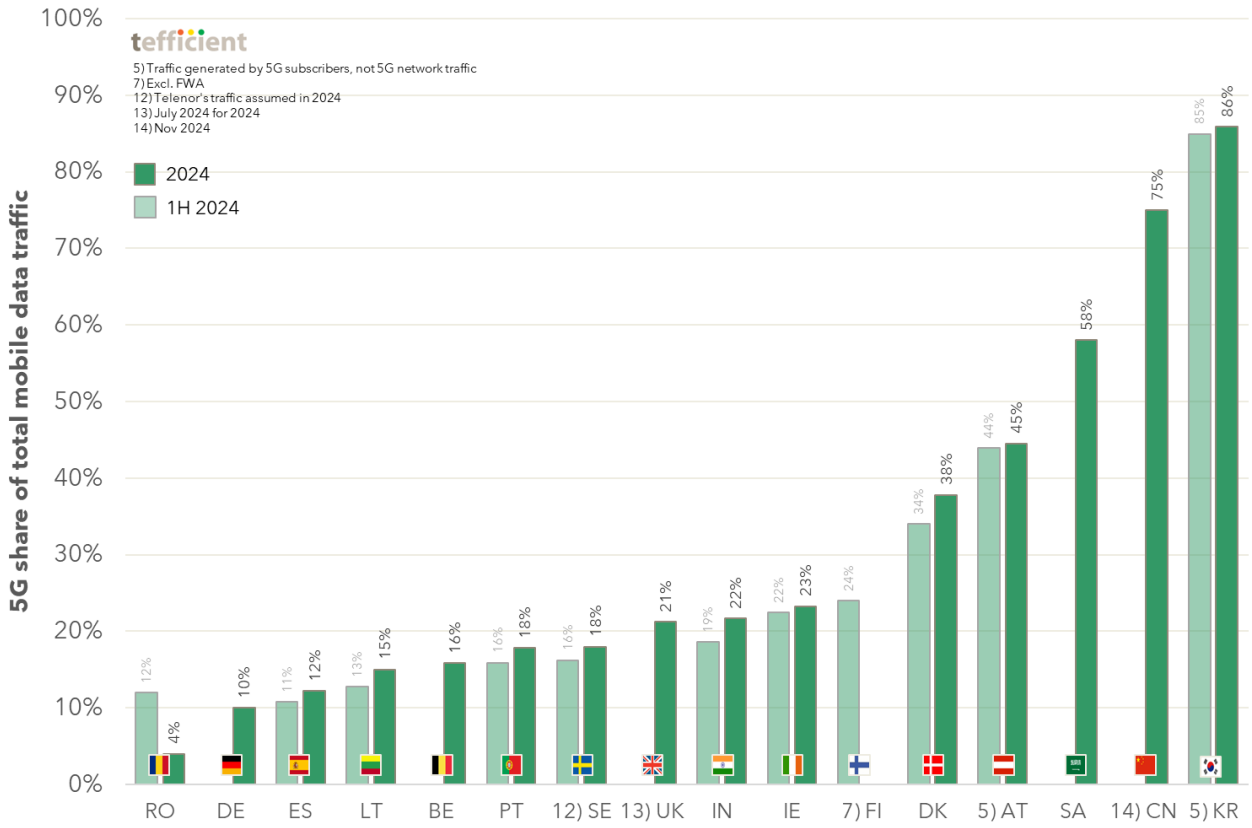


Figure 13. 5G share of total traffic – full year 2024 (not dimmed) and first half of 2024 (dimmed)

5G's proportion of total traffic in Europe is much lower than in Saudi Arabia, China, and South Korea.

Some European countries – Romania[18] and Germany – struggle with 5G traffic take-up having achieved just 4% and 10% in 2024. Spain, Lithuania, Belgium, Portugal, and Sweden[19] have between 12% and 18%. The UK, India, Ireland, and Finland are all above 20%. **Denmark** had a much higher share of its traffic on 5G, 38%.

Austria had 45% but this share is the traffic generated by 5G subscriptions, not necessarily on 5G networks.

Saudi Arabia had 58%. **China**'s 75% was stated for the month of November 2024 whereas **South Korea** leads in Figure 13 with 86% - but again this is the traffic generated by 5G subscriptions, not necessarily on 5G networks.

[18] The drop from 12% in 1H 2024 to just 4% in the full year of 2024 is as reported.
[19] It is apparent that the total mobile data traffic reported for Telenor Sweden is overstated in the regulatory data from PTS. Waiting for a correction, we have assumed that Telenor's traffic in 2024 had the same annual growth rate, 23%, as competitors 3 and Tele2.

A gigabyte has never been cheaper – except for in four countries

Most mobile operators in mature markets aren't attempting to monetise voice and SMS based on usage any longer; they have instead made these allowances unlimited and included them in a flat fee. This means that the last price-defining parameter for most mobile users is **data volume**. Even though more operators introduce unlimited propositions, these are often the last step in a tiered data plan[20] – which means that price still, essentially, is about data volume.

Figure 14 plots the *total* mobile service revenue per consumed gigabyte[21] against the average mobile data usage per subscription and month.

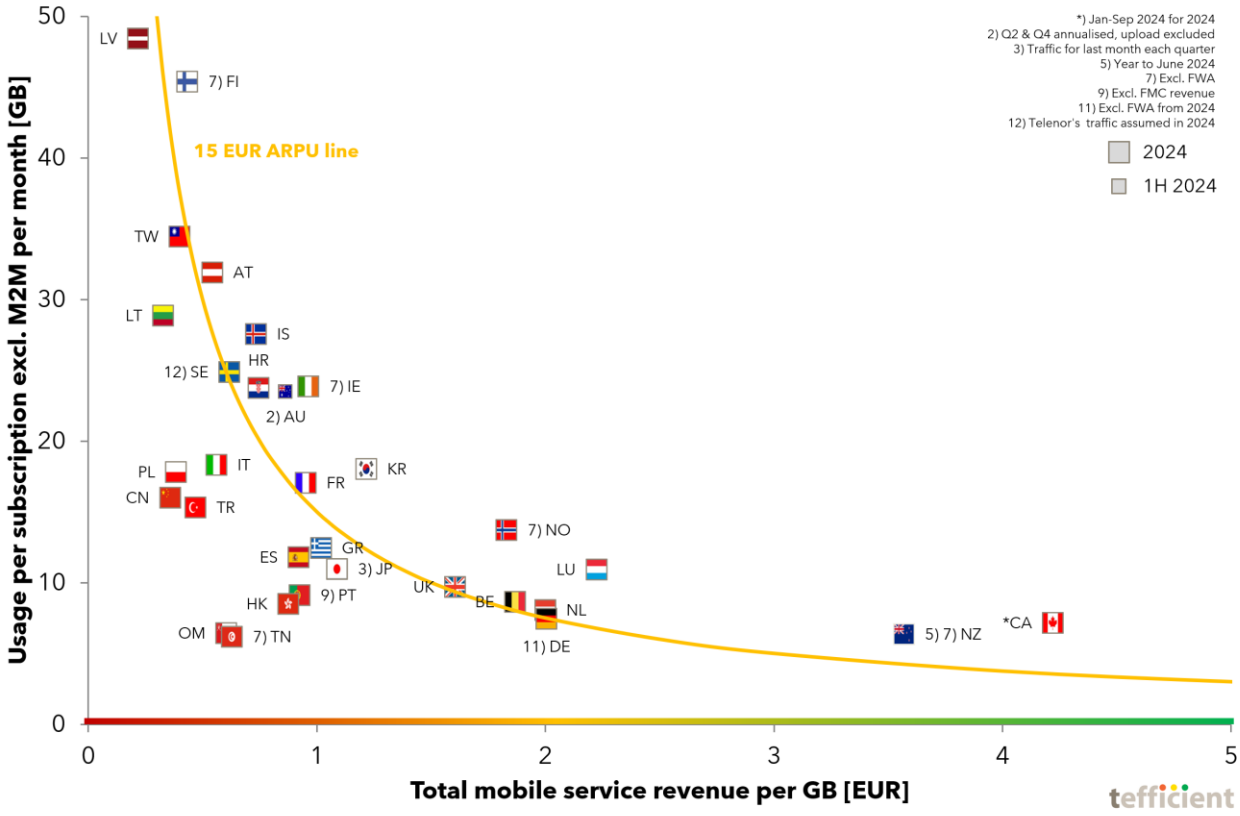


Figure 14. Mobile data usage vs. total mobile service revenue per consumed GB

The amber line shows where **15 EUR of ARPU** is earned. Countries below it had an ARPU lower than 15 EUR, countries above an ARPU higher than 15 EUR.

[20] There are exceptions to this – where the price-defining parameter instead is data throughput – e.g. with Finnish operators, Swisscom, O2 Germany, Norwegian operators and Vodafone. There are also operators mixing several parameters such as volume, throughput, policy, zero-rating, video resolution, service bundling etc.
[21] Attributing zero value to voice and messaging.

Canada holds the position where operators collectively earn the highest total service revenue per consumed mobile GB. Only **New Zealand** is in the vicinity of Canada with an almost as high revenue.

In the middle of the graph, there is a cluster of countries with relatively high revenue per GB: **Luxembourg**, **Germany**, the **Netherlands**, **Belgium**, **Norway**, and the **UK**.

It's important to point out that our analysis looks at what the mobile operator industry de facto makes on end-users, not what the best offer on the market currently is. Most users are on old price plans because they are still locked in by a contract – or because they have not bothered to find the best deal.

At the other end of the scale, we find the markets where operators get the lowest revenue per consumed gigabyte: **Latvia**, **Lithuania**, **China**, **Poland**, **Taiwan**, and **Finland**.

Looking at Figure 14 we can conclude – as in all our previous editions of this analysis – that the key explanation to high mobile data usage is low effective revenue per gigabyte: **Bigger data buckets lead to lower revenue per GB – which, on the other hand, increases usage**. At least when customers can use those big buckets also within the data-only segment, see Figure 9.

Latvia's operators have the lowest total revenue per GB – Canada's operators the highest.

But we also said that a gigabyte has never been cheaper. More correctly put is that operators never had lower total service revenue per gigabyte than what they currently have – which is true for all markets but four: **Turkey, Oman, Finland, and Croatia**. Figure 15 shows the revenue development from the 2023 to 2024.

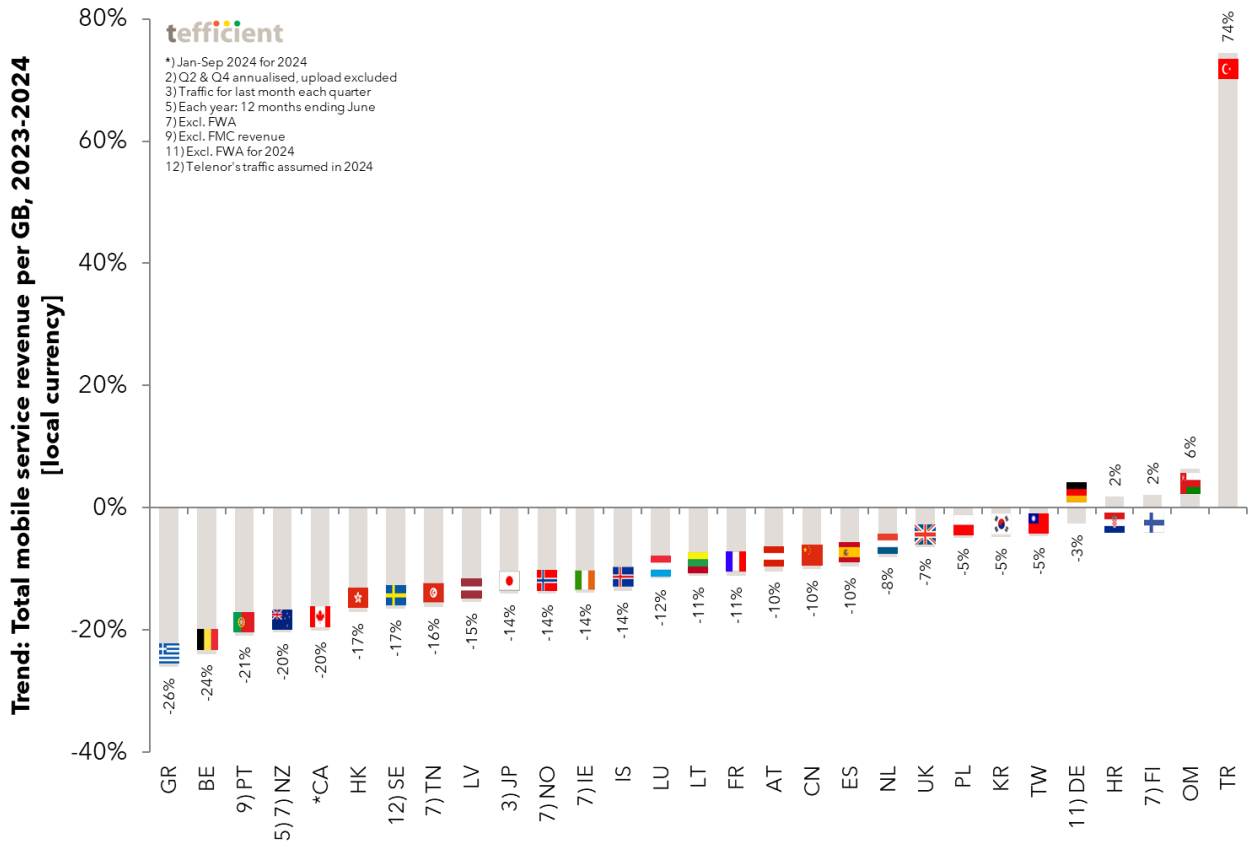


Figure 15. Development in total mobile service revenue per consumed GB – 2023 to 2024

The prerequisite to appear in Figure 15 is of course that the statistics are reported for both 2023 and 2024. Of these markets, **Greece** had the fastest revenue erosion, 26%. **Belgium**, **Portugal**, **New Zealand**, and **Canada** follow, with 20% to 24%.

The erosion rates are slower than what we historically seen in this analysis. There are two reasons to it:

1) Slower growth in data usage,
2) Faster growth in mobile service revenue.

In **Turkey**, with its hyperinflation, the revenue per GB continued to increase – this time with **74%** – in local currency. But this time we have three additional markets with revenue growth per GB: **Oman** with 6%, and **Finland** and **Croatia** both with 2%.

No correlation between data usage and ARPU

Figure 16 is a variant of the revenue per GB chart – it plots the usage against the average revenue per subscription, i.e. the ARPU.

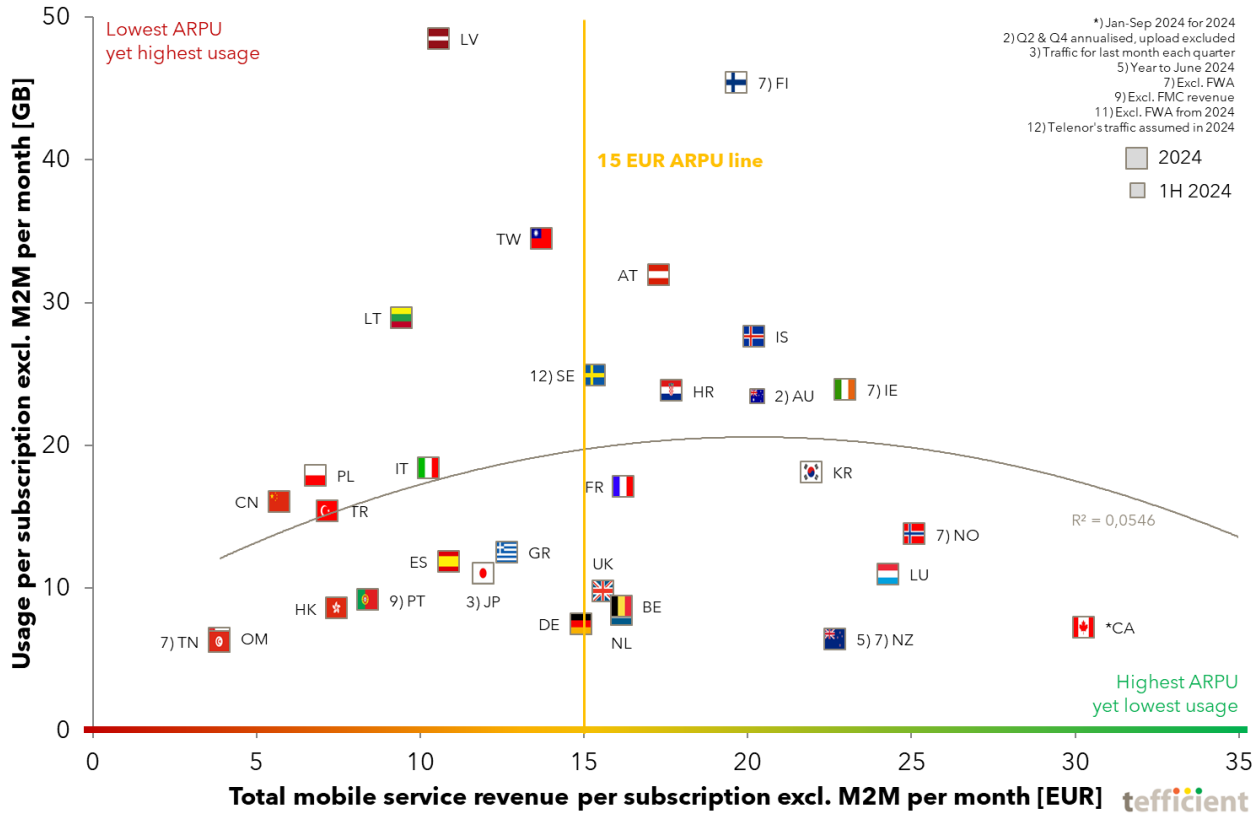


Figure 16. Mobile data usage vs. total mobile service revenue per subscription

Canada had the highest ARPU among our markets, followed by **Norway**, **Luxembourg**, **Ireland**, **New Zealand**, and **South Korea**. Ireland and South Korea have quite high mobile data usage, though.

Operators to the upper left – **Latvia**, **Lithuania**, **China**, **Poland**, and **Turkey** – are generous with mobile data considering their ARPU. These countries form a nice imaginative trend line suggesting that operators could expect to get rewarded with higher ARPU as usage grows.

But that's regretfully not to overall trend: The adherence to the grey regression line is weak but it's not pointing in the north-easterly direction one would like to see – with more usage leading to higher ARPU.

Dressing the Christmas tree based on ARPU development

Now to our Christmas tree graph which we think is our best data representation. It's the graph were we like to see the branches stretch to the right – since that means that the ARPU grew in the past year. That would demonstrate that the operators of a country have been able to monetise the growth in data usage.

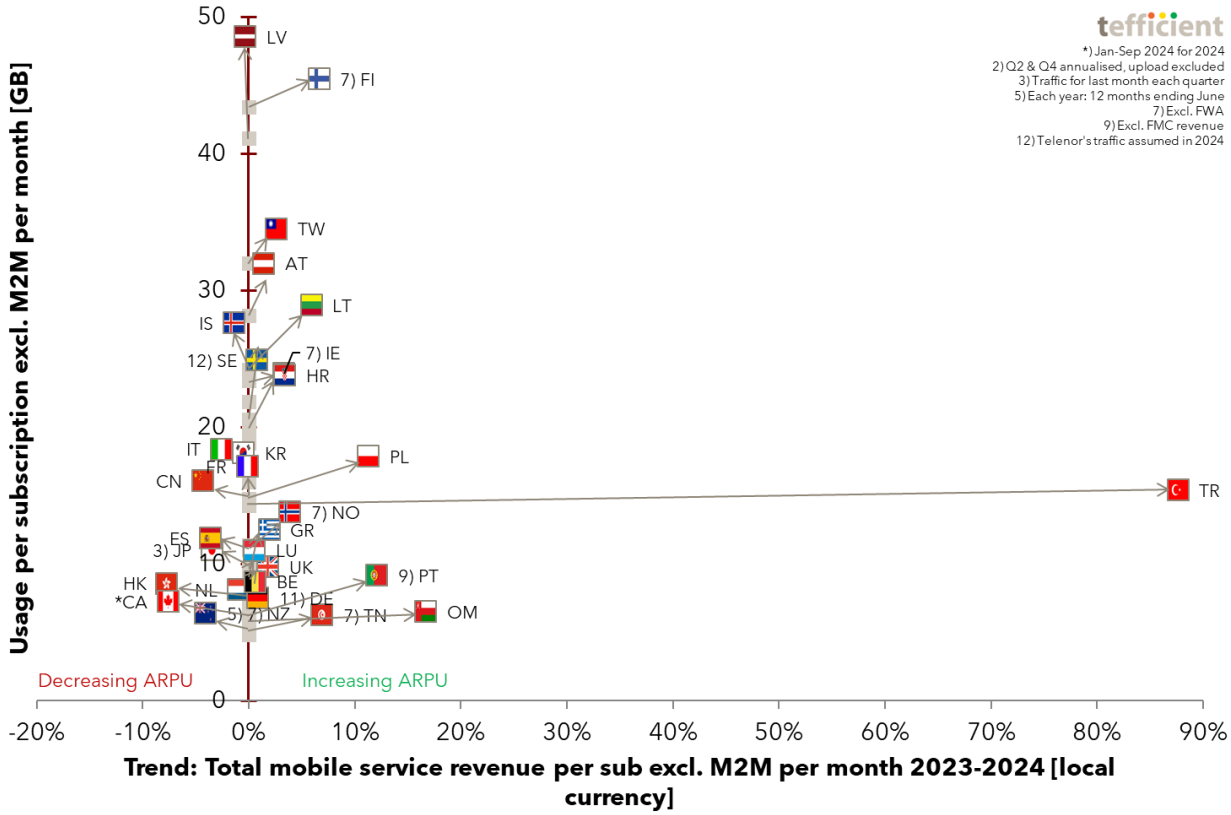


Figure 17. Development in mobile data usage vs. the development in ARPU – 2023 to 2024

The branches stretch right in **18 of 30 markets**[22] (60%) which means that the positive ARPU trend observed in our previous edition was discontinued. These markets are – from the top – **Finland**, **Taiwan**, **Austria**, **Lithuania**, **Sweden**, **Ireland**, **Croatia**, **Poland**, **Turkey**, **Norway**, **Greece**, **Luxembourg**, the **UK**, **Portugal**, **Belgium**, **Germany**, **Oman**, and **Tunisia**.

In 12 markets (40%), the branches stretch left meaning that ARPU fell even though data usage grew. The ARPU erosion in **Hong Kong** and **Canada** was the fastest, 8%. **New Zealand**, **China** and **Spain** were all at 4% with **Japan** at 3%.

ARPU grew, following an increase in mobile data usage, in 18 of 30 markets.

[22] The markets for which regulators/operators have reported the necessary underlying stats to date.

Conclusion

In our country-level analysis of mobile data usage and revenues, **usage growth was observed across all 40 markets** covered.

Saudi Arabia led with 50.4 GB per average subscription per month in 2024, followed by **Latvia** with 48.5 GB and **Finland** with 45.4 GB. **Croatia** had the slowest usage growth at just 2%, while **Greece** once again recorded the fastest growth at 38% – though this was a slowdown compared to previous periods. **Growth rates in percentage terms decelerated** in most markets, and **absolute growth (in GB) also slowed**. After more than a decade of conducting these analyses, we observe that the demand for additional mobile data is now weaker than ever.

Our analysis reveals a strong correlation between the share of **data-only** subscriptions and average data usage. **Finland**, **Lithuania**, **Austria**, **Poland**, and **Latvia** stand out as the global leaders in this segment. Austrian statistics show that mobile networks carried 42% of total data traffic in Q4 2024, with fixed networks handling the remaining 58%. Finland, previously the leader, reported a 40/60 split in the second half of 2024.

Efforts to correlate the share of **5G** subscriptions with 5G traffic share faced challenges due to limited data availability and inconsistent definitions across markets. Only **South Korea, China, Austria, and Lithuania** report disproportionately high 5G traffic. In other markets, lack of widespread 5G coverage indoors appears to be a key factor limiting its traffic contribution.

Regardless of technology generation, increased data-only penetration – particularly because of fixed-line substitution – can significantly boost data usage. However, a key enabler of this, and of high usage in general, is a low total revenue per gigabyte. Countries such as **Latvia, Lithuania, China, Poland, Taiwan, and Finland** exemplify this, while **Canada and New Zealand** lie at the opposite end of the spectrum.

Despite varying usage levels, market ARPU does not consistently correlate with data consumption. **Canada, Norway, Luxembourg, Ireland, New Zealand, and South Korea** report higher ARPU levels, though all but Ireland and South Korea do not rank highly in data usage.

In this edition, **18 of 30 markets achieved ARPU growth** alongside increased data usage. This marks a departure from the stronger ARPU growth trend identified in our previous edition. With weakening demand for additional mobile data, ARPU development has likewise softened.
