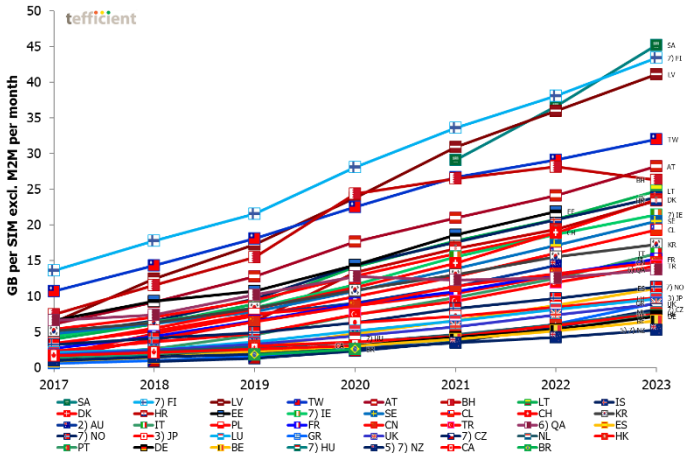
tefficient

Industry analysis #1 2024

Mobile data – full year 2023 – excluding M2M/IoT

Change at the top as growth slows



Tefficient's 41st public analysis of mobile data development and drivers compares 39 countries worldwide, where M2M/IoT can be excluded from the total bases. Mobile data usage grew in 38 of these, with Bahrain as the only exception.

For the first time since 2013, Finland doesn't lead in usage. Saudi Arabia is the new world leader with more than 45 GB per average subscription in 2023.

When usage continues to grow, the growth rates are slowing. Greece leads with a growth rate of 49%, contrasting with Qatar's 9% and Taiwan's modest 10% growth. Bahrain even experienced a decline of 7% in data usage.

Data-only subscriptions continue to dominate average mobile data usage, although their market share remains limited. Latvia's average data-only subscription consumed 164 GB per month in 2023. In the FWA-only category, Australia had a high 334 GB per month in 1H 2023.

While data-only subscriptions drive traffic, the same can't be said for 5G in general. Reporting is imperfect, but only three countries have disproportionately high 5G traffic relative to their 5G bases: South Korea, Austria, and Saudi Arabia. We explain what these countries are doing right and what other countries are missing.

Overall, mobile data revenue once again reached its lowest level, although the decline in revenue per gigabyte slowed compared to our previous analyses. Greece experienced the fastest erosion rate at 31%. Turkey was the only country to witness a much-needed increase.

Adding to the positive outcomes, 68% of markets experienced an increase in ARPU following data usage growth. This is an improvement compared to some of the previous editions of this analysis.

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The M2M/IoT reporting dilemma

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

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

Qatar, New Zealand, and Taiwan – for which the regulators state that M2M is excluded – are, on the other hand, only shown in this analysis.

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 (SIM) 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.

When excluding M2M, data usage is still growing in all but one country

Figure 1 shows the development of mobile data usage for 39 countries where regulators report mobile data traffic and where – at least – M2M subscribers can be excluded from the total mobile base. The usage is shown per SIM per month.

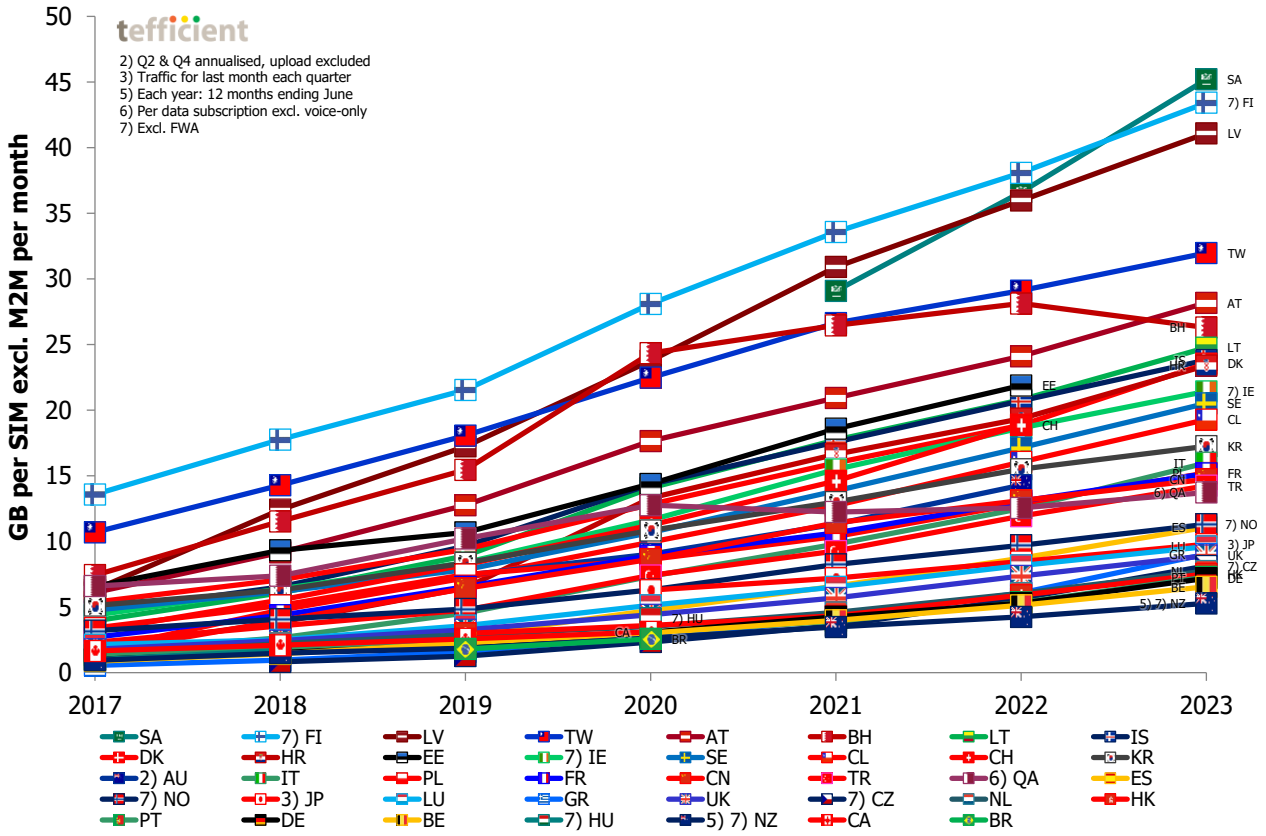

Figure 1. Development of mobile data usage per SIM (excl. M2M) per month – the legend shows the ranking[3]

Let's start from the top of the chart and start with a bang: For the first time since 2013, Finland doesn't have the highest average mobile data usage. With 45.2 GB per month, **Saudi Arabia** is the new world leader[4].

The dethroned **Finland** had 43.4 GB but then the traffic of about 50k fixed wireless access (FWA) subscribers with a service guarantee is not included. Since such FWA customers likely have very high usage, Finland could possibly have made it to the usage top if that traffic was included, but it is not broken out of the regulator's reported fixed broadband traffic.

Latvia shadows the two with 41.1 GB.

[3] Some countries will report full year 2023 but haven't yet: Australia, Estonia, and Switzerland. Some countries have not reported sufficient data in a long time (Hungary, Canada, Brazil).
[4] The reporting of CST is incomplete, though. We emailed CST a few questions in April 2024 but haven't received a reply.

Taiwan is now a quite distant number four while **Austria** overtook Bahrain and now is fifth-ranked[5].

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. As to Finland, **85%** of the Finnish non-M2M SIMs had **unlimited data volume** in December 2023. If we exclude voice-only SIMs, that share grows to 89%. No other country is as unlimited as Finland.

Unlimited is offered as a premium option in regular mobile in **Latvia** but, as we will show later in this analysis, the high usage is largely explained by data-only subscriptions.

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 biggest fibre roll-out laggards, it's always interesting to speculate what the chicken is and what the egg is.

Although the legend below Figure 1 shows the ranking of the 39 countries, it's difficult to spot them all. Figure 2 offers an easier visualisation.

[5] As shown in our including-M2M analysis, Malaysia could possibly play in the global top five too, but since the Malaysian regulator does not break out M2M SIMs, Malaysia can't join this analysis.
[6] There are now just three MNOs left in Taiwan. In 2023, Taiwan Mobile acquired Taiwan Star (TStar) and FarEasTone acquired APT (Gt).

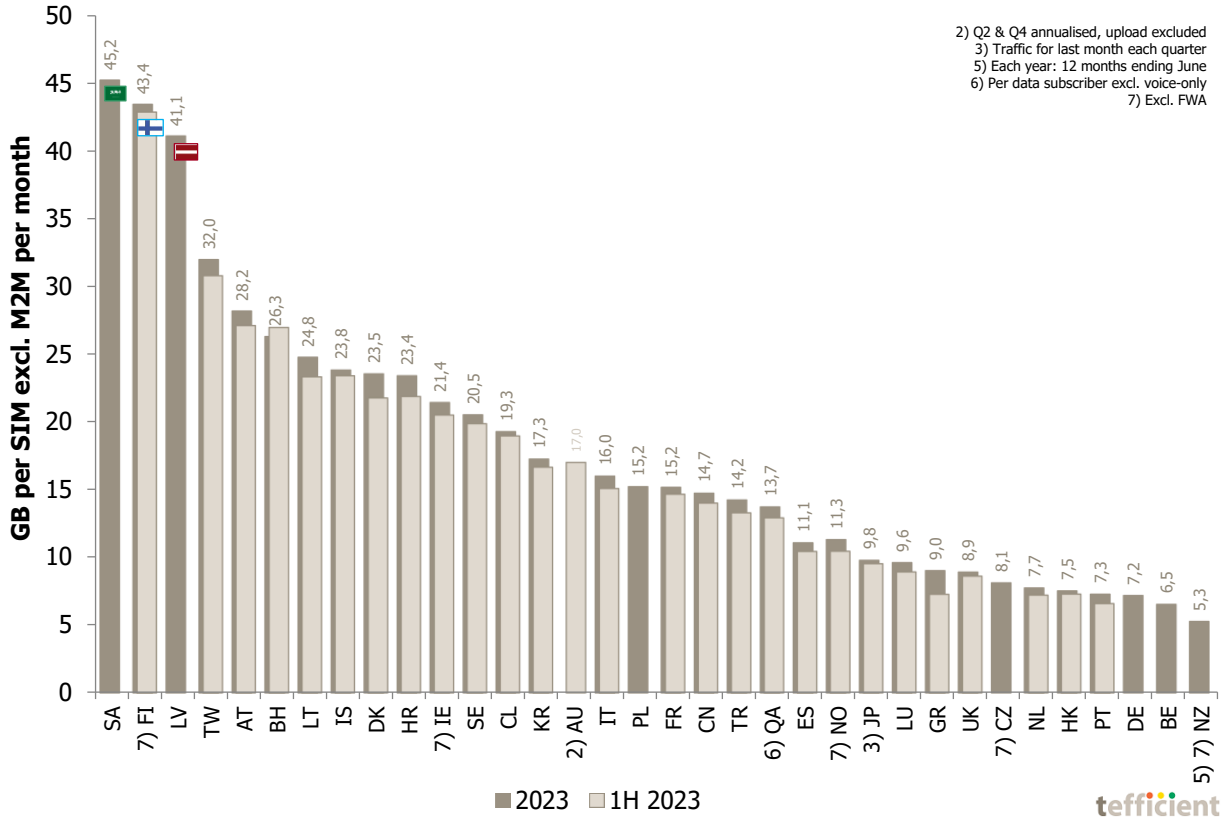

Figure 2. Mobile data usage per SIM (excl. M2M) per month, full year 2023 and first half 2023

In comparison to our historical reports there's not much dark grey on top of the 1H 2023 light grey bars which shows that for most markets, there was little usage growth in the second half of 2023.

The markets with the lowest data usage in Figure 2 are **New Zealand**[7], **Belgium**, **Germany**, **Portugal**, **Hong Kong**, the **Netherlands** and **Czechia**[7].

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 regulators.

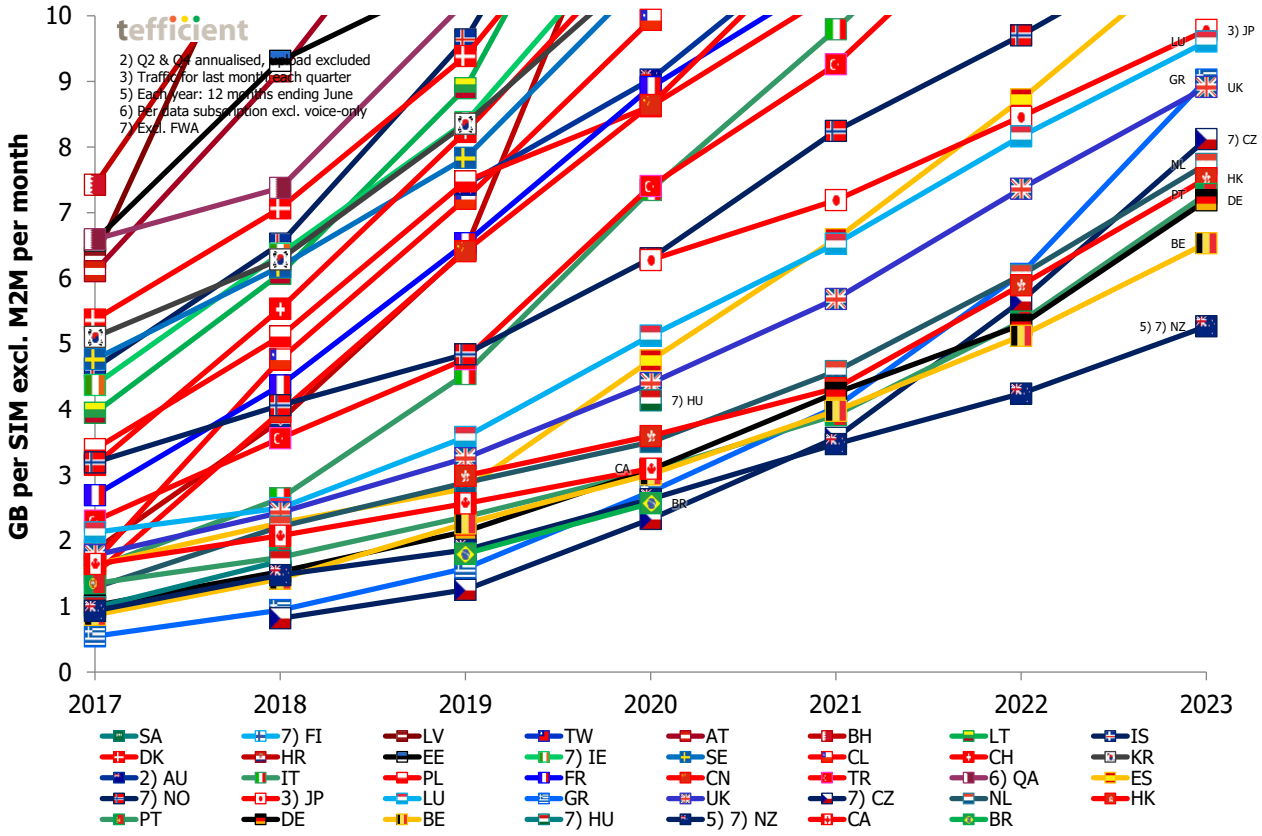

Figure 3. Development of mobile data usage per SIM (excl. M2M) per month [zoom-in on low end]

Albeit in the lower usage range, **Luxembourg** and **Japan** had quite modest usage growth in 2023. Faster growth then in Greece, Czechia, Portugal and Germany.

Data usage growth fastest in Greece

Figure 4 shows the growth in average usage per SIM between 2022 and 2023.

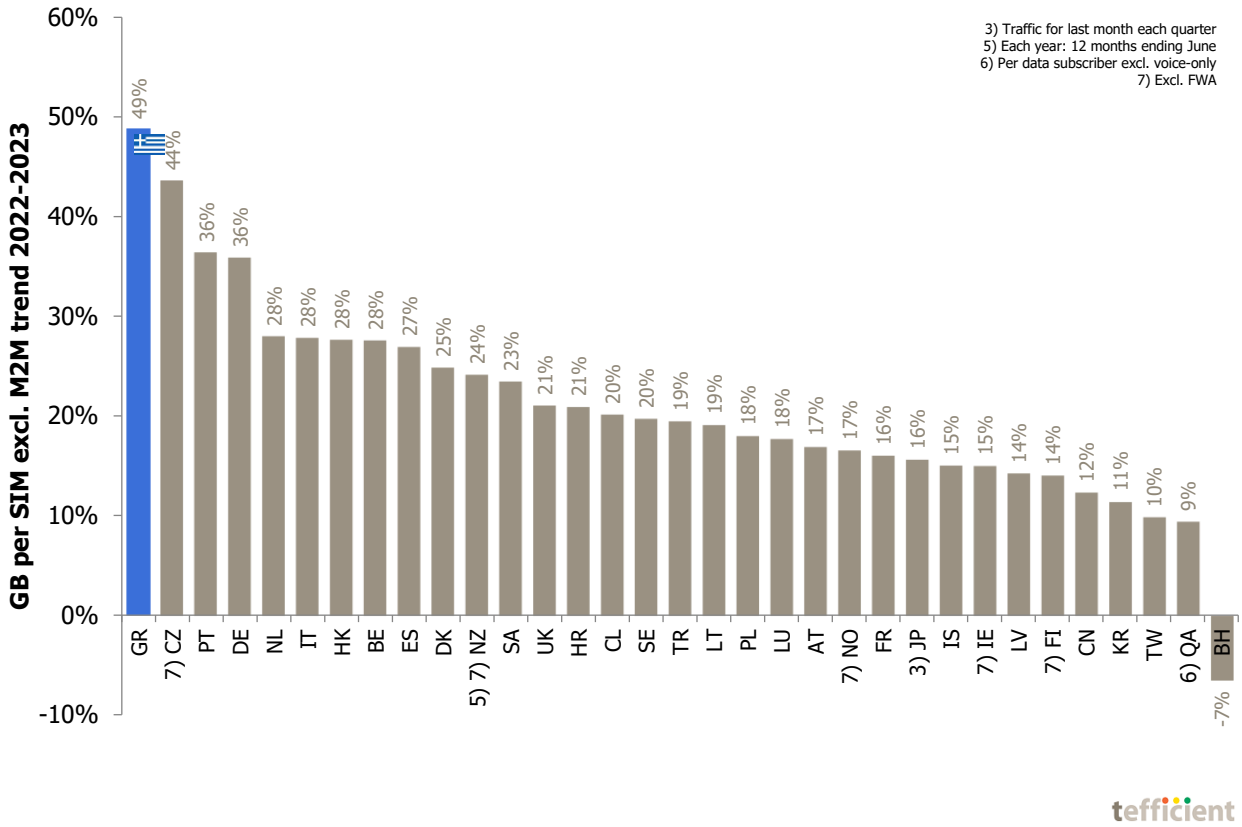

Figure 4. Development of mobile data usage per SIM (excl. M2M) 2022-2023

Greece had the fastest growth in mobile data usage, **49%**. **Czechia** is the number two in growth with 44%. **Portugal** is number three, closely followed by **Germany**, both with 36%.

At the right end of the scale, we find **Bahrain** with a **decline of 7%**. **Qatar** and **Taiwan** had some growth, but just 9-10%.

Qatar had the slowest usage growth – but Bahrain witnessed a decline in usage.

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

Although **fixed wireless access** (FWA) experiences a renaissance with 5G in the US with the US MNOs collectively having recruited 9 million FWA customers for four years (read on), 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 5.

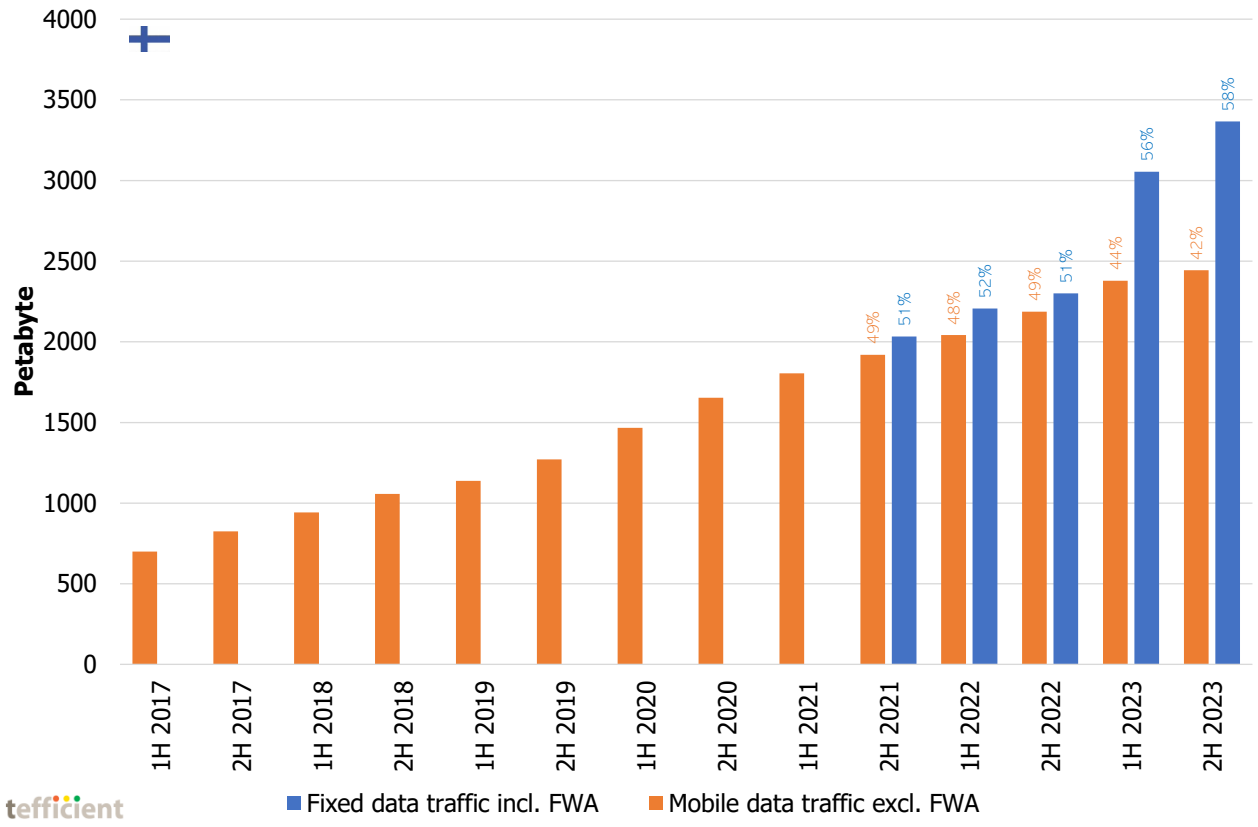

Figure 5. Development in reported mobile and fixed data traffic[8] in Finland, 1H 2017-2H 2023

In the first half of 2023, the fixed data traffic seems to have leaped in Finland, making mobile data traffic represent 44% of the total data traffic. In the second half of 2023, the share lowered further – to 42%. The fixed data traffic in 2021 and 2022 might however have been reported too low by one or several of the fixed providers, but the historical numbers have not been updated by the regulator.

[8] Remember, as mentioned in the beginning, that the traffic from about 50k FWA subscriptions with a service level guarantee is reported as fixed, not mobile, traffic in Finland.

A 42/58% split between mobile and fixed data traffic is still quite evenly distributed. But there's another market with that split: **Austria**.

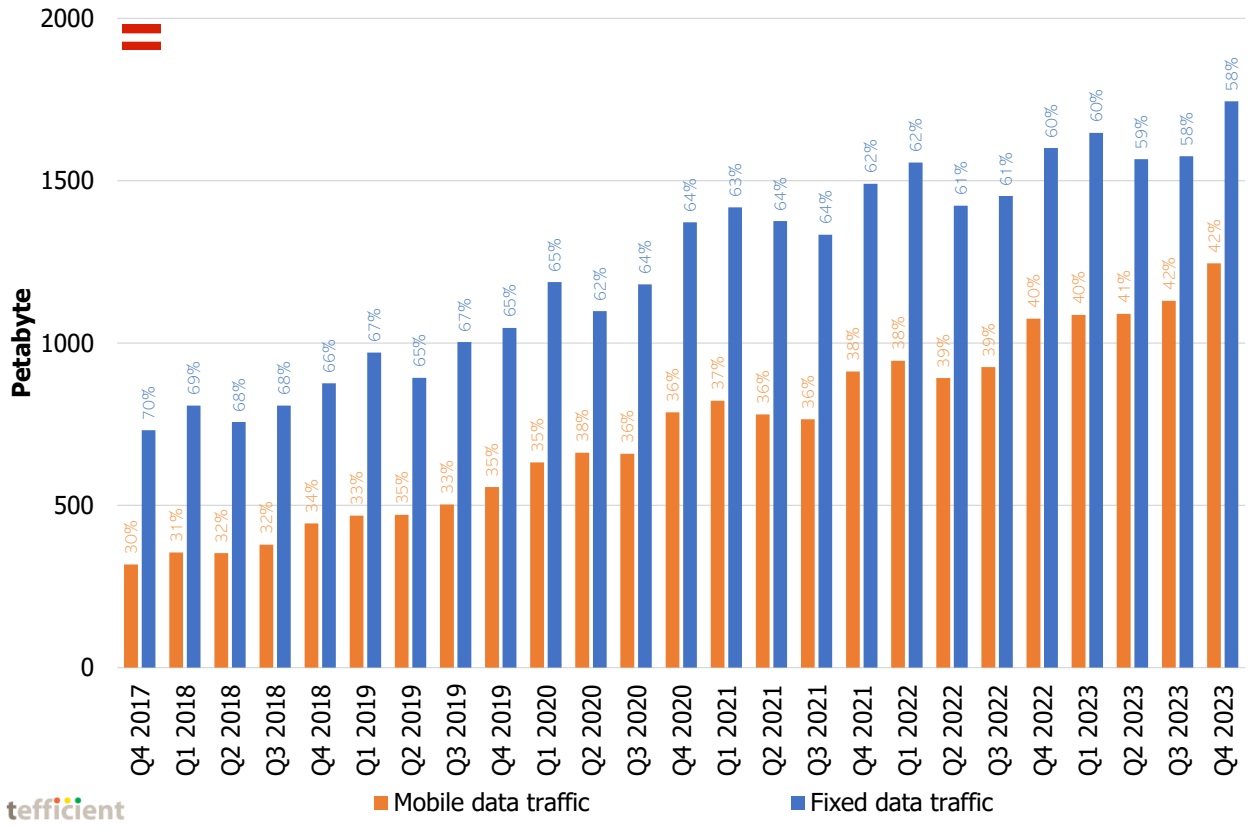

Figure 6. Development in reported mobile and fixed data traffic Austria, Q4 2017-Q4 2023

In the latest reported quarter by RTR, Q4 2023, the Austrian split was also 42/58%. Unlike Finland, where the mobile data share of traffic seems to be in decline, it continues to grow in Austria.

In most other countries, the fixed data traffic totally dominates over the mobile data traffic.

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

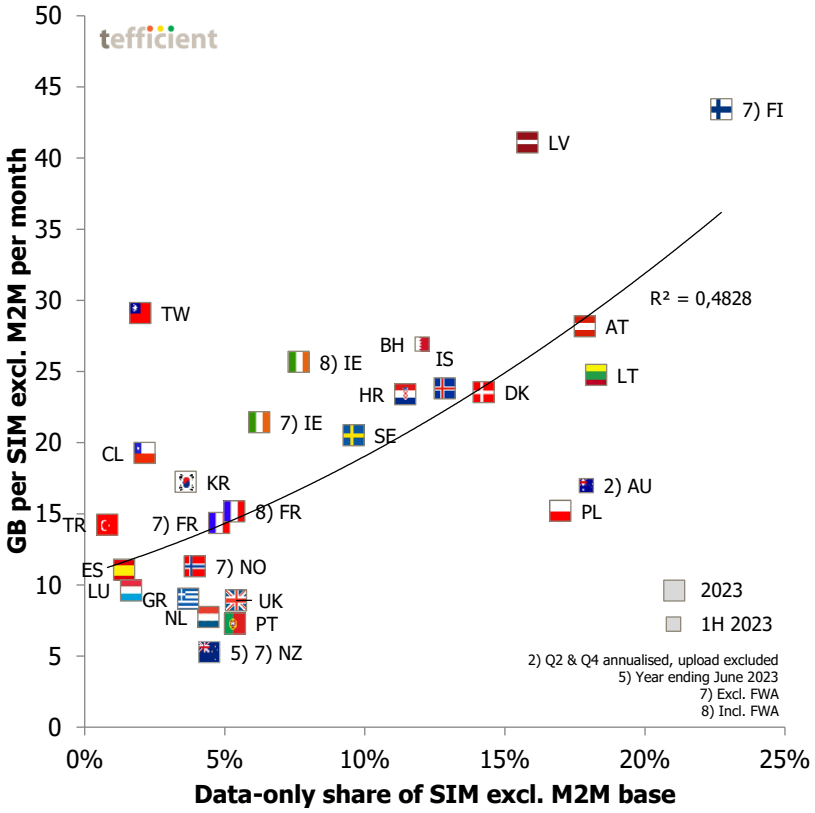

Figure 7. Mobile data usage vs. data-only share

In December 2023, **23%** of the SIM base in Finland was data-only[9]. That makes **Finland** the leader in data-only share of base – and the average mobile data usage is also the second highest in the world. In **Lithuania**, **Australia** and **Austria**, data-only represented 19% of the bases and the usage was lower than in Finland. **Poland** was at 17%, but with much lower overall usage than Austria and Lithuania. **Latvia** was at 16% and with the third highest overall usage.

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 and Turkey have low data-only share of base.

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.

[9] Excluding those about 50k FWA subscriptions with a service level guarantee mentioned in the beginning.

The US wireless market leader **Verizon** launched its first **5G** branded service in December 2018 to support a fixed wireless access (FWA) use case. **T-Mobile**, **U.S. Cellular** and finally **AT&T** have since followed. It seems to work very well sales-wise as FWA since the beginning of 2022 totally dominates the overall broadband subscriber growth, see Figure 8. In Q1 2024, **127%** of the broadband net adds were FWA. (A value above 100% is possible as fixed broadband overall had negative net adds).

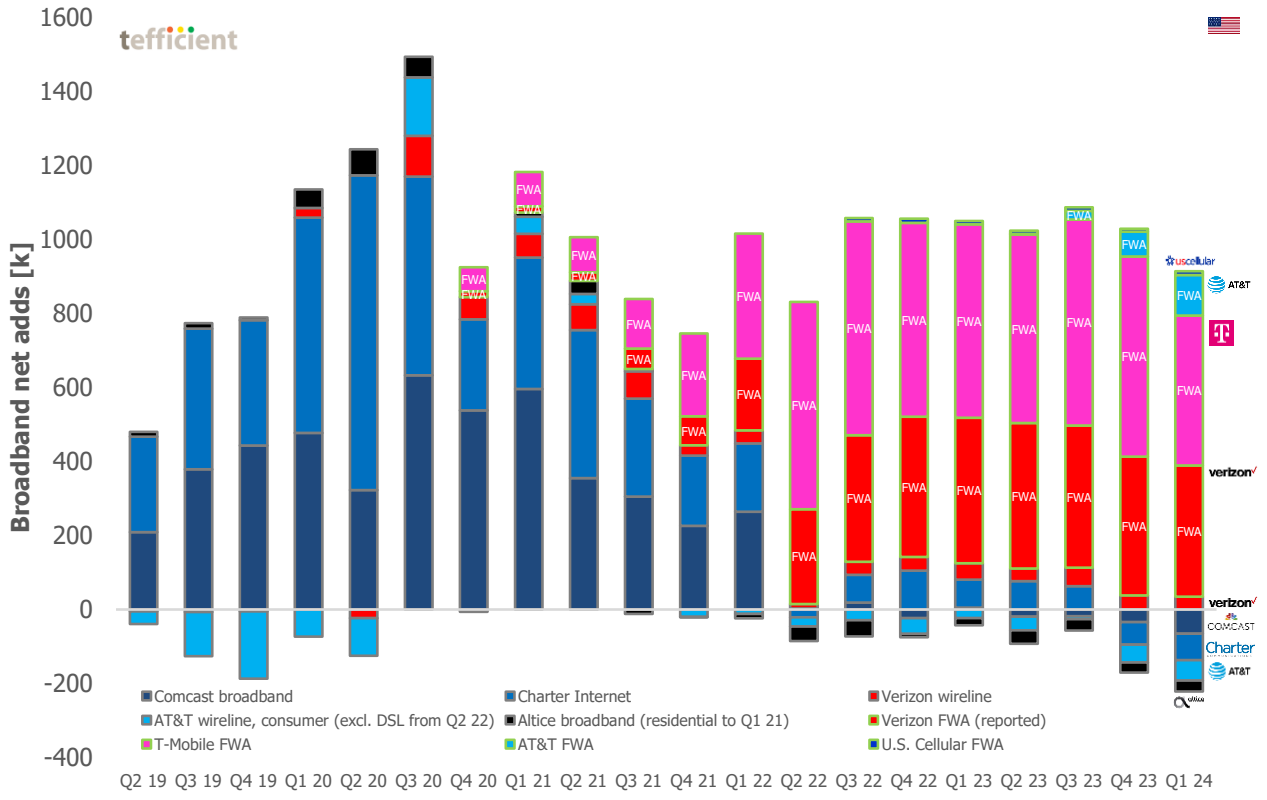

Figure 8. Broadband – fixed (grey outline) and FWA (green outline) – net adds per quarter per provider, USA

In March 2024, T-Mobile had accumulated close to **5.2 million FWA subscribers** (4G and 5G) across the US. Since Verizon offers fibre broadband in parts of the country, it doesn't sell FWA everywhere. Verizon still had more than 3.4 million FWA subscribers (again across 4G and 5G) in March 2024, representing **31%** of Verizon's total broadband (fixed+FWA) base.

Figure 7 shows that even a relatively low share of such data-only subscriptions could lift the average data consumption significantly.

Some of the countries in Figure 7 are also reporting the data-only traffic. For these countries, we can compare the data-only penetration of the SIM base to its share of the total mobile data traffic, see Figure 9.

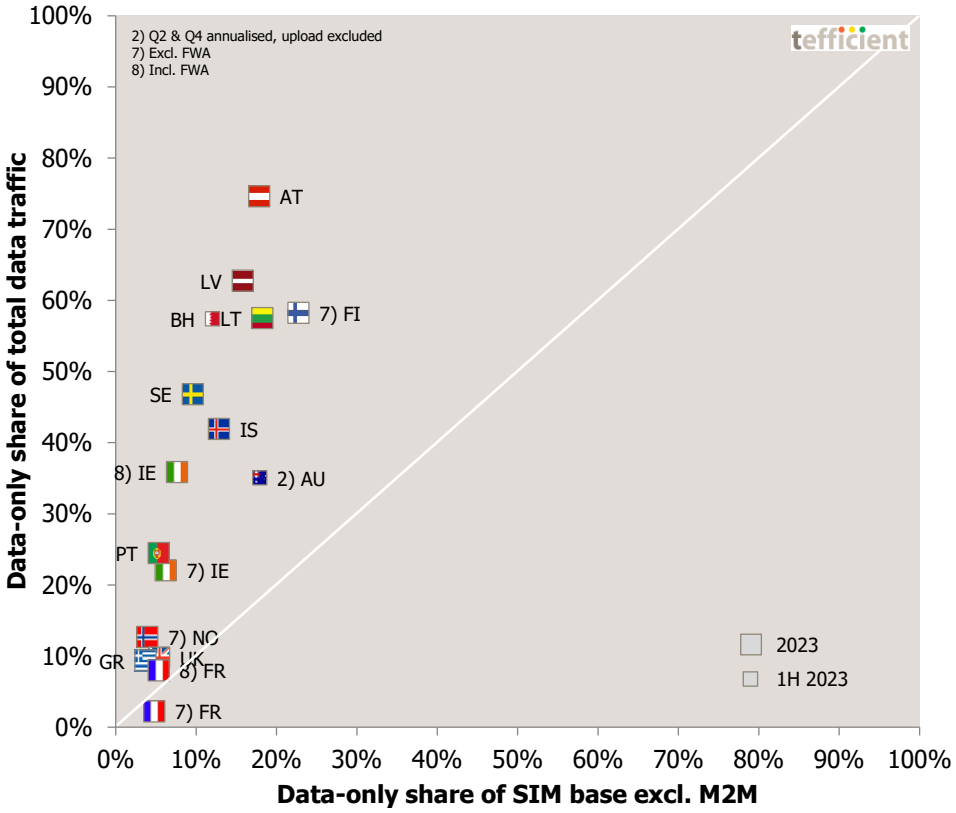

Figure 9. Data-only share of total traffic vs. data-only share of SIM base

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

- Sweden **4.9x** higher traffic per data-only SIM vs. any SIM
- Bahrain **4.8x**
- Ireland (incl. FWA) **4.7x**
- Portugal **4.6x**
- Austria **4.2x**
- Latvia **4.0x**
- Iceland **3.3x**
- Norway (excl. FWA) **3.2x**
- Lithuania **3.1x**
- Finland (excl. FWA) **2.6x**
- Greece **2.5x**
- Belgium **2.4x**
- Australia **2.0x**
- UK **1.8x**
- France (incl. FWA) **1.5x**

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 10.

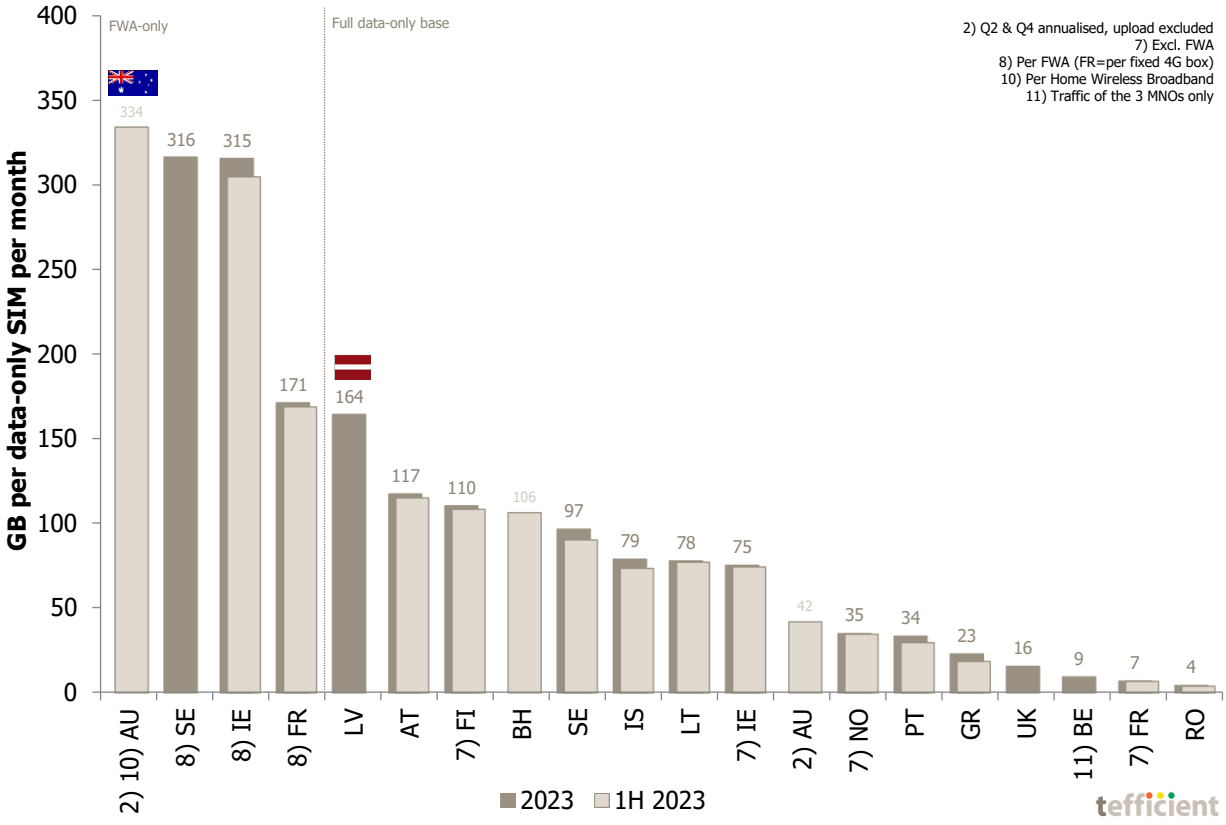

Figure 10. Mobile data usage per data-only SIM per month, full year 2023 and first half 2023

Starting from the left, the average Home Wireless Broadband subscription in **Australia** carried **334 GB** of mobile data per month in the first half of 2023. In Sweden, the average FWA subscription carried 316 GB of mobile data per month. The number is almost identical to **Ireland** (315 GB). At the end the short FWA-only top list, we have **France** where the average '4G box' carried **171 GB** of mobile data per month in 2023.

If instead looking at the whole data-only base (not just the FWA segment), **Latvia** leads with an average mobile data consumption per data-only SIM of **164 GB** per month in 2023. **Austria** follows with 117 GB. **Finland** had 110 GB in 2023 and **Bahrain** 106 GB in the first half of 2023.

The average Latvian data-only subscription consumed 164 GB per month in 2023.

In comparison to our previous reports, there's little dark grey on top of the first half 2023 light grey bars which shows that for most markets, there was little usage growth in the second half of 2023.

If **5G FWA** should become the fibre-over-radio solution that T-Mobile and Verizon suggest, the data-only FWA usage figures of Australia and Ireland give a taste of the usage that the solution must at least manage. Fixed broadband usage is yet higher – often above 400 GB per month.

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 11 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, Iceland, Taiwan and Japan).
- In Spain and India, regulators report 5G traffic, but not 5G subscribers.
- The definition of what a 5G subscriber is differs.

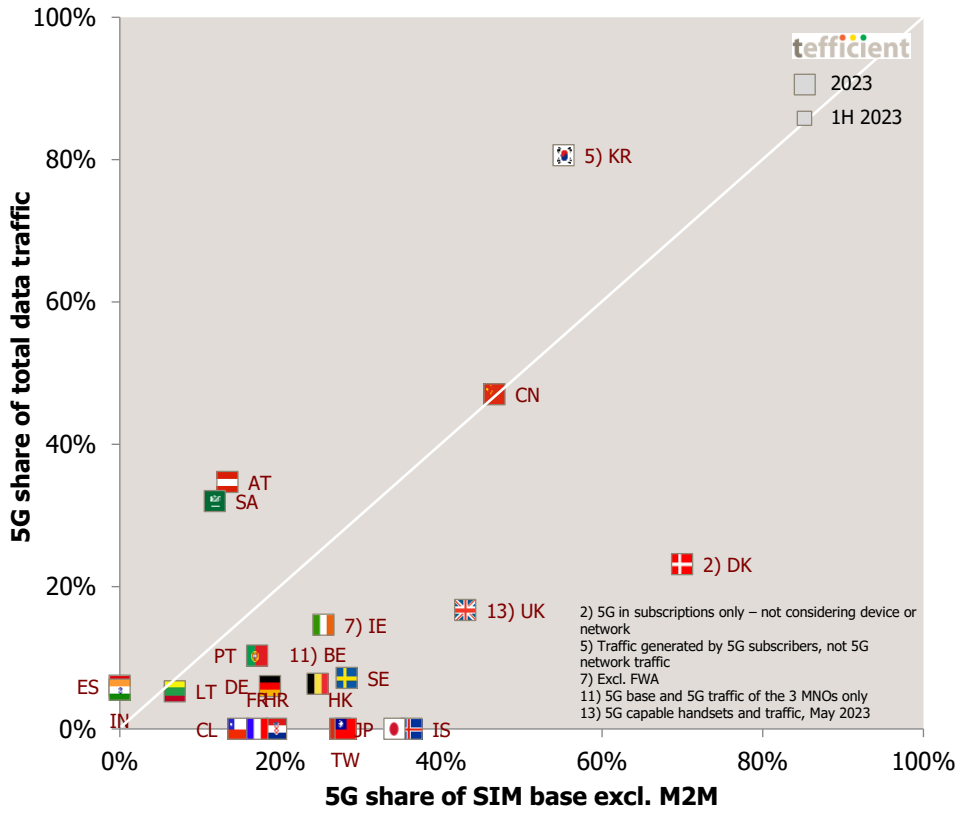

Figure 11. 5G share of total traffic vs. 5G share of SIM base

With these difficulties, it's hard to be firm on the conclusion on 5G, but Figure 11 isn't necessarily showing that 5G drives data traffic. There are a few countries above the white equilibrium line for which it is true – **Saudi Arabia, Austria and South Korea** – but there are more countries below the line: Lithuania, Portugal, Germany, Belgium, Ireland, Sweden, the UK and Denmark – whereas China is on the line. If we compare to Figure 9 – the data-only graph – the difference is clear. Whereas data-only drives data traffic, 5G doesn't seem to.

Why not? One obvious explanation is **coverage** (or rather lack thereof). 5G subscribers with 5G devices need 5G coverage to generate 5G traffic and while 5G coverage is being rolled out, 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.

South Korea, Austria and Saudi Arabia have disproportionally high 5G traffic.

While that sounds both costly and slow, another option is to **target the FWA market using 5G**. The positions of **Austria** and **Saudi Arabia** in Figure 11 – where 5G's share of traffic is higher than 5G's share of subscriptions – is 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.

We have in earlier editions of this report highlighted 3/Drei in Austria as the 5G standalone example, but a more recently added example is **Elisa** in Finland, see Figure 12.

Figure 12. The 5G FWA offering of Elisa Finland for a particular address – with a premium "Omakaista" 1000 Mbit/s tier

At the example address shown in Figure 12, Elisa offers three 5G FWA options for fixed use: One ordinary option with up to 600 Mbit/s and a starting price of 29.01 EUR, another ordinary option with up to 1000 Mbit/s and a starting price of 34.01 EUR – but finally also an "Omakaista" (~your own band) premium option with a starting price of 46.82 EUR in which Elisa uses **5G standalone** to ensure the highest possible speed regardless of the number of other mobile users in the neighbourhood. The availability is limited to a certain number of addresses in an area; how many is likely dependent on the capacity at hand.

Before closing this section, let's introduce a simpler version of Figure 11 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 **Austria and Saudi Arabia** also shows how important 5G FWA could be to drive the overall 5G traffic.

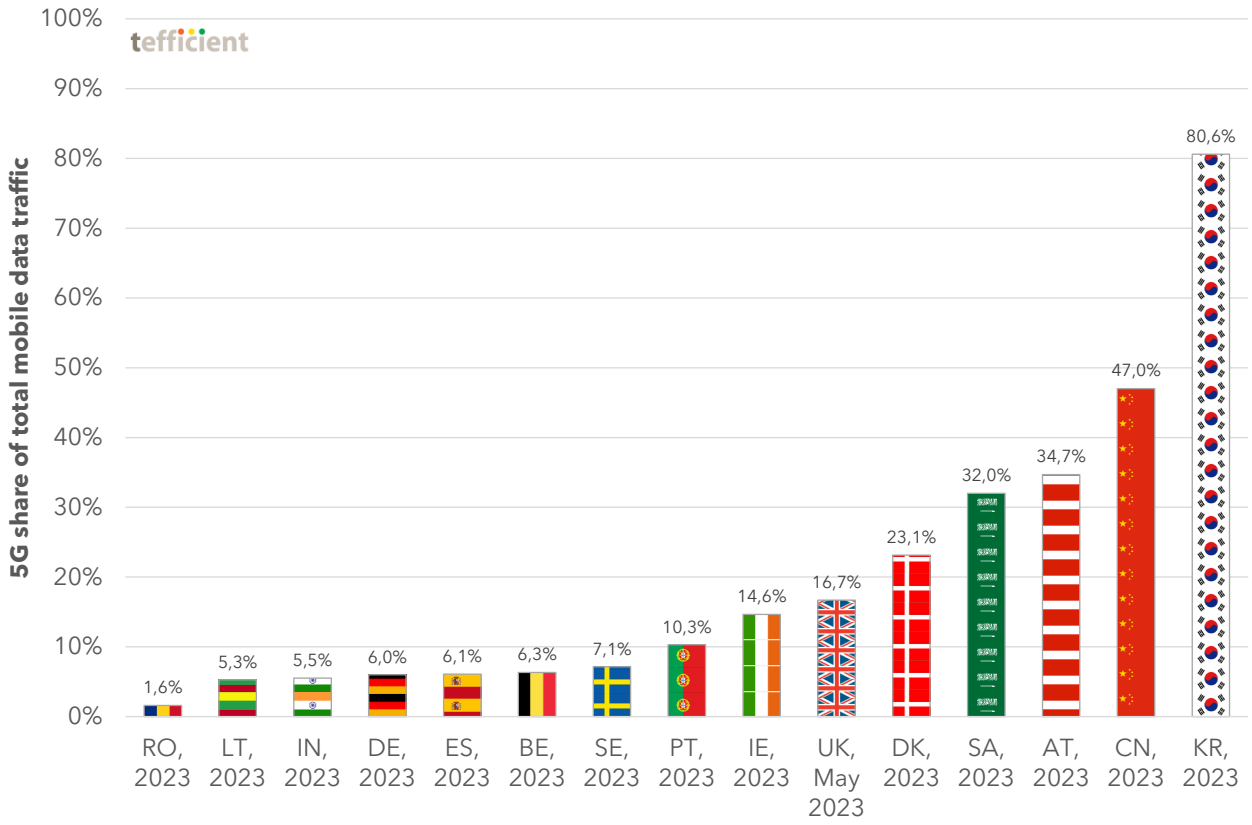

Figure 13. 5G share of total traffic

Most European countries – Romania, Lithuania, Germany, Spain, Belgium and Sweden – struggle with 5G traffic take-up just having achieved 1.6% to 7.1% in 2023. Apart from already-mentioned Austria, **Denmark** stands out positively in Europe with its 5G share of traffic of 23.1%.

A gigabyte has never been cheaper

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 and more operators introduce unlimited propositions, these are often the last step in a tiered data plan[10] – which means that price still, essentially, is about data volume.

Figure 14 plots the *total* mobile service revenue per consumed gigabyte[11] against the average mobile data usage per SIM and month.

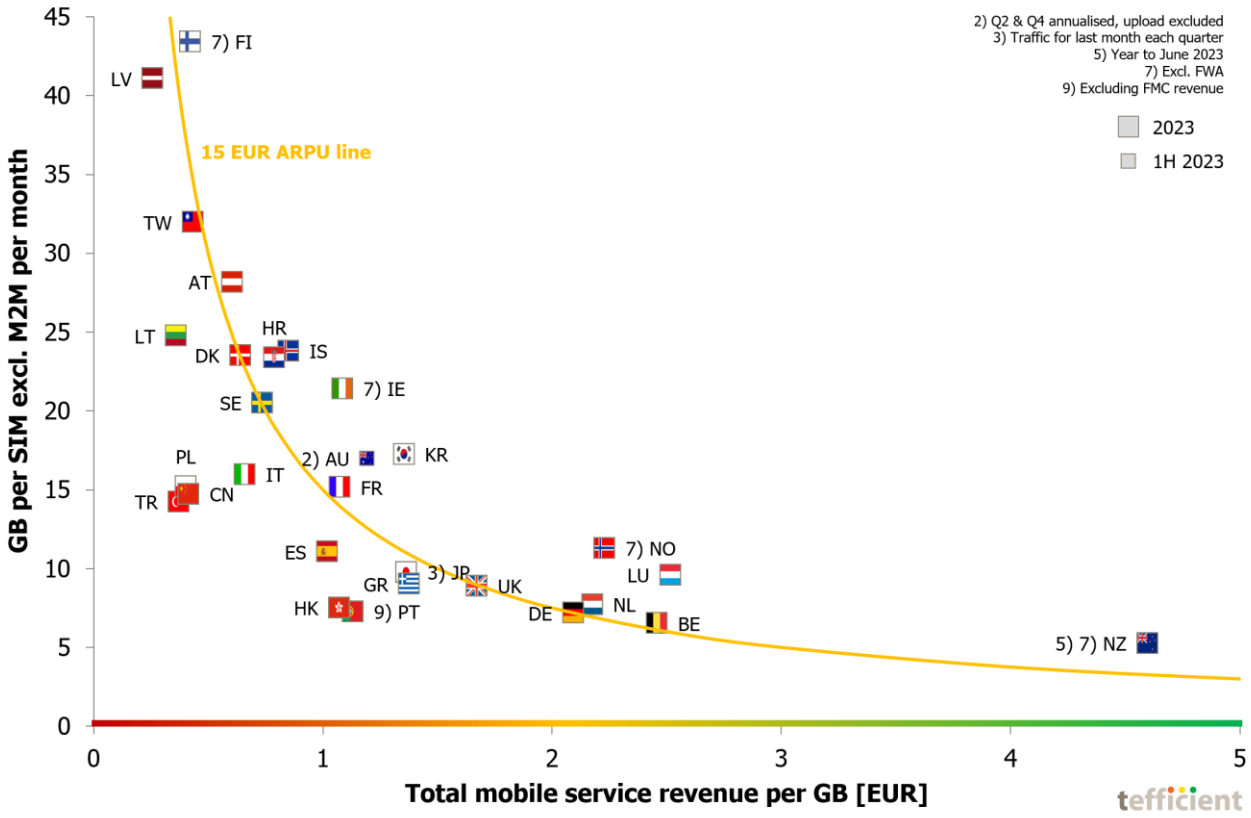

Figure 14. Mobile data usage vs. total mobile service revenue per consumed GB

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.

[10] There are exceptions to this – where the price-defining parameter instead is data throughput – e.g. Finnish operators, Swisscom, O2 Germany, Norwegian operators and Vodafone in Spain, the UK and most other European Vodafone markets (except Germany). There are also operators mixing several parameters such as volume, throughput, policy, zero-rating, video resolution, service bundling etc.
[11] Attributing zero value to voice and messaging.

With Canada not being in this excluding-M2M analysis (due to lack of M2M reporting), **New Zealand**[12] holds the position where operators collectively earn the highest total service revenue per consumed mobile GB. **Belgium** and **Luxembourg** are the very distant number two and three in revenue per GB.

There is a cluster of countries with almost as high revenue per GB as Belgium and Luxembourg: **Norway**[12], the **Netherlands** and **Germany**.

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**, **Turkey**, **Poland**, **China**, **Finland** and **Taiwan**.

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 7.

Latvia's operators have the lowest total revenue per GB – New Zealand'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 except Turkey. Figure 15 shows the revenue development from 2022 to 2023.

[12] FWA not included in the revenue nor the data traffic since the regulators do not report the FWA traffic.

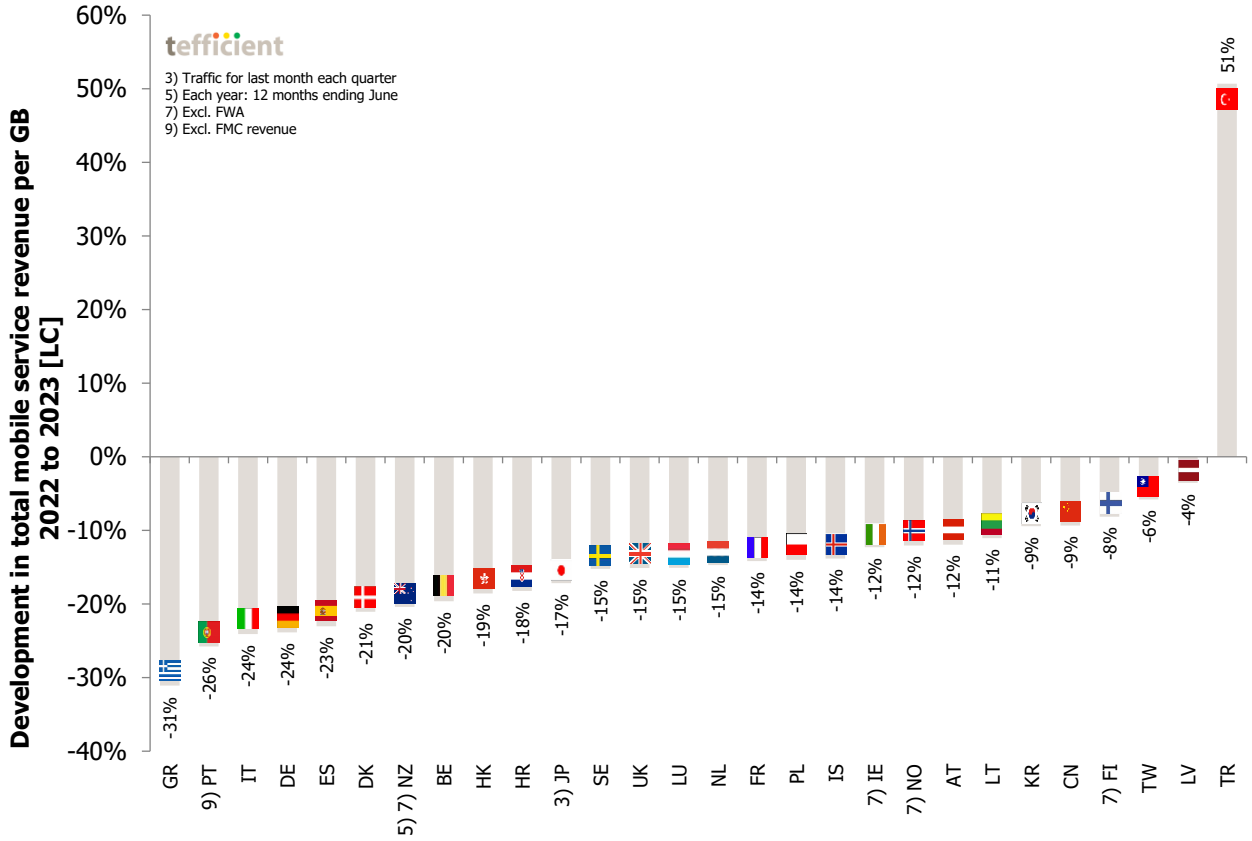

Figure 15. Development in total mobile service revenue per consumed GB – 2022 to 2023

The prerequisite to appear in Figure 15 is of course that the statistics have been reported both for 2022 and 2023. Of these markets, **Greece** had the fastest revenue erosion, 31%. **Portugal** had 26% while **Italy** and **Germany** had 24%, and Spain 23%.

In **Turkey**, the revenue per GB **increased with 51%** – in local currency – between 2022 and 2023. But where inflation started to decrease in the world in 2023, Turkey still had hyperinflation: It was 54% in 2023, making Turkey an outlier among our markets.

The market with the slowest erosion in the revenue per GB is **Latvia**.

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 SIM, i.e. the ARPU.

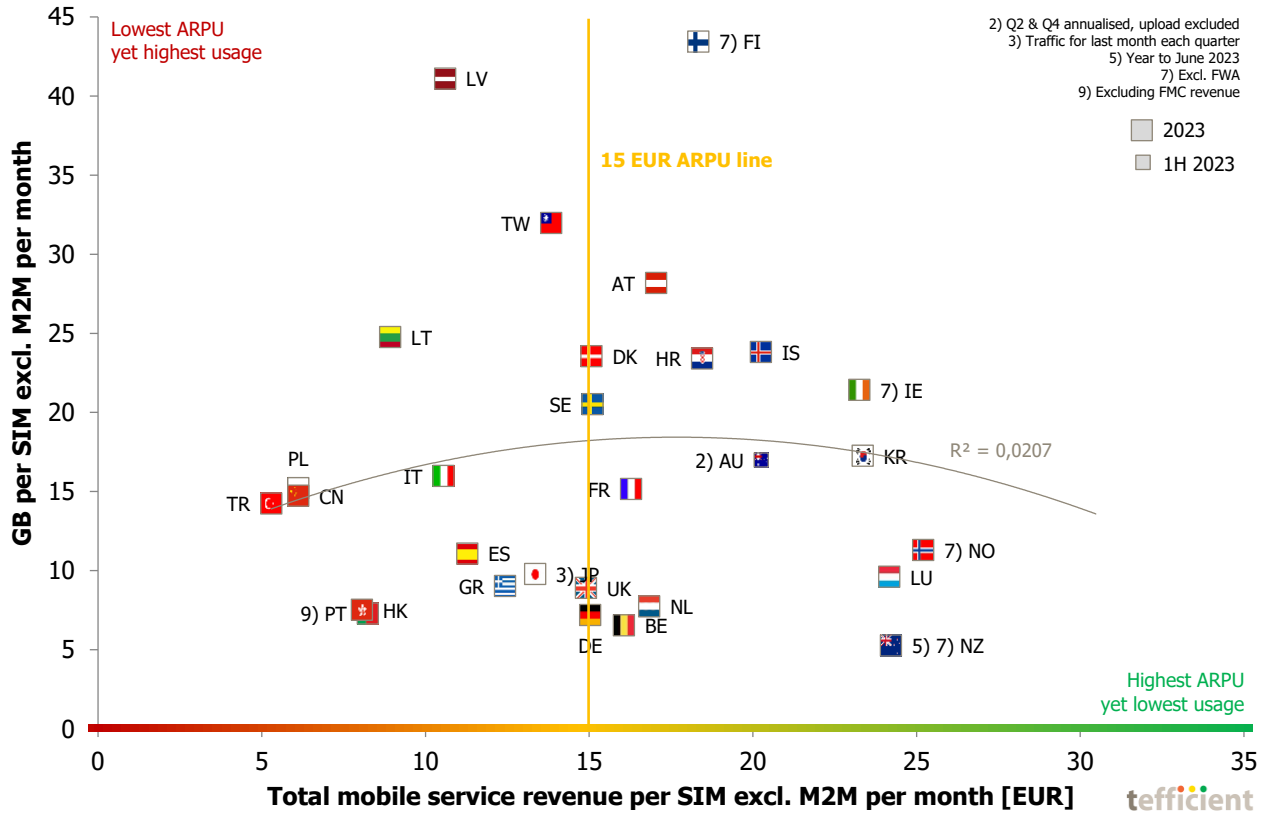

Figure 16. Mobile data usage vs. total mobile service revenue per SIM

Norway[13] had the highest ARPU among our markets, followed by **New Zealand**, **Luxembourg**, **South Korea**, and **Ireland**. The latter two have quite high mobile data usage, though.

Operators to the upper left – **Taiwan**, **Latvia**, **Taiwan**, **Lithuania**, **Poland**, **China**, and **Turkey** – are the most 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.

[13] FWA traffic, FWA subscriptions and FWA revenues excluded as FWA traffic isn't reported.

Dressing the Christmas tree based on ARPU development

Now to our Christmas tree graph which we continue to think is the best visualisation ever. 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.

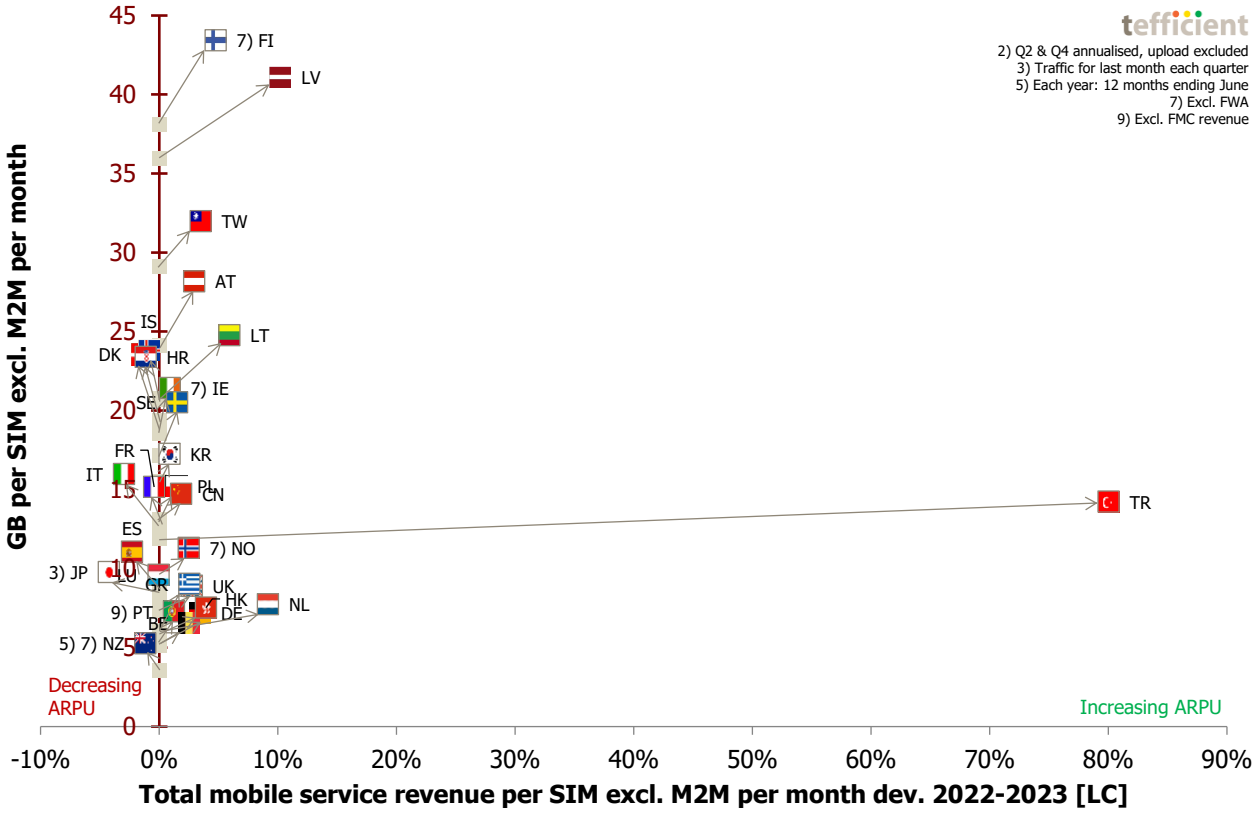

Figure 17. Development in mobile data usage vs. the development in ARPU – 2022 to 2023

The branches stretch right in **19 of 28 markets**[14] (68%). These are – from the top – **Finland**, **Latvia**, **Taiwan**, **Austria**, **Lithuania**, **Ireland**, **Sweden**, **South Korea**, **Poland**, **China**, **Turkey**, **Norway**, **Greece**, the **UK**, the **Netherlands**, **Hong Kong**, **Portugal**, **Germany**, and **Belgium**. In 9 markets (32%), the branches stretch left meaning that even though data usage generally grew, ARPU fell. The ARPU erosion in **Japan** was the fastest; 4%. **Italy** was at 3% and **Spain** at 2%.

ARPU grew, following an increase in mobile data usage, in 19 of 28 markets

[14] The 28 markets for which regulators/operators have reported the necessary underlying stats to date.

Conclusion

In our analysis focused solely on mobile data usage and revenues excluding M2M, **usage growth was observed in 38 of the 39 markets**, with **Bahrain** being the sole exception.

We saw a change at the top: **Saudi Arabia** now leads with 45.2 GB per average SIM per month in 2023, overtaking **Finland** (43.4 GB). For the first time since 2013 Finland isn't in the top. Saudi Arabia's usage grew by 23%, compared to Finland's 14%. **Greece** experienced the fastest growth at 49%. In absolute terms, the data usage increased by 8.6 GB in Saudi Arabia, 5.3 GB in Finland, and 3.0 GB in Greece.

Our analysis shows strong correlation between the **data-only share** of a country's SIM base and the average data usage. **Finland**, **Lithuania**, **Australia**, **Austria**, **Poland** and **Latvia** are the data-only powerhouses of the world. Finnish statistics indicate that mobile networks carried 42% of the total data traffic in the second half of 2023, with fixed networks handling 58%. Austria has exactly the same split, but while mobile's share of traffic is still increasing in Austria, it has begun to decline in Finland.

Attempting to correlate **5G** share of base with 5G share of traffic faced challenges due to data limitations and varied definitions. Only **South Korea, Austria and Saudi Arabia** have disproportionately high 5G traffic. Lack of 5G coverage emerged as a plausible explanation for the limited impact of 5G elsewhere.

Across technologies, increased data-only penetration, particularly through fixed-line substitution, has the potential to elevate data usage. However, a prerequisite for this, and for high data usage in general, is maintaining a low total revenue per gigabyte. Countries such as **Latvia, Lithuania, Turkey, Poland, China, Finland, and Taiwan** exhibit this characteristic, while **New Zealand** represents the opposite end of the spectrum.

Despite variations in data usage, market ARPU does not consistently correlate with usage levels. **New Zealand, Norway, Luxembourg, South Korea, and Ireland** boast higher ARPU, though the first three do not have particularly high usage.

19 of 28 markets could grow ARPU on the back the data usage growth, an improvement compared to some of the previous editions of this analysis.
