

WB6 Roaming Report 2024



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WB6 Roaming Report 2024

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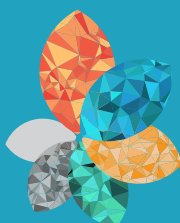
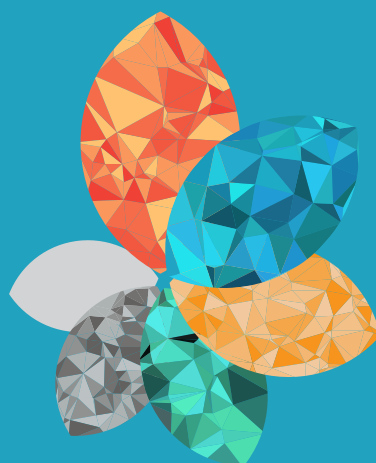


Table of Contents

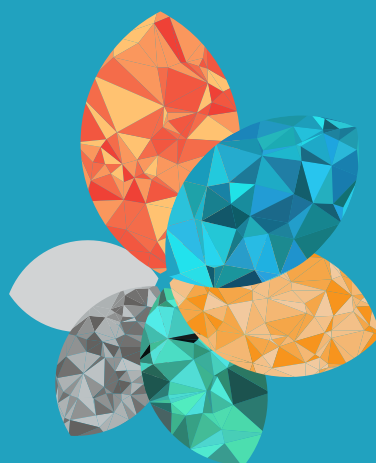
INTRODUCTION	6
EXECUTIVE SUMMARY	8
I ROAMING USERS	11
II ROAMING CONSUMPTION	13
2.1. ROAMING VOICE CONSUMPTION	13
2.2. ROAMING SMS USAGE	17
2.3. ROAMING DATA USAGE	18
III RETAIL ROAMING REVENUES	20
3.1. RETAIL ROAMING REVENUES SPLIT PER SERVICES	21
3.2. RETAIL ROAMING VOICE REVENUES	22
3.3. RETAIL ROAMING SMS REVENUES	25
3.4. RETAIL ROAMING DATA REVENUES	27
IV WHOLESALE ROAMING REVENUES	29
4.1. WHOLESALE ROAMING REVENUES SPLIT PER SERVICES	30
4.2. WHOLESALE ROAMING VOICE REVENUES	31
4.3. WHOLESALE ROAMING SMS REVENUES	32
4.4. WHOLESALE ROAMING DATA REVENUES	34
V WHOLESALE ROAMING COSTS	36
5.1. WHOLESALE ROAMING COSTS SPLIT PER SERVICES	37
5.2. WHOLESALE ROAMING VOICE COSTS	38
5.3. WHOLESALE ROAMING SMS COSTS	39
5.4. WHOLESALE ROAMING DATA COSTS	41
VI CONCLUSION	43



List of Tables

Figure 1	Total number of roaming users	11
Figure 2	Roaming users in the WB6 and EEA	12
Figure 3	Average duration of outgoing calls per roaming user	14
Figure 4	Outgoing voice minutes per roaming user in the WB6	14
Figure 5	Outgoing voice minutes per roaming user in the EEA	15
Figure 6	Average duration of incoming calls per roaming user	15
Figure 7	Incoming voice minutes per roaming user in the WB6	16
Figure 8	Incoming voice minutes per roaming user in the EEA	16
Figure 9	Average SMS consumption per roaming user	17
Figure 10	SMS traffic per roaming user in the WB6	17
Figure 11	SMS traffic per roaming user in the EEA	18
Figure 12	Average data consumption per roaming user	18
Figure 13	Data traffic per roaming user in the WB6	19
Figure 14	Data traffic per roaming user in the EEA	19
Figure 15	Total retail roaming revenues	20
Figure 16	Split of retail roaming revenues in the WB6 in 2023	21
Figure 17	Split of retail roaming revenues in the EEA in 2023	21
Figure 18	Total retail roaming revenues per minute of outgoing calls	22
Figure 19	Retail roaming revenue per minute of outgoing calls in the WB6	22
Figure 20	Retail roaming revenue per minute of outgoing calls in the EEA	23
Figure 21	Total retail roaming revenues per minute of incoming calls	23
Figure 22	Retail roaming revenue per minute of incoming calls in the WB6	24
Figure 23	Retail roaming revenue per minute of incoming calls in the EEA	24
Figure 24	Total retail roaming revenues per SMS	25
Figure 25	Retail roaming revenue per SMS in the WB6	26
Figure 26	Retail roaming revenue per SMS in the EEA	26
Figure 27	Total retail roaming revenues per GB	27
Figure 28	Retail roaming revenue per GB in the WB6	27
Figure 29	Retail roaming revenue per GB in the EEA	28
Figure 30	Total wholesale roaming revenues	29

Figure 31	Split of wholesale roaming revenues from the WB6	30
Figure 32	Split of wholesale roaming revenues from the EEA	30
Figure 33	Total wholesale roaming revenues per minute of inbound call	31
Figure 34	Wholesale roaming revenue per minute from the WB6	31
Figure 35	Wholesale roaming revenues per minute from the EEA	32
Figure 36	Total wholesale roaming revenues per SMS	32
Figure 37	Wholesale roaming revenue per SMS from the WB6	33
Figure 38	Wholesale roaming revenue per SMS from the EEA	34
Figure 39	Total wholesale roaming revenues per GB of data services	34
Figure 40	Wholesale roaming revenue per GB from the WB6	35
Figure 41	Wholesale roaming revenue per GB from the EEA	35
Figure 42	Total wholesale roaming costs	36
Figure 43	Split of wholesale roaming costs in the WB6 in 2023	37
Figure 44	Split of wholesale roaming costs in the EEA in 2023	37
Figure 45	Total wholesale roaming costs per minute of outbound calls	38
Figure 46	Wholesale roaming voice costs per minute in the WB6	38
Figure 47	Wholesale roaming voice costs per minute in the EEA	39
Figure 48	Total wholesale roaming costs per SMS	39
Figure 49	Wholesale roaming costs per SMS in the WB6	40
Figure 50	Wholesale roaming costs per SMS in the EEA	40
Figure 51	Total wholesale roaming costs per GB of data services	41
Figure 52	Wholesale roaming costs per GB in the WB6	41
Figure 53	Wholesale roaming costs per GB in the EEA	42



INTRODUCTION



Successful implementation of the Roam Like at Home (RLAH) regime in the Western Balkans Six (hereinafter: WB6) has marked a significant milestone in the region's telecommunications landscape. In the three years since the introduction of RLAH, it has transformed the way citizens of the WB6 communicate while traveling within the region, allowing users to use their mobile phones while traveling abroad at no additional cost beyond what they pay at home, fostering greater connectivity, economic integration, and regional cooperation.

Building on the success of RLAH in WB6, efforts have been extended to further reduce roaming costs between the WB6 and the EU. This led to the signing of the EU/WB Roaming Declaration on 6 December 2022 in Tirana, bringing together telecommunications operators from the EU and the WB6, supported by the Regional Cooperation Council (RCC) and the European Commission (EC). Through their voluntary agreement, operators committed to narrowing the gap between roaming and domestic data service prices across both regions. The signatories established retail price caps for roaming data services for the period 2023–2028, with reductions taking effect from 1 October 2023.

On 8 November 2023, the European Commission adopted a new Growth Plan for the Western Balkans, aiming to bring the region closer to the EU by offering selected benefits of EU membership ahead of accession. The plan seeks to boost economic growth and accelerate socio-economic convergence while incentivising reforms necessary for EU integration.

To support this initiative, the EU adopted a €6 billion financial instrument—Regulation (EU) 2024/1449 of 14 May 2024—establishing the Reform and Growth Facility for the Western Balkans for 2024–2027.

One of the four pillars of the new Growth Plan for the Western Balkans aim to enhance economic integration with the European Union's single market by addressing the Digital Single Market as one of the seven priorities within this pillar.

The main goals for the Digital Single Market, among others, include:

- (i.) Facilitate the extension of coverage of the current voluntary roaming agreement among telecom operators as an interim step until (ii) below;
- (ii.) Provide legal certainty for users and operators exploring solutions for a long-term roaming arrangement to include the Western Balkans in the EU 'roam like at home' area, fully respecting the European Union's international trade commitments.

This document represents the third edition of the Western Balkans Roaming Report and covers the period from 2019 to 2023. It provides a comprehensive overview of the Western Balkans Regional Roaming Agreement (RRA) implementation which commenced in 2019. The figures presented in the

report support the anticipated positive impacts of the RLAH implementation in the WB6. Additionally, the report includes the analysis of roaming data for the European Economic Area (EEA) for the entire analysed period.

The report includes a thorough analysis of key trends in roaming usage, retail and wholesale revenues, and wholesale costs in the WB6 and the EEA from 2019 to 2023. Additionally, it offers a detailed examination of roaming data specific to each WB economy for 2022 and 2023. The roaming data for 2022 and 2023 was collected from WB6 regulatory authorities responsible for electronic communications. The data collection process started in June and concluded in August 2024. The RCC or the Consultant does not take responsibility for the completeness or accuracy of the data provided by the regulators.

EXECUTIVE SUMMARY



The WB6 is increasingly interconnected, with more people traveling within the region and using roaming services. From 2019 to 2023, there has been a notable rise in roaming users in both the WB6 and the EEA, driven by increasing connectivity and the abolition of retail roaming charges. The total number of roaming users in the WB6 grew by 25% during this period, with a compound annual growth rate (CAGR) of 6%. Similarly, the number of WB6 users utilising roaming services in the EEA increased by 18%, with a CAGR of 4%.

Between 2022 and 2023, the WB6 recorded 13% more roaming users, while growth in the EEA was more modest at 7%. Most WB6 users preferred using roaming services within their region, with Bosnia and Herzegovina and Serbia being exceptions, where more users used roaming services in the EEA.

As a result of lower prices, there has been a noticeable increase in the usage of roaming data, voice, and SMS services in the WB6 in 2023 compared to 2022. This has not only benefited consumers, but also telecommunications operators who have seen higher overall usage volumes, compensating for lower retail roaming prices.

Since 2021, the average duration of outgoing voice calls in the WB6 has been declining. However, total outgoing voice minutes increased by 4% in 2023 compared to 2022, driven primarily by a rise in number of roaming users, which offset the shorter call durations. Roaming users from the WB6 also recorded a 4% increase in outgoing voice call minutes while roaming in the EEA.

In the same period, the average duration of incoming calls per roaming user has decreased in both the WB6 and the EEA.

The data highlights a robust growth in data consumption per roaming user in both the WB6 and the EEA, with average annual growth rates of 48% and 72%, respectively from 2019 to 2023. The growth rate of 51% in the WB6 and 89% in the EEA from 2022 to 2023 underscores the significant impact of reduced retail roaming prices. This tremendous growth points to the ongoing digital integration and the crucial role of affordable mobile data services in fostering connectivity and economic activity across regions.

In 2023, a roaming user from the WB6 spent on average 58 minutes for making calls and 51 minutes for receiving calls while using roaming services in the WB6 and 7 minutes for making and receiving calls in the EEA. In the same period, a roaming user sent on average 14 SMS while roaming in the WB6 and 8 SMS while roaming in the EEA. The average data traffic per roaming user reached almost 3.2 GB in the WB6 and 1.4 GB in the EEA in 2023. Lower consumption per user while using roaming services in the EEA compared to roaming consumption per user in the WB6 is directly related to higher retail prices for roaming data services in the EEA.

Total retail revenues from roaming services in the EEA grew at an average annual rate of 10% from 2019 to 2023. In contrast, total retail revenues from roaming services within the WB6 declined by an average of 13% annually over the same period, largely due to the implementation of RRA. Compared to 2022, in 2023 total retail revenues from WB6 roaming users within the WB6 declined by 5%. In the same period, total retail roaming revenues generated by WB6 users in the EEA increased by 29%. In 2023, 44% of total retail roaming revenues in the WB6 came from outgoing voice calls, while data services accounted for 43%. Of the total retail roaming revenues from roaming services in the EEA in 2023, 65% came from data services and 20% from outgoing voice calls.

Between 2022 and 2023, retail revenue per minute of outgoing roaming voice calls in the WB6 decreased by 13%. Similarly, retail revenues per SMS dropped by 27%. Both declines were driven by reductions in retail prices for roaming services in the WB6. Retail revenue per GB of data services experienced an even steeper drop of 37%, primarily due to a decrease in retail prices for roaming data services. Providing roaming services within the EEA resulted in 10% lower retail roaming revenues per minute of outgoing roaming call and relatively stable retail roaming revenues per SMS in 2023 compared to 2022. However, retail roaming revenues per GB of data services decreased by 20% in 2023 compared to 2022, as a result of lower average retail roaming prices for data services in the EEA in 2023.

Total wholesale roaming revenues generated by EEA roaming users while using roaming services in the WB6 grew at an average annual rate of 5% from 2019 to 2023. In comparison, total wholesale roaming revenues generated by WB6 roaming users while using roaming services in the region increased by an average of 2% annually over the same period. There has been a declining trend in average wholesale roaming revenues per unit of service across all roaming services provided in the WB6, including inbound voice, SMS, and data, mainly driven by lower average wholesale prices for inbound roaming services. Only wholesale roaming revenues per minute of inbound voice calls from EEA users increased by 33% in 2023 compared to 2022. In 2023, over 60% of total wholesale roaming revenues from both the WB6 and the EEA users came from data services.

Total wholesale costs of providing roaming services in the WB6 grew at an average annual rate of 15% from 2019 to 2023, while wholesale costs of providing roaming services in the EEA increased by 7% on average annually. In 2023, data services accounted for 63% of total wholesale roaming costs from the WB6 and 57% from the EEA. Compared to 2022, in 2023 wholesale roaming voice costs per minute of outbound calls generated by WB6 roaming users while using roaming services within the WB6 remained mostly flat. Wholesale roaming voice costs per minute of outbound calls generated by WB6 roaming users while using roaming services within the EEA grew by 12%, mainly due to higher average wholesale roaming prices for voice services in 2023. Despite increased outbound SMS traffic in the WB6, wholesale roaming costs per SMS have declined by 24% due to reduced average wholesale prices. In contrast, wholesale roaming costs per SMS in the EEA increased by 16% due to increased average prices per SMS. A declining trend in total wholesale roaming costs per GB of data services is evident throughout the observed period, with a decrease of 27% in the WB6 and 35% in the EEA. This decrease is driven by reduced average wholesale prices for data services in both regions.

Overall, the implementation of RLAH over the past three years in the WB6 stands as a significant achievement, showcasing the tangible benefits of regional cooperation and policy alignment in the telecommunications sector.



I ROAMING USERS



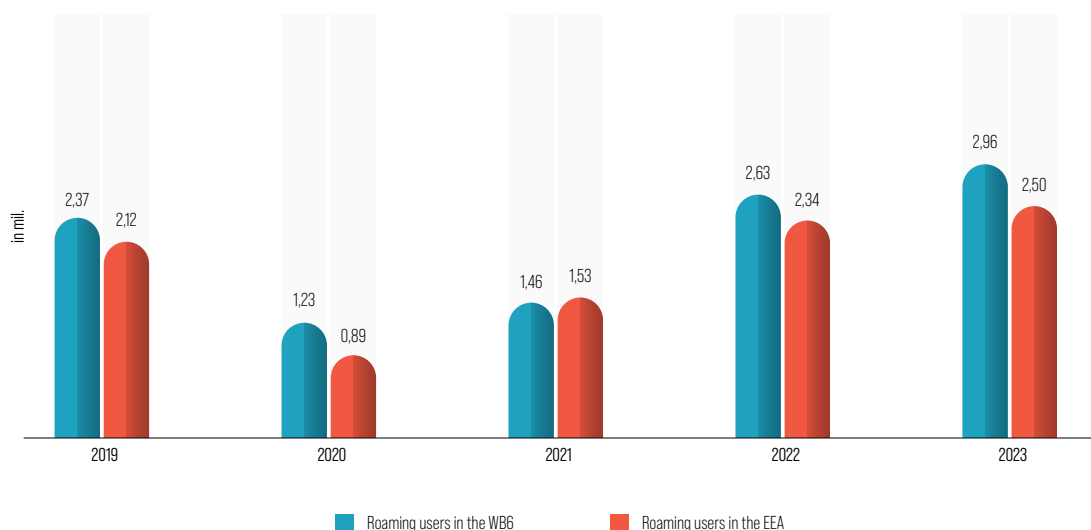
The total number of roaming users in the WB6 increased by 25% in 2023 compared to 2019.



During the same period, the total number of WB6 users using roaming services in the EEA increased by 18%.

Over these five years, there has been a significant increase in the number of roaming users in both the WB6 and the EEA. The total number of roaming users¹ in the WB6 increased at an average annual rate (CAGR) of 6% between 2019 and 2023. During the same period, the total number of WB6 users using roaming services in the EEA grew by an average of 4% per year. The year 2021, marking the first year of RLAH implementation, was still affected by COVID-19 travel restrictions. For a more accurate assessment, comparisons of roaming user numbers were made with 2019, a year not impacted by the pandemic.

Figure 1 Total number of roaming users



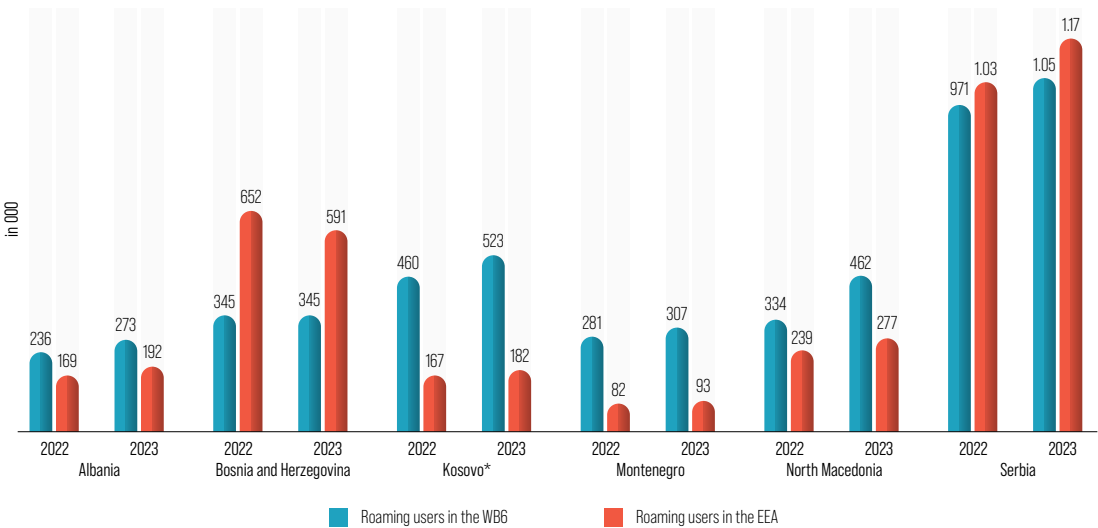
Source: Roaming questionnaire

¹ The methodology used in this report is based on calculating the average of the quarterly figures as an estimate of the annual number of roaming users.

Between 2022 and 2023, the WB6 reported a 13% increase in roaming users, indicating sustained interest in roaming services driven by the abolition of roaming charges. During the same period, the number of WB6 users using roaming services in the EEA grew by 7%.

In 2023, the majority of WB6 roaming users used roaming services within the region, except in Bosnia and Herzegovina and Serbia, where more users used roaming services in the EEA.

Figure 2 Roaming users in the WB6 and EEA



Source: Roaming questionnaire

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

II ROAMING CONSUMPTION



A roaming user from the WB6 spent on average 58 minutes for making calls in the region and 7 minutes in the EEA in 2023.



A roaming user from the WB6 spent on average 51 minutes receiving calls within the region and 7 minutes within the EEA in 2023.



In 2023, each roaming user sent on average 14 SMS in the WB6 and 8 SMS in the EEA.



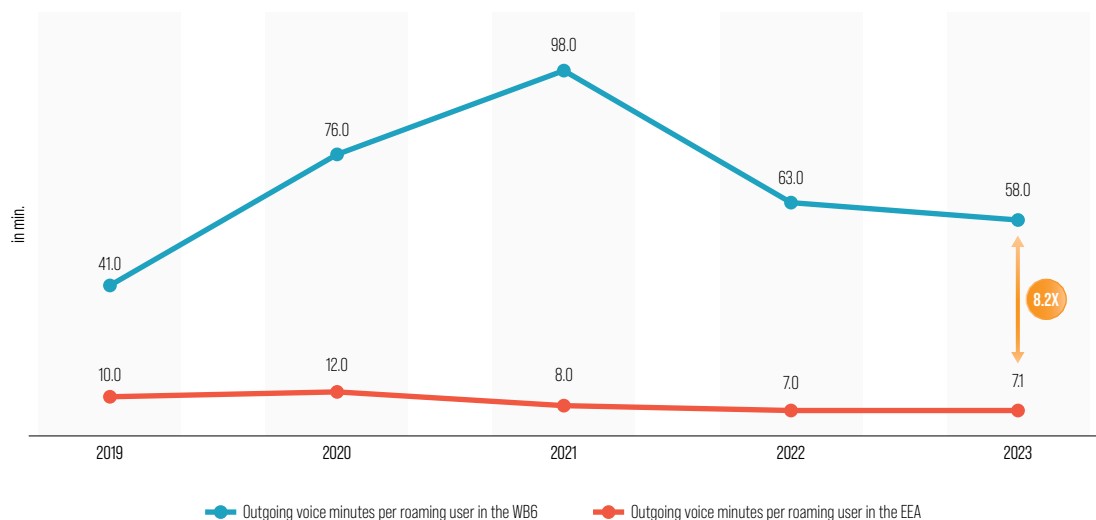
The average data traffic per roaming user reached 3.2 GB in the WB6 and 1.4 GB in the EEA in 2023.

2.1. ROAMING VOICE CONSUMPTION

2021 marked the first year of the introduction of RLAH in the WB6, which abolished roaming charges for roaming services. This significant change led to high voice consumption per roaming user in 2021, as the removal of additional charges provided a strong incentive for increased usage, resulting in a notable spike in outgoing and incoming voice minutes per user during that year.

Since 2021, the average duration of outgoing voice calls in the WB6 has been decreasing. Despite this trend, the total number of minutes of outgoing calls increased by 4%, rising from 166 million minutes in 2022 to 173 million minutes in 2023. This indicates that although individual users may be making fewer voice calls on average, the overall usage has grown due to a 13% increase in the number of roaming users in the WB6. This larger user base has effectively offset the reduction in average outgoing call duration, resulting in a net increase in total outgoing voice minutes.

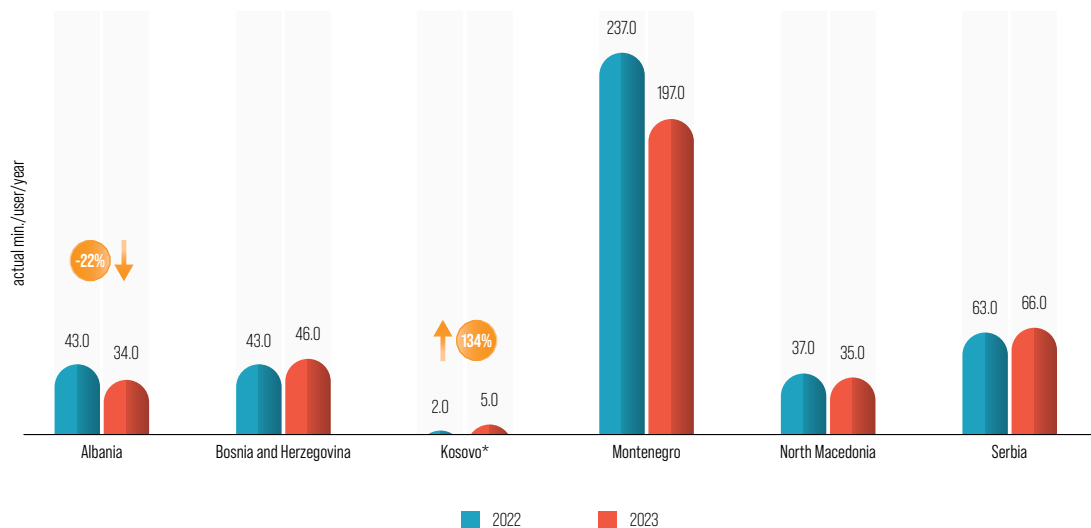
Figure 3 Average duration of outgoing calls per roaming user



Source: Roaming questionnaire

In 2023, roaming users from Montenegro recorded the highest number of outgoing voice minutes per user in the WB6.

Figure 4 Outgoing voice minutes per roaming user in the WB6

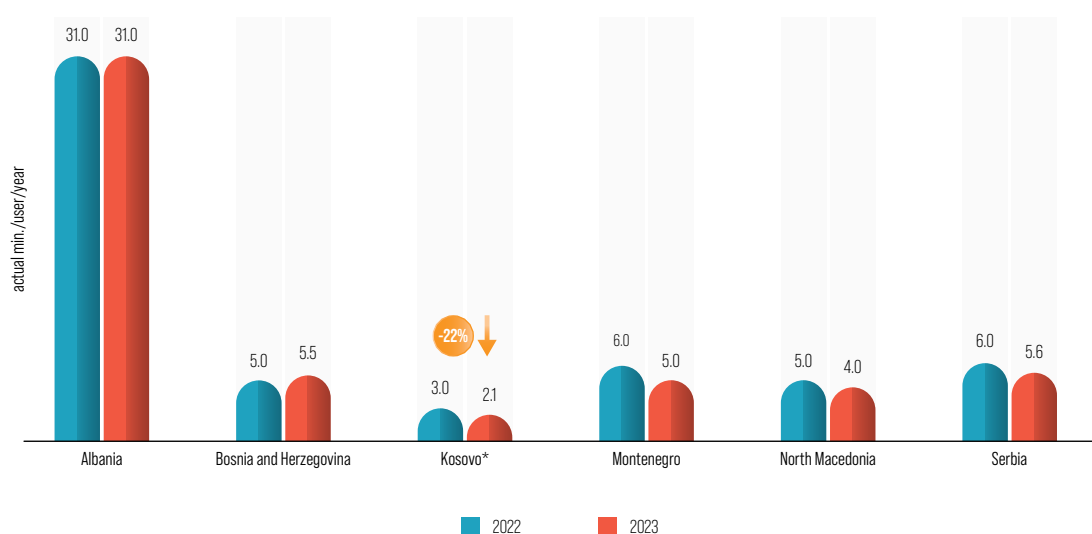


Source: Roaming questionnaire

In 2023, roaming users from the WB6 made a total of 18 million minutes of outgoing calls while roaming in the EEA, compared to 17 million minutes in 2022. This represents a 4% increase in the total number of outgoing voice minutes, driven by a 7% increase in roaming users during the same period.

Roaming users from Albania made the highest number of outgoing voice minutes per roaming user in the EEA in 2023.

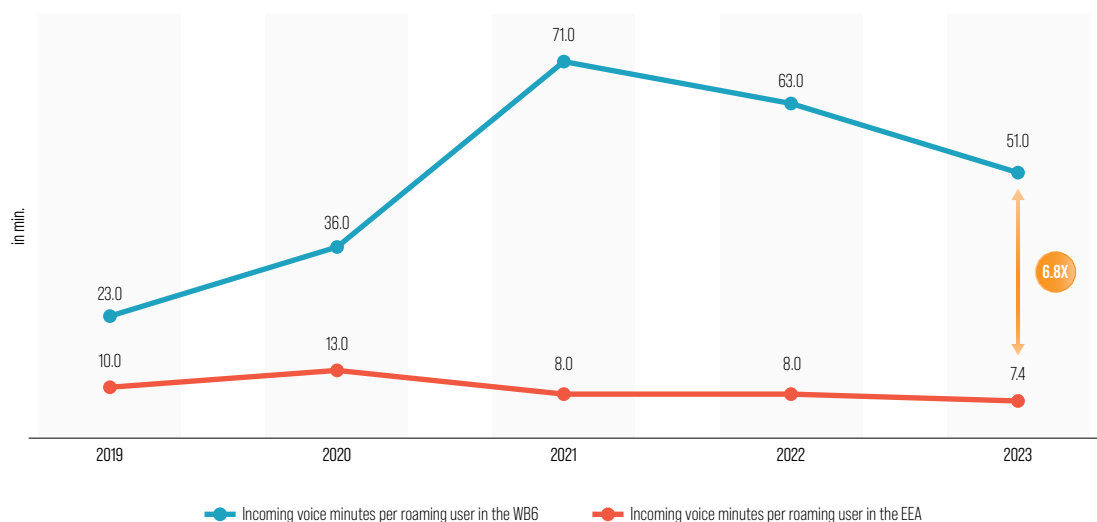
Figure 5 Outgoing voice minutes per roaming user in the EEA



Source: Roaming questionnaire

The total duration of incoming calls made by users while roaming in the region reached 150 million minutes, reflecting a 4% increase from 144 million minutes recorded in 2022. Despite a 13% increase in the number of users in the WB6, the average duration of incoming calls per user has decreased, which is a trend observed since 2021.

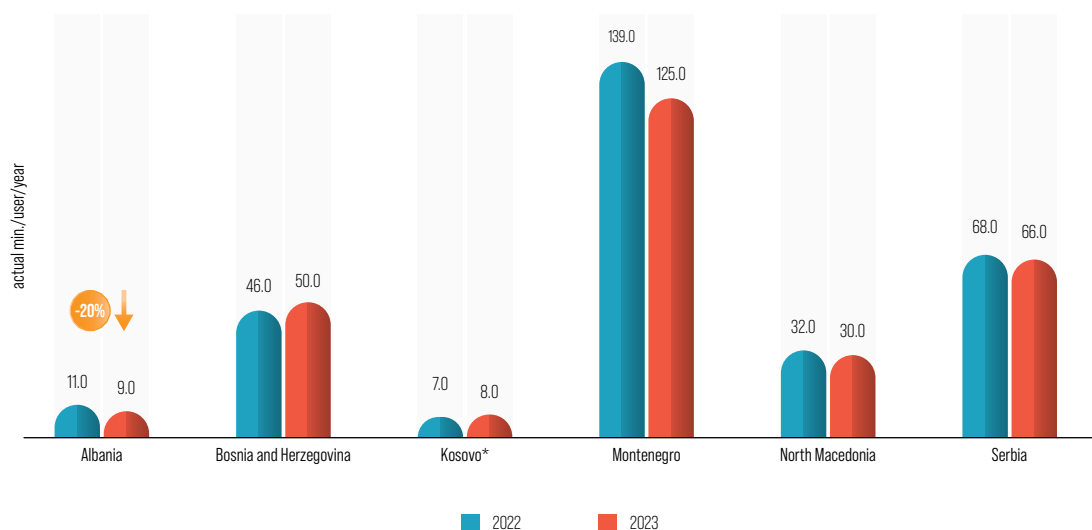
Figure 6 Average duration of incoming calls per roaming user



Source: Roaming questionnaire

The highest number of incoming voice minutes per roaming user in the WB6 in 2023 was made by roaming users from Montenegro.

Figure 7 Incoming voice minutes per roaming user in the WB6

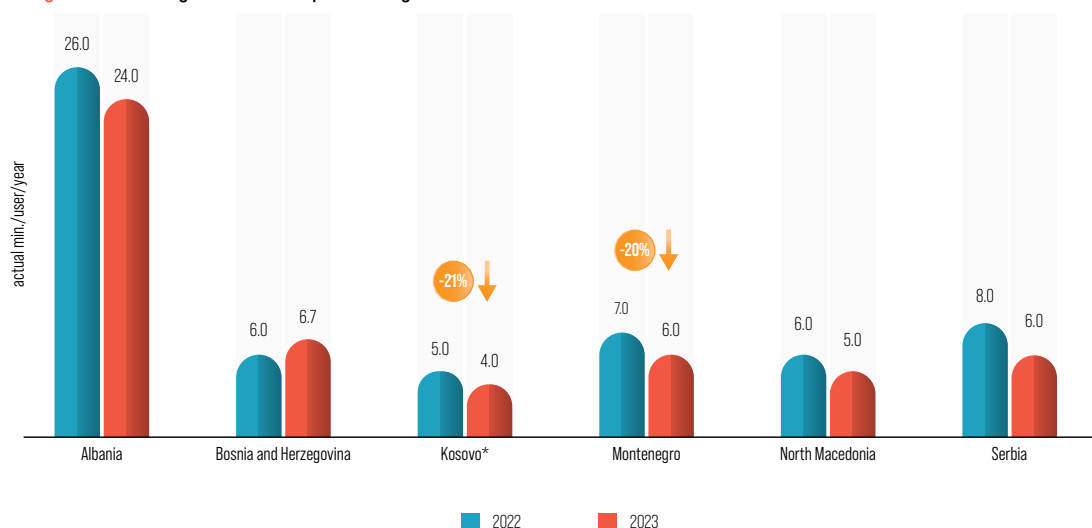


Source: Roaming questionnaire

In 2023, the total number of minutes of incoming calls made by roaming users in the EEA was 18.5 million minutes, which is 2% lower than in 2022. A 7% increase in the number of roaming users in the EEA did not translate into a corresponding increase in the total minutes of incoming calls, suggesting that individual users, on average, received fewer incoming calls or shorter calls while roaming in the EEA compared to the previous year.

The highest number of incoming voice minutes per roaming user in the EEA in 2023 was made by roaming users from Albania.

Figure 8 Incoming voice minutes per roaming user in the EEA

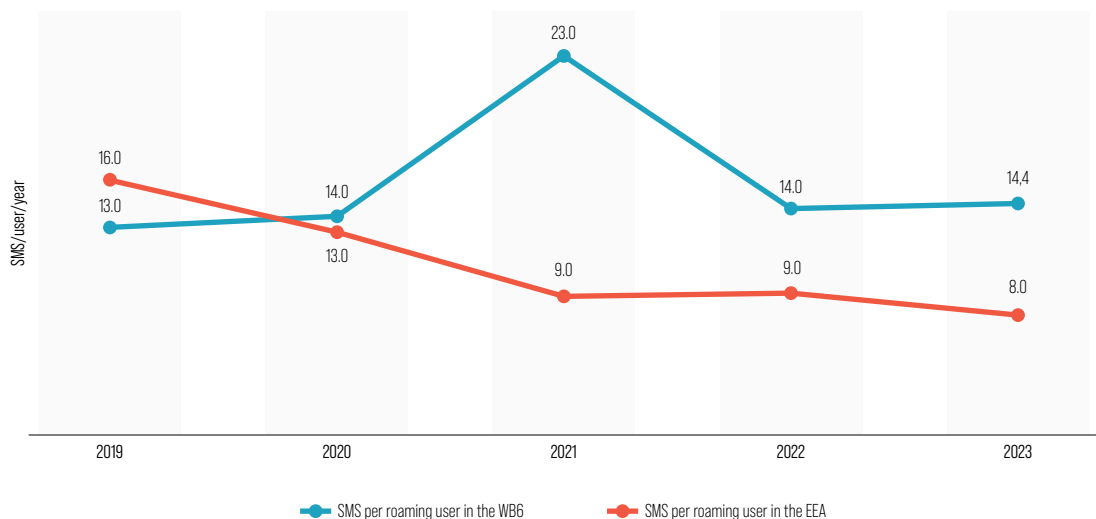


Source: Roaming questionnaire.

2.2. ROAMING SMS USAGE

The overall trend points to a decline in SMS usage among roaming users due to the rise of internet-based messaging apps. This trend is more evident in the EEA in the observed period. However, compared to 2022, the number of SMS messages sent per roaming user in the WB6 slightly increased by 2%, primarily driven by increased SMS consumption per roaming user from Kosovo*.

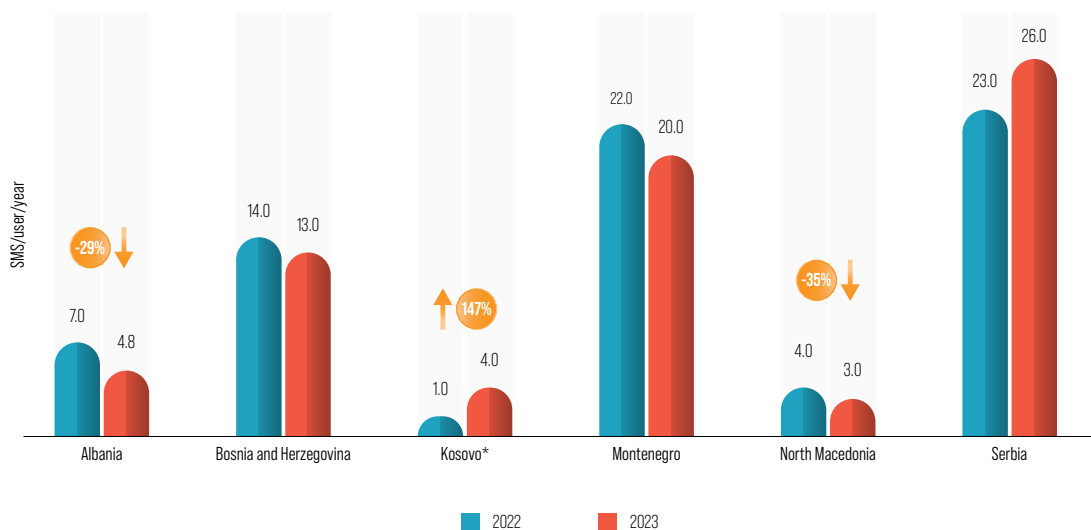
Figure 9 Average SMS consumption per roaming user



Source: Roaming questionnaire

In 2023, WB6 roaming users sent 43 million SMS while using roaming services in the WB6 which is 15% more compared to the previous year. The number of SMS per roaming user is the highest in Serbia and Montenegro.

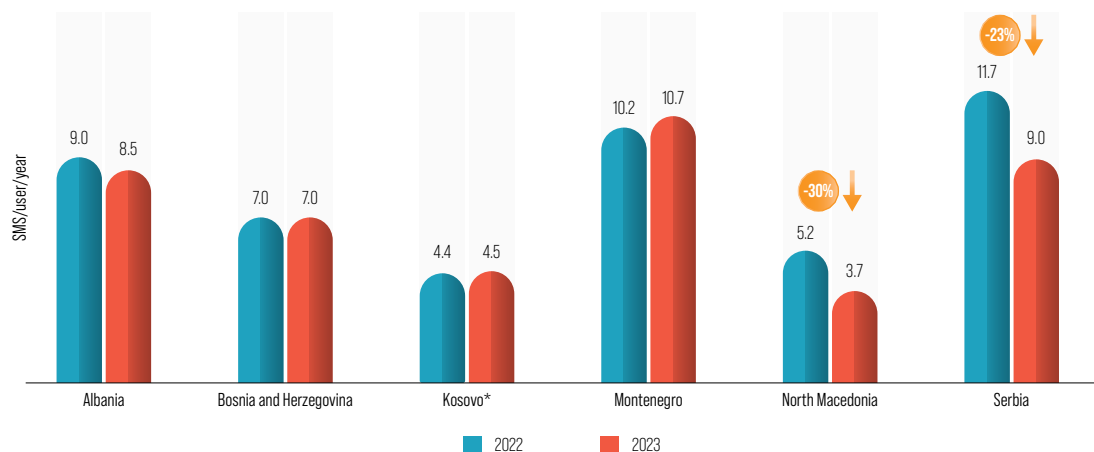
Figure 10 SMS traffic per roaming user in the WB6



Source: Roaming questionnaire

The total number of roaming SMS in the EEA decreased by 9% and reached almost 19 million in 2023. The highest consumption of SMS per roaming user in the EEA was reported in Montenegro and Serbia.

Figure 11 SMS traffic per roaming user in the EEA



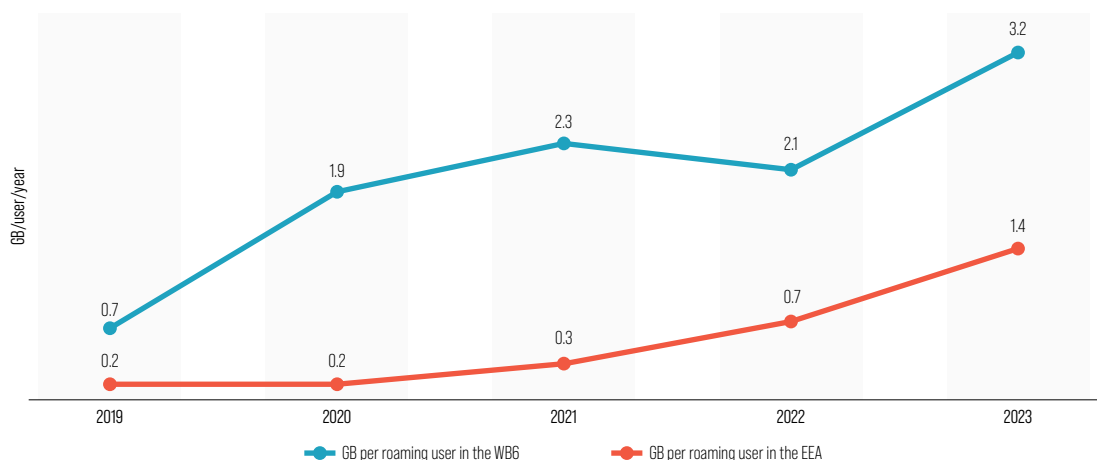
Source: Roaming questionnaire.

2.3. ROAMING DATA USAGE

The observed period from 2019 to 2023 shows significant growth in data consumption per roaming user in both the WB6 and the EEA. The data consumption per roaming user in the WB6 grew by an average of 48% annually, while in the EEA it grew by an average of 72% annually over the same period. This significant growth in roaming data usage reflects both an increased dependence on mobile data services and the impact of decreasing retail roaming prices.

Only in 2023, when compared to 2022, data consumption per roaming user grew by 51% in the WB6 and 89% in the EEA. Lower retail roaming prices have made it more affordable for users to consume data while traveling. This is a key driver for the increased data usage.

Figure 12 Average data consumption per roaming user

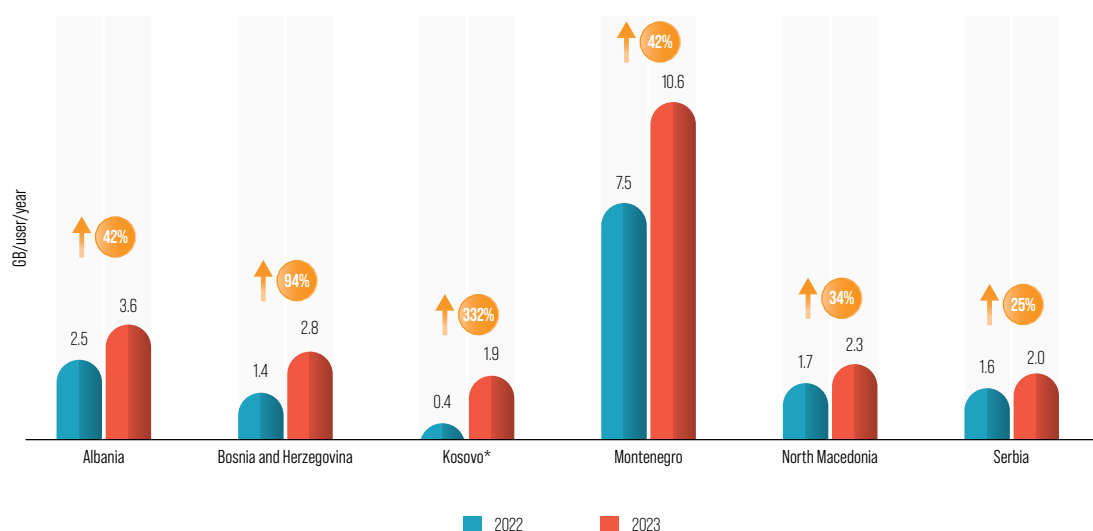


Source: Roaming questionnaire

Roaming users from the WB6 spent 9.4 million GB of roaming data services in the WB6 in 2023 and 5.5 million GB in 2022. Total roaming data consumption in the WB6 increased by 70% in 2023 compared to 2022.

The highest data traffic per roaming user in the WB6 in 2023 was made by roaming users from Montenegro.

Figure 13 Data traffic per roaming user in the WB6

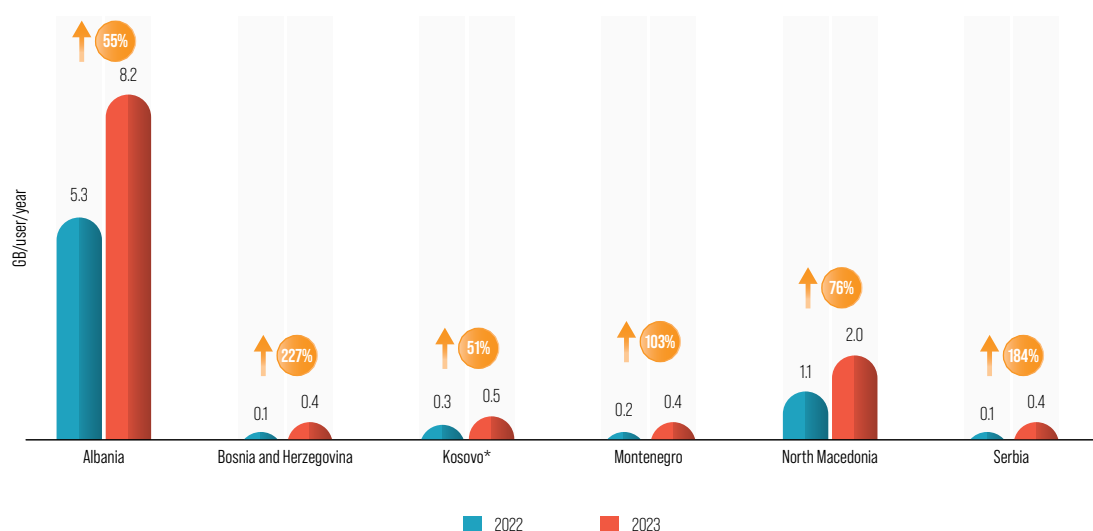


Source: Roaming questionnaire.

Roaming users from the WB6 spent 2.9 million GB of roaming data in the EEA in 2023. This represents a 101% increase in total roaming data consumption in the EEA compared to 2022.

The highest data traffic per roaming user in the EEA in 2023 was made by roaming users from Albania.

Figure 14 Data traffic per roaming user in the EEA



Source: Roaming questionnaire.

III RETAIL ROAMING REVENUES



The average total retail roaming revenue per minute in the EEA was 48 times higher for outgoing roaming voice calls compared to the average total retail roaming revenues per minute of outgoing roaming voice calls in the WB6 in 2023.



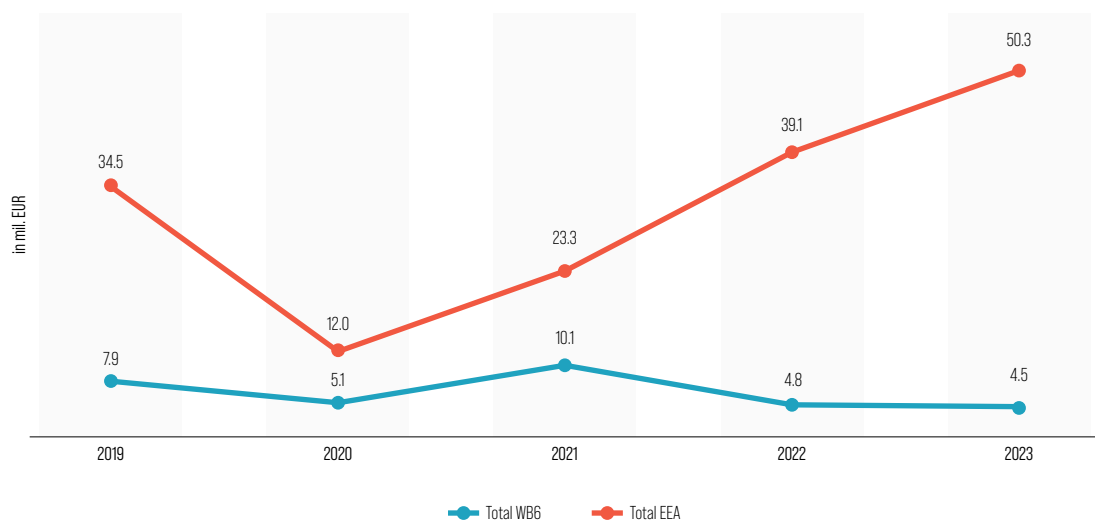
The average total retail roaming revenue per SMS in the EEA was 15 times higher compared to the average total retail roaming revenues per SMS in the WB6 in 2023.



The average total retail roaming revenue per GB in the EEA was 55 times higher compared to the average total retail roaming revenues per GB in the WB6 in 2023.

Total retail revenues from roaming services in the EEA grew by an average of 10% annually from 2019 to 2023 reaching EUR 50 million in 2023. In contrast, retail roaming revenues from providing roaming services in the WB6 decreased by an average of 13% annually over the same period due to the RRA implementation.

Figure 15 Total retail roaming revenues²



Source: Roaming questionnaire

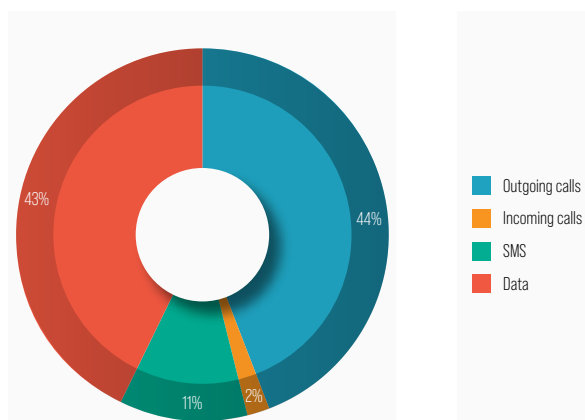
² Revenues from roaming bundles are not included.

3.1. RETAIL ROAMING REVENUES SPLIT PER SERVICES

Total retail roaming revenues generated by WB6 roaming users while using roaming services in the WB6 was EUR 4.5 million in 2023 which is a 5% decrease compared to 2022.

Of the total retail roaming revenues in the WB6 in 2023, 44% were revenues from outgoing voice calls, while data services accounted for 43%. Incoming voice calls and SMS services accounted for 11% and 2% of total retail roaming revenues in 2023, respectively.

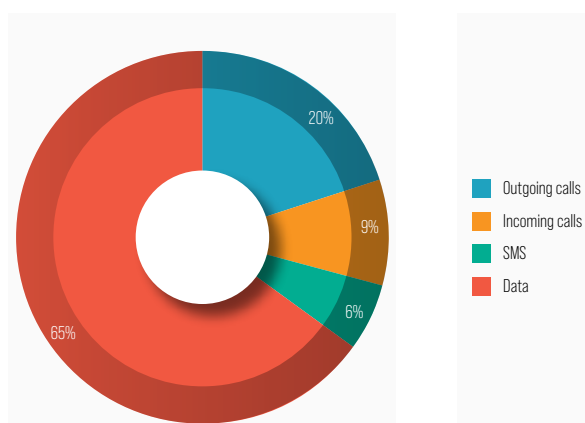
Figure 16 Split of retail roaming revenues in the WB6 in 2023



Source: Roaming questionnaire

Total retail roaming revenues generated by WB6 roaming users in the EEA were EUR 39 million in 2022. In 2023, total retail roaming revenues in the EEA increased by 29% to EUR 50 million. Of the total EEA retail roaming revenues in 2023, 65% were revenues from data services, while outgoing voice services accounted for 20%. Incoming voice services and SMS services accounted for 9% and 6% of total retail roaming revenues in the EEA in 2023, respectively.

Figure 17 Split of retail roaming revenues in the EEA in 2023

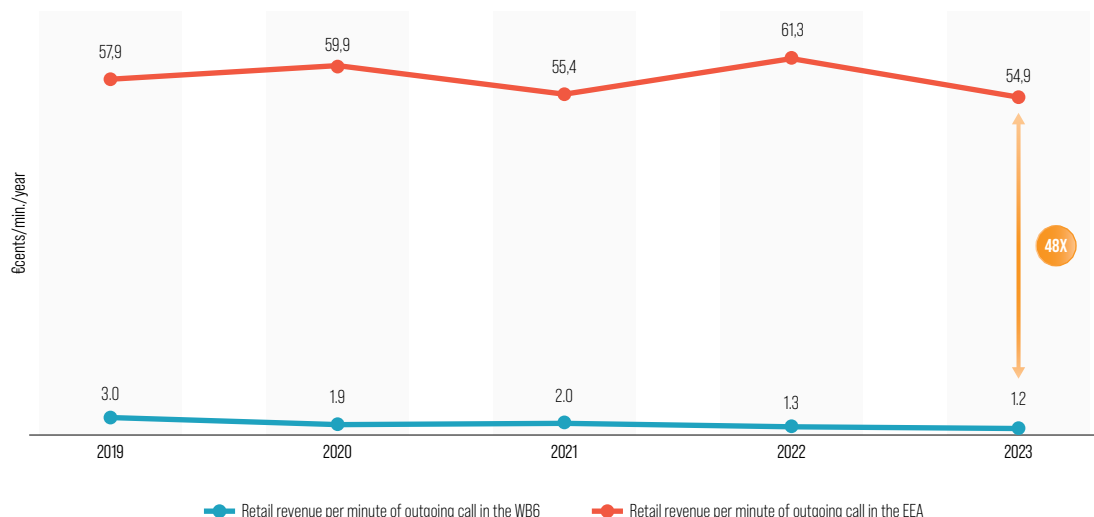


Source: Roaming questionnaire

3.2. RETAIL ROAMING VOICE REVENUES

From 2019 onwards there has been a decreasing trend in average total retail roaming revenues per minute of outgoing calls in the WB6, resulting from retail price decreases for roaming voice services.

Figure 18 Total retail roaming revenues per minute of outgoing calls

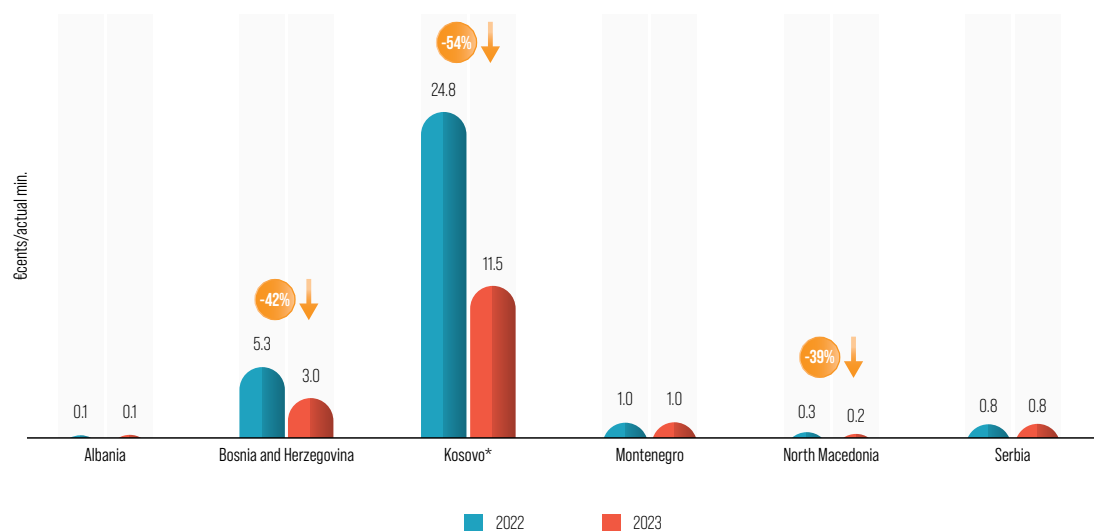


Source: Roaming questionnaire.

Roaming users from the WB6 generated nearly EUR 2 million in retail roaming revenues from making roaming calls in the region, indicating a 9% decrease compared to 2022. The decrease in revenues compared to the increase in outgoing calls volume (4%) indicates a reduction in the prices of outgoing roaming calls in the WB6.

The highest retail roaming revenue per minute of outgoing calls in the WB6 was reported by Kosovo*.

Figure 19 Retail roaming revenue per minute of outgoing calls in the WB6

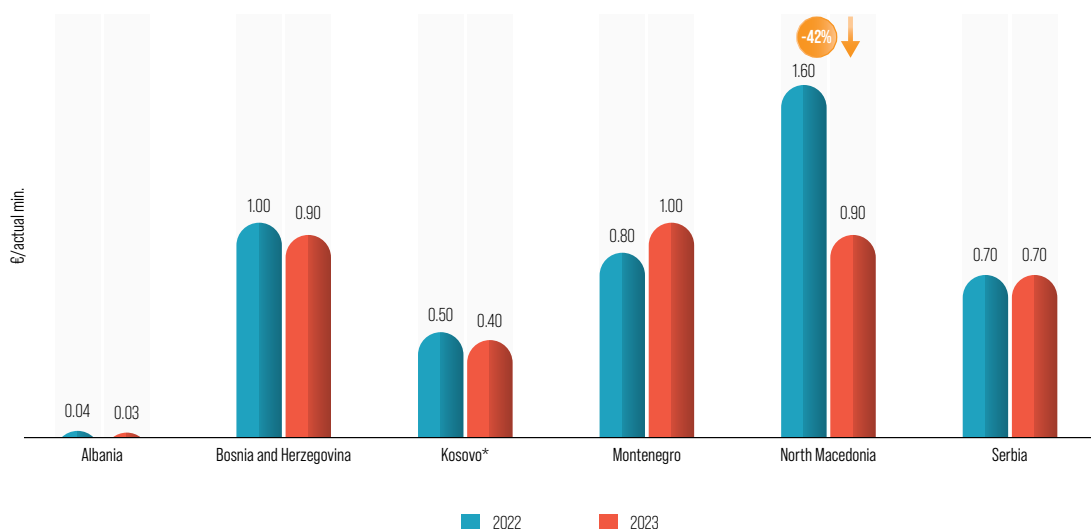


Source: Roaming questionnaire.

Roaming users from the WB6 generated EUR 9.5 million of retail roaming revenues while making roaming calls in the EEA in 2023, indicating a 7% decrease compared to 2022. Users are paying less per minute for their outgoing calls in 2023, which is reflected in decreased revenues despite higher outgoing call volumes (4%) compared to 2022.

Montenegro managed to increase retail roaming revenues per minute of outgoing voice calls in the EEA, while in other WB6 retail roaming revenue per minute decreased or remained flat.

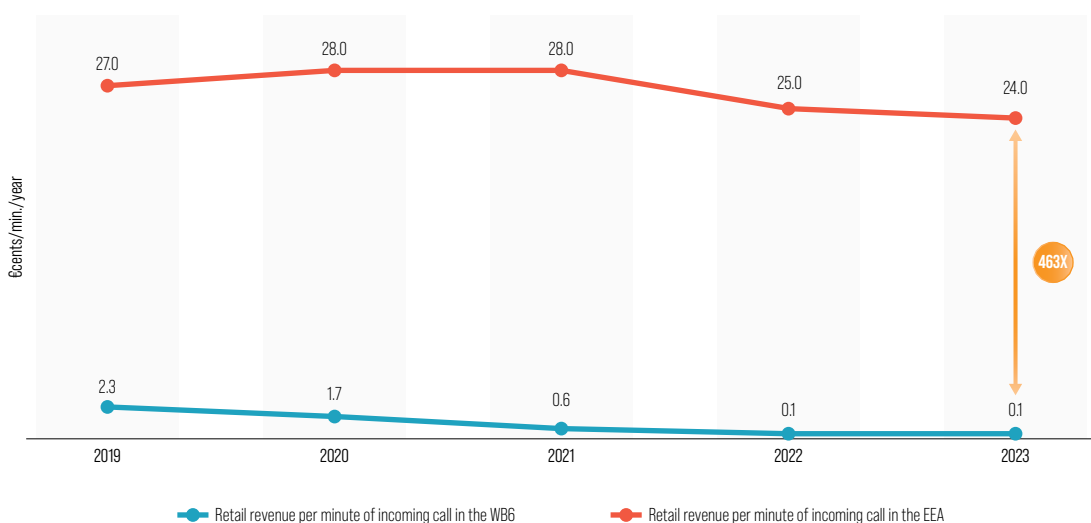
Figure 20 Retail roaming revenue per minute of outgoing calls in the EEA



Source: Roaming questionnaire.

Since 2019, retail roaming revenues per minute of incoming calls in the WB6 have been on a downward trend, driven by the decline in retail roaming prices.

Figure 21 Total retail roaming revenues per minute of incoming calls

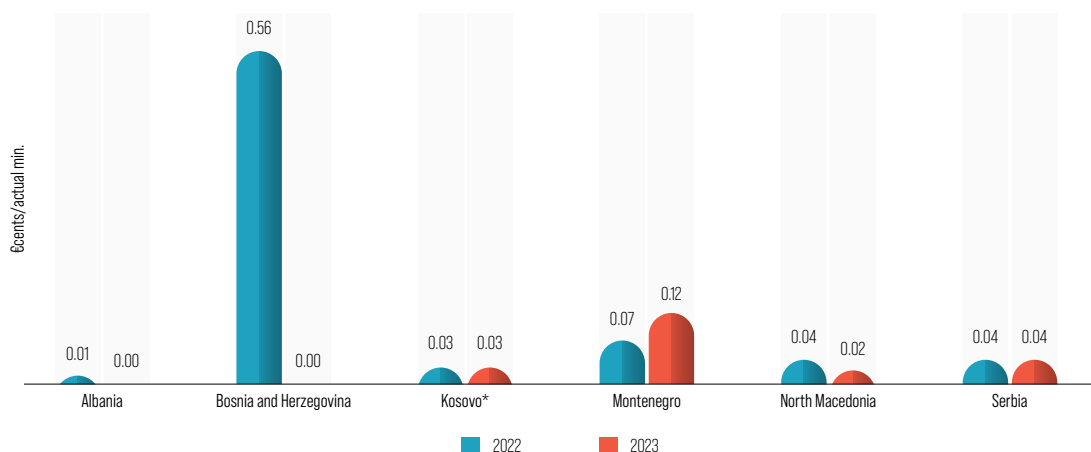


Source: Roaming questionnaire.

In 2023, roaming users generated EUR 79 thousand in retail roaming revenues from receiving calls in the WB6, indicating a 47% decrease relative to 2022. Despite a 4% increase in incoming voice minutes, this significant decline in revenues is primarily attributed to reduced retail roaming prices.

In 2023, all WB6 faced lower or flat retail roaming revenue per minute of incoming calls in the WB6, except Montenegro.

Figure 22 Retail roaming revenue per minute of incoming calls in the WB6

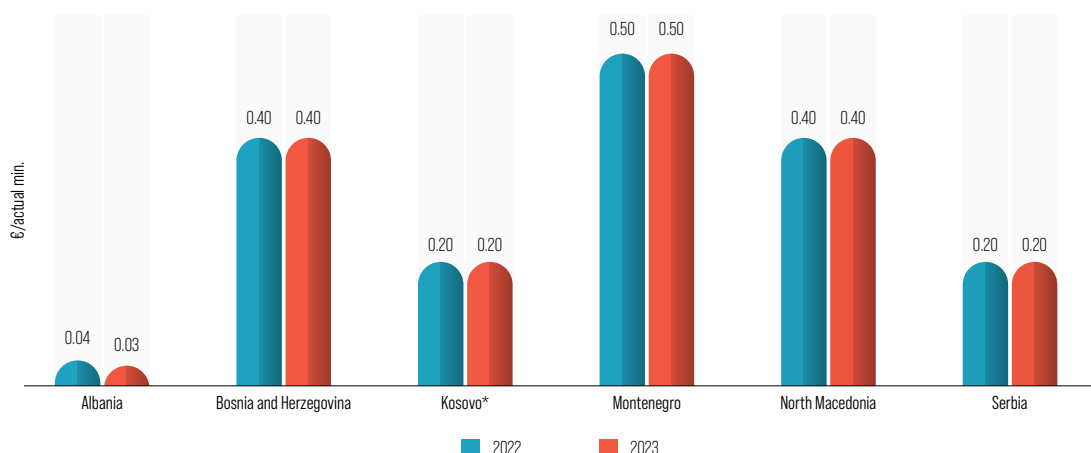


Source: Roaming questionnaire.

In 2023, roaming users generated EUR 4.5 million of retail roaming revenues from receiving calls in the EEA, indicating a 4% decrease compared to 2022. The decrease is driven by lower average retail prices and a decrease (-2%) in the number of incoming minutes in the EEA in 2023 compared to the previous year.

In 2023, all WB6 saw retail roaming revenues either decline or remain unchanged.

Figure 23 Retail roaming revenue per minute of incoming calls in the EEA

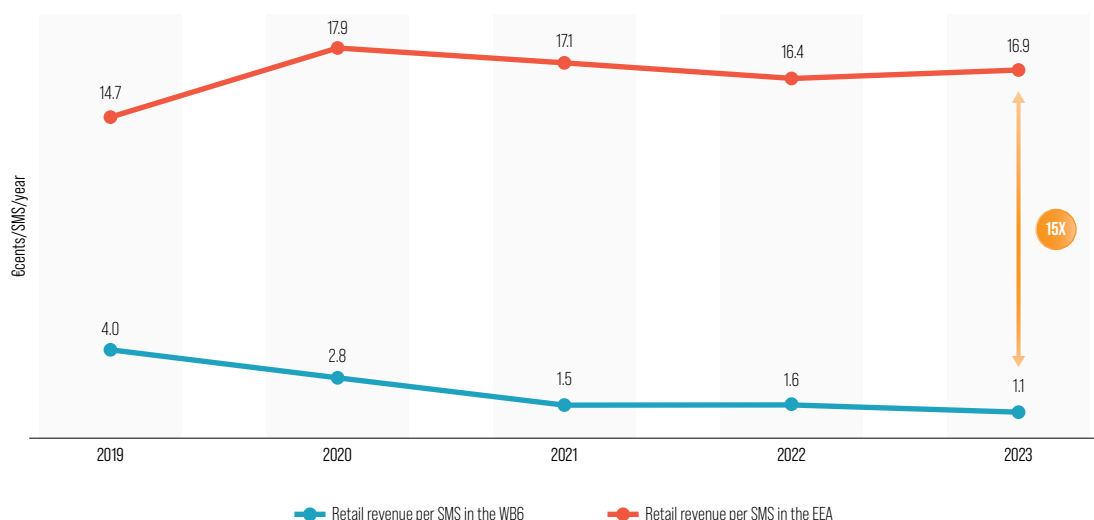


Source: Roaming questionnaire.

3.3. RETAIL ROAMING SMS REVENUES

From 2019 onwards there has been a decreasing trend in average total retail roaming revenues per SMS in the WB6, resulting from a retail price decrease. The average total retail roaming revenues per SMS remained mostly flat from 2020 onwards in the EEA.

Figure 24 Total retail roaming revenues per SMS



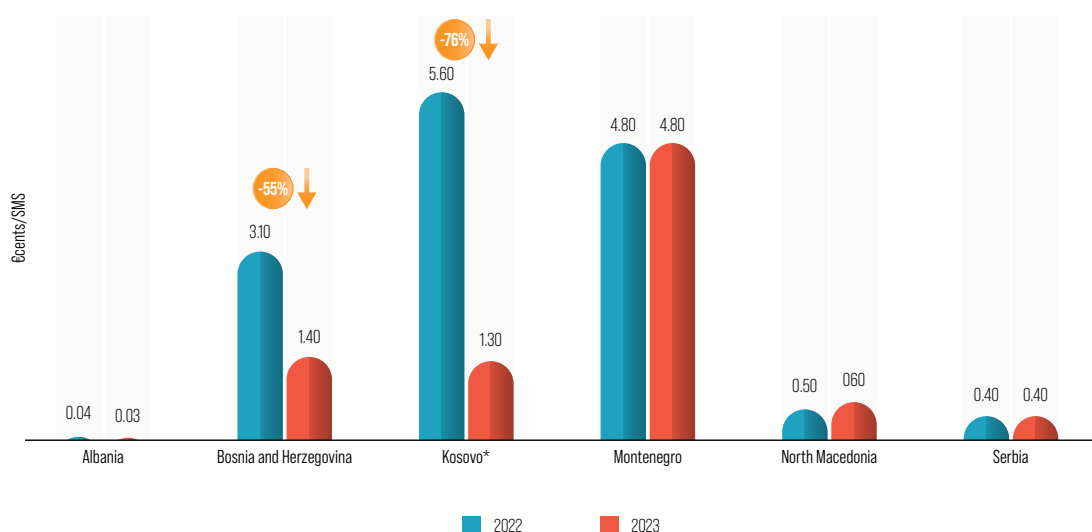
Source: Roaming questionnaire.

In 2023, the total retail roaming SMS revenues generated by roaming users from the WB6 while using SMS roaming services in the region amounted to EUR 467 thousand. This represented a 16% decrease compared to the previous year. This reduction in total retail roaming SMS revenues was primarily driven by a decrease in retail roaming prices for SMS services. Reduced prices led to a higher volume of usage since there was a notable increase of 15% in the number of SMS messages sent in 2023.

Overall, the reduction in retail roaming prices in the WB6 led to more frequent use of SMS roaming services, as evidenced by the increase in the number of SMS messages. However, this increase in usage was not sufficient to offset the impact of the lower prices, resulting in an overall decline in total retail roaming revenues for SMS services.

Bosnia and Herzegovina and Kosovo* reported a significant decline in retail roaming revenues per SMS in the WB6, while only North Macedonia recorded a slight increase in retail roaming revenues per SMS in 2023.

Figure 25 Retail roaming revenue per SMS in the WB6

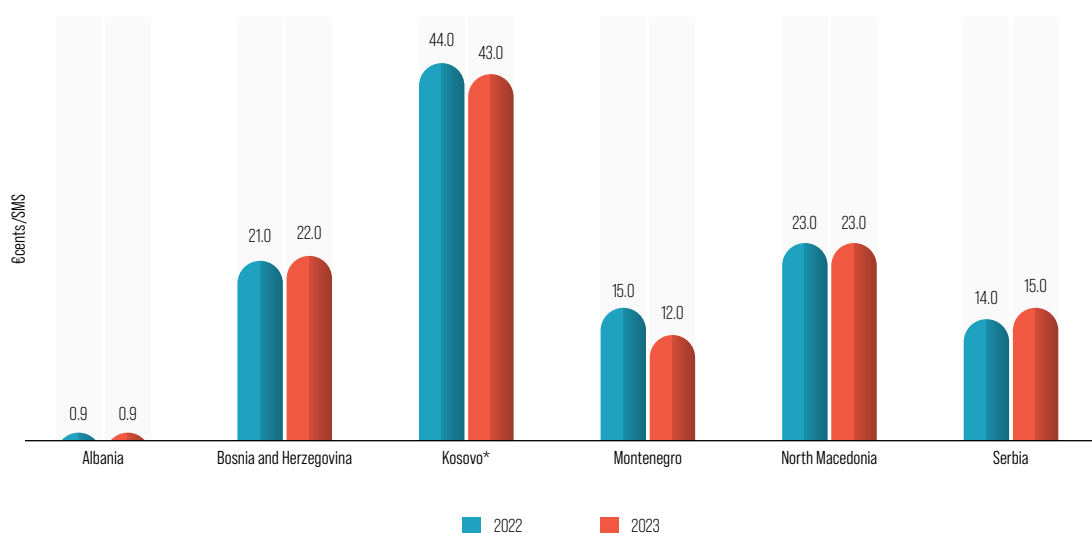


Source: Roaming questionnaire.

In 2023, total retail roaming SMS revenues generated by WB6 users while roaming in the EEA amounted to almost EUR 3.2 million, reflecting a 7% decrease relative to 2022. This decline can be attributed mainly to a 9% drop in SMS traffic in the EEA in 2023. Despite the reduction in total revenues, the retail roaming revenue per SMS saw a positive trend, rising by 3%, which suggests that even though fewer messages were sent, operators managed to generate slightly higher revenue per individual SMS.

The increase in retail roaming revenues per SMS was evident in Serbia and Bosnia and Herzegovina in 2023.

Figure 26 Retail roaming revenue per SMS in the EEA

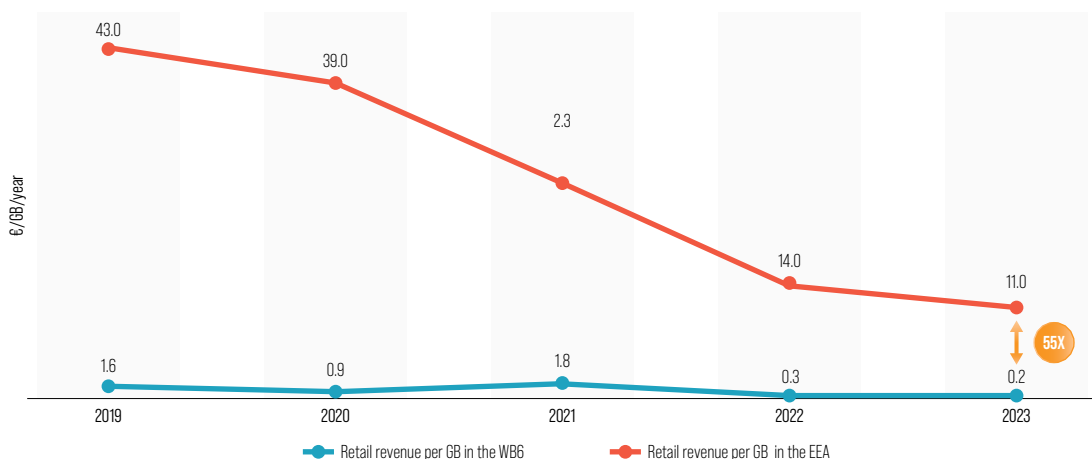


Source: Roaming questionnaire.

3.4. RETAIL ROAMING DATA REVENUES

In the observed period from 2019 to 2023, there was a declining trend in average total retail revenues per GB, driven by a substantial increase in roaming data traffic in both the WB6 and the EEA.

Figure 27 Total retail roaming revenues per GB

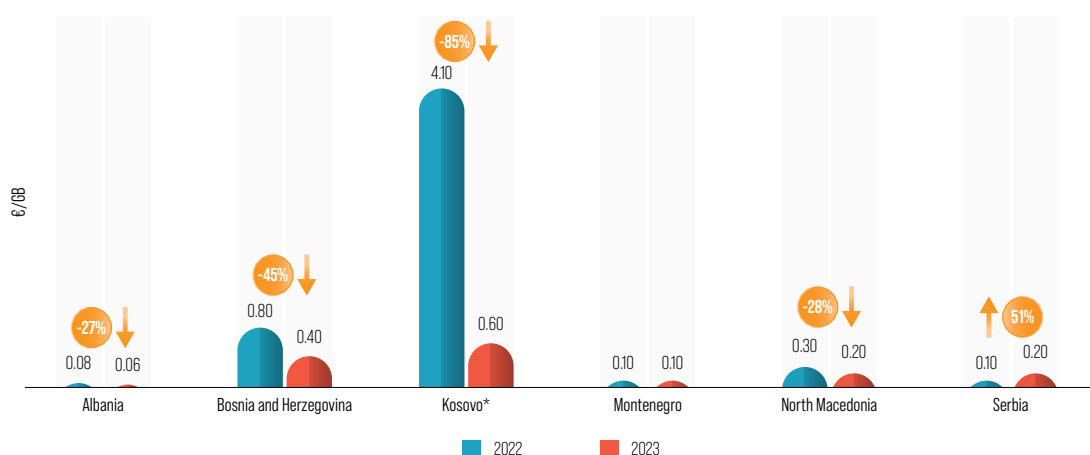


Source: Roaming questionnaire.

Total retail roaming revenues from data services generated by WB6 roaming users while using roaming data services in the region amounted to EUR 1.9 million in 2023, which is a 6% increase compared to 2022. Despite the significant increase in the total number of GB used in roaming in the WB6 of 70%, retail roaming revenues per GB of data service decreased by 37% in 2023 due to the reduction of retail roaming prices in the WB6 as a result of the RRA implementation.

The increase in retail roaming revenue per GB was only evident in Serbia in 2023.

Figure 28 Retail roaming revenue per GB in the WB6

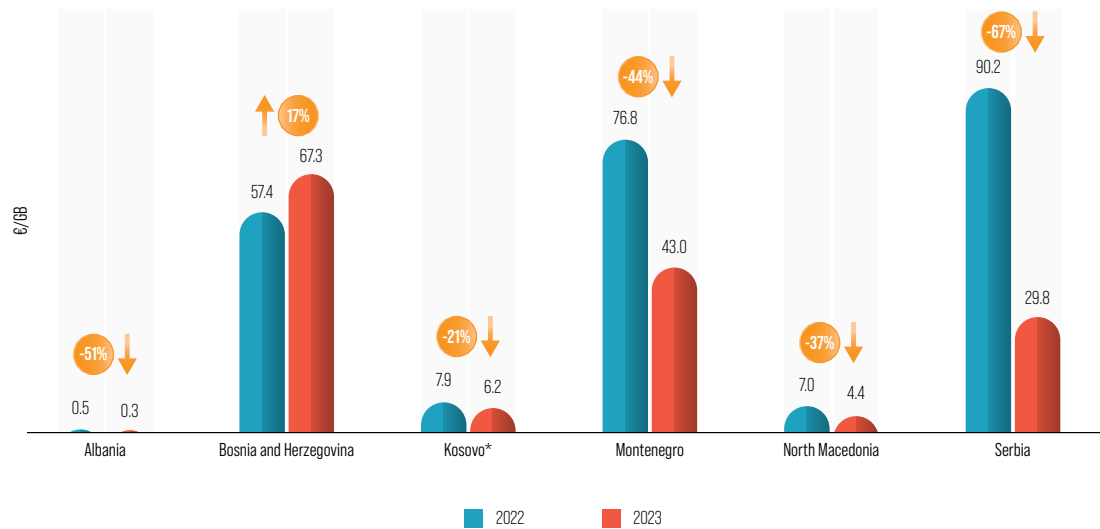


Source: Roaming questionnaire.

Total retail roaming data revenues generated by WB6 roaming users while using data services in the EEA amounted to EUR 32.8 million in 2023 and EUR 20.5 million in 2022, indicating a 60% increase. Although total retail revenues increased, retail roaming revenues per GB of data service declined by 20% in 2023 due to lower average retail roaming prices for data services in the EEA, despite a 101% rise in roaming data traffic.

The increase in retail roaming revenue per GB in 2023 was only evident in Bosnia and Herzegovina.

Figure 29 Retail roaming revenue per GB in the EEA



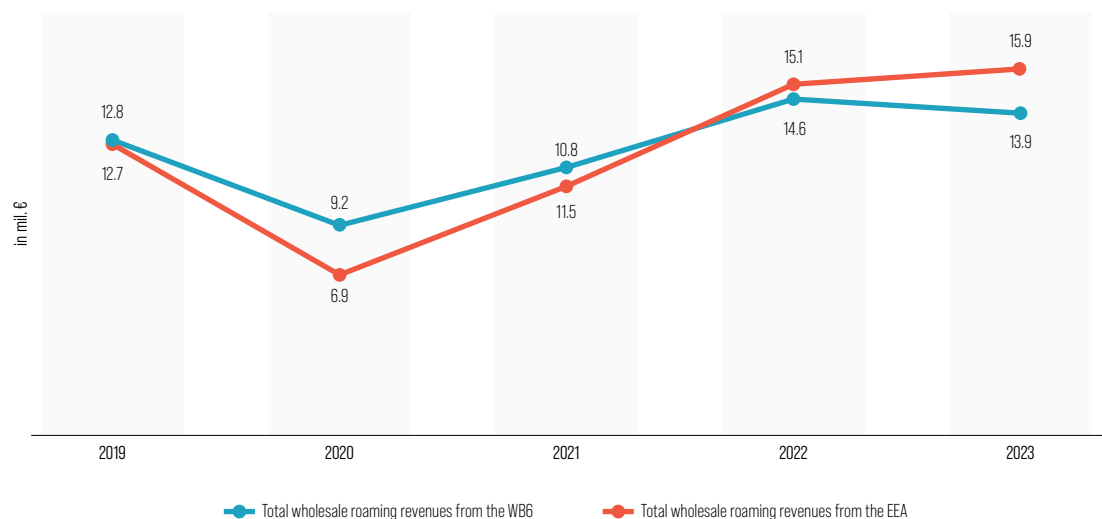
Source: Roaming questionnaire.

IV WHOLESALE ROAMING REVENUES



Total wholesale roaming revenues from roaming services from the EEA grew by an average of 5% annually from 2019 to 2023 reaching nearly EUR 16 million in 2023. In comparison, total wholesale roaming revenues from WB6 grew by an average of 2% annually over the same period, reaching nearly EUR 14 million in 2023.

Figure 30 Total wholesale roaming revenues

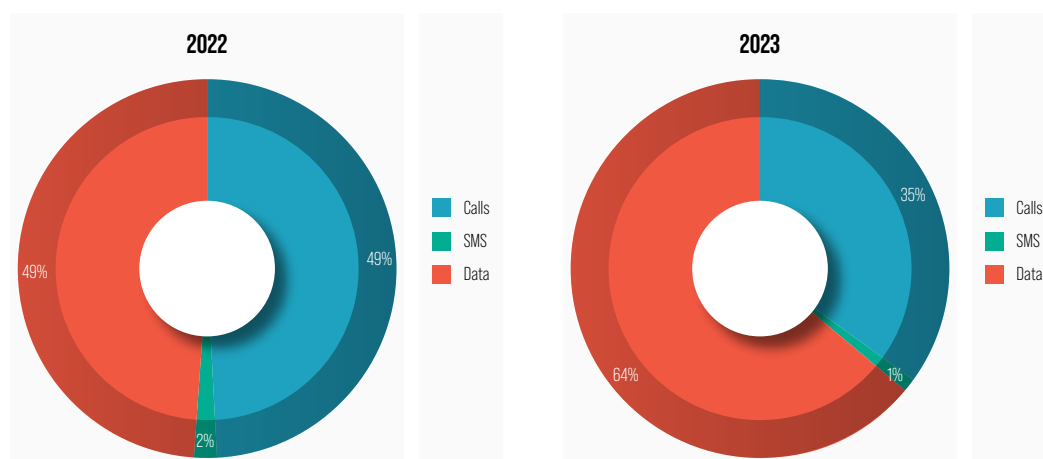


Source: Roaming questionnaire

4.1. WHOLESALE ROAMING REVENUES SPLIT PER SERVICES

Total wholesale roaming revenues generated by WB6 roaming users while using roaming services in the WB6 amounted to EUR 14.6 million in 2022, and in 2023 decreased by 5% to EUR 13.9 million. In 2023, 64% of total wholesale roaming revenues from the WB6 were revenues from data services. In 2022, data services accounted for 49% of total wholesale roaming revenues from the WB6.

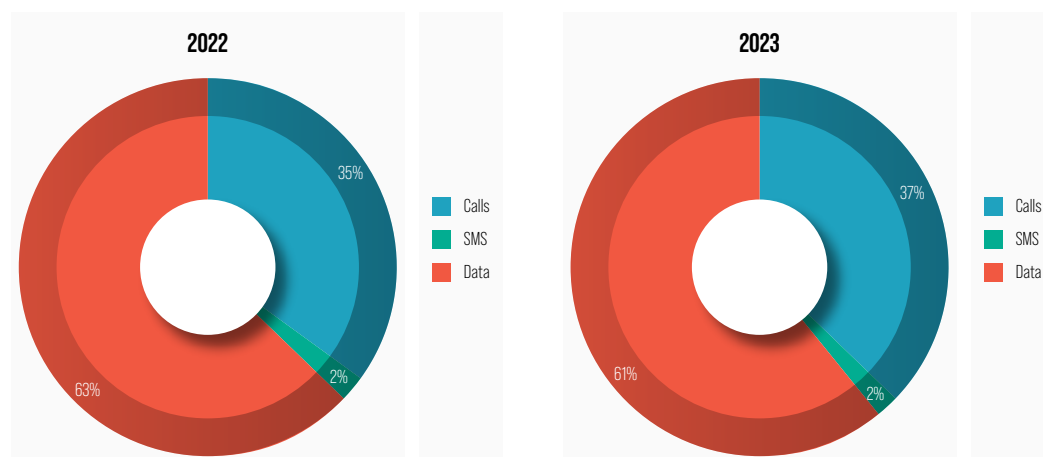
Figure 31 Split of wholesale roaming revenues from the WB6



Source: Roaming questionnaire

Total wholesale roaming revenues generated by EEA roaming users while using roaming services in the WB6 amounted to EUR 15.9 million in 2023, which is a 5% increase compared to 2022. Of the total wholesale roaming revenues from EEA roaming users, 61% were roaming revenues from data services in 2023.

Figure 32 Split of wholesale roaming revenues from the EEA

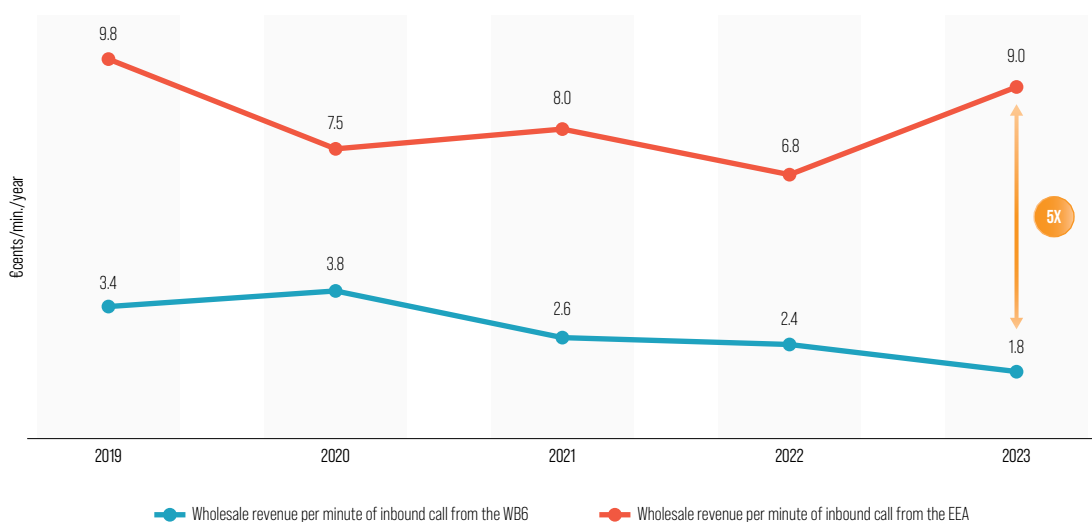


Source: Roaming questionnaire

4.2. WHOLESALE ROAMING VOICE REVENUES

From 2019 onwards there has been a decreasing trend of average total wholesale roaming revenues per minute of inbound calls in the WB6, resulting from the decrease in wholesale prices for inbound voice services.

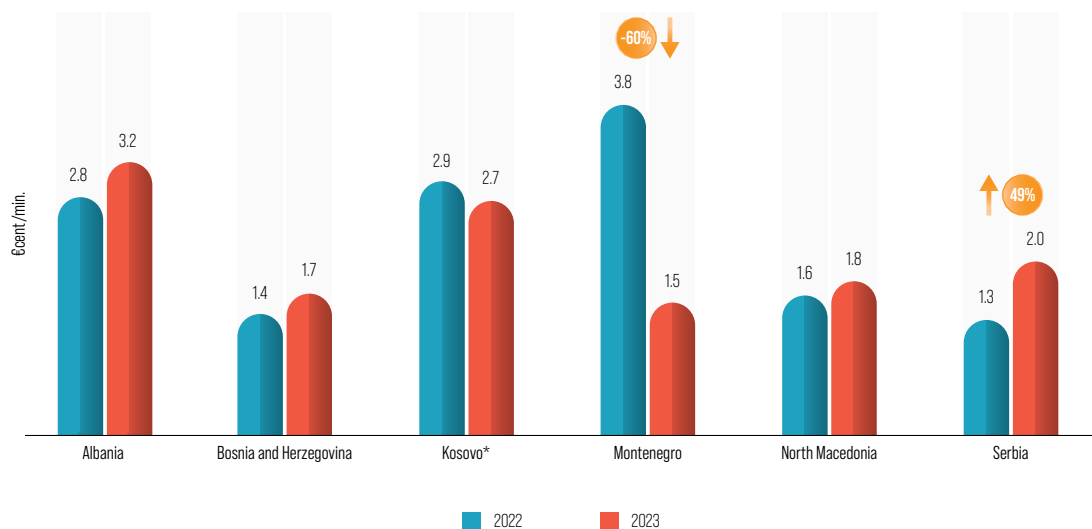
Figure 33 Total wholesale roaming revenues per minute of inbound call



Source: Roaming questionnaire

Total wholesale roaming voice revenues generated by WB6 roaming users while using roaming voice services in the WB6 amounted to EUR 4.8 million in 2023, indicating a 33% decrease compared to 2022. This decline is primarily attributed to a 9% reduction in inbound roaming voice traffic from WB6 users and lower wholesale revenue per minute of inbound voice traffic in Montenegro in 2023.

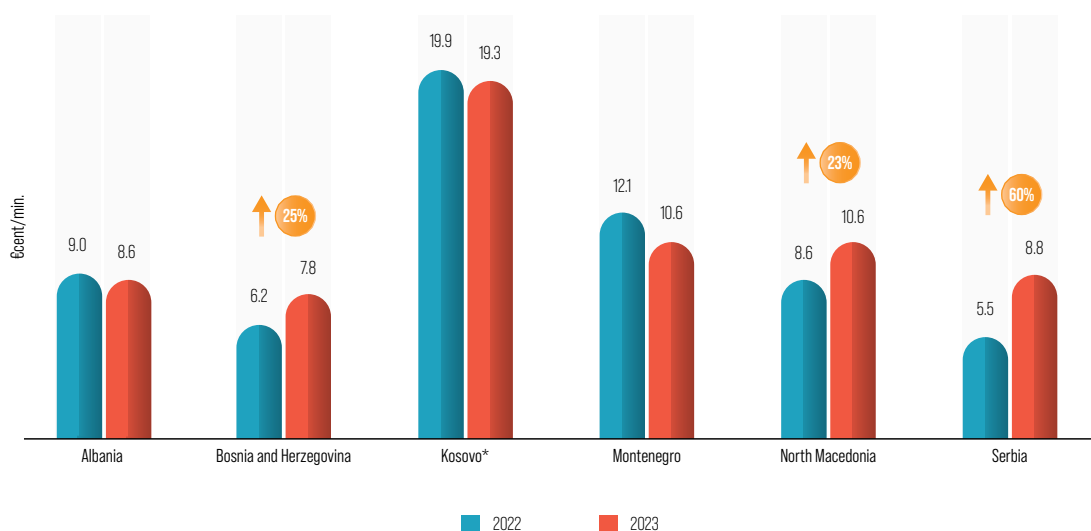
Figure 34 Wholesale roaming revenue per minute from the WB6



Source: Roaming questionnaire

Total wholesale roaming revenues generated by EEA roaming users while using voice services in the WB6 amounted to EUR 5.9 million in 2023. This represents a 12% increase compared to the 2022. Despite a 16% decrease in inbound voice traffic from the EEA in 2023 compared to 2022, wholesale roaming voice revenues grew, primarily due to higher wholesale revenue per minute of inbound voice traffic in North Macedonia and Serbia.

Figure 35 Wholesale roaming revenues per minute from the EEA

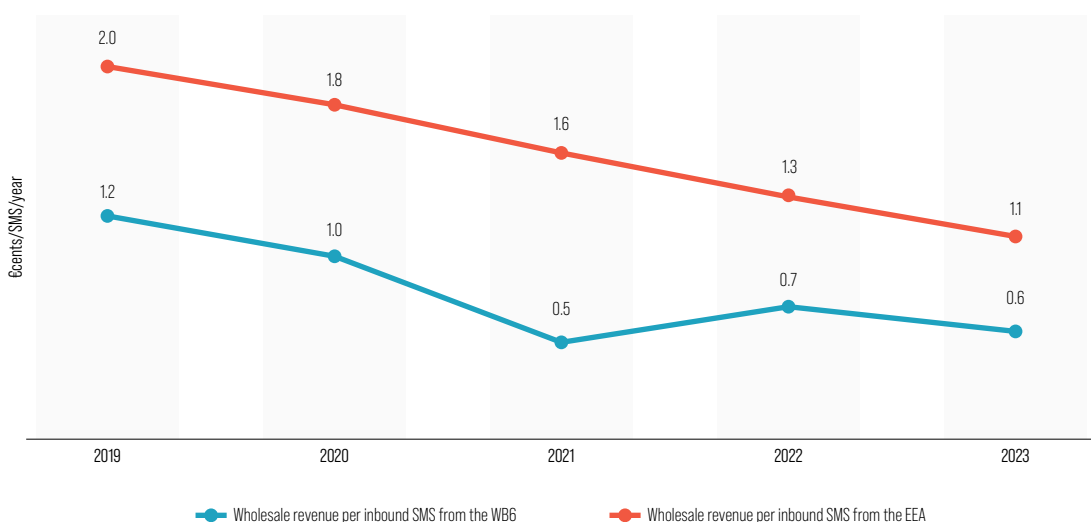


Source: Roaming questionnaire

4.3. WHOLESALE ROAMING SMS REVENUES

There has been a declining trend in total wholesale roaming revenues per SMS throughout the observed period, driven by a decrease in inbound SMS traffic and lower wholesale prices for SMS services.

Figure 36 Total wholesale roaming revenues per SMS

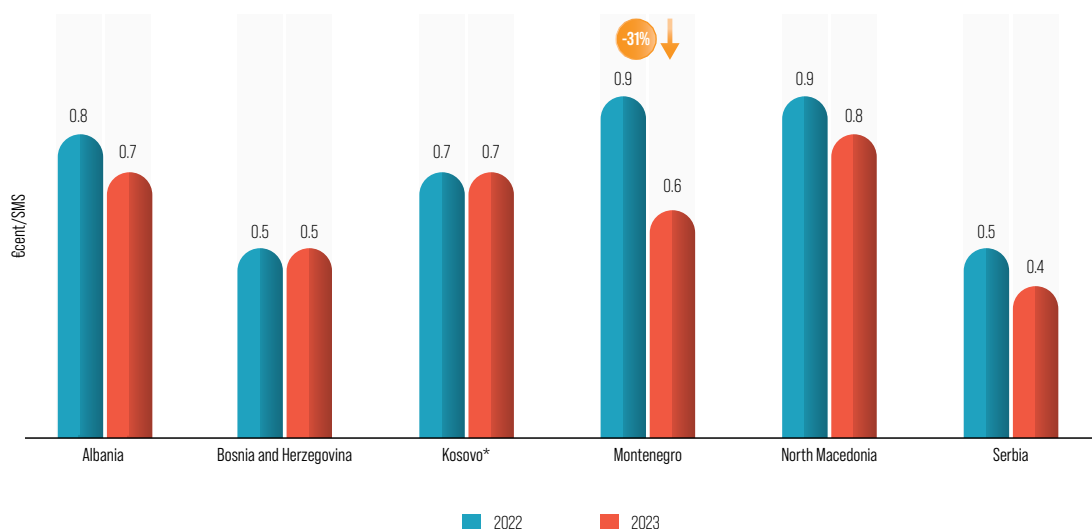


Source: Roaming questionnaire

Total wholesale roaming revenues from SMS services generated by WB6 roaming users while using SMS services in the WB6 amounted to EUR 219 thousand in 2023 which is 20% lower compared to 2022. The decline of wholesale roaming SMS revenues from the WB6 region in 2023 was mainly influenced by lower wholesale prices for inbound SMS services and the lower inbound SMS roaming traffic (-4%).

In 2023 all WB6 economies reported decreased or flat wholesale roaming revenues per SMS in WB6 compared to 2022.

Figure 37 Wholesale roaming revenue per SMS from the WB6

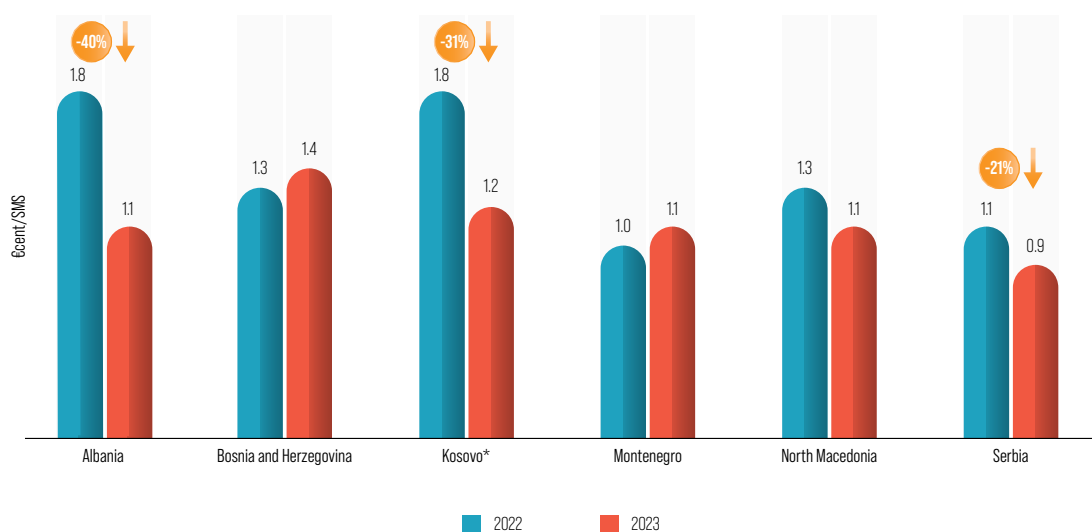


Source: Roaming questionnaire

Total wholesale roaming SMS revenues generated by EEA users while roaming in the WB6 amounted to EUR 253 thousand in 2023, indicating a 17% decline compared to 2022. This decrease in revenue was primarily due to lower wholesale prices for inbound SMS traffic in 2023, as the inbound SMS traffic volume remained nearly unchanged (-1%).

All WB6 economies reported decreased wholesale roaming revenues per SMS from the EEA region in 2023 compared to 2022, except Bosnia and Herzegovina and Montenegro.

Figure 38 Wholesale roaming revenue per SMS from the EEA

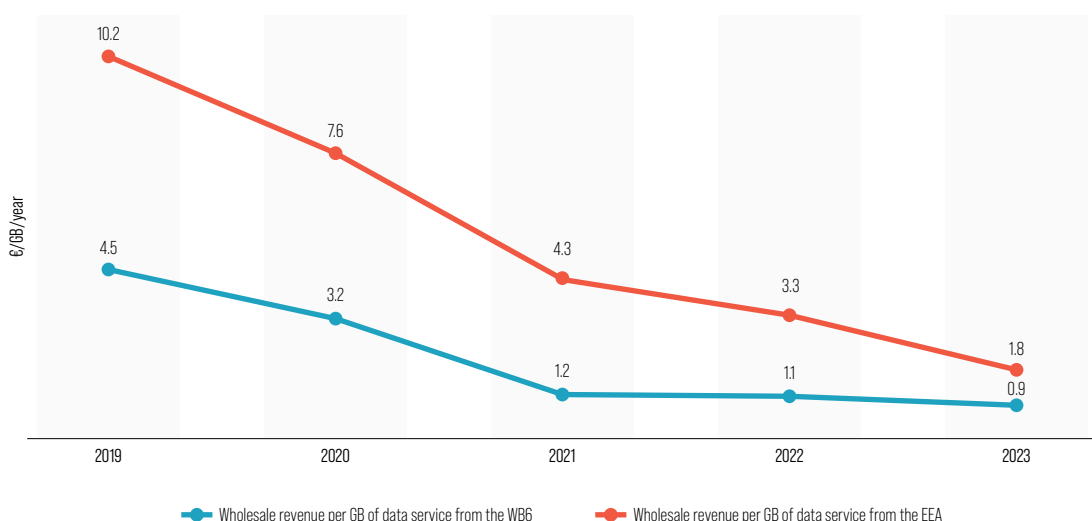


Source: Roaming questionnaire

4.4. WHOLESALE ROAMING DATA REVENUES

A declining trend in total wholesale roaming revenues per GB of data services has been evident throughout the observed period, driven by a decrease in the average wholesale prices for data services in both the WB6 and the EEA.

Figure 39 Total wholesale roaming revenues per GB of data services



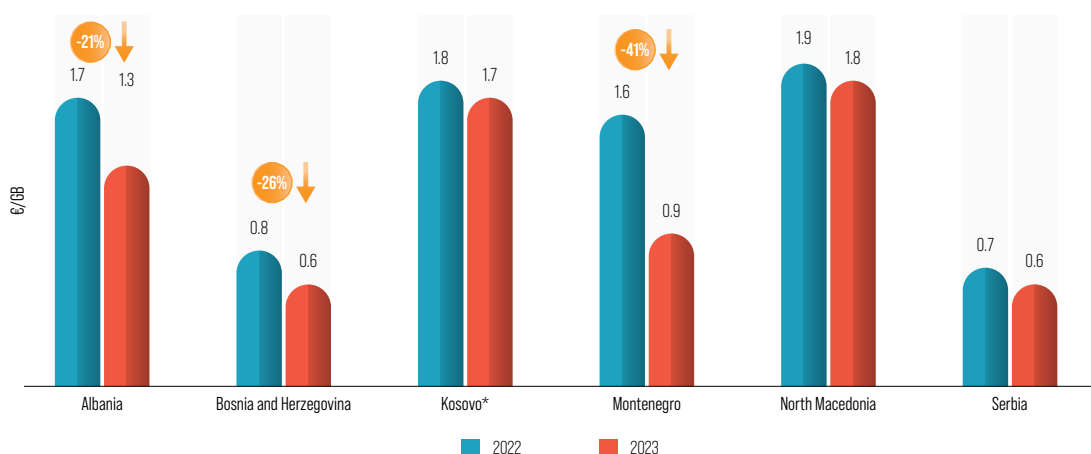
Source: Roaming questionnaire

Total wholesale roaming data revenues generated by WB6 roaming users while using roaming data services in the WB6 amounted to EUR 8.9 million in 2023, indicating a 24% increase relative to 2022. The increase in wholesale roaming data revenues from the WB6 in 2023 was driven by a significant

increase in inbound data traffic of 61%, which offset a decline in average wholesale prices for inbound data services in 2023 compared to 2022.

All WB6 economies reported decreased wholesale roaming revenues per GB from the WB6 in 2023 compared to 2022.

Figure 40 Wholesale roaming revenue per GB from the WB6

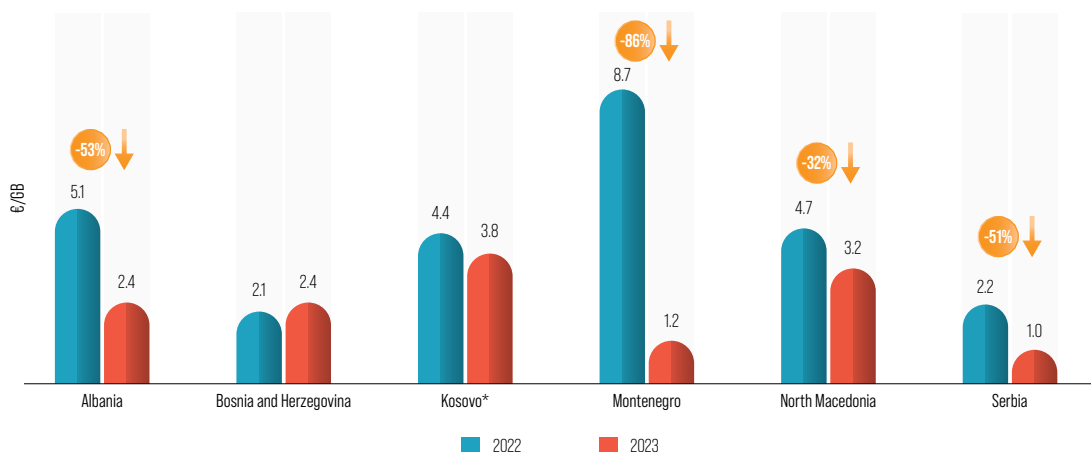


Source: Roaming questionnaire

Total wholesale roaming data revenues generated by EEA roaming users while using roaming data services in the WB6 amounted to EUR 9.7 million in 2023, indicating a slight 2% increase compared to 2022. Despite a significant 87% increase in inbound data traffic, the relatively modest increase in wholesale roaming data revenues from the EEA region in 2023 indicates a reduction in average wholesale prices for inbound roaming data services.

All WB6 economies reported decreased wholesale roaming revenues per GB from the EEA in 2023 compared to 2022, except Bosnia and Herzegovina.

Figure 41 Wholesale roaming revenue per GB from the EEA



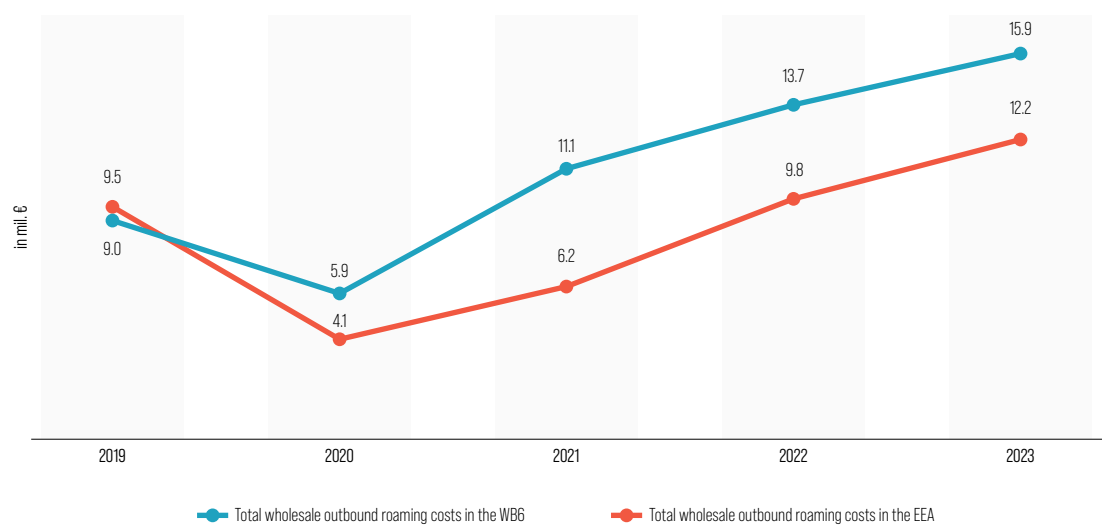
Source: Roaming questionnaire

V WHOLESAL ROAMING COSTS



In the observed period from 2019, total wholesale costs of providing roaming services in the WB6 grew faster (15%) compared to the average annual growth of wholesale costs of providing roaming services in the EEA (7%).

Figure 42 Total wholesale roaming costs

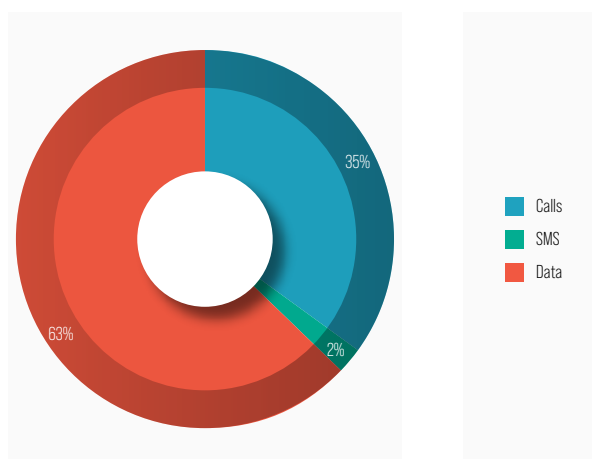


Source: Roaming questionnaire

5.1. WHOLESALE ROAMING COSTS SPLIT PER SERVICES

Total wholesale roaming costs generated by the WB6 roaming users while using roaming services in the region were EUR 15.9 million in 2023, indicating a 16% increase compared to 2022. In 2023, 63% of the total wholesale roaming costs in the WB6 were costs of data services, while voice services accounted for 35% of total wholesale roaming costs in the WB6.

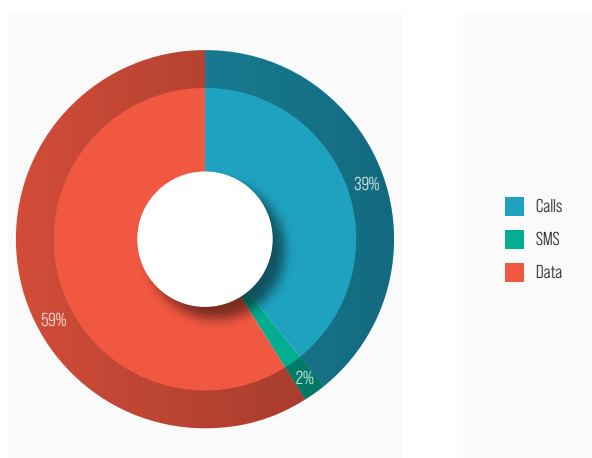
Figure 43 Split of wholesale roaming costs in the WB6 in 2023



Source: Roaming questionnaire

Total wholesale roaming costs generated by the WB6 roaming users while using roaming services in the EEA amounted to EUR 12.2 million in 2023, indicating a 24% increase compared to 2022. Of the total wholesale roaming costs in the EEA, 59% were costs of data services, while outbound voice services represented 39% of the total wholesale costs in 2023.

Figure 44 Split of wholesale roaming costs in the EEA in 2023

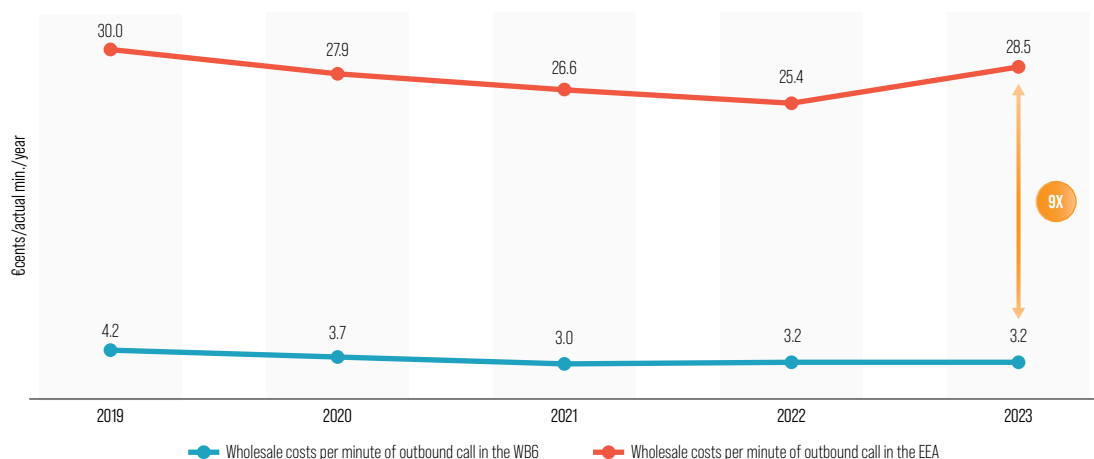


Source: Roaming questionnaire

5.2. WHOLESALE ROAMING VOICE COSTS

From 2019 onwards, there has been a decreasing trend in total wholesale roaming costs per minute of outbound calls in the WB6. Similarly, wholesale roaming voice costs per minute for outbound calls in the EEA followed a declining trend over the same period, although a slight increase was observed in 2023 compared to 2022.

Figure 45 Total wholesale roaming costs per minute of outbound calls

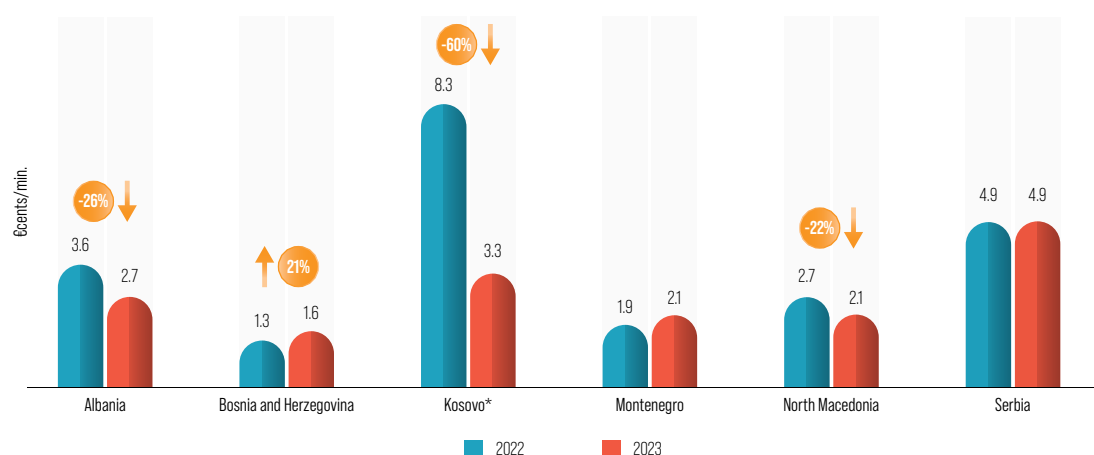


Source: Roaming questionnaire

Wholesale roaming voice costs generated by WB6 roaming users while using outbound roaming voice services in the region amounted to EUR 5.5 million in 2023, which is an increase of 5% compared to 2022, mainly as the result of increased outbound roaming voice traffic of 4%.

All WB6 economies faced decreased wholesale roaming costs per minute of outbound calls in the WB6 in 2023, except Bosnia and Herzegovina and Montenegro.

Figure 46 Wholesale roaming voice costs per minute in the WB6

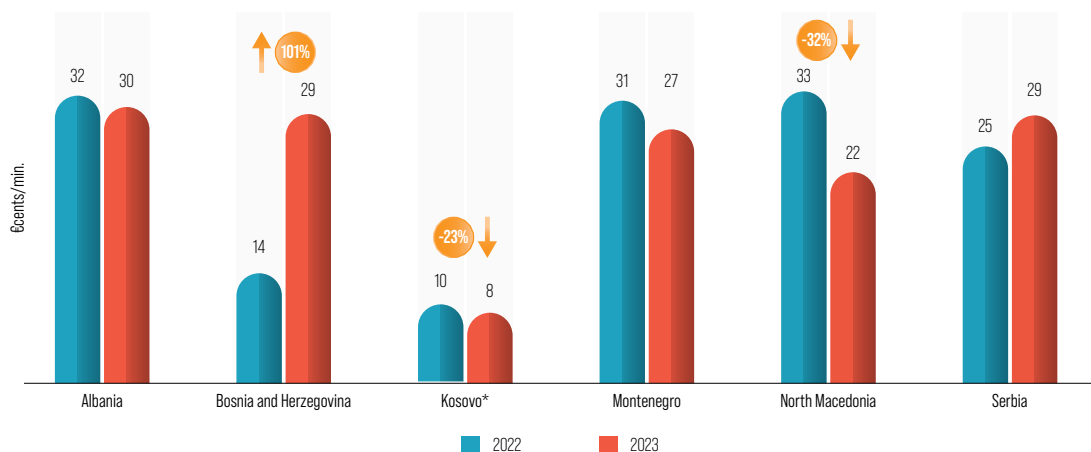


Source: Roaming questionnaire

Wholesale roaming voice costs generated by WB6 roaming users while using outbound roaming voice services in the EEA amounted to EUR 5.1 million in 2023, indicating a 17% increase compared to 2022. The increase in total wholesale roaming voice costs in the EEA was mainly driven by higher outbound voice traffic (4%) and higher average wholesale prices for voice services.

All WB6 economies faced decreased wholesale roaming costs per minute of outgoing calls in the EEA in 2023, except Bosnia and Herzegovina and Serbia.

Figure 47 Wholesale roaming voice costs per minute in the EEA

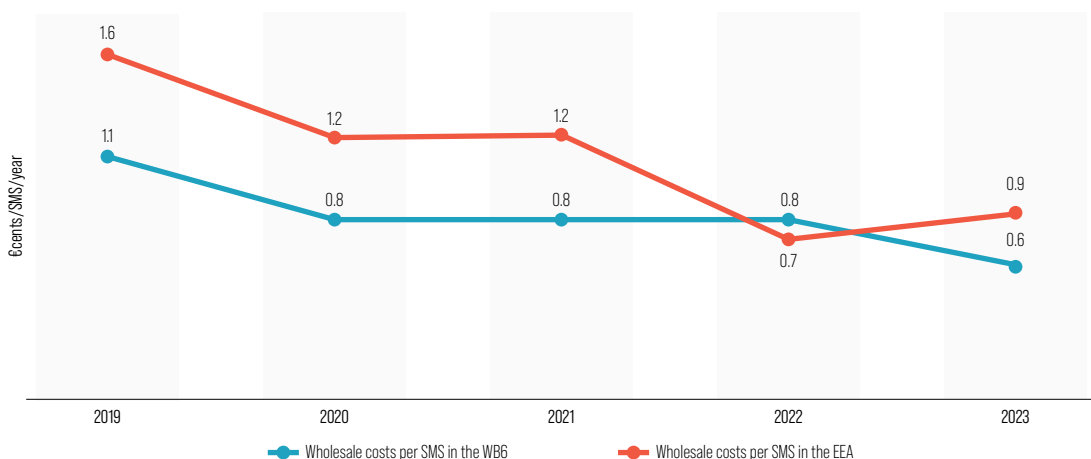


Source: Roaming questionnaire

5.3. WHOLESALE ROAMING SMS COSTS

Throughout the observed period, there has been a declining trend in total wholesale roaming costs per SMS in the WB6, despite an increase in outbound SMS traffic. This decrease is primarily driven by reduced average wholesale roaming prices for SMS services. A similar downward trend is observed in the total wholesale roaming costs per SMS in the EEA, which is mainly due to a reduction in outbound SMS traffic in the EEA.

Figure 48 Total wholesale roaming costs per SMS

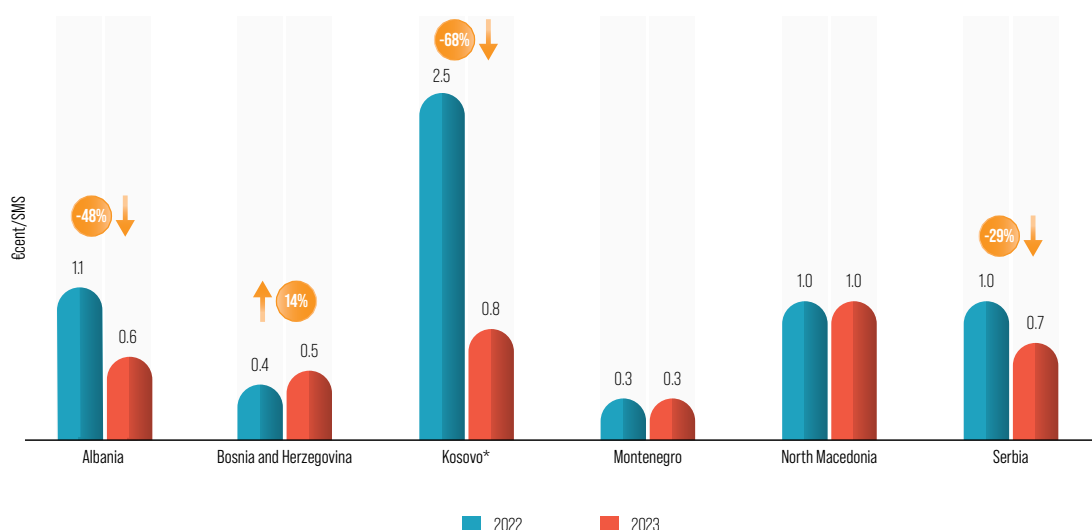


Source: Roaming questionnaire

In 2023, wholesale roaming SMS costs generated by WB6 roaming users within the region amounted to EUR 262 thousand. Despite a 15% increase in outbound SMS traffic, wholesale roaming SMS costs decreased by 13% due to lower average wholesale roaming prices for SMS services in the WB6.

All WB6 economies reported decreased or flat wholesale roaming costs per SMS in the WB6 in 2023, except Bosnia and Herzegovina.

Figure 49 Wholesale roaming costs per SMS in the WB6

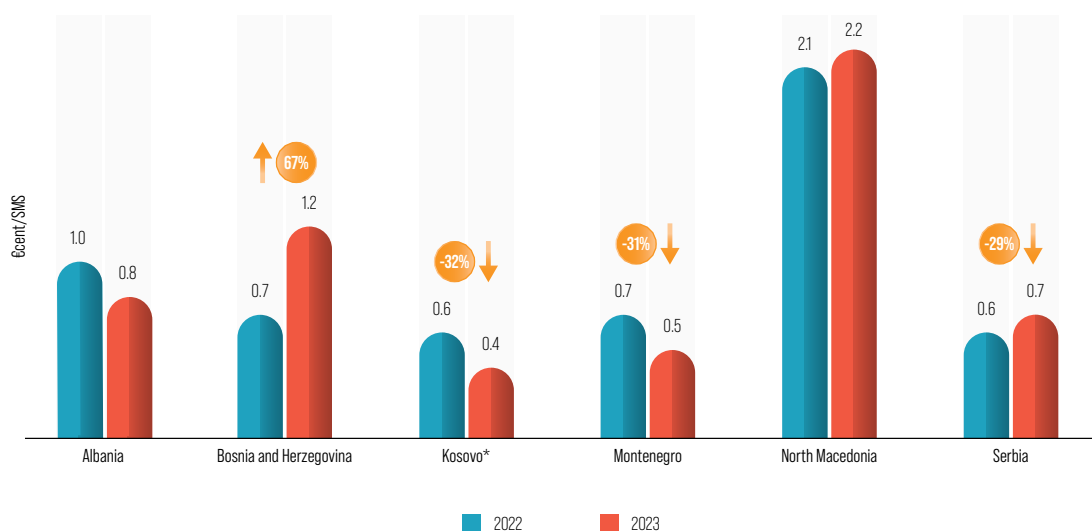


Source: Roaming questionnaire

Wholesale roaming SMS costs generated by WB6 roaming users while using SMS services in the EEA amounted to EUR 0.16 million in 2023, which is a 6% increase compared to 2022, mainly due to an increase in wholesale roaming SMS costs in Bosnia and Herzegovina.

Three economies reported decreased wholesale roaming costs per SMS in the EEA in 2023.

Figure 50 Wholesale roaming costs per SMS in the EEA

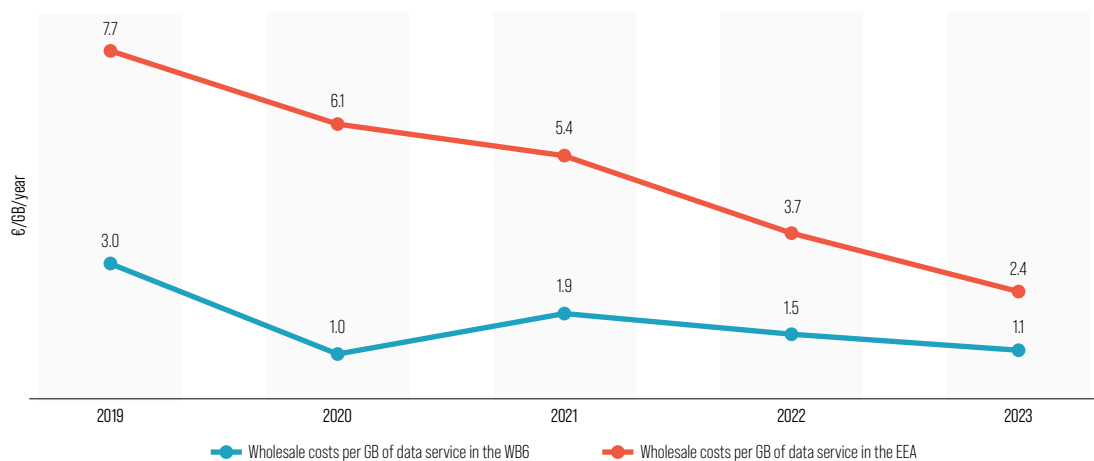


Source: Roaming questionnaire

5.4. WHOLESALE ROAMING DATA COSTS

A declining trend in total wholesale roaming costs per GB of data services has been evident throughout the observed period, driven by a decrease in the average wholesale prices for data services in both the WB6 and the EEA.

Figure 51 Total wholesale roaming costs per GB of data services

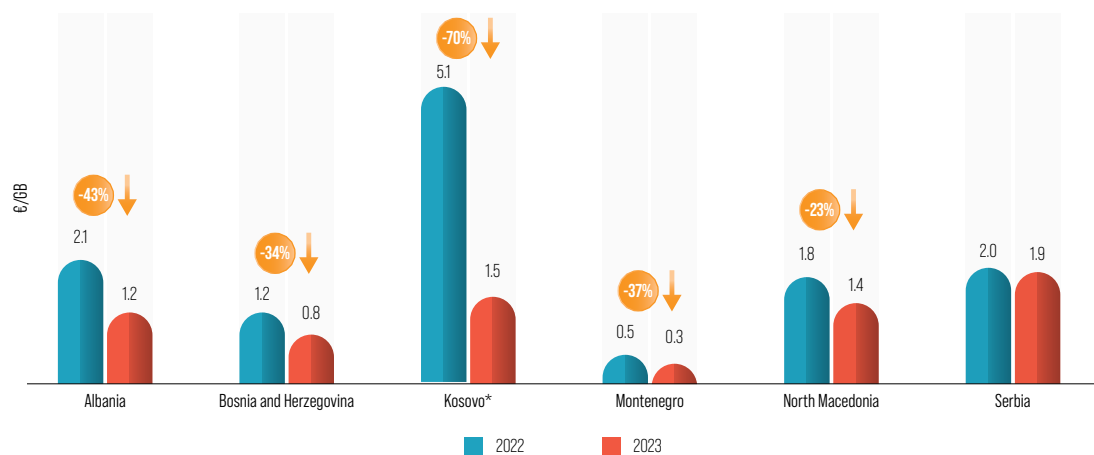


Source: Roaming questionnaire

In 2023, wholesale roaming data costs generated by WB6 roaming users within the WB6 amounted to nearly EUR 10 million, representing a 23% increase compared to 2022. This increase in wholesale costs for data services is attributed to a 70% increase in outbound roaming data traffic, which is partially offset by a 27% decrease in the wholesale costs per GB in the WB6 in 2023.

All WB6 economies reported decreased wholesale roaming costs per GB in the region in 2023.

Figure 52 Wholesale roaming costs per GB in the WB6

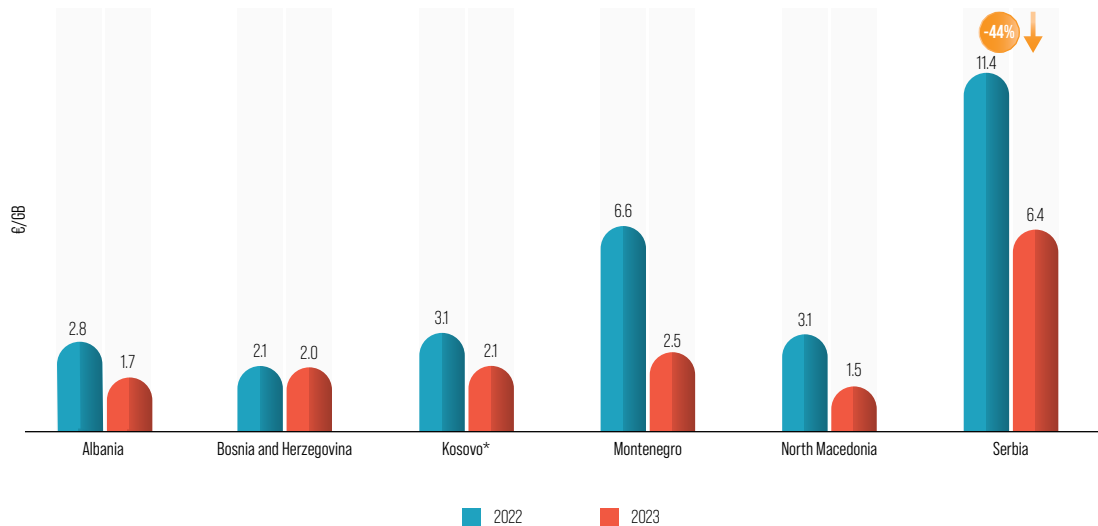


Source: Roaming questionnaire

In 2023, wholesale roaming data costs generated by WB6 roaming users within the EEA region amounted to EUR 7 million, representing a 31% increase compared to 2022. This increase in wholesale costs for data services is attributed to a 101% increase in outbound roaming data traffic, which is partially offset by a 35% decrease in the average wholesale cost per GB in the EEA in 2023.

All WB6 economies reported decreased wholesale roaming costs per GB in the EEA region in 2023.

Figure 53 Wholesale roaming costs per GB in the EEA



Source: Roaming questionnaire

VI CONCLUSION



The analysed data suggests that the reduction in retail and wholesale roaming prices has had a profound effect on roaming services consumption patterns among roaming users in the WB6. The considerable increase in the number of roaming users in the WB6 in the last five years, coupled with the overall rise in roaming services consumption, underscores the importance of affordable roaming services in driving user engagement and regional connectivity. This trend reflects broader shifts towards digital integration and the removal of barriers to communication within the WB6. This positive trend is expected to persist, supported by the implementation of 5G technologies and the continued harmonisation with EU roaming regulations.

In terms of roaming services between the WB6 and the EEA, these positive outcomes provide a compelling business case for operators to further reduce roaming prices with the EU. Despite the consistent decline in average retail prices for roaming services in the EEA, they remain relatively high. For example, average retail roaming costs per roaming user for outgoing voice services are 48 times higher for roaming in the EEA than in the WB6, with an even greater discrepancy for data services, where average retail roaming costs per roaming user for data services are 55 times higher for roaming in the EEA compared to the WB6. The EU/WB Roaming Declaration, which limits retail data roaming prices between EU and WB6 operators signatories of the Declaration, is expected to bring further positive effects by reducing retail roaming prices for data services and increasing roaming data traffic.

Overall, the WB6 experience with roaming agreements highlights the importance of collaborative regional policies in driving growth and enhancing connectivity. This sets a strong foundation for the region's digital future and further integration with the EU.



WB6 Roaming Report 2024



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