

**International Roaming
BEREC Benchmark Data Report
January 2011 – June 2011**

October 2011

Content

Executive summary.....	3
Introduction	7
Overall data summary.....	11
Further issues	38
Annex 1	43
List of respondents.....	43

Section 1

Executive summary

- 1.1 This BEREC Benchmark Report on International Roaming (the “Report”) presents the results of the eighth round of data collection on European international roaming services undertaken by the Body of European Regulators for Electronic Communications (BEREC). The Report covers the period 1 January 2011 – 30 June 2011, i.e. quarter 1 quarter 2 2011. The Report also includes data from previous rounds of data collection conducted by BEREC and its predecessor, the European Regulators Group (ERG), to provide context for the current figures. The earliest data is from quarter 2 2007, when regulation was about to enter into force.
- 1.2 Regarding the applicable regulatory framework for this data collection, the amended Roaming Regulation (EC) No 544/2009¹ applied in the EU and the EEA EFTA countries², with requirements for retail and wholesale regulated tariffs for voice and SMS roaming, and a wholesale regulated tariff for data roaming. As regards previous quarters included for comparison, it should be noted that from quarter 3 2009 to quarter 1 2010, Regulation 544/2009 applied in the EU while the first Roaming Regulation (EC) No 717/2007 remained in force in Norway, Iceland and Liechtenstein, with slightly higher voice caps, no SMS caps and no wholesale data cap.

BEREC Benchmark Report on International Roaming

- 1.3 This and subsequent Reports will provide information on the evolution of wholesale and retail prices for voice, SMS and data roaming services. The Reports are intended to provide a sound evidence base for the legislative process following the Commission’s July 2011 Report and proposal for a new Regulation³.
- 1.4 The information gathered by BEREC continues to suggest good level of compliance with the current Roaming Regulation in all EU Member States. At the retail level, all consumers have access to a Eurotariff and a Euro-SMS tariff. At the wholesale level, the voice, SMS and data roaming charges set between operators are in line with the declining regulated average caps. In this collection, some countries reported average prices that were around €0.001 above the regulated cap, but in a couple of cases up to €0.01 above the cap. The NRAs concerned have checked compliance with the Regulation by their operators. In some cases, the situation seems to have been caused by inaccuracies in reporting for the data collection itself. In a few instances, the NRA has launched a compliance investigation to gather further information on the possible reasons for this reported price. BEREC will monitor this issue closely.

¹<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:167:0012:0023:EN:PDF>

² For the purposes of this Report, ‘EEA EFTA’ refers to Norway and Iceland. Data from Liechtenstein was not available. Figures from Switzerland are excluded from both “EEA” and “EEA EFTA” averages.

³http://ec.europa.eu/information_society/activities/roaming/index_en.htm

1.5 During the data collection period, the applicable caps were⁴:

Service and Price Cap (ex VAT)	Q1– Q2 2011
Wholesale voice (€/minute)	22
Eurotariff voice (making call) (€/minute)	39
Eurotariff voice (receiving call) €/minute)	15
Wholesale SMS (€/SMS)	4
Euro-SMS sent (€/SMS)	11
Euro-SMS received (€/SMS)	0
Wholesale data (€/MB)	80

- 1.6 In general, average Eurotariff retail voice roaming rates (see Figures 1 and 2) remained fairly near the regulated caps in most EU Member States during the data collection period. For calls made, the EU average Eurotariff was €0.359 in Q1 2011, and €0.354 for Q2 2011, compared to a cap of €0.39 (i.e. on average 4 - 5 cents less than the cap). In Q1 and Q2 2011, the EU average unregulated voice tariff for calls made (Figures 1 and 2) was lower than during the equivalent period of 2010 (€0.404 and €0.390, compared to €0.410 and €0.406 in Q1 and Q2 2010).
- 1.7 The EU average Eurotariff rate was nearer the cap for calls received at €0.129 during Q1 2011 and €0.126 in Q2 2011, compared to a cap of €0.15. For calls received, unregulated prices were also lower in Q1 and Q2 2011 than in 2010 (€0.157 and €159, compared to €0.181 and €0.180 in the same periods in 2010).
- 1.8 As can be seen in Figure 4, the nature of the difference in the average EEA price for regulated and unregulated voice prices has changed over time. EEA average unregulated prices drew closer to average regulated prices in Q1 – Q2 2011, while remaining slightly higher, especially for calls received. Nonetheless, there remains a notable variation in the average price for individual countries for unregulated voice tariffs.
- 1.9 Regarding the effects of billing unitisation for Eurotariff calls (Figure 9), the 2009 amended Regulation requires per second billing for Eurotariff calls made, with the possibility of up to a 30 second minimum initial charging period to cover the costs of setting up the call. This has led to a significant drop in the EU average surcharge for calls made, from around 27% in Q2 2009 to around 6% in Q1 2011 and Q2 2011. The Regulation requires per second billing only for Eurotariff calls received, to result in a surcharge of 0%, from around 18% before the 2009 Regulation.
- 1.10 At the wholesale level (Figures 10 and 12), average voice prices are below the regulated wholesale cap of €0.22, with an EU average of €0.183 for Q1 and Q2 2011.

⁴Not applicable to Switzerland

- 1.11 Under the 2009 Regulation, the average wholesale voice charge must be aggregated on a per second basis, adjusted to take account of the possibility for the operator of the visited network to apply an initial minimum charging period not exceeding 30 seconds. This has led to a significantly lower surcharge (Figure 11) in EU countries, from around 24% in Q2 2009 to around 5% in Q1 and Q2 2011.
- 1.12 Considering 'Rest of World' retail voice roaming calls (Figures 7 and 8), typical prices are significantly greater than for calls within EU countries. Comparing the same quarters of 2010 and 2011, while there is no consistent trend in average country prices for calls made or received, the average for all EU-based providers has decreased. There are no clear indications that operators have tended to raise the prices of unregulated 'Rest of World' roaming calls to make up for lost revenue due to the regulated price caps.
- 1.13 The introduction of the Euro-SMS in the EU in accordance with the 2009 Regulation has led to an EU average Euro-SMS price (Figures 13 and 14) of around €0.10 in Q1 - Q2 2011, compared to a regulated cap of €0.11. The EU average price for unregulated SMS is higher at around €0.12 - €0.13 (Q1 and Q2 2011). Before the 2009 Regulation, the EU average SMS price was around €0.27 - €0.24 (Q1 - Q2 2009).
- 1.14 At the wholesale level, the 2009 Regulation has led to a reduction in the average EU SMS price (Figure 17) to near the level of the cap €0.038. In comparison, the EU average price was €0.148 - €0.140 in Q1 - Q2 2009, before the 2009 Regulation came into force.
- 1.15 Regarding EU volumes of voice and SMS roaming services (Figure 16), there is a similar trend for both services, which is largely seasonal with a peak in Q3 of each year, but with a significantly larger growth in volumes for SMS sent (up around 85% in Q2 2011 compared to Q4 2008). For voice, there is slightly higher growth for voice calls received than for calls made.
- 1.16 Considering data roaming services, EU average off-net retail prices (Figures 18 and 21, meaning prices charged where the home network and foreign host network are not owned by companies within the same group) continue to follow the downward trend noted in previous Reports, to €2.18 (prepaid) and €2.03 (postpaid) in Q2 2011 per MB. There is a considerable difference between EU average on-net and off-net data roaming prices, where on-net is cheaper. Meanwhile the difference between average prepaid and postpaid prices has narrowed. There are variations at individual country level and between operators, although these appear to be getting smaller as prices come down.
- 1.17 At the wholesale level, an average data cap of €0.80 applies in the EU in accordance with the 2009 Regulation. The EU average price for non-group wholesale data (Figure 21) has fallen to €0.360 per MB in Q2 2011, compared with an EU average of €1.77 in Q2 2009, just before the Regulation came into effect.
- 1.18 This data collection found continued growth in EU volumes of roaming data services (Figure 19), which were around 170% higher in Q2 2011 than in Q2 2009.
- 1.19 In response to the data collection, no operators reported circumstances under which traffic steering can lead to consumers paying higher rates for roaming. No significant problems of inadvertent roaming were identified by operators.

Evidence of market forces at work

- 1.20 For voice roaming services, average EEA prices are near the regulated caps. Although unregulated voice calls remain slightly more expensive than the Eurotariff average, the difference narrowed during this collection. There remains a significant variation between countries.
- 1.21 For SMS, the 2009 amended Regulation brought a significant reduction in the average price for regulated and unregulated SMS. Since the Regulation came into force, average wholesale and Euro-SMS retail prices have remained near the caps. EU average prices for unregulated retail SMS are also near the price of Euro-SMS, although in some countries they are significantly higher.
- 1.22 The picture is different for EEA data roaming, where average wholesale and retail charges have fallen significantly between Q4 2007 and Q2 2011. There was a noticeable slowing in the reduction in prices in late 2009 and early 2010, although the rate of decrease picked up in this collection. EU average retail off-net prices fell between Q2 2010 and Q2 2011 by 27%. This data collection also found a continued drop in EU average charges for wholesale non-group data roaming of around 27% between Q2 2010 and Q2 2011. The average wholesale price is well below the regulated cap but still higher than the (conservative) BEREC cost estimates⁵.
- 1.23 BEREC notes that a sizeable margin remains between the average wholesale and retail prices. While the difference between average non-group wholesale and off-net retail rates has narrowed in relative and absolute terms in the past year, it remains significant (with retail representing a 429% or €2.097 margin over the wholesale rate in Q2 2010, and 428% or €1.539 in Q2 2011).
- 1.24 In its December 2010 Report and its February 2011 response to the Commission's public consultation to inform the Commission's review of the functioning of the 2009 Regulation and future regulatory options⁶, BEREC identified some arguments to support the proposition that market forces are stronger for data roaming than for voice and SMS. In the consultation response, it concluded that: 'In the longer term, retail data roaming could become a reasonably competitive market, given that there are partial substitutes (e.g. via WiFi access), which provide competitive pressure. Subject to a review of tariff developments in the first half of 2011, while retail data roaming seems relatively unlikely to become fully competitive during the Commission's time horizon (up to 2015), it is a reasonable longer-term expectation'.
- 1.25 BEREC has undertaken to study the trends in wholesale and retail data roaming prices closely in its Benchmark Reports, in particular to see to what extent lower wholesale prices are passed through to the retail level within a reasonable time period, and how well market forces are working. This can be used to inform consideration of the Commission's July 2011 proposals for a new Regulation⁷ during the negotiations process⁸.

⁵ BoR (11) 46 BEREC Analysis of the European Commission's Proposal for a Regulation on Roaming COM(2011)402 of 6 July 2011, document available on the website:

http://berec.europa.eu/documents/berec_docs/index_en.htm#board

⁶ See http://erg.eu.int/doc/berec/bor_10_58.pdf and http://erg.eu.int/doc/berec/bor_11_09.pdf.

⁷ http://ec.europa.eu/information_society/activities/roaming/index_en.htm

⁸ http://ec.europa.eu/information_society/activities/roaming/index_en.htm

Section 2

Introduction

- 2.1 The European Regulators Group (ERG) worked on the long-standing issue of high prices for international roaming services. Following its creation in January 2010, the Body of European Regulators in Electronic Communications (BEREC) has taken over responsibility for this work from ERG.

The 2007 Regulation

- 2.2 In 2005, ERG undertook a study of international roaming that concluded that the EC Regulatory Framework did not provide the necessary tool-kit for NRAs to tackle the problems identified. ERG wrote to the Commission in December 2005 highlighting its concerns.
- 2.3 On 8 February 2006, Commissioner Reding announced an intention to regulate international roaming services with a “call for input” on how this might be undertaken⁹. ERG responded¹⁰ to the Commission’s proposals.
- 2.4 After significant debate, the first Regulation on international roaming services was published on 29 June 2007. The primary provisions capped wholesale and retail charges voice calls and set a number of transparency provisions to help to ensure that consumers were well informed. The provisions of the Regulation entered into force at different times, with retail and transparency provisions taking full effect by the end of September 2007 and wholesale provisions calculated annually from the end of August 2007.

The 2009 amended Regulation

- 2.5 On 7 May 2008, the Commission launched a public consultation on the functioning of the 2007 Regulation. ERG’s¹¹ views expressed in response to the consultation were substantially reflected in the Commission’s legislative proposals,¹² published on 23 September 2008, to extend the 2007 Regulation in duration and scope.
- 2.6 On 22 April 2009, the European Parliament adopted Regulation (EC) No 544/2009 at first reading, with a view to amending Regulation (EC) No 717/2007. Subsequently, on 8 June 2009 the Council of EU Telecoms Ministers formally adopted the new EU roaming rules approved by the European Parliament. The definitive text of Regulation (EC) No 544/2009 was published in the Official Journal of the European Union on 29 June 2009¹³.
- 2.7 In particular, the Regulation introduced the following measures, applicable from 1 July 2009 to 30 June 2012:

⁹http://ec.europa.eu/information_society/activities/roaming/roaming_regulation/first_phase/index_en.htm

¹⁰http://www.erg.eu.int/doc/whatsnew/erg_response_22_march_2006.pdf and http://www.erg.eu.int/doc/whatsnew/erg_response_11_may_2006.pdf

¹¹http://erg.eu.int/doc/publications/erg_08_35rev1_resp_intern_roaming_cons_080729.pdf

¹²http://ec.europa.eu/information_society/activities/roaming/docs/regulation/reg_en.pdf

¹³<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:167:0012:0023:EN:PDF>

- extended wholesale and retail price regulation for voice, with a yearly decrease in the level of the caps
- price regulation of SMS roaming services at both the wholesale and retail levels
- safeguard price regulation of data roaming services at the wholesale level

And from July 2010 to July 2012:

- retail transparency measures to protect consumers from “bill shock” when data roaming
- 2.8 On 29 June 2010, the Commission published an interim Report¹⁴ on the functioning of the 2009 Regulation. The Commission’s Digital Agenda for Europe¹⁵ also included a target for roaming, where ‘the difference between roaming and national tariffs should approach zero by 2015’.
- 2.9 In accordance with the 2009 Regulation, BEREC provided advice to the Commission on the functioning of the Regulation and future regulatory options in a December 2010 Report¹⁶, supplemented by its February 2011 response to the Commission’s public consultation¹⁷.
- 2.10 The Commission then published a full review of the functioning of the Regulation and legislative proposals for a new Regulation, in July 2011¹⁸.

This Report

- 2.11 This Report is the eighth in a series of reports, previously produced by ERG, providing an overview of international roaming prices and volumes across the EU. This Report covers the period 1 January 2011 – 30 June 2011.
- 2.12 Individual NRAs are required “...to monitor developments in wholesale and retail charges” for voice roaming services under the 2007 Regulation, and for voice, SMS and data roaming services under the 2009 Regulation(Art. 7(3)). It shall also include information on inadvertent roaming and traffic steering (Art. 11). This monitoring informed the Commissions interim and full reviews of the functioning of the Regulation.
- 2.13 BEREC believes that the information collected in existing and subsequent reports should provide a sound basis for any decisions regarding future regulation. In addition, BEREC considers it important to collect and publish a wider range of information than that explicitly set out in Articles 7 and 11 in order to give a better picture of the effect of the current Regulation and the state of evolution of roaming services.
- 2.14 BEREC has included data from previous reports for comparison. BEREC considers that the data collected from just before the implementation of the 2007 Regulation for voice and the 2009 Regulation for SMS and wholesale data, can serve as a “benchmark” against which data following implementation can be assessed.

¹⁴http://ec.europa.eu/information_society/activities/roaming/docs/interim_report2010.pdf

¹⁵<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>

¹⁶http://erg.eu.int/doc/berec/bor_10_58.pdf

¹⁷http://ec.europa.eu/information_society/activities/roaming/docs/cons11/Berec.pdf

¹⁸http://ec.europa.eu/information_society/activities/roaming/index_en.htm

However, due to the highly seasonal nature of the roaming market, due care must be taken when comparing different periods of time; comparing subsequent periods without taking seasonality into account could lead to invalid conclusions.

- 2.15 While the monitoring obligations are addressed to individual NRAs, ERG and now BEREC considers that it can add value by pursuing the following objectives:
- Simplify the process, not only for NRAs as BEREC acts as a central point for the data collection, but also for the Commission, as the data is received from a single source and following data processing to check it for inconsistencies
 - Coordinate the actions of individual NRAs, as the data collection exercise uses a single and commonly agreed data collection model, and the process is synchronised and based on the same collection periods. BEREC consults the market players and the Commission before finalising the data collection templates
 - As far as possible, provide a common response to the different questions posed during the collection process by operators and NRAs, as BEREC serves as the forum where these questions are commonly debated and addressed
- 2.16 Following publication of previous reports, some operators have provided their NRA with more accurate data for one or more previous periods. These updates have been incorporated into the data used in this Report, which may create some inconsistencies with previous reports. In such cases, the data from the most recent Report takes precedence. Similarly, it is possible that data in this Report might be updated in a subsequent Report.
- 2.17 This Report includes data for Norway and Iceland, where the 2007 Regulation was in force from the end of 2007 to quarter 2 2010, when the 2009 amended Regulation came into effect. An average of the Norwegian and Icelandic data is shown under 'EEA EFTA average'¹⁹. The Report also includes data for Switzerland (where the Regulations do not apply), collected by the Federal Office of Communications on behalf of the Swiss NRA ComCom. Swiss data is not included in either the 'EU average' or the 'EEA EFTA average'.

Methodology for data collection

- 2.18 ERG first consulted on a draft version of its data questionnaire during September 2007. Following comments received, ERG amended the data questionnaire sent to providers²⁰, with an accompanying Explanatory Memorandum, in October 2007. Information gathered as part of this exercise has been used in the formulation of this Report. Market players and the Commission have been informally consulted on subsequent revisions of the template.
- 2.19 The information gathered for this Report covers both retail and wholesale prices and volumes for voice, SMS and data roaming services. In addition, information was

¹⁹For the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland. Data from Liechtenstein was not available. Figures from Switzerland are excluded from both "EEA" and "EEA EFTA" averages.

²⁰http://www.erg.eu.int/doc/publications/erg_07_47_rev1_data_model_spec_roaming_reg.xls
http://www.erg.eu.int/doc/publications/erg_07_47_rev1b_data_model_spec_on_roaming_reg_exp_mem.pdf

gathered on traffic steering and inadvertent roaming. Each NRA aggregated individual provider data to provide a national aggregate to BEREC. Therefore, only national aggregated data appears in this Report.

- 2.20 Over 130 providers of international roaming services provided information for this Report. These include virtually all of the mobile network operators in the EU, as well as a significant number of MVNOs that provide EU roaming services. BEREC estimates that this covers around 95% of EU consumers using international roaming services today.

Format of the Report

- 2.21 The main body of this Report is set out in Section 3 below, which provides an overview of the data gathered to date. Section 4 gives explanations for some “anomalous” results, which in some cases may not be a fair reflection of reality. Annex 1 lists the providers that supplied information to NRAs for inclusion in this Report.

Section 3

Overall data summary

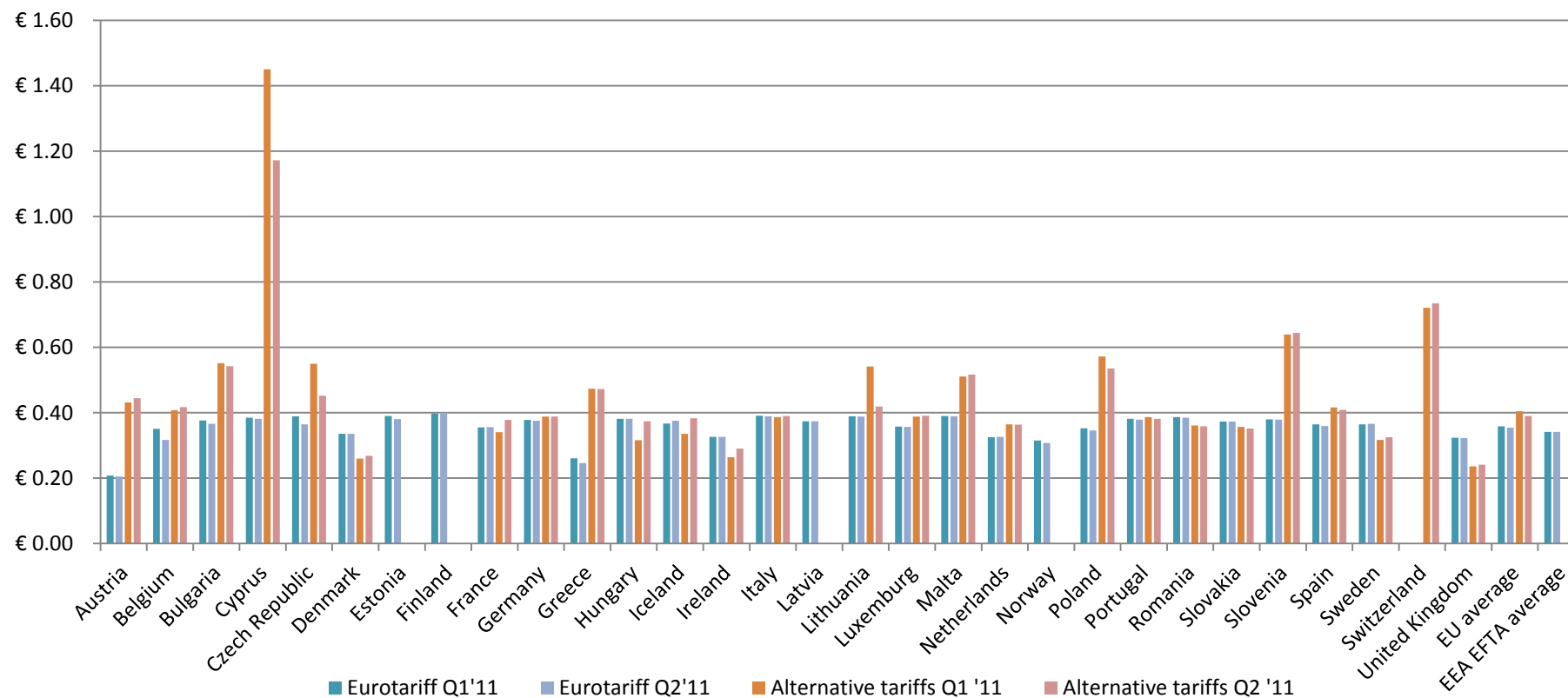
- 3.1 All EU countries took part in this data gathering exercise; Iceland and Norway also participated, given the extension of the 2007 Regulation to those countries from December 2007 and the implementation of the 2009 Regulation in Q2 2010. In addition, Switzerland contributed to this data collection, although the 2007 and the 2009 Regulation are not applicable there²¹. A comprehensive range of information was requested by NRAs from their national providers of international roaming services.
- 3.2 The data presented below represents the results of both the current and previous BEREC and ERG data collections, and provides an overview of international roaming for the period 1 January 2011 to 30 June 2011, split by calendar quarter.
- 3.3 For ease of comparison, all retail prices included in the charts below exclude VAT. They are an average of prices paid by postpaid and prepaid customers, including business users with standard business or consumer tariffs. Prices paid by “special corporate” customers²² are not included. All averages are based on billed minutes of voice calls or billed megabytes of data, unless expressly stated otherwise. Tariff plans with no clients were not taken into account, as there will be no volume or revenue associated with these.
- 3.4 For data services, a distinction is made between group and non-group at the wholesale level and on-net and off-net at the retail level. 'Group' means the data pertains to traffic between entities within the same group where such entities are fully-owned or majority-owned by the group. 'Non-group' traffic is that which does not fall under the group definition. At the retail level, 'on-net' traffic concerns traffic that would be qualified as group traffic at the wholesale level and 'off-net' traffic is the retail equivalent of non-group traffic.
- 3.5 In order to show the impact of the 2009 amended Roaming Regulation, which had entered into force in the EU in Q2 2009 but was implemented in the EEA EFTA countries during Q2 2010, this Report contains separate averages for the EU and the EEA EFTA countries in some Figures.

²¹ For the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland. Data from Liechtenstein was not available. (Figures from Switzerland are excluded from “EEA” and “EEA EFTA” averages.

²² This means undertakings that have negotiated a bespoke tariff for international roaming that is not available to individual customers.

Retail voice

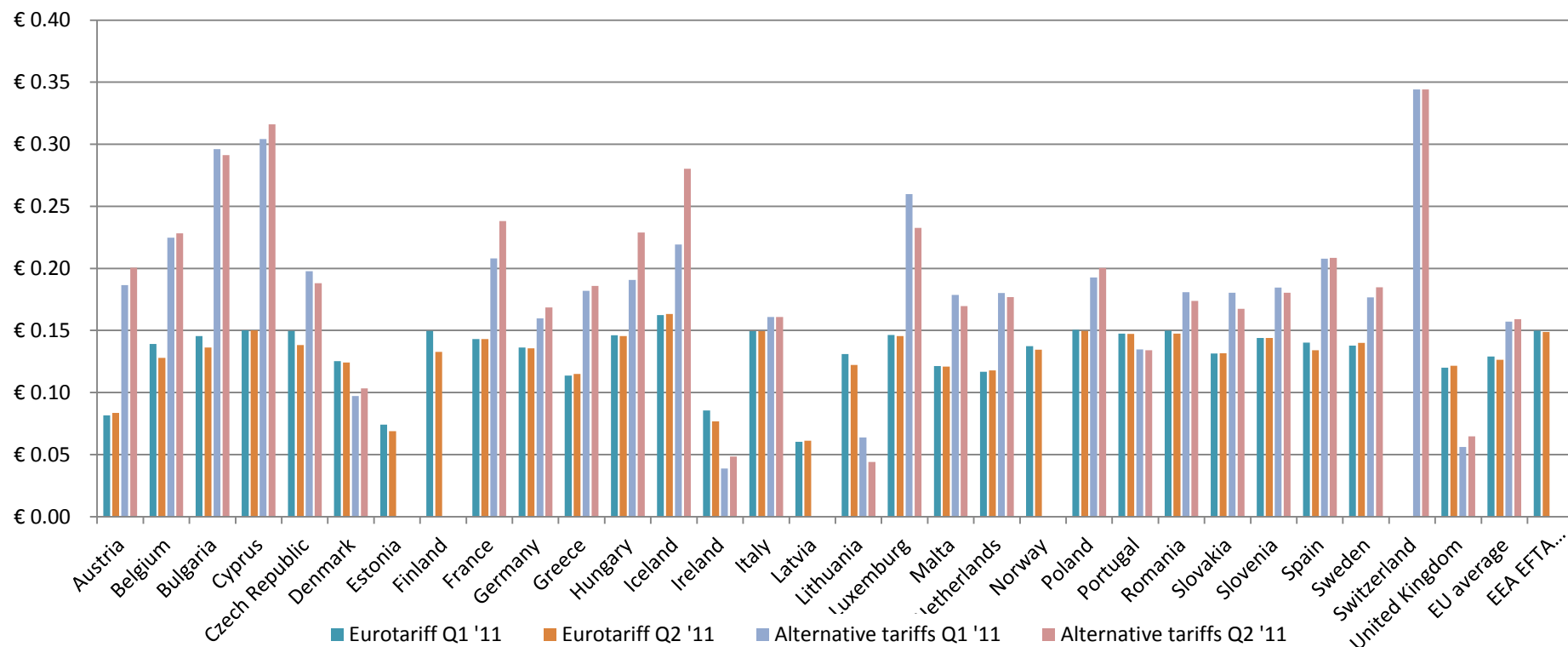
**Figure 1: Average retail price per minute for intra-EEA roaming voice calls made:
Eurotariff and alternative tariffs**



EU average: Eurotariff Q1 2011 = € 0.359; Eurotariff Q2 2011 = € 0.354; Alternative tariffs Q1 2011 = € 0.404; Alternative tariffs Q2 2011 = € 0.390

While the average Eurotariff varies between countries, the EU average is around 4 cents below the regulated cap of € 0.39. On average the Eurotariff offered a slightly better deal for calls made than alternative tariff plans.

Figure 2: Average retail price per minute for intra-EEA roaming voice calls received: Eurotariff and alternative tariffs



EU average: Eurotariff Q1 2011 = € 0.129; Eurotariff Q2 2011 = € 0.126; Alternative tariffs Q1 2011 = € 0.157*; Alternative tariffs Q2 2011 = € 0.159*

For calls received, the Eurotariff offered a better deal than alternative tariffs in most countries. The EU average for the Eurotariff was below the regulated Eurotariff cap of € 0.18 (difference of around 5€c), while the EU average alternative tariffs was above regulated cap in Q1 2011 and in Q2 2011.

*The German average for alternative tariffs has been calculated based on actual minutes instead of billed minutes; see Section 4.

Figure 3: EEA average retail price per minute for intra-EEA roaming voice calls made : Eurotariff and alternative tariffs (EU only for Q2 2009 - Q1 2010)*

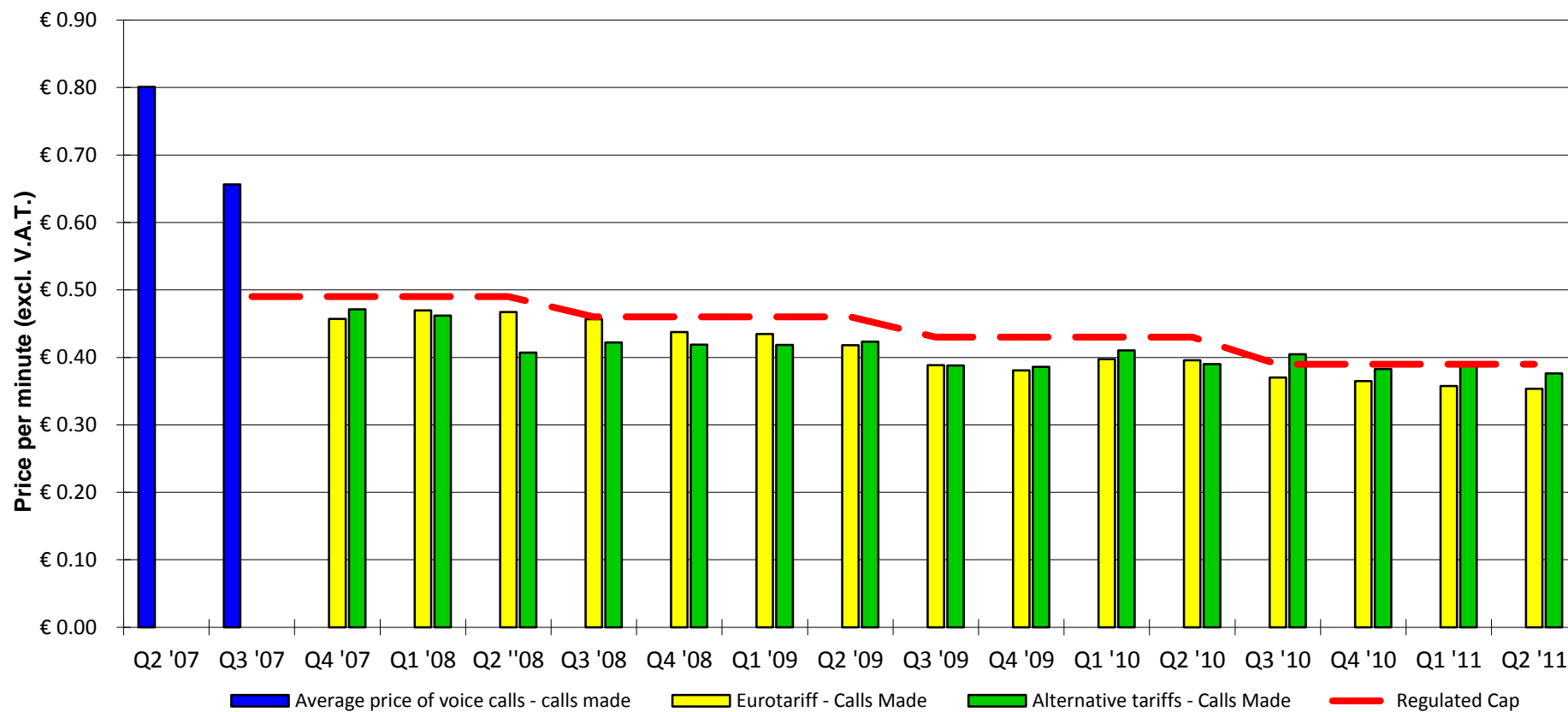


Figure 3 demonstrates how the EEA average price for calls made has evolved since introduction of the Regulation in Q3 2007. The Eurotariff averages are consistently below the Eurotariff cap. The average price of the Eurotariff and alternative voice tariffs have varied over time but fallen overall.

Figure 4: EEA average retail price per minute for intra-EEA retail roaming voice calls received: Eurotariff and alternative tariffs (EU only for Q2 2009 - Q1 2010)*

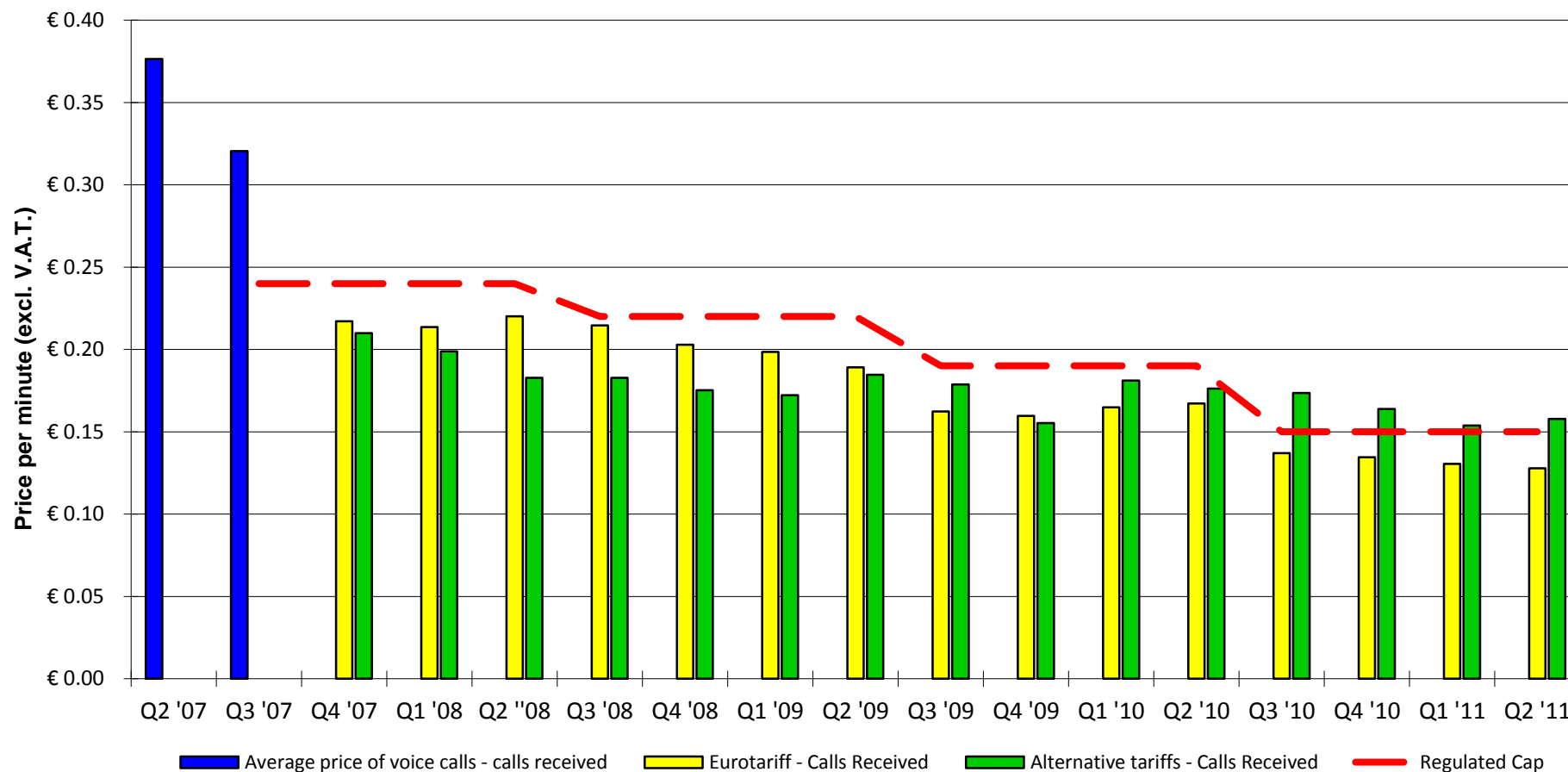
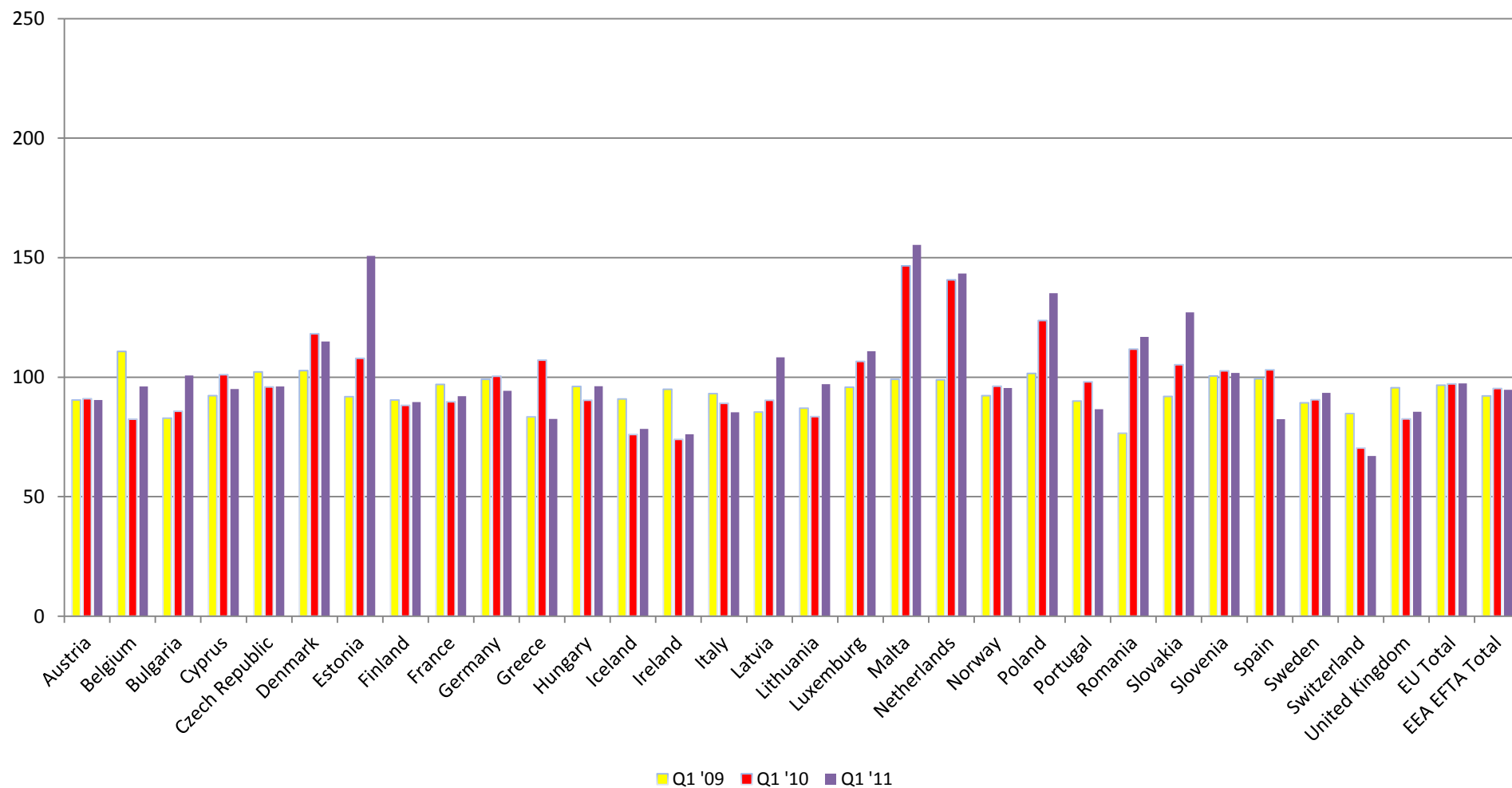


Figure 4 is similar to Figure 3, but for calls received. Originally, average prices for alternative tariffs were consistently lower than average Eurotariff prices. This changed in early 2010, when average alternative prices became higher than the Eurotariff cap. Alternative prices have started decreasing but still remain above Eurotariff prices and price cap.

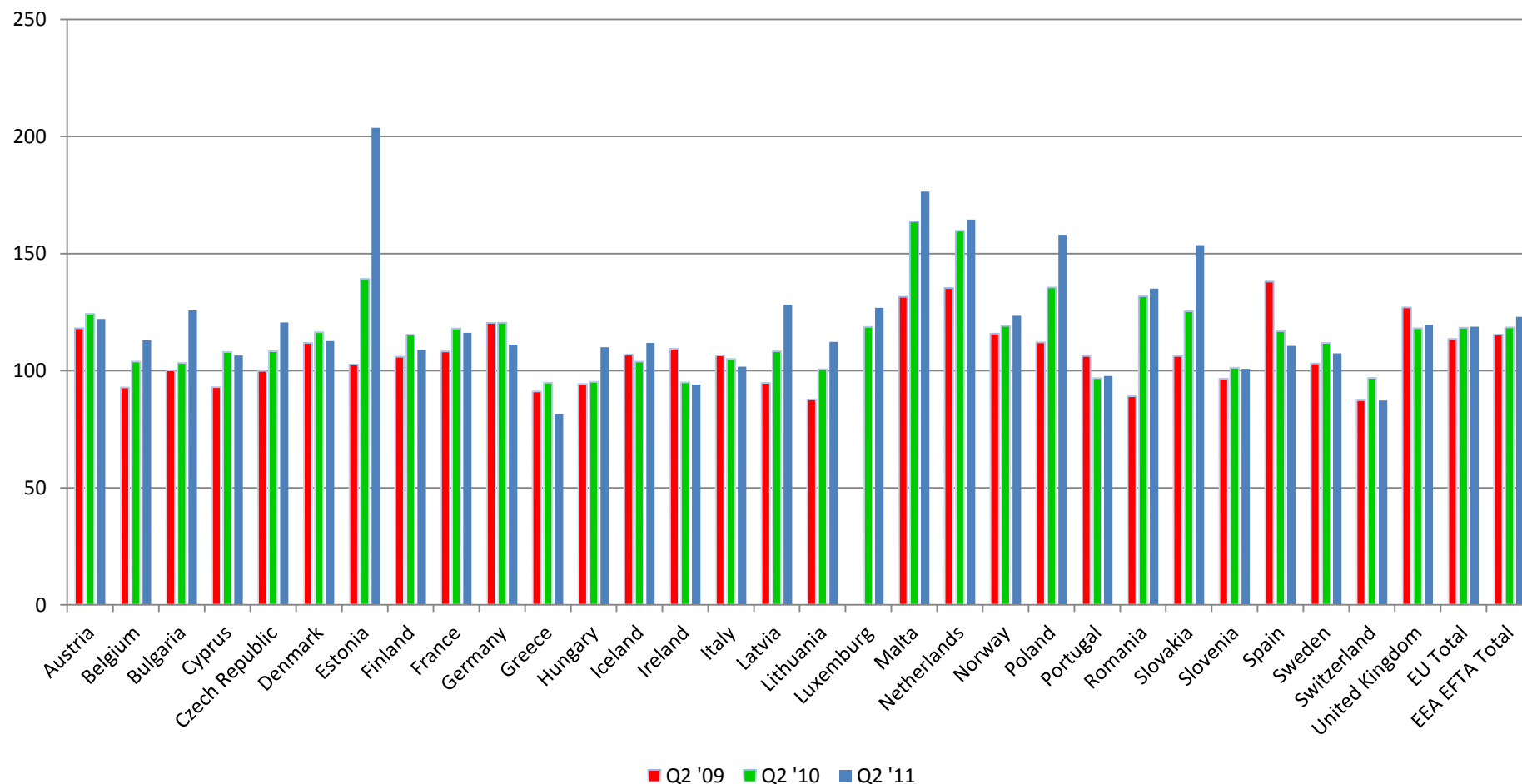
**Figure 5a: Volumes of intra-EEA roaming calls made
(Actual minutes, Q4 2008 = 100)**



EU average: Q1 2009 = 96.648; Q1 2010 = 97.175; Q1 2011 = 97.41.

For Q1, the country averages follow no clear trend year on year, while the overall averages are stable.

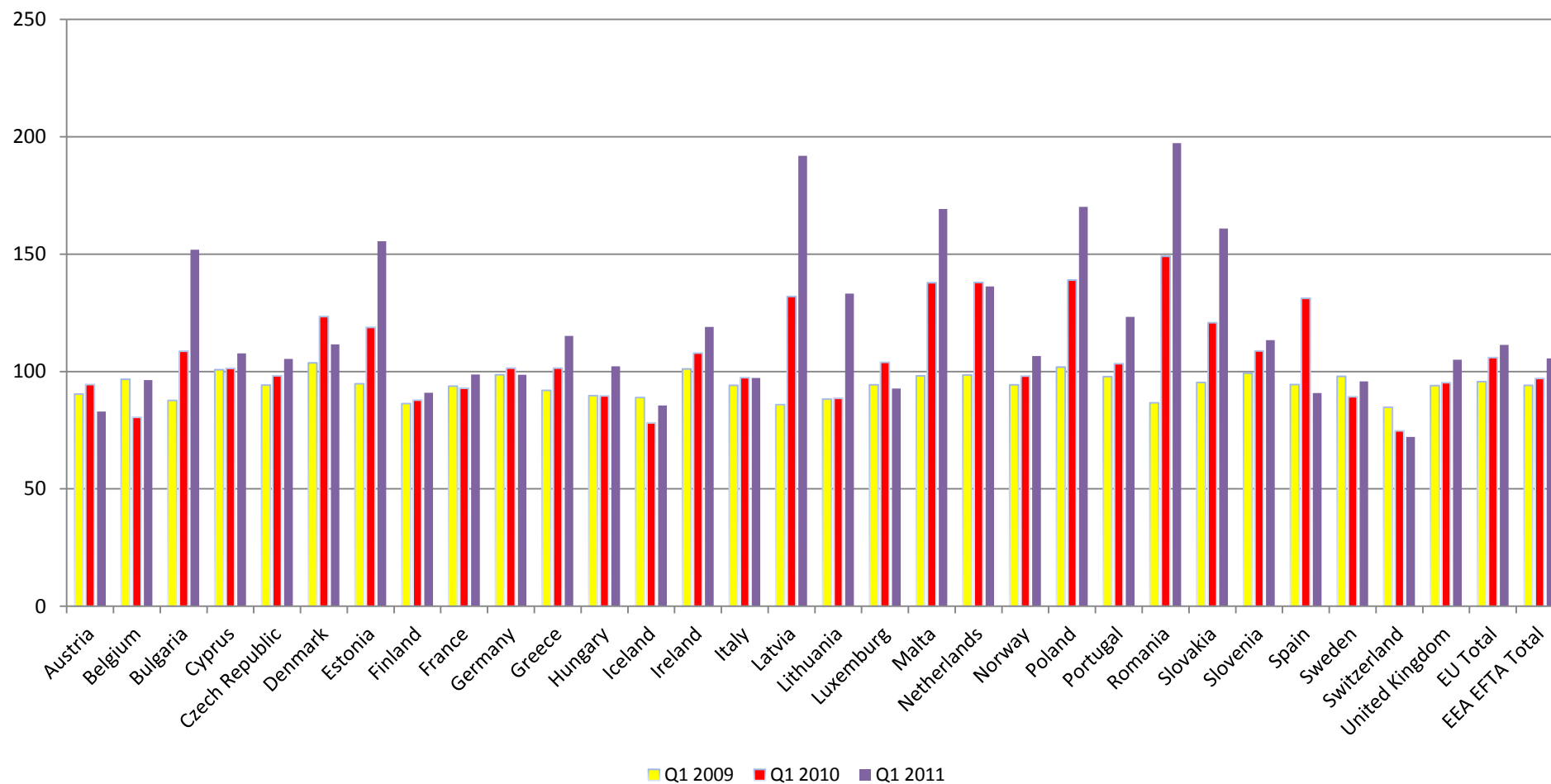
**Figure 5b: Volumes of intra-EEA roaming calls made
(Actual minutes, Q4 2008 = 100)**



EU average: Q2 2009 = 113.584; Q2 2010 = 118.374, Q2 2011 = 118.78

The same picture can be seen in Q2: the country averages follow no clear trend year on year, while the overall averages are stable.

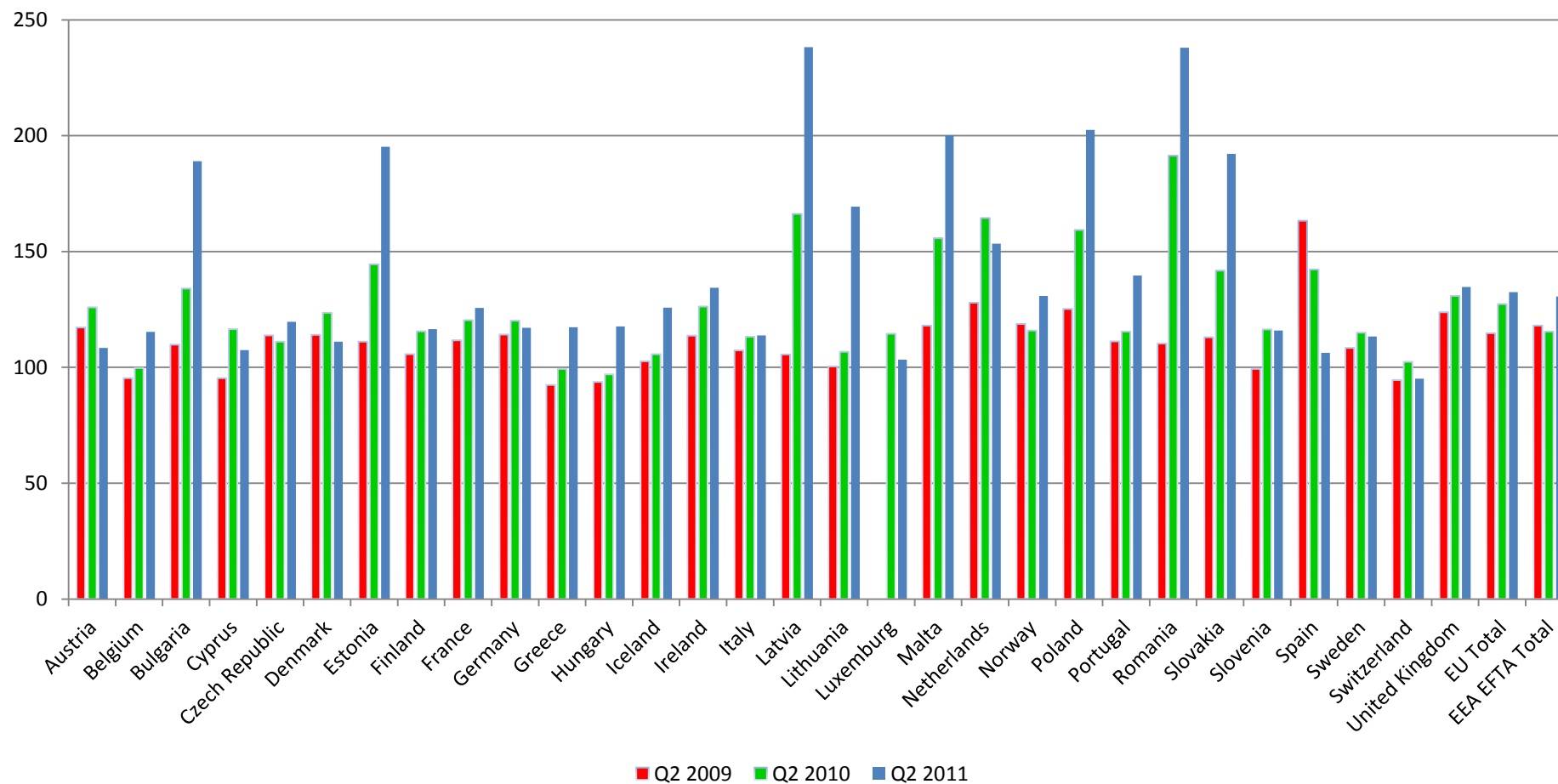
**Figure 6a: Volumes of intra-EEA roaming calls received in Q1
(Actual minutes, Q4 2008 = 100)**



EU average: Q1 2009 = 95.713; Q1 2010 = 105.950; Q1 2011 = 111.33

For Q1 calls received, most countries reported an increase year on year, with a few reporting strong increases in 2011.

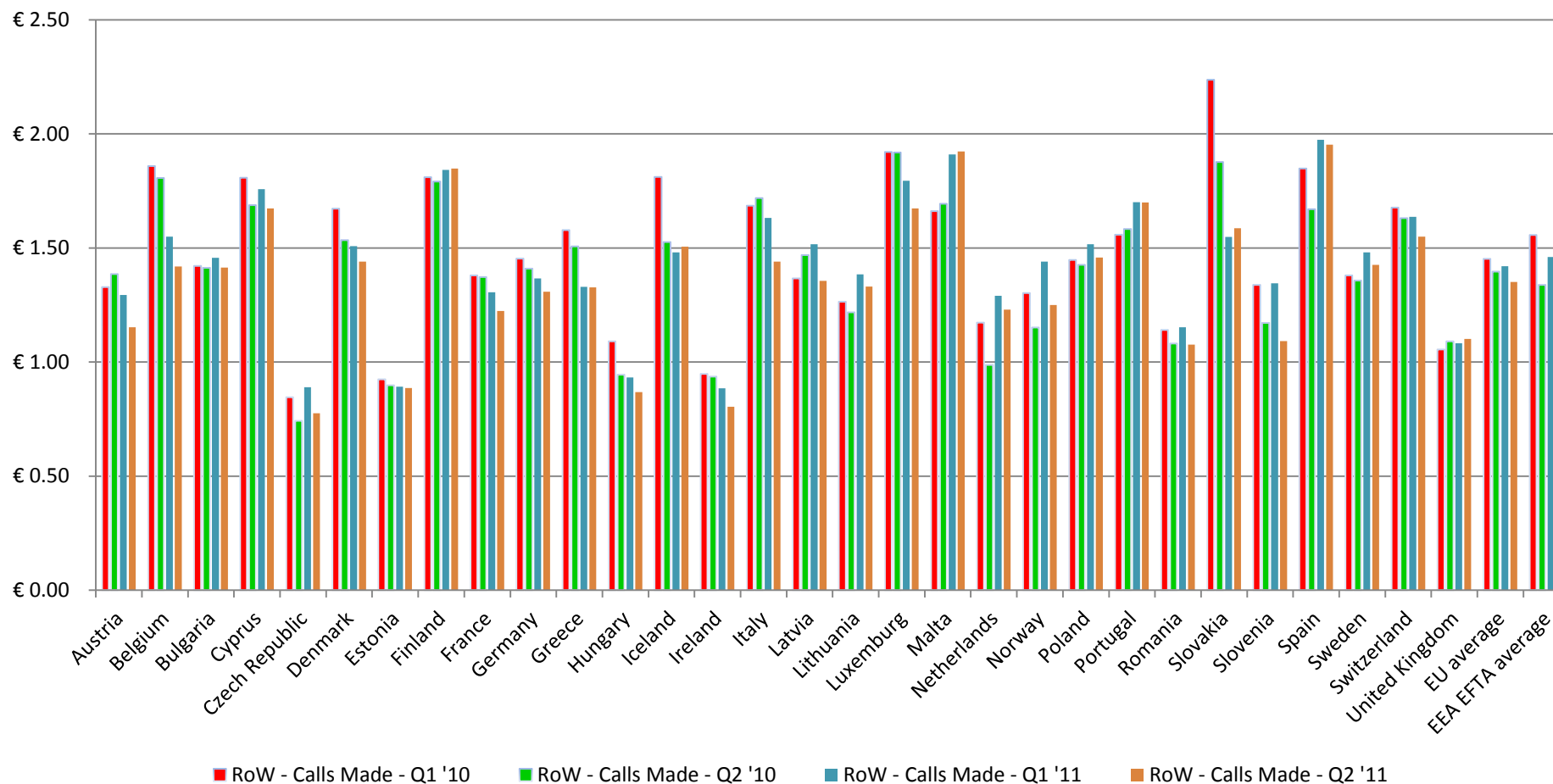
**Figure 6b: Volumes of intra-EEA roaming calls received in Q2
(Actual minutes, Q4 2008 = 100)**



EU average: Q2 2009 = 114.701; Q2 2010 = 127.312; Q2 2011 = 132.51

For Q2 calls received, a similar pattern can be observed to Q1 – most countries reported an increase year on year, with a few reporting a strong increase in 2011.

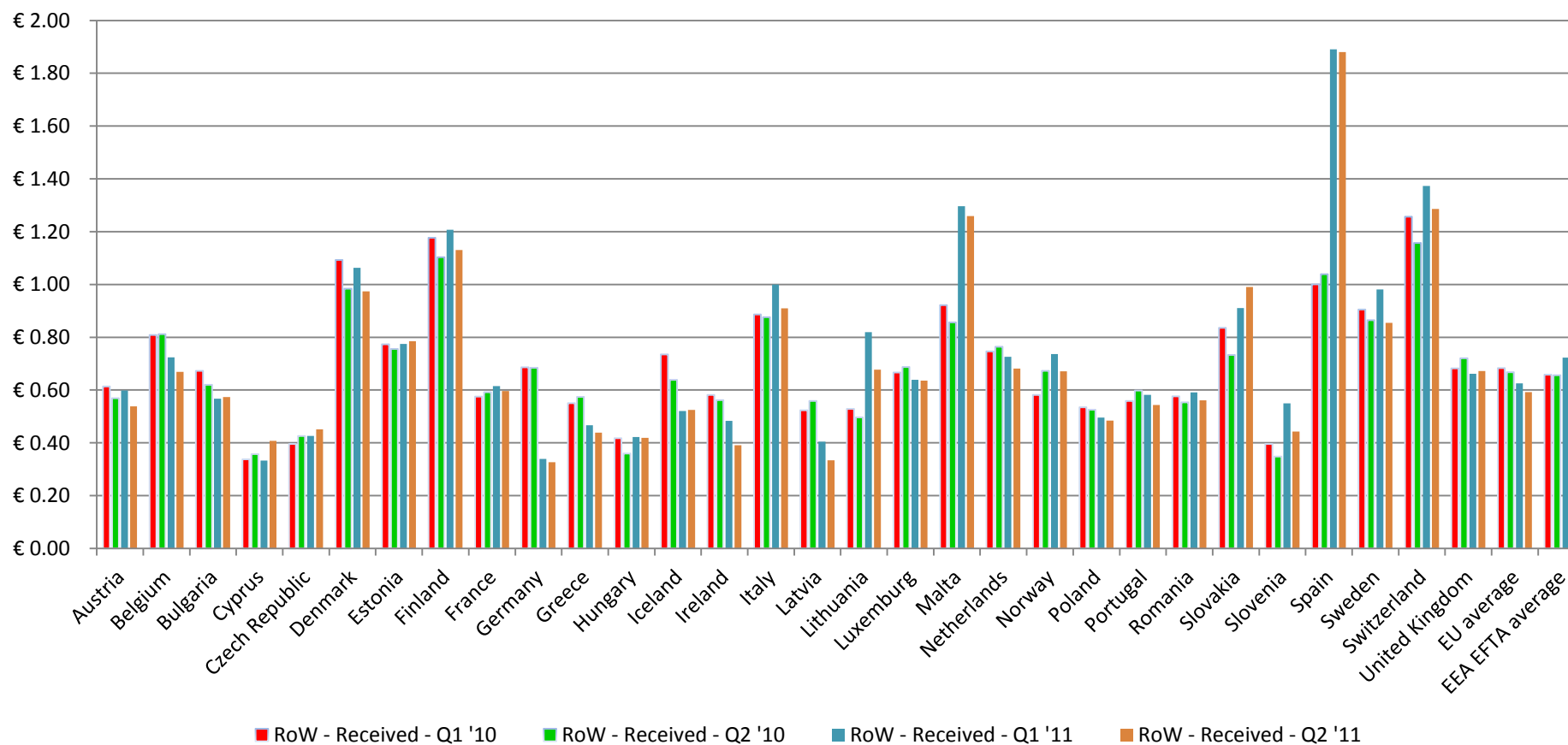
Figure 7: Average retail price per minute for roaming voice calls made by EEA customers outside EEA



EU average: Q1 2010 = € 1.451; Q2 2010 = € 1.396; Q1 2011 = € 1.420; Q2 2011 = € 1.351.

Figure 7 gives an overview of developments in average prices for making calls where either caller or receiver (or both) is outside the EEA. While there is no consistent trend at country level, the average for all EU-based providers has decreased slightly.

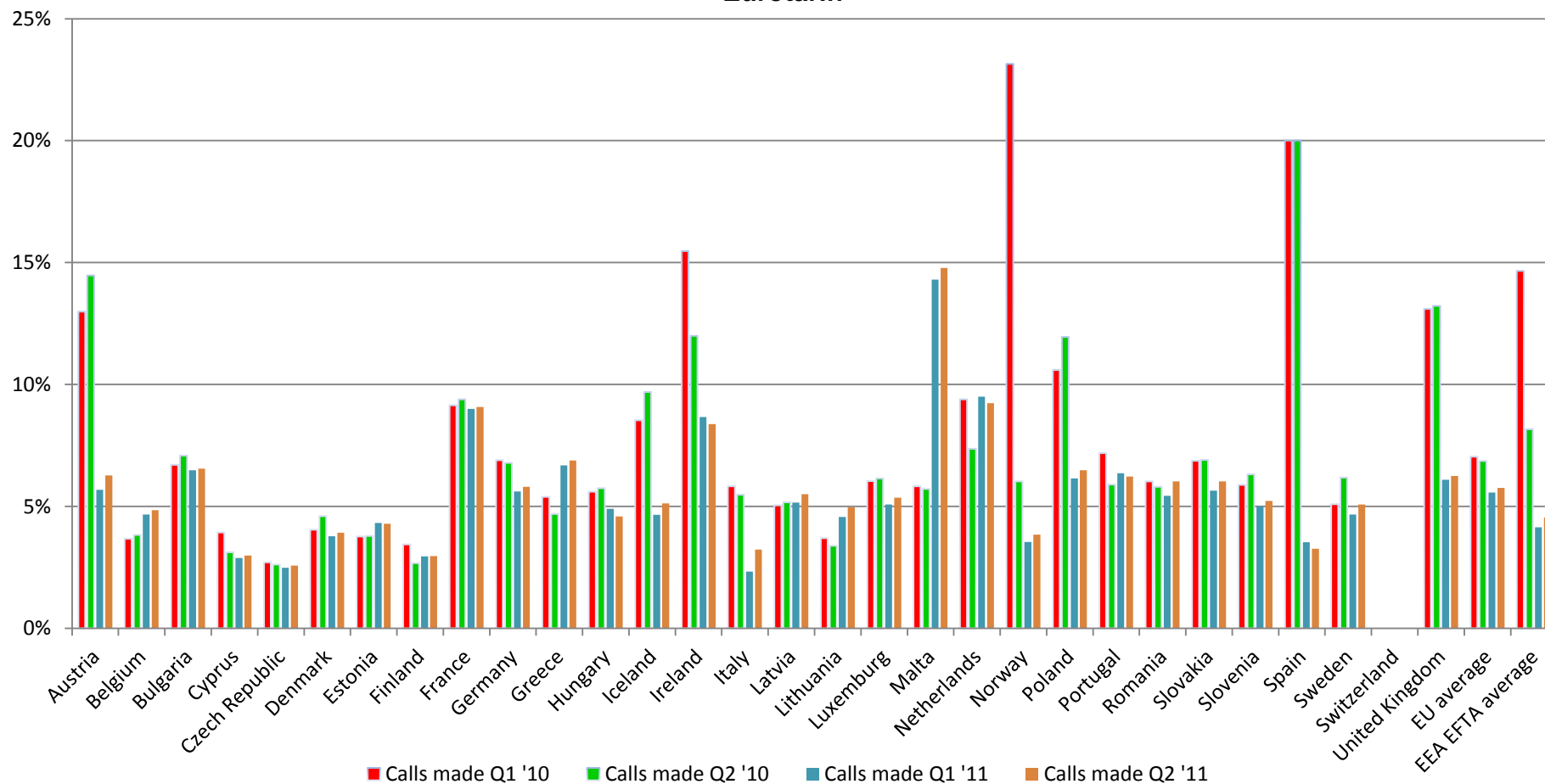
Figure 8: Average retail price per minute roaming voice calls received by EEA customers outside EEA



EU average: Q1 2010 = € 0.683; Q2 2010 = € 0.668; Q1 2011 = € 0.626; Q2 2011 = € 0.592.

Figure 8 shows a similar picture to Figure 7, where either caller or receiver (or both) is outside the EEA. In this case, the EU average has fallen steadily, comparing 2011 to 2010.

Figure 9: Surcharge as a result of billed minutes for intra-EEA roaming voice calls made : Eurotariff

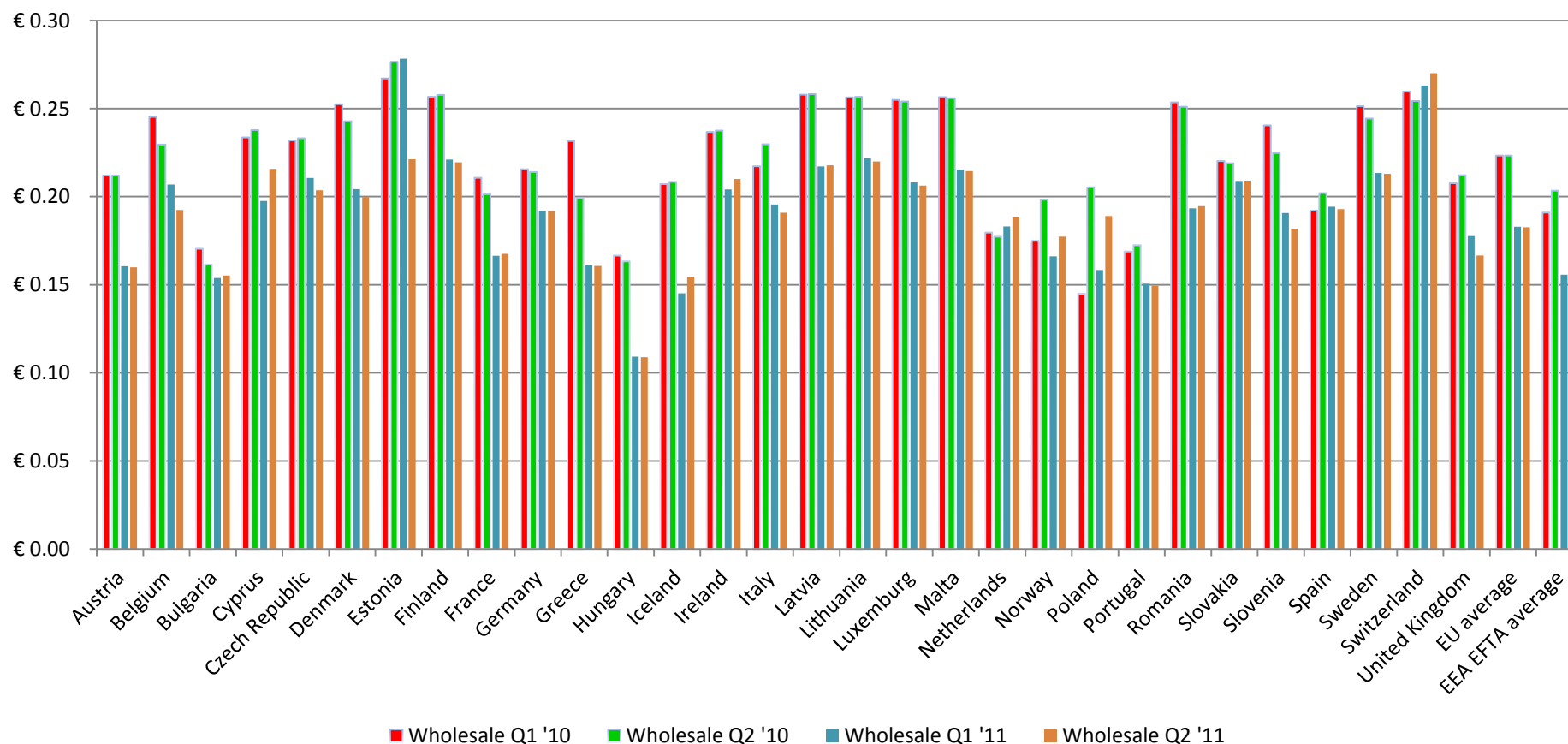


EU average: Calls made Q1 2010 = 7.04%; Calls made Q2 2010 = 6.86%; Calls made Q1 2011 = 5.57%; Calls made Q2 2011 = 5.76%.

Figure 9 illustrates the effects of billing unitisation, whereby the average price calculated on the basis of billed minutes is lower than that calculated on the basis of actual minutes. These figures have reduced sharply since the 2009 Regulation in line with the policy intention.

Wholesale Voice

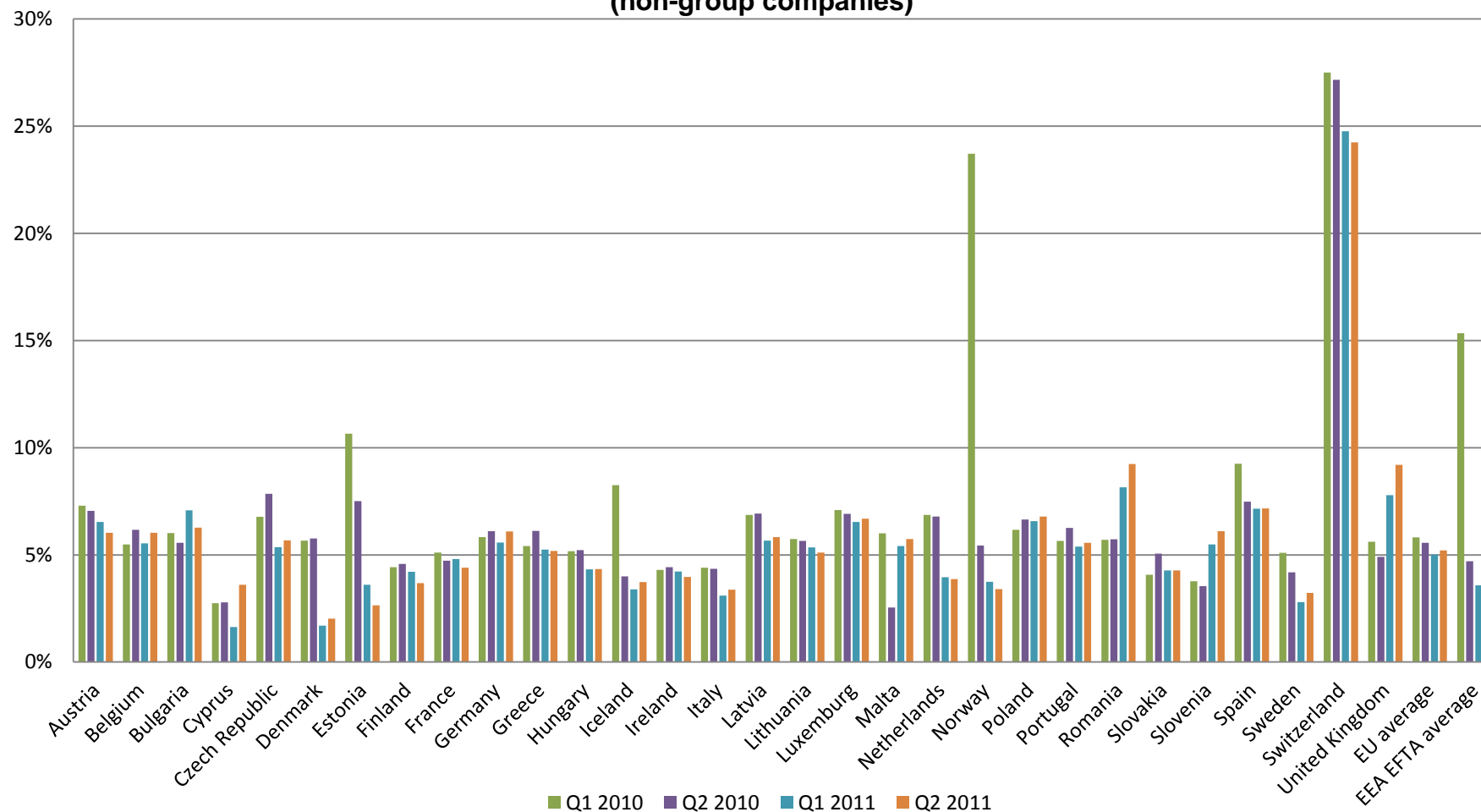
Figure 10: Average wholesale price per minute for intra-EEU roaming voice calls: charges to non-group companies



EU average: Q1 2010 = € 0.223; Q2 2010 = € 0.223; Q1 2011 = € 0.183; Q2 2011 = € 0.183

Figure 10 illustrates average prices for voice minutes at the wholesale level. The EU averages are nearly 4 cents below the regulated wholesale price cap of € 0.22 in Q1 – Q2 2011.

Figure 11: Surcharge as a result of billed minutes for intra-EEA wholesale voice calls (non-group companies)



EU average: Q1 2010 = 5.82%; Q2 2010 = 5.56%; Q1 2011 = 5.02%, Q2 2011 = 5.21%.

Figure 11 illustrates the effects of billing unitisation at the wholesale level. Similar to figure 9 for the retail level, these figures have reduced sharply since the 2009 Regulation in line with the policy intention.

**Figure 12: EEA average price per minute for wholesale non-group roaming voice calls
(EU only for Q2 2009 - Q1 2010)***

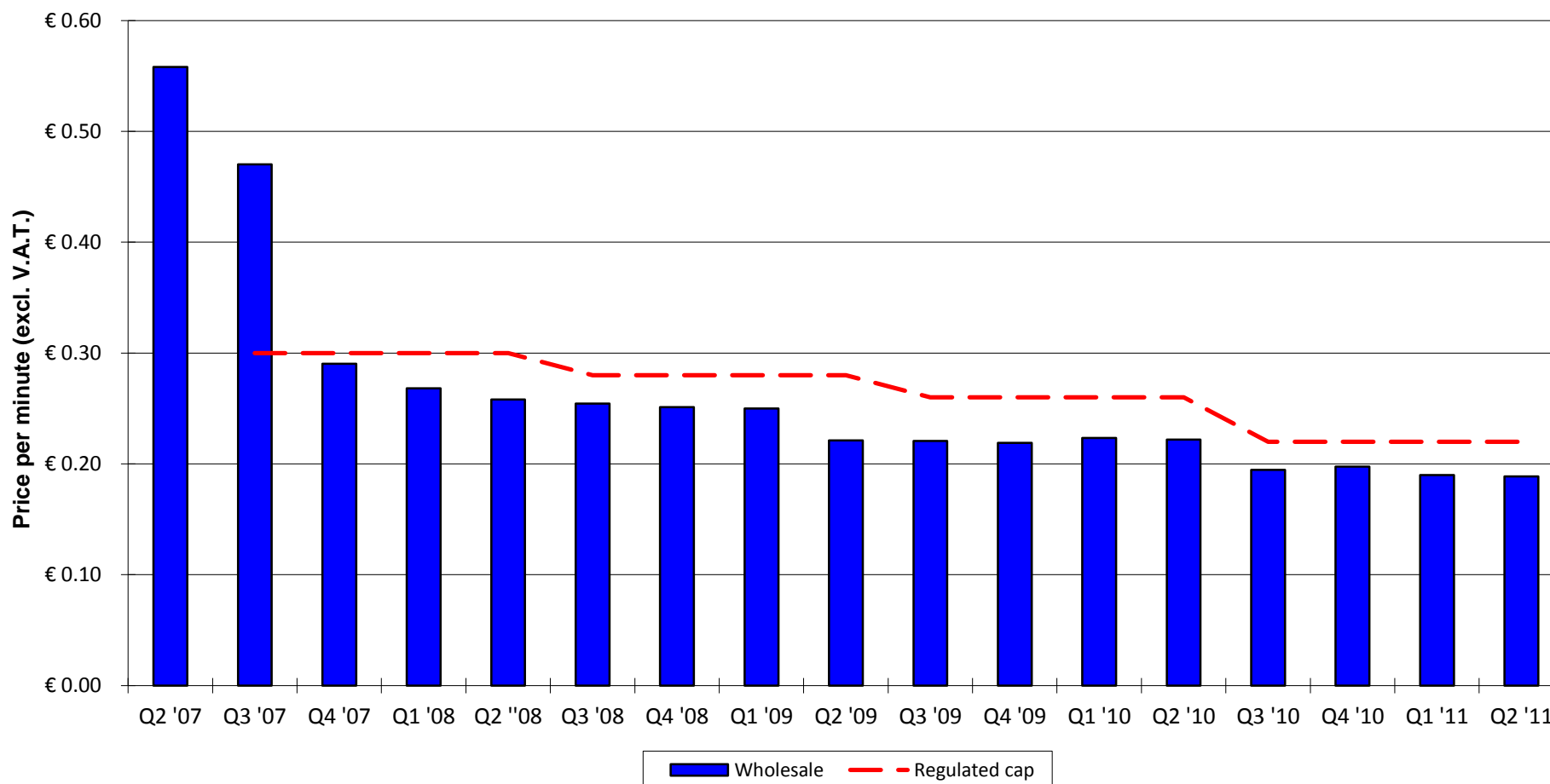
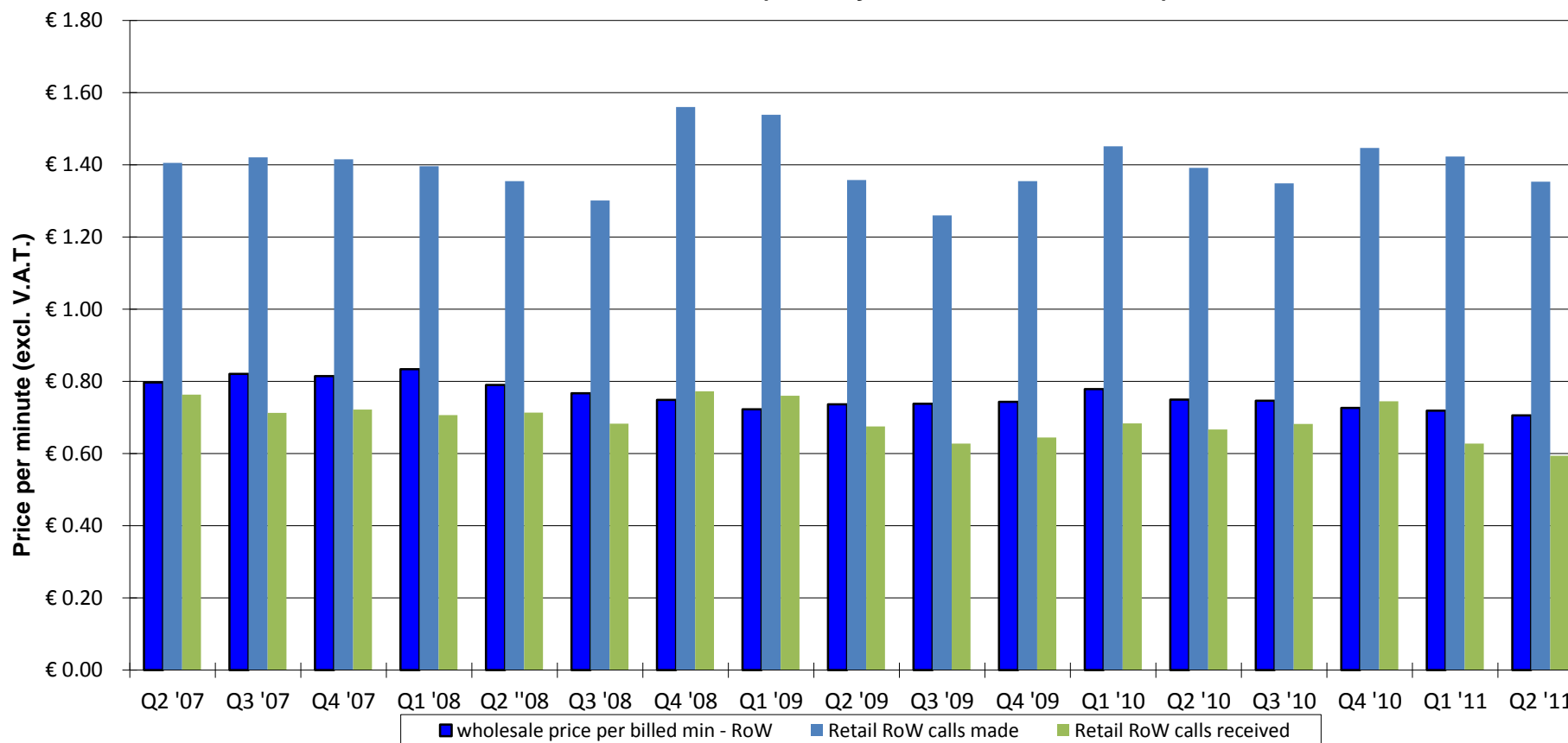


Figure 12 illustrates the EEA average price at the wholesale level from Q2 2007 to Q2 2011 (with the EU-only average for Q2 2009 to Q1 2010). It illustrates the clear drop in the average soon after the implementation of the 2007 Regulation. Since then, the average wholesale price for countries covered by the Regulation has been below the regulated cap by a few €c per minute.

Figure 12A: Average wholesale and retail prices for roaming calls made and received by EEA customers outside EEA (EU only for Q2 2009 - Q1 2010)*



EEA average:

Wholesale: Q1 2008 = € 0.834; Q1 2009 = € 0.723; Q1 2010 = € 0.778; Q1 2011 = 0.719

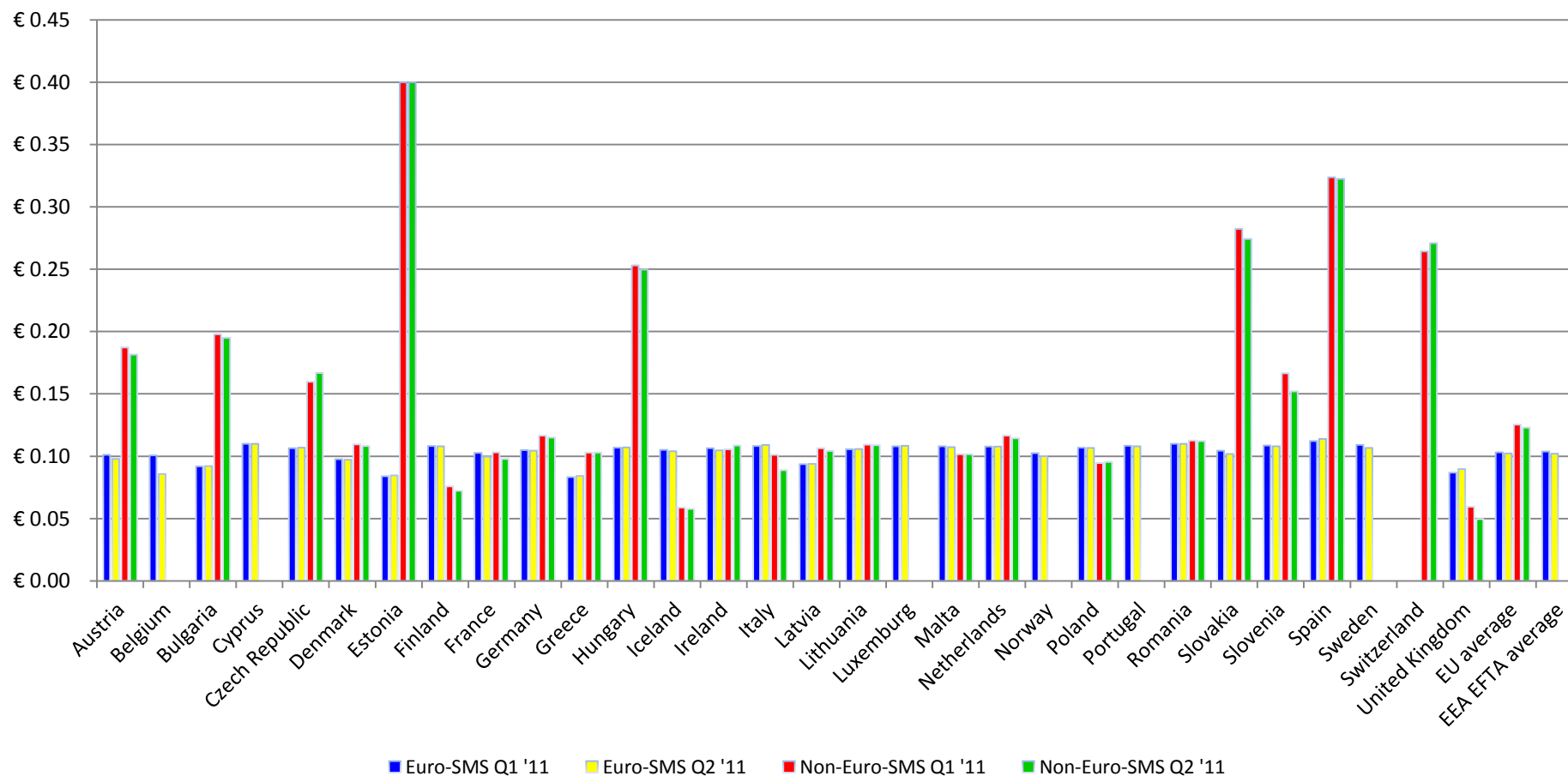
Retail calls made: Q1 2008 = € 1.396; Q1 2009 = € 1.538; Q1 2010 = € 1.451; Q1 2011 = € 1.423

Retail calls received: Q1 2008 = € 0.707; Q1 2009 = € 0.760; Q1 2010 = € 0.683; Q1 2011 = € 0.628

Average wholesale and retail prices have fluctuated over time, usually in the same direction.

Retail SMS

Figure 13: Average price for Euro-SMS and Non-Euro-SMS



EU average: Euro-SMS Q1 2011 = € 0.103; Euro-SMS Q2 2011 = € 0.102; Non-Euro-SMS Q1 2011 = € 0.125; Non-Euro-SMS Q2 2011 = € 0.123.

Euro-SMS appears to offer the better deal in the majority of EU countries, sometimes by a considerable margin. All Member States reported Euro-SMS averages below the regulated cap of € 0.11.

**Figure 14: Average price per retail SMS (Euro + Non Euro SMS tariffs)
(EU only for Q2 2009 - Q1 2010)***

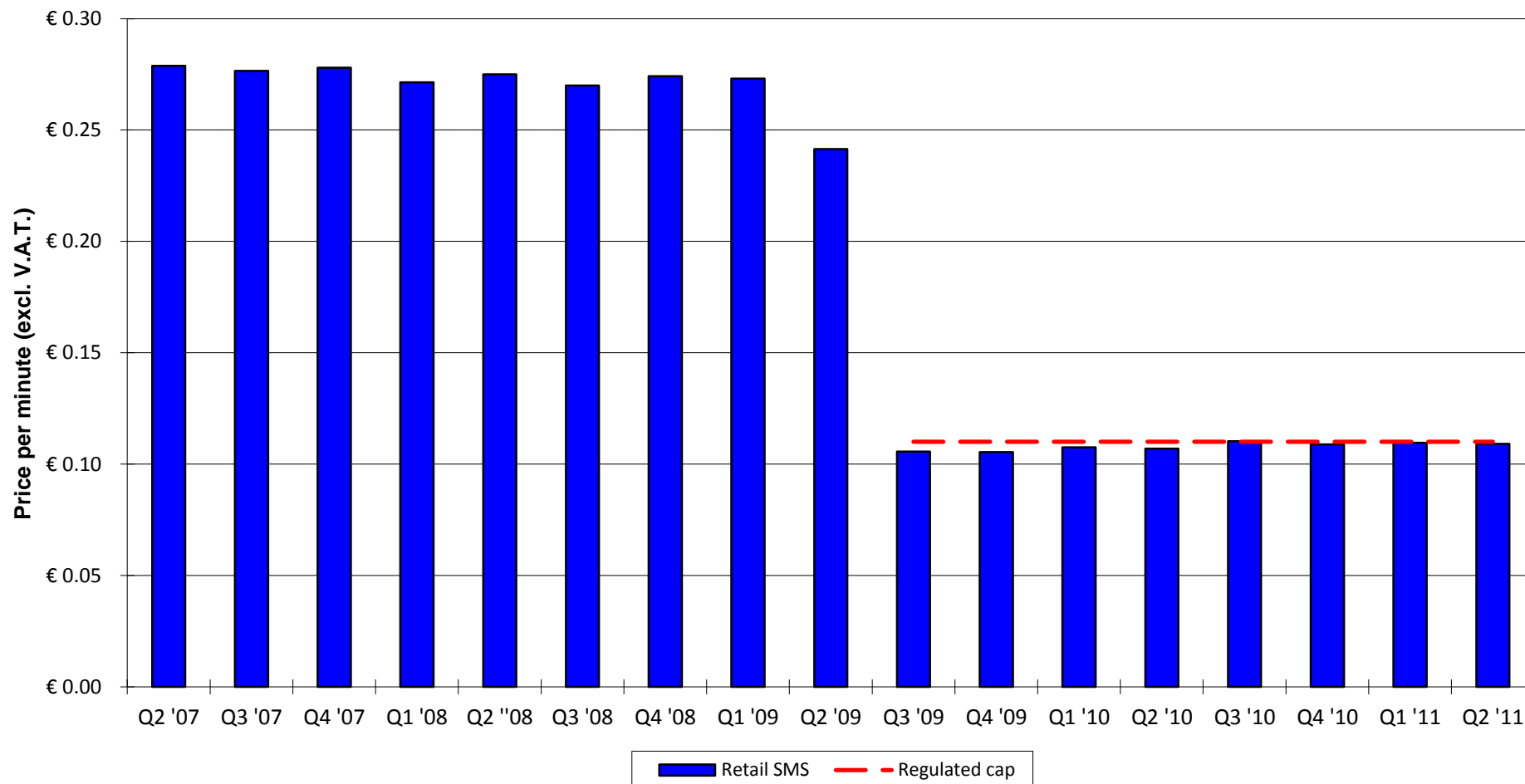
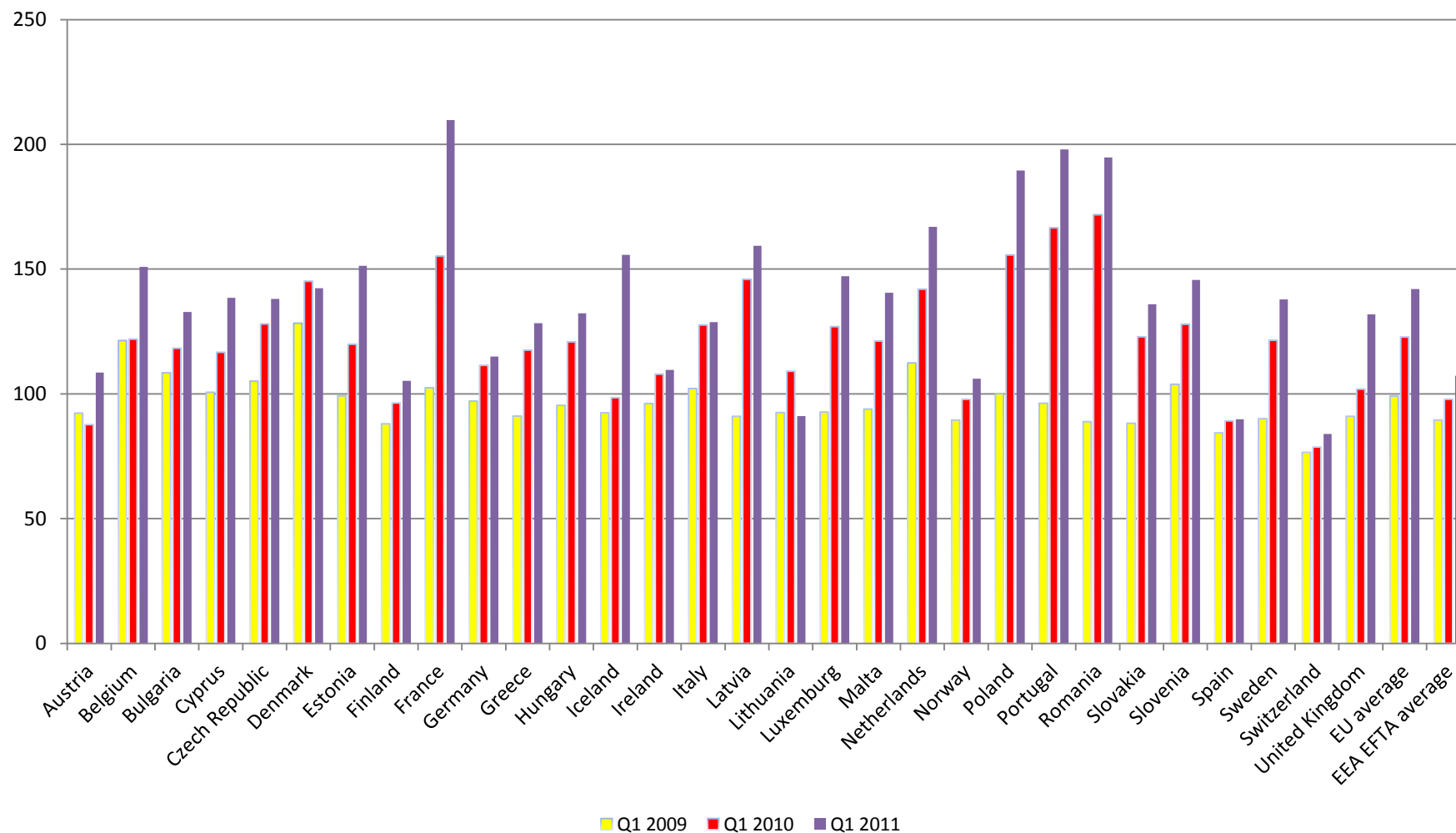


Figure 14 gives an overview of the EEA average price for all retail SMS messages, covering the regulated Euro-SMS tariff and alternative tariffs from Q3 2009 (EU only for Q2 2009 – Q1 2010).

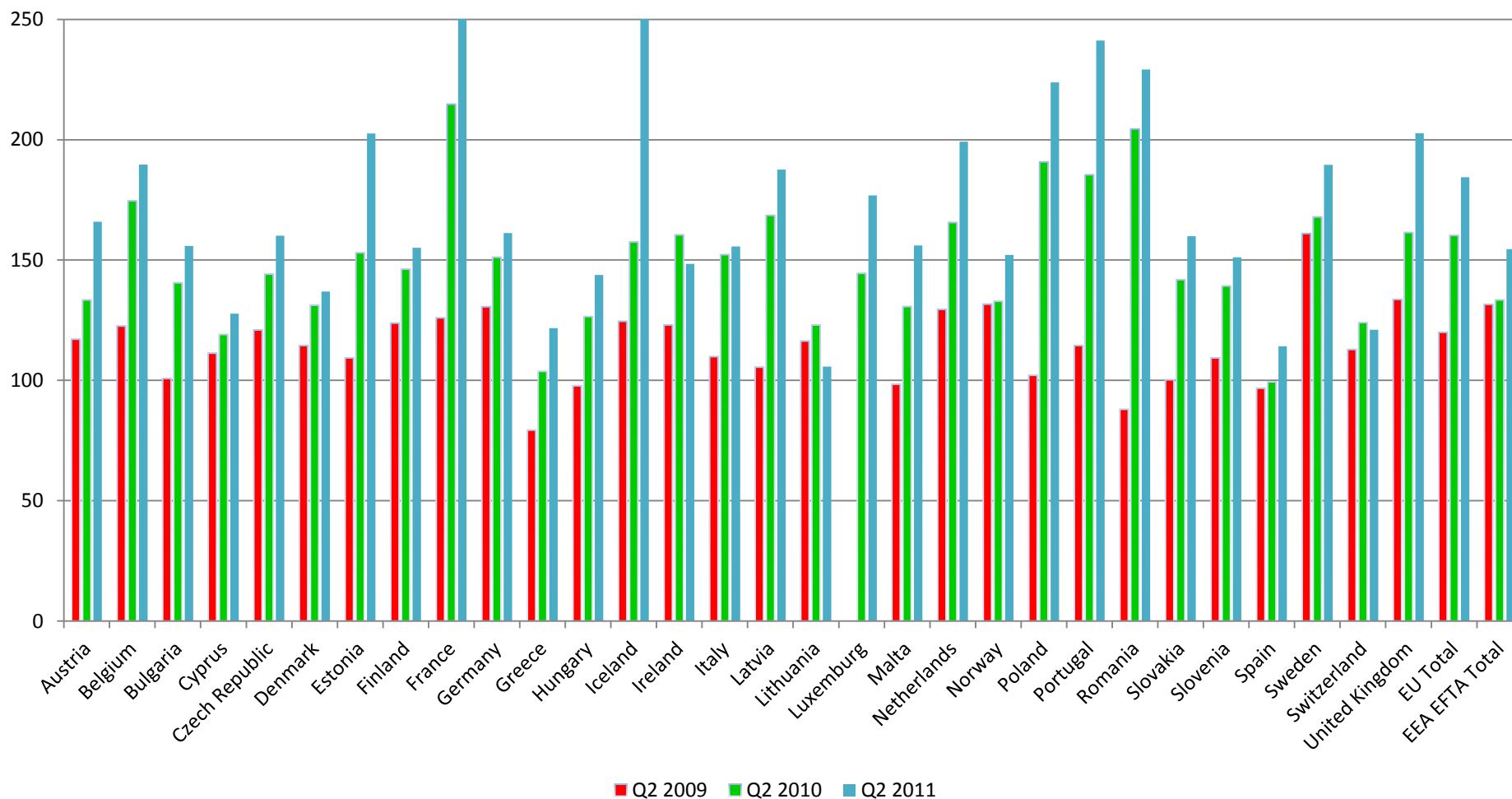
Figure 15a: Volumes of retail intra-EEA roaming SMS sent in Q1 (Q4 2008 = 100)



EU average: Q1 2009 = 99.171; Q1 2010 = 122.797; Q1 2011 = 142.00

The volumes of roaming SMS messages sent have increased year-on-year in nearly all EU countries, in some cases quite significantly.

Figure 15b: Volumes of retail intra-EEA roaming SMS sent in Q2 (Q4 2008 = 100)



EU average: Q2 2009 = 119.919; Q2 2010 = 160.212; Q2 2011 = 184.39

As above, the volumes of all roaming SMS messages sent have increased year-on-year in nearly all EU countries, in some cases quite significantly.

**Figure 16: Trends in volume for retail intra -EEA roaming voice calls and SMS
(Q4 2008 = 100)**

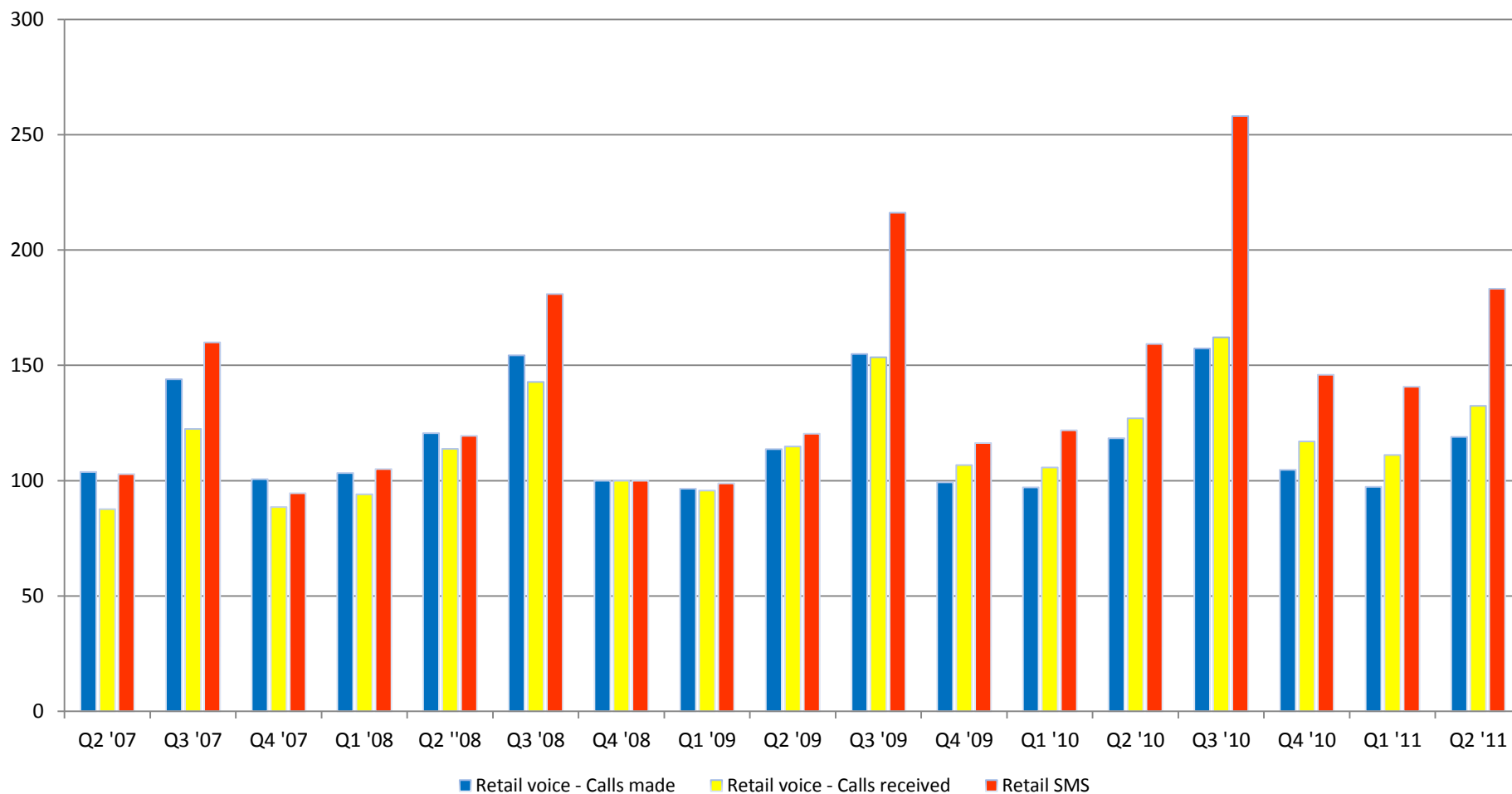
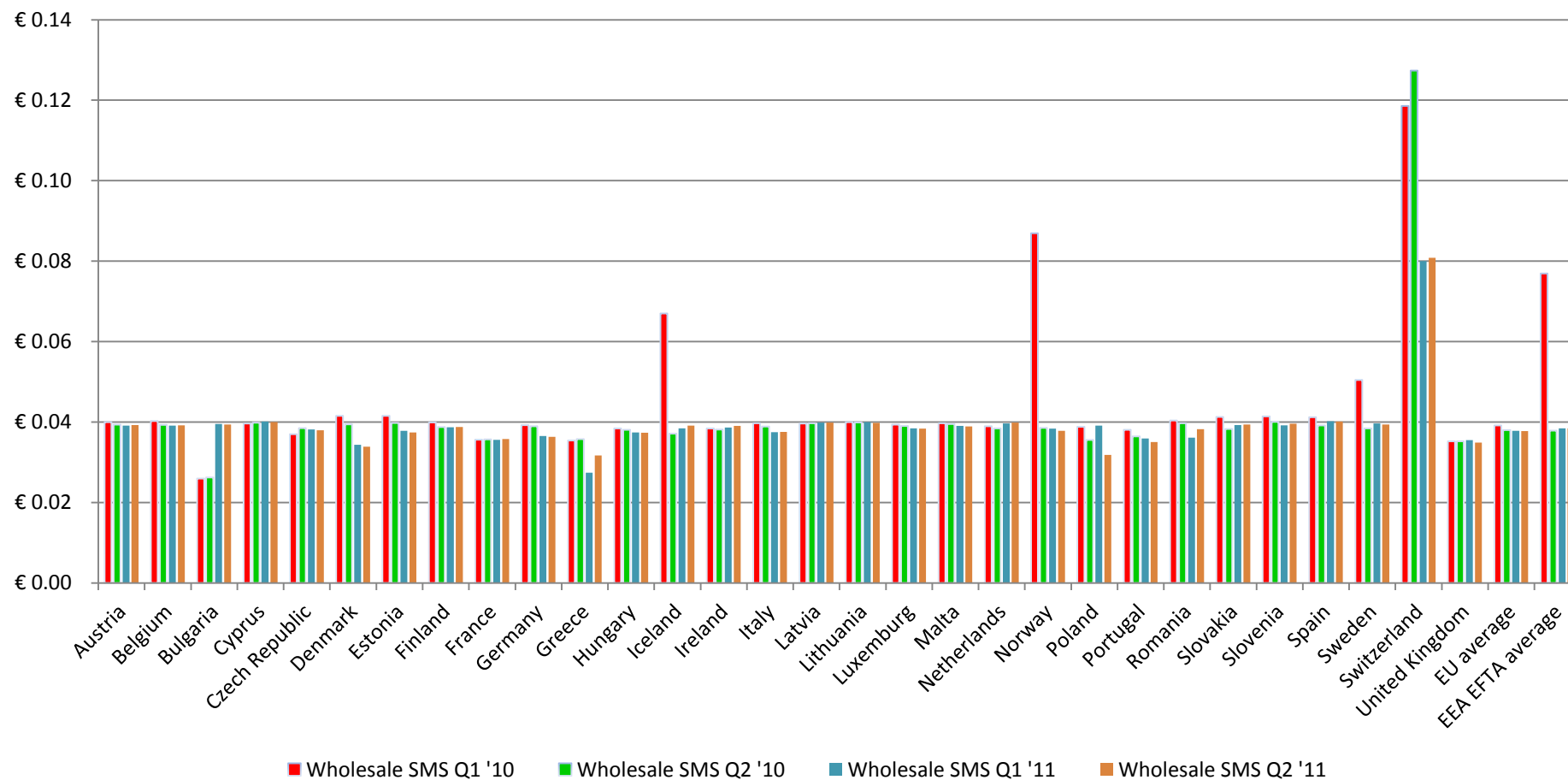


Figure 16 compares the changes in EEA volumes for retail voice calls made and received and the volumes of SMS messages sent. It shows a similar trend for all services, largely seasonal, with modest growth in volumes of calls received, and more significant growth for SMS.

Wholesale SMS

Figure 17: Average wholesale price per intra-EEA roaming SMS: charges to non-group companies

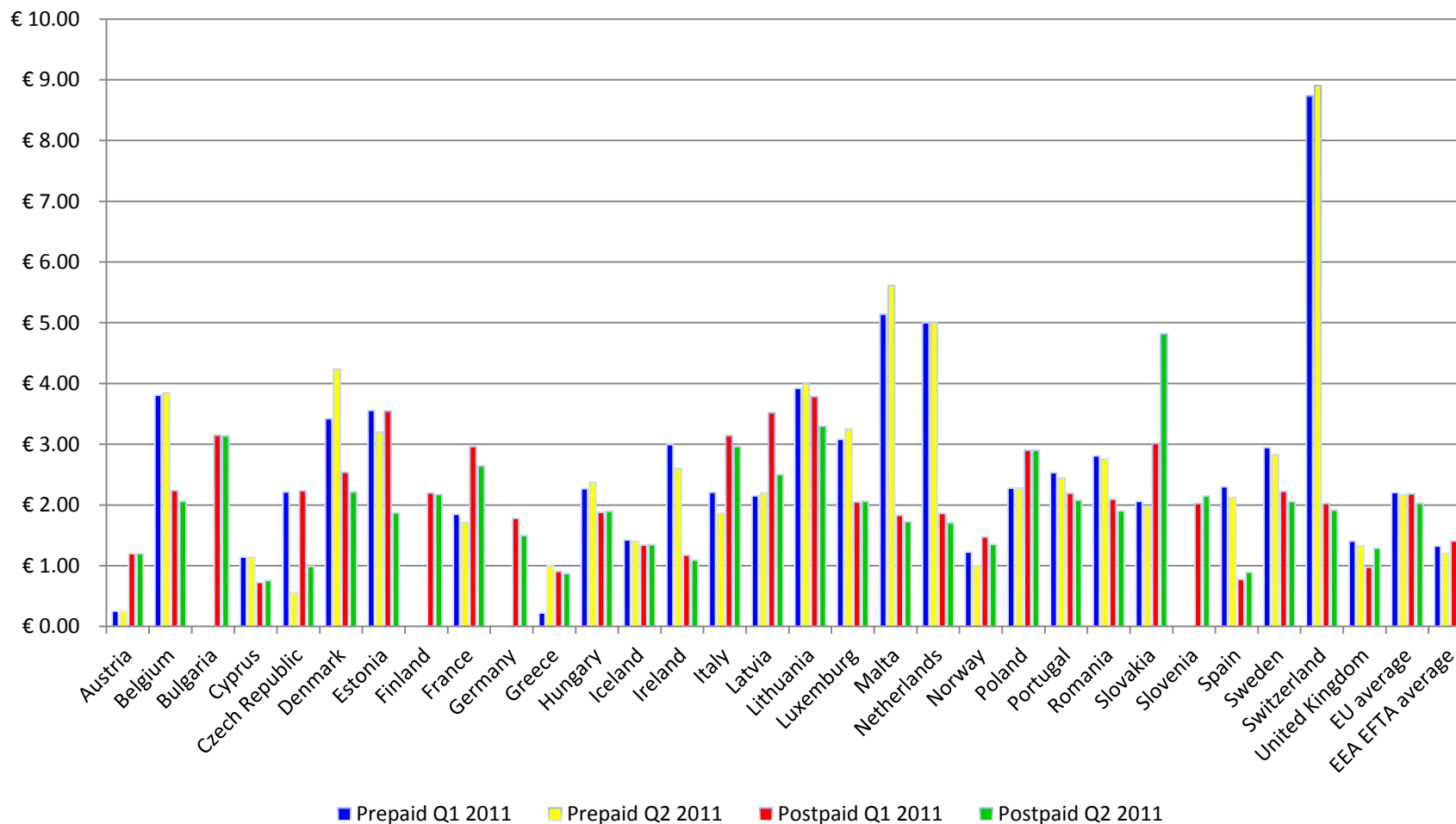


EU average: Q1 2010 = € 0.039; Q2 2010 = € 0.038; Q1 2011 = € 0.038; Q2 2011 = € 0.038.

Average wholesale prices comply with the regulated cap of € 0.04. In EEA EFTA countries, the impact of the adoption of the 2009 Regulation from Q2 2010 is clear.

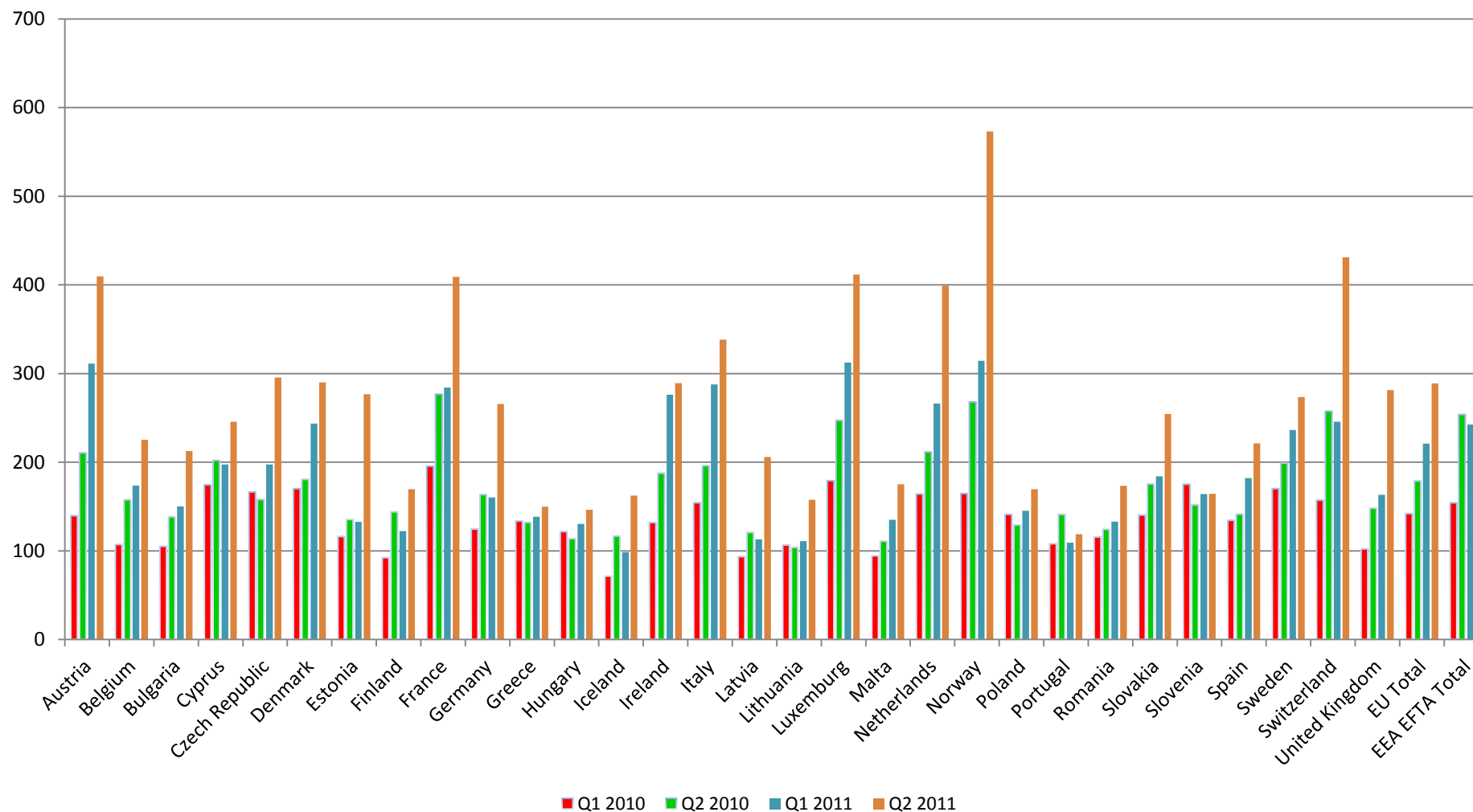
Retail Data

Figure 18: Average non-group retail price per data Mb



EU average: Prepaid Q1 2011 = € 2.207; Prepaid Q2 2011 = € 2.170; Postpaid Q1 2011 = € 2.182; Postpaid Q2 2011 = € 2.028

Figure 19: Volumes of (group and non-group) retail data (Q4 2008 = 100)

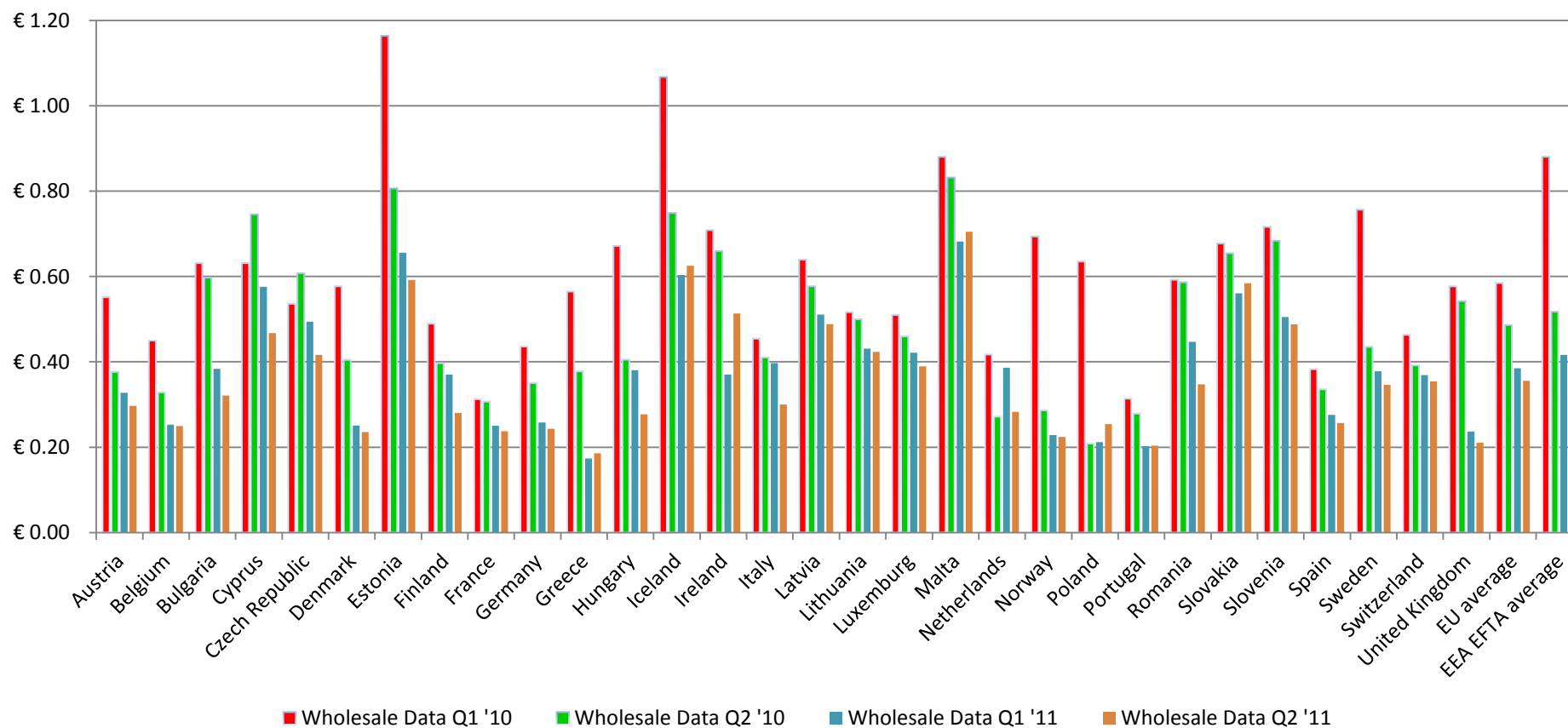


EU average: Q1 2010 = 142.087; Q2 2010 = 178.932; Q1 2011 = 220.95; Q2 2011 = 288.80.

There has been a significant increase in data volumes in many countries year on year.

Wholesale data

Figure 20: Average wholesale data price per Mb for intra-EEA roaming: charges to non-group companies



EU average: Q1 2010 = € 0.585; Q2 2010 = € 0.487; Q1 2011 = € 0.385; Q2 2011 = € 0.355.

A steady decrease in the EU average wholesale price can be observed year on year. In Q1-Q2 2011, the average in all countries is well below the regulated safeguard cap of € 0.80 per Mb.

**Figure 21: Average price per Mb for retail and wholesale intra-EEA roaming data
(EU only for Q2 2009 - Q1 2010)***

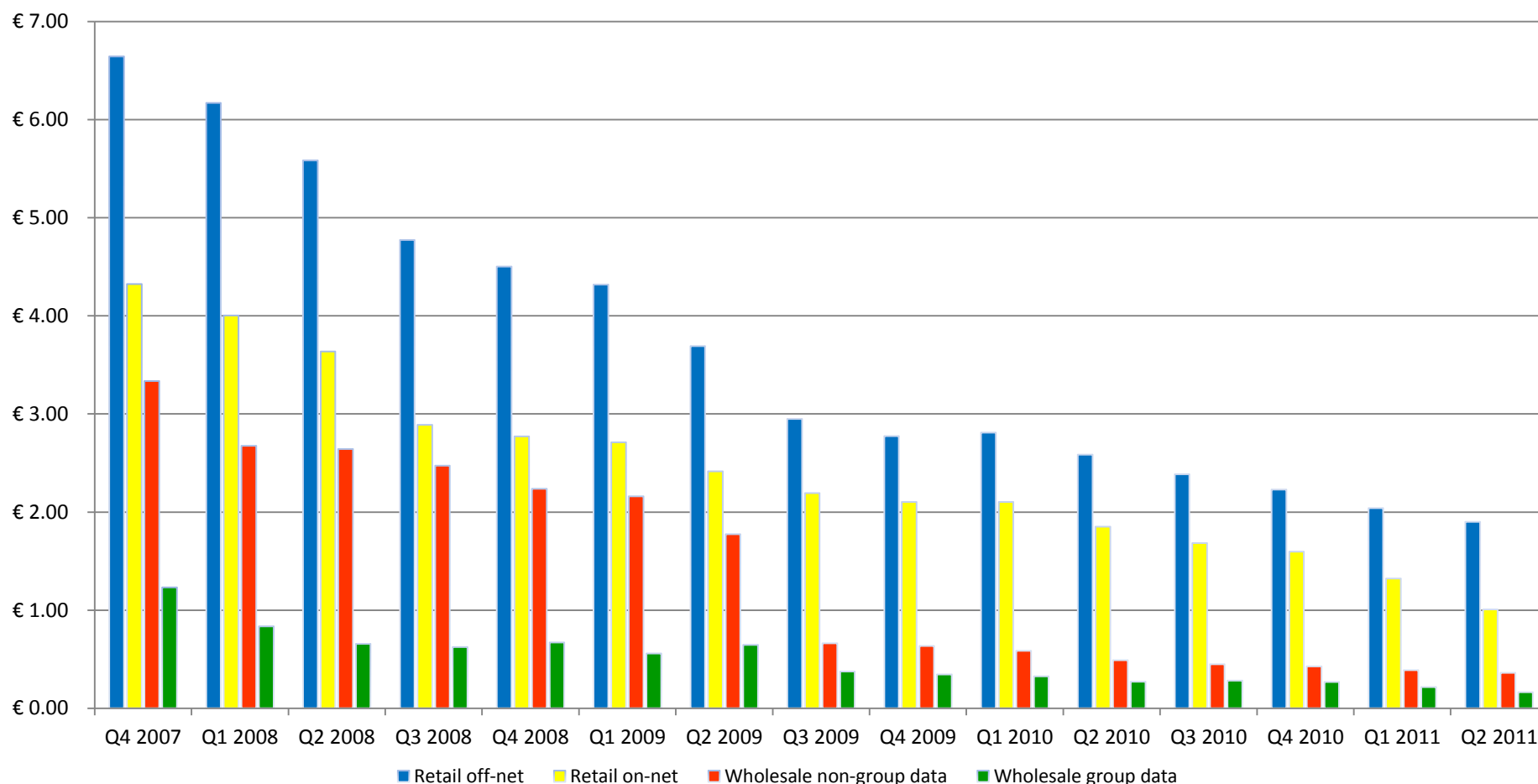
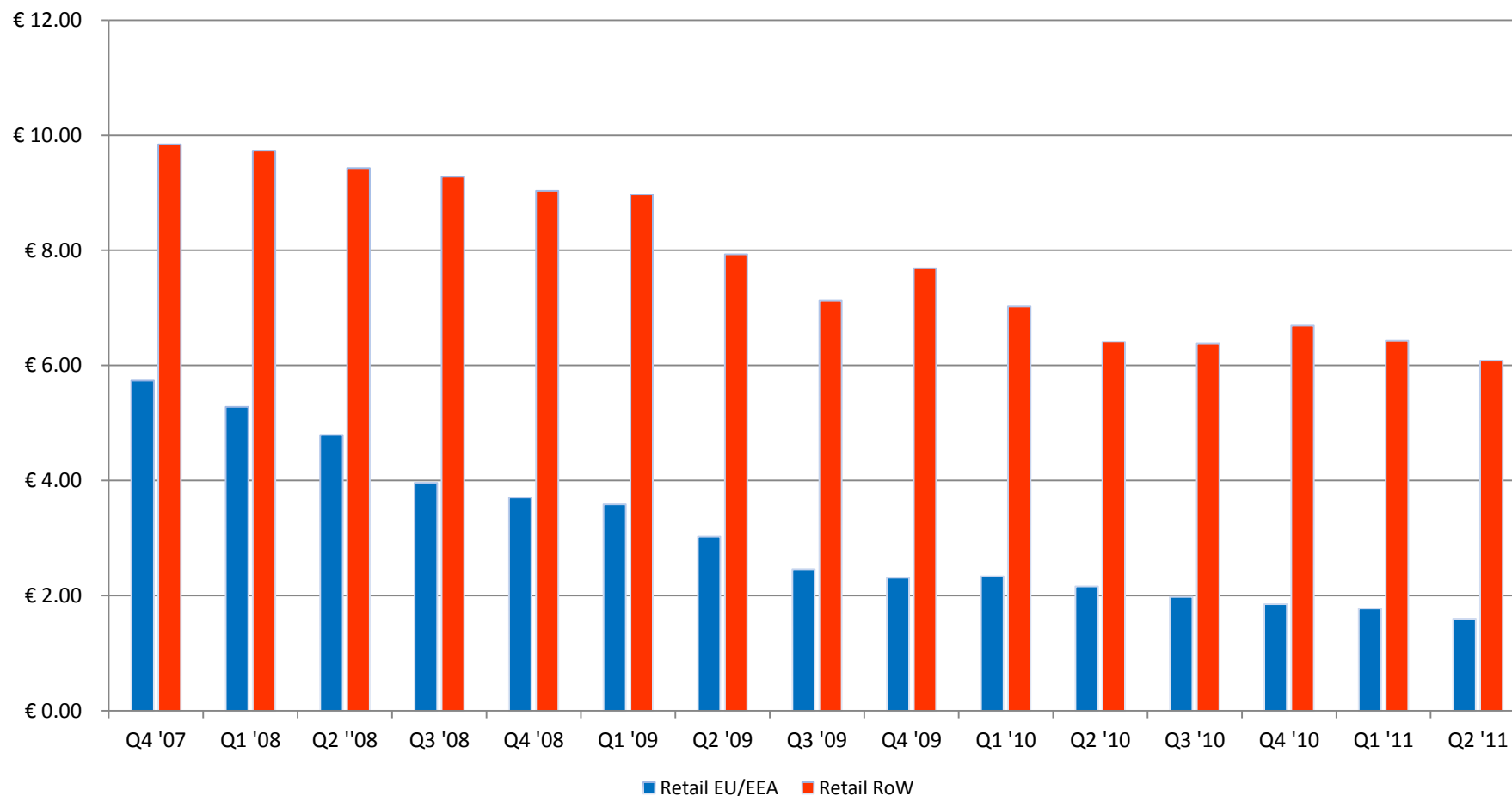


Figure 21 compares the average EEA price trends for retail and wholesale data services (EU-only averages were used for Q2 2009 – Q1 2010). It shows the continued downward trend in the average price for data services at both the retail and wholesale levels. The impact of the 2009 Regulation on wholesale non-group data prices is clearly visible. However, the retail margin for off-net traffic has always been large and has increased significantly since Q4 2007. In Q1 and Q2 2011, it was around 420% of the average non-group wholesale price.

**Figure 22: EEA average price per Mb for retail and RoW data
(EU only for Q2 2009 - Q1 2010)***



EEA average: Retail price EU/EEA Q1 2011 = € 1.779; Retail price EU/EEA Q2 2011 = € 1.600; Retail price RoW Q1 2011= € 6.434; Retail RoW Q2 2011 = €6.081

Average RoW retail data prices remain significantly higher than EU/EEA prices.

Section 4

Further issues

Traffic steering

- 4.1 As part of this collection, BEREC gathered information in relation to traffic steering and inadvertent roaming, as required under Article 7 of the 2007 and the 2009 Roaming Regulations. Traffic steering is a technique used by mobile operators to steer traffic on to a preferred or partner network. There are a number of methods used to achieve this, but the result is that the consumer will roam onto the foreign network of their home network's choice. Evidence suggests that this is used to provide an enhanced or lower priced service to the roaming consumer. None of the providers that responded to the information request stated that traffic steering was used to the disadvantage of consumers through higher charges.

Inadvertent roaming

- 4.2 Inadvertent roaming can occur near international borders. When a consumer is close to a border it is possible that they will pick-up a foreign mobile operator's network signal even if they are not actually located in the country of the foreign operator. In such cases, the consumer may be charged as if they were internationally roaming when in fact they are still physically located in their home country.
- 4.3 Most respondents to the data collection did not identify this as a significant problem, with apparently relatively few consumers adversely affected. Whereas inadvertent roaming traditionally occurred with voice services, BEREC understands that, as consumer take-up of mobile data services has become more common, some cases of inadvertent roaming for data have also arisen.
- 4.4 BEREC understands that providers operate a number of mechanisms to deal with the question of inadvertent roaming: information is generally available on provider websites; where a particular issue has been identified providers have generally taken additional steps to ensure consumers are aware of it; in some cases operators offer bespoke tariffs for neighbouring countries; some operators have developed network coverage in border areas to tackle the problem. Providers also reported that where roaming has occurred inadvertently, they investigate the complaints and may offer compensation or refund the roaming charges as a goodwill gesture.

Implementation in EEA EFTA countries

- 4.5 The 2007 Regulation entered into force in the EEA EFTA countries Norway, Iceland (and Liechtenstein) on 22 December 2007, meaning that in those countries, data for the regulated wholesale voice rate and the Eurotariff is available from quarter 1 2008 only. The 2009 Regulation was adopted in the EEA EFTA countries during Q2 2010. Therefore the regulated SMS and data caps did not apply before this quarter, and the voice caps were at the slightly higher levels required by the 2007 Regulation in Q1 2010. To reflect this, separate EU and EEA EFTA averages are shown in various Figures. Note that for the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland only.

Summary of data ‘gaps’ and apparently ‘anomalous’ results

- 4.6 This round of data collection revealed that there remains a limited number of operators that have some problems supplying reasonable quality data. This is not at all unusual for a comprehensive data collection of this type. In most cases the NRA was able to work with the company to resolve or alleviate the problem. In other cases, where system upgrades will be necessary to comply with the data collection or where systems failures were the source of the problem, the company was asked to provide the best possible estimate currently available and to complete upgrades in time to provide high quality data in future.

Actual/billed minutes

- 4.7 Although NRAs have strongly encouraged their operators to supply the figures for actual and billed minutes for voice roaming services, a small number of operators still had problems supplying the requested data. Overall, BEREC feels the differences between actual and billed minutes indicated by this Report are a fair reflection of actual practices.

Wholesale discounts

- 4.8 At the wholesale level, operators often receive discounts based on variables like volume of traffic, calculated at the end of a 12-month period. When providing data for these Reports, operators may estimate the effect of such discounts on data for each quarter. Because the actual discount may vary from the estimate, there may be an apparently ‘anomalous’ result for the quarter when the discount is actually applied. This should be kept in mind when comparing wholesale figures for different quarters in the same year.

Varying response rate

- 4.9 A further issue that may cause an apparent change in price between quarters, when tariffs have remained the same, is a variance in the operators that provide reliable data for a particular data category in a quarter. This can also cause strong volume changes.

Exchange rate issues

- 4.10 For ease of comparison, the Euro is used throughout this Report. Within the EU, currency fluctuations between the Euro and other national currencies are likely to have affected the average prices reported for EEA countries outside the Euro zone.

Overview of compliance issues

- 4.11 As stated elsewhere in this Report, overall compliance with the provisions of the 2007 and the 2009 Regulations has generally been good. All mobile operators offer their consumers a Eurotariff and Euro-SMS tariff, wholesale rates appear to have fallen in line with the requirements set out in the Regulations, and consumer transparency has improved.
- 4.12 In this collection, some countries reported average prices that were around €0.001 above the regulated cap, but in a couple of cases up to €0.01 above the cap. The NRAs concerned have checked compliance with the Regulation by their operators. In some cases, the situation seems to have been caused by inaccuracies in reporting for the data collection itself. In a few instances, the NRA has launched a compliance

investigation to gather further information on the possible reasons for this reported price. BEREC will monitor this issue closely.

The Figures

General points

- 4.13 For Austria there could be variations compared to previous data collections, because in former collections one operator had to estimate most of the relevant data. For the current data collection, this operator set up a new project to facilitate the data collection and receive more reliable data.

Average retail price per minute voice calls made (Figure 1)

- 4.14 For the UK, one operator has reported all alternative voice and SMS volumes and revenues under the Eurotariff and the Euro-SMS tariff (no split). In addition, it has not included the monthly charge to access the unregulated roaming bundles in the revenues, only the per-unit charge. The MNO is looking at ways to improve reporting for the next collection (this also affects other Figures).

Average retail price per minute voice calls received (Figure 2)

- 4.15 Germany noted that one operator offers an alternative voice tariff with calls received free of charge up to 60 minutes, and then billed at € 0.19 per minute. This means that the initial billing unit is 60 minutes (or 3600 seconds). One reason why there is a sizeable gap between billed and actual minutes is that apparently most calls last less than an hour. For this tariff, calculations based on actual minutes seem more meaningful than billed minutes, and have been used to calculate the average for Germany in Figure 2.
- 4.16 In Latvia, where operators only offer the Eurotariff, receiving a call is free of charge when a customer selects affiliated or group operators while roaming in Lithuania, Estonia or Sweden. In addition, in recent years domestic mobile prices have decreased significantly. All three operators offer zero on-net prices. Therefore, some roaming customers don't make roaming calls but just ping the recipient, who then calls them back. In this case, the recipient makes an on-net call free of charge and the customer receives the roaming call free of charge. Such behaviour is quite popular and has led to the growth of volumes and decreases in the average price.
- 4.17 In the UK, one operator provides two alternative roaming bundles, which give access to a reduced price for calls made and calls received at no additional charge. There is an access fee for the bundles, which has been allocated to the revenues for calls made. Since only one other operator has reported an unregulated tariff for calls received, this leads to a low average price.

Volumes of EEA calls made and received (Figures 5a - 6b)

- 4.18 In relation to increase in volumes for calls made and received, Latvia noted the increase in emigration by the Latvian population. When people emigrate for non-permanent or permanent work, initially they tend to use their home SIM, which leads to an increase in volumes of roaming services (this trend can be particularly noted in Figure 6b).
- 4.19 The UK noted that a change in the number of operators included has contributed to the apparent decline in voice volumes.

Surcharge as a result of billed minutes for voice calls made (Eurotariff) (Figure 9)

- 4.20 In Spain, national regulations require operators to bill per second, even for international roaming. However, operators may apply a set-up charge, which has a similar effect to the 30 second minimum charge permitted under the Roaming Regulation for Eurotariff calls made.
- 4.21 In the UK, one operator has been unable to report the applicable minimum charge for Eurotariff calls made (prepaid and postpaid), making its billing units look smaller than reality and slightly affecting the UK average.
- 4.22 Malta noted that all the operators charge a 30 second minimum charge for calls made. As a significant number of calls last less than 30seconds on average, the surcharge appears large.

Average retail SMS price for Euro-SMS and non-Euro-SMS (Figures 13)

- 4.23 For Spain, one of the four MNOs was not able to distinguish between retail SMS and MMS and the data provided includes both. This makes the average price reported for Euro SMS appear a bit higher than the regulated cap, when providers are in fact compliant.

Average retail and wholesale data prices and volumes (Figures 18 – 22)

- 4.24 For Lithuania, one operator in Q2 2011 reduced on-net retail data tariffs by about 4 times. It also reduced off-net retail data tariffs by about 30 per cent. This has influenced the average on-net and off-net prices reported.
- 4.25 Malta noted that since retail data is not subject to price caps, tariffs vary quite significantly between the operators, ranging up to €5 per MB in the case of one operator.
- 4.26 In the Netherlands, volumes for prepaid data roaming are very low. Only some providers offer this service on-net, and almost no providers offer it off-net. This can lead to fluctuations in the figures reported.
- 4.27 Ireland commented that the relatively large increase in retail data volumes is a reflection of the summer months, increased usage of smartphones when abroad and in part due to the reporting of one operator. This operator started charging some customers for a data service during these periods. Prior to this no roaming data was reported for this service.
- 4.28 Spain highlighted that operators provided aggregate data for total prepaid and total postpaid retail data roaming, without a split for on-net and off-net services. That is because tariffs do not distinguish between 'on-net' and 'off-net' data in Spain (see Figure 18).
- 4.29 Denmark reported that the average price for retail and wholesale group data is dependent on a single operator that generates a lot of data traffic between its customers in Denmark and Sweden. The Danish customers of this operator can use data included in their domestic bundled subscription in Sweden without paying any additional roaming charges. Since the amount of data included in these bundled subscriptions and the use of data have both been increasing, that has lowered the average price and also affected the wholesale price.

- 4.30 For the UK, one operator has not reported prepaid data volumes or revenues (only postpaid), although it does offer such tariffs. It is carrying out developments to be able to provide this data for the next collection. This has made the prepaid volumes and revenues appear lower than in reality. Another operator has not been able to split prepaid and postpaid data volumes and revenues or to provide a robust estimate, and has reported everything under postpaid; an average has been included in the charts.

Future data collection

- 4.31 BEREC intends to continue to collect data on a regular basis, with data split by quarter. The next period for data collection will be from 1 July 2011 to 31 December 2011. BEREC expects to report on this data in early 2012. As mentioned above, BEREC will closely monitor for any apparent non-compliance with the regulated caps.

Annex 1

List of respondents

Below are the operators that provided data for the period 1 January 2011 – 30 June 2011:

Austria	Estonia
A1 Telekom Austria	AS EMT
T-Mobile Austria	Elisa Eesti AS
Orange Austria	OÜ Top Connect
Hutchison 3G Austria	ProGroup Holding OÜ
Yesss!	TELE 2 Eesti AS
Teleport Consulting	
Tele Select Manser	
	Finland
Belgium	AlandsMobiltelefonAb
Belgacom Mobile	DNA Ltd
KPN Group Belgium (Base)	Elisa Corporation
Mobistar	TeliaSonera Finland Oyj
Bulgaria	France
BTC AD	Bouygues Telecom
Cosmo Bulgaria Mobile EAD	Orange Caraïbe
Mobitel EAD	Orange France
	SFR
Cyprus	Germany
Cytamobile-Vodafone	E-Plus Mobilfunk GmbH & Co. KG
EAD MTN Cyprus (AreebaLtd)	Telefónica-O2 Germany GmbH & Co. OHG
	Telekom Deutschland GmbH
Czech Republic	Vodafone D2 GmbH
Telefónica O2 Czech Republic	
T-Mobile Czech Republic	
Vodafone Czech Republic	Greece
	COSMOTE Mobile
Denmark	Vodafone Panafon S.A.
TDC	Wind HellasTelecommunications S.A.
Telenor	
TeliaDanmark	

Hungary
Telenor MagyarországZrt
T-Mobile
Vodafone MagyarországZrt

Iceland
Nova
Síminn hf.
Vodafone Iceland

Ireland
Eircom Mobile
Hutchison 3G Ireland
Meteor Mobile Communications
O2 Communications Ireland
Tesco Mobile
Vodafone Ireland

Italy
Carrefour Italia Mobile
Coop Voce
Fastweb
H3G Italia
Noverca Italia
Poste Mobile
Telecom Italia
Tiscali Italia
Vodafone Omnitel
WindTelecomunicazioni

Latvia
Bite Latvia
LatvijasMobilaisTelefons
Tele2

Lithuania

BitėLietuva
Eurocom
Omnitel
Tele2
Teledema

Malta
Melita Mobile Ltd
Mobisle Communications Ltd (GO Mobile)
RedtouchFone Ltd
Vodafone Malta Ltd
PING

Netherlands
KPN B.V.
Lebara B.V.
Lycamobile Netherlands Ltd
Tele2 Netherlands B.V. (data roaming excluded)
T-Mobile Netherlands B.V.
Vodafone Libertel B.V.

Norway
Telenor
NetCom
Network Norway
Tele2
Chess
Lebara
Ventelo
OneCall

Poland
P4 Sp. z.o.o.
Polkomtel S.A.
PTC Sp. z.o.o.
PTK Centertel Sp. z.o.o.
Portugal

CTT – Correios de Portugal, S.A	TeliaSonera AB
OPTIMUS – Comunicações, S.A	
TMN	- Switzerland
Telecomunicações Móveis Nacionais, SA	Orange Communications AG
Vodafone Portugal	- Sunrise Communications AG
Comunicações Pessoais, SA	Swisscom (Schweiz) AG
ZON TV Cabo Portugal, S.A.	
	United Kingdom
Romania	3 UK
Cosmote RMT	O2 UK
Orange Romania	Everything Everywhere
RCS&RDS	Vodafone UK
Vodafone Romania	Tesco Mobile
	Virgin Mobil
Slovak Republic	
Telefónica O2 Slovakia	
Orange Slovensko	
T-Mobile Slovensko	
Slovenia	
Debitel d.d.	
IZI mobil d.d.	
Mobitel d.d.	
Si. mobil d.d.	
T-2 d.o.o.	
Tušmobil o.o.	
Spain	
Euskaltel	
Orange	
Telefónica Móviles de España	
Vodafone	
Yoigo	
Sweden	
Hi3G Access AB	
Tele2 Sverige AB	
Telenor Sverige AB	