

## International Roaming

### BEREC Benchmark Data Report for January 2010 – June 2010

October 2010

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## Section 1

# Executive summary

1.1 This BEREC Benchmark Report on International Roaming (the “Report”) presents the results of the sixth round of data collection on European international roaming services undertaken by the Body of European Regulators in Electronic Communications (BEREC). The Report covers the period 1 January 2010 – 30 June 2010, i.e. quarter 1 – quarter 2 2010. 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.

1.2 Regarding the applicable regulatory framework during this data collection, the amended Roaming Regulation (EC) No 544/2009<sup>1</sup> applied in the EU, with requirements for retail and wholesale regulated tariffs for voice and SMS roaming, and a wholesale regulated tariff for data roaming. For Norway, Iceland and Lichtenstein, Regulation 544/2009 applied in quarter 2 only. In quarter 1, the first Roaming Regulation (EC) No 717/2007 remained in force, with slightly higher voice caps, no SMS caps and no 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. This Report provides comparator data for quarters 1 and 2 2008, under the first Regulation, and quarter 2 2007, when regulation was due to first enter into force. The Reports are intended to provide a sound evidence base for the Commission’s full review of the amended Regulation due by 30 June 2011.

1.4 The information gathered by BEREC suggests a high level of compliance with the applicable Roaming Regulations in all EU Member States. At the retail level, all consumers have access to a Eurotariff and a Euro-SMS tariff, within the regulated maximum rates. At the wholesale level, the voice, SMS and data roaming charges set between operators are in line with the declining regulated average caps.

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

Service and Price Cap (ex VAT)	Q1 – Q2 2010
Wholesale voice (€/minute)	26
Eurotariff voice (making call) (€/minute)	43
Eurotariff voice (receiving call) €/minute)	19
Wholesale SMS (€/SMS)	4
Euro-SMS sent (€/SMS)	11
Euro-SMS received (€/SMS)	0
Wholesale data (€/MB)	100

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

1.6 In general, average Eurotariff retail voice roaming rates (see Figures 1 and 3) remained at or fairly near the regulated caps in many Member States, and stayed at a similar level during the data collection period. For calls made, the average Eurotariff was €0.385 in Q1 2010, and €0.381 for Q2 2010, compared to a cap of €0.43. The average Eurotariff rate was slightly nearer the caps for calls received at €0.163 during Q1 2010 and €0.164 in Q2 2010, compared to a cap of €0.19.

1.7 In the same period, the average unregulated voice tariff for calls made (Figures 2 and 4) rose slightly from €0.384 in Q1 2010 to €0.391 in Q2 2010. For calls received, it also went up a fraction over the period from €0.150 in Q1 2010 to € 0.156 in Q2 2010. Such small changes may reflect changes in certain tariffs; equally they may arise as a consequence of changes in the share of traffic attributable to certain operators.

1.8 As a result, the difference in the average EU price for regulated and unregulated voice prices is fairly small, although there is 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 average surcharge for calls made, from around 26% in Q2 2009 to 9% for both Q1 and Q2 2010. 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. As there is no longer a price trend to measure, this metric has not been included since the 5<sup>th</sup> BEREC Benchmark Data Report.<sup>2</sup>

1.10 At the wholesale level (Figures 10 and 12), average voice prices are below the regulated wholesale cap, at an average of €0.211 during both Q1 and Q2 2010 compared to a regulated cap of €0.26.

1.11 Under the 2009 Regulation, the average wholesale voice charge must be calculated 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 21% in Q2 2009 to around 6% in Q2 2010.

1.12 Considering 'Rest of World' retail voice roaming calls (Figures 7 and 8), typical prices are significantly greater than for calls wholly within EU/EEA. Over time, no clear price trend in average country prices can be seen for calls made or received. There are no clear indications that operators have tended to raise the prices of unregulated roaming calls to make up for lost revenue due to the regulated price caps. Although individual increases have been reported, the averages have tended to decrease slightly.

1.13 The introduction of the Euro-SMS in the EU in accordance with the 2009 Regulation has led to an average Euro-SMS price (Figures 13 and 14) of €0.099 (Q1 2010) and €0.096 (Q2 2010), compared to a regulated cap of €0.11. The EU average price for unregulated SMS is slightly higher at €0.120 (Q1 2010) and €0.116 (Q2 2010). Before the 2009 Regulation, the average EU/EEA SMS price was around €0.27 - €0.24 (Q1 – Q2 2009).

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<sup>2</sup> If a surcharge for Eurotariff calls received seems greater than 0%, NRAs are responsible for investigating whether the operator is complying with the Regulation. (BEREC published an ad hoc Roaming Compliance Report in March 2010 which showed a good level of compliance, and will repeat the compliance survey in late 2010).

1.14 At the wholesale level, the 2009 Regulation has led to a reduction in the average EU price (Figure 17) to the level of the cap (€0.04). In comparison, the EU/EEA average price was €0.136 - €0.133 in Q1 – Q2 2009.

1.15 Regarding 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 slightly larger growth in volumes for SMS sent and voice calls received than for calls made.

1.16 Considering data roaming services, off-net retail prices (Figures 18 and 22, 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, from €2.668 in Q4 2009 to €2.604 in Q2 2010. This reduction, however, is smaller than previous quarterly reductions. A considerable variation in average price between countries remains, but appears to be getting smaller as prices come down. As shown by Figure 19, there is a considerable difference between prepay and postpaid prices and between on-net and off-net prices, whereby prepay prices are higher than postpaid (for both on-net and off-net) and on-net is considerably cheaper than off-net.

1.17 At the wholesale level, an average cap of €1.00 applies in the EU in accordance with the 2009 Regulation. The EU average price (Figure 21) has fallen to €0.364 in Q2 2010, compared with an EU/EEA average of €1.205 in Q1 2009.

1.18 This data collection found continued growth in volumes of roaming data services (Figure 20), to nearly 50% higher in Q2 2010 than Q2 2009. A seasonal peak in Q3 is also visible, although this does not hold true for all countries.

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 EU/EEA prices are near the regulated caps, with a similar gap to that seen in the past, particularly for unregulated voice services, although there is a significant variation between countries.

1.21 For SMS, the 2009 amended Regulation brought a significant reduction in the average EU price for regulated and unregulated SMS. For the first six months of regulation, prices were near the caps. This Report completes data for a full year under the 2009 Regulation, and finds that during this period the average has remained just below the cap. BEREC will look closely at the evolution of SMS in subsequent Reports to provide comparable year-on-year data.

1.22 The picture is different for data roaming, in that the average wholesale and retail charges have fallen significantly between the second quarter of 2007 and the second quarter of 2010, although there is a noticeable reduction in the drop in prices during the first half of 2010. BEREC also notes that a sizeable margin remains between the average wholesale and retail prices. The average wholesale price also fell more in both relative and absolute terms than the average retail price during the first half of 2010.

1.23 In responding to the Commission's 2008 public consultation to inform the amended 2009 Regulation, ERG<sup>3</sup> identified some arguments to support the proposition that market forces would be stronger for data roaming than had proved to be the case for voice and SMS. Subsequent data collections tend to confirm the validity of this analysis, although it is not clear how effective these forces will be in further reducing prices, especially in some countries. In its consultation response, ERG also noted that it would be difficult to assess the extent to which threats of regulatory intervention had stimulated the price cuts.

1.24 BEREC will study the trends in wholesale and retail data roaming prices closely in its next 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 if market forces are working. BEREC will also examine this question in its submission to the Commission's full review of the 2009 Regulation.

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<sup>3</sup> [http://erg.eu.int/doc/publications/erg\\_08\\_35rev1\\_resp\\_intern\\_roaming\\_cons\\_080729.pdf](http://erg.eu.int/doc/publications/erg_08_35rev1_resp_intern_roaming_cons_080729.pdf)

## Section 2

# Introduction

2.1 The European Regulators Group (ERG) was at the forefront of tackling 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 undertaken<sup>4</sup>. ERG responded<sup>5</sup> 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 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’s<sup>6</sup> views expressed in response to the consultation were substantially reflected in the Commission’s legislative proposals,<sup>7</sup> 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 2009<sup>8</sup>.

2.7 In particular, the Regulation introduced the following measures from 1 July 2009 to 30 June 2012:

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<sup>4</sup>[http://ec.europa.eu/information\\_society/activities/roaming/roaming\\_regulation/first\\_phase/index\\_en.htm](http://ec.europa.eu/information_society/activities/roaming/roaming_regulation/first_phase/index_en.htm)

<sup>5</sup>[http://www.erg.eu.int/doc/whatsnew/erg\\_response\\_22\\_march\\_2006.pdf](http://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](http://www.erg.eu.int/doc/whatsnew/erg_response_11_may_2006.pdf)

<sup>6</sup>[http://erg.eu.int/doc/publications/erg\\_08\\_35rev1\\_resp\\_intern\\_roaming\\_cons\\_080729.pdf](http://erg.eu.int/doc/publications/erg_08_35rev1_resp_intern_roaming_cons_080729.pdf)

<sup>7</sup>[http://ec.europa.eu/information\\_society/activities/roaming/docs/regulation/reg\\_en.pdf](http://ec.europa.eu/information_society/activities/roaming/docs/regulation/reg_en.pdf)

<sup>8</sup><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

### ***This Report***

2.8 This Report is the sixth in a series of reports, previously produced by ERG, providing an overview of international roaming across the EU. This Report covers the period 1 January 2010 – 30 June 2010.

2.9 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)). This monitoring informed the Commission’s interim review of the functioning of the amended Regulation required by 30 June 2010, and will be drawn upon for the Commission’s full review due by 30 June 2011. It should include information on inadvertent roaming and traffic steering (Art.11).

2.10 BEREC believes that the information collected in existing and subsequent reports should provide a sound basis for the Commission’s full review of the 2009 Regulation, and 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 Regulation and the state of evolution of roaming services.

2.11 BEREC has also 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 can be assessed after implementation. 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.

2.12 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. ERG and now 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



2.13 Following publication of previous reports,<sup>9</sup> some operators have provided their national NRA with more accurate data for one or more of the 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 certain data in this Report might be updated in a subsequent report.

2.14 This Report includes data for Norway and Iceland, where the 2007 Regulation was in force for quarter 1 2010 and the 2009 amended Regulation for quarter 2 2010. It 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.

### ***Methodology for data collection***

2.15 ERG first consulted on a draft version of its data questionnaire during September 2007. Following comments received, ERG amended the data questionnaire sent to providers<sup>10</sup>, 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.

2.16 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 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.

2.17 Over 135 providers of international roaming services provided information for this Report. These include virtually all of the mobile operators in the EU, as well as a significant number of MVNOs that provide roaming services in the EU. BEREC estimates that this covers around 95% of EU consumers using international roaming services today.

### ***Format of the Report***

2.18 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.

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<sup>9</sup> [http://erg.eu.int/doc/publications/2009/erg\\_09\\_01\\_intern\\_roaming\\_rep3\\_090112.pdf](http://erg.eu.int/doc/publications/2009/erg_09_01_intern_roaming_rep3_090112.pdf)

<sup>10</sup> [http://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_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](http://www.erg.eu.int/doc/publications/erg_07_47_rev1b_data_model_spec_on_roaming_reg_exp_mem.pdf)

## 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 or the 2009 Regulations are not applicable there. 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 2010 to 30 June 2010, 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” customers<sup>11</sup> 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.

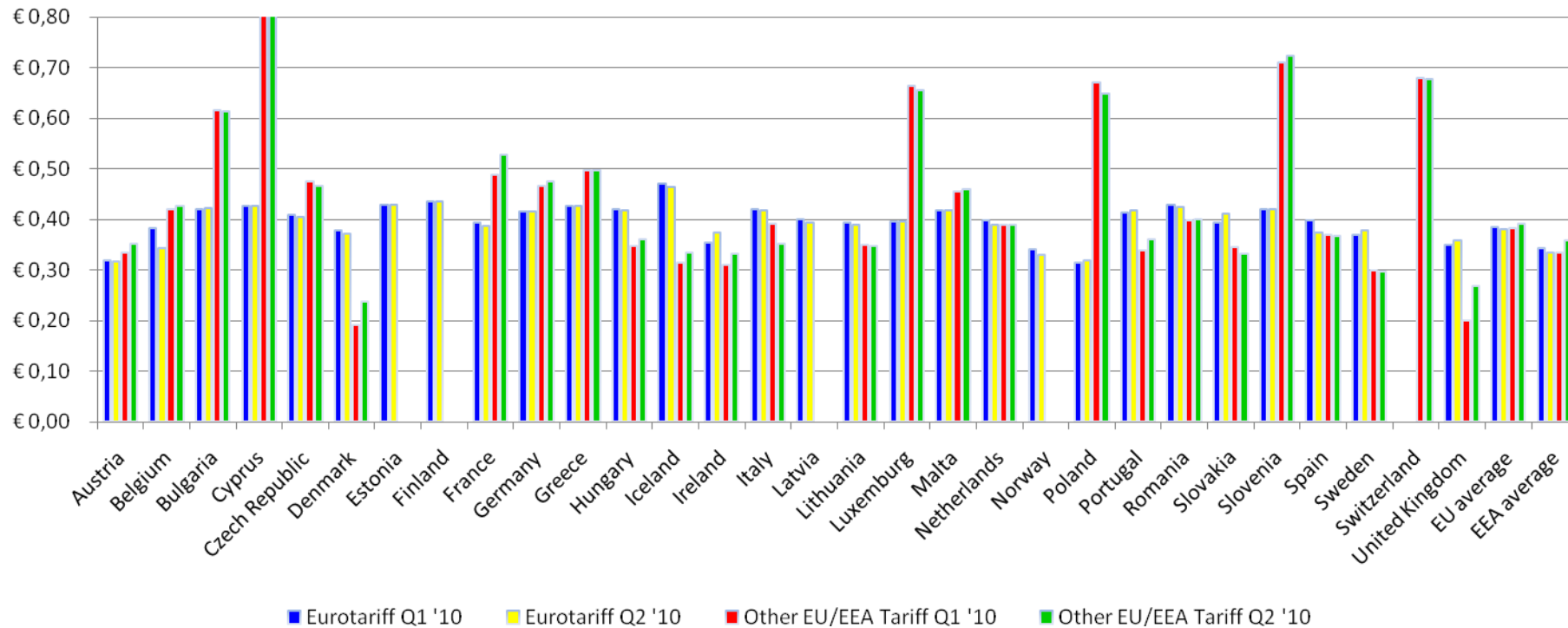
3.5 In order to show the impact of the 2009 amended Roaming Regulation, which had entered into force in the EU but was implemented in the EEA during Q2 2010, this Report contains separate averages for the EU and the EEA. In some figures, only EU averages are shown. Where this is the case, an \* at the end of the title notes this distinction. BEREC expects to go back to reporting EU/EEA averages in the next report, as the amended Regulation will have been in force in the EEA countries for the entire period of the data collection.

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<sup>11</sup> This means undertakings that have negotiated a bespoke tariff for international roaming that is not available to individual customers.

## Retail voice

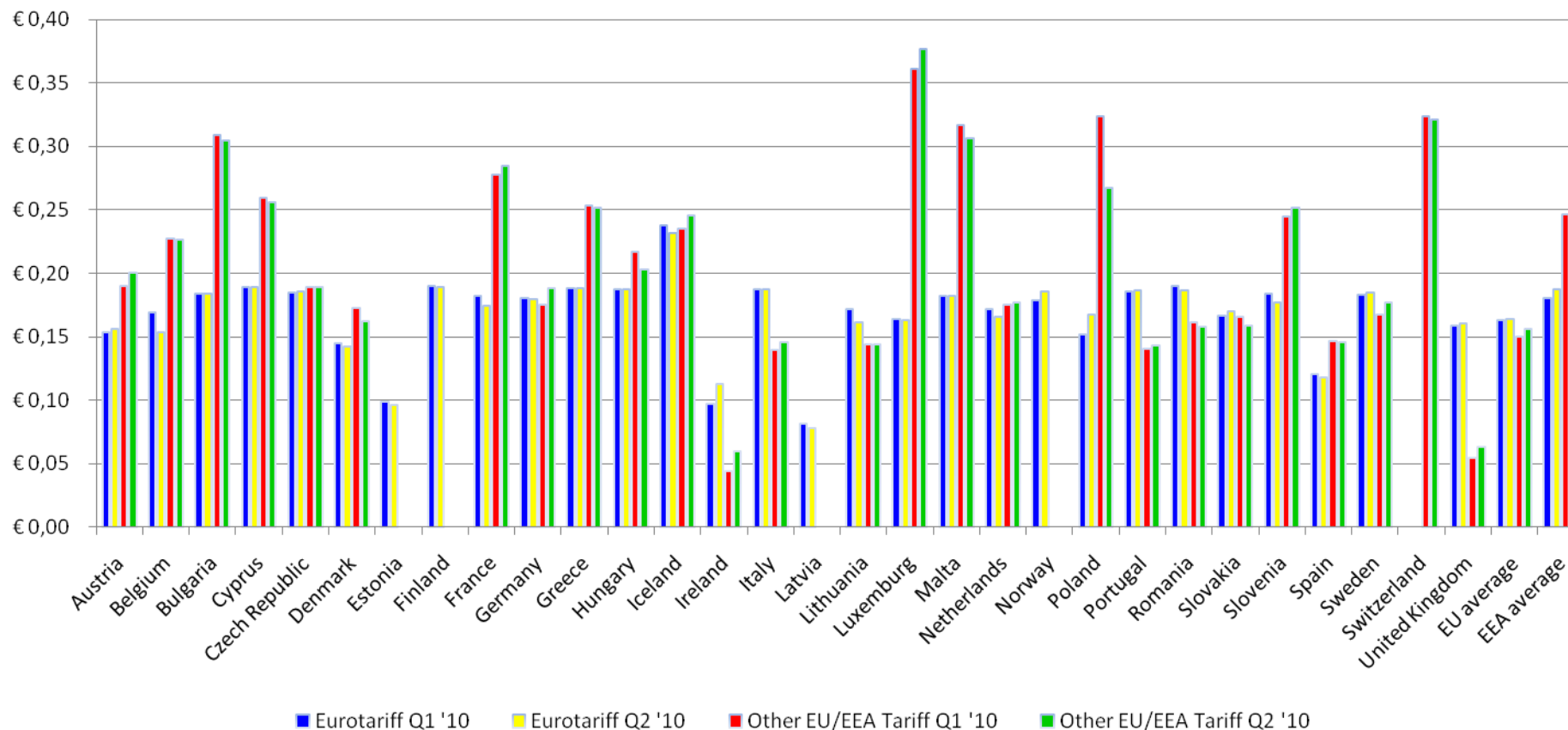
**Figure 1: Average retail price per minute voice call made for all consumers (excluding special corporate): Eurotariff and other EU/EEA tariffs (based on billed minutes)**



**EU average:** Eurotariff Q1 2010 = € 0.385; Eurotariff Q2 2010 = € 0.381; Other EU/EEA Tariff Q1 2010 = € 0.384; Other EU/EEA Tariff Q2 2010 = € 0.391

On average the Eurotariff offered a slightly better deal for calls made then alternative tariff plans. While the average for Eurotariff varies between countries, the EU average is about 4.5 to 5 cents below the regulated cap of € 0.43.

**Figure 2: Average retail price per minute voice call received for all consumers (excluding special corporate): Eurotariff and other EU/EEA tariffs (based on billed minutes)**



**EU average:** Eurotariff Q1 2010 = € 0.163; Eurotariff Q2 2010 = € 0.164; Other EU/EEA Tariff Q1 2010 = € 0.150; Other EU/EEA Tariff Q2 2010 = € 0.156.

For calls received it appears alternative tariffs offer a better deal than the Eurotariff, although this varies per country. Both EU averages are below the regulated cap of € 0.19

Figure 3: EU/EEA average prices per minute for retail voice calls made  
(based on billed minutes)  
(EU only from Q2 2009 onward)\*

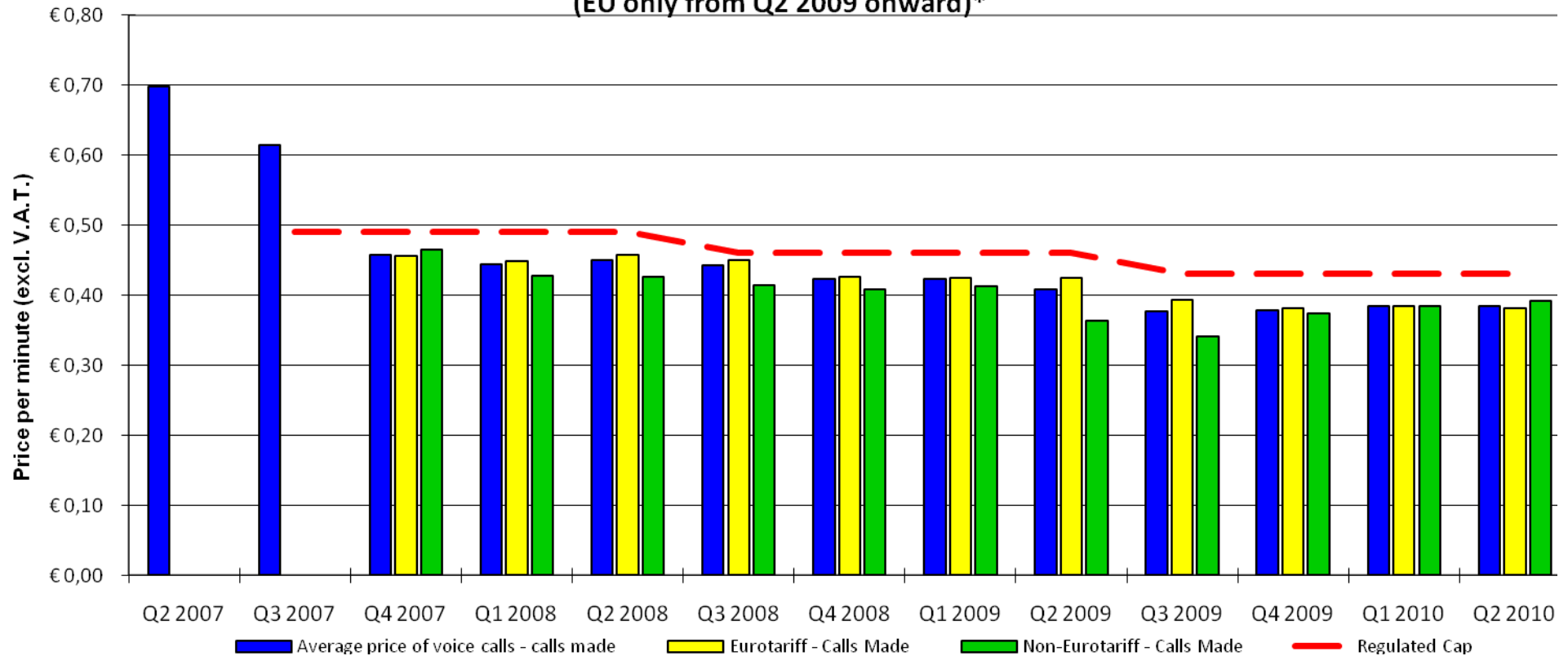


Figure 3 demonstrates how the average price for calls made has come down since introduction of the Regulation in Q3 2007 and that both Eurotariff and non-Eurotariff averages are below the Eurotariff cap. Comparing the same quarters year on year, the difference between the average EU price for the Eurotariff and for other EU/EEA tariffs for calls made is greatest in Q2 and Q3 2009, the peak travel season, and narrows afterwards.

Figure 4: EU/EEA average prices per minute for retail voice calls received  
 (based on billed minutes)  
 (EU only from Q2 2009 onward)\*

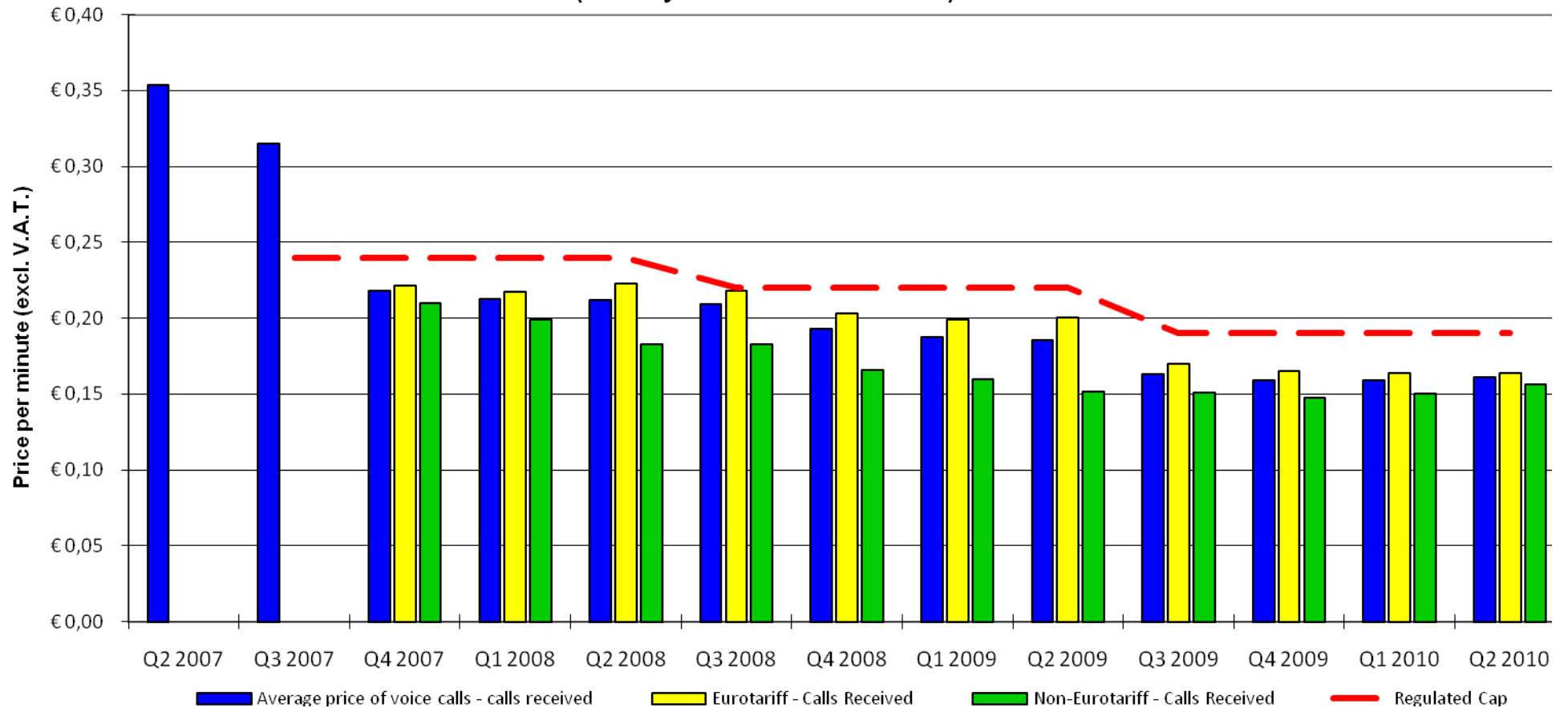
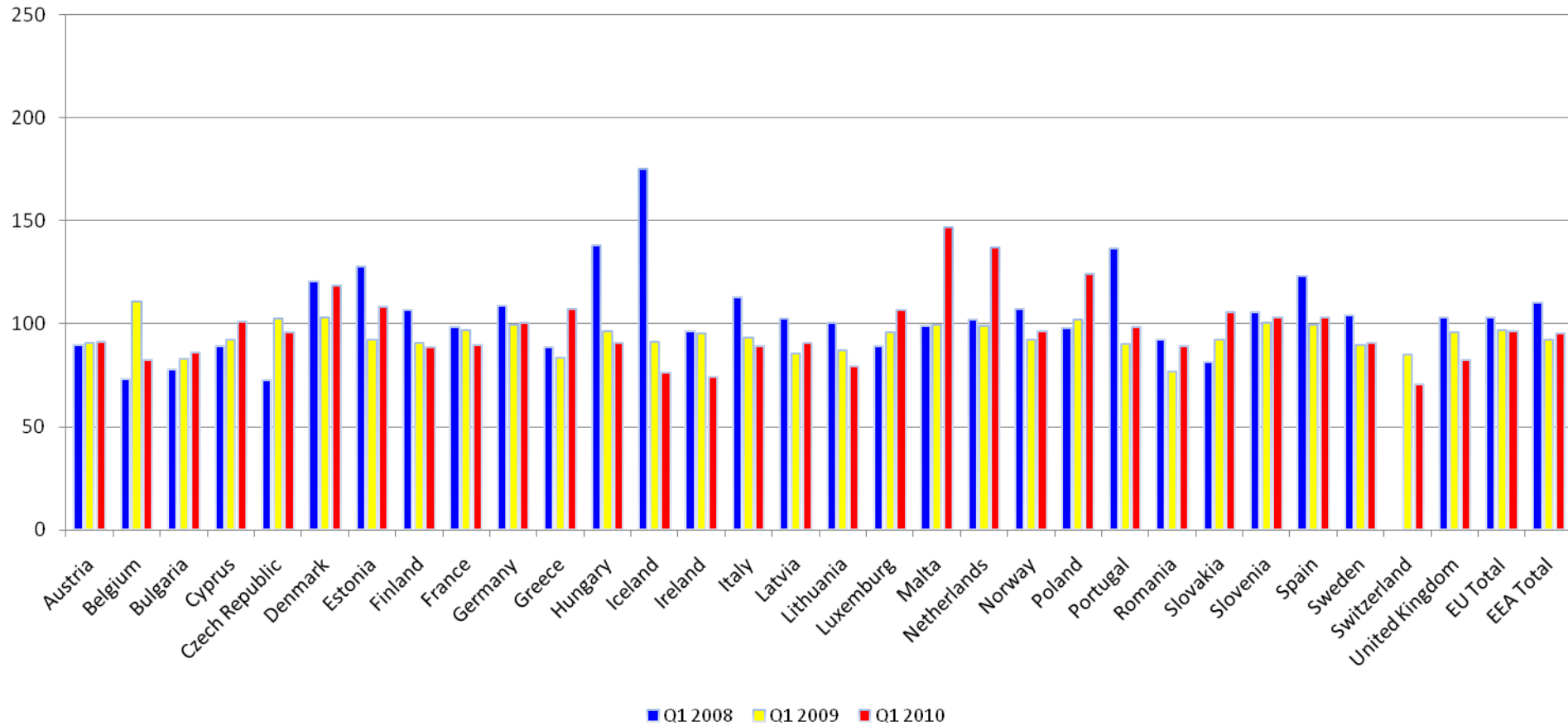


Figure 4 is similar to Figure 3, but now for calls received. Similar to figure 2 it appears that for calls received, average prices for other EU/EEA tariffs are consistently lower than average Eurotariff prices.

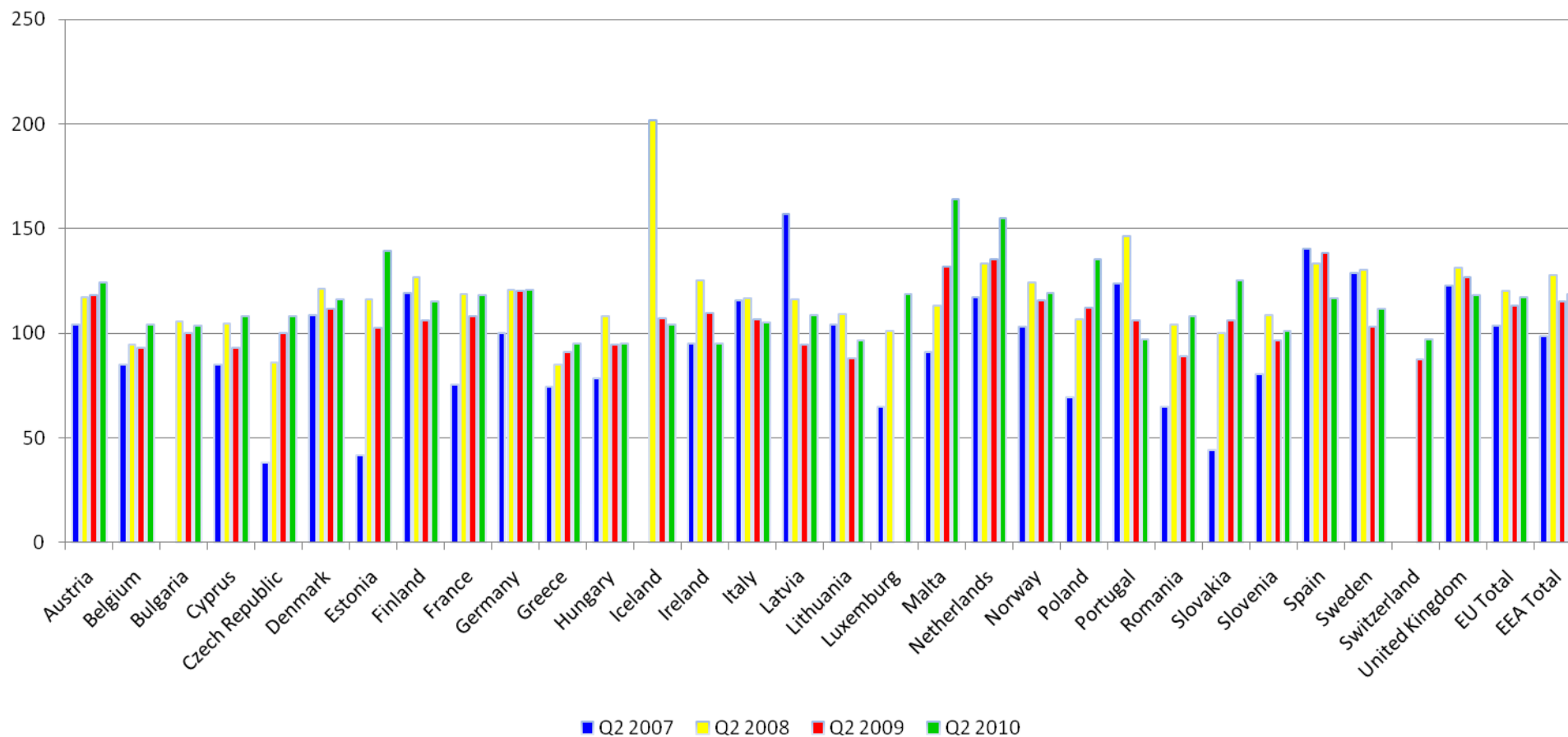
Figure 5a: Volumes of EU/EEA calls made (all consumers excluding special corporate)  
(Actual minutes, Q4 2008 = 100)



**EU average:** Q1 2008 = 103.0; Q1 2009 = 96.6; Q1 2010 = 96.15.

Most countries illustrate a trend similar to the EU average, with slightly lower year-on-year volumes for Q1 2010.

**Figure 5b: Volumes of EU/EEA calls made (all consumers excluding special corporate)  
(Actual minutes, Q4 2008 = 100)**

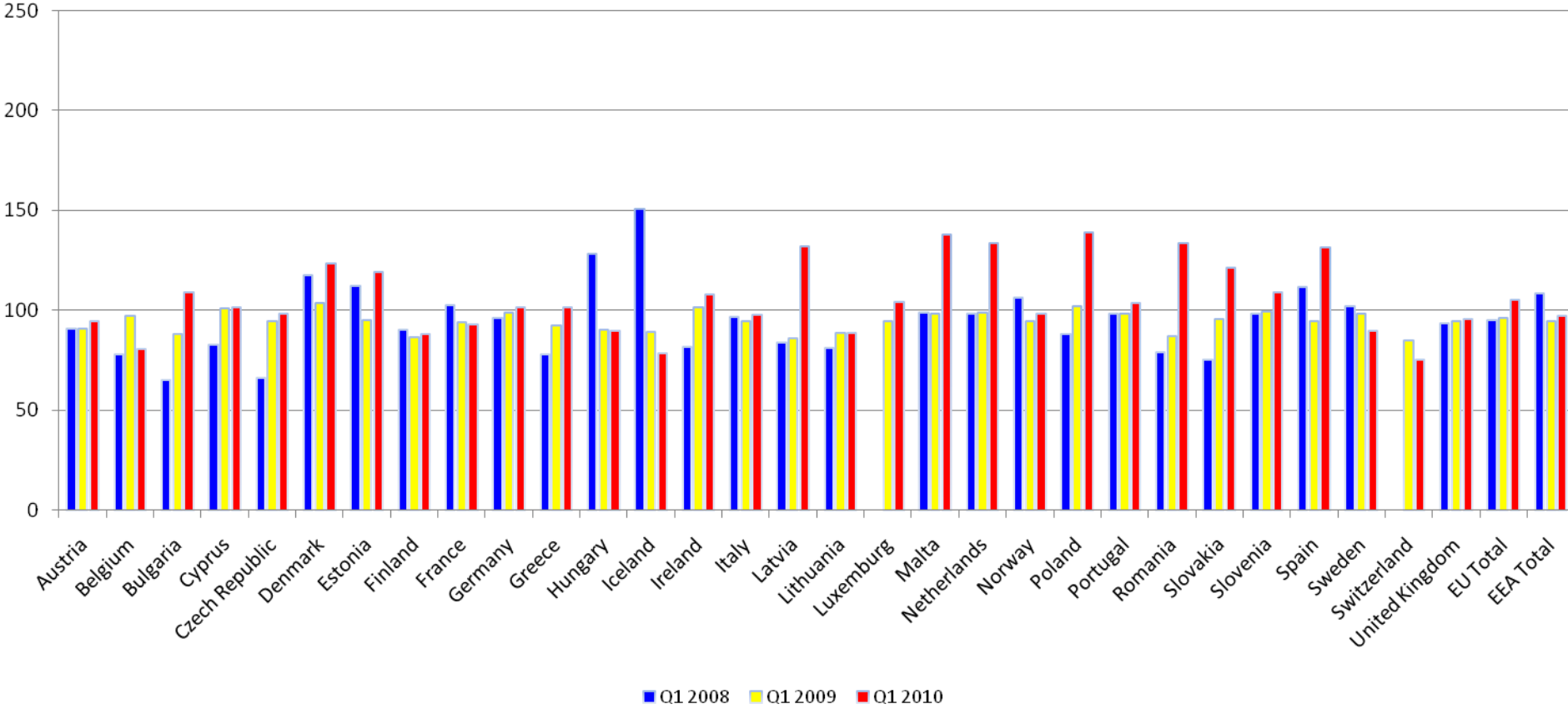


**EU average:** Q2 2007 = 103.8; Q2 2008 = 120.3; Q2 2009 = 113.1; Q2 2010 = 117.2.

For Q2 the traffic movements differ from country to country, with some showing an increase, while others decrease. The EU average shows only little movement.



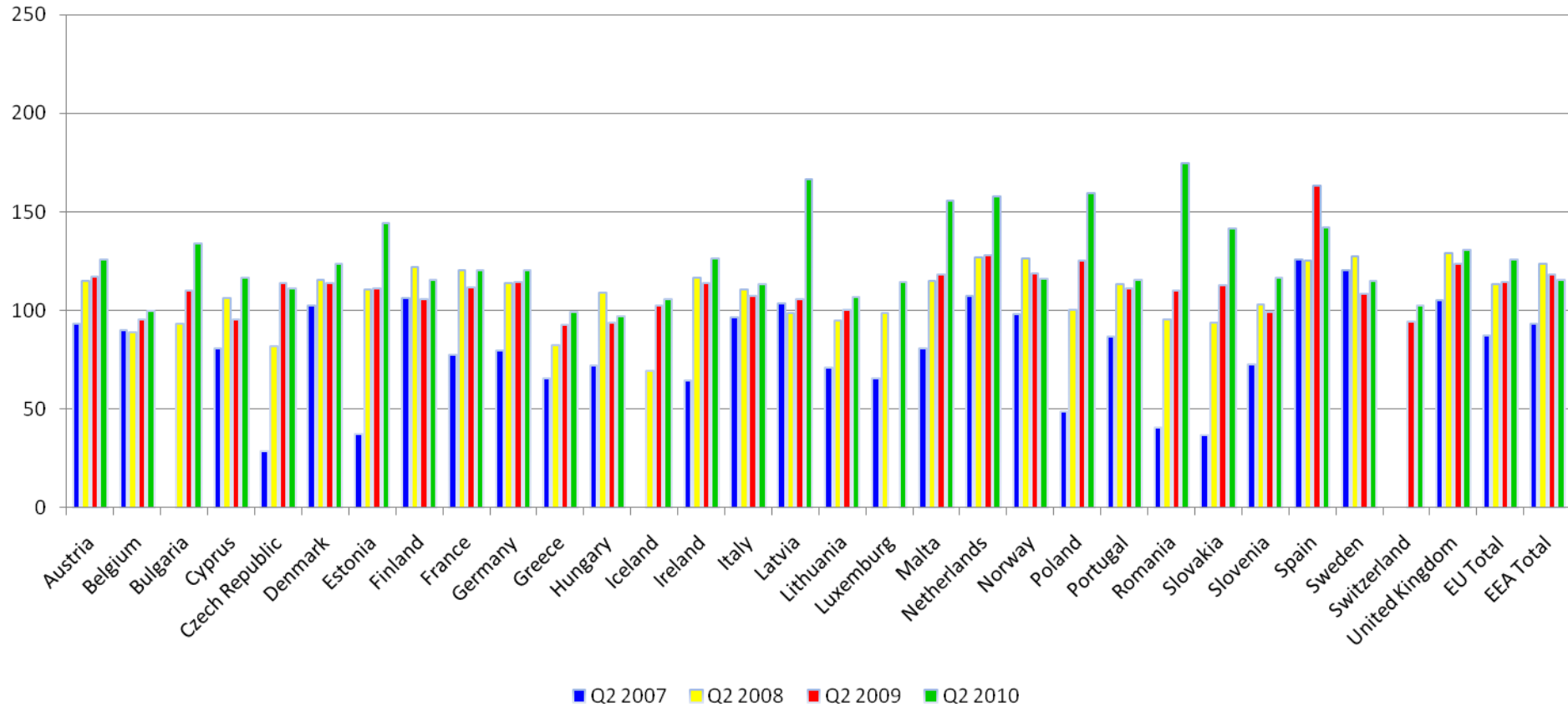
Figure 6a: Volumes of EU/EEA calls received (all consumers excluding special corporate)  
(Actual minutes, Q4 2008 = 100)



**EU average:** Q1 2008 = 94.7; Q1 2009 = 95.7; Q1 2010 = 104.9.

For calls received, most countries illustrate a trend similar to the EU average, with slightly higher year-on-year volumes for Q1 2010.

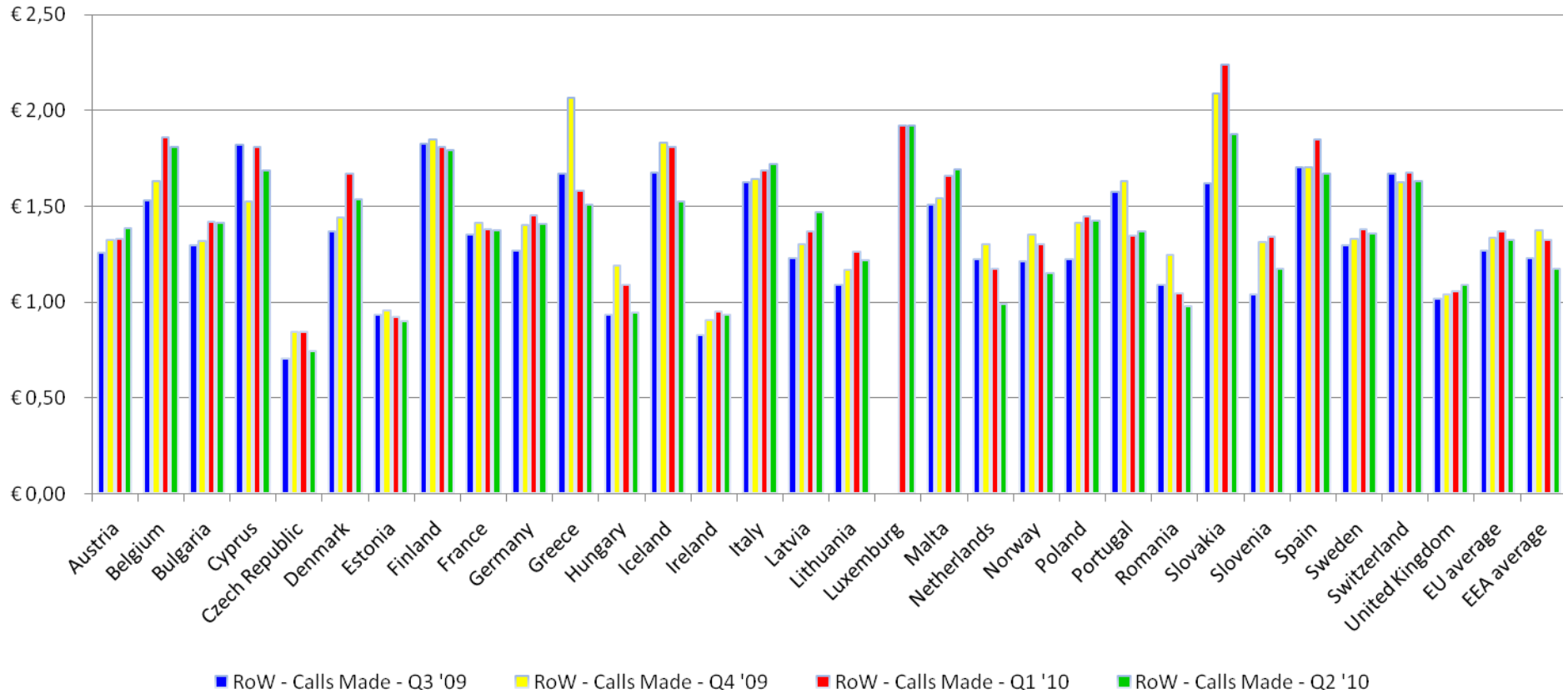
**Figure 6b: Volumes of EU/EEA calls received (all consumers excluding special corporate)  
(Actual minutes, Q4 2008 = 100)**



**EU average:** Q2 2007 = 87.4; Q2 2008 = 113.5; Q2 2009 = 114.2; Q2 2010 = 126.0.

For calls received, most countries illustrate a trend similar to the EU average, with slightly higher year-on-year volumes for Q2 2010.

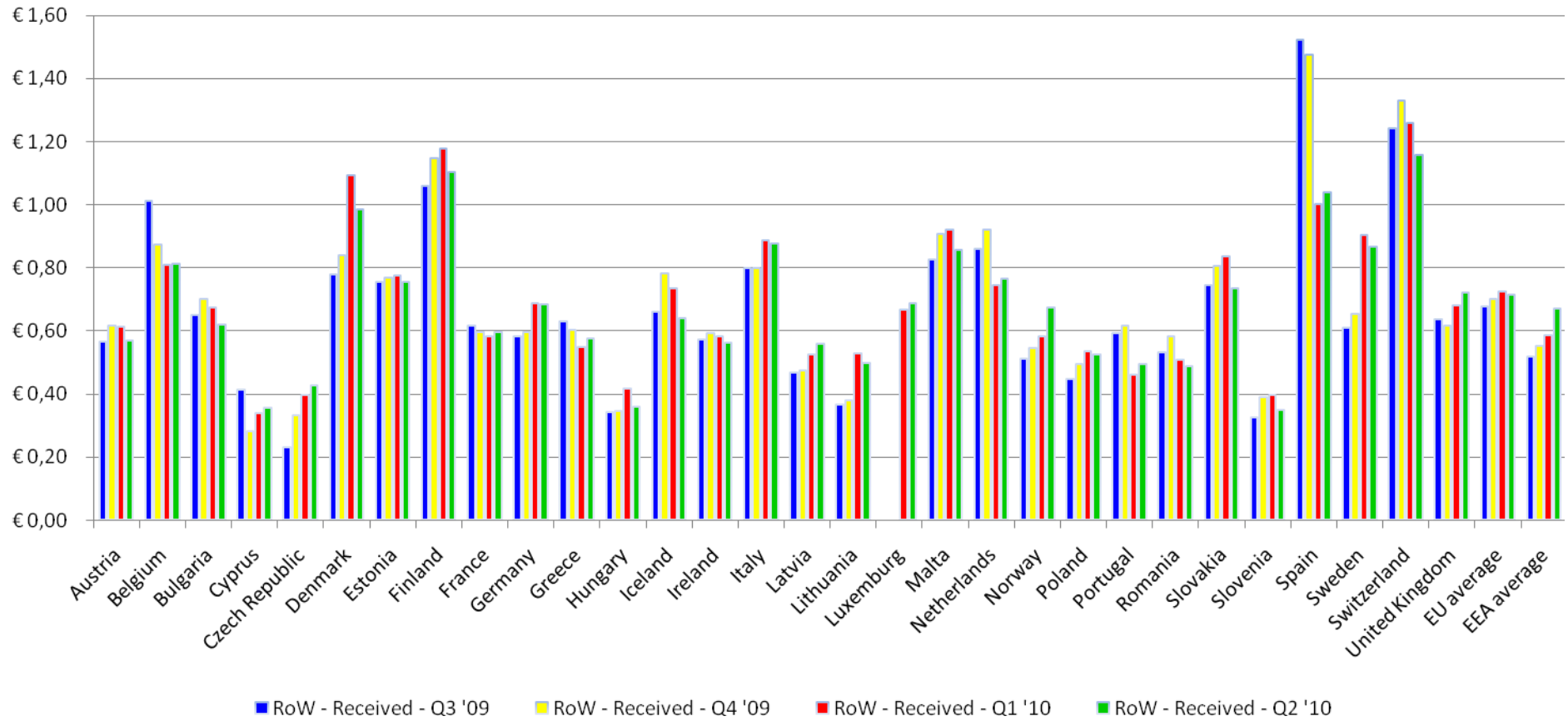
**Figure 7: Average retail price per minute voice call made for all consumers (excluding special corporate): Rest of World tariffs (based on billed minutes)**



**EU average:** Q3 2009 = € 1.270; Q4 2009 = € 1.337; Q1 2010 = € 1.366; Q2 2010 = € 1.321.

Figure 7 gives an overview of developments in average prices for making calls from the EU/EEA to non-EU/EEA countries, from non-EU/EEA countries to the EU/EEA, or between non-EU/EEA countries. There does not appear to be a clear discernable trend. BEREC considers fluctuations in average prices by country are likely to be influenced by seasonal effects.

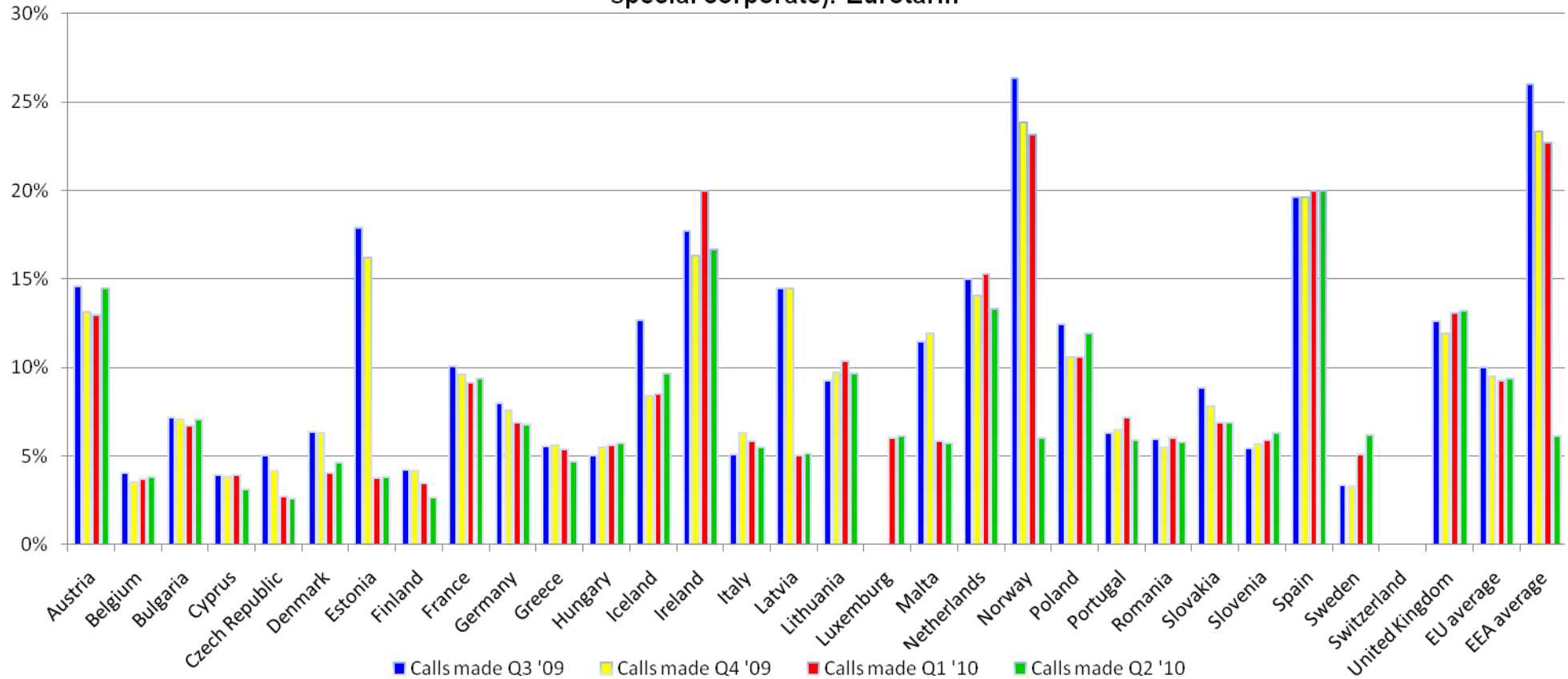
**Figure 8: Average retail price per minute voice call received for all consumers (excluding special corporate): Rest of World tariffs (based on billed minutes)**



**EU average:** Q3 2009 = € 0.678; Q4 2009 = € 0.701; Q1 2010 = € 0.724; Q2 2010 = € 0.713.

Figure 8 shows a similar picture to Figure 7, calls received in non-EU/EEA countries and originating inside or outside the EU/EEA. Again, there is no obvious trend.

**Figure 9: Surcharge as a result of billed minutes for voice calls made for all consumers (excluding special corporate): Eurotariff**

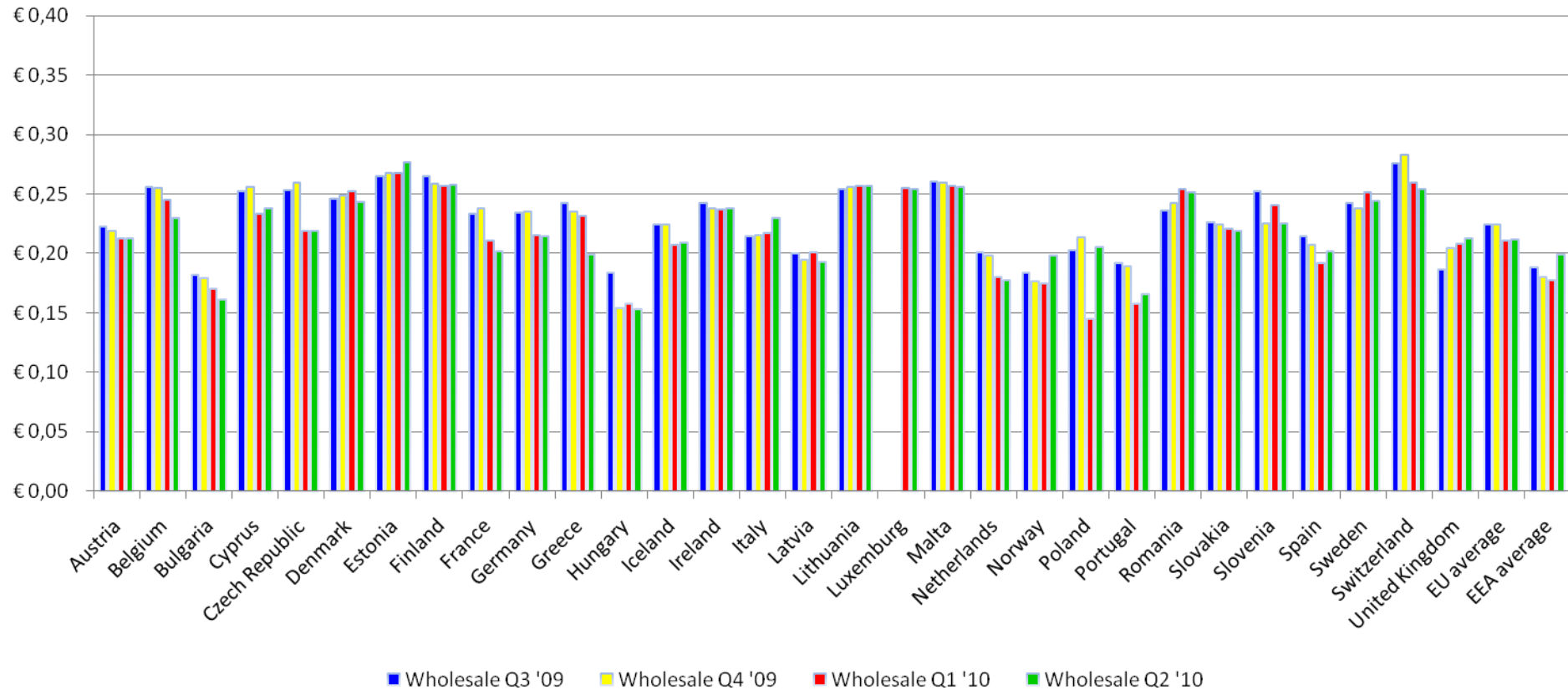


**EU average:** Calls made Q3 2009 = 10.0%; Calls made Q4 2009 = 9.5%; Calls made Q1 2010 = 9.3%; Calls made Q2 2010 = 9.4%.

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. The effect of the amended Regulation is quite pronounced, and in line with the intentions behind it, though there are some countries in which this effect appears to be less pronounced.

## Wholesale voice

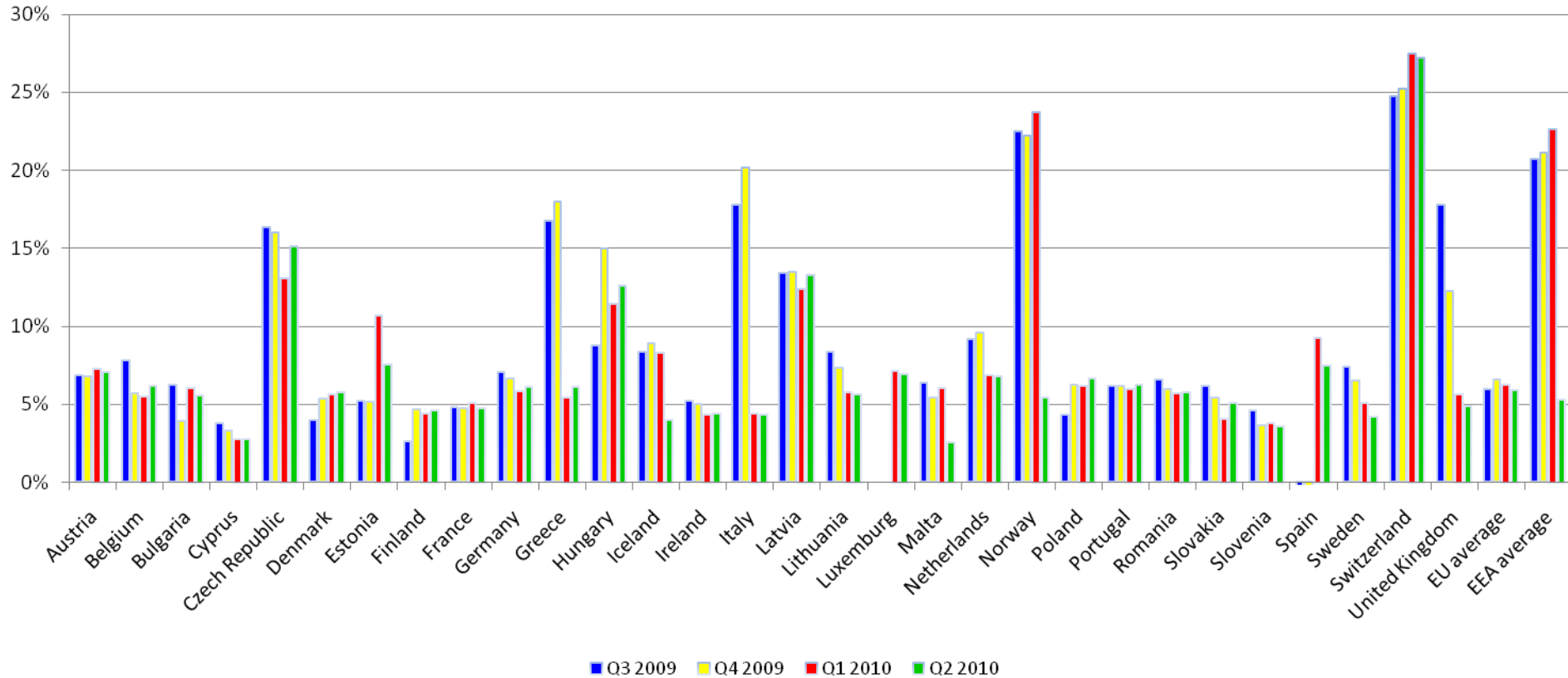
**Figure 10: Average wholesale price per minute voice call: EU/EEA, non-group companies  
(based on billed minutes)**



**EU average:** Q3 2009 = € 0.224; Q4 2009 = € 0.225; Q1 2010 = € 0.211; Q2 2010 = € 0.211.

Figure 10 illustrates average prices for voice minutes at the wholesale level. All averages are below the regulated wholesale price cap.

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



**EU average:** Q3 2009 = 6.0%; Q4 2009 = 6.6%; Q1 2010 = 6.2%; Q2 2010 = 5.9%.

Figure 11 illustrates the effects of billing unitisation at the wholesale level. Similar to figure 9 for the retail level, there is a noticeable trend towards a much lower surcharge in EU countries, due to the 2009 amended Regulation. This is especially notable for the EEA countries, where the amended Regulation came into effect during Q2 2010.

**Figure 12: EU/EEA averages prices per minute for wholesale non-group voice calls  
(based on billed minutes)  
(EU only for Q2 2009 onward)\***

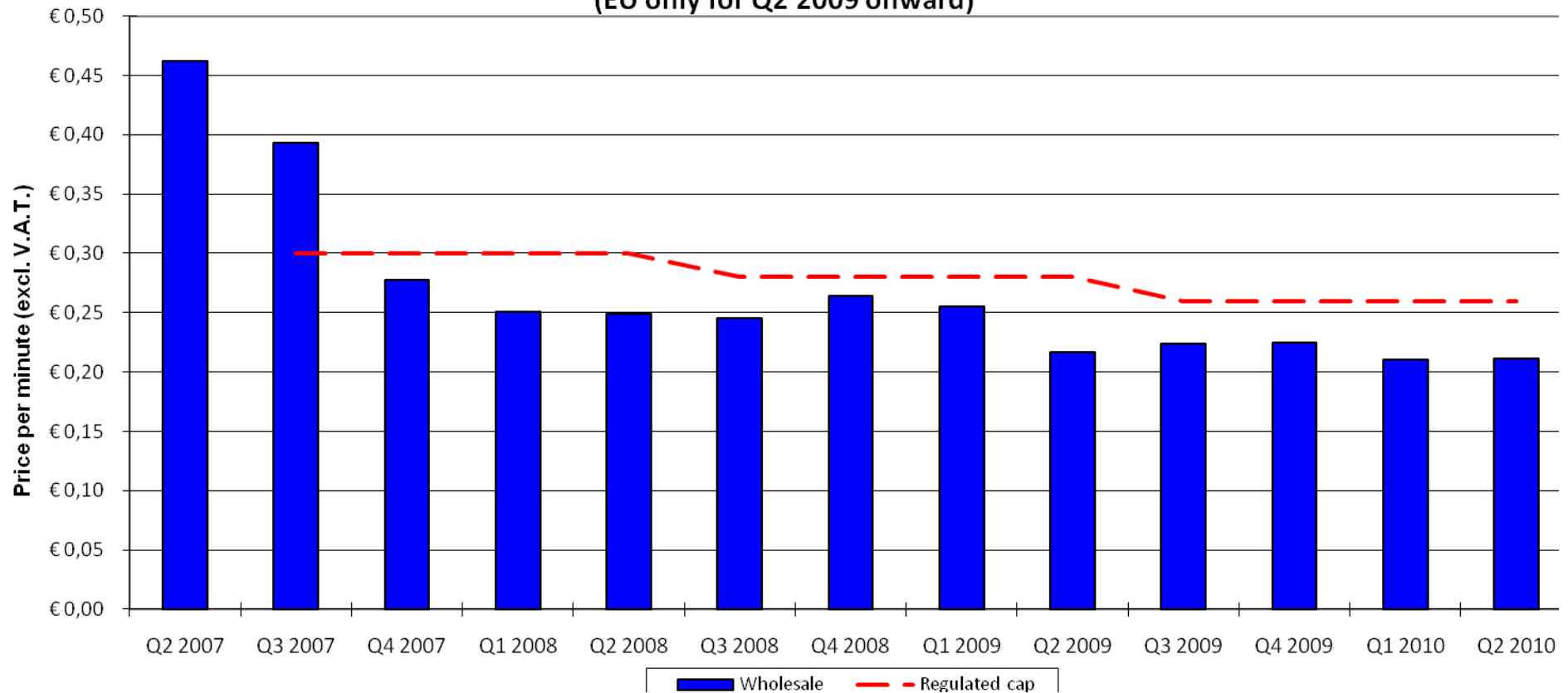
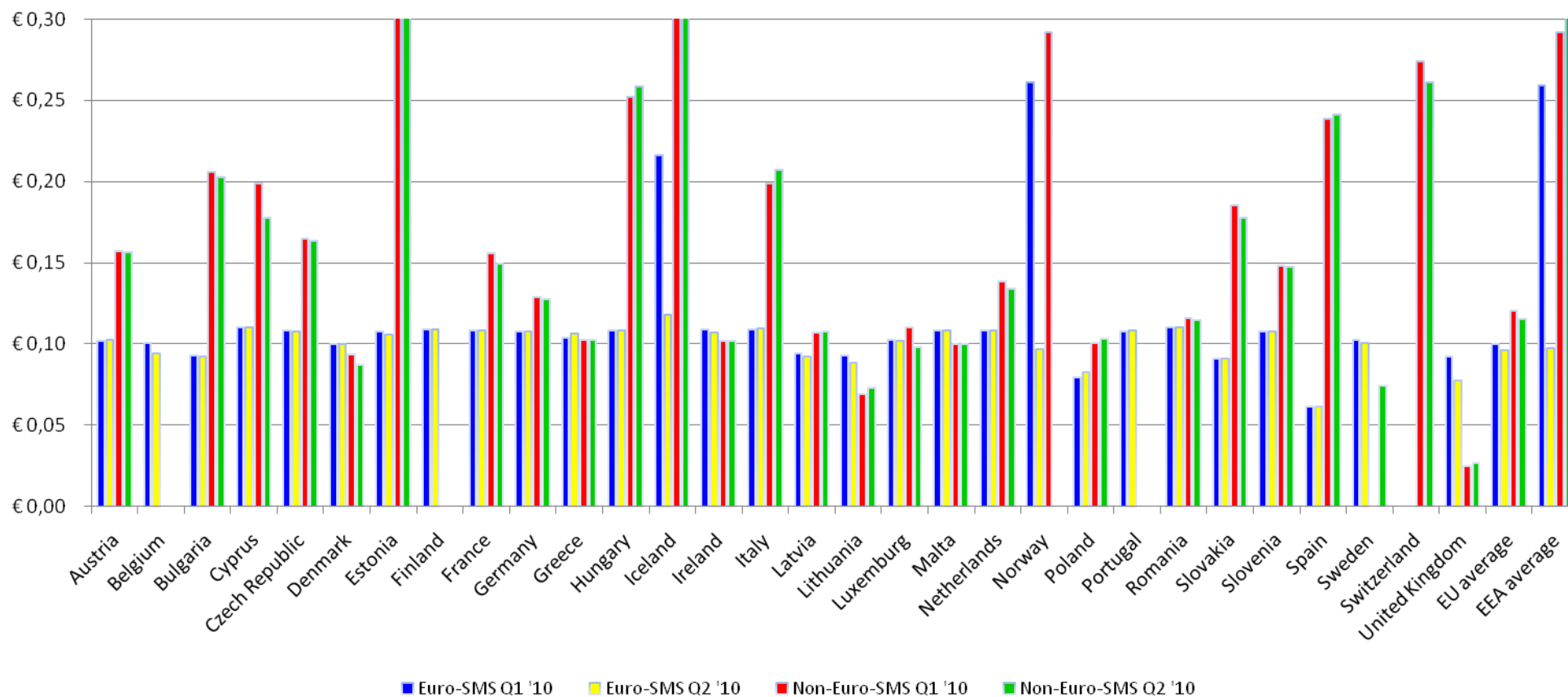


Figure 12 illustrates the EU/EEA average price at the wholesale level from Q2 2007 until Q2 2010 (with the EU-only average for Q2 2009 onwards). It illustrates the clear drop in the average soon after the implementation of the 2007 Regulation. Since then, the average wholesale price has been below the regulated cap with a varying margin.



## Retail SMS

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



**EU average:** Euro-SMS Q1 2010 = € 0.099; Euro-SMS Q2 2010 = € 0.096; Non-Euro-SMS Q1 2010 = € 0.120; Non-Euro-SMS Q2 2010 = € 0.116.

On average, Euro-SMS appears to offer the better deal in most EU countries. All Member States reported Euro-SMS averages below the regulated € 0.11 cap.

Figure 14: EU/EEA average price per retail SMS  
(EU only for Q2 2009 onward)\*

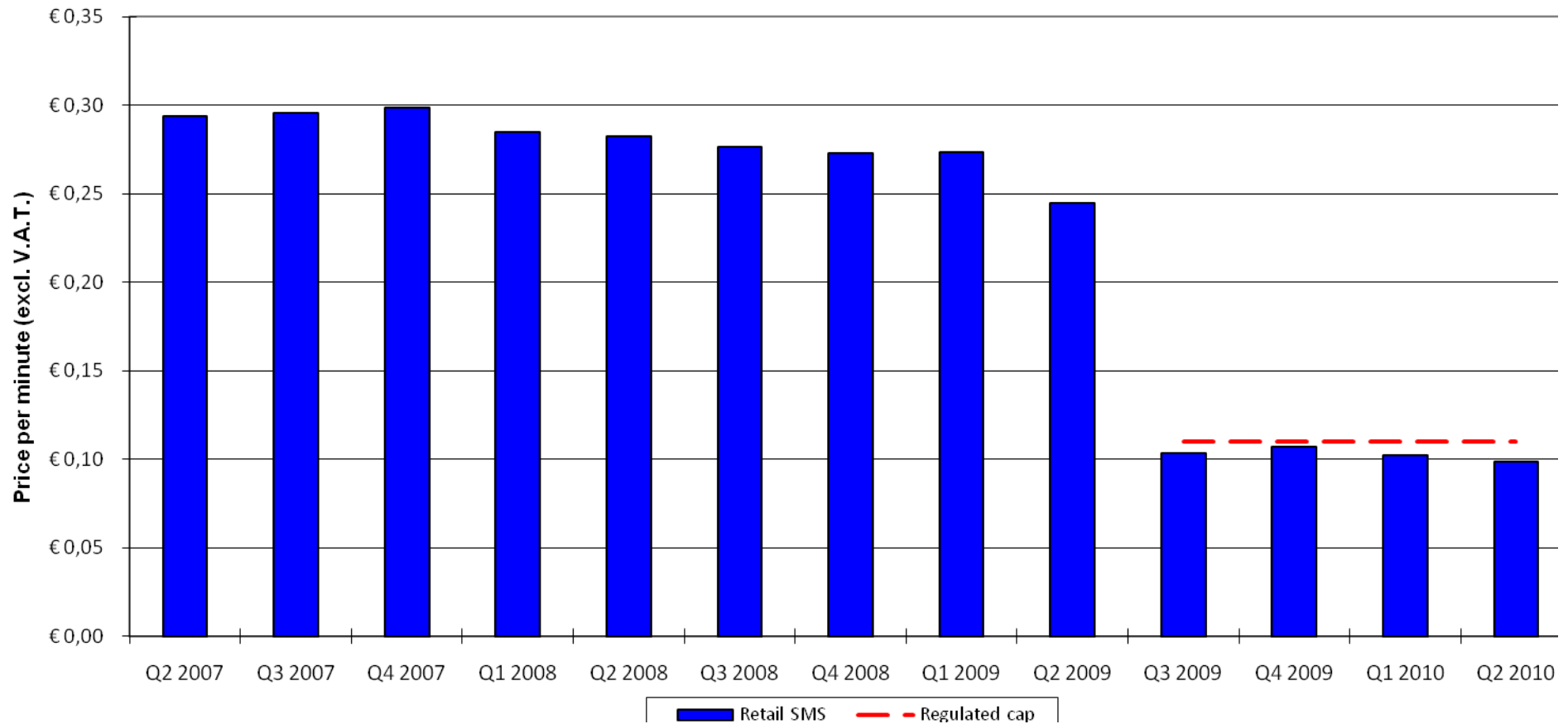
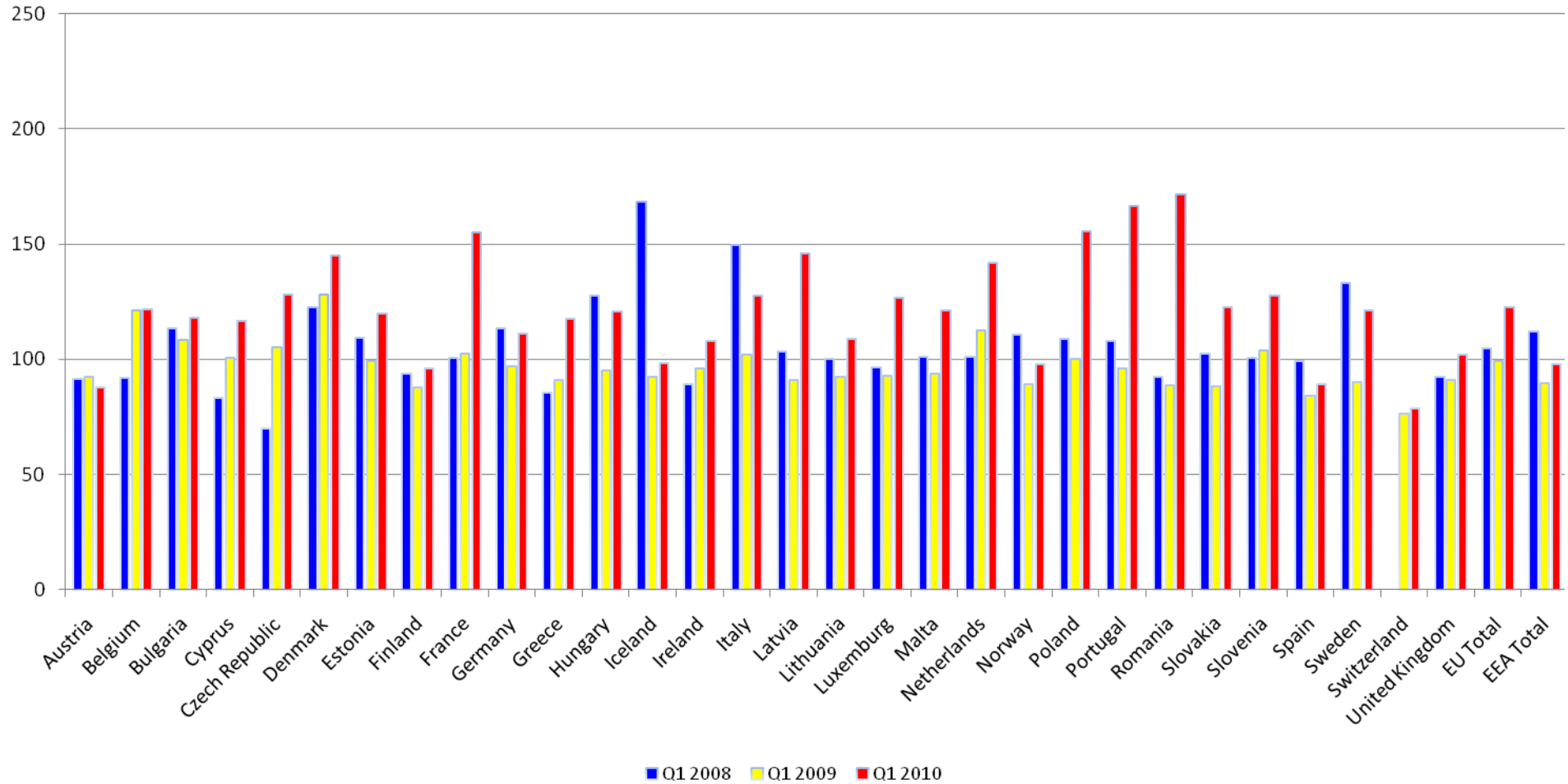


Figure 14 gives an overview of the EU/EEA average price for SMS messages (with the EU-only average for Q2 2009 onward), and the subsequent introduction of the regulated Euro-SMS in Q3 2009. The EU average is slightly below the regulated cap.

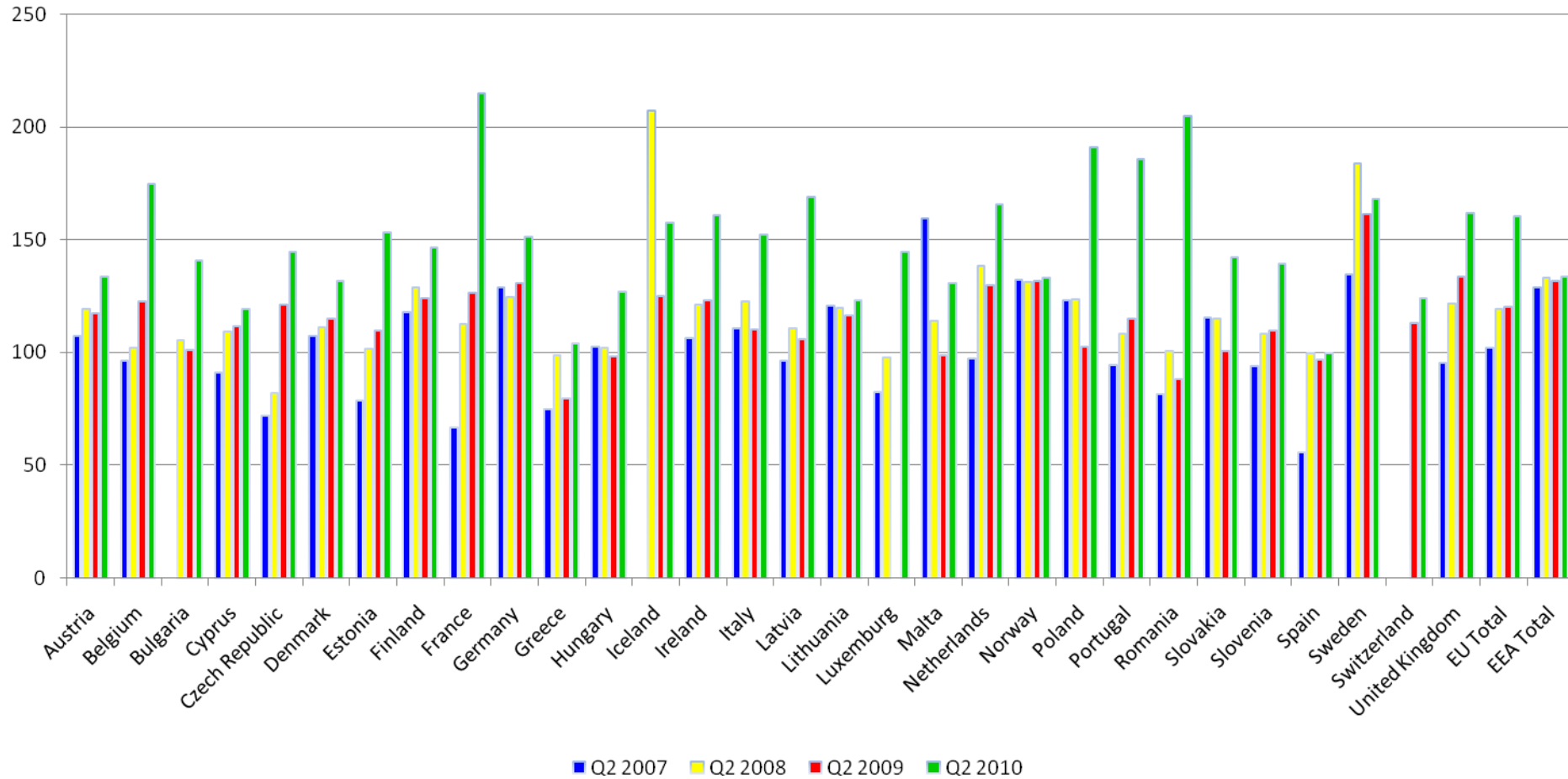
Figure 15a: Volumes of retail EU/EEA SMS sent (Q4 2008 = 100)



**EU average:** Q1 2008 = 104.7; Q1 2009 = 99.2; Q1 2010 = 122.8.

The volumes of roaming SMS messages sent have increased in nearly all EU countries.

Figure 15b: Volumes of retail EU/EEA SMS sent (Q4 2008 = 100)



**EU average:** Q2 2007 = 101.8; Q2 2008 = 118.9; Q2 2009 = 119.9; Q2 2010 = 160.2.

The volumes of all roaming SMS messages sent have increased in nearly all EU countries.

Figure 16: EU/EEA trends in volume for retail voice calls and SMS  
(Q4 2008 = 100)

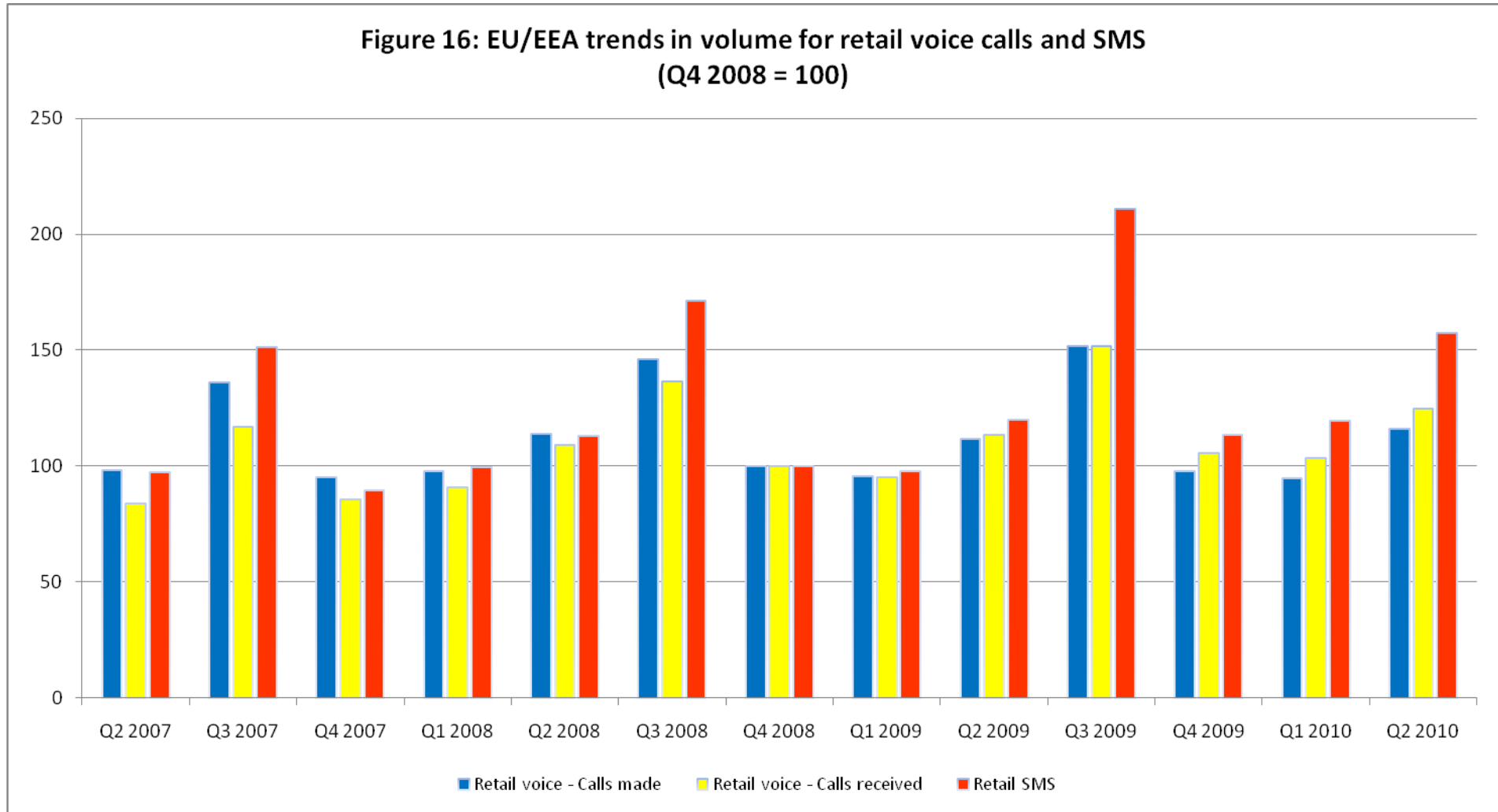
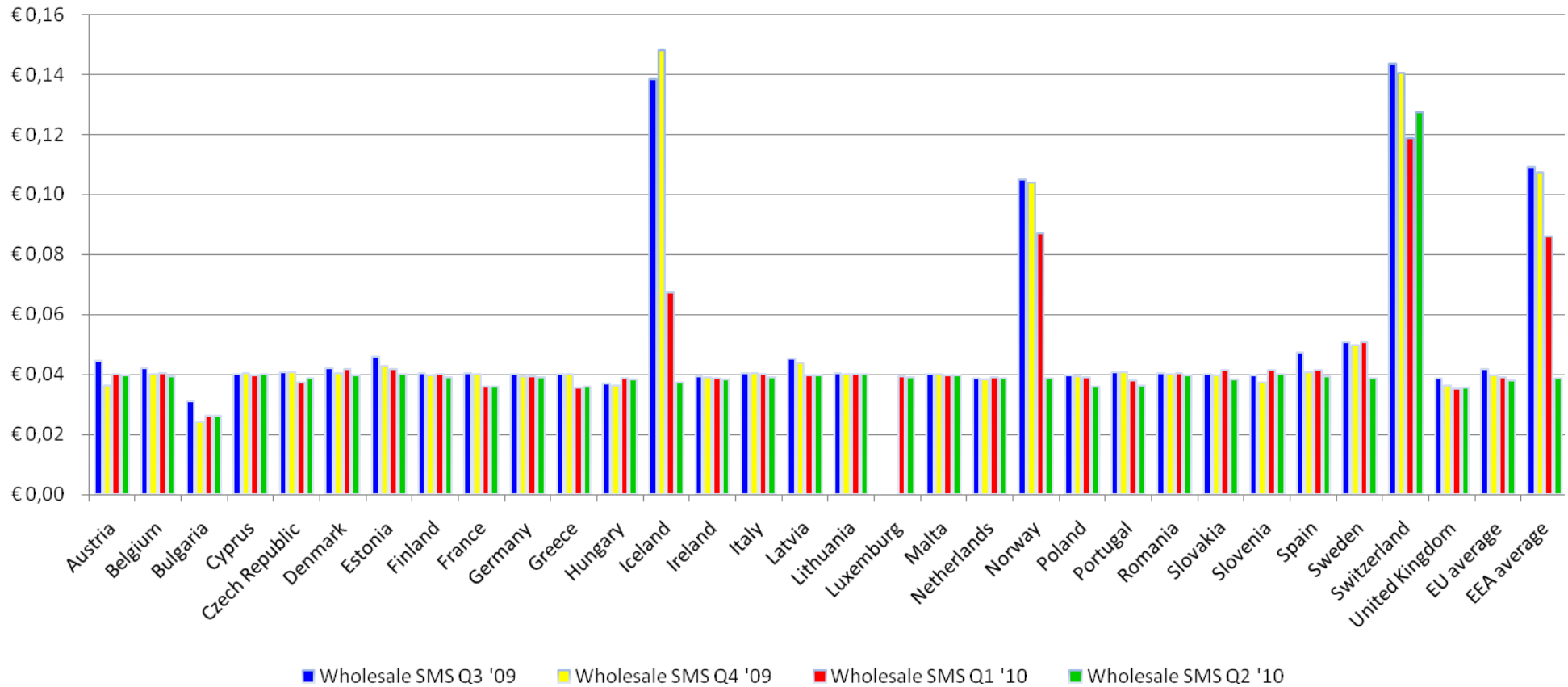


Figure 16 compares the changes in EU/EEA volumes for retail voice calls made and received and the volumes of SMS messages sent. It shows a similar trend for both services, largely seasonal, with a slightly larger growth in volumes for SMS sent and calls received than for calls made.

Wholesale SMS

Figure 17: Average wholesale price per SMS: EU/EEA, non-group companies

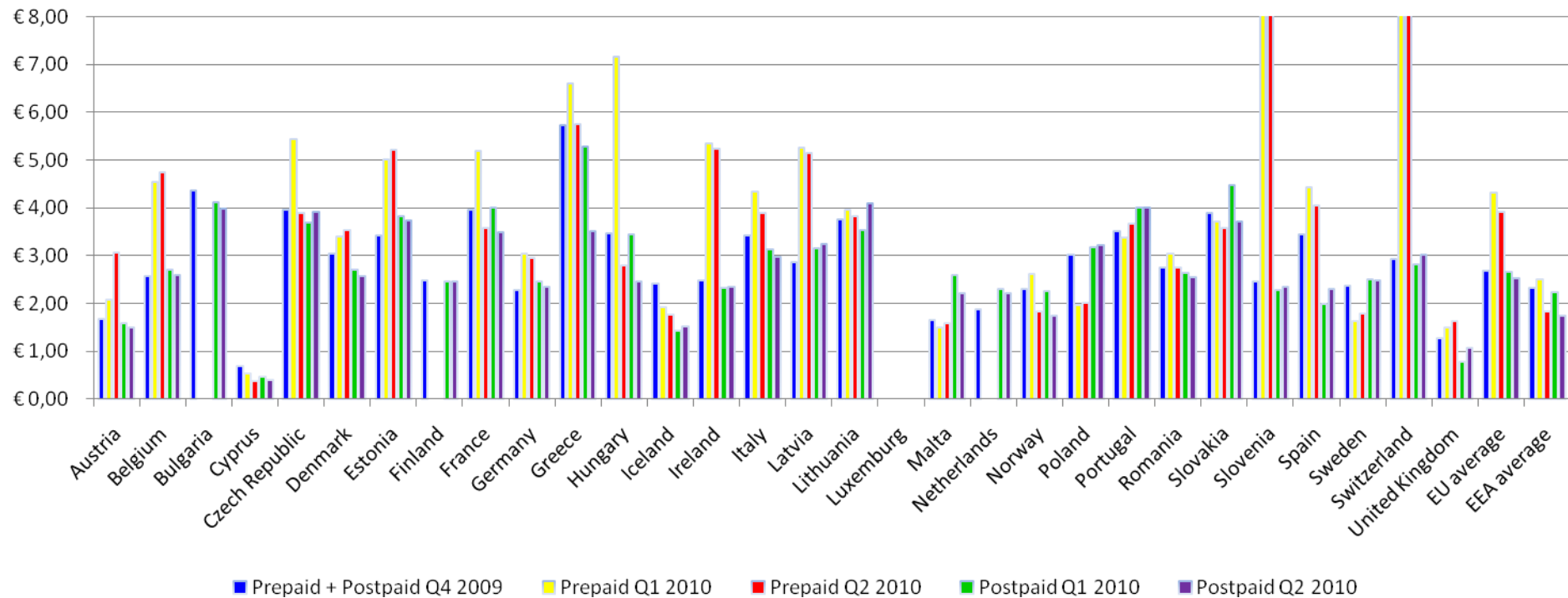


**EU average:** Q3 2009 = € 0.042; Q4 2009 = € 0.039; Q1 2010 = € 0.039; Q2 2010 = € 0.038.

Nearly all countries show wholesale averages below the regulated cap of € 0.04. In EEA countries the impact of the adoption of the amended Regulation is clear.

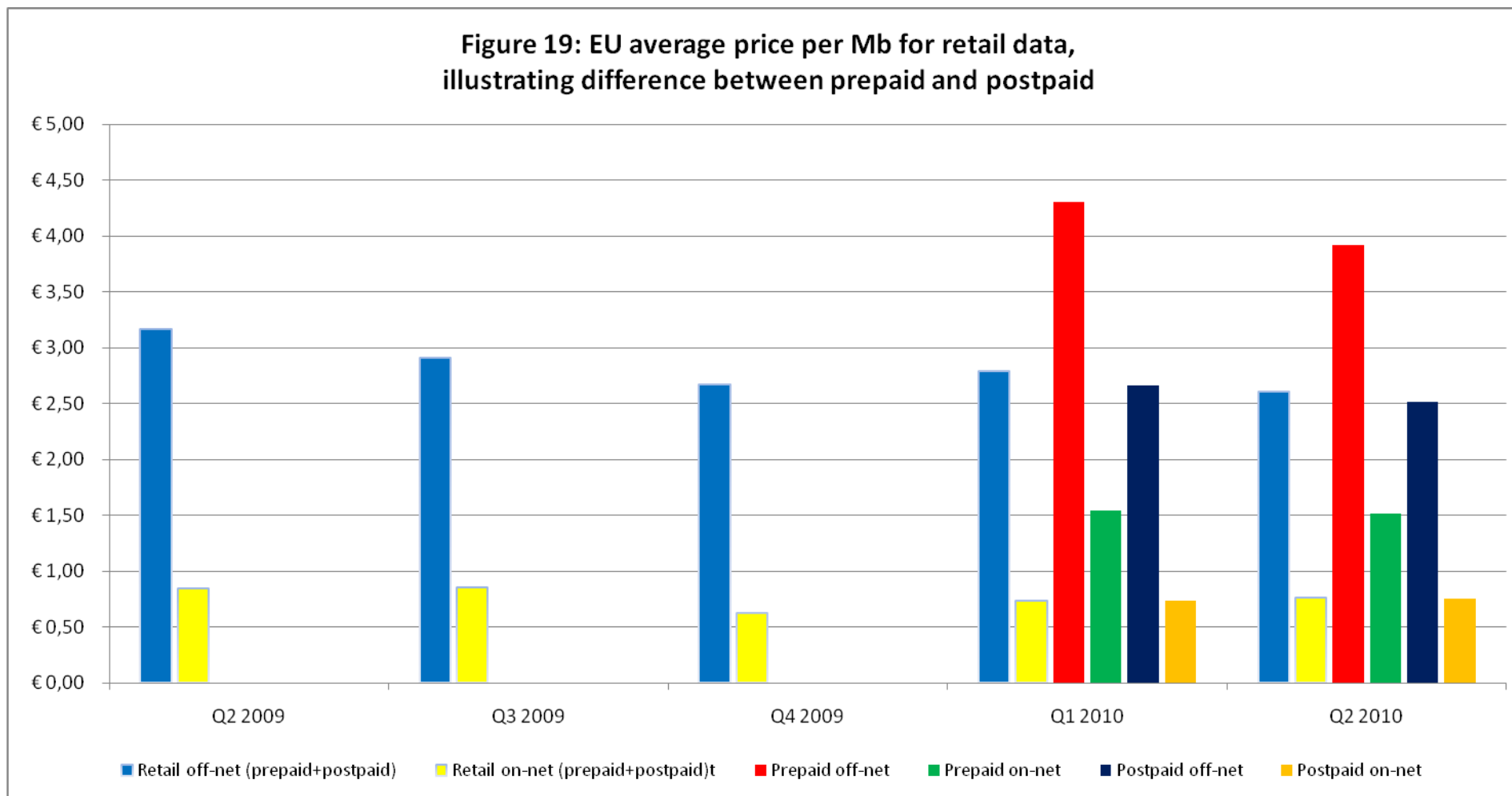
## Retail data

Figure 18: Average EU/EEA off-net retail price per data MB (based on billed megabytes)



**EU average:** Prepaid + Postpaid Q4 2009 = € 2.668; Prepaid Q1 2010 = € 4.312; Prepaid Q2 2010 = € 3.933; Postpaid Q1 2010 = € 2.660; Postpaid Q2 2010 = € 2.511.

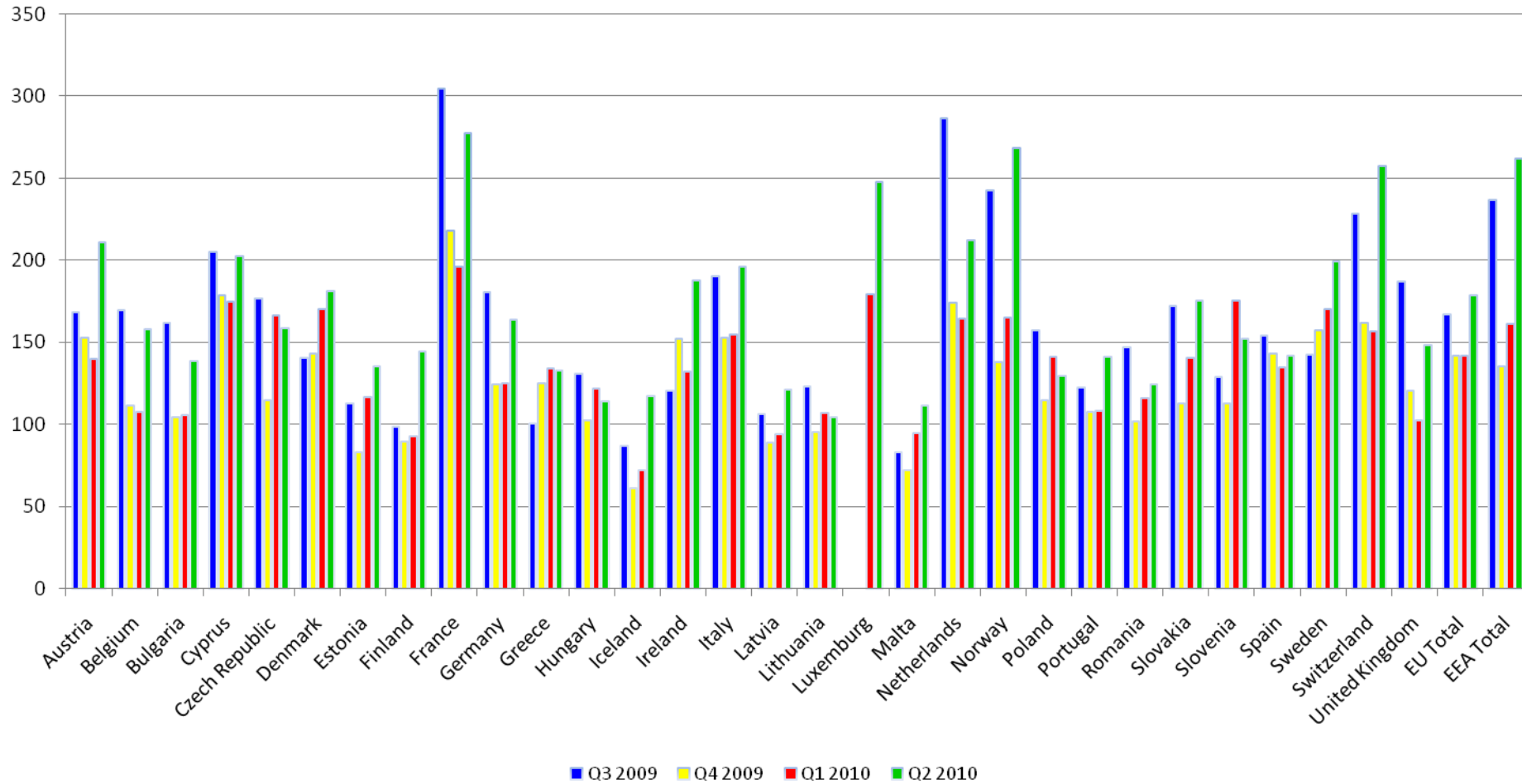
This data collection marks the first time BEREC collected data for prepaid and postpaid separately. For comparison the last combined average is also shown. With the exception of some countries, prepaid data is more expensive than postpaid.



Similar to Figure 18, but now at the EU level to more easily see the trends, this figure shows how prepaid data services are more expensive than postpaid in most Member States.



Figure 20: Volumes of (on-net and off-net) EU/EEA retail data (Q4 2008 = 100)

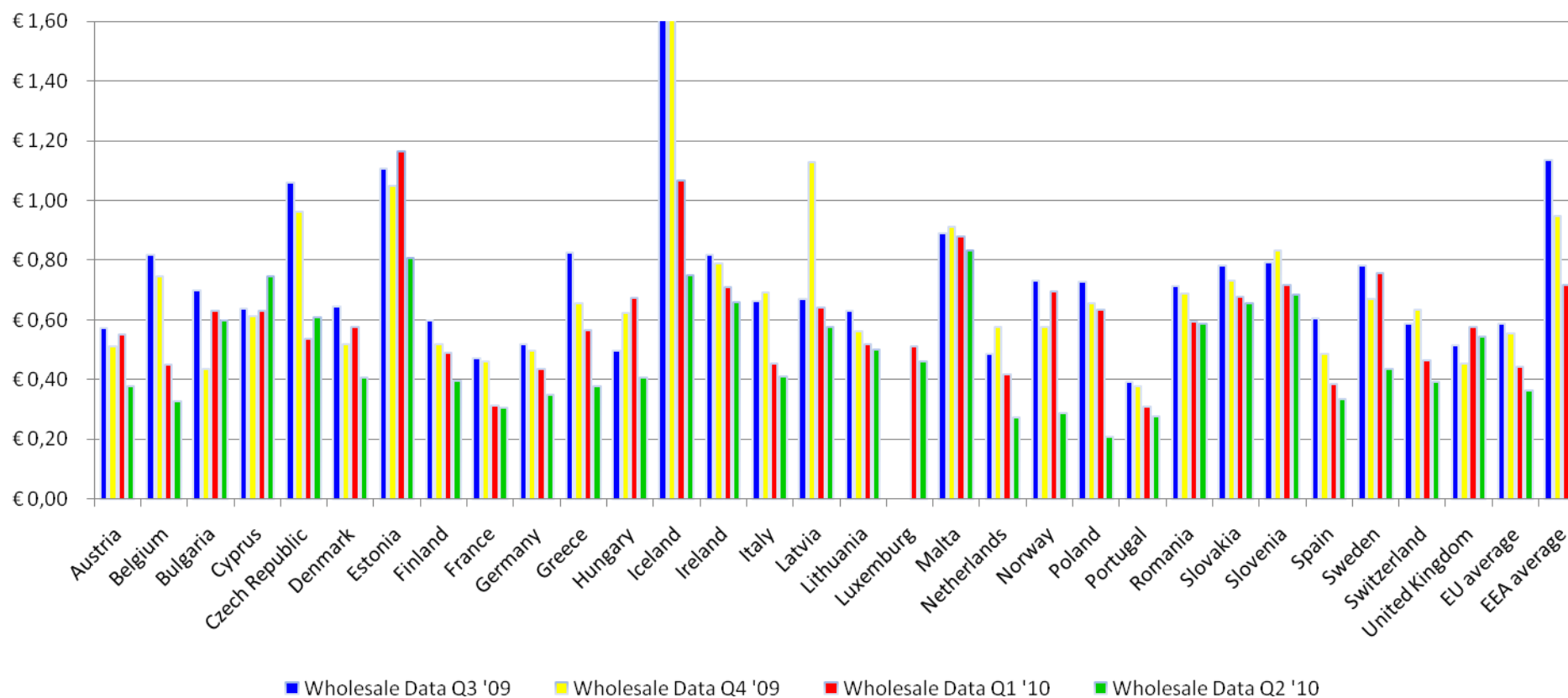


**EU average:** Q3 2009 = 166.6; Q4 2009 = 141.2; Q1 2010 = 141.5; Q2 2010 = 178.1

After a slight drop in volumes following the seasonal peak in Q3 2009, data volumes increased in most countries during Q2 2010.

## Wholesale data

**Figure 21: Average wholesale price per data MB for inbound roaming:  
EU/ EEA, non-group companies (based on billed megabytes)**



**EU average:** Q3 2009 = € 0.585; Q4 2009 = € 0.554; Q1 2010 = € 0.443; Q2 2010 = € 0.364.

Nearly all countries show wholesale averages below the regulated safeguard cap of € 1 per Mb.

**Figure 22: EU/EEA average price per Mb for retail and wholesale data  
(EU only for Q2 2009 onward)\***

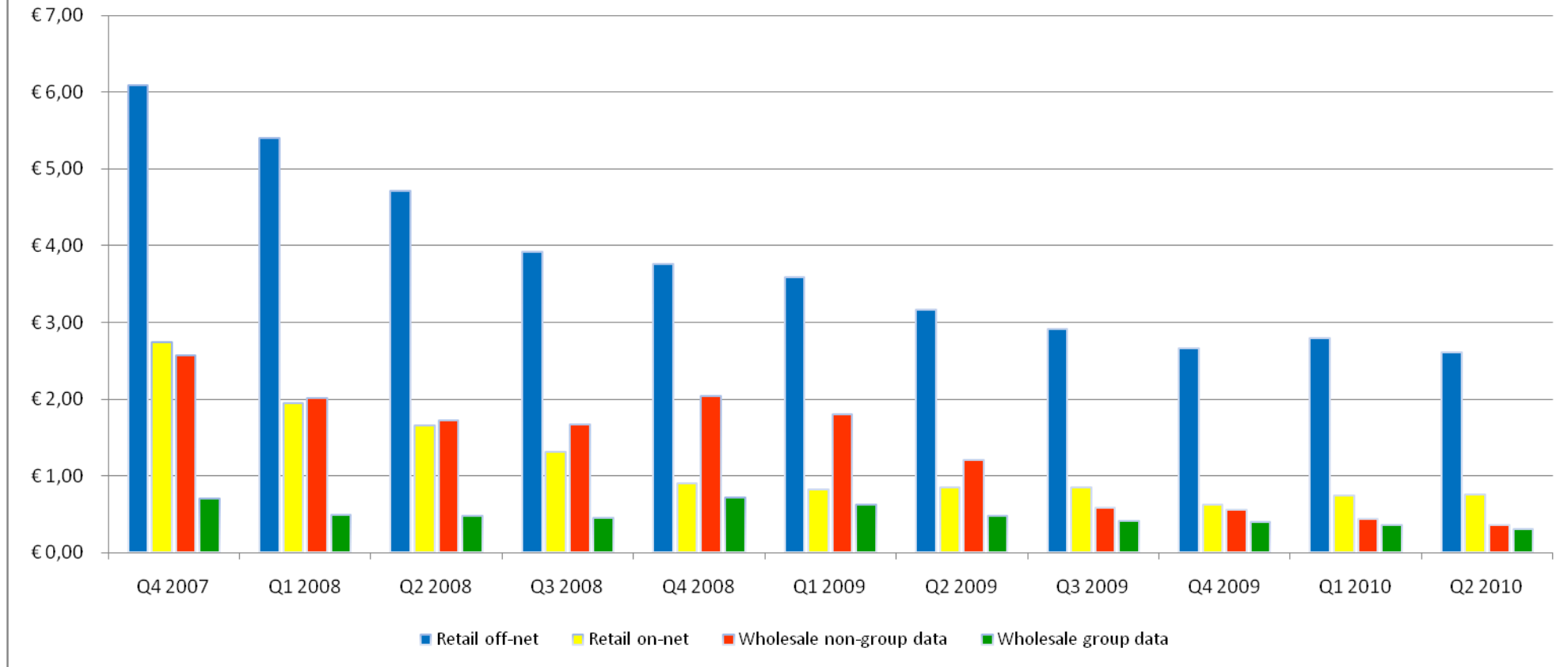


Figure 22 compares the average EU/EEA price trends for retail and wholesale data services (EU-only averages were used from Q2 2009 onward). It shows the continued downward trend in the average price for data services at both the retail and wholesale levels. The impact of the Regulation on wholesale non-group data prices is clearly visible.

\* See paragraph 4.7

## Section 4

# Further issues

4.1 BEREC also 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*

4.2 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*

4.4 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.

4.5 Most provider respondents to the data collection did not identify this as a significant problem, with apparently relatively few consumers adversely affected. One operator reported a few problems with laptop dongles connecting to foreign networks near borders, as consumer take-up of mobile data services became more common.

4.6 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 specific 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-only Member States*

4.7 The 2007 Regulation entered into force in Norway, Iceland and Lichtenstein on 22 December 2007, meaning that in those countries, data for the regulated wholesale rate and the Eurotariff is available from quarter 1 2008 only. (Note that one operator in Norway introduced the Eurotariff during quarter 1, meaning that the 'other EU/EEA tariff' data for quarter 1 2008 also includes data from that operator (Figure 1)). The 2009 Regulation was adopted in Norway, Iceland and Lichtenstein 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 for Q1 2010. To reflect this, separate EU and EEA averages are shown in Figures 3, 4, 12, 14 and 21.

### *Summary of data 'gaps' and apparently 'anomalous' results*

4.8 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 others 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 for the next collection.

### ***Actual/billed minutes***

4.9 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***

4.10 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***

4.11 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***

4.12 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 EU/EEA countries outside the Eurozone.

### ***Overview of compliance issues***

4.13 As stated elsewhere in this Report, overall compliance with the provisions of the 2007 and the 2009 Regulations has been very good. All mobile operators offer their consumers a Eurotariff, compliant with the rates set down in Article 4 of the 2007 and 2009 Regulations, wholesale rates appear to have fallen in line with the requirements set out in Article 3 of the Regulations, and consumer transparency has improved.

### ***EEA adoption of the amended 2009 Regulation***

4.14 The Swedish NRA, PTS, notes that its operators included all EEA countries in EU/EEA figures for the period 1 January - 31 March 2010. Since the EEA (i.e. Norway, Iceland and Liechtenstein) did not adopt the new regulation until 1 April 2010, this means that the average prices in the Report for the above period will be higher than the regulated price levels.

### ***Average EU/EEA off-net retail price per data MB (Figure 18)***

4.15 The average price for Portugal is overestimated because one operator has reported information on gross revenues (discounts applied according to consumption volumes were not withdrawn from revenues).

4.16 For the Netherlands no data is included on prepaid data roaming services, as following the implementation of the transparency measures to prevent bill shock, only one MNO still offers this service to prepaid users. As such, presenting this data in this Report would lead to the disclosure of confidential information.

***Different prices for prepaid and postpaid data (Figure 19)***

4.17 The prepaid on-net data for Austria was not used in this figure as there is one operator with very high on-net volumes and low on-net prices for prepaid customers. Data from this operator was eliminated when calculating average prices, as this operator would skew the European Average to a very high degree, given the high volumes compared to the rest of the EU operators.

4.18 The data for Ireland was not used in this figure, as one MNO with significant data volumes was unable to make the split between prepaid and postpaid.

**Future data collection**

4.19 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 2010 to 31 December 2010. BEREC expects to report on this data in early spring 2011.

## Annex 1

# List of respondents

Below are the operators that provided data for the period 1 January 2010 – 30 June 2010.

Austria  
Hutchison 3G Austria  
Mobilkom Austria  
Orange Austria  
Telekom Austria  
T-Mobile Austria  
Yesss!

Belgium  
Belgacom Mobile  
KPN Group Belgium (Base)  
Mobistar

Bulgaria  
BTC AD  
Cosmo Bulgaria Mobile EAD  
Mobiltel EAD

Cyprus  
Cytamobile-Vodafone  
EAD MTN Cyprus (Areeba Ltd)

Czech Republic  
Telefónica O2 Czech Republic  
T-Mobile Czech Republic  
Vodafone Czech Republic

Denmark  
3  
TDC  
Telenor  
TeliaSonera

Estonia  
AS EMT  
Elisa Eesti AS  
OÜ Top Connect  
ProGroup Holding OÜ  
TELE 2 Eesti AS

Finland  
Alands Mobiltelefon Ab  
DNA Ltd  
Elisa Corporation  
TeliaSonera Finland Oyj

France

Bouygues Telecom  
Orange Caraïbe  
Orange France  
SFR

Germany  
E-Plus Mobilfunk GmbH & Co. KG  
Telefónica-O2 Germany GmbH & Co.  
OHG  
Telekom Deutschland GmbH  
Vodafone D2 GmbH

Greece  
COSMOTE Mobile  
Telecommunications S.A.  
Vodafone Panafon S.A.  
Wind HellasTelecommunications S.A.

Hungary  
Telenor Magyarország Zrt  
T-Mobile  
Vodafone Magyarország Zrt

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  
Daily Telecom Mobile  
Fastweb  
H3G Italia  
Noverca Italia  
Poste Mobile  
Telecom Italia  
Tiscali Italia  
Vodafone Omnitel  
Wind Telecomunicazioni

## Latvia

Bite Latvia  
Latvijas Mobilais Telefons  
Tele2

## Lithuania

Bitė Lietuva  
Eurocom  
Omnitel  
Tele2  
Teledema

## Malta

Melita Mobile Ltd  
Mobisle Communications Ltd (GO Mobile)  
Redtouch Fone Ltd  
Vodafone Malta Ltd

## Netherlands

AH Mobiel B.V.  
KPN B.V.  
Lebara B.V.  
Lycamobile Netherlands Ltd  
Rabo Mobiel B.V.  
Tele2 Netherlands B.V.  
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  
OPTIMUS – Comunicações, S.A  
TMN - Telecomunicações Móveis Nacionais, SA  
Vodafone Portugal - Comunicações Pessoais, SA  
ZON TV Cabo Portugal, S.A.

## Romania

Cosmote RMT  
Orange Romania  
RCS&RDS  
Vodafone Romania

## Slovak Republic

Telefónica O2 Slovakia  
Orange Slovensko  
T-Mobile Slovensko

## Slovenia

Debitel d.d.  
IZI mobil d.d.  
Mobitel d.d.  
i.mobil d.d.  
T-2 d.o.o.  
Tušmobil d.o.o.

## Spain

Euskaltel  
Orange  
Telefónica Móviles de España  
Vodafone  
Yoigo

## Sweden

Hi3G Access AB  
Tele2 Sverige AB  
Telenor Sverige AB  
TeliaSonera AB

## Switzerland

Orange Communications AG  
Sunrise Communications AG  
Swisscom (Schweiz) AG

## United Kingdom

3 UK  
Asda Mobile  
BT Mobile  
O2 UK  
Orange UK  
Tesco Mobile



T-Mobile UK  
Vodafone UK  
Virgin Mobile