

BEREC Report on Western Balkan Roaming

October 2018 – September 2019

5 March, 2020

Contents

List of figures	2
1 Introduction	4
2 Analysis of subscribers and those that use roaming services	5
3 Consumption patterns for domestic mobile retail services	7
4 Consumption patterns for roaming services (voice, SMS and data)	10
5 The development of retail roaming services: retail revenues per unit	22
6 The development of wholesale roaming services: wholesale revenues per unit	34
7 Annex	38

List of figures

Figure 1: Domestic average retail mobile revenue (voice+SMS+data) per total number of subscribers per month in Euro	5
Figure 2: Share of roaming enabled subscribers from total number of subscribers	6
Figure 3: Domestic voice minutes: average number of domestic minutes (actual minutes) per total number of subscribers per month	7
Figure 4: Domestic SMS: average number of domestic SMS per total number of subscribers per month.....	8
Figure 5: Domestic data: average consumption of domestic data (GB) per total number of subscribers per month.....	9
Figure 6: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the WB region (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month	10
Figure 7: Roaming RLAH+ minutes, calls made (actual minutes): average number of roaming minutes within the WB region from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month	11
Figure 8: 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	12
Figure 9: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the WB region (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month	13
Figure 10: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the WB region from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month	14
Figure 11: 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	15
Figure 12: Roaming SMS services: average number of roaming SMS (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month.....	16
Figure 13: Roaming SMS services: average number of roaming SMS from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month.....	17
Figure 14: Roaming SMS services: average number of roaming SMS within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month.....	18
Figure 15: Roaming data services: average data roaming consumption in GB (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month	19
Figure 16: Roaming data services: average data roaming consumption in GB from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month.....	20

Figure 17: 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.....	21
Figure 18: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (separately for WB alternative and WB RLAH+ tariffs)	22
Figure 19: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within EEA countries).....	23
Figure 20: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within RoW countries).....	24
Figure 21: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (separately for WB alternative and WB RLAH+ tariffs).....	25
Figure 22: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within EEA countries)	26
Figure 23: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within RoW countries).....	27
Figure 24: Average retail roaming revenues per SMS, in Euro (separately for WB alternative and WB RLAH+ tariffs).....	28
Figure 25: Average retail roaming revenues per SMS, in Euro (within EEA countries)	29
Figure 26: Average retail roaming revenues per SMS, in Euro (within RoW countries)	30
Figure 27: Average retail roaming revenues per GB, in Euro (separately for WB alternative and WB RLAH+ tariffs).....	31
Figure 28: Average retail roaming revenues per GB, in Euro (within EEA countries).....	32
Figure 29: Average retail roaming revenues per GB, in Euro (within RoW countries).....	33
Figure 30: Average Wholesale voice roaming services: wholesale revenues per minute (group and non-group) in Eurocent (separately within WB region, from EEA countries and from RoW countries)	34
Figure 31: Average Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group) in Eurocent (separately within WB region, from EEA countries and from RoW countries)	35
Figure 32: Wholesale data roaming services: wholesale revenues per GB in Euro (separately within WB region and from EEA countries).....	36
Figure 33: Wholesale data roaming services: wholesale revenues per GB in Euro (from RoW countries)	37

1 Introduction

The BEREC Report on Western Balkan Roaming presents the results of the 1st and 2nd round of data collection on international roaming services in the Western Balkans (WB) region including the economies Albania, Bosnia, Kosovo*, Montenegro, Northern Macedonia, Serbia undertaken by BEREC. This Report covers the period 1 October 2018 – 30 September 2019, i.e. from the 4th quarter 2018 until the 3rd quarter 2019. It is the first of a series of Reports which shall be published biannually and will henceforth cover periods of six months each.

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 by 1 July 2021.

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 this 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 a further step, roaming prices between EU and WB signatories shall be reduced, providing benefits to consumers in the WB and EU region alike.

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. A discussion of retail roaming revenues may be found in Chapter 5, complemented by a chapter on wholesale roaming revenues (Chapter 6). A full list of operators that submitted data may be found in the Annex.

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

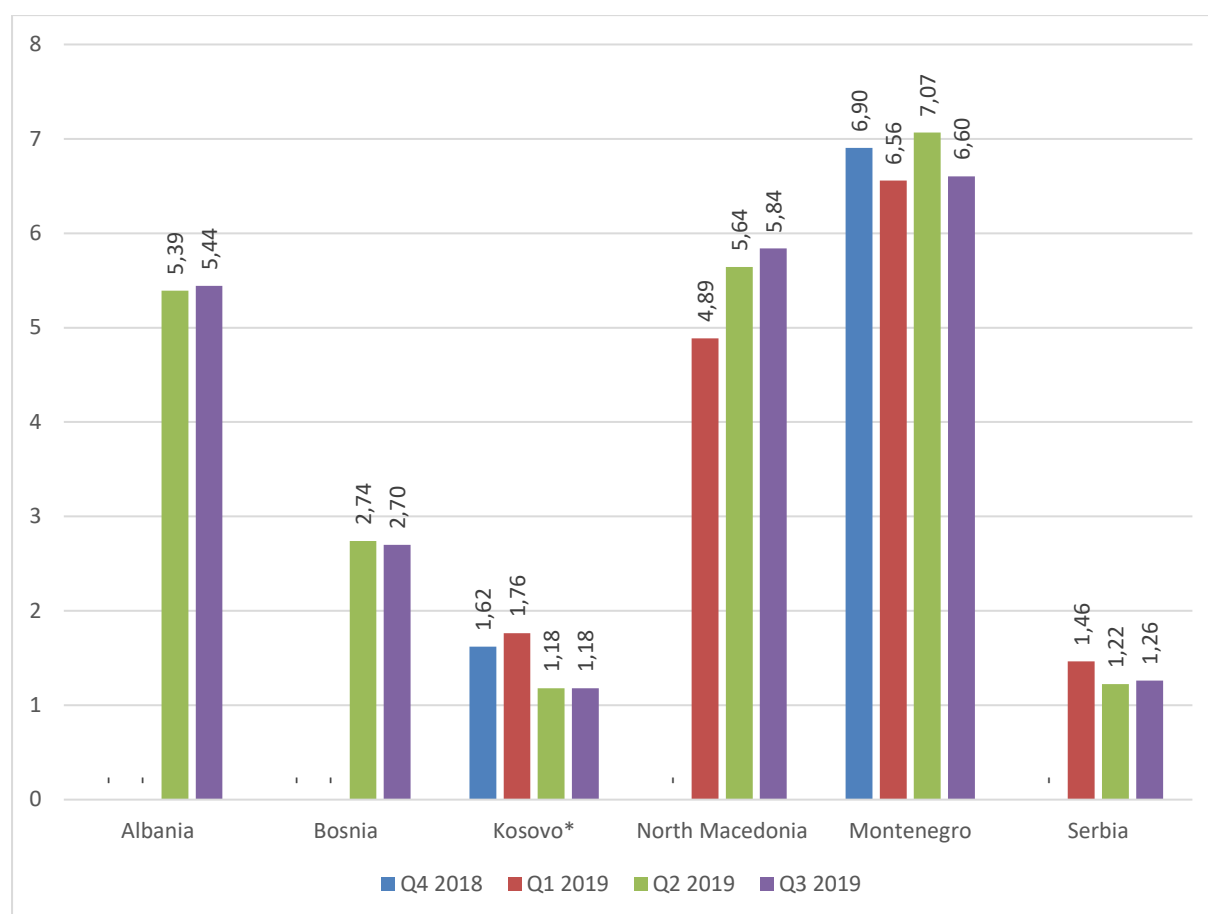
¹ The cited “home-like” rule shall correspond to the “roaming like at home” rules applicable in the European Union.

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

2 Analysis of subscribers and those that use roaming services

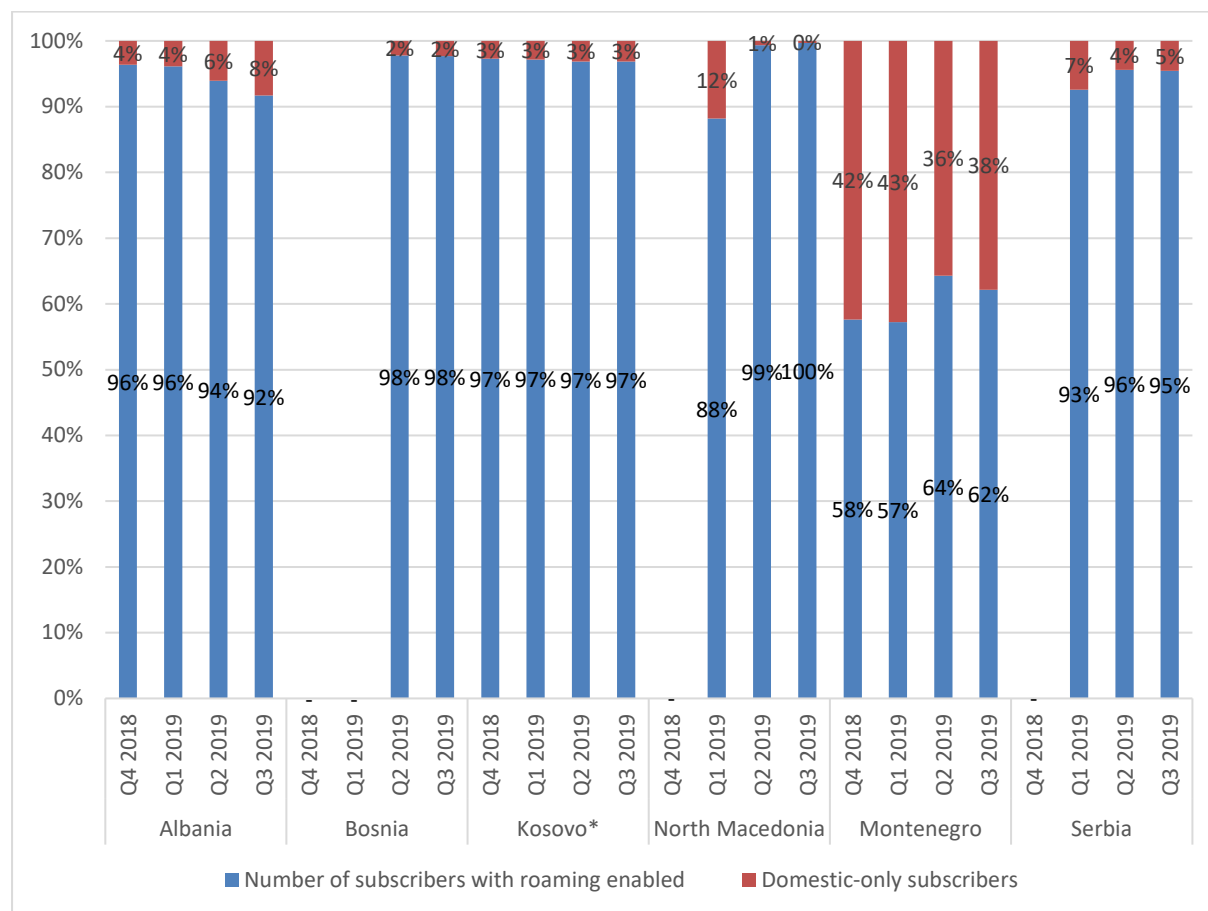
2.1 Domestic average Retail Mobile Revenue per User (ARRPU)

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



2.2 Share of roaming enabled subscribers from total number of subscribers

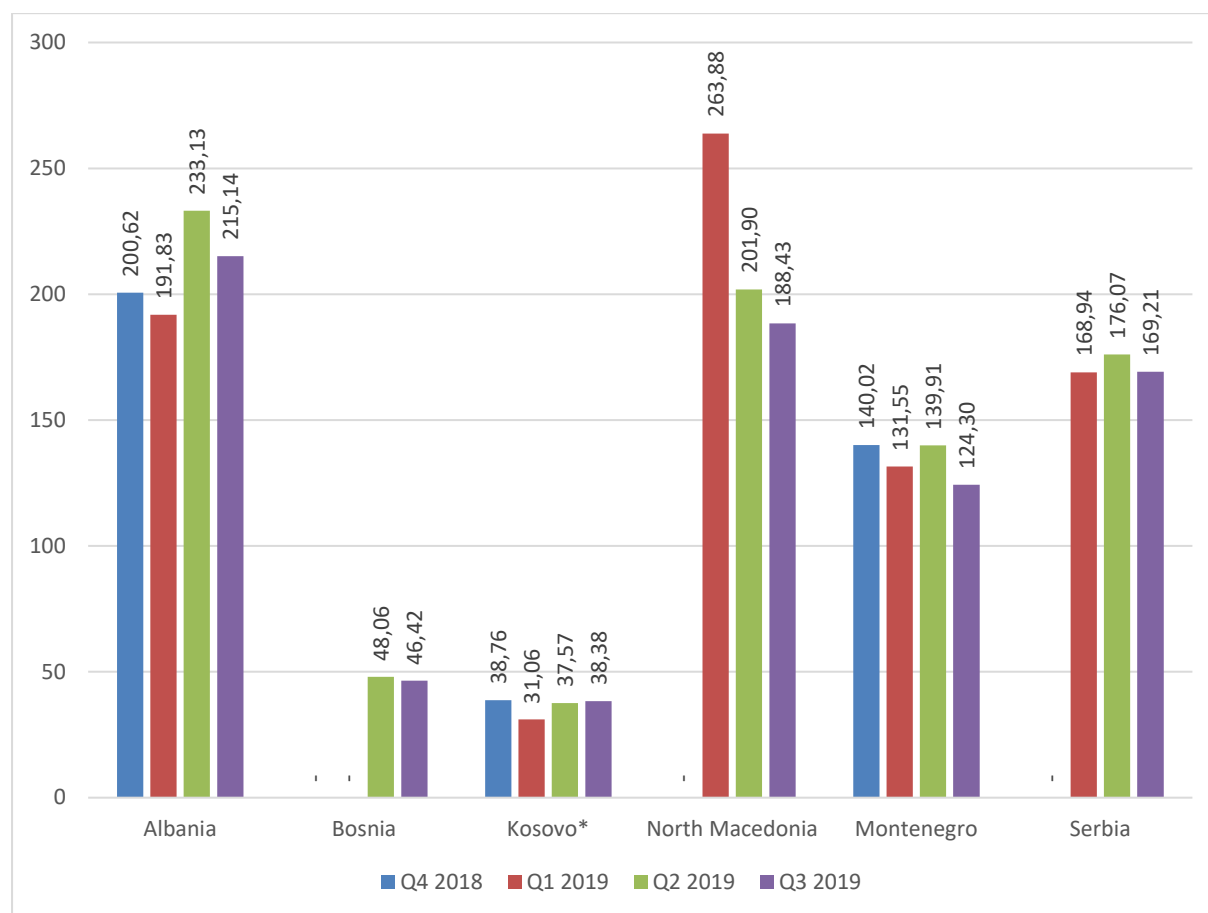
Figure 2: Share of roaming enabled subscribers from total number of subscribers



3 Consumption patterns for domestic mobile retail services

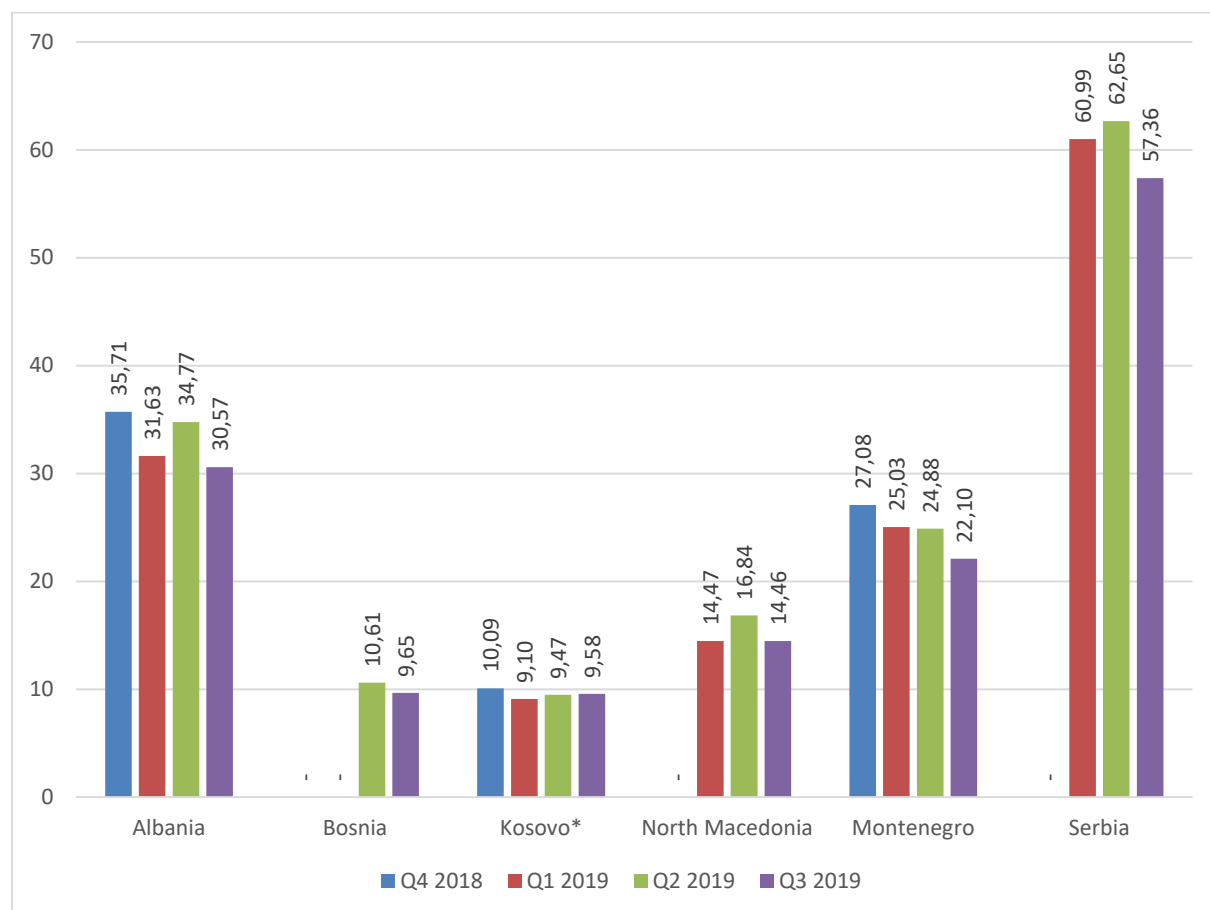
3.1 Domestic voice minutes: average number of domestic minutes (actual minutes) per total number of subscribers per month

Figure 3: Domestic voice minutes: average number of domestic minutes (actual minutes) per total number of subscribers per month



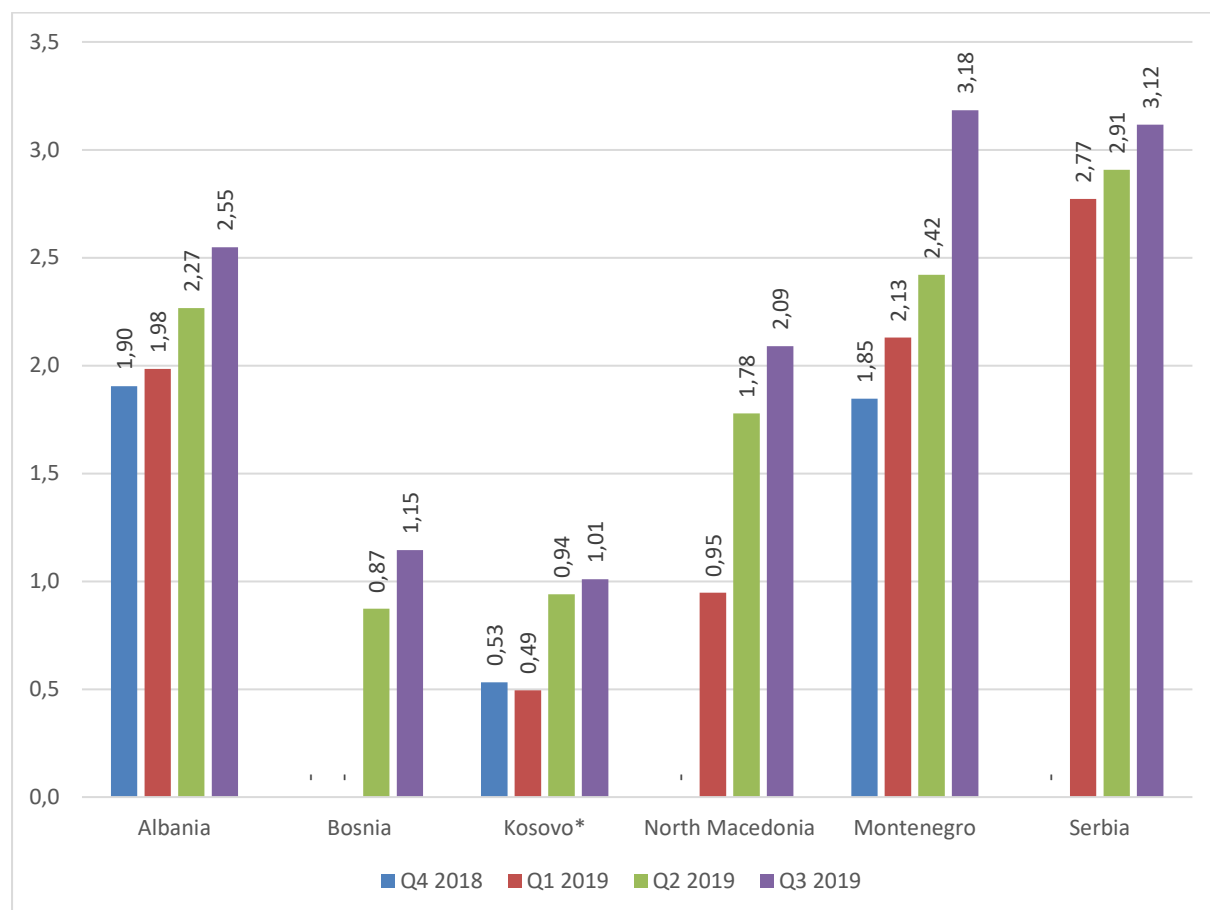
3.2 Domestic SMS: average number of domestic SMS per total number of subscribers per month

Figure 4: Domestic SMS: average number of domestic SMS per total number of subscribers per month



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

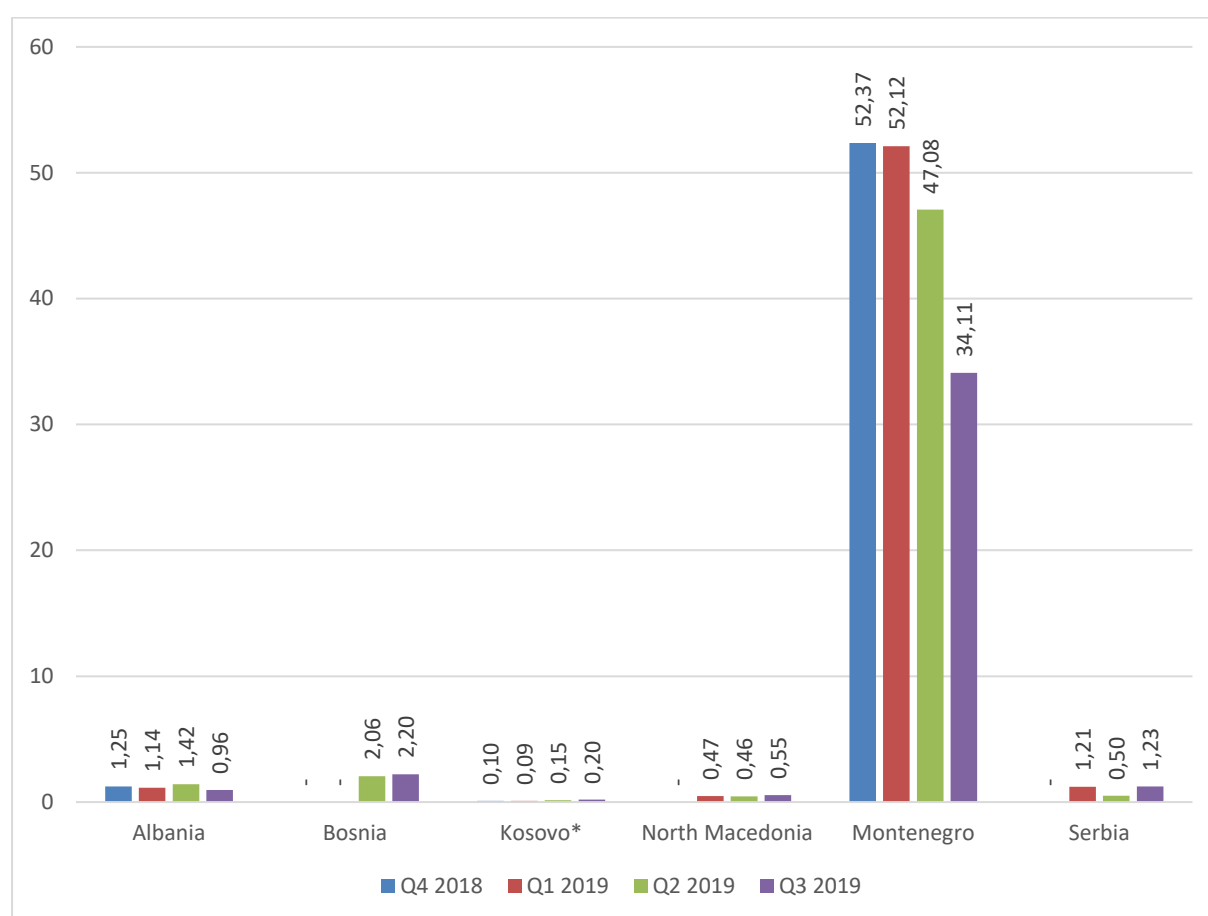
Figure 5: Domestic data: average consumption of domestic data (GB) per total number of subscribers per month



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 6: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the WB region (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month³



³ The categories “Western Balkans alternative” and “Western Balkans RLAH+” were implemented in Q3 2019, prior to which only the category “Western Balkans tariffs” existed.

Figure 7: Roaming RLAH+ minutes, calls made (actual minutes): average number of roaming minutes within the WB region from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month

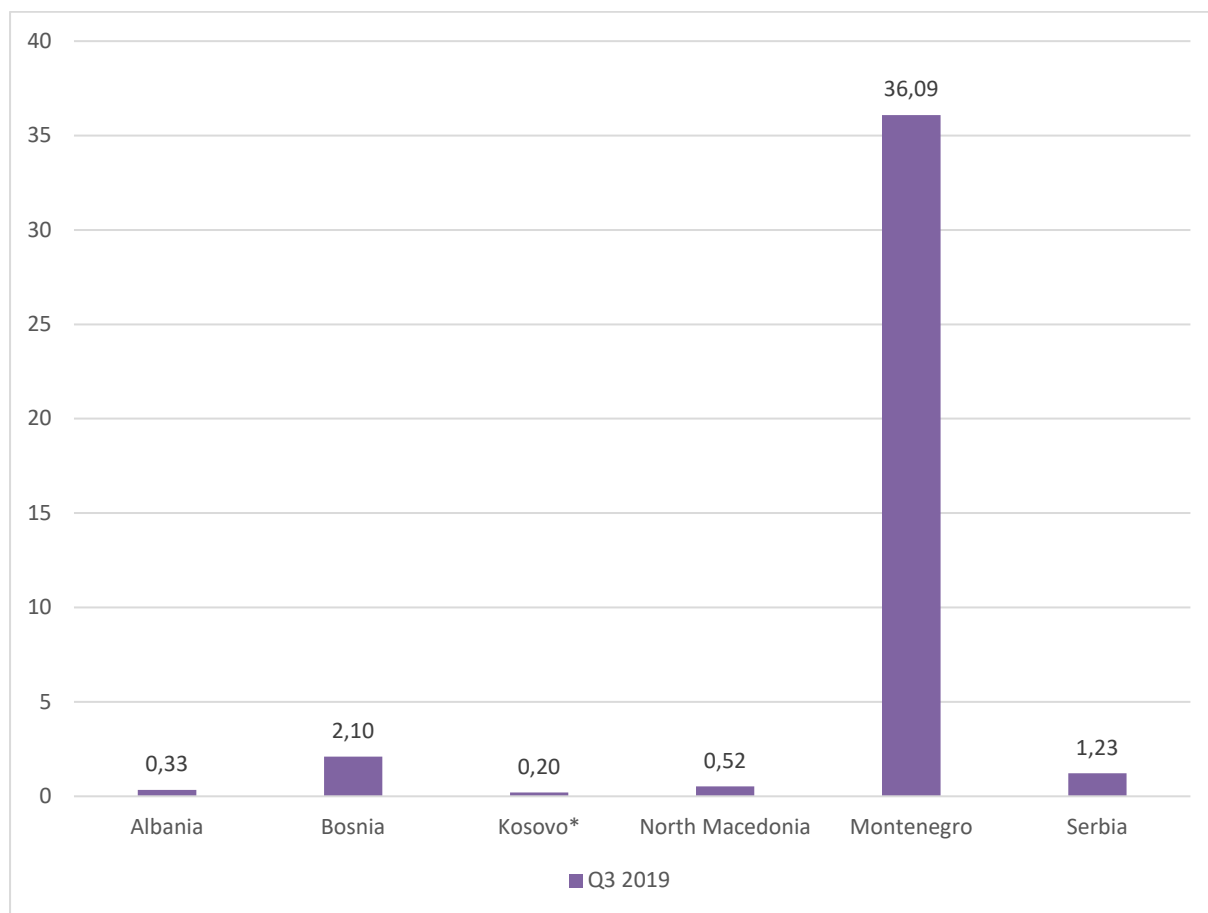
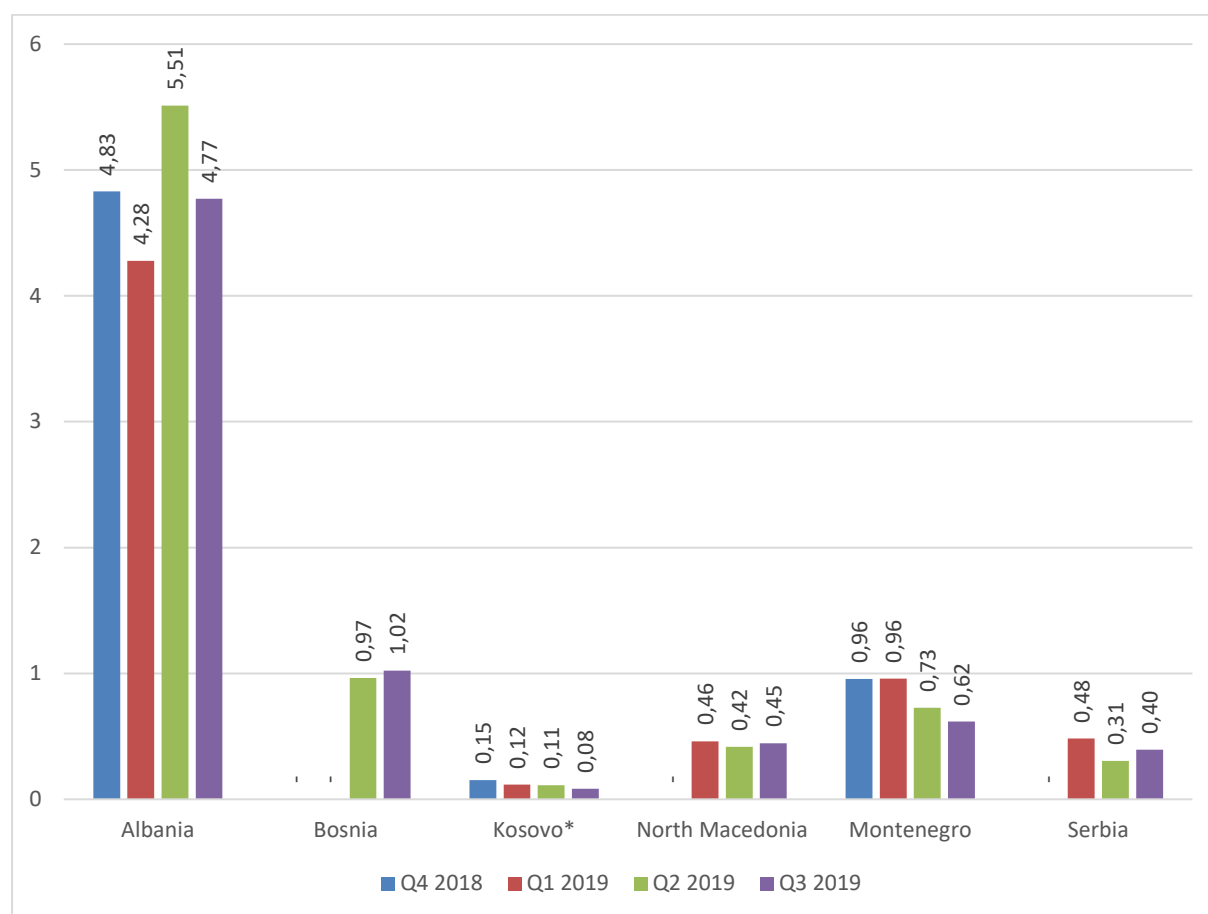
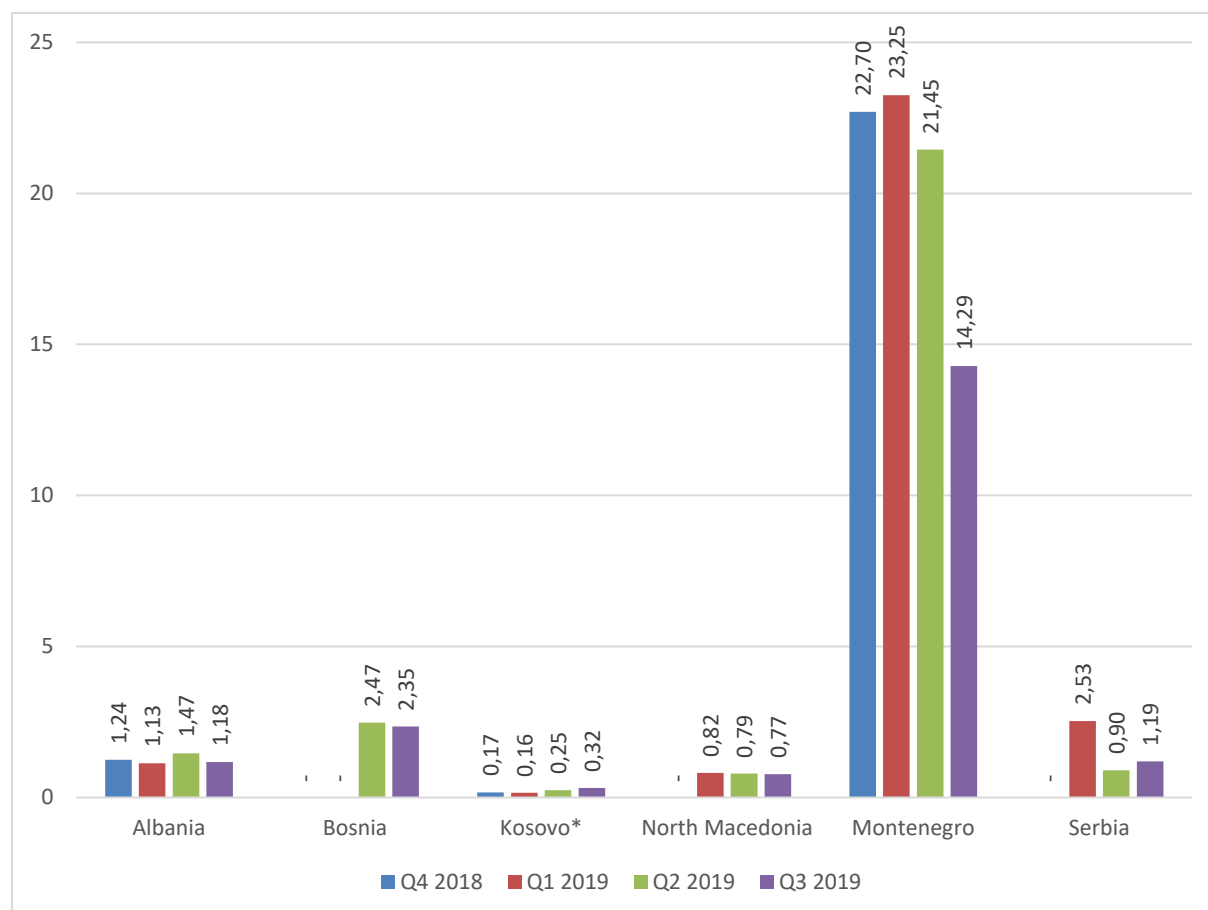


Figure 8: Roaming voice services, calls made (actual minutes): average number of roaming minutes within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



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

Figure 9: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the WB region (from alternative 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 in Q3 2019 as "WB alternative" is therefore a very different category from the same category in the previous quarters.

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

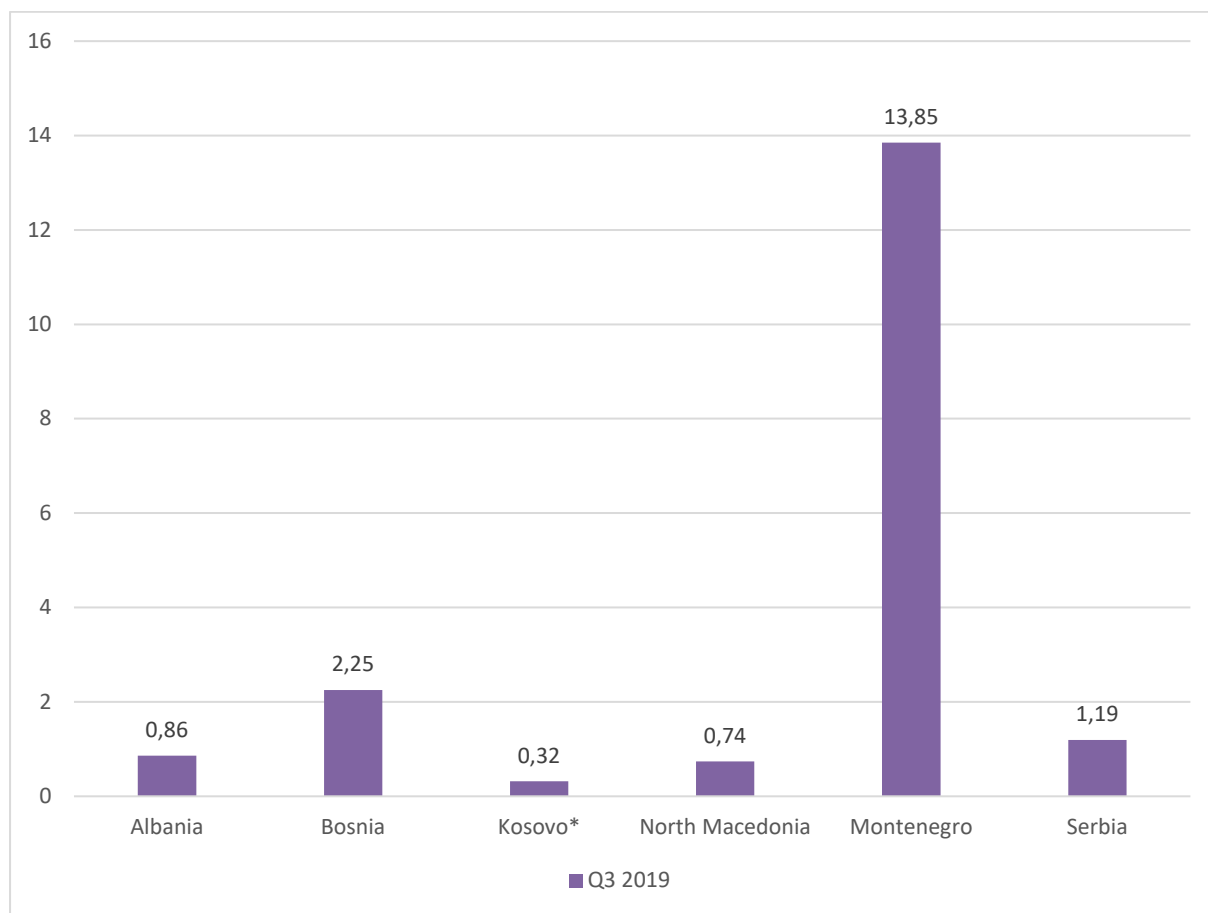
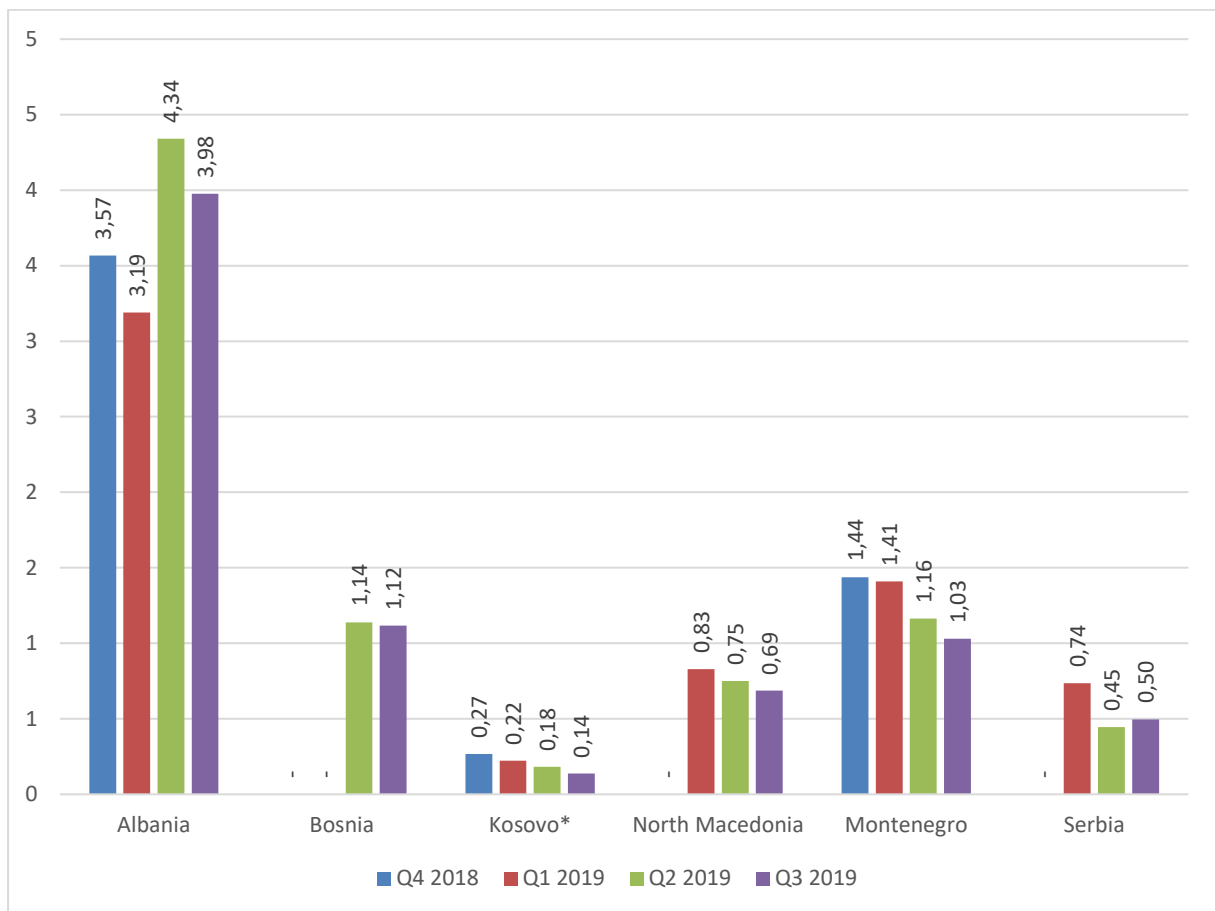
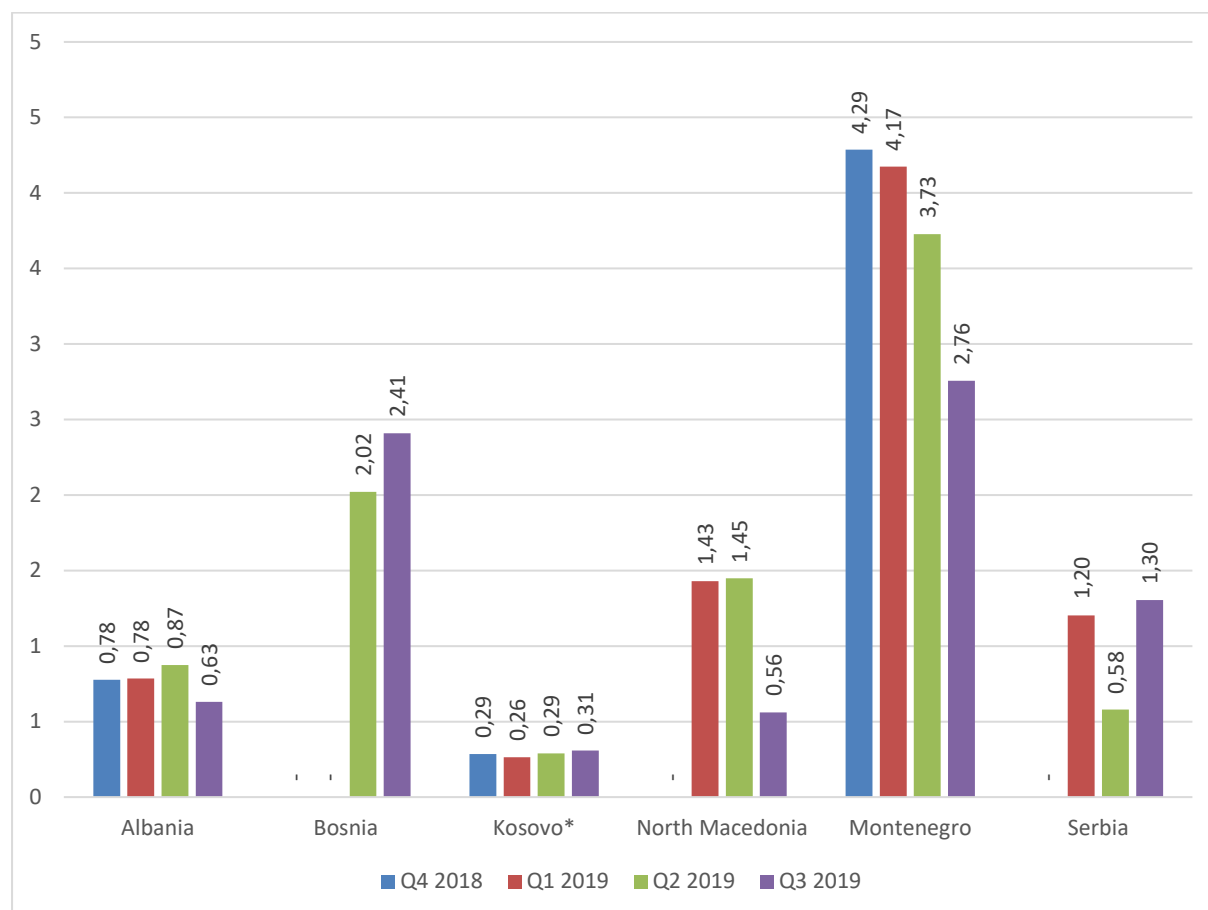


Figure 11: Roaming voice services, calls received (actual minutes): average number of roaming minutes within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



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

Figure 12: Roaming SMS services: average number of roaming SMS (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month⁵



⁵ 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 in Q3 2019 as "WB alternative" is therefore a very different category from the same category in the previous quarters.

Figure 13: Roaming SMS services: average number of roaming SMS from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month

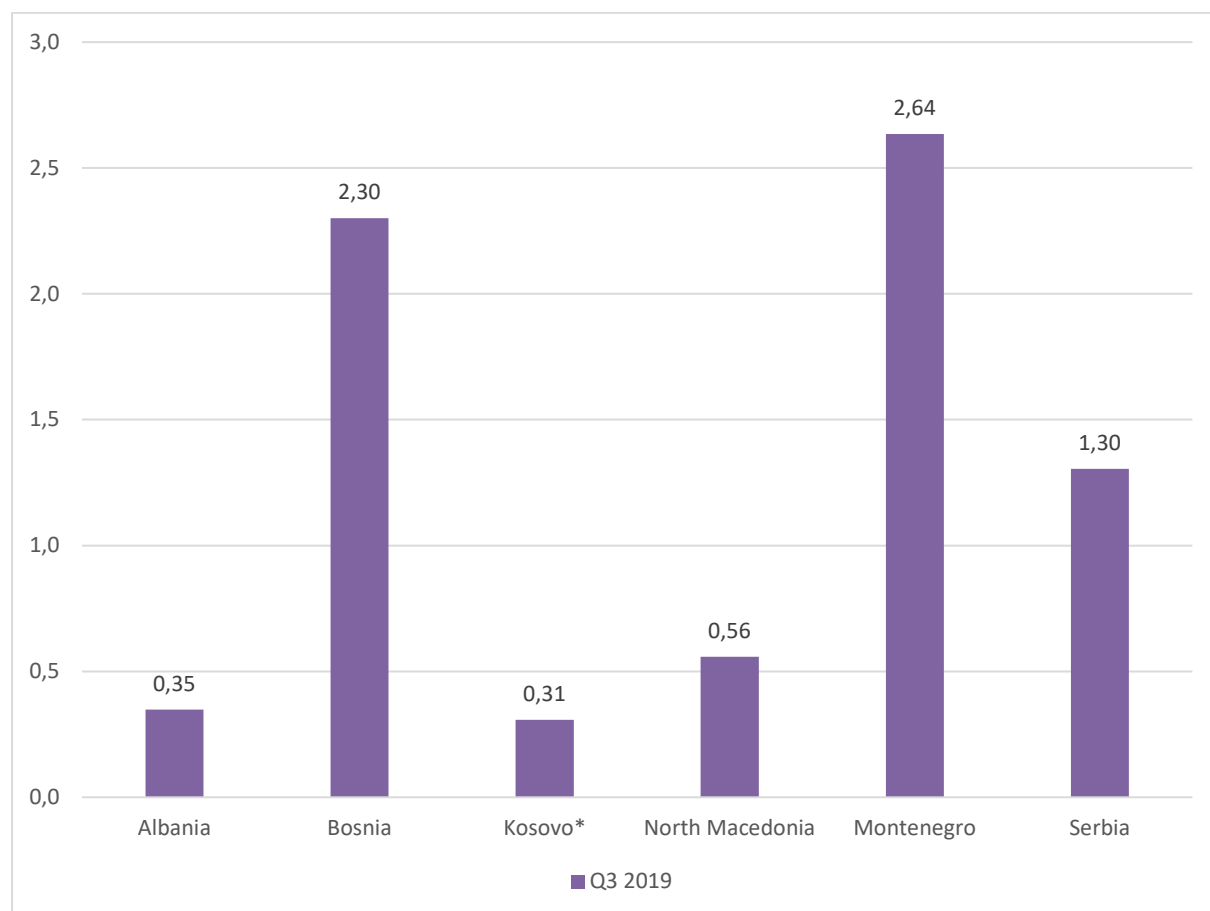
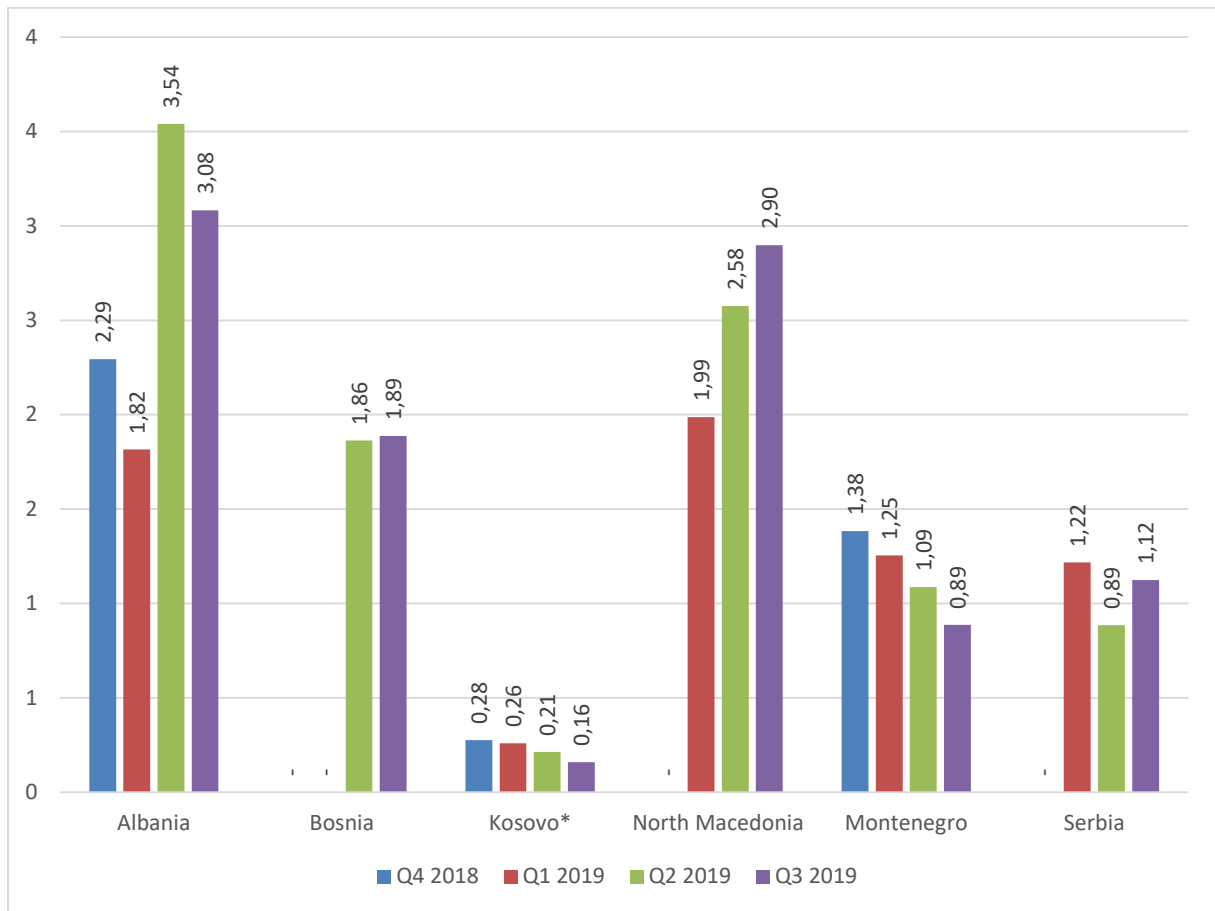
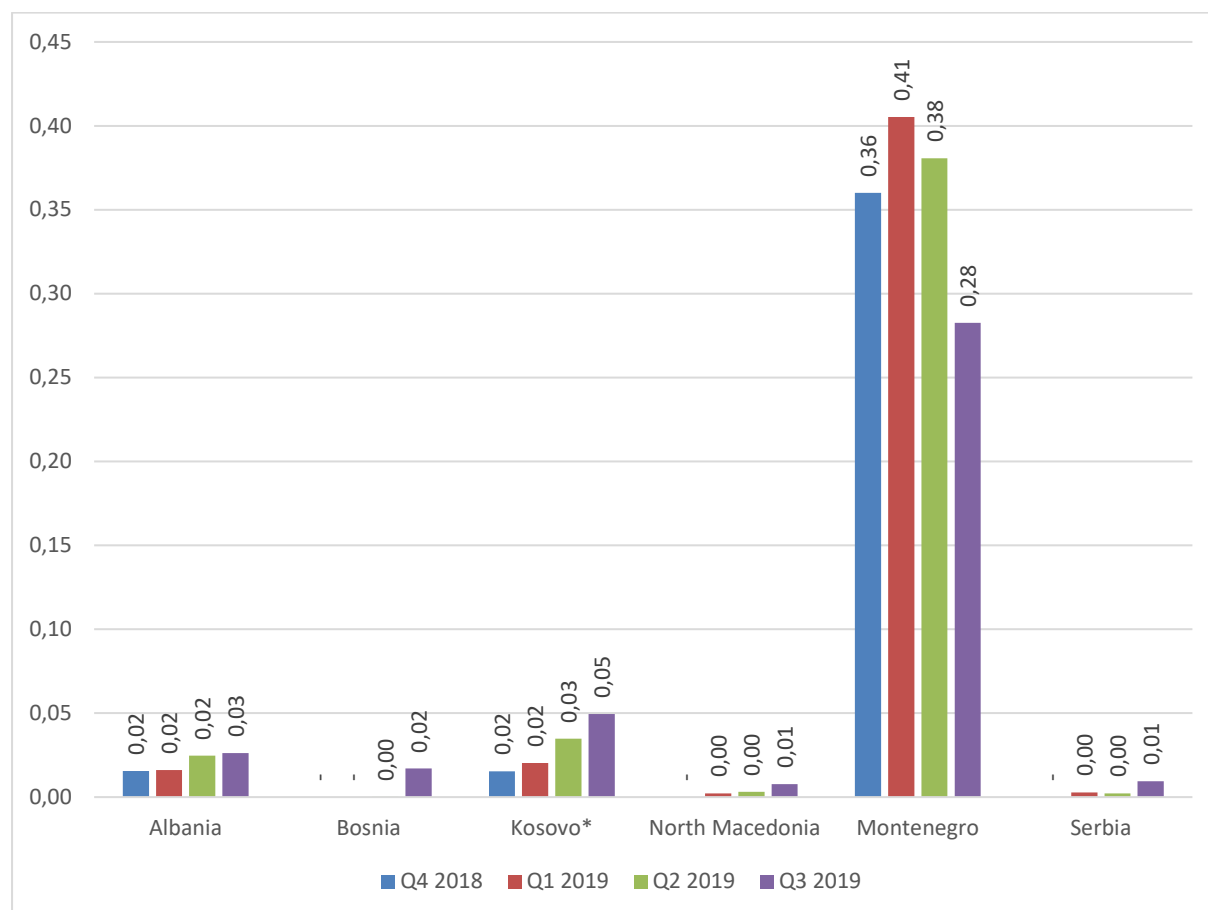


Figure 14: Roaming SMS services: average number of roaming SMS within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



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

Figure 15: Roaming data services: average data roaming consumption in GB (from alternative and RLAH+ tariffs) per number of subscribers roaming at least once in the concerned quarter and region per month⁶



⁶ 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 in Q3 2019 as “WB alternative” is therefore a very different category from the same category in the previous quarters.

Figure 16: Roaming data services: average data roaming consumption in GB from RLAH+ tariffs per number of RLAH+ subscribers roaming at least once in the concerned quarter and region per month

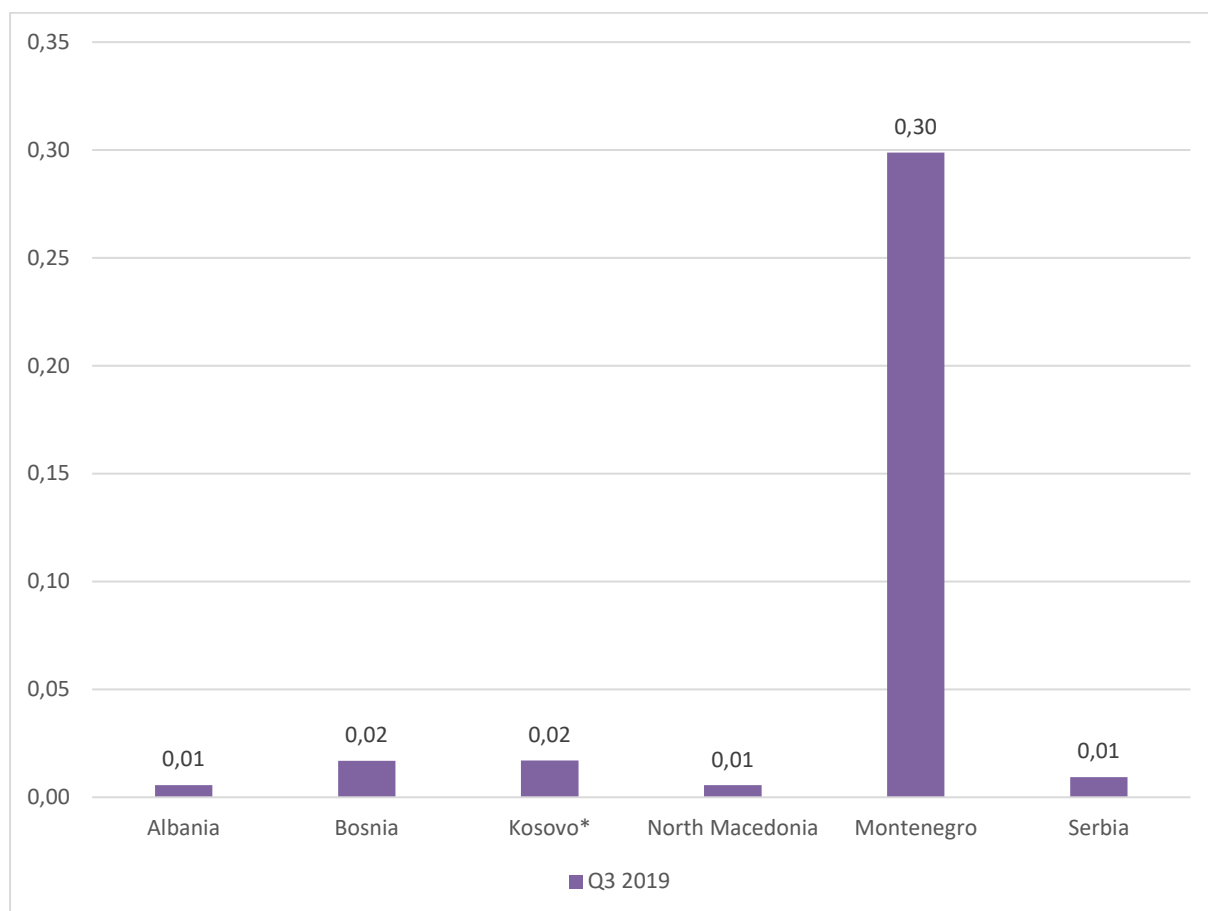
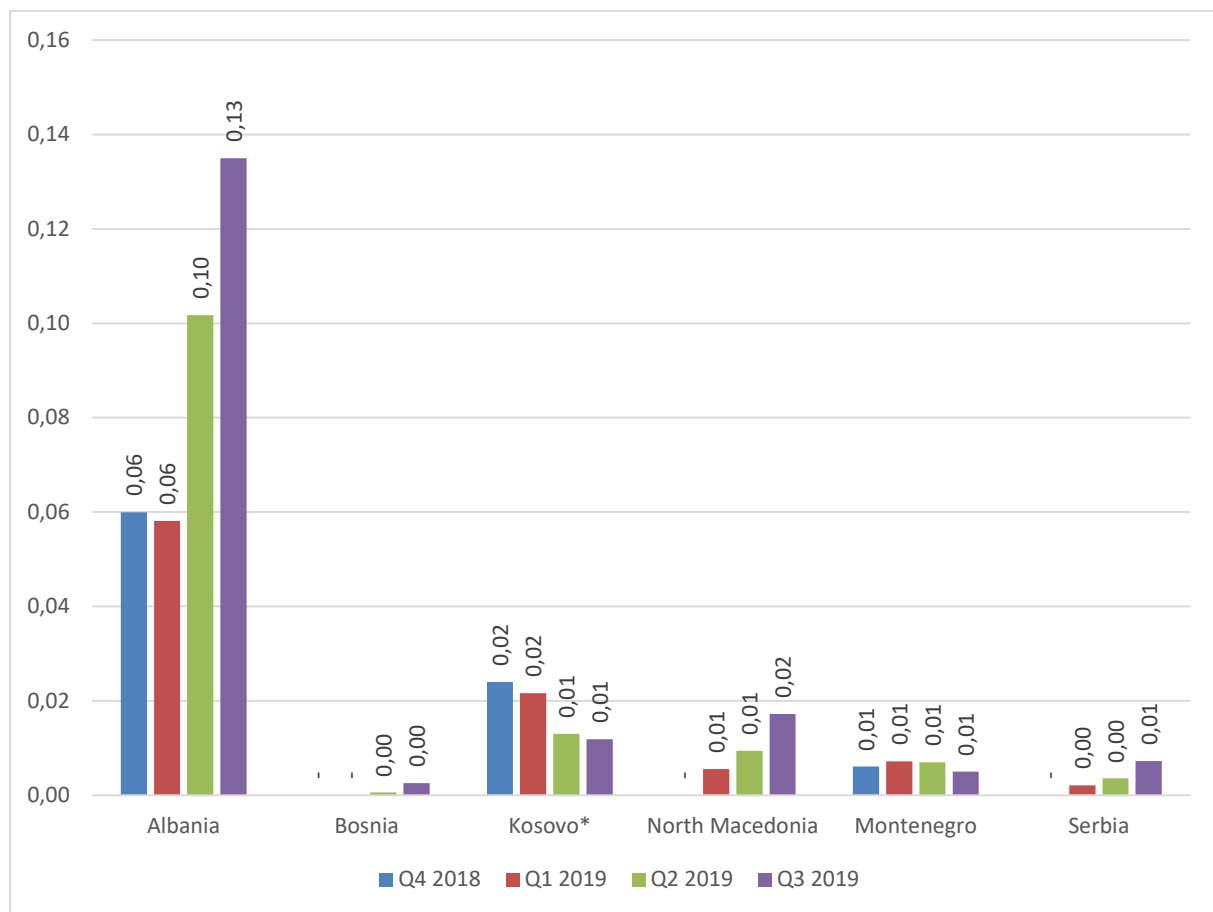


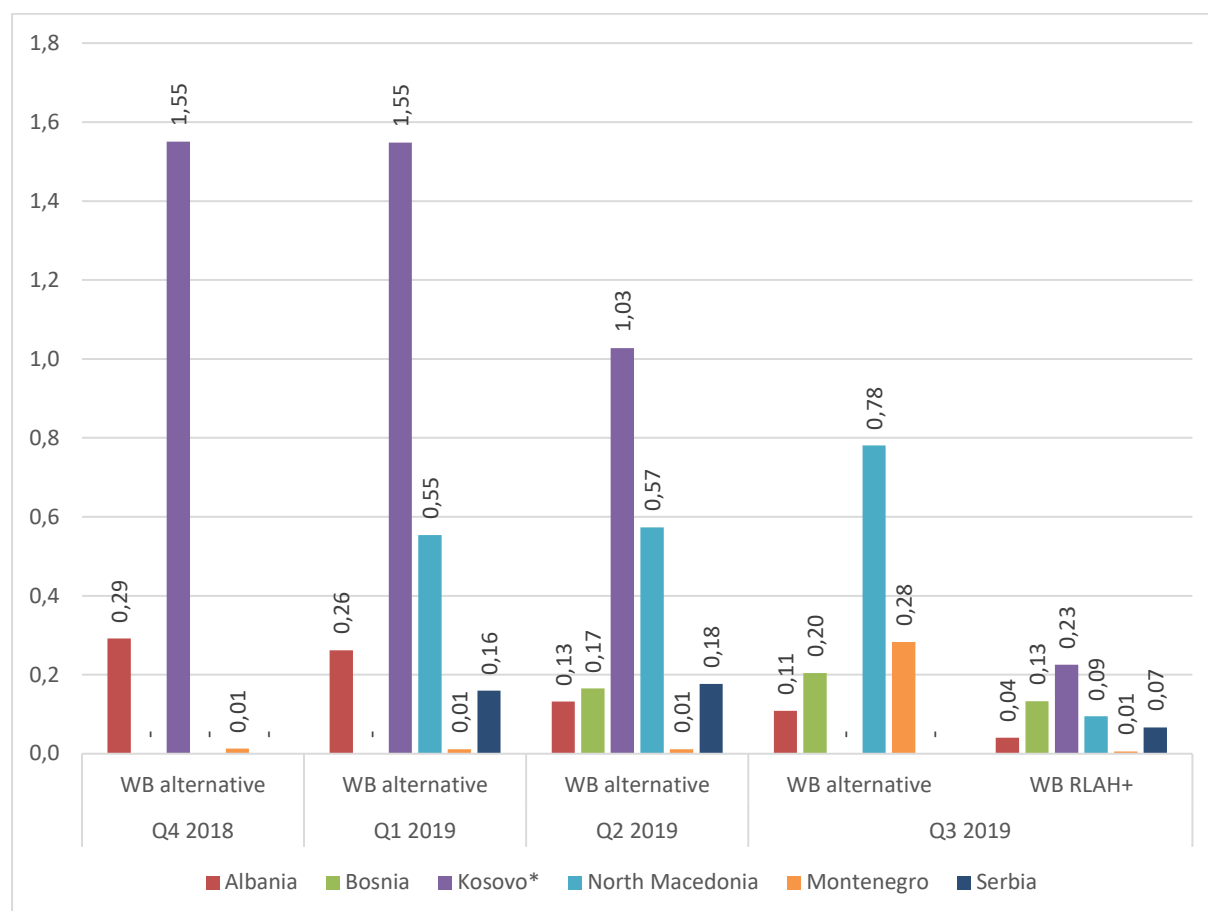
Figure 17: Roaming data services: average data roaming consumption in GB within the EEA region per number of subscribers roaming at least once in the concerned quarter and region per month



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

5.1 Average retail roaming revenues per minute, calls made

Figure 18: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (separately for WB alternative and WB RLAH+ tariffs)⁷

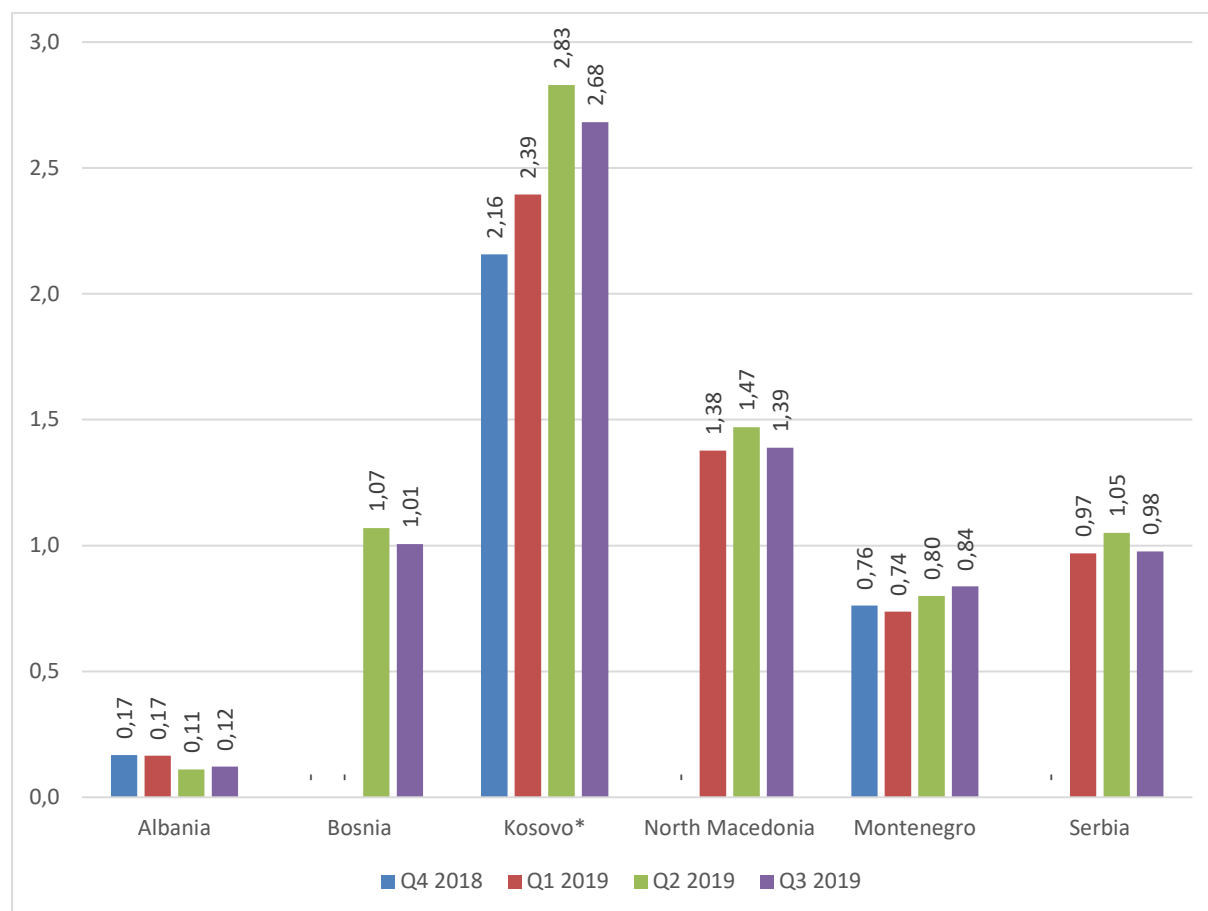


⁷ The categories “Western Balkans alternative” and “Western Balkans RLAH+” were implemented in Q3 2019, prior to which only the category “Western Balkans tariffs” existed. The category displayed in Q3 2019 as “WB alternative” is therefore a very different category from the same category in the previous quarters.

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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

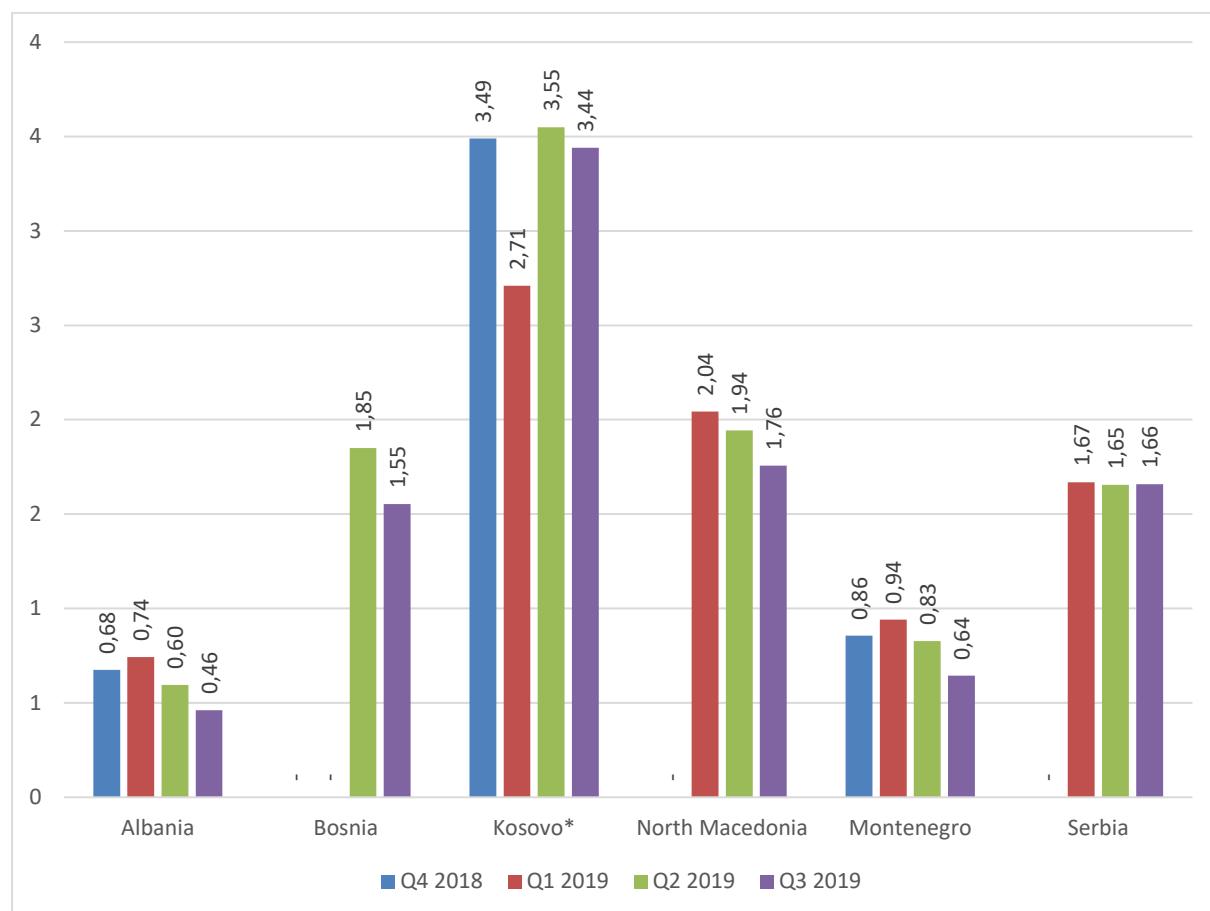
Figure 19: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within EEA countries)⁸



⁸ 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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

Figure 20: Average retail roaming revenues per minute, calls made (actual minutes), in Euro (within RoW countries)⁹

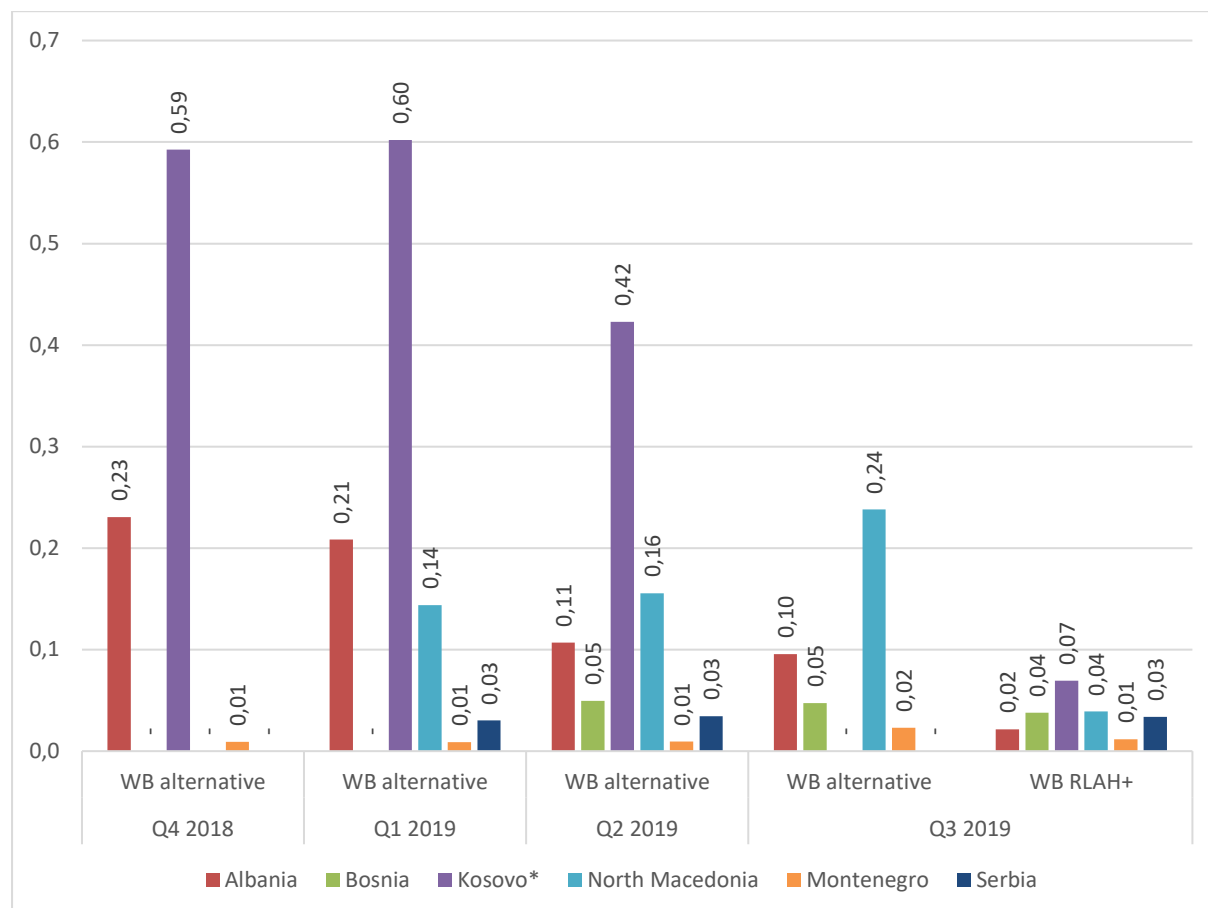


⁹ Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

5.2 Average retail roaming revenues per minute, calls received

Figure 21: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (separately for WB alternative and WB RLAH+ tariffs)¹⁰

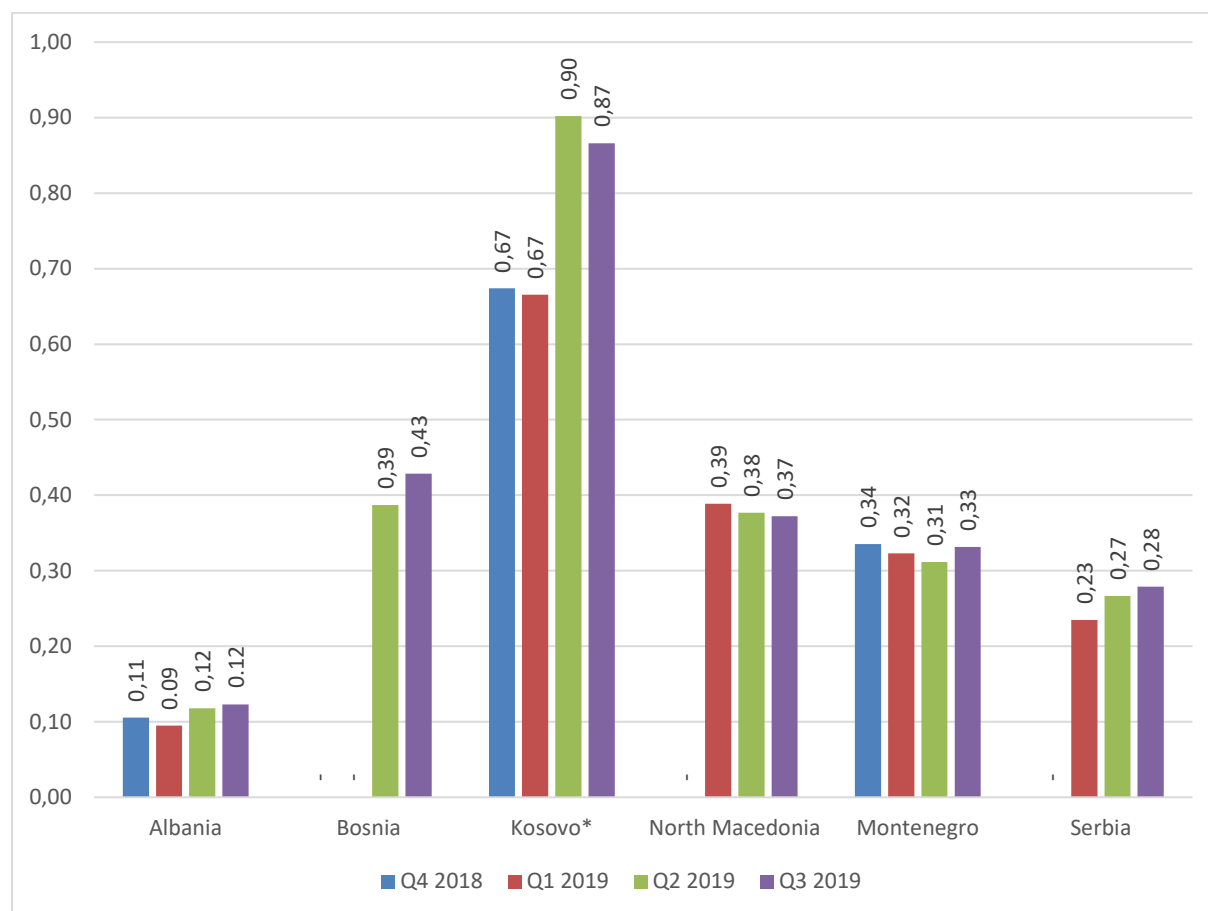


¹⁰ The categories “Western Balkans alternative” and “Western Balkans RLAH+” were implemented in Q3 2019, prior to which only the category “Western Balkans tariffs” existed. The category displayed in Q3 2019 as “WB alternative” is therefore a very different category from the same category in the previous quarters.

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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

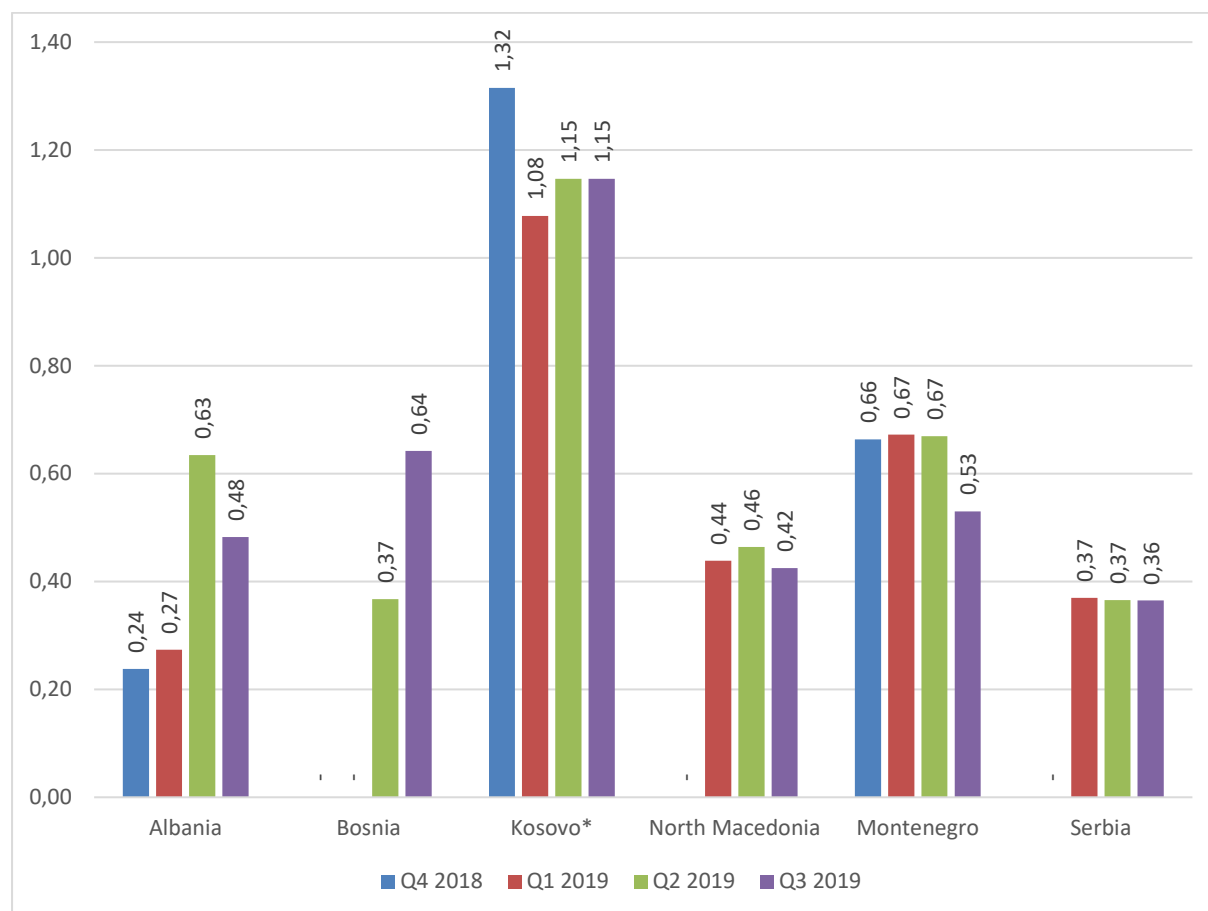
Figure 22: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within EEA countries)¹¹



¹¹ 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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

Figure 23: Average retail roaming revenues per minute, calls received (actual minutes), in Euro (within RoW countries)¹²

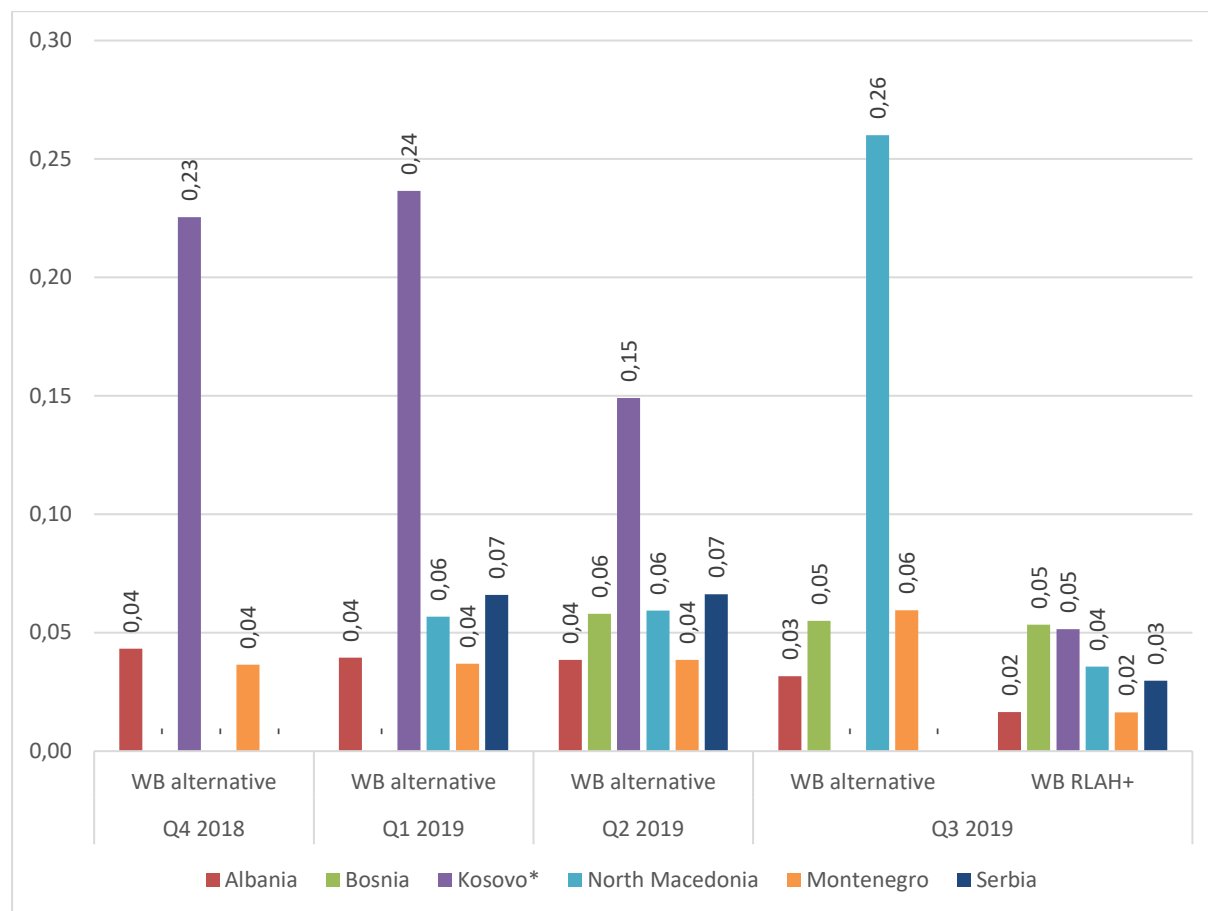


¹² Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

5.3 Average retail roaming revenues per SMS

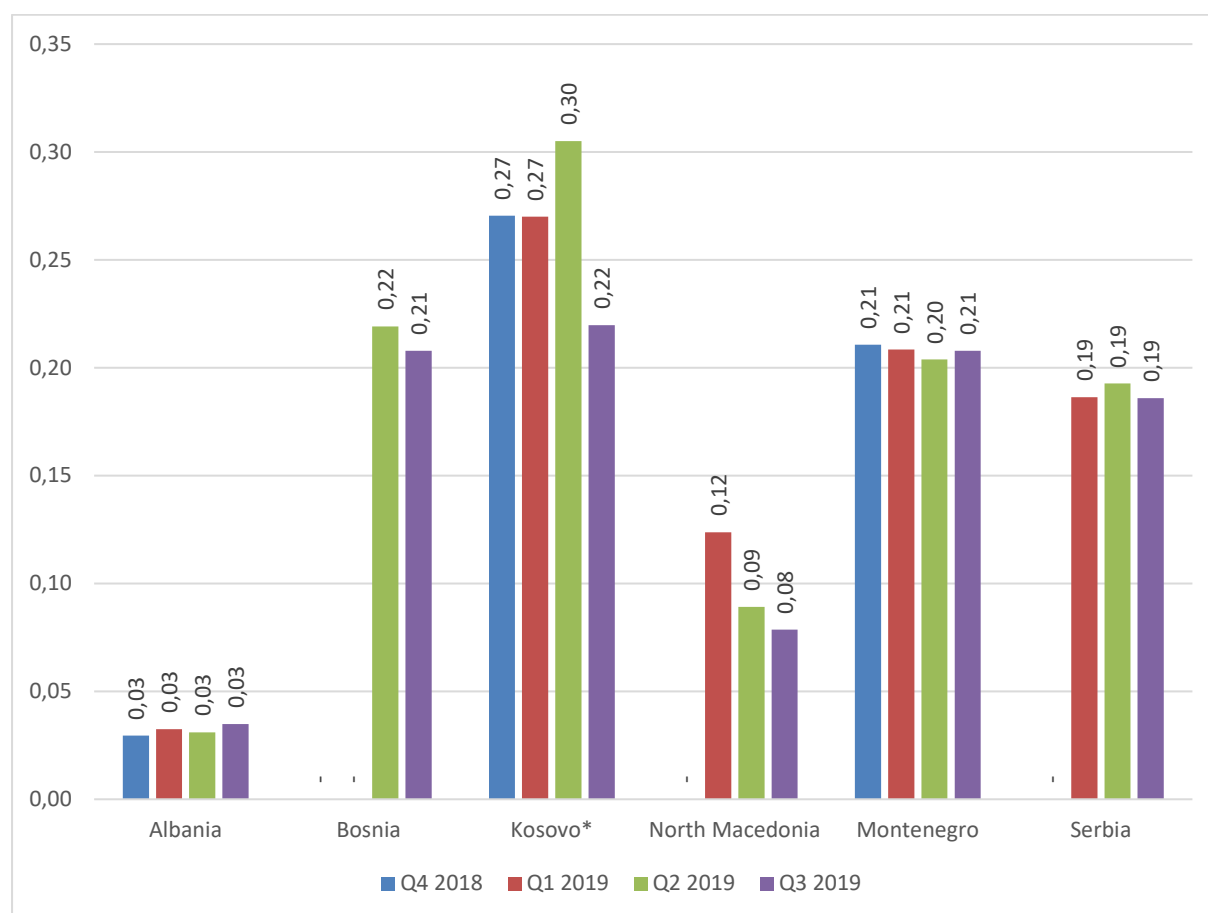
Figure 24: Average retail roaming revenues per SMS, in Euro (separately for WB alternative and WB RLAH+ tariffs)¹³



¹³The 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 in Q3 2019 as “WB alternative” is therefore a very different category from the same category in the previous quarters.

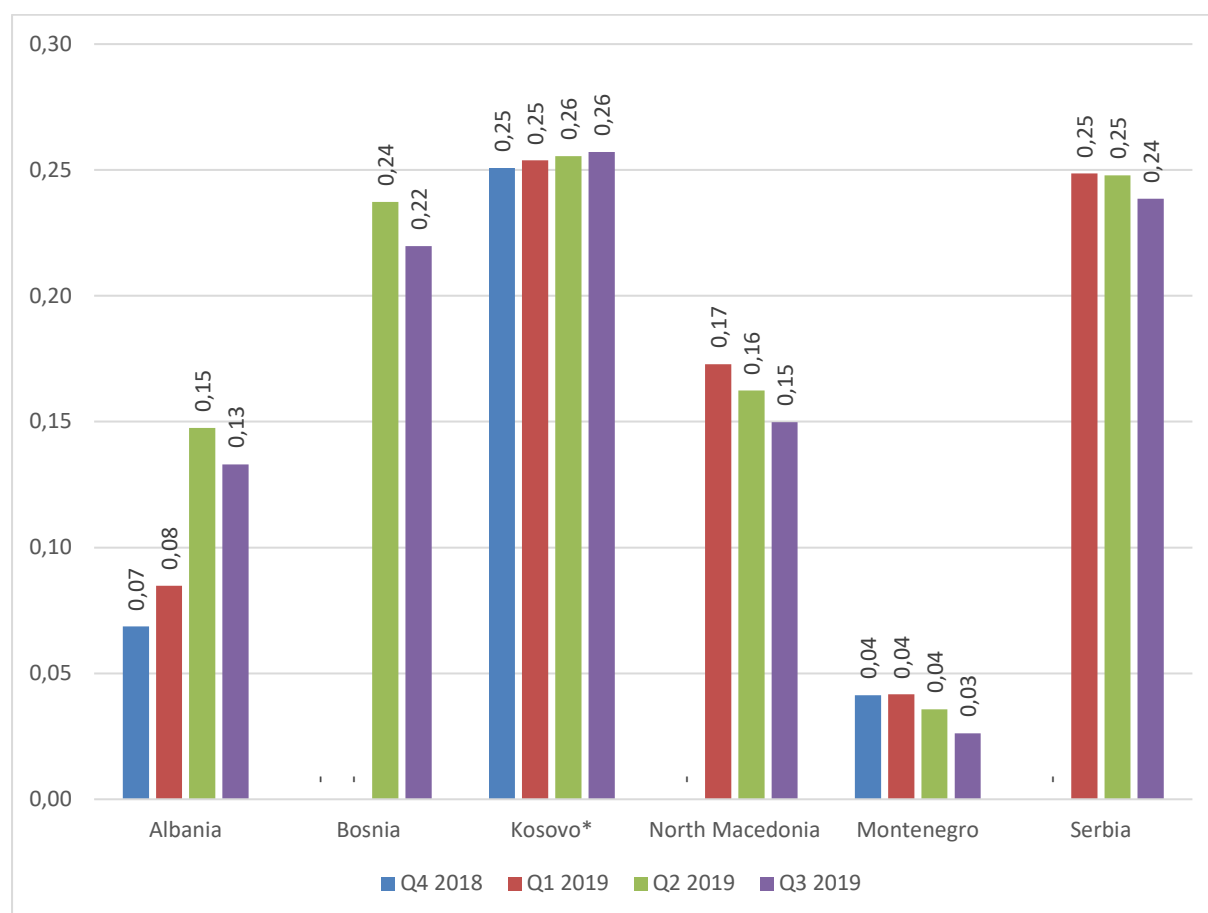
Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

Figure 25: Average retail roaming revenues per SMS, in Euro (within EEA countries)¹⁴

¹⁴ 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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

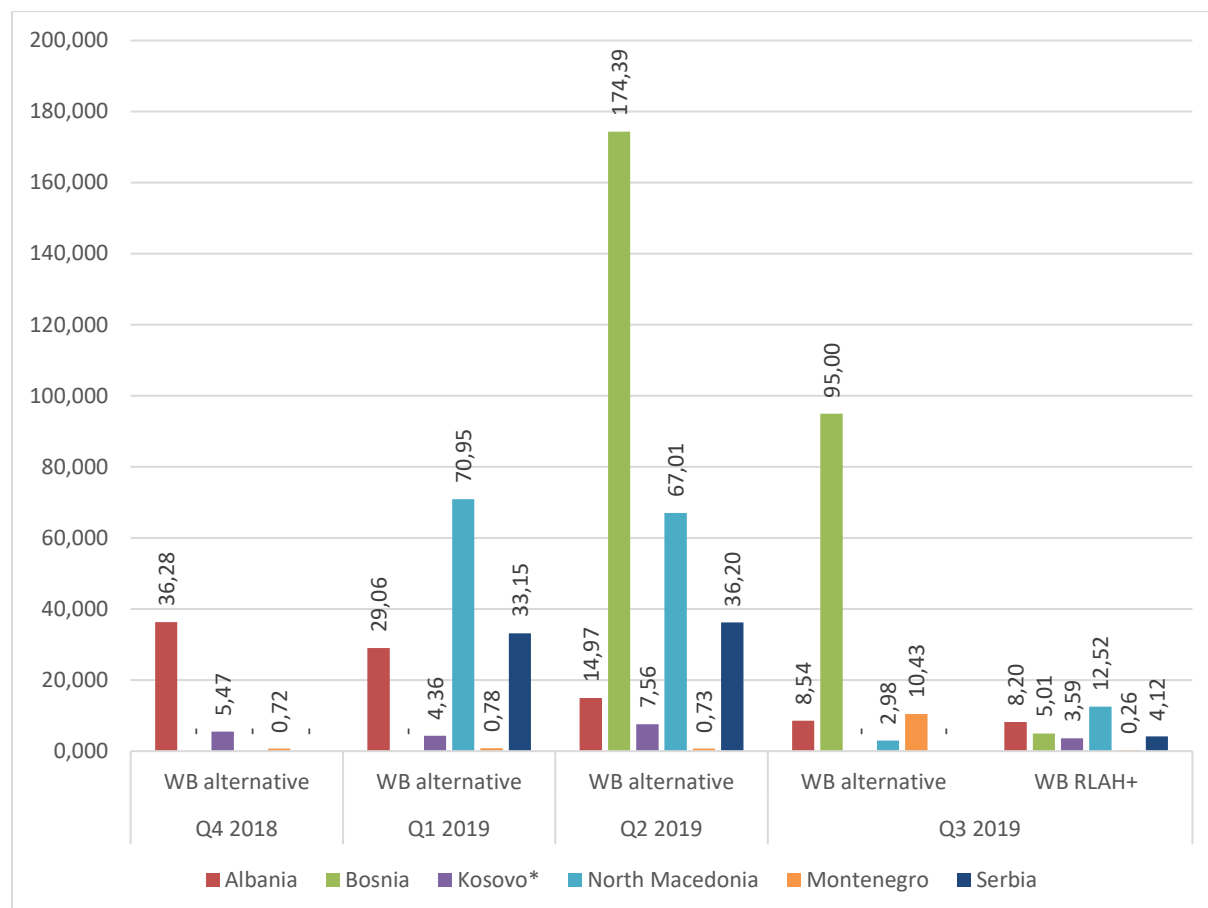
Figure 26: Average retail roaming revenues per SMS, in Euro (within RoW countries)¹⁵

¹⁵ 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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

5.4 Average retail roaming revenues per GB

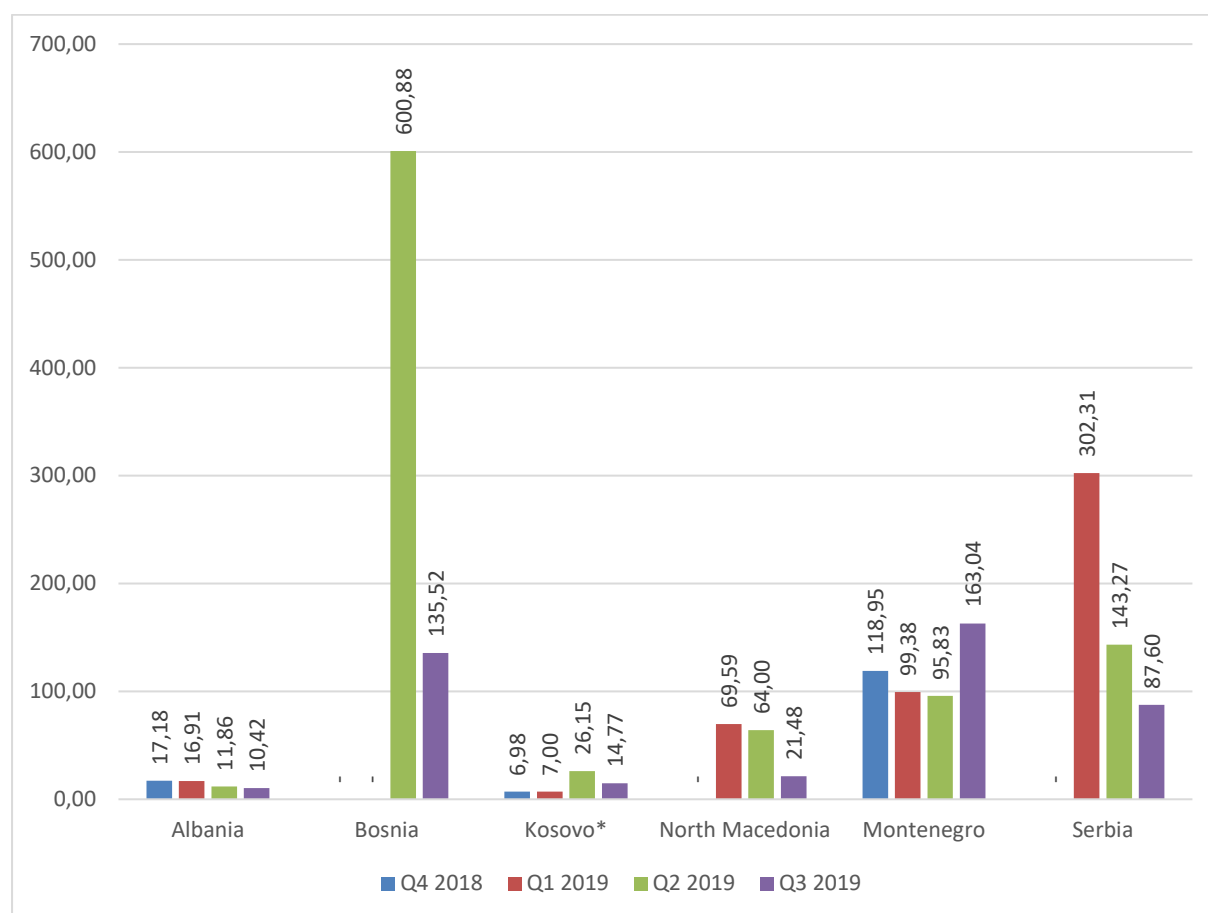
Figure 27: Average retail roaming revenues per GB, in Euro (separately for WB alternative and WB RLAH+ tariffs)¹⁶



¹⁶ 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 in Q3 2019 as “WB alternative” is therefore a very different category from the same category in the previous quarters.

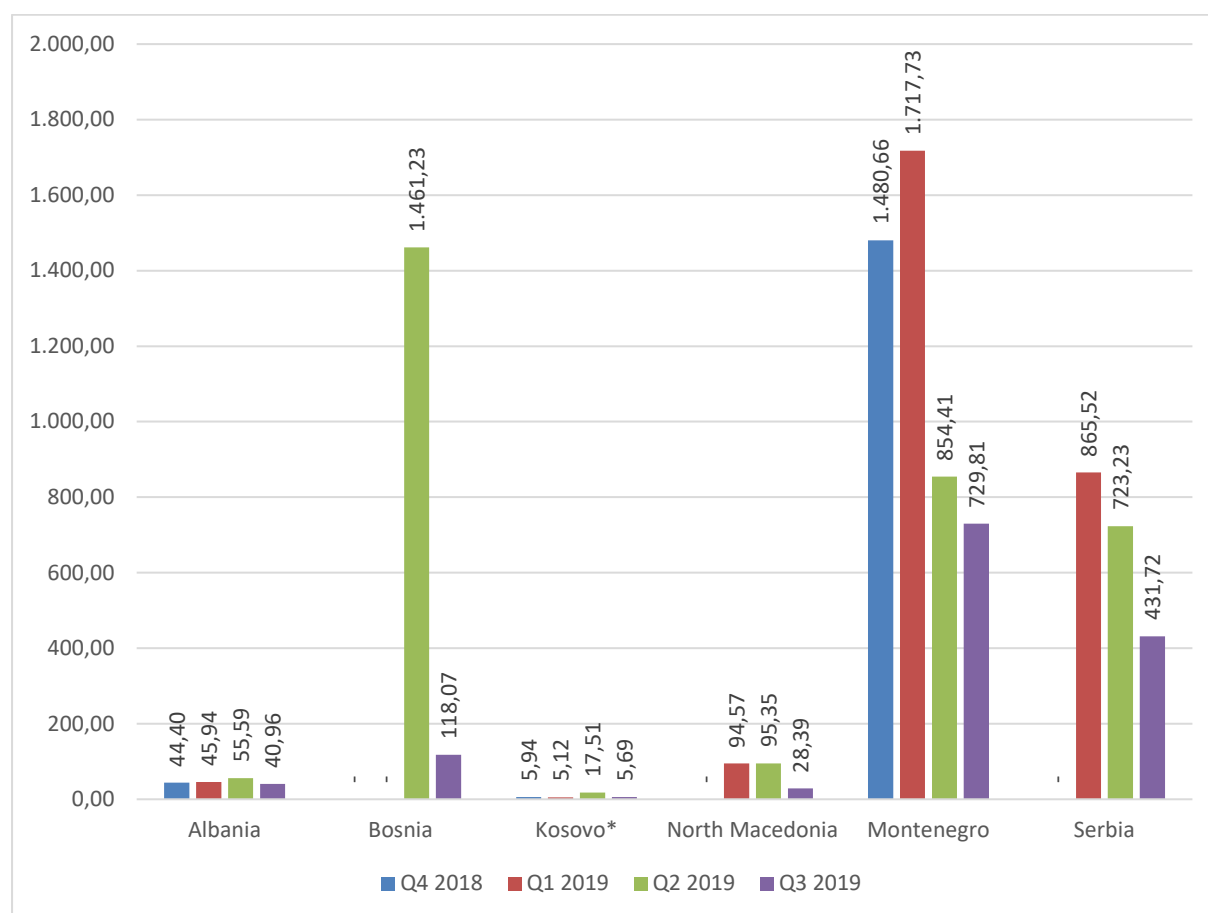
Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

Figure 28: Average retail roaming revenues per GB, in Euro (within EEA countries)¹⁷

¹⁷ 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. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

Figure 29: Average retail roaming revenues per GB, in Euro (within RoW countries)¹⁸

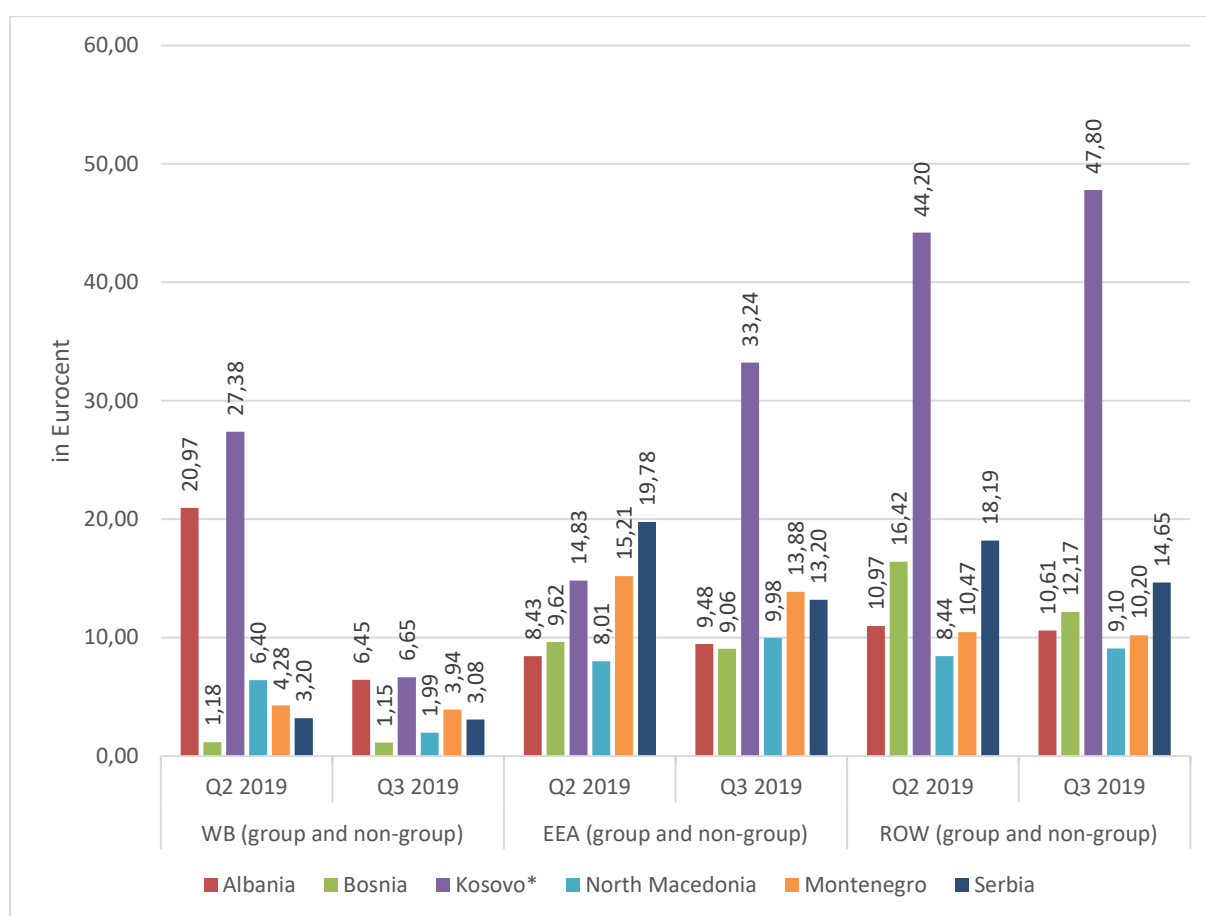
¹⁸ Albania: Due to a high prevalence of retail roaming bundles, drivers were used to split the values provided for retail roaming revenues from bundles into categories. Q4 2018 and Q1 2019 estimations are based on data submitted by two out of three operators.

Serbia: The submitted revenues do not include tariff add-ons.

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)

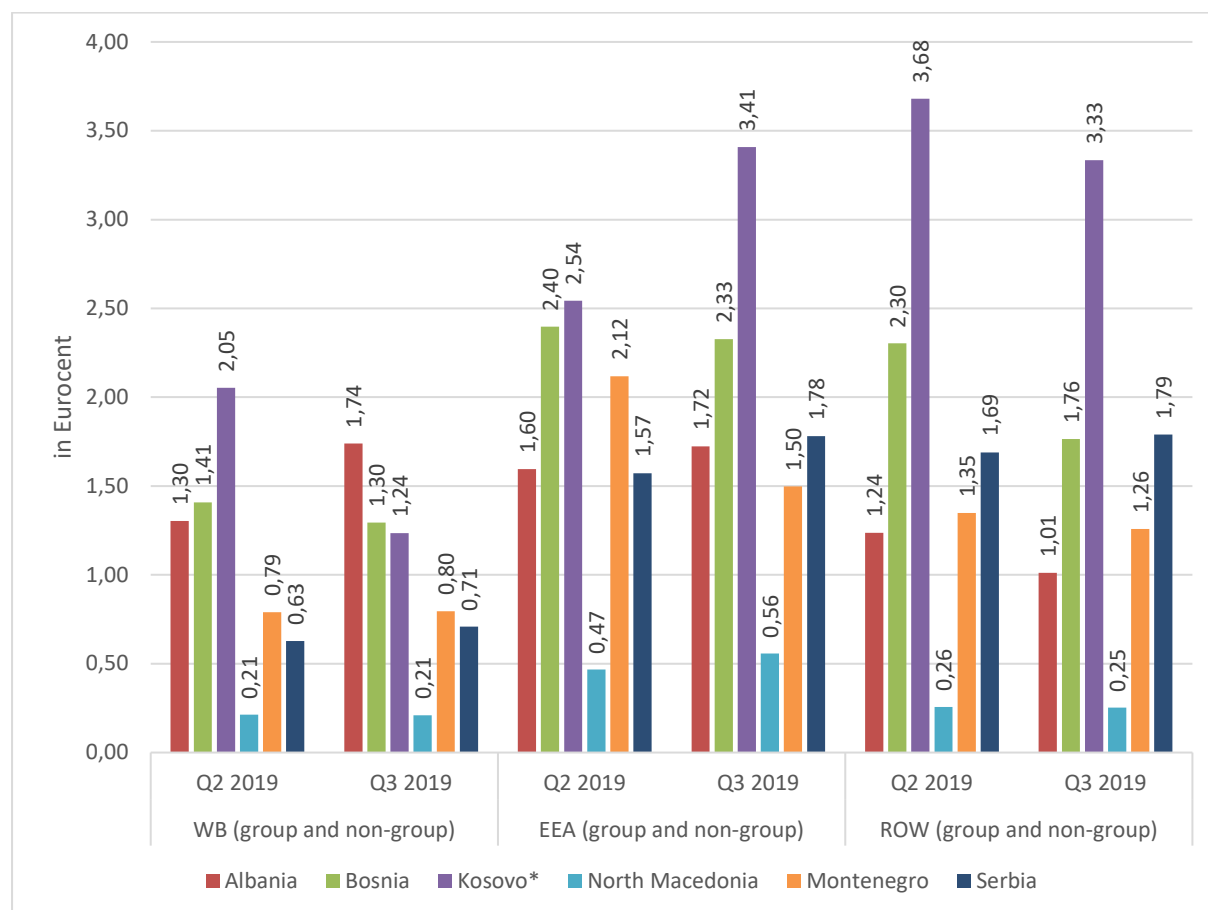
Figure 30: Average Wholesale voice roaming services: wholesale revenues per minute (group and non-group) in Eurocent (separately within WB region, from EEA countries and from RoW countries)¹⁹



¹⁹ Serbia: Two of three operators submitted data for Q2 2019.

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

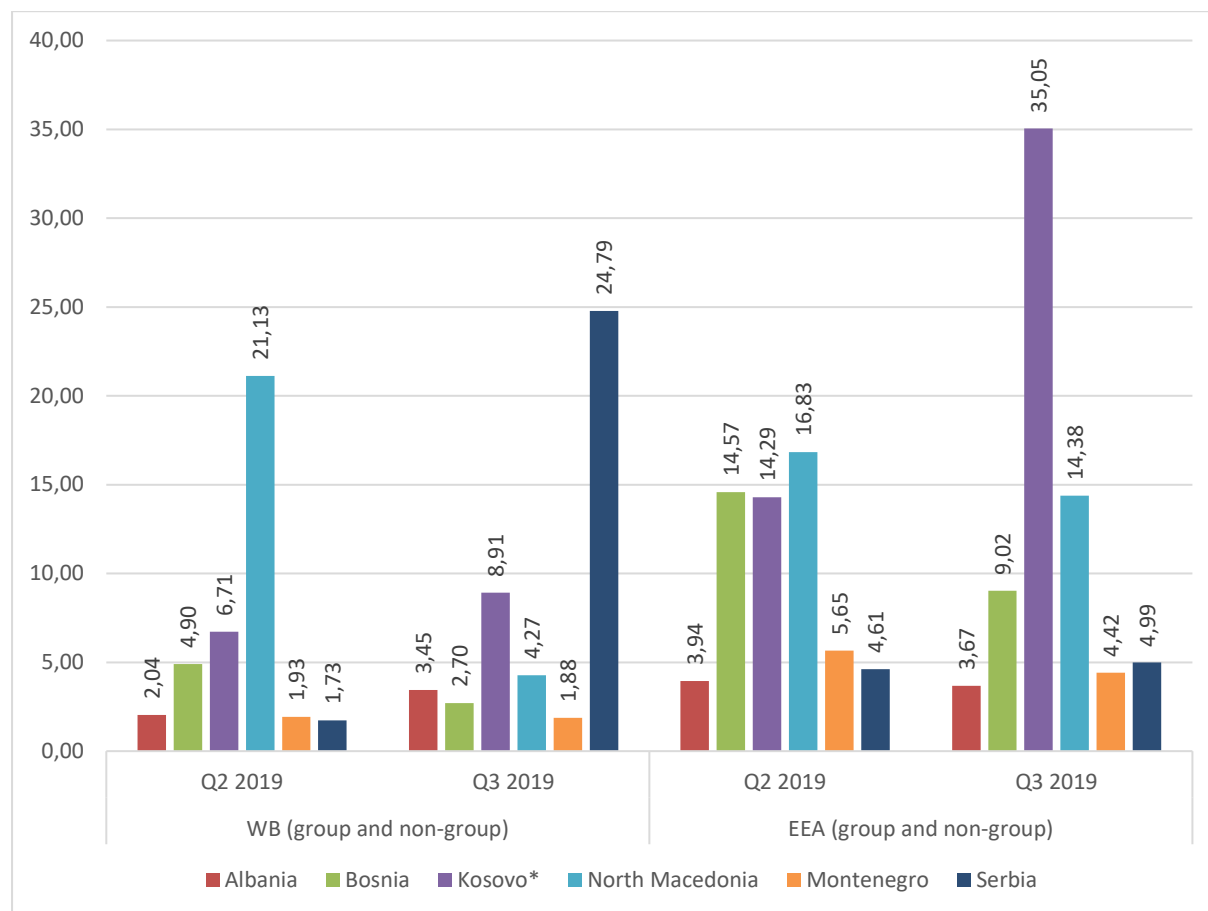
Figure 31: Average Wholesale SMS roaming services: wholesale revenues per SMS (group and non-group) in Eurocent (separately within WB region, from EEA countries and from RoW countries)²⁰



²⁰ Serbia: Two of three operators provided data for Q2 2019.

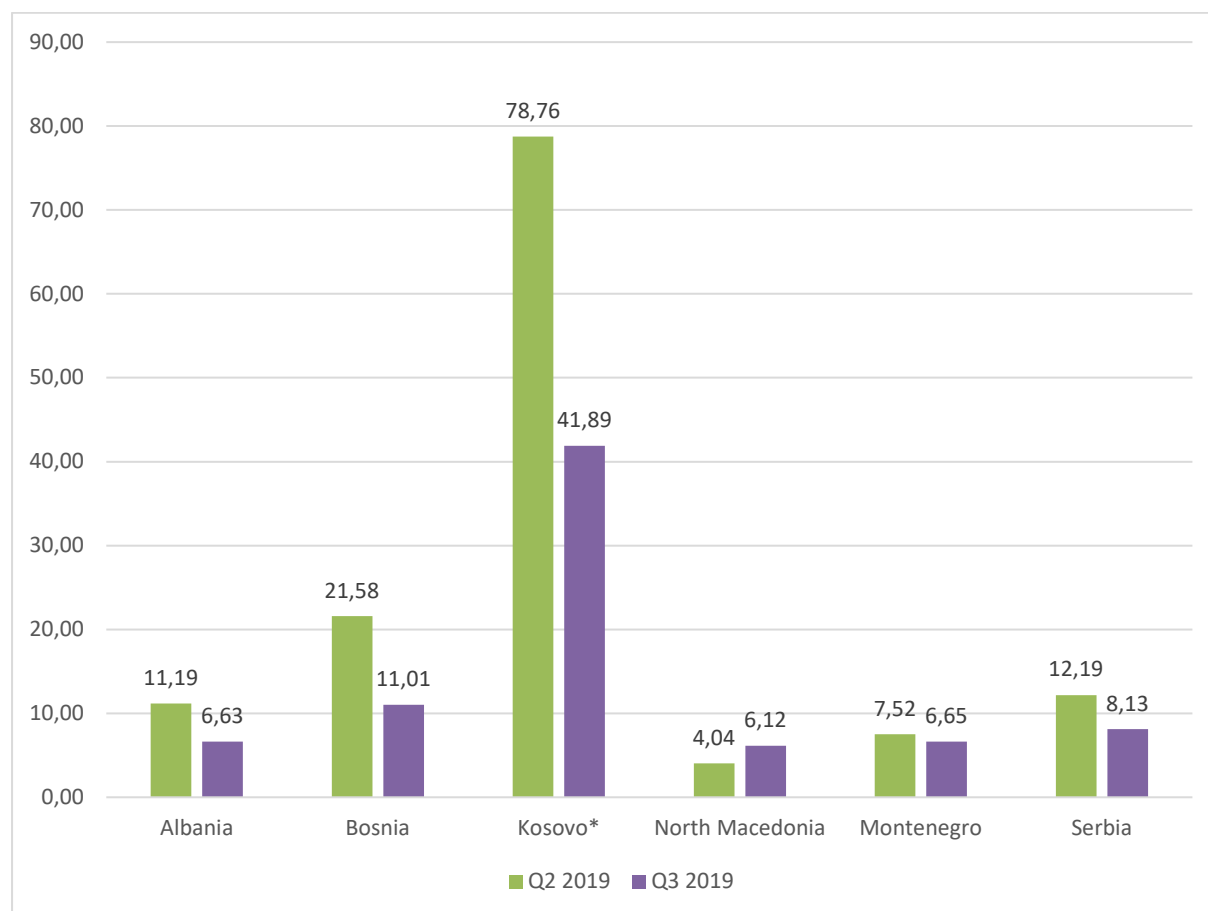
6.3 Wholesale data roaming services: wholesale revenues per GB

Figure 32: Wholesale data roaming services: wholesale revenues per GB in Euro (separately within WB region and from EEA countries)²¹



²¹ Serbia: Two of three operators provided data for Q2 2019.

Figure 33: Wholesale data roaming services: wholesale revenues per GB in Euro (from RoW countries)²²



²² Serbia: Two of three operators submitted data for Q2 2019.

7 Annex

The following chapter contains a list of operators who submitted data to their respective NRAs.

Albania

Vodafone Albania

Telekom Albania

Albtelecom

Bosnia

BH Telecom d.d. Sarajevo

BLICNET d.o.o. Banja Luka

DASTO SEMTEL d.o.o. Bijeljina

JP HRVATSKE TELEKOMUNIKACIJE
d.d. Mostar

LOGOSOFT d.o.o. Sarajevo

TELEKOM SRPSKE a.d. Banja Luka

TELRAD NET d.o.o. Bijeljina

Kosovo*

Telecom of Kosovo JSC

IPKO Telecommunications LLC

Dardafon.net LLC

Montenegro

Telenor

Crnogorski

Telekom

Mtel

North Macedonia

Makedonski Telekom

A1 Macedonia

TRD Robi

Lycamobile Macedonia

Serbia

Telekom Srbija

Telenor

Vip mobile