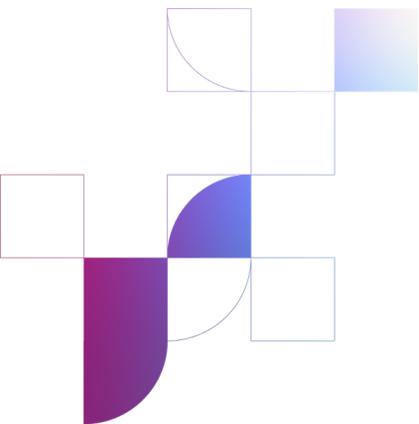


BEREC Report on Western Balkan Roaming

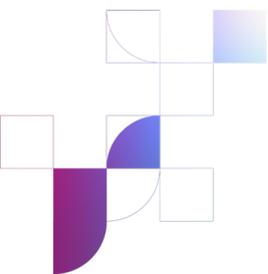
October 2022 – September 2023

7 March 2024



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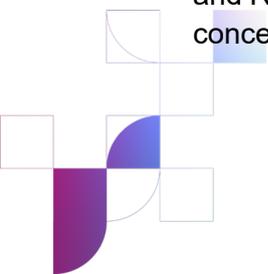


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1 Introduction

The BEREC Report on Western Balkan Roaming presents the results of the 9th round of data collection on international roaming services in the Western Balkans (WB) region including the economies Albania, Bosnia, Kosovo*, Montenegro, North Macedonia, Serbia undertaken by BEREC. This Report covers the period from 1 October 2022 – 30 September 2023, i.e. from the 4th quarter 2022 until the 3rd quarter 2023. It is the ninth report of a series and from this year onward the report will be produced on annual basis.

The applicable regulatory framework for this data collection is the Agreement on the price reduction of the roaming services in public mobile communication networks in the Western Balkans region, signed on 4 April 2019. According to this agreement, a transitional regime for roaming services shall apply from 1 July 2019 and allow adjustments of the price level of roaming services towards a “home-like” rule¹. As of 1 July 2021, the Roam Like at Home (RLAH) regime in the region was successfully achieved, meaning that currently, WB consumers do not pay extra charges for calls, SMS and mobile data while in roaming in the region, compared to what they pay at home.

The consumption of all types of roaming traffic has significantly increased in the past 3 years, with more than 100% growth of data traffic within the WB region just in the last year. In the same period, SMS consumption within the WB region has risen 44%, while voice calls consumption within the WB region is on the same level as after introduction of RLAH in 2021. The impact of RLAH is reflected in an increase of the number of minutes per user in H2 2021 vs. H1 2021 from 45% in Kosovo* to as much as 237% in Serbia (note that seasonality effects are not considered). In the same reference period, data consumption/user grew from 62% in Albania up to 459% in Serbia.

Roaming agreements are keystones of international cooperation in the telecommunications sector and this agreement therefore marks a milestone in the cooperation not only between all six WB signatories, but also with the European Union. Even at the early stage of the transitional regime, the average prices for roaming have been reduced significantly in all six WB signatories, in some cases by over 90%². In December 2022, an agreement was reached between EU and WB telecommunications providers to reduce roaming prices between EU and WB signatories, providing benefits to consumers in the WB and EU region alike. This agreement came into effect on 1 October 2023.

This Report aims to provide information about consumption and price developments and to monitor the implementation of the roaming agreement. The first chapter contains information on subscribers in each of the WB signatories ([Chapter 2](#)), followed by an analysis of retail domestic consumption patterns in [Chapter 3](#). [Chapter 4](#) is focused on retail roaming consumption patterns. [Chapter 5](#) offers information on retail roaming revenues, complemented by a chapter on wholesale roaming revenues ([Chapter 6](#)). A full list of operators that submitted data may be found in the Annex

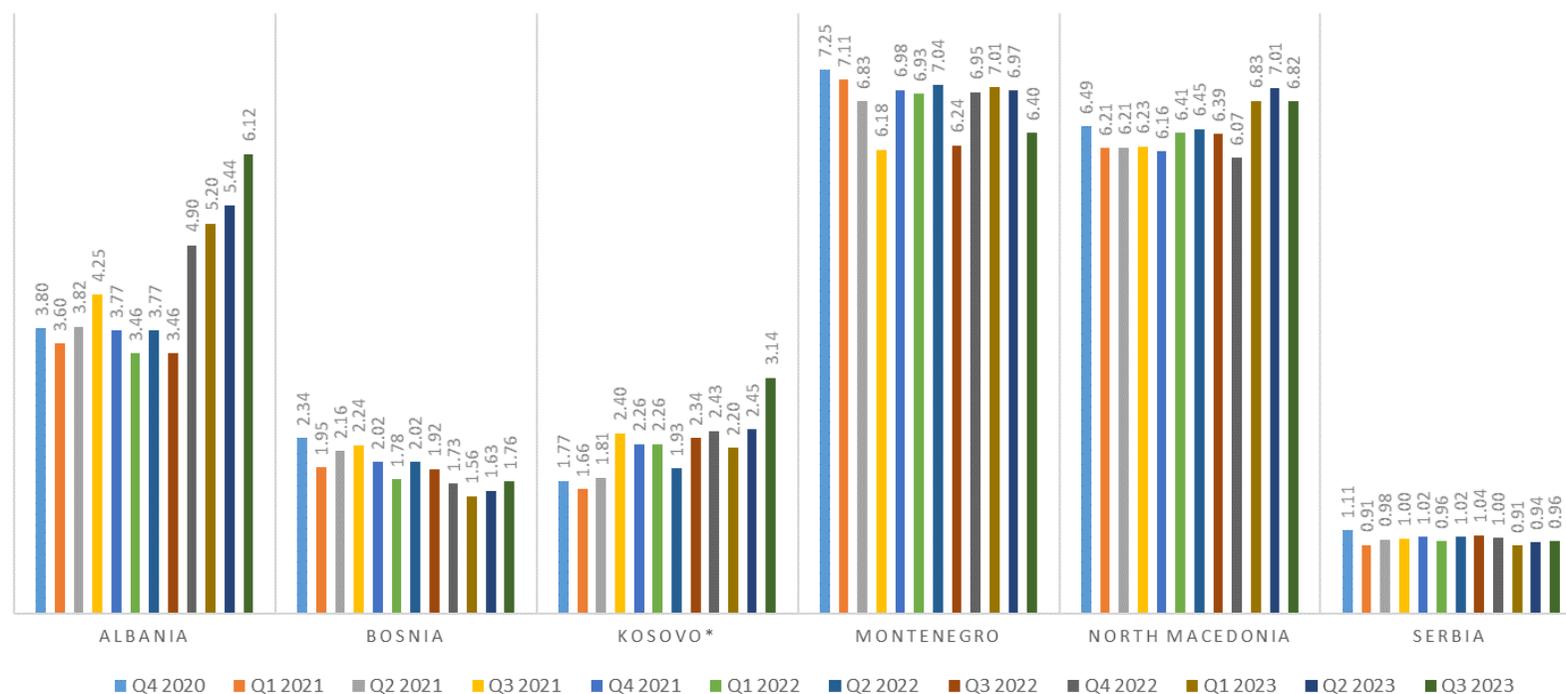
¹ The cited “home-like” rule shall correspond to the “roaming like at home” rules applicable in the European Union.

² <https://www.rcc.int/pubs/86/leaflet-roaming-free-western-balkans>

2 Analysis of subscribers and those that use roaming services

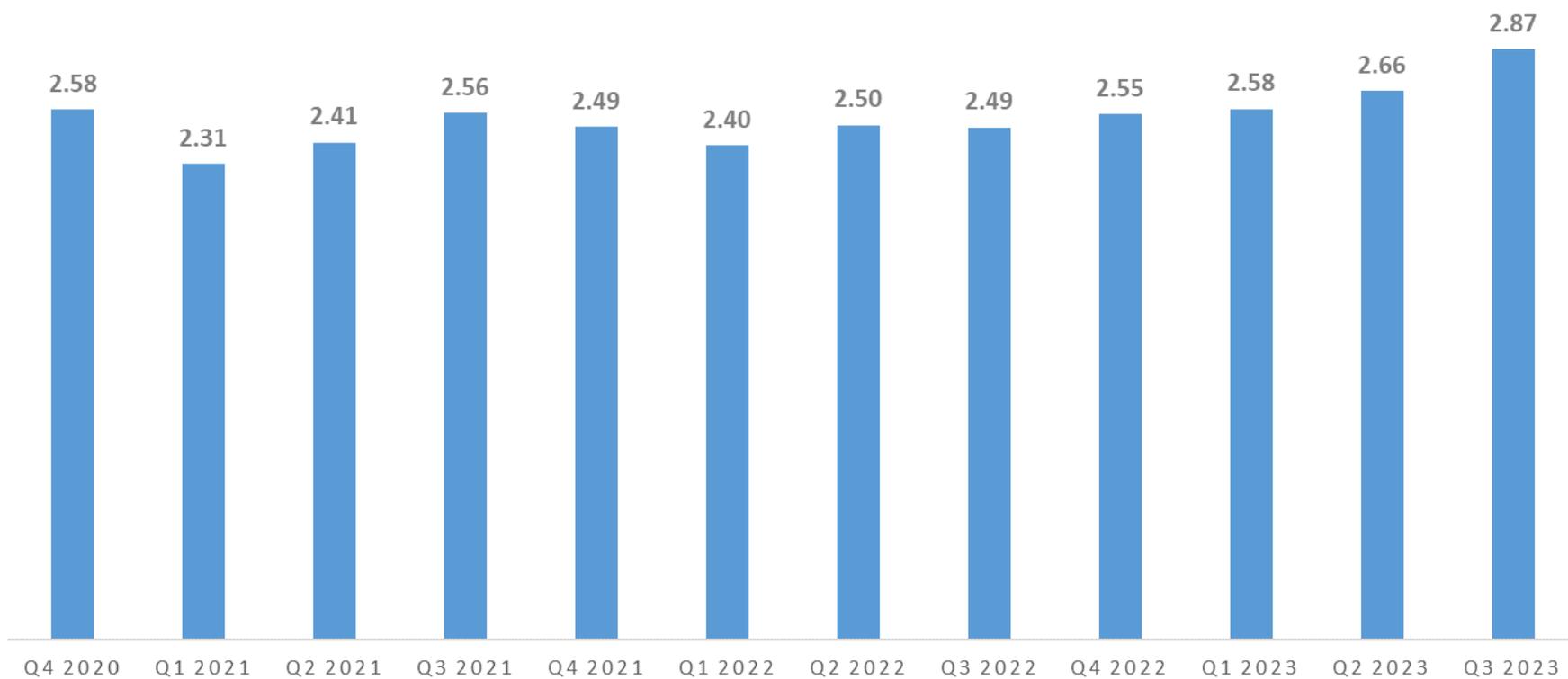
2.1 Domestic average Retail Mobile Revenue per User (ARRPU)

Figure 1: Domestic average retail mobile revenue (voice+SMS+data) per total number of subscribers per month in Euro³



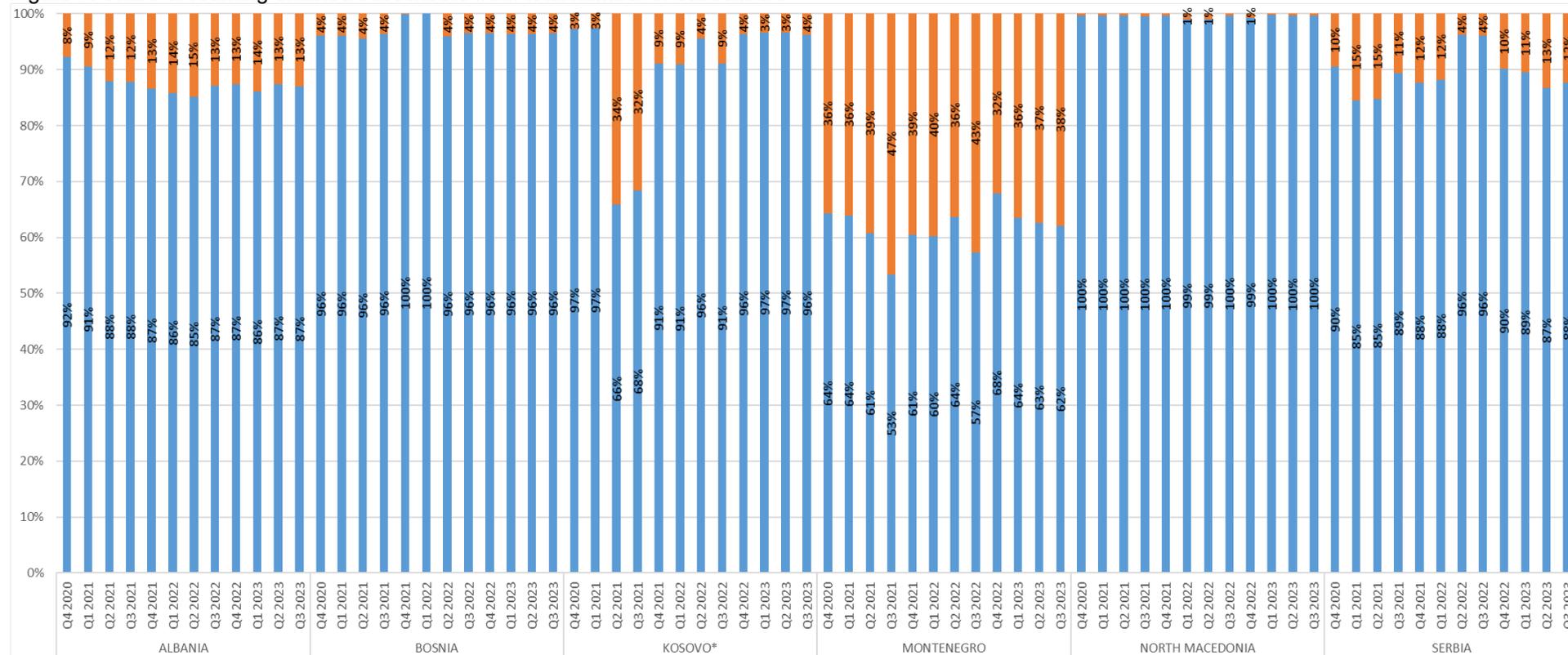
³ Albanian operators reported bundle data given high prevalence of domestic bundles and MNOs difficulties in separating the revenues per each item

Figure 2: Average monthly revenue (voice+SMS+data) per user per month for the whole WB region weighted by the number of subscribers



2.2 Share of roaming enabled subscribers from total number of subscribers

Figure 3: Share of roaming enabled subscribers from total number of subscribers



3 Consumption patterns for domestic mobile retail services

3.1 Domestic voice minutes: average number of domestic minutes (actual minutes) per subscriber (total number of subscribers) per month

Figure 4: Domestic voice minutes: average number of domestic minutes (actual minutes) per total number of subscribers per month

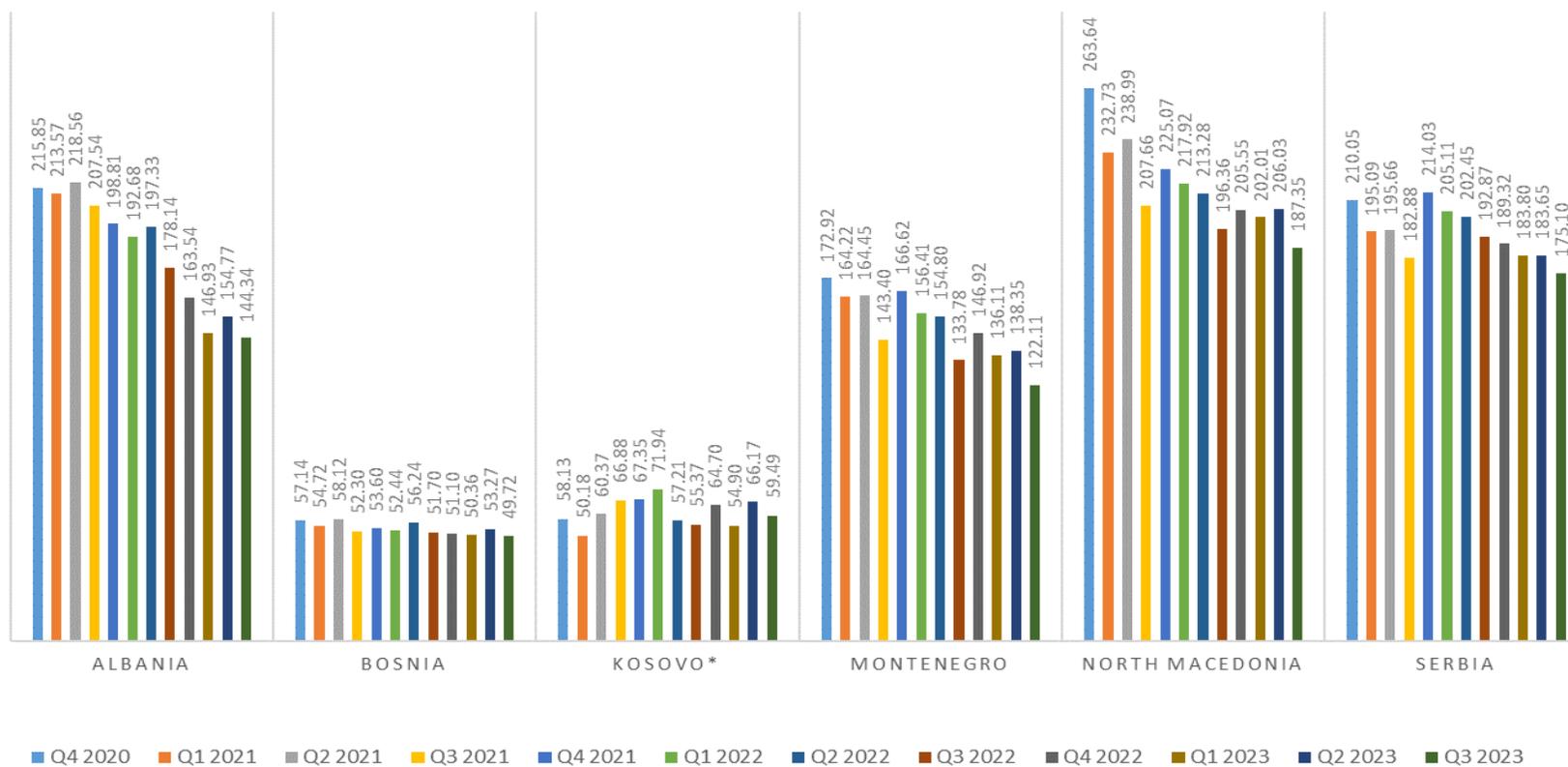
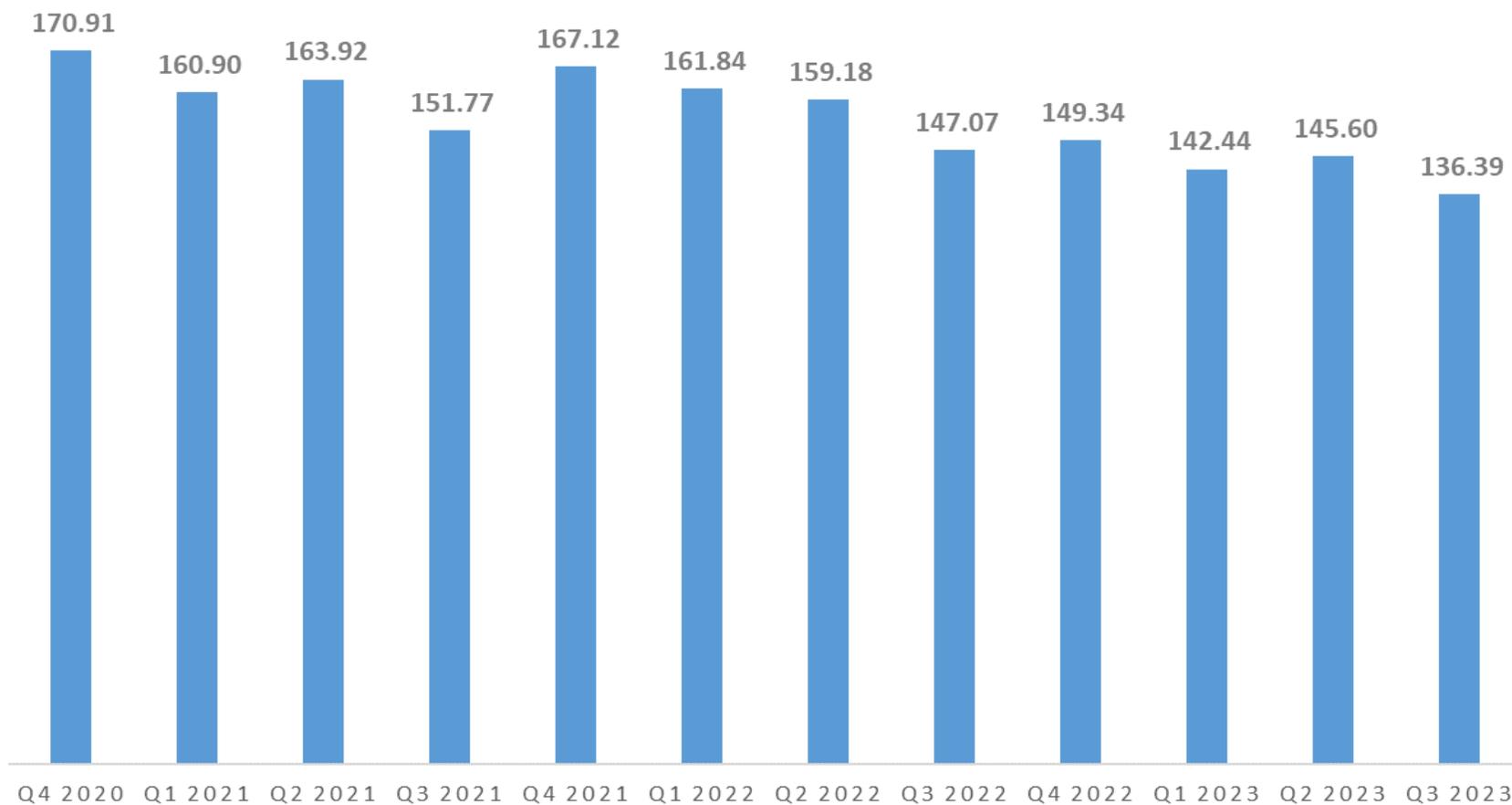


Figure 5: Domestic voice minutes: average number of domestic minutes (actual minutes) per subscriber per month for the whole WB region weighted by the total number of subscribers



3.2 Domestic SMS: average number of domestic SMS per subscriber (total number of subscribers) per month

Figure 6: Domestic SMS: average number of domestic SMS per total number of subscribers per month

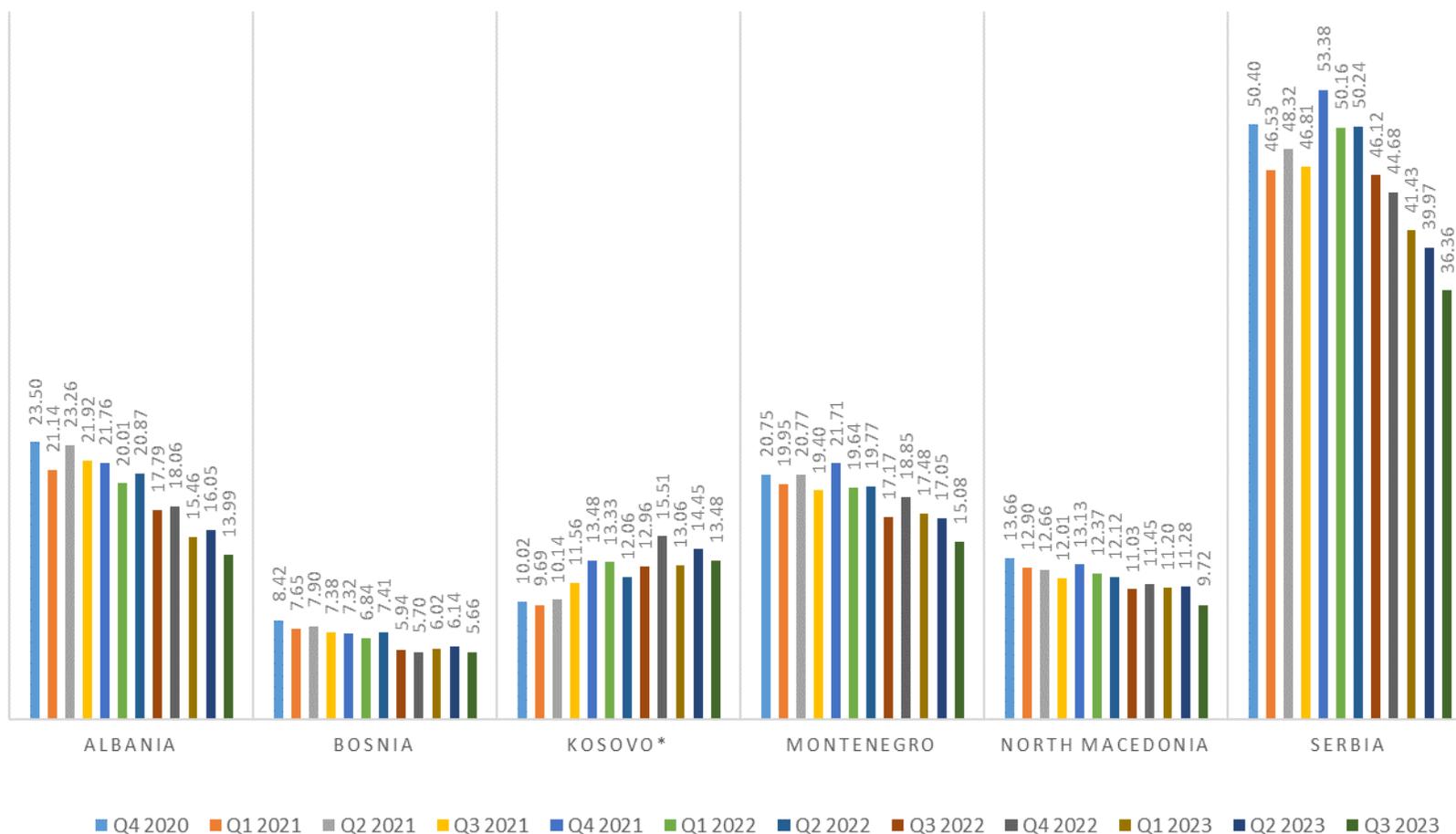
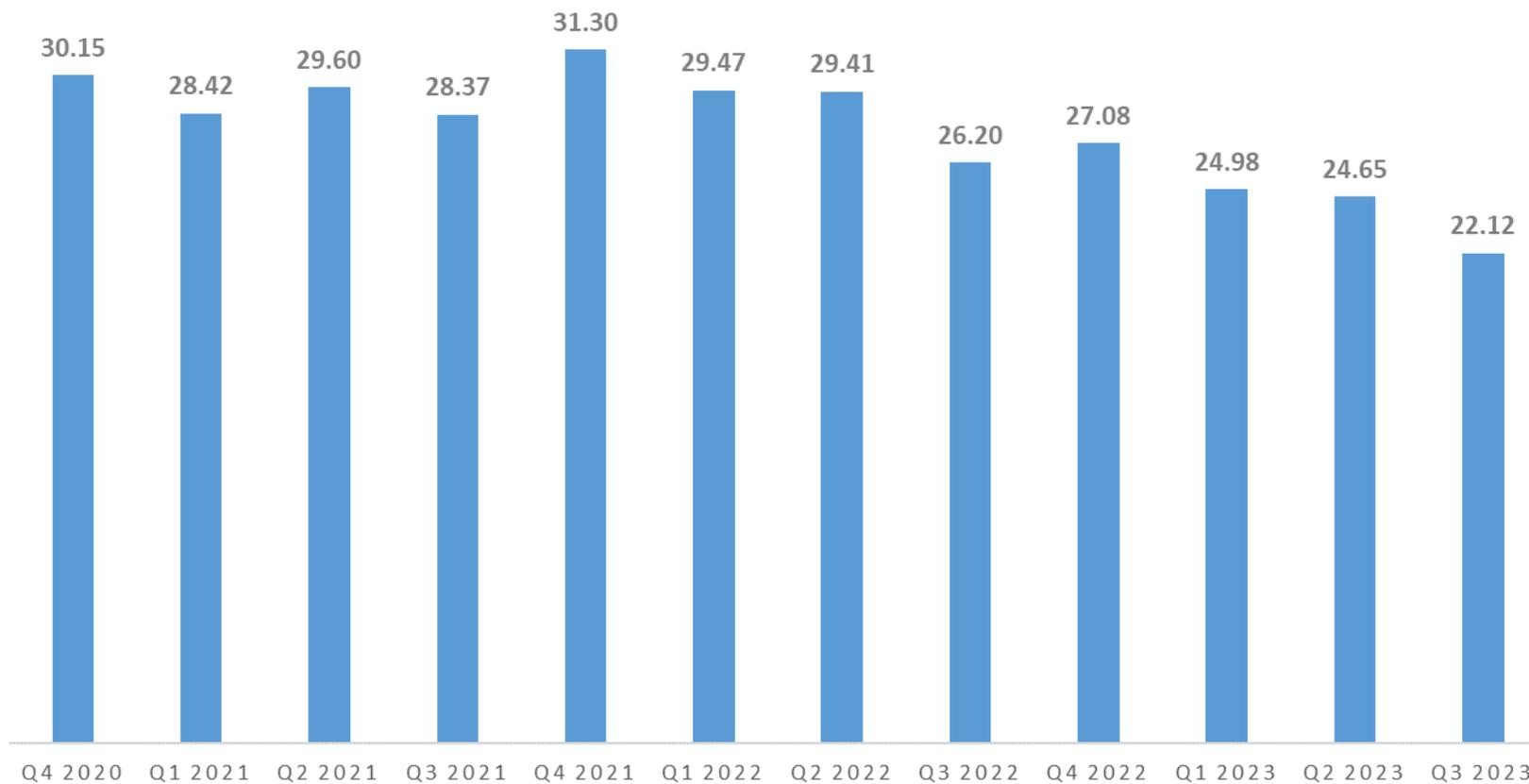


Figure 7: Domestic SMS: average number of domestic SMS per subscriber per month for the whole WB region weighted by the total number of subscribers



3.3 Domestic data: average consumption of domestic data (GB) per subscriber (total number of subscribers) per month

Figure 8: Domestic data: average consumption of domestic data (GB) per total number of subscribers per month

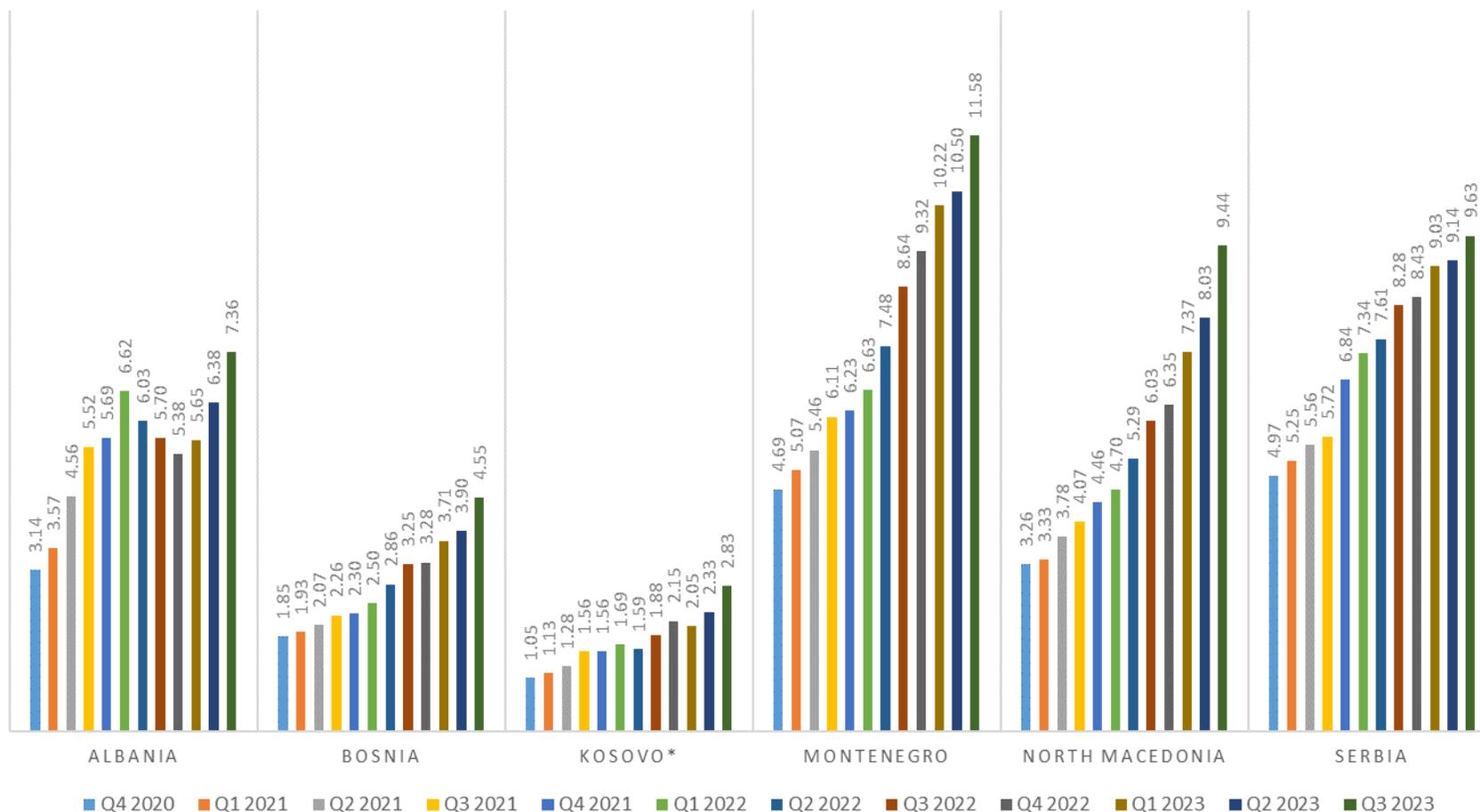
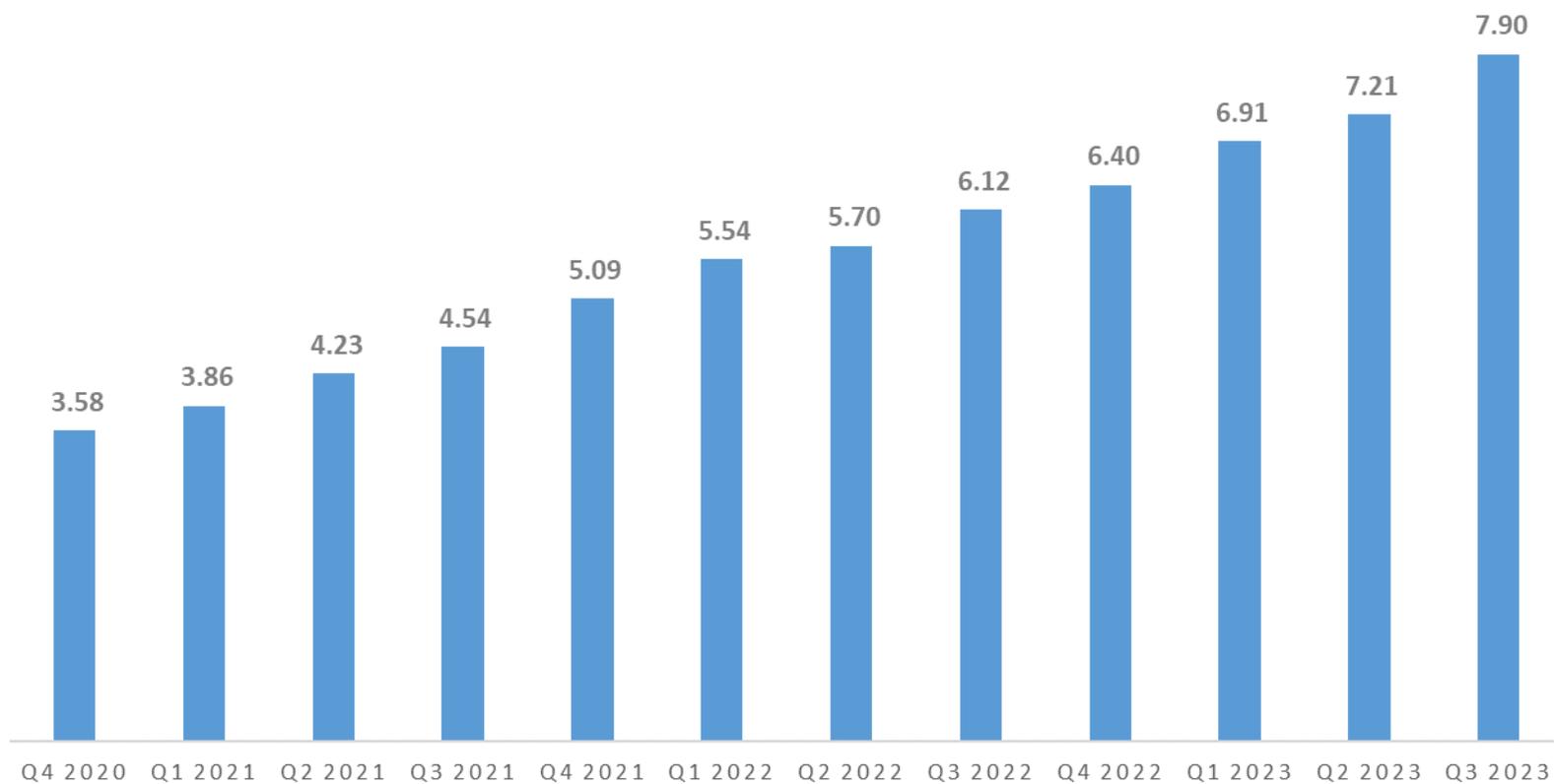


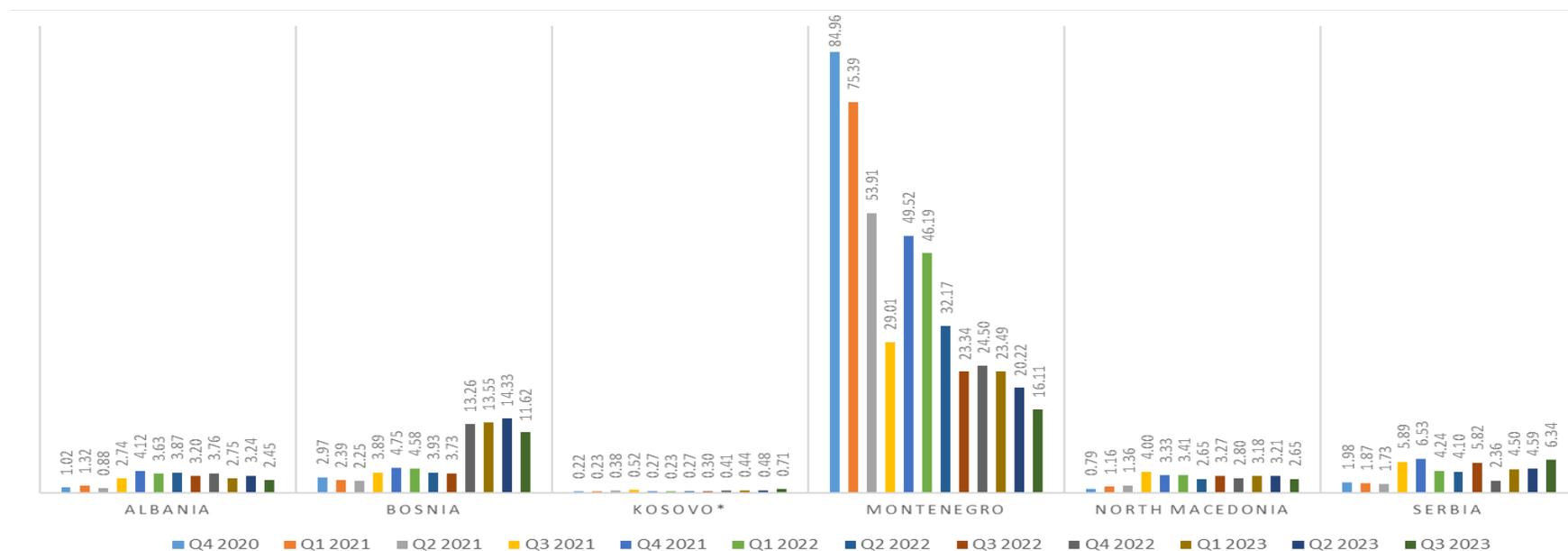
Figure 9: Domestic data: average consumption of domestic data (GB) per subscriber per month weighted by the total number of subscribers



4 Consumption patterns for roaming services (voice, SMS and data)

4.1 Roaming voice services, calls made: average number of regional roaming minutes per roaming-enabled subscriber per month

Figure 10: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the WB region (from alternative RLAH+ and RLAH tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month⁴



⁴ The categories “Western Balkans alternative” and “Western Balkans RLAH+” were implemented in Q3 2019, prior to which only the category “Western Balkans tariffs” existed. The category displayed from Q3 2019 onwards as “WB alternative” is therefore a very different category from the same category in the previous quarters. Roam Like at Home (RLAH) regime was successfully achieved and roaming free WB region was established as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 11: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the WB region (from alternative RLAH+ and RLAH tariffs) per subscriber per month for the whole WB region weighted by the number of roaming-enabled subscribers

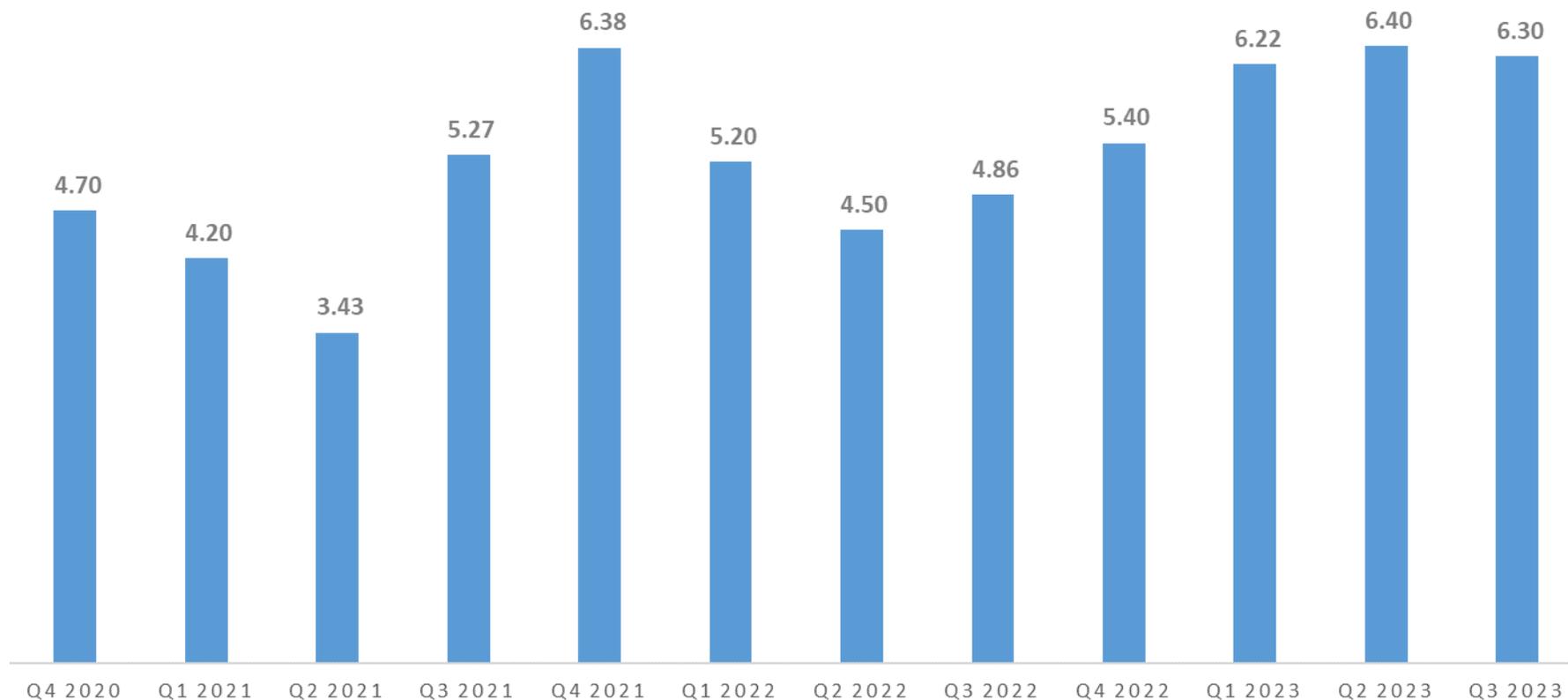


Figure 12: Roaming RLAH+ and RLAH minutes, calls made (actual minutes): average number of roaming minutes within the WB region from RLAH+ and RLAH tariffs per number of RLAH+ and RLAH subscribers roaming at least once in the concerned quarter and region per month

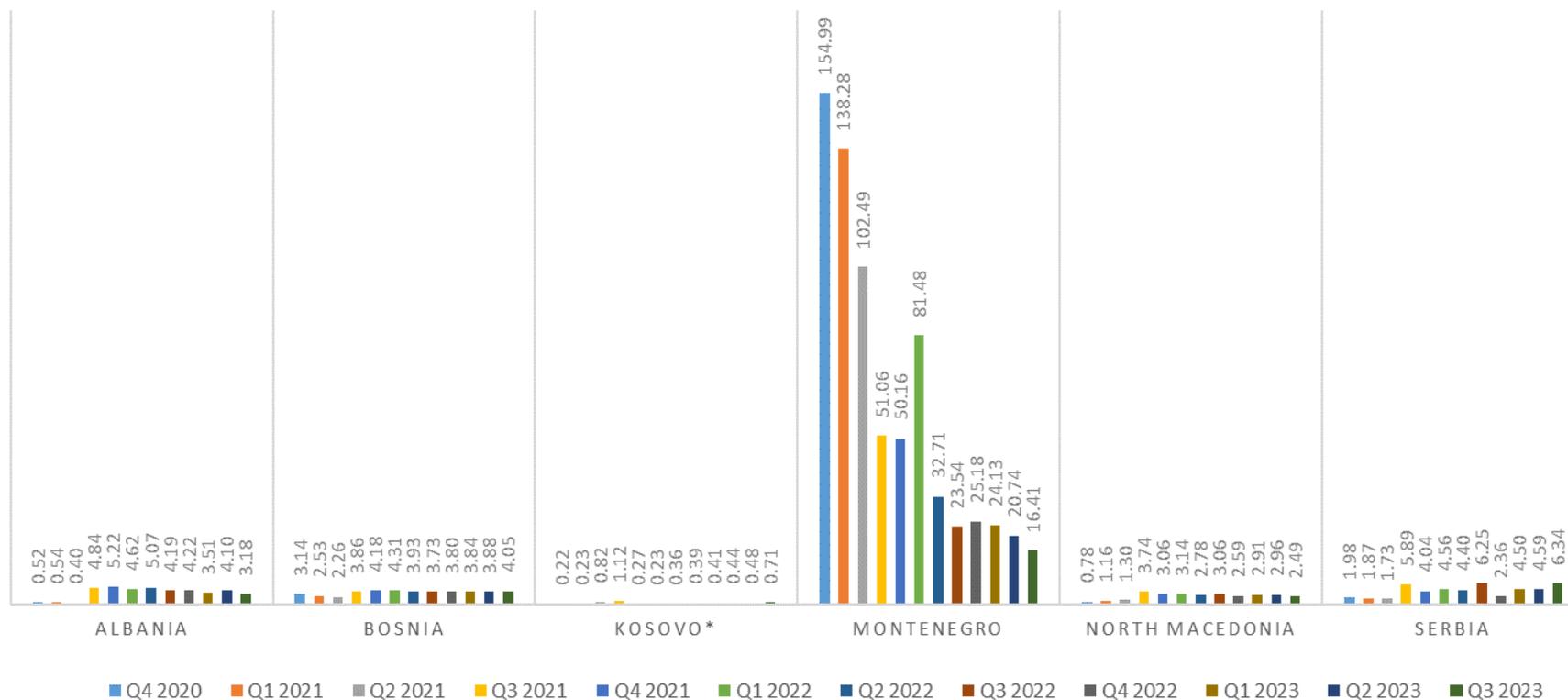
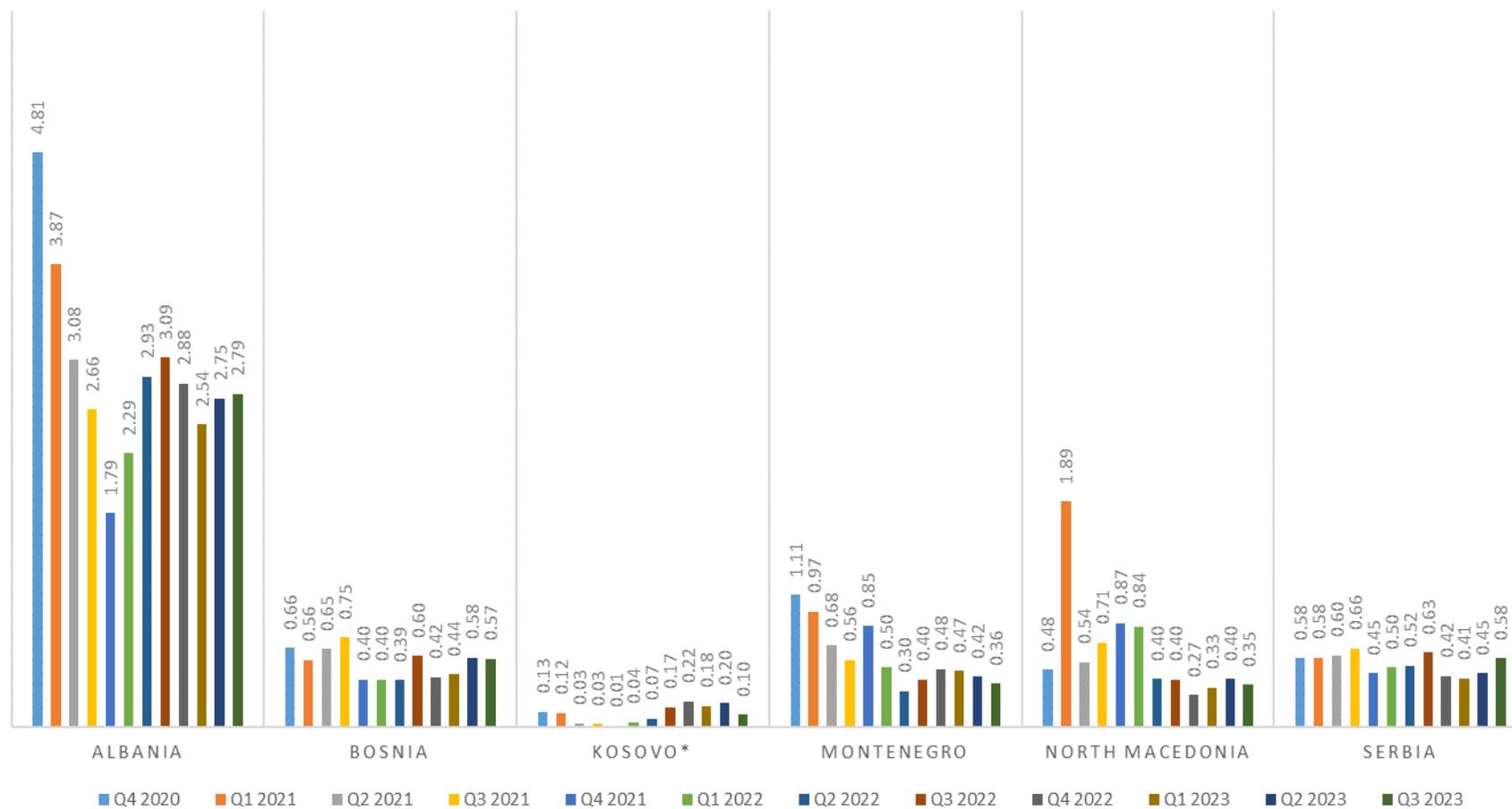


Figure 13: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



4.2 Roaming voice services, calls received: average number of roaming minutes per regional roaming enabled subscriber per month

Figure 14: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the WB region (from alternative, RLAH+ and RLAH tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month

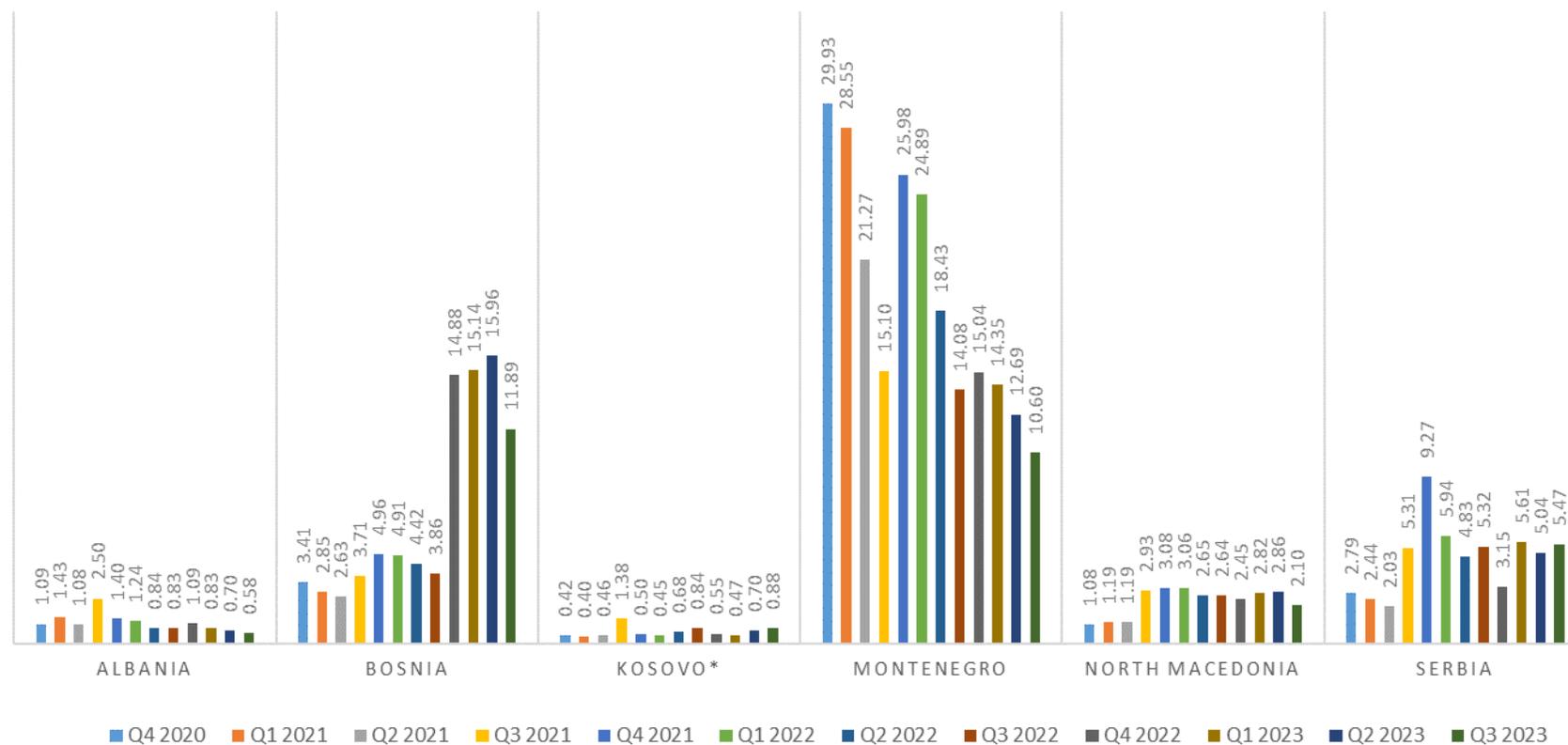
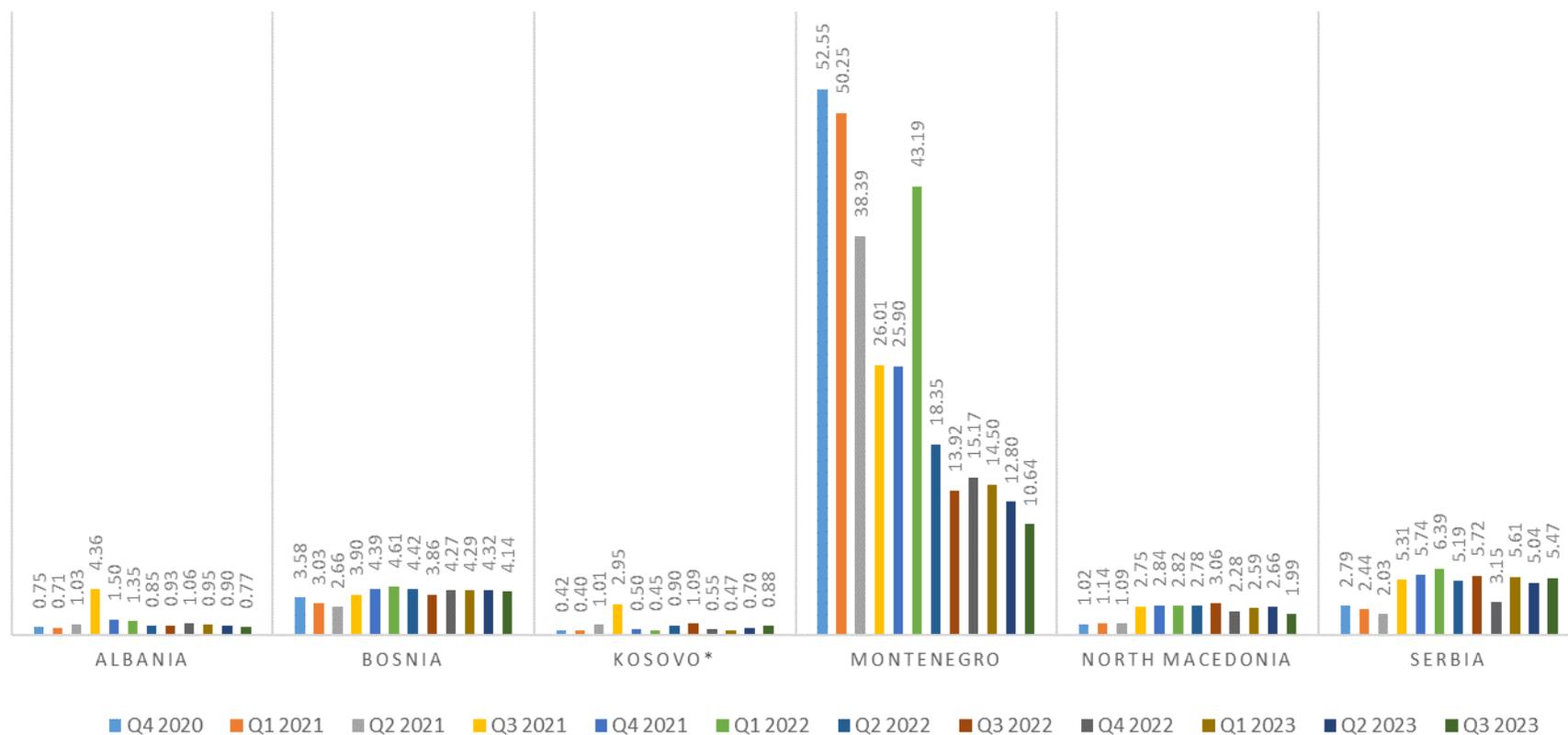
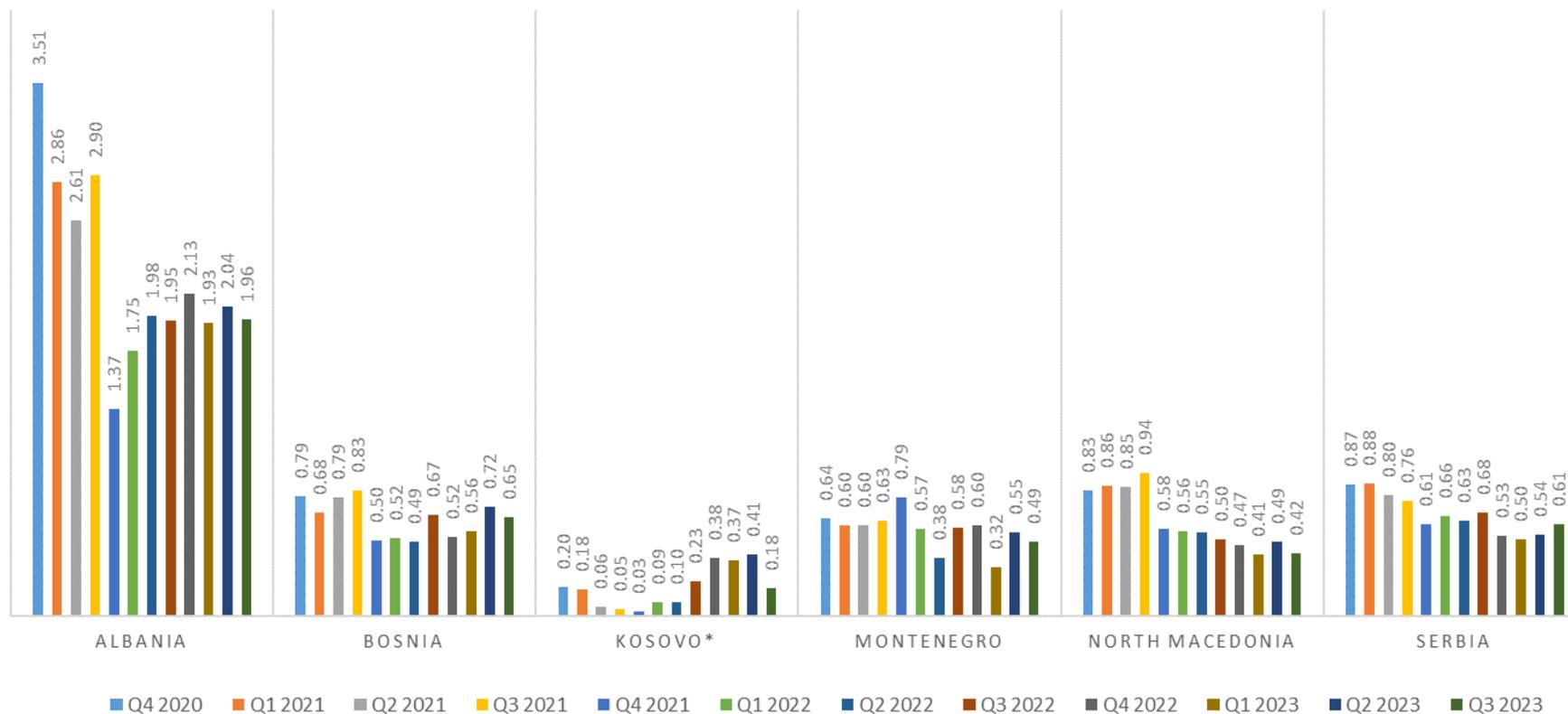


Figure 15: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the WB region from RLAH+ and RLAH tariffs per number of RLAH+ and RLAH subscribers roaming at least once in the concerned quarter and region per month⁵



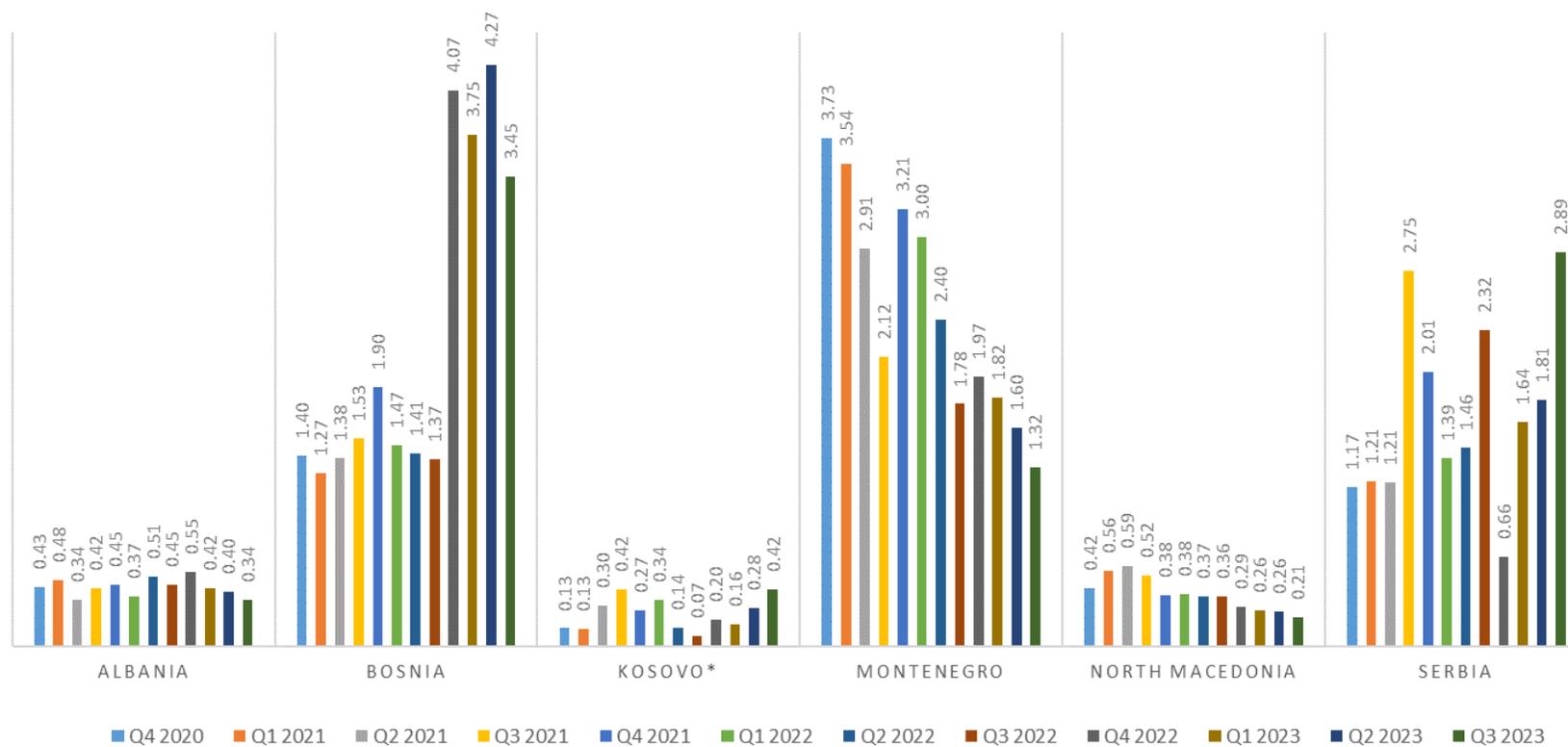
⁵ Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 16: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



4.3 Roaming SMS services: average number of roaming SMS per regional roaming enabled subscriber per month

Figure 17: Roaming SMS services: average number of roaming SMS (from alternative, RLAH+ and RLAH tariffs) within the WB region per number of subscribers roaming at least once in the concerned quarter and region per month⁶



⁶ Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 18: Roaming SMS services: average number of roaming SMS (from alternative, RLAH+ and RLAH tariffs) within the WB region per subscriber roaming at least once in the concerned quarter and region per month for the whole WB region weighted by the number of roaming-enabled subscribers from each country

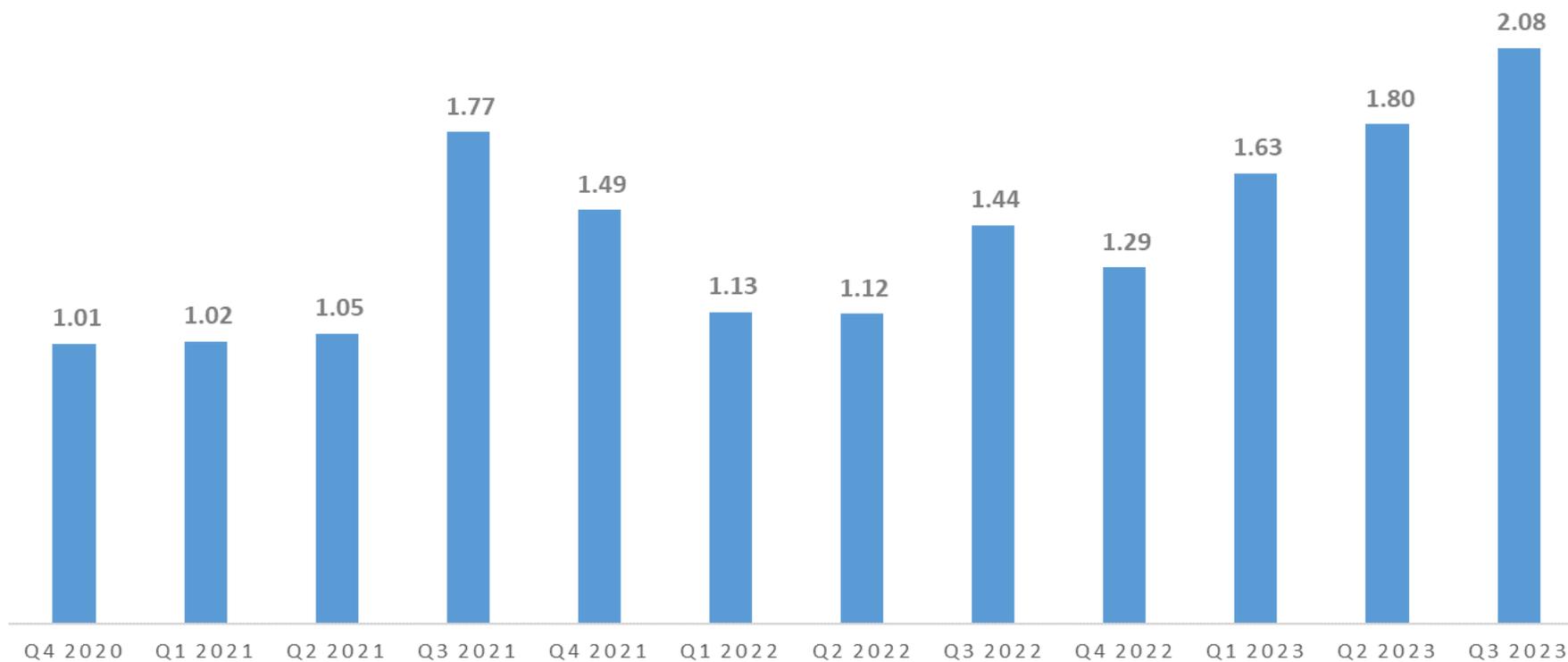


Figure 19: Roaming SMS services: average number of roaming SMS within the WB region (from RLAH+ and RLAH tariffs) per subscriber roaming at least once in the concerned quarter and region per month

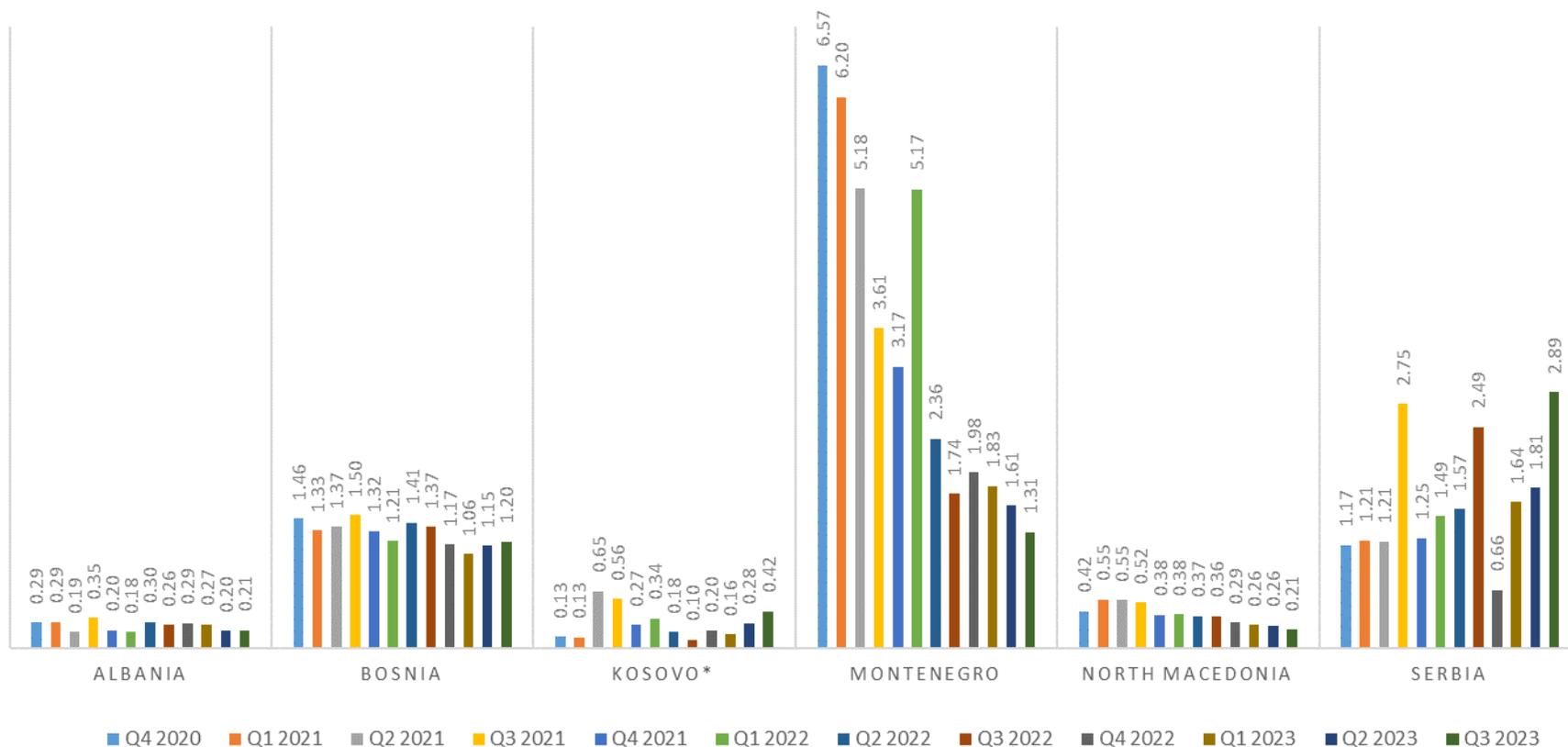
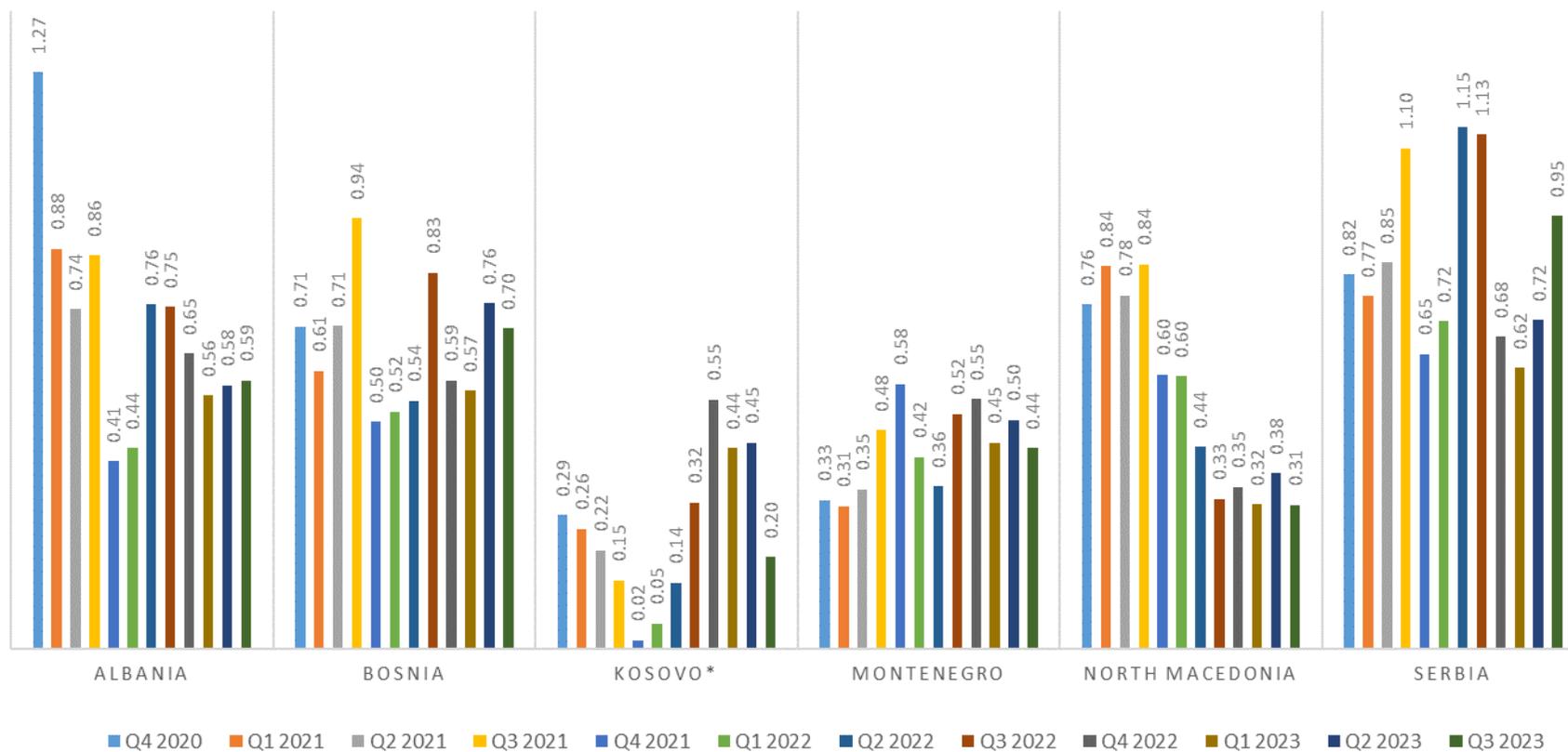
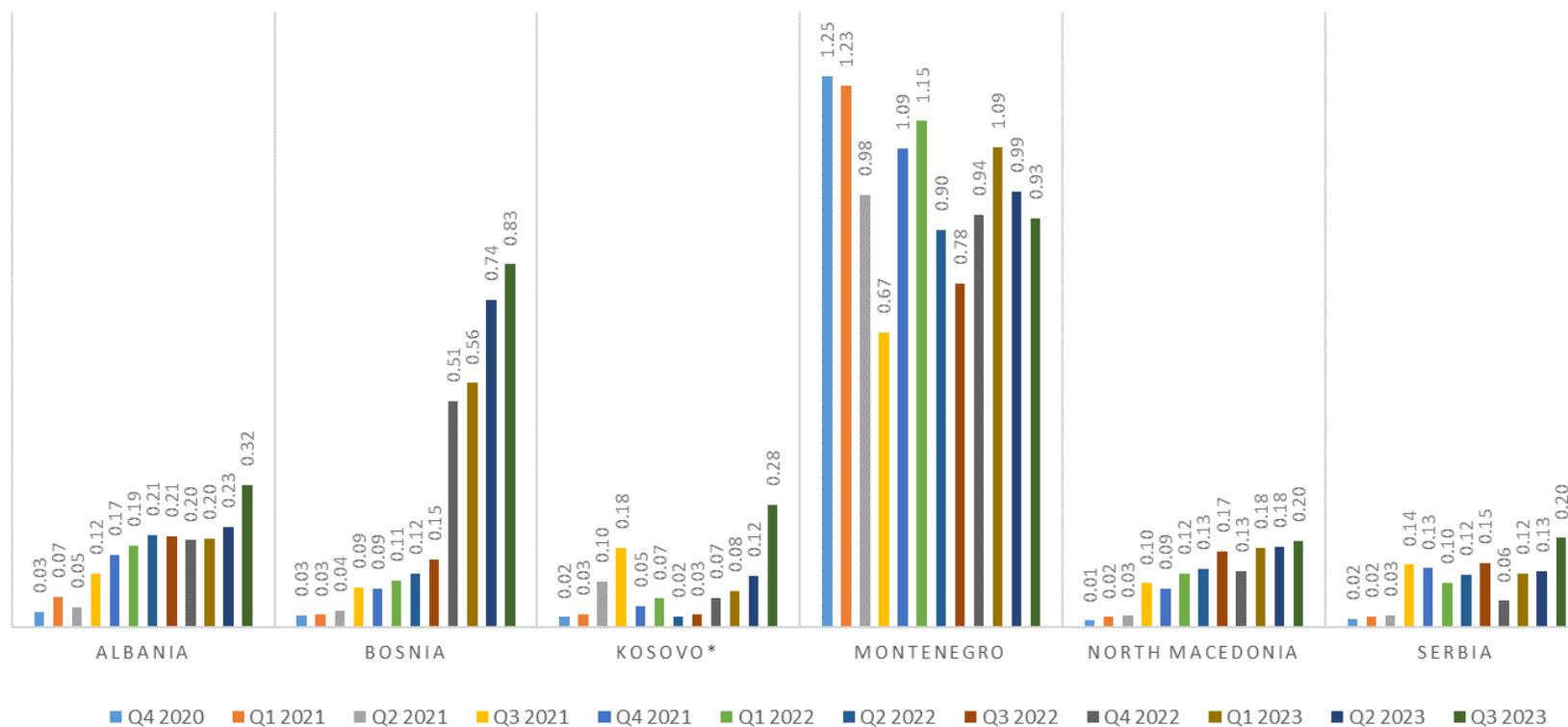


Figure 20: Roaming SMS services: average number of roaming SMS within the EEA region per subscriber roaming at least once in the concerned quarter and region per month



4.4 Roaming data services: average data roaming consumption in GB per regional roaming-enabled subscriber per month

Figure 21: Roaming data services: average data roaming consumption in GB (from alternative, RLAH+ & RLAH tariffs) within the WB region per subscriber roaming at least once in the concerned quarter and region per month⁷



⁷ Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 22: Roaming data services: average data roaming consumption in GB (from alternative, RLAH+ & RLAH tariffs) within the WB region per subscriber roaming at least once in the concerned quarter and region per month for the whole WB region weighted by the number of roaming-enabled

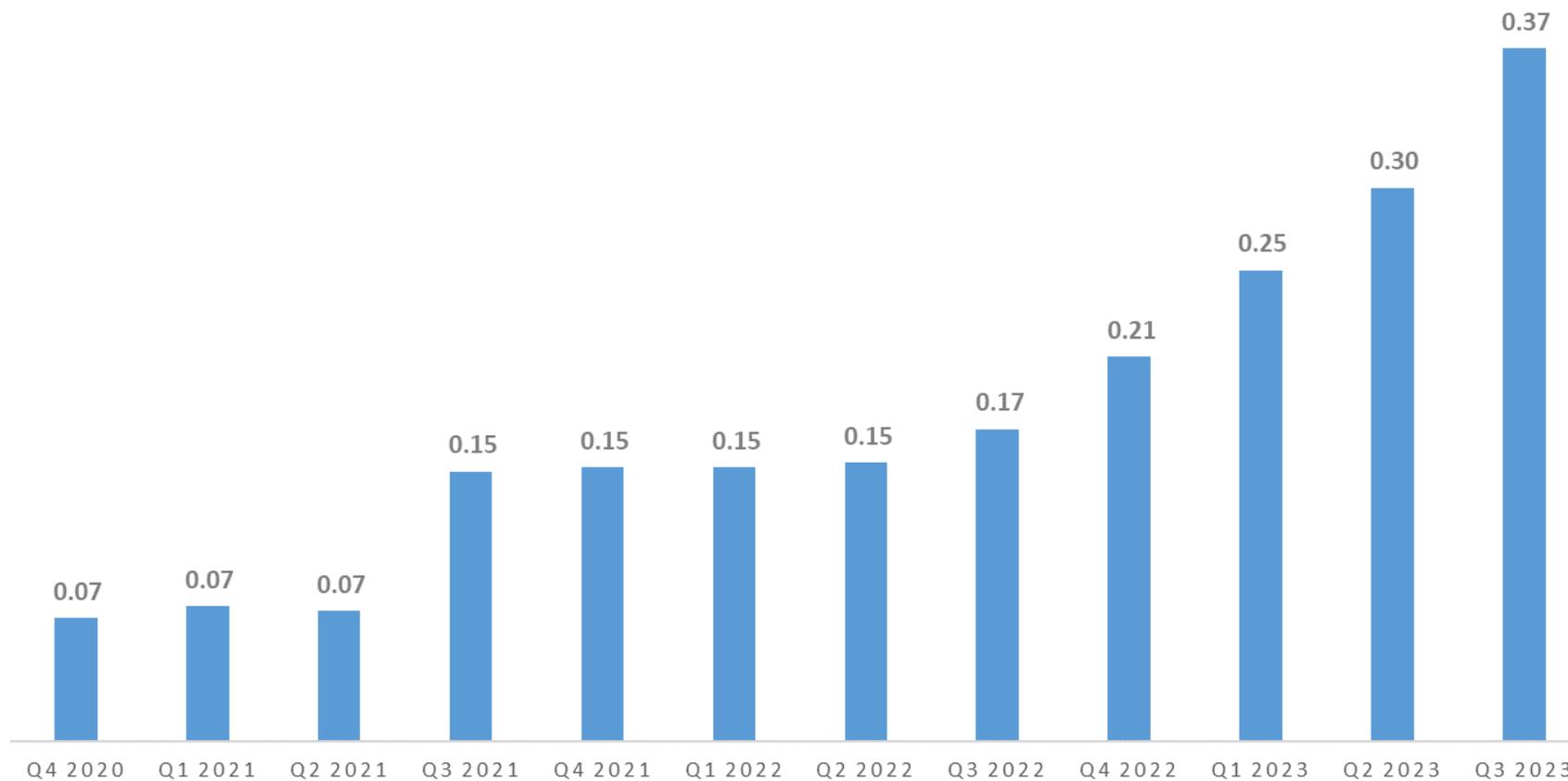


Figure 23: Roaming data services: average data roaming consumption in GB within the WB region from RLAH+ and RLAH tariffs per number of RLAH+ and RLAH subscribers roaming at least once in the concerned quarter and region per month

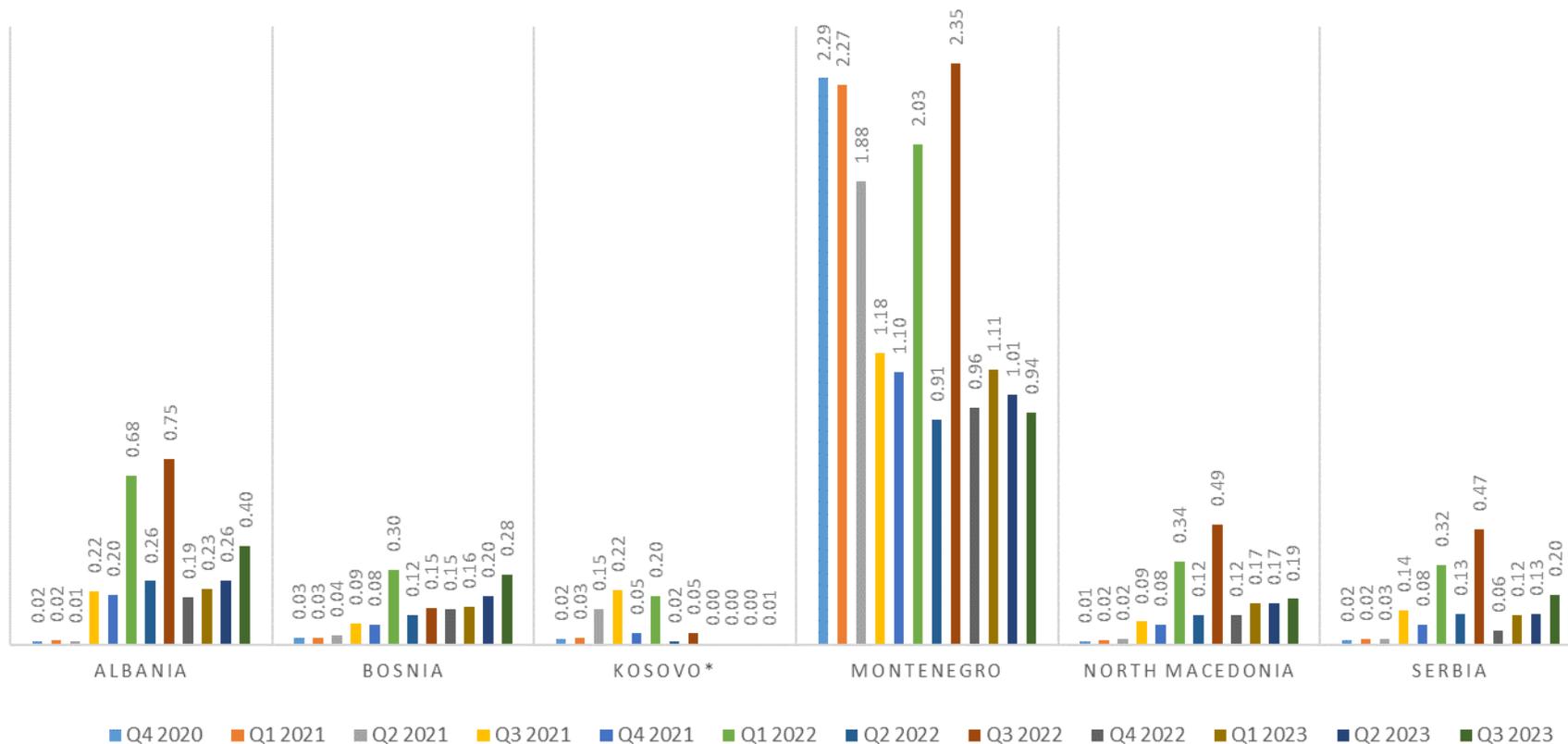
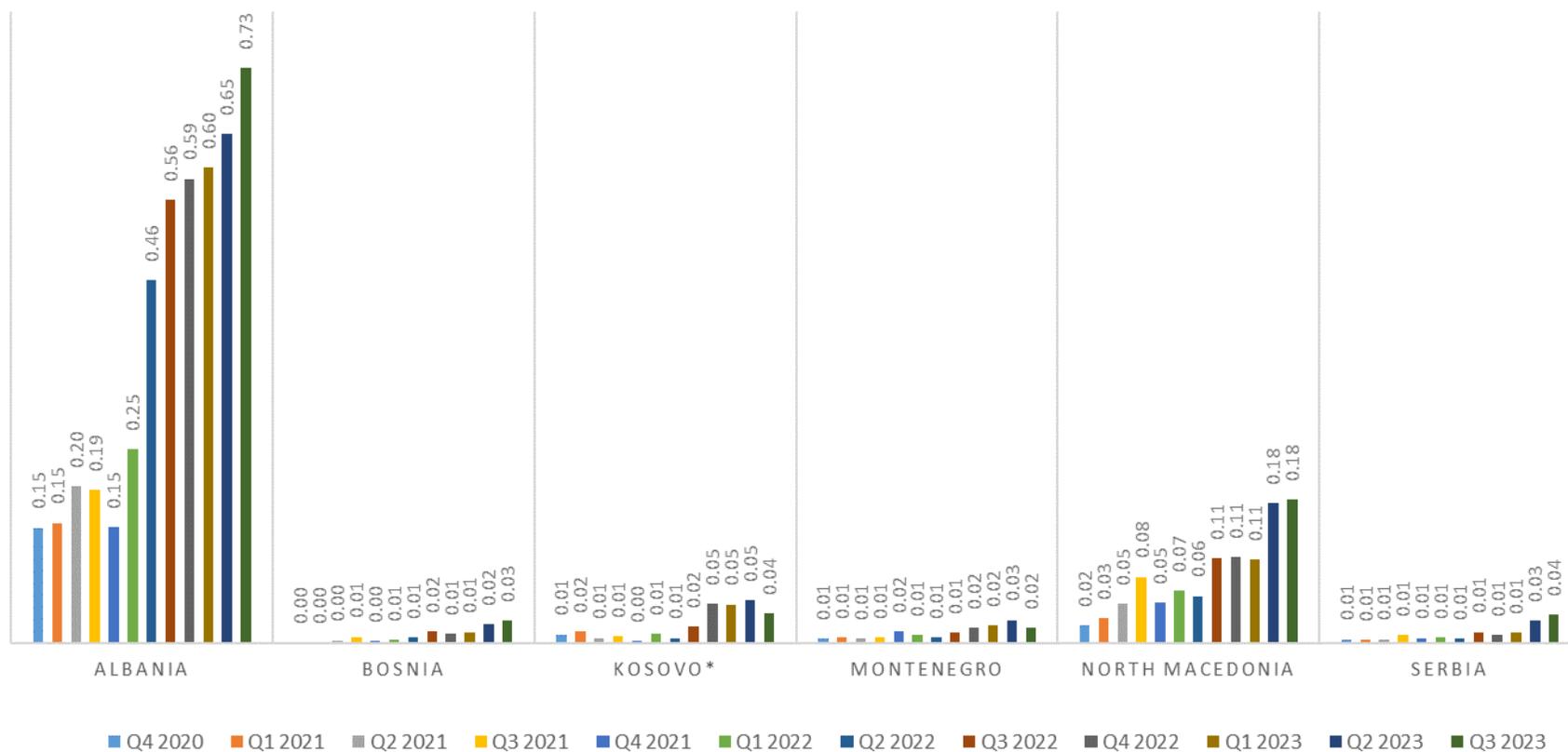


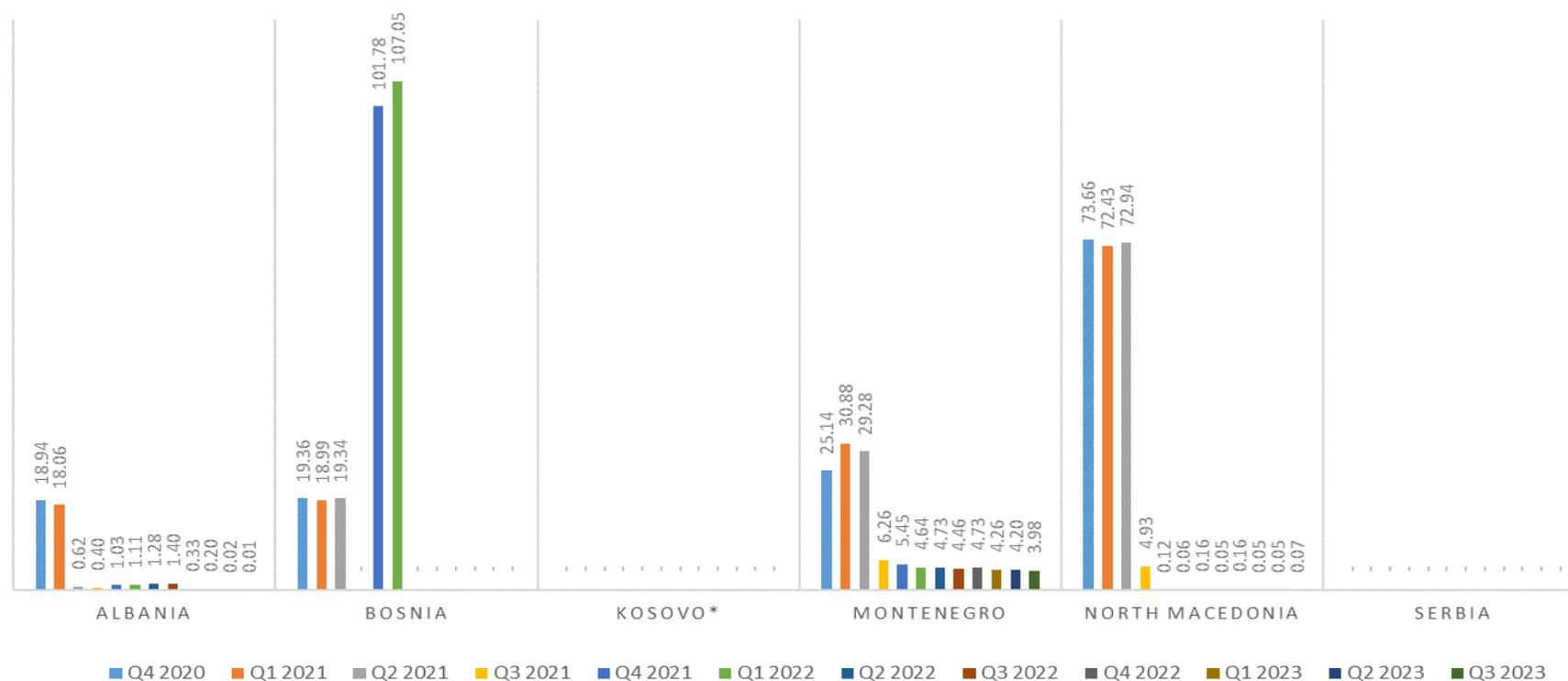
Figure 24: Roaming data services: average data roaming consumption in GB within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



5 The development of retail roaming services: retail revenues per unit

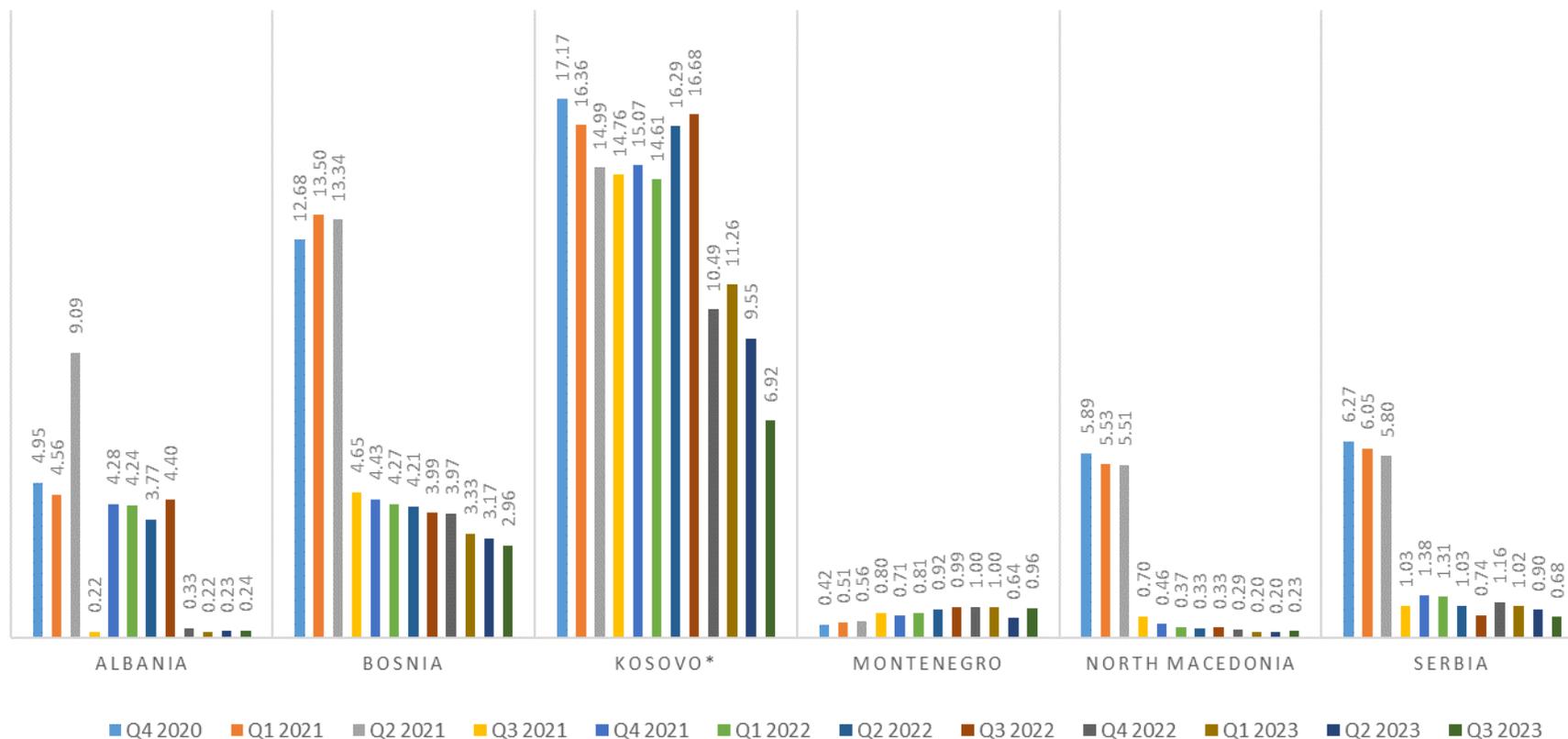
5.1 Average retail roaming revenues per minute, calls made

Figure 25: Average retail roaming revenues per alternative WB roaming minute, calls made (actual minutes), in Eurocent (within WB)⁸



⁸ Albania: "In the data submitted for the period Q4-2022 to Q3 2023 we haven't used drivers to calculate the average revenues for each unit i.e. minutes, data and sms."

Figure 26: Average retail roaming revenues per WB RLAH+ and RLAH⁹ roaming minute, calls made (actual minutes), in Eurocent (within WB)¹⁰



⁹ Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

¹⁰ Albania: "In the data submitted for the period Q4-2022 to Q3 2023 we haven't used drivers to calculate the average revenues for each unit i.e. minutes, data and sms."

Figure 27: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within EEA countries)

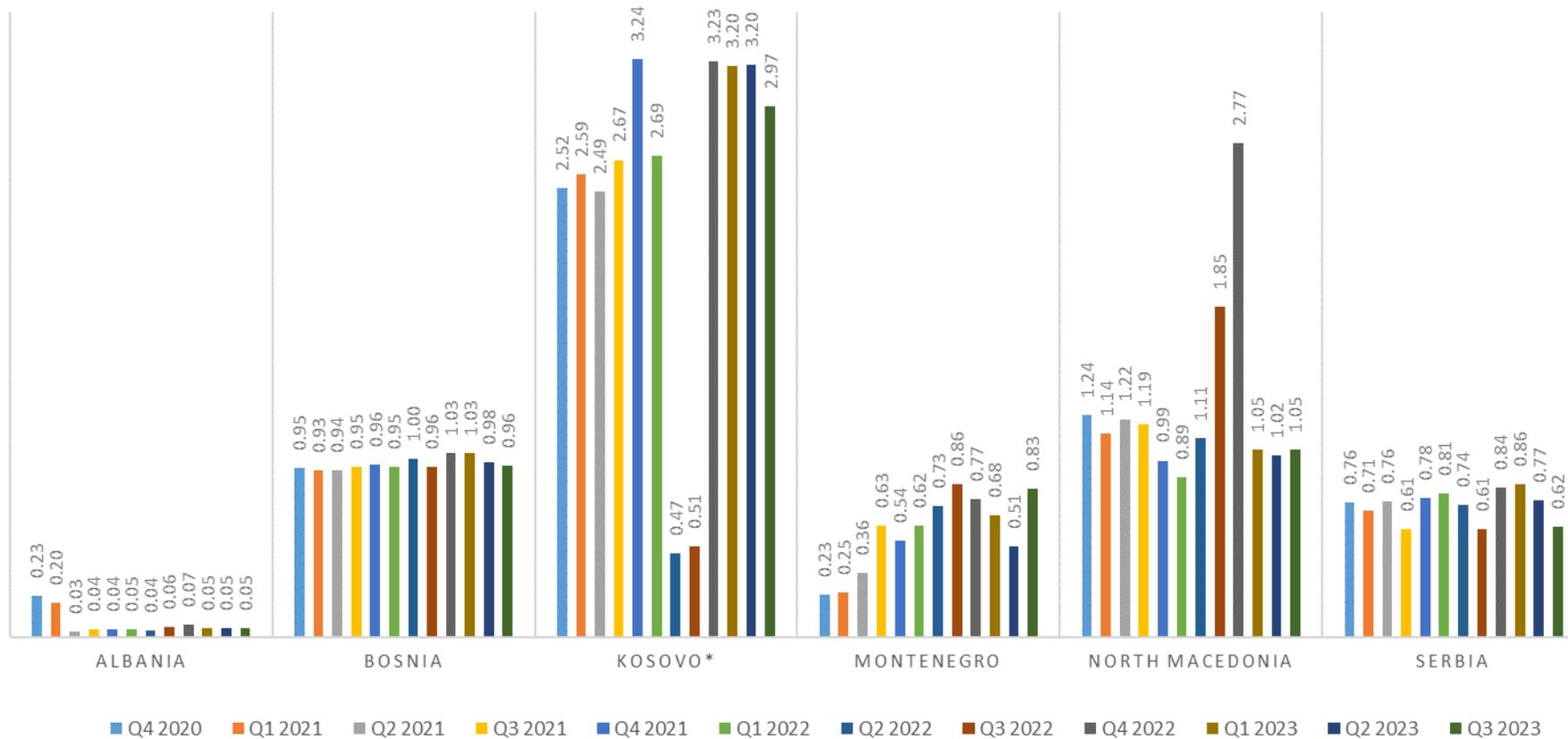
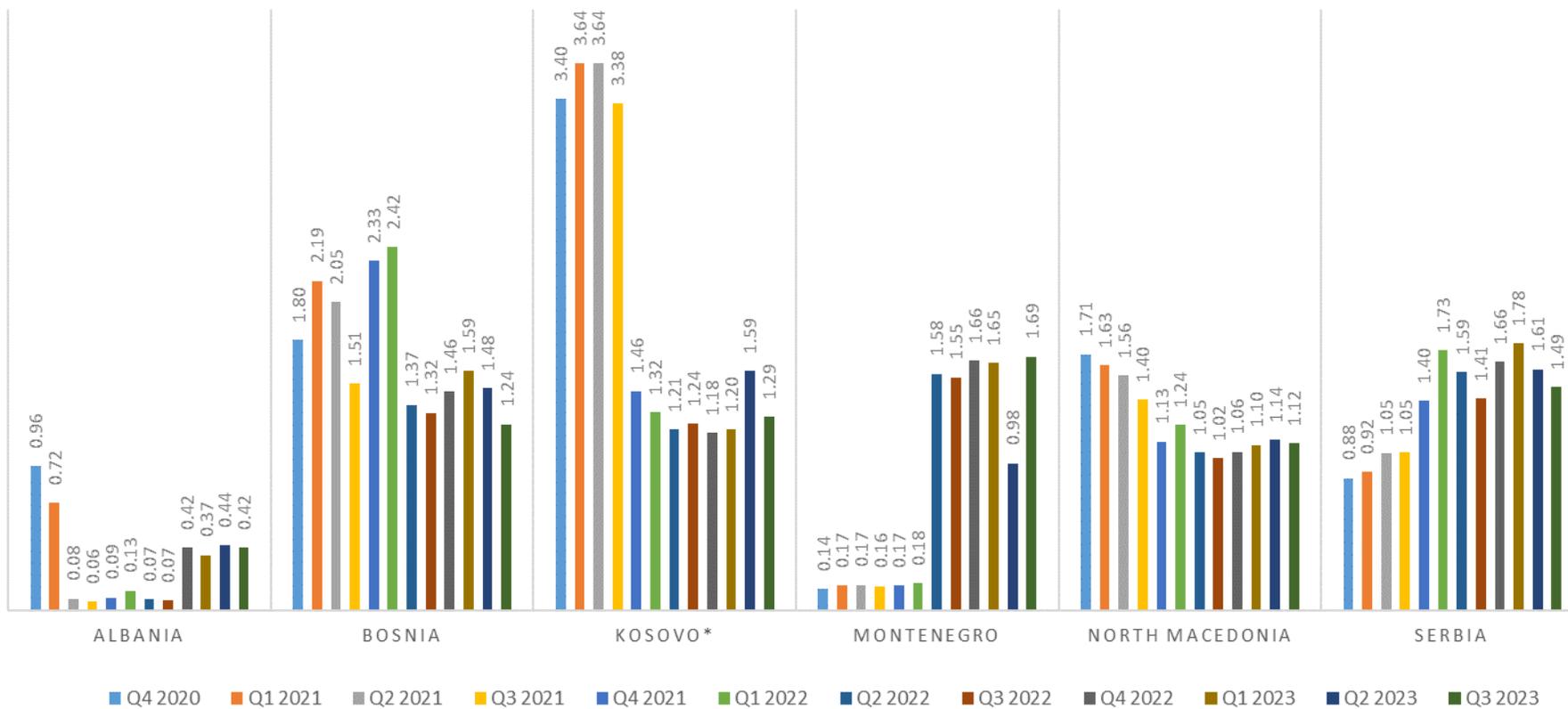


Figure 28: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within RoW countries)



5.2 Average retail roaming revenues per minute, calls received

Figure 29: Average retail roaming revenues per alternative WB roaming minute, calls received (actual minutes), in Eurocent (within WB)

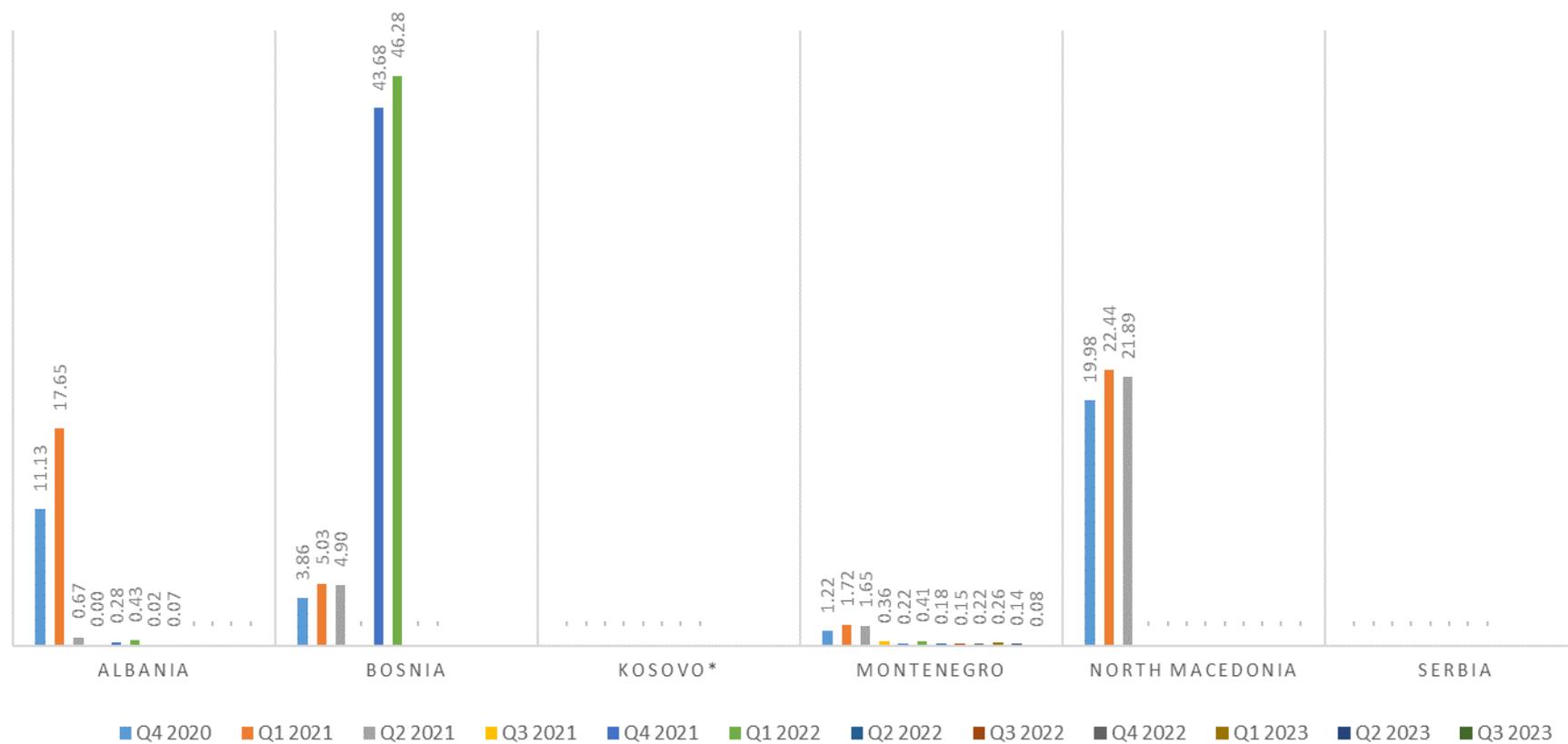
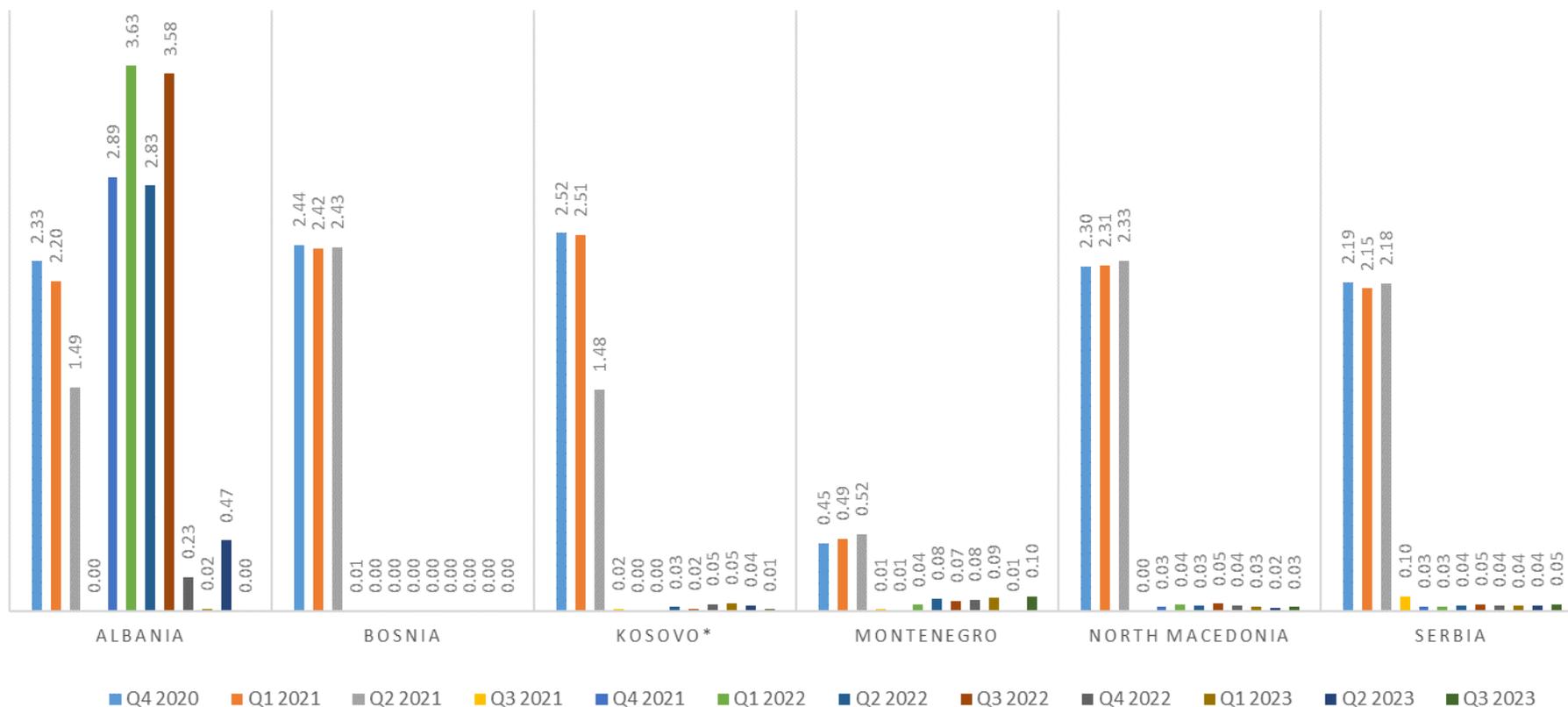


Figure 30: Average retail roaming revenues per WB RLAH+ and RLAH¹¹ roaming minute, calls received (actual minutes), in Eurocent (within WB)¹²



¹¹ Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

¹² Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories.

Figure 31: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within EEA countries)

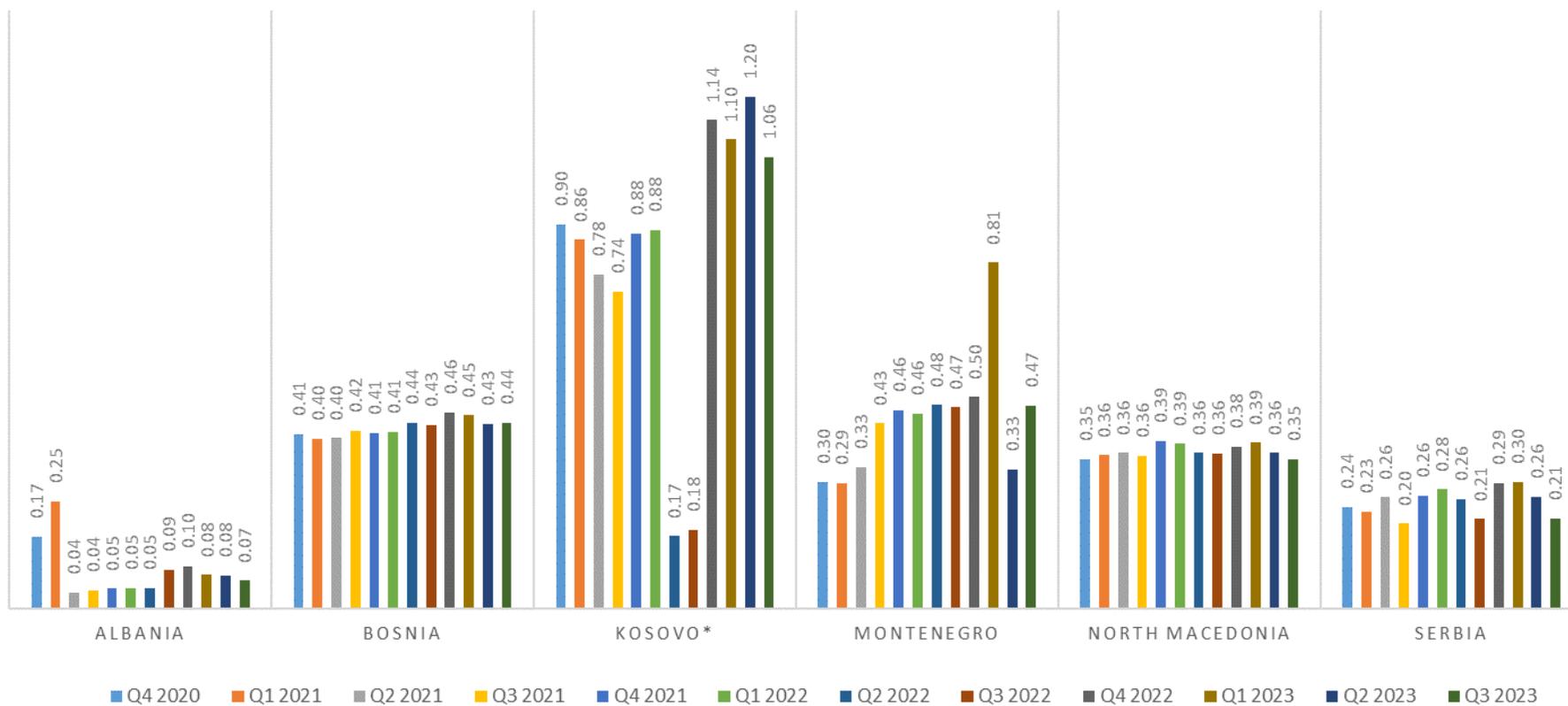
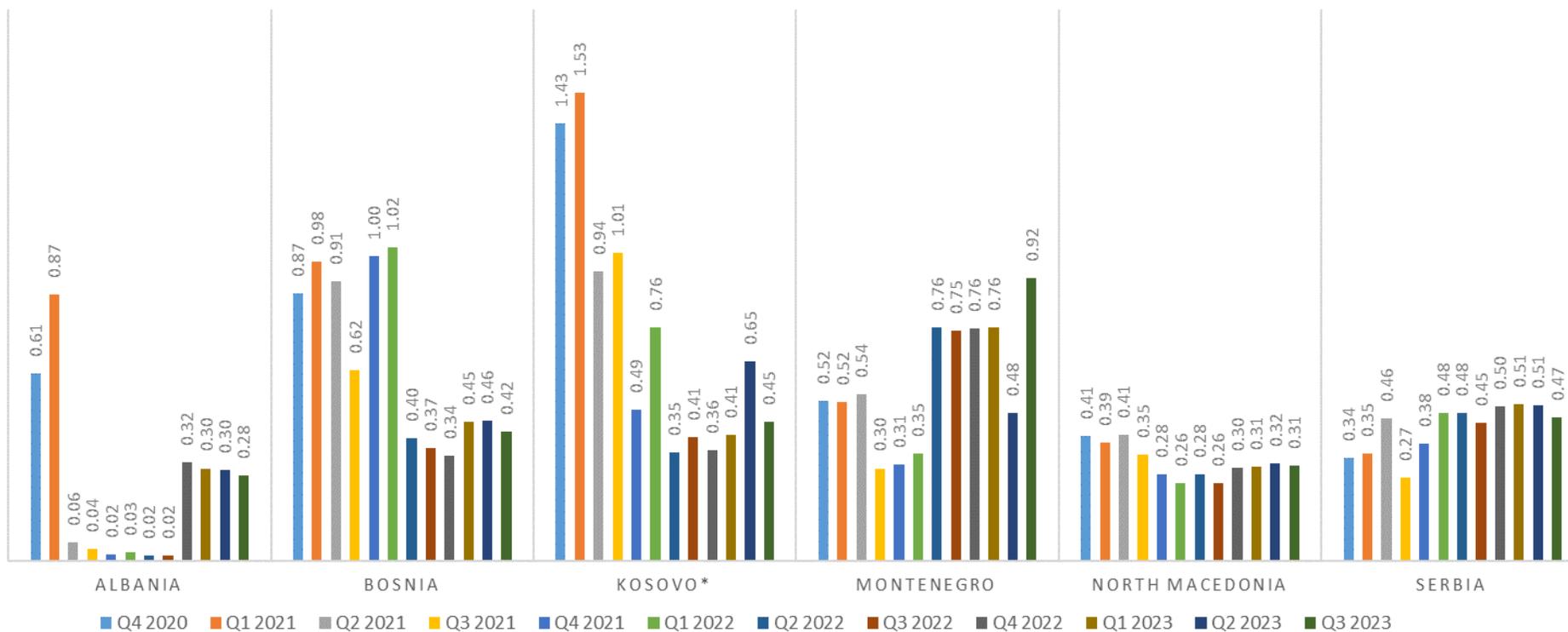


Figure 32: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within RoW countries)



5.3 Average retail roaming revenues per SMS

Figure 33: Average retail roaming revenues per alternative WB roaming SMS, in Eurocent (within WB)

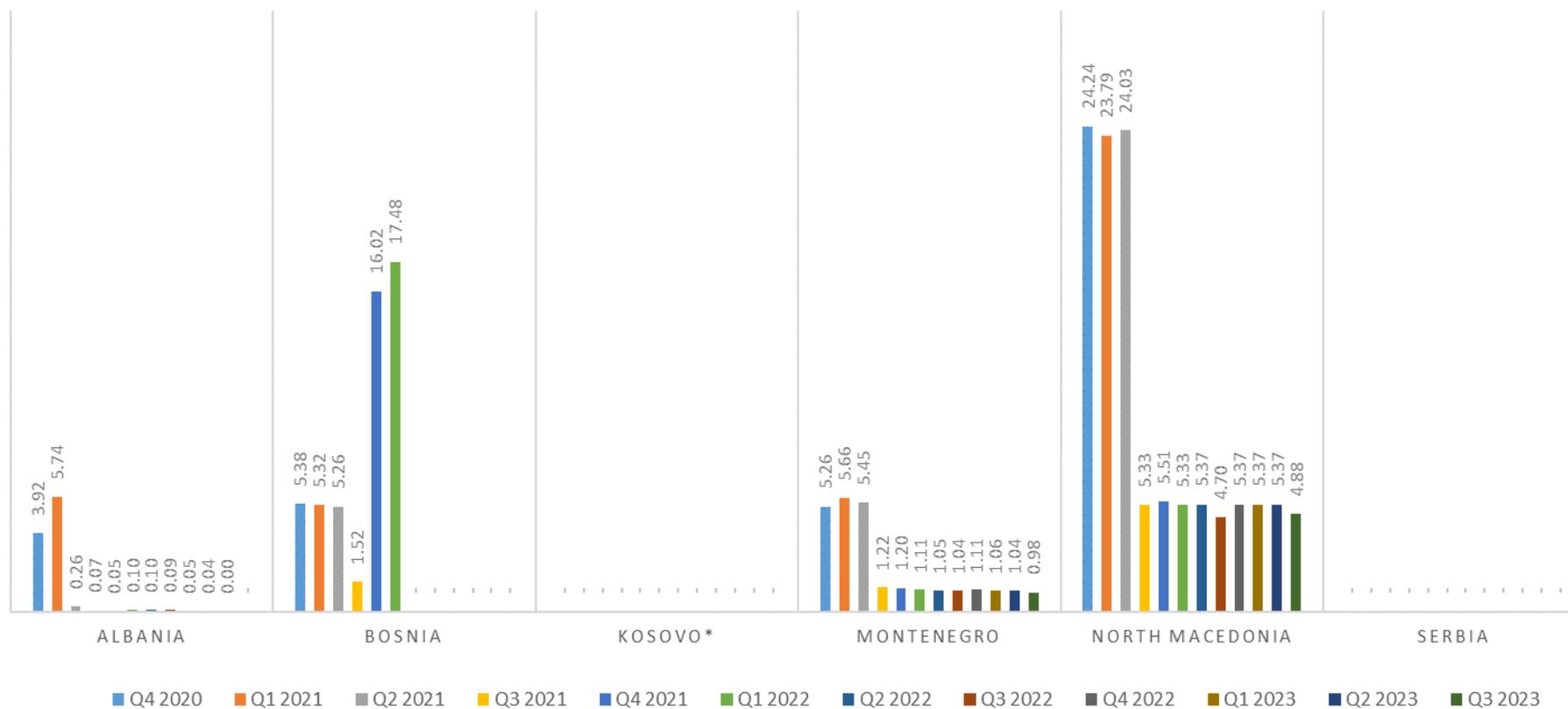
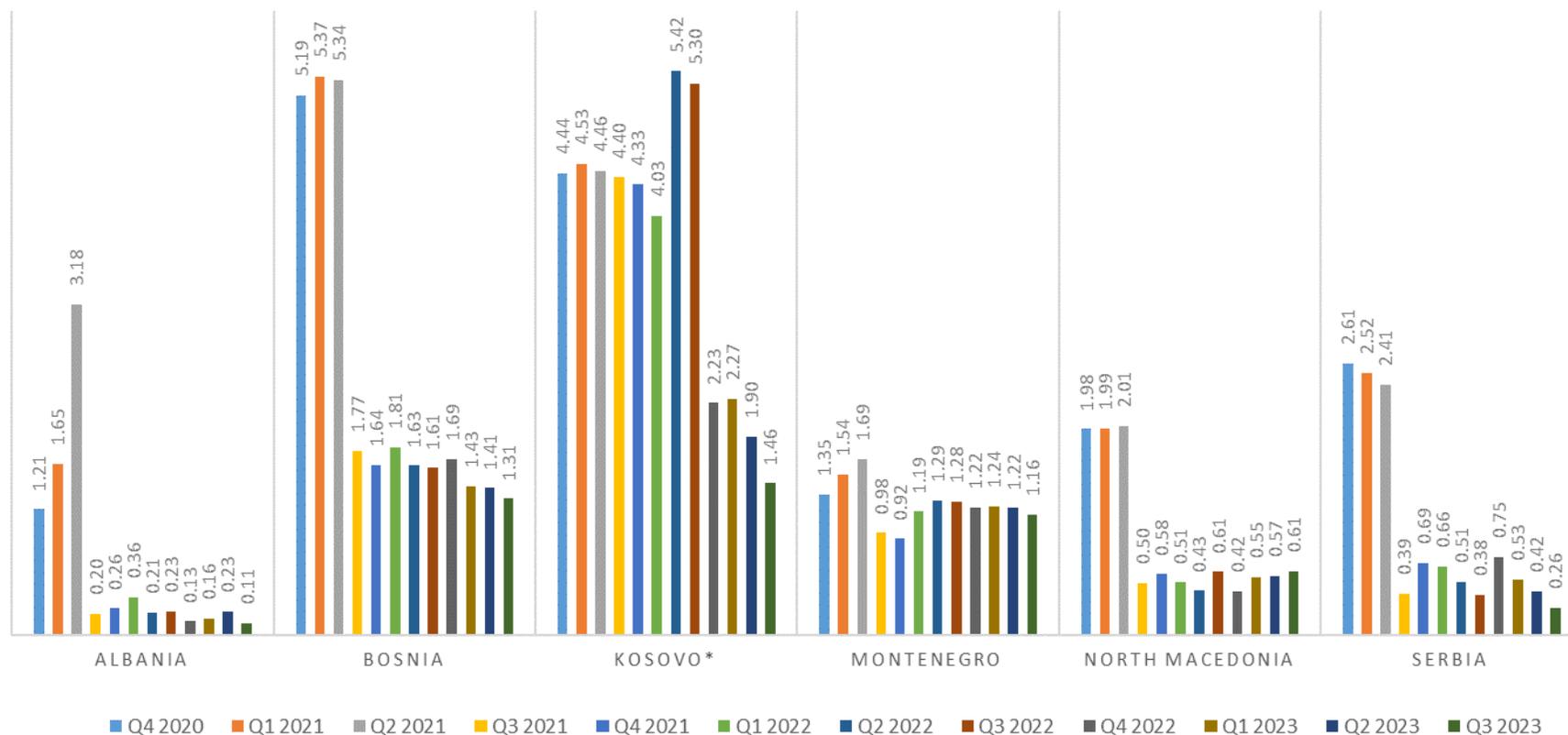


Figure 34: Average retail roaming revenues per WB RLAH+ and RLAH¹³ roaming SMS, in Eurocent (within WB)



¹³ RLAH+ was in place until 1 July 2021, Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 35: Average retail roaming revenues per SMS, in Euro (within EEA countries)

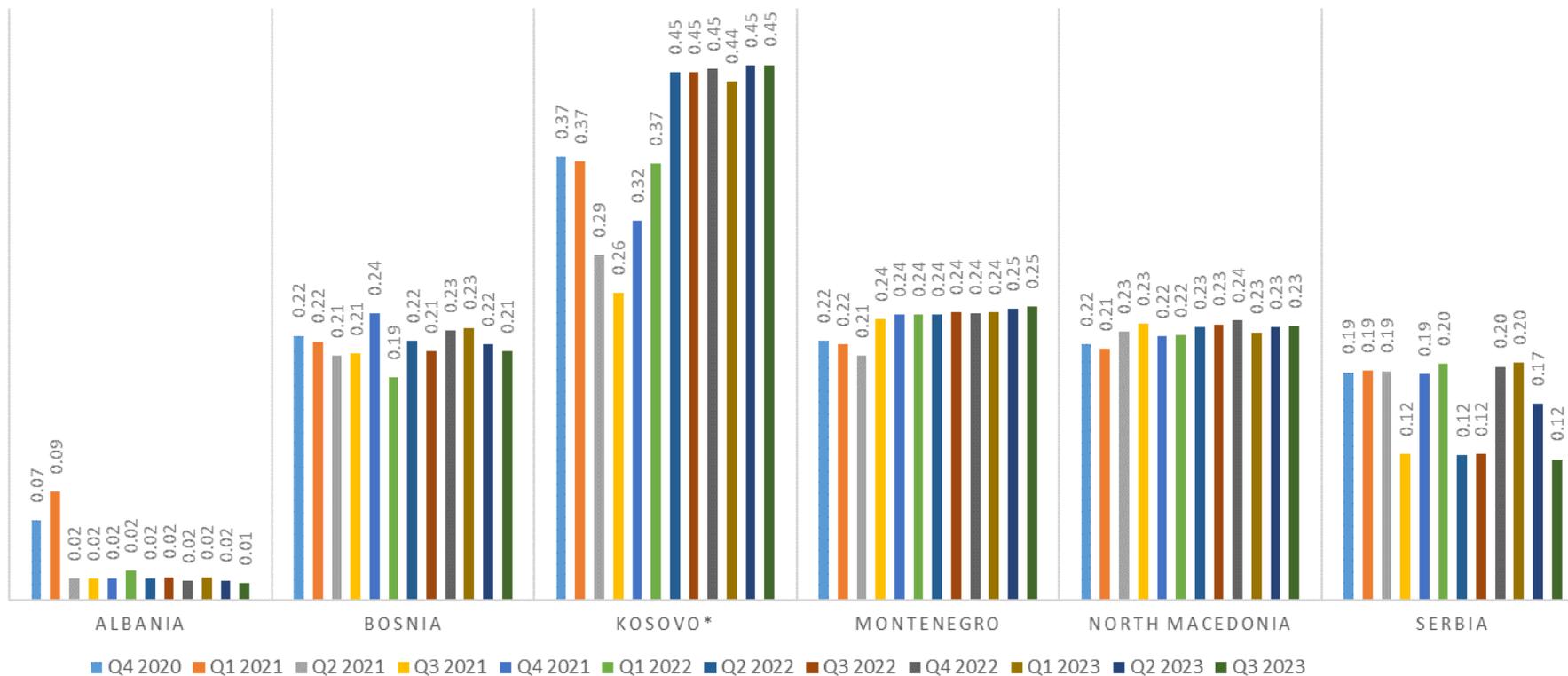
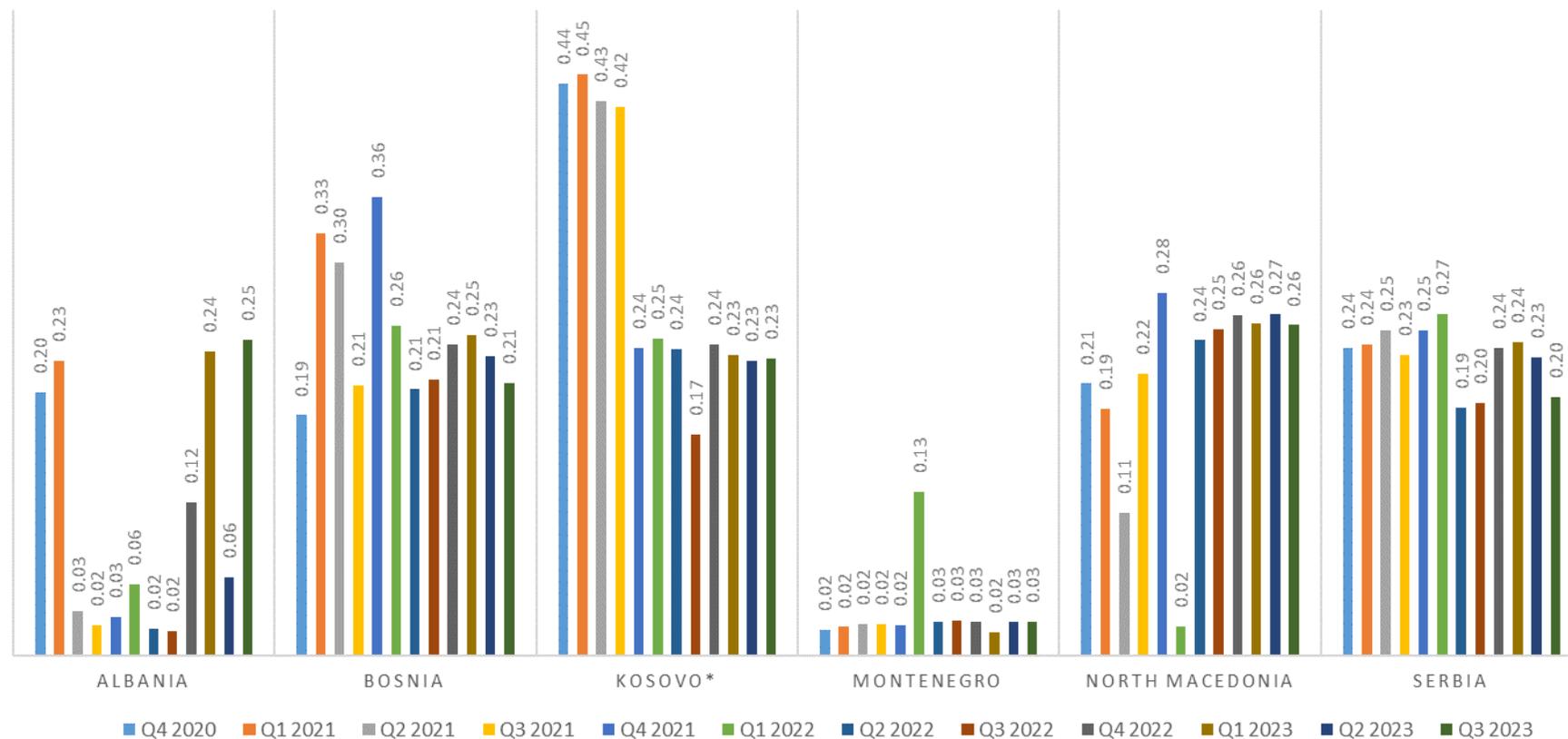


Figure 36: Average retail roaming revenues per SMS, in Euro (within RoW countries)



5.4 Average retail roaming revenues per GB

Figure 37: Average retail roaming revenues per alternative WB roaming GB, in Euro

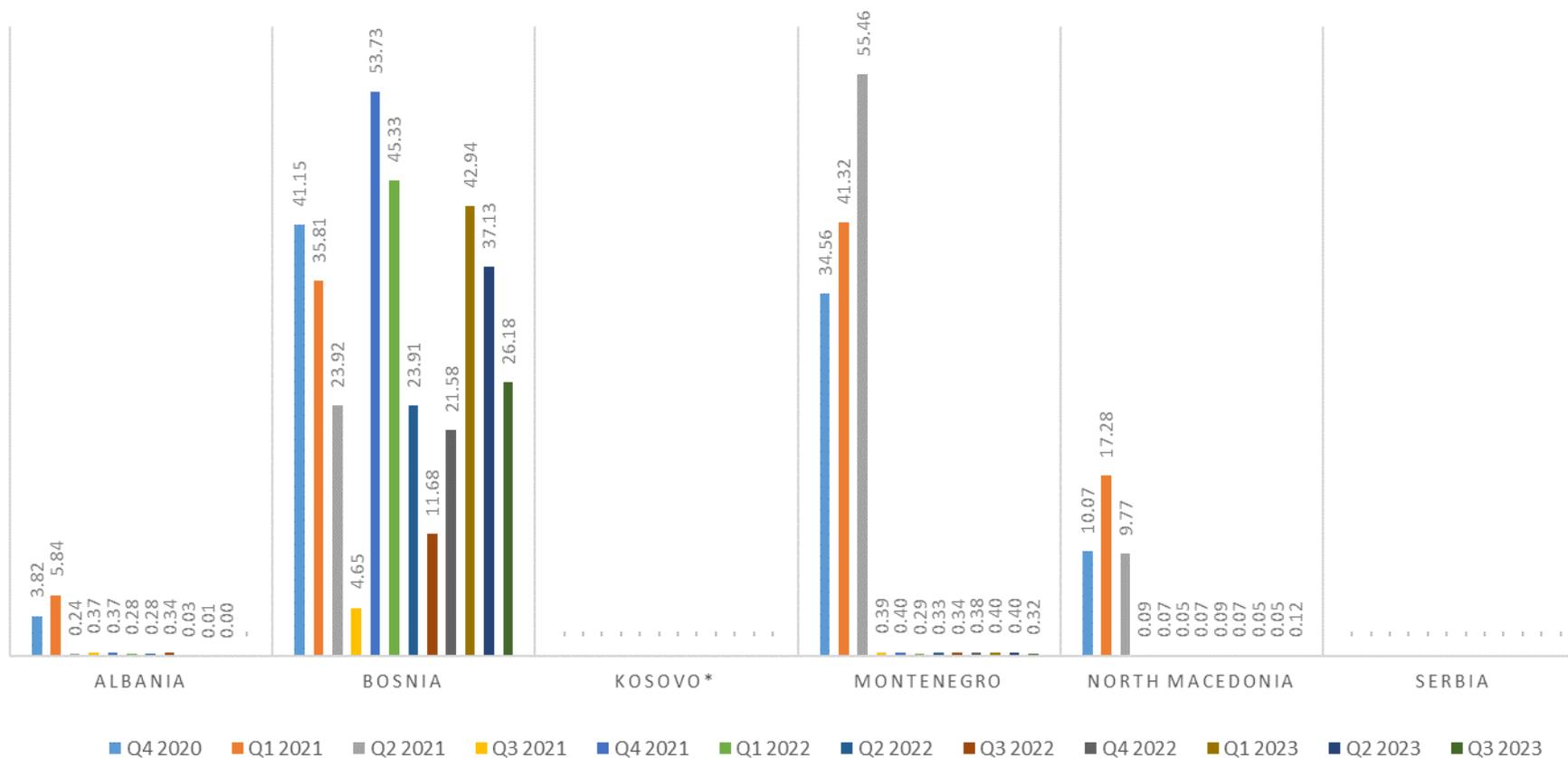
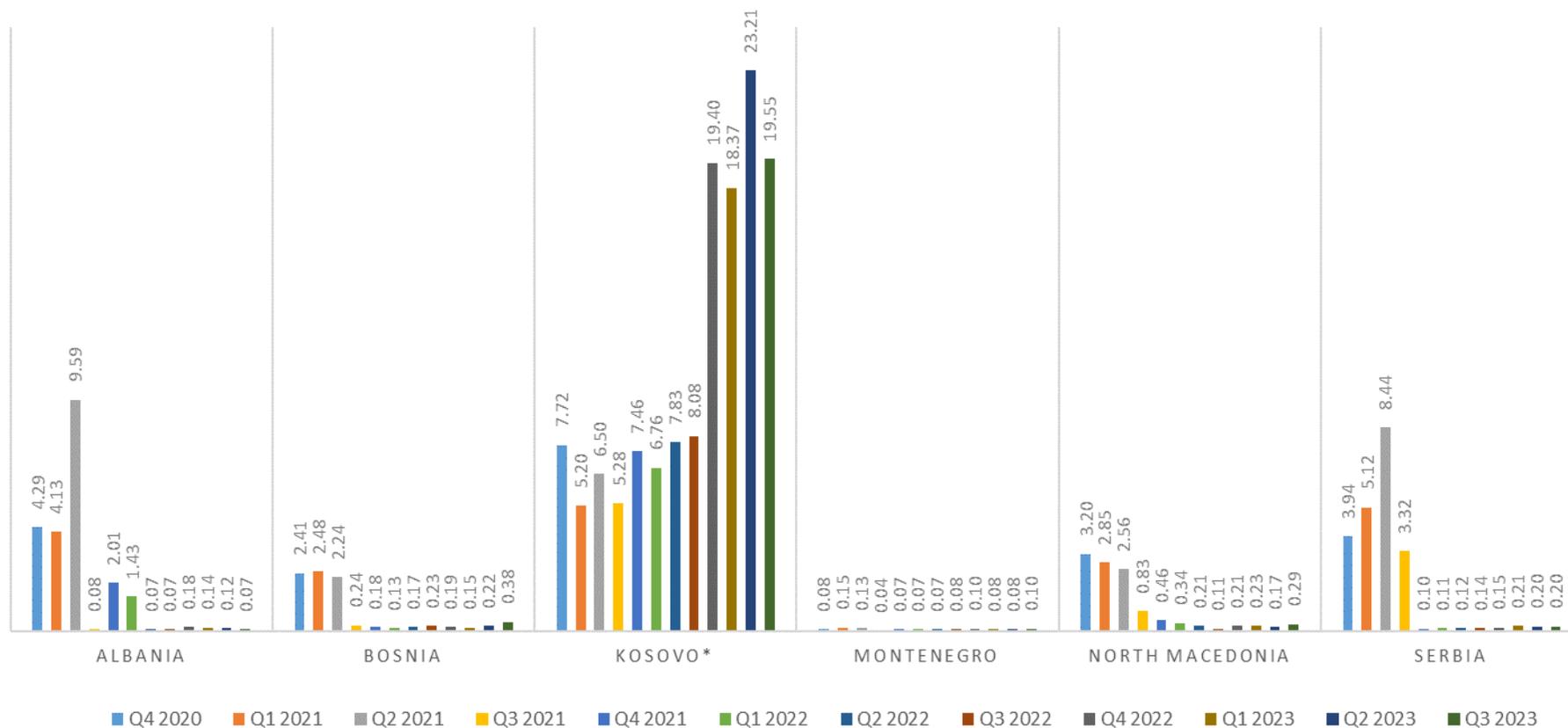


Figure 38: Average retail roaming revenues per WB RLAH+ and RLAH¹⁴ roaming GB, in Euro

¹⁴ RLAH+ was in place until 1 July 2021, Roam Like at Home (RLAH) regime in the WB region was successfully achieved as of 1 July 2021. RLAH+ is not being reported as of this date.

Figure 39: Average retail roaming revenues per GB, in Euro (within EEA countries)

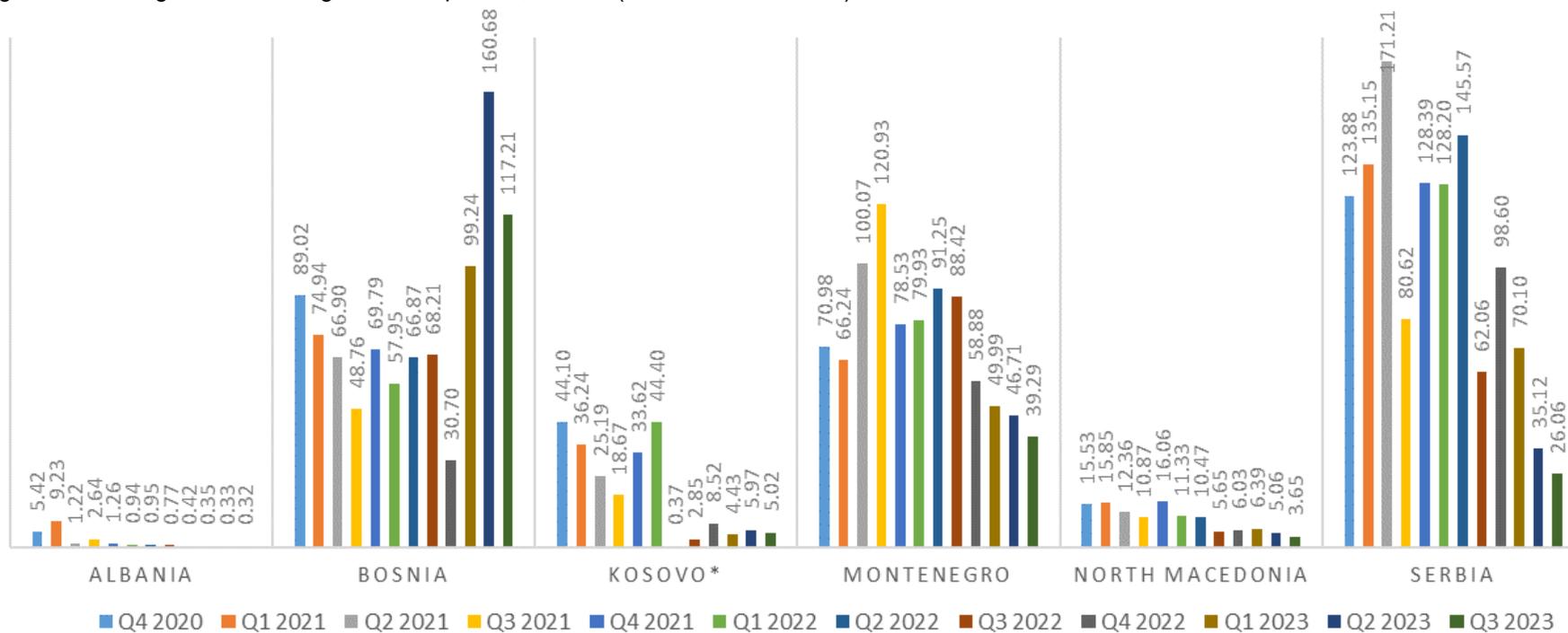
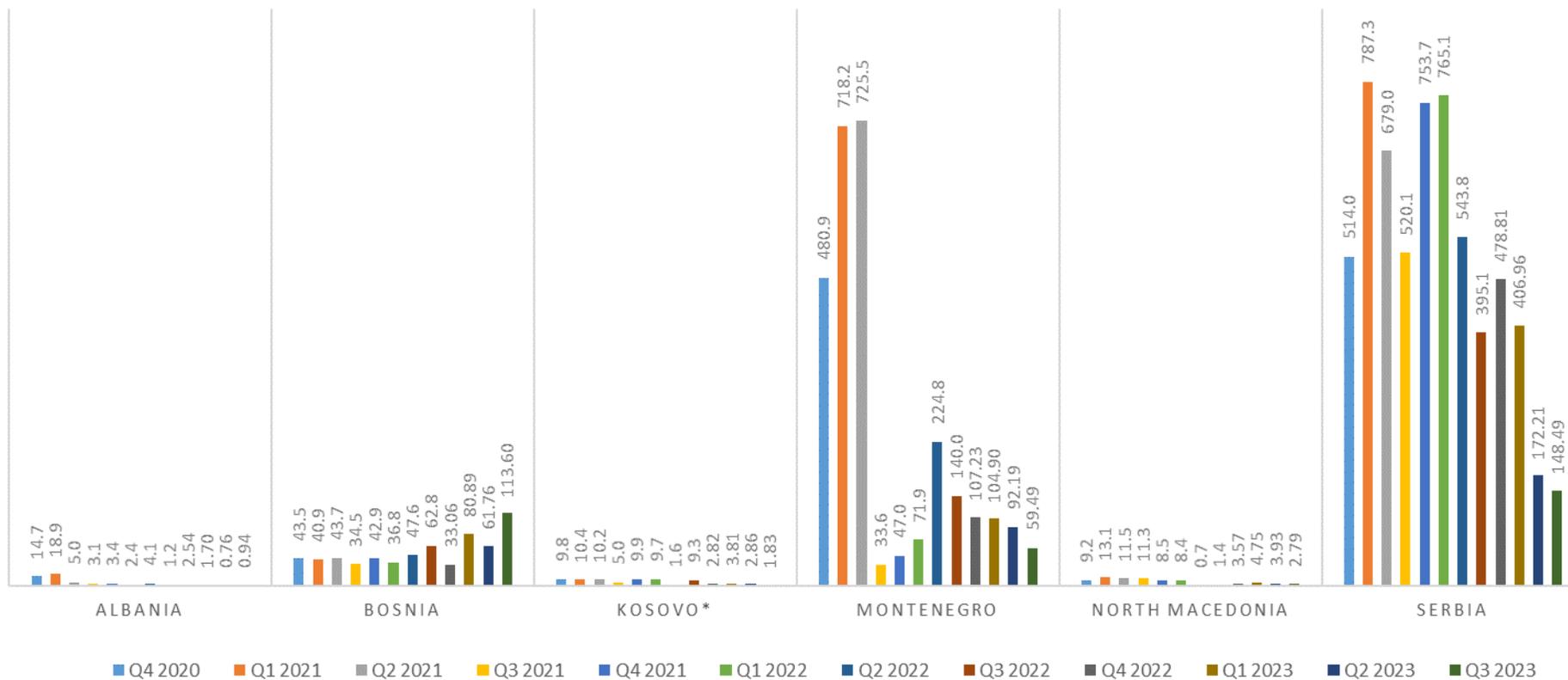


Figure 40: Average retail roaming revenues per GB, in Euro (RoW countries)



6 The development of wholesale roaming services: wholesale revenues per unit

6.1 Wholesale voice roaming services: wholesale revenues per minute (group and non-group)

Figure 41: Average Wholesale voice roaming services: wholesale revenues per minute (group and non-group) in Eurocent, within WB region

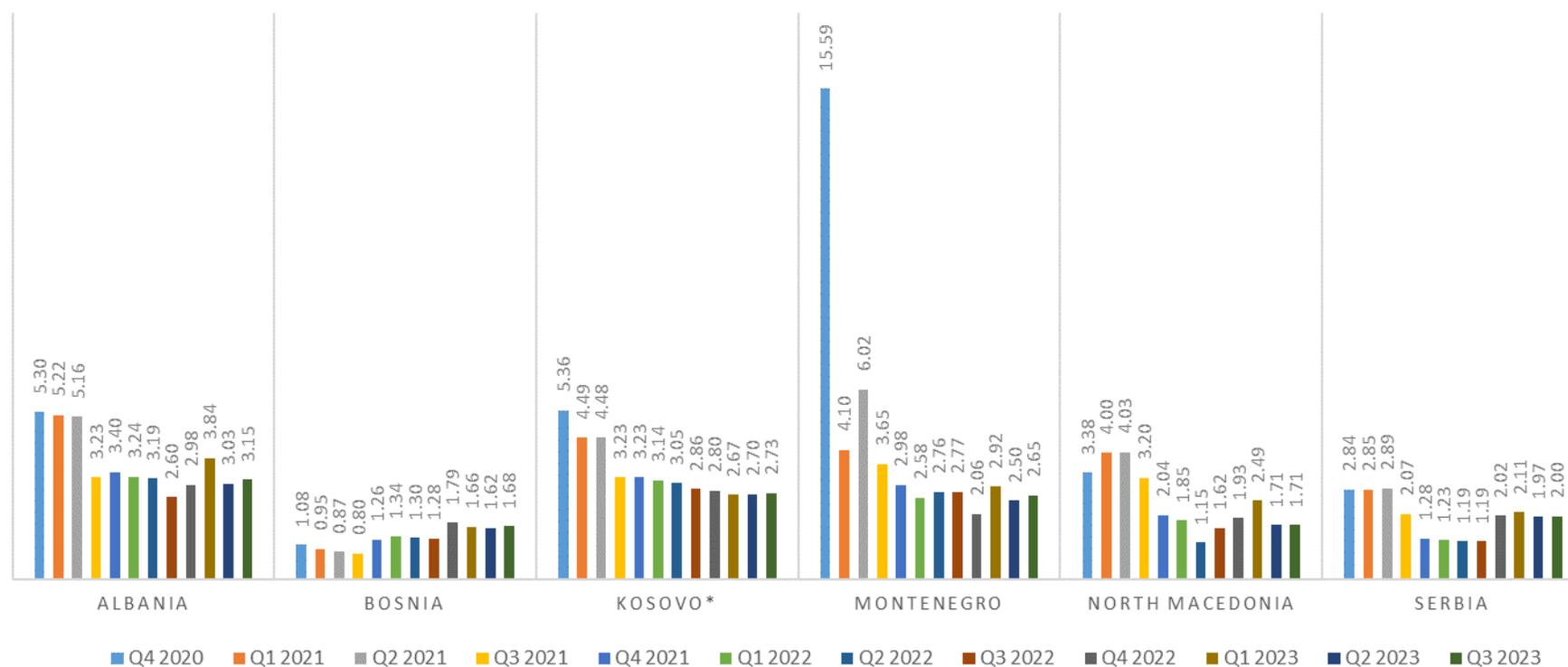


Figure 42: Average Wholesale voice roaming services: wholesale revenues per minute (group and non-group) in Eurocent, from EEA countries

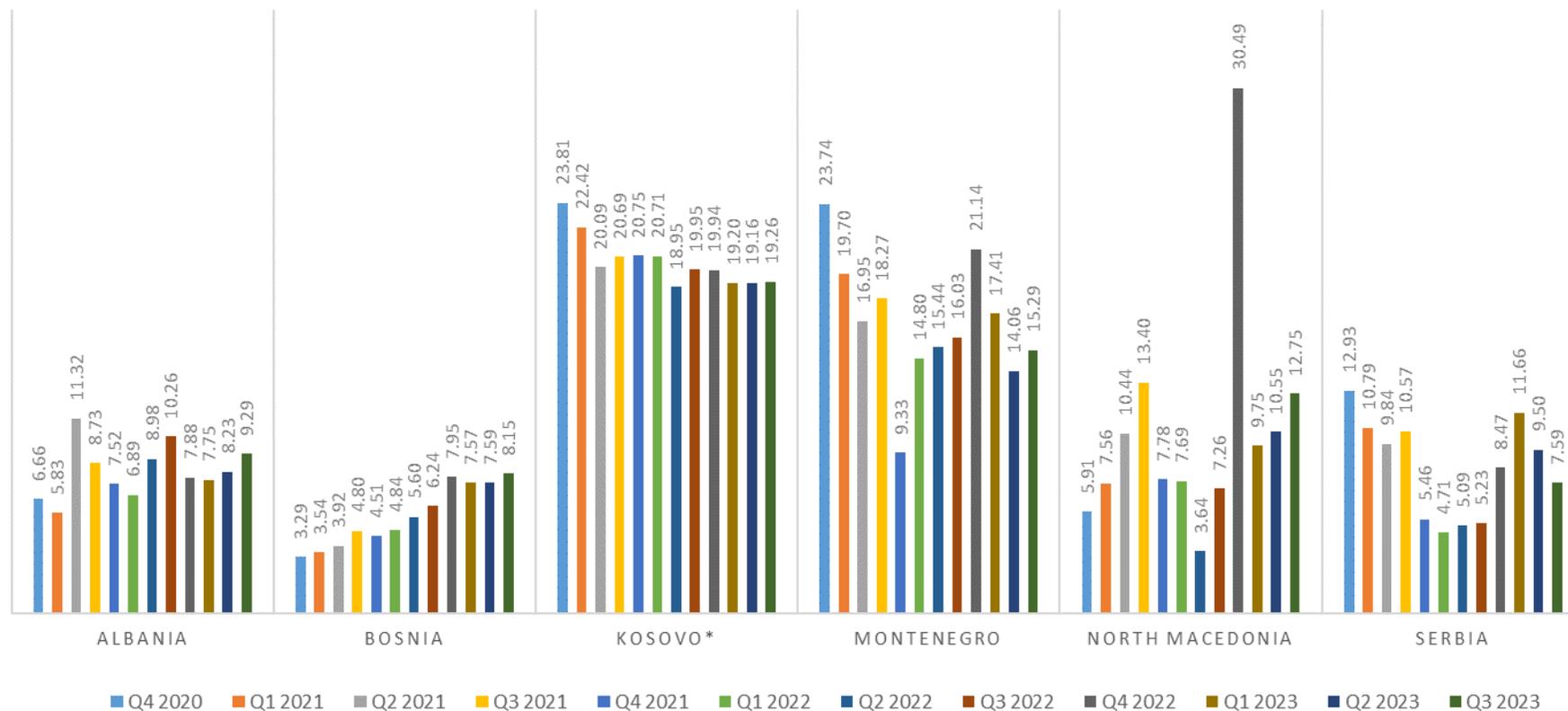
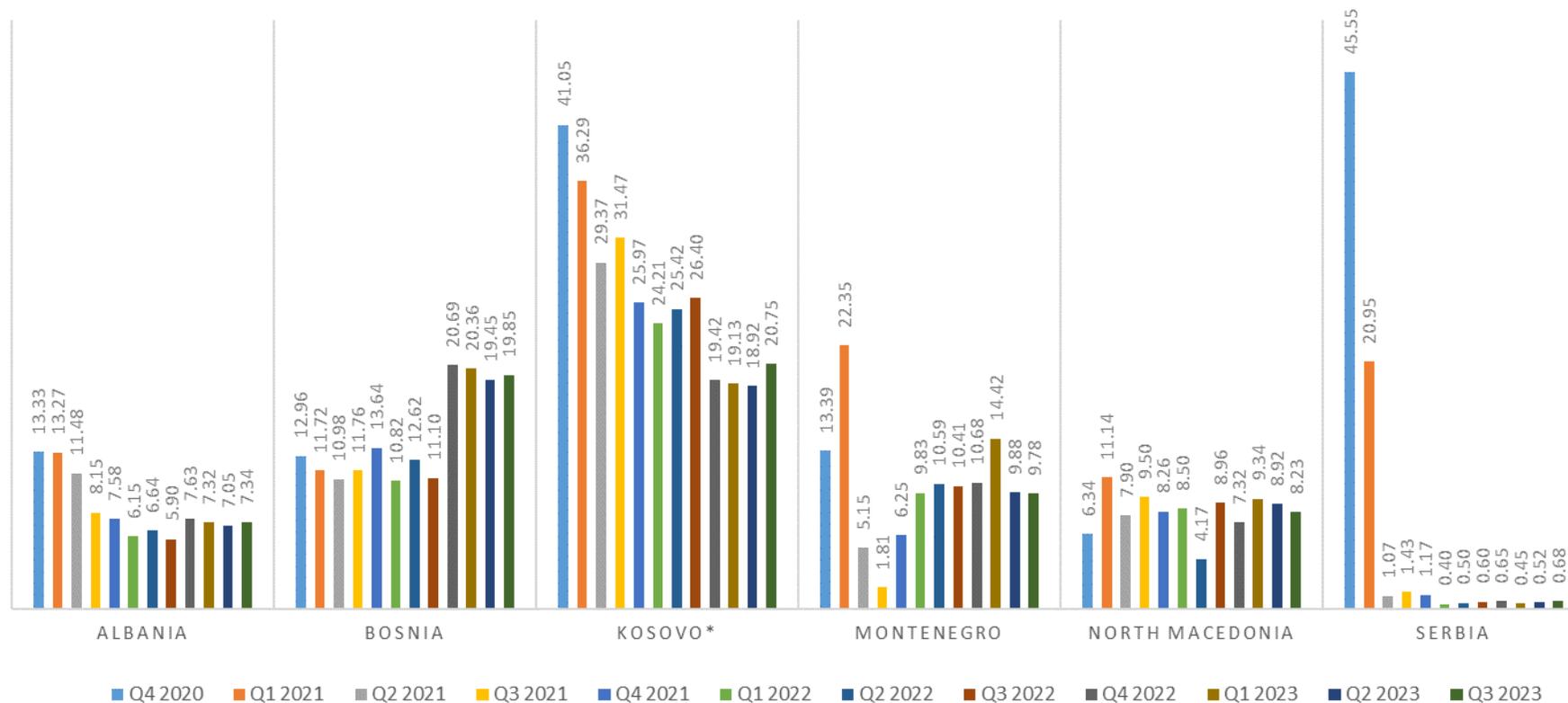


Figure 43: Average Wholesale voice roaming services: wholesale revenues per minute (group and non-group) in Eurocent, from RoW countries



6.2 Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group)

Figure 44: Average Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group) in Eurocent, within WB region

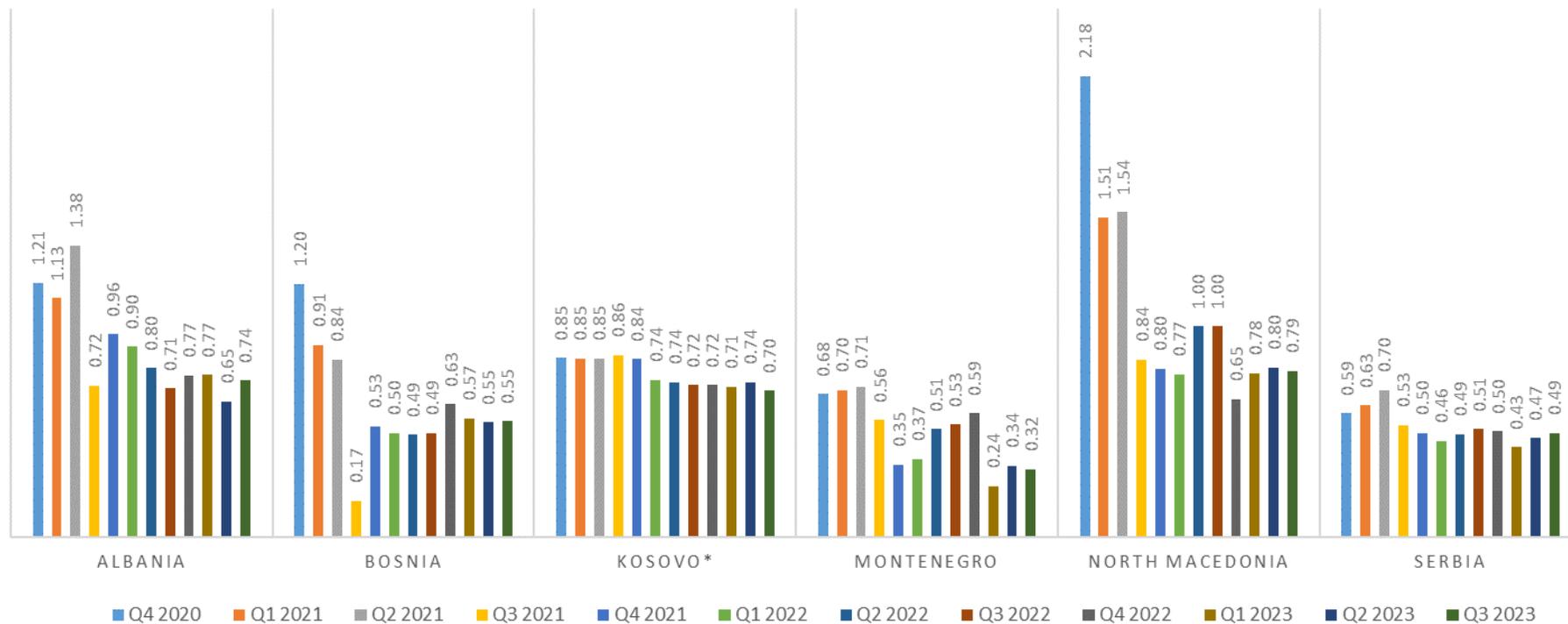


Figure 45: Average Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group) in Eurocent, from EEA countries

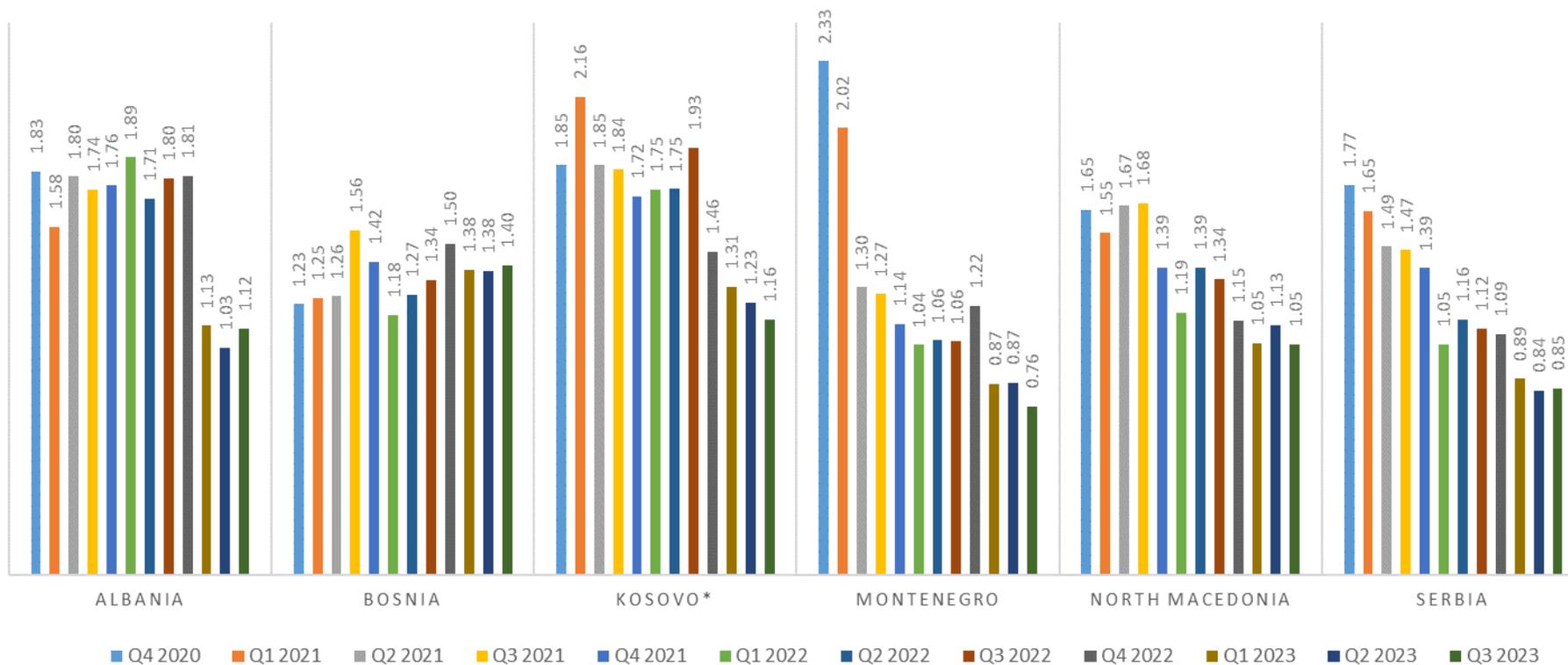
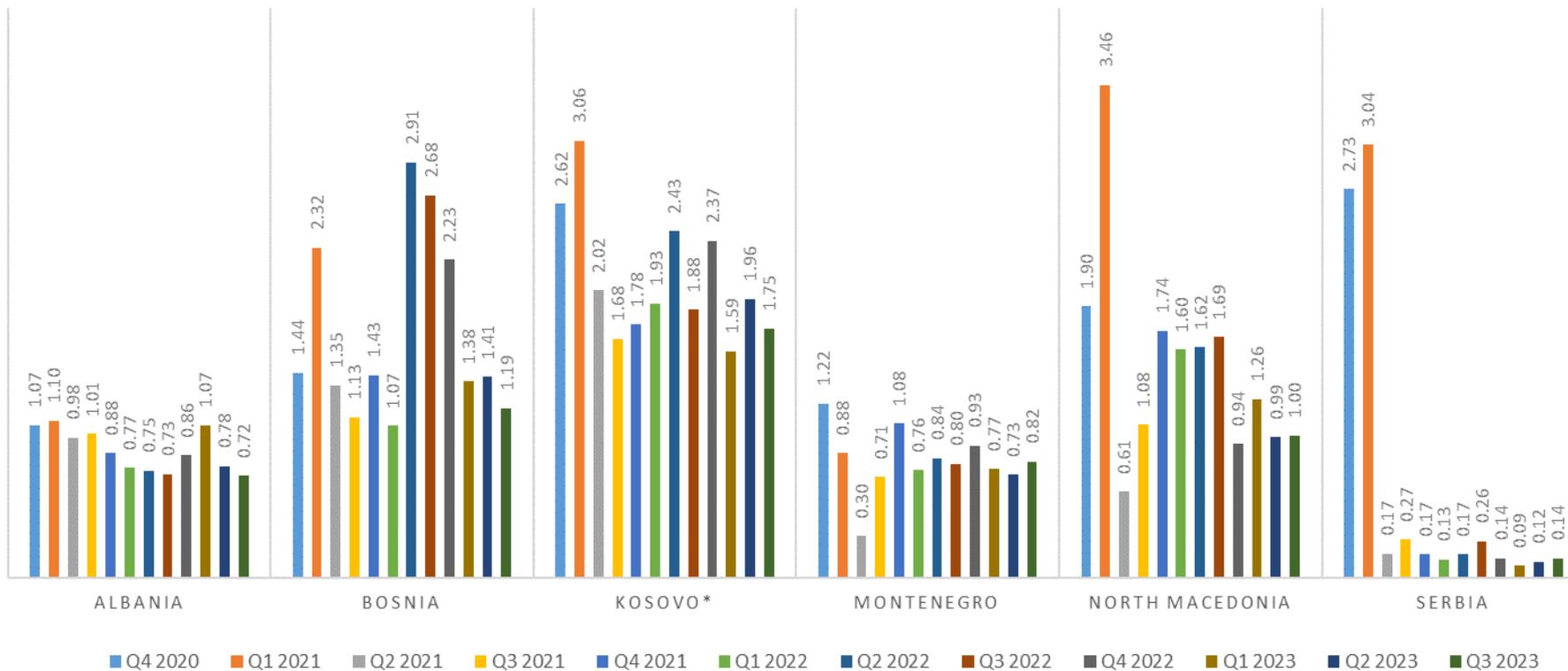


Figure 46: Average Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group) in Eurocent, from RoW countries



6.3 Wholesale data roaming services: wholesale revenues per GB

Figure 47: Wholesale data roaming services: wholesale revenues per GB in Euro, within WB region

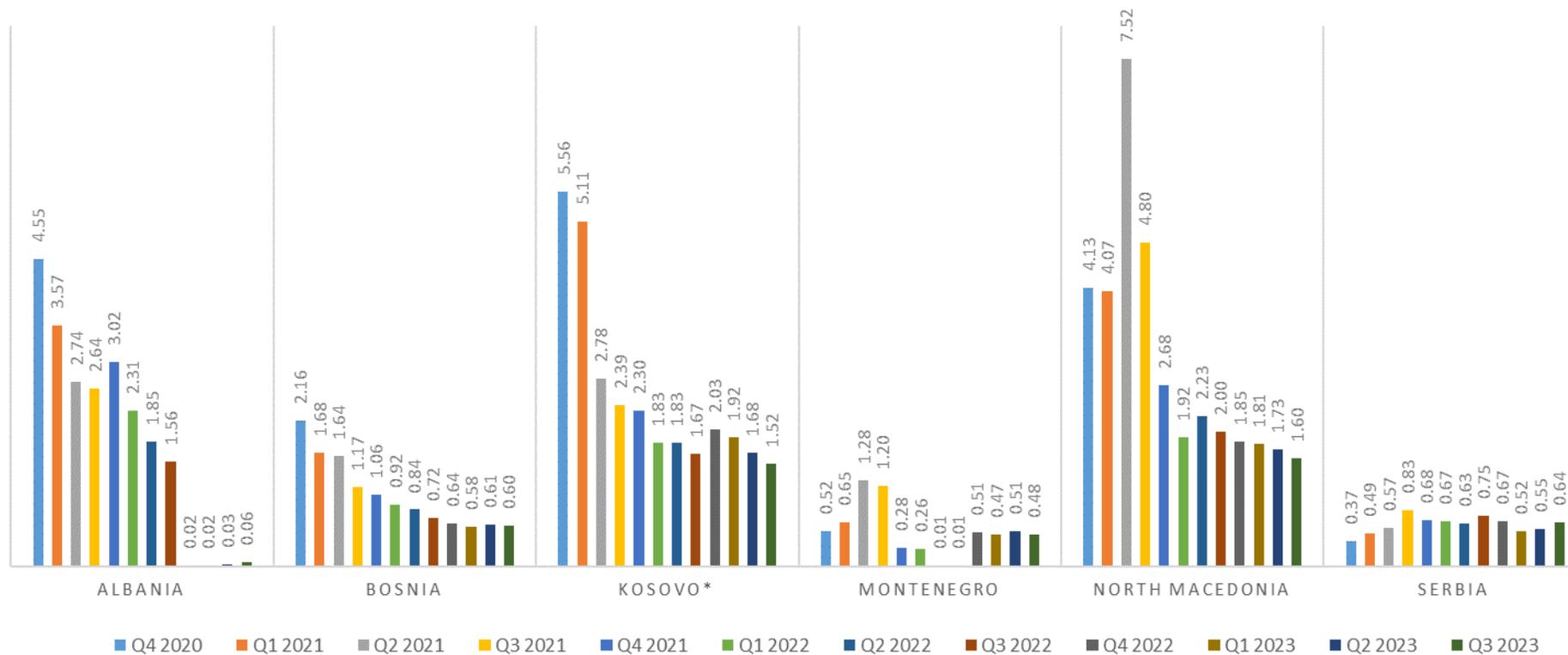


Figure 48: Wholesale data roaming services: wholesale revenues per GB in Euro, from EEA countries

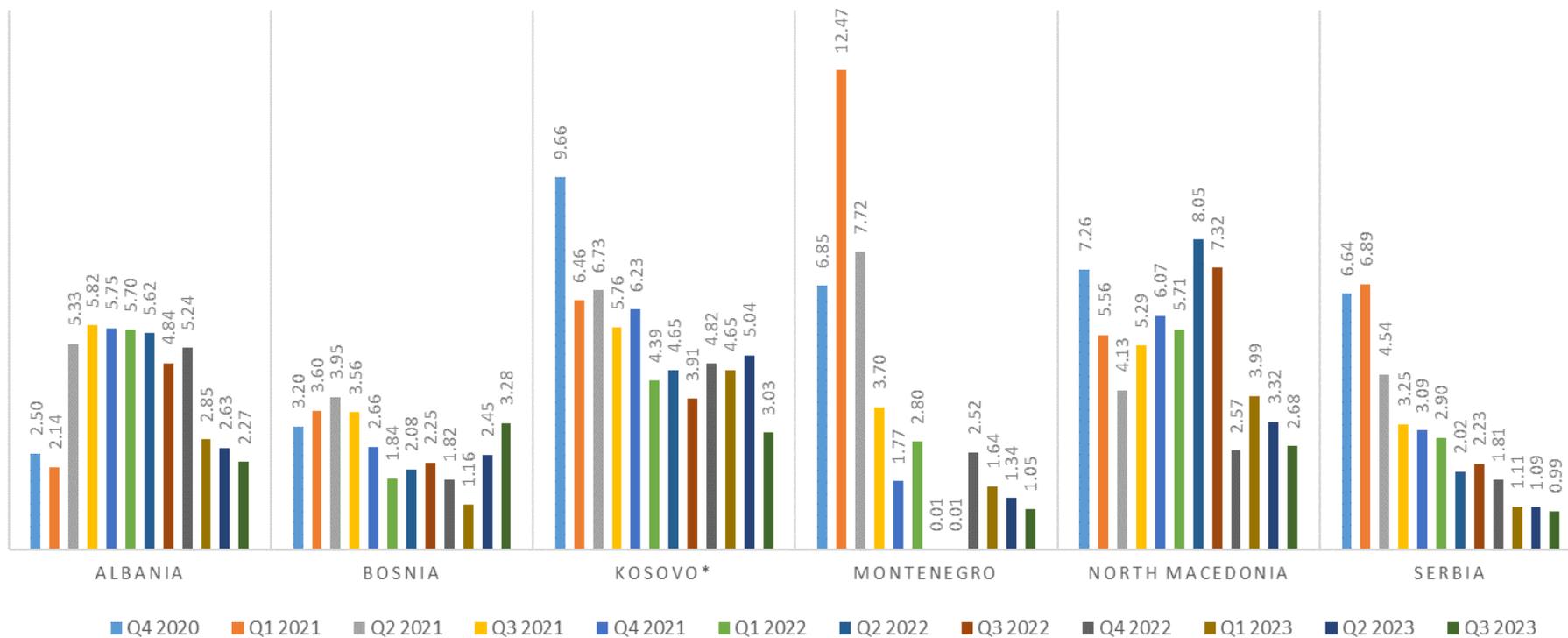
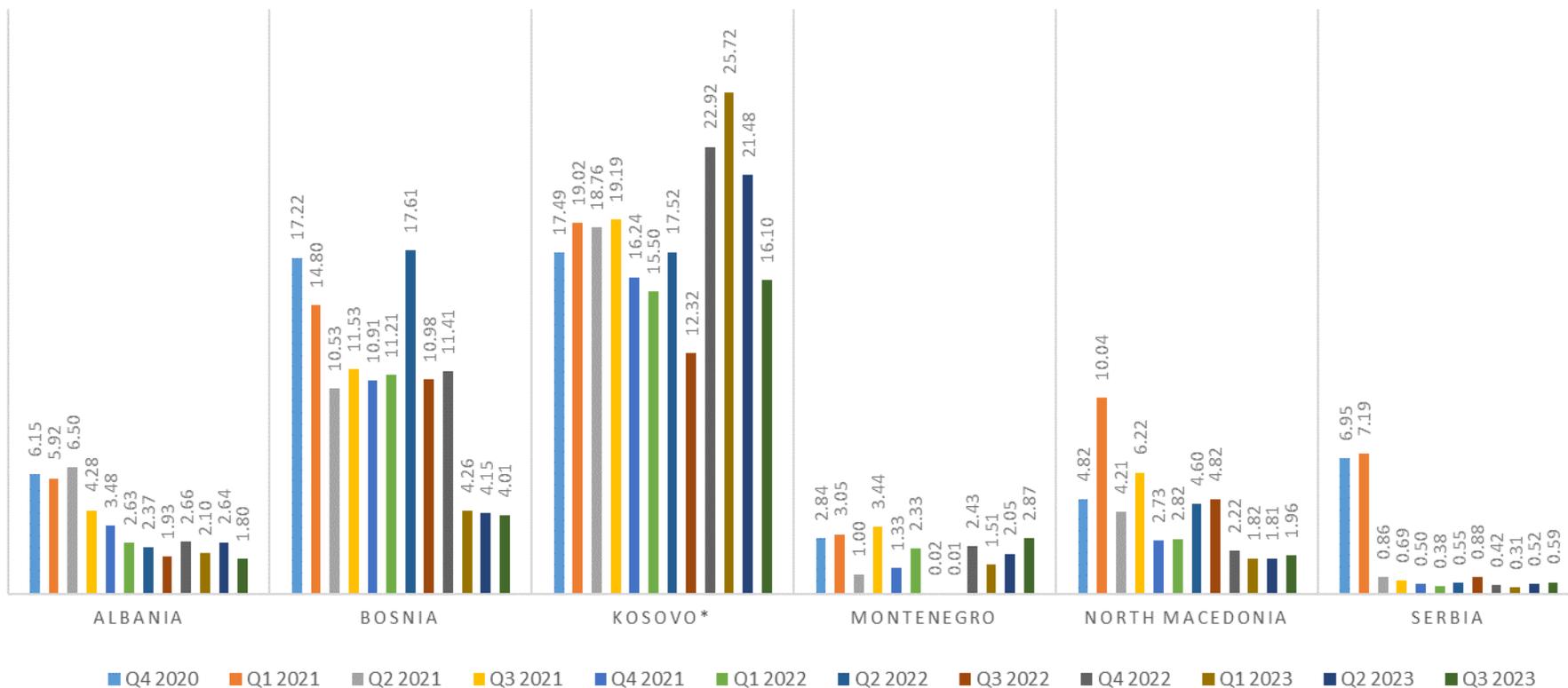


Figure 49: Wholesale data roaming services: wholesale revenues per GB in Euro, from RoW countries



7 Annex

The following chapter contains a list of national operators who submitted data during the data collection exercise. The data submitted by the operators has been aggregated for this report.

Albania

Albtelecom

One Telecommunications

Vodafone Albania

Bosnia

BH Telecom d.d.

HT d.d

Dasto Semtel d.o.o.

Logosoft d.o.o.

Telekom Srpske a.d.

Serbia

Telekom Srbija a.d.

Yettel d.o.o

A1 d.o.o.

Globaltel d.o.o

Kosovo*

IPKO Telecommunications

Kosovo Telecom

Montenegro

Crnogorski Telekom

Telenor

M:tel

North Macedonia

A1 Makedonija

Lajkamobajl

Makedonski Telekom

Robi

Green mobile

