



**International Roaming
BEREC Benchmark Data Report
July 2010 – December 2010**

May 2011

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Section 1

Executive summary

1.1 This BEREC Benchmark Report on International Roaming (the “Report”) presents the results of the seventh 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 July 2010 – 31 December 2010, i.e. quarter 3 – quarter 4 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. 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 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 Roaming Regulation 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 <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 (and does not include Liechtenstein). Note that Switzerland is not an EU or EEA EFTA country.

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

Service and Price Cap (ex VAT)	Q3 – Q4 2010
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 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 €0.362 in Q3 2010, and €0.353 for Q4 2010, compared to a cap of €0.39 (i.e. on average 4 – 5 cents less than the cap). The average Eurotariff rate was nearer the cap for calls received at €0.138 during Q3 2010 and €0.134 in Q4 2010, compared to a cap of €0.15.

1.7 In Q3 and Q4 2010, the average unregulated voice tariff for calls made (Figures 1 and 2) was higher than in the same period of 2009 (€0.404 and €0.395, compared to €0.341 and €0.374 in Q 3 and Q4 2009). In 2009 average prices were lower in Q3 than in Q4, during the peak summer travel season. That did not occur in 2010. For calls received, the same observations can be made of increased average unregulated prices and higher average prices in Q3 than Q4 (€0.178 and €0.165 in Q3 and Q4 2010, compared to €0.151 and €0.148 in Q3 and Q4 2009). Such changes may reflect changes in certain tariffs, or changes in the share of traffic attributable to certain operators.

1.8 As a result, the nature of the difference in the average EU price for regulated and unregulated voice prices has changed, with average unregulated prices being higher than average regulated prices for the first time, 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 average surcharge for calls made, from around 26% in Q2 2009 to 6% for both Q3 and Q4 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 5th BEREC Benchmark Data Report.³

1.10 At the wholesale level (Figures 10 and 12), average voice prices are below the regulated wholesale cap of €0.22, with an average of €0.196 in Q3 2010 and €0.197 in Q4 2010.

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 Q4 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 EFTA. Comparing the same quarters of 2009 and 2010, no single trend in average country prices can be seen for calls made, with under half of countries reporting a rise, just under a third reporting a fall and the remaining quarter reporting more or less stable average prices. The effect overall is a slight increase in the EU average price. For 'Rest of World' calls received, there is a clearer increase in the EU average price from 2009, with around half of the countries reporting a rise in average prices and the remaining half reporting either a decrease or relatively stable prices, equally split. 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. BEREC will look into the possible roles of increased wholesale rates from providers outside of the EU/EEA EFTA and/or increased retail margins.

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 (Q3 2010) and €0.101 (Q4 2010), compared to a regulated cap of €0.11. The EU average price for unregulated SMS is similar at €0.100 (Q3 2010) and €0.102 (Q4 2010). Before the 2009 Regulation, the average EU/EEA EFTA 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 price (Figure 17) to the level of the cap (€0.038). In comparison, the EU/EEA EFTA average price was €0.136 - €0.133 in Q1 – Q2 2009, before the 2009 Regulation came into force.

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

³ 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 repeated the survey in autumn 2010).

significantly larger growth in volumes for SMS sent (up around 140% in Q4 2010 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, 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, from €2.668 in Q4 2009 to €2.227 in Q4 2010. A considerable variation in average price between countries remains, but appears to be getting smaller as prices come down. There is a considerable difference between EU average prepaid and postpaid prices and between on-net and off-net prices, where average prepaid prices are higher than postpaid (for both on-net and off-net) and on-net is considerably cheaper than off-net. There are variations at individual country level and between operators.

1.17 At the wholesale level, an average 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 €0.340 in Q4 2010, compared with an EU/EEA EFTA average of €1.205 in Q2 2009, just before the Regulation came into effect.

1.18 This data collection found continued growth in volumes of roaming data services (Figure 19), which were over 30% higher in Q4 2010 than in Q4 2009. A seasonal peak in Q3 is also clearly 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 EFTA prices are near the regulated caps, although unregulated voice calls are now more expensive than the Eurotariff on average, particularly unregulated voice calls received. There remains 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. 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 data roaming, in that the average wholesale and retail charges have fallen significantly between the second quarter of 2007 and the fourth quarter

of 2010, although there is a noticeable reduction in the drop in prices during 2010. BEREC also notes that a sizeable margin remains between the average wholesale and retail prices. The average wholesale price fell more in both relative and absolute terms than the average retail price during the first half of 2010, although the retail margin narrowed slightly in Q3 and Q4 2010.

1.23 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 Regulation and future regulatory options⁴, 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'.

1.24 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 will inform BEREC's consideration of the proposals in the Commission's full Report on the future of regulation, due by 30 June 2011.

⁴ See http://erg.eu.int/doc/berec/bor_10_58.pdf and http://erg.eu.int/doc/berec/bor_11_09.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 undertaken⁵. ERG responded⁶ 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’s⁷ views expressed in response to the consultation were substantially reflected in the Commission’s legislative proposals,⁸ published on 23 September 2008, to extend the 2007 Regulation in duration and scope.

⁵http://ec.europa.eu/information_society/activities/roaming/roaming_regulation/first_phase/index_en.htm

⁶ 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

⁷ http://erg.eu.int/doc/publications/erg_08_35rev1_resp_intern_roaming_cons_080729.pdf

⁸ http://ec.europa.eu/information_society/activities/roaming/docs/regulation/reg_en.pdf

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 2009⁹.

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

- 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 Report¹⁰ on the functioning of the 2009 Regulation. The Commission’s Digital Agenda for Europe¹¹ 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 Regulation, BEREC provided advice to the Commission on the functioning of the Regulation and future regulatory options in a December 2010 Report¹², supplemented by its February 2011 response to the Commission’s public consultation¹³.

2.10 The Commission is due to publish a full review of the functioning of the Regulation, future regulatory options, and any new legislative proposals, by the end of June 2011.

This Report

⁹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:167:0012:0023:EN:PDF>

¹⁰ http://ec.europa.eu/information_society/activities/roaming/docs/interim_report2010.pdf

¹¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>

¹² http://erg.eu.int/doc/berec/bor_10_58.pdf

¹³ http://ec.europa.eu/information_society/activities/roaming/docs/cons11/Berec.pdf

2.11 This Report is the seventh 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 July 2010 – 31 December 2010.

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)). This monitoring informed the Commission’s interim review of the functioning of the Regulation, and will be drawn upon for the Commission’s full review. It should include information on inadvertent roaming and traffic steering (Art.11).

2.13 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.

2.14 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. 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. 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

2.16 Following publication of previous reports, some operators have provided their national 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 certain 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'¹⁴. 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 providers¹⁵, 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 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 145 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.

¹⁴ For the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland (and does not include Liechtenstein). Note that Switzerland is not an EU or EEA EFTA country.

¹⁵ 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

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 or the 2009 Regulations are not applicable there¹⁶. 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 July 2010 to 31 December 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” customers¹⁷ 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.

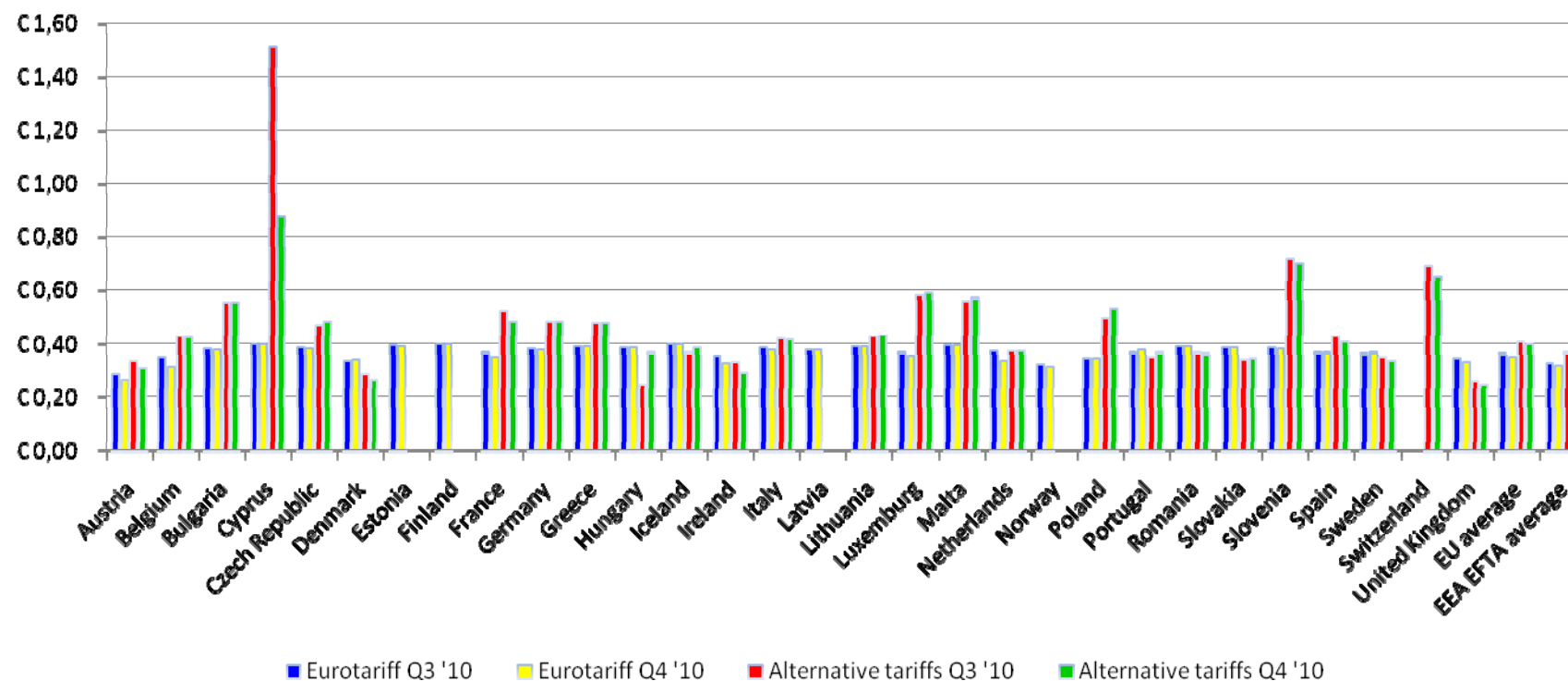
In order to show the impact of the 2009 amended Roaming Regulation, which had entered into force in the EU but was implemented in the EEA EFTA countries during Q2 2010, this Report contains separate averages for the EU and the EEA EFTA countries. In some figures, only EU averages are shown for the period Q2 2009 – Q1 2010, when the 2009 Regulation was in force in the EU but not yet in the EEA EFTA countries.

¹⁶ For the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland (and does not include Liechtenstein). Note that Switzerland is not an EU or EEA EFTA country.

¹⁷ This means undertakings that have negotiated a bespoke tariff for international roaming that is not available to individual customers.

Retail voice

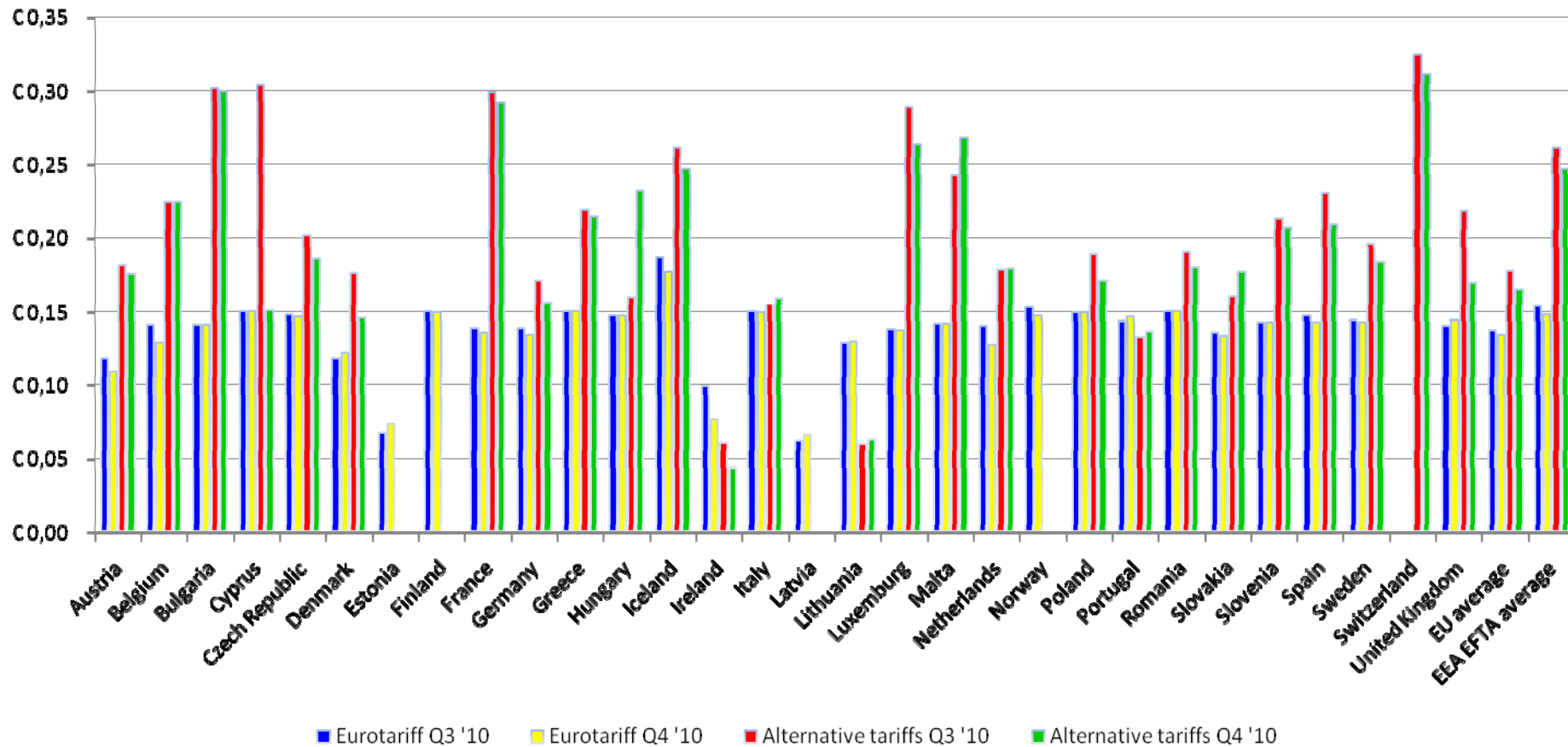
Figure 1: Average retail price per minute voice call made for all consumers (excluding special corporate): Eurotariff and alternative tariffs (based on billed minutes)



EU average: Eurotariff Q3 2010 = € 0.362; Eurotariff Q4 2010 = € 0.353; Alternative tariffs Q3 2010 = € 0.404; Alternative tariffs Q4 2010 = € 0.395

On average the Eurotariff offered a better deal for calls made than alternative tariff plans. While the average Eurotariff varies between countries, the EU average is 3-4 cents below the regulated cap of € 0.39.

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



EU average: Eurotariff Q3 2010 = € 0.138; Eurotariff Q4 2010 = € 0.134; Alternative tariffs Q3 2010 = € 0.178; Alternative tariffs Q4 2010 = € 0.165.

For calls received, the Eurotariff offered a better deal than alternative tariffs in most countries. The EU average for alternative tariffs rose above the regulated Eurotariff cap of € 0.15.

**Figure 3: EU/EEA EFTA average prices per minute for retail voice calls made
(based on billed minutes)
(EU only for Q2 2009 -Q1 2010)***

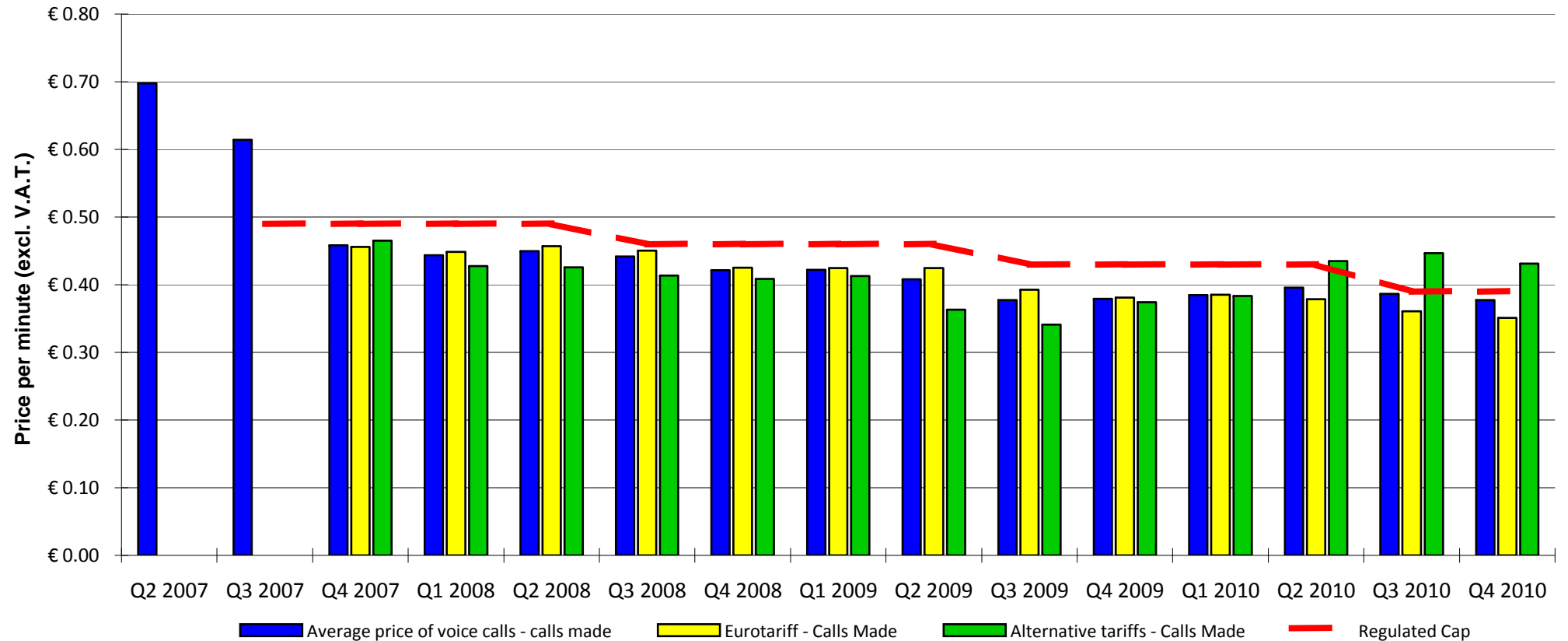


Figure 3 demonstrates how the average price for calls made has evolved since introduction of the Regulation in Q3 2007. The Eurotariff averages are consistently below the Eurotariff cap and, comparing the same quarters year on year, have fallen or remained fairly stable. On the other hand, after a steady downward trend, the average price of alternative voice tariffs began to rise year on year in Q2 2010.

**Figure 4: EU/EEA EFTA average prices per minute for retail voice calls received
(based on billed minutes)
(EU only for Q2 2009 -Q1 2010)***

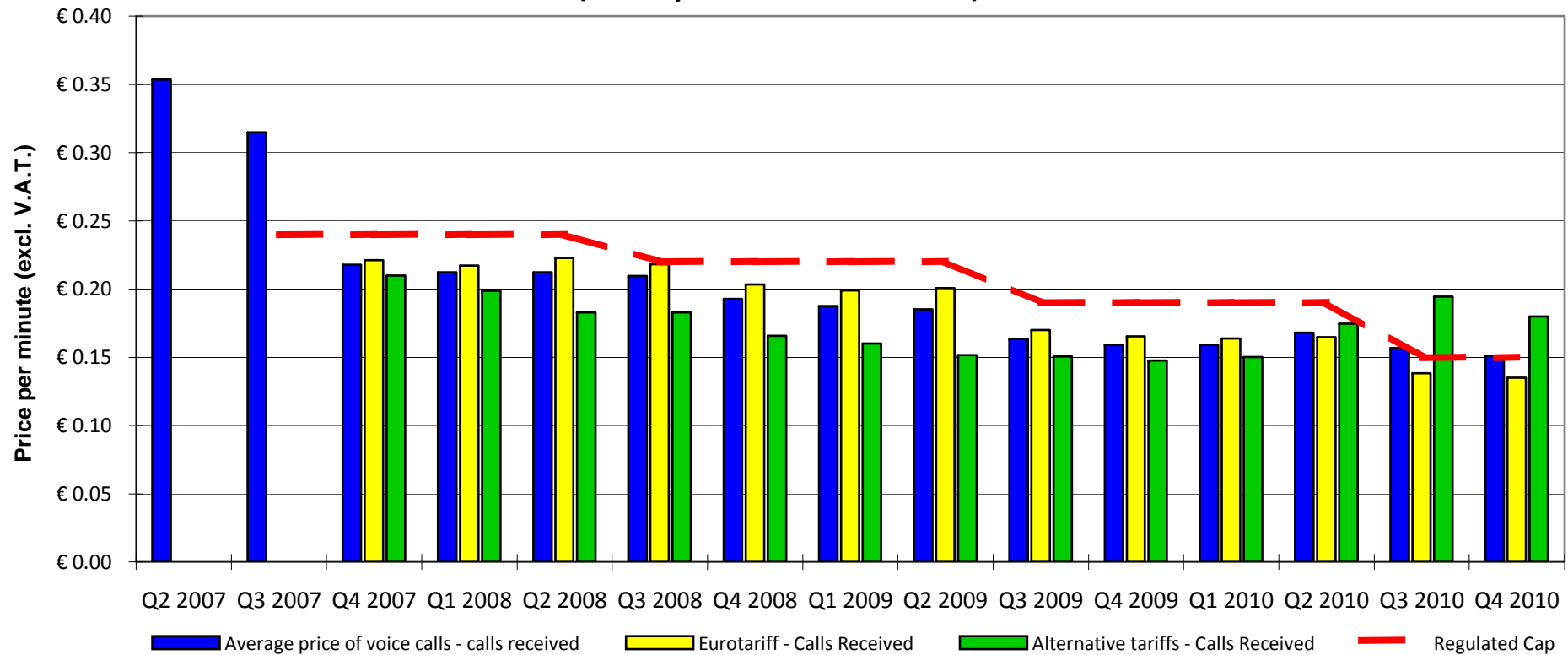
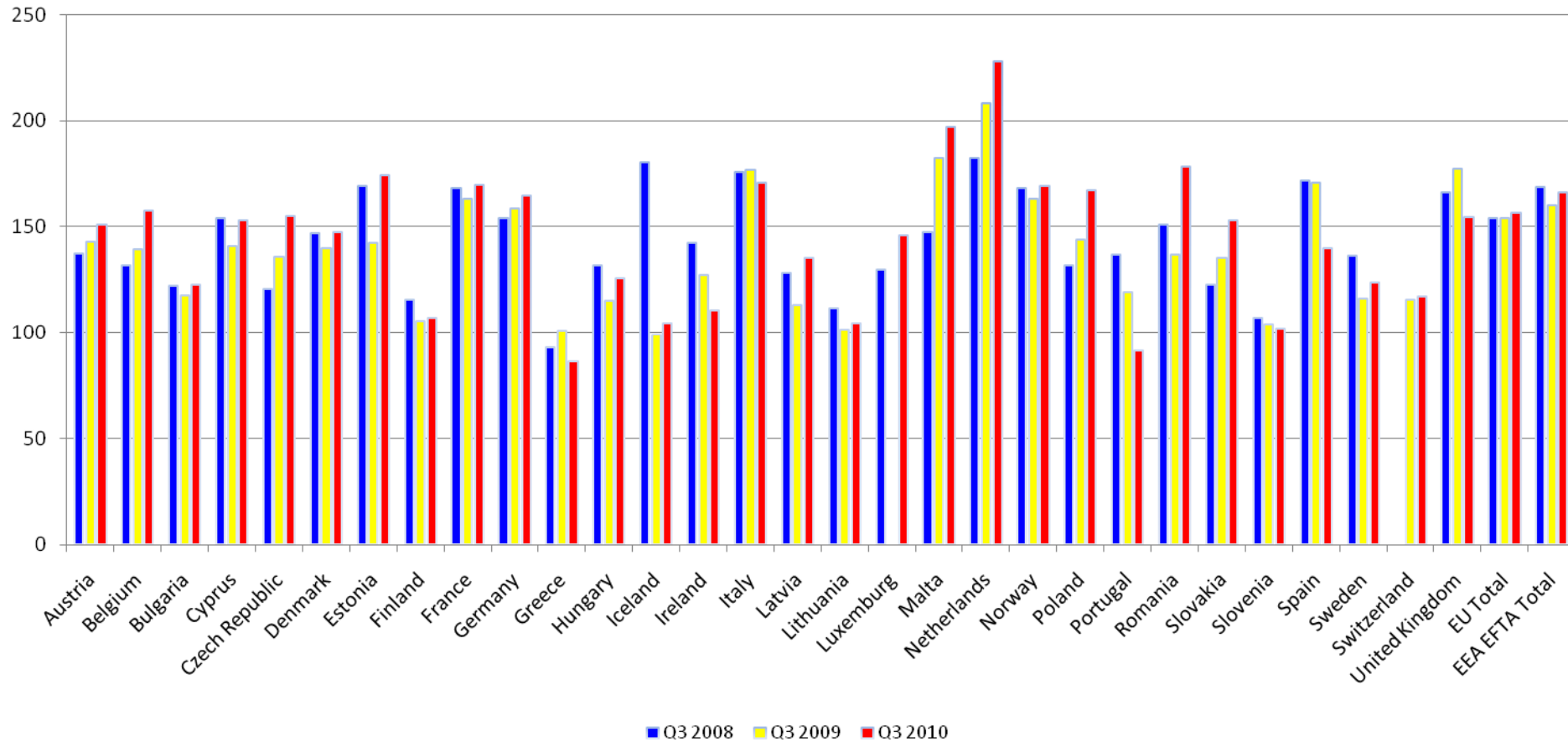


Figure 4 is similar to Figure 3, but for calls received. Here, average prices for alternative tariffs have been consistently lower than average Eurotariff prices. This changed in Q2 – Q4 2010, when average alternative prices were higher than the Eurotariff cap.

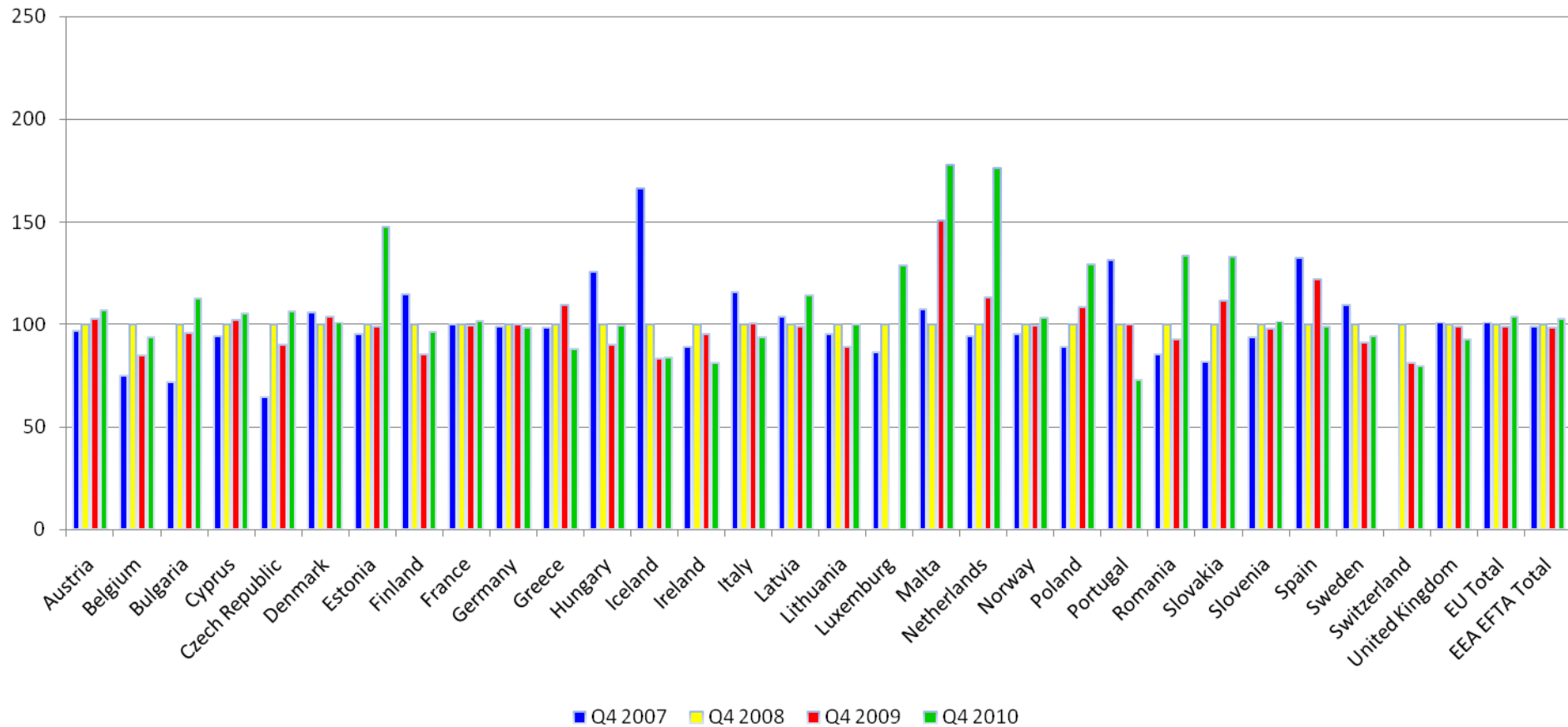
**Figure 5a: Volumes of EU/EEA EFTA calls made (all consumers excluding special corporate)
(Actual minutes, Q4 2008 = 100)**



EU average: Q3 2008 = 153.7; Q3 2009 = 153.7; Q3 2010 = 156.4.

The country averages follow no clear trend year on year, with increases, decreases, or a dip in 2009.

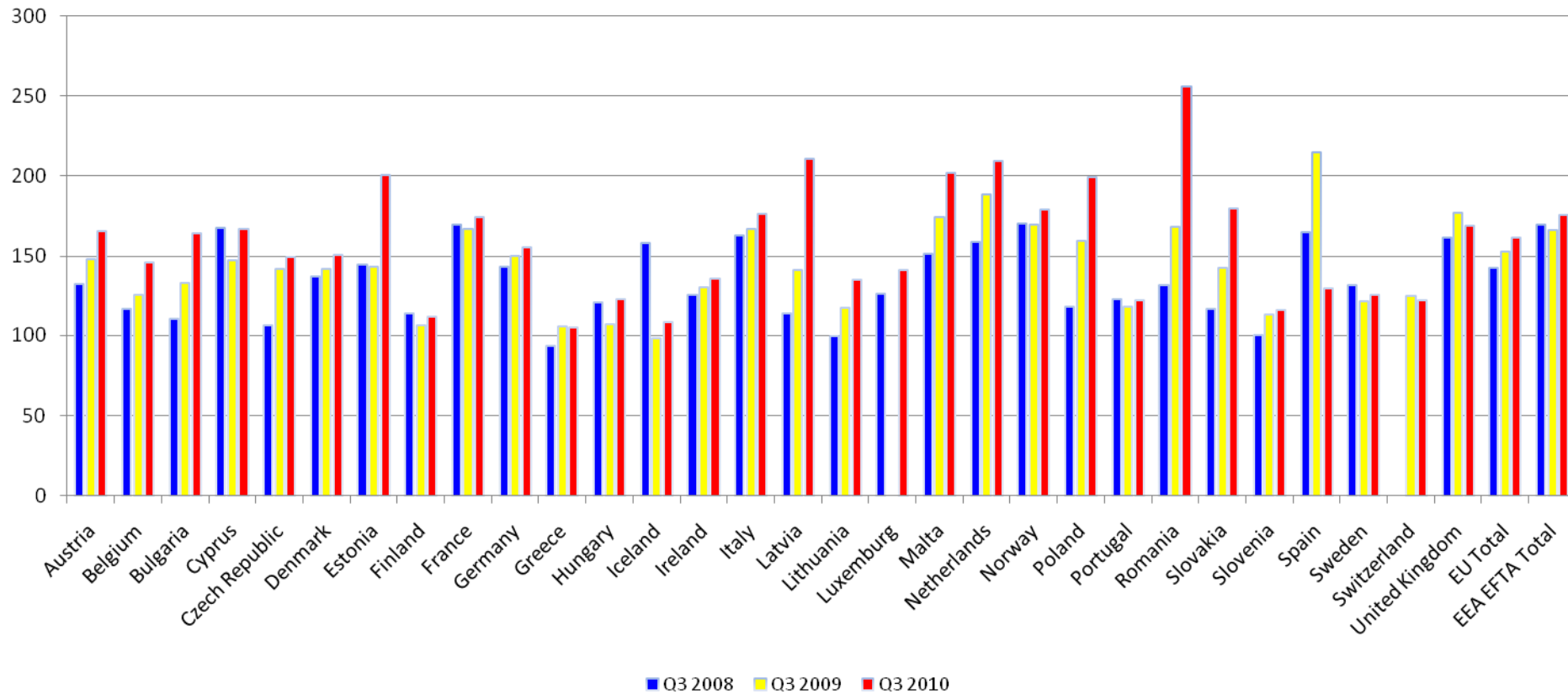
**Figure 5b: Volumes of EU/EEA EFTA calls made (all consumers excluding special corporate)
(Actual minutes, Q4 2008 = 100)**



EU average: Q4 2007 = 100.7; Q4 2008 = 100.0; Q4 2009 = 98.7; Q4 2010 = 104.3.

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

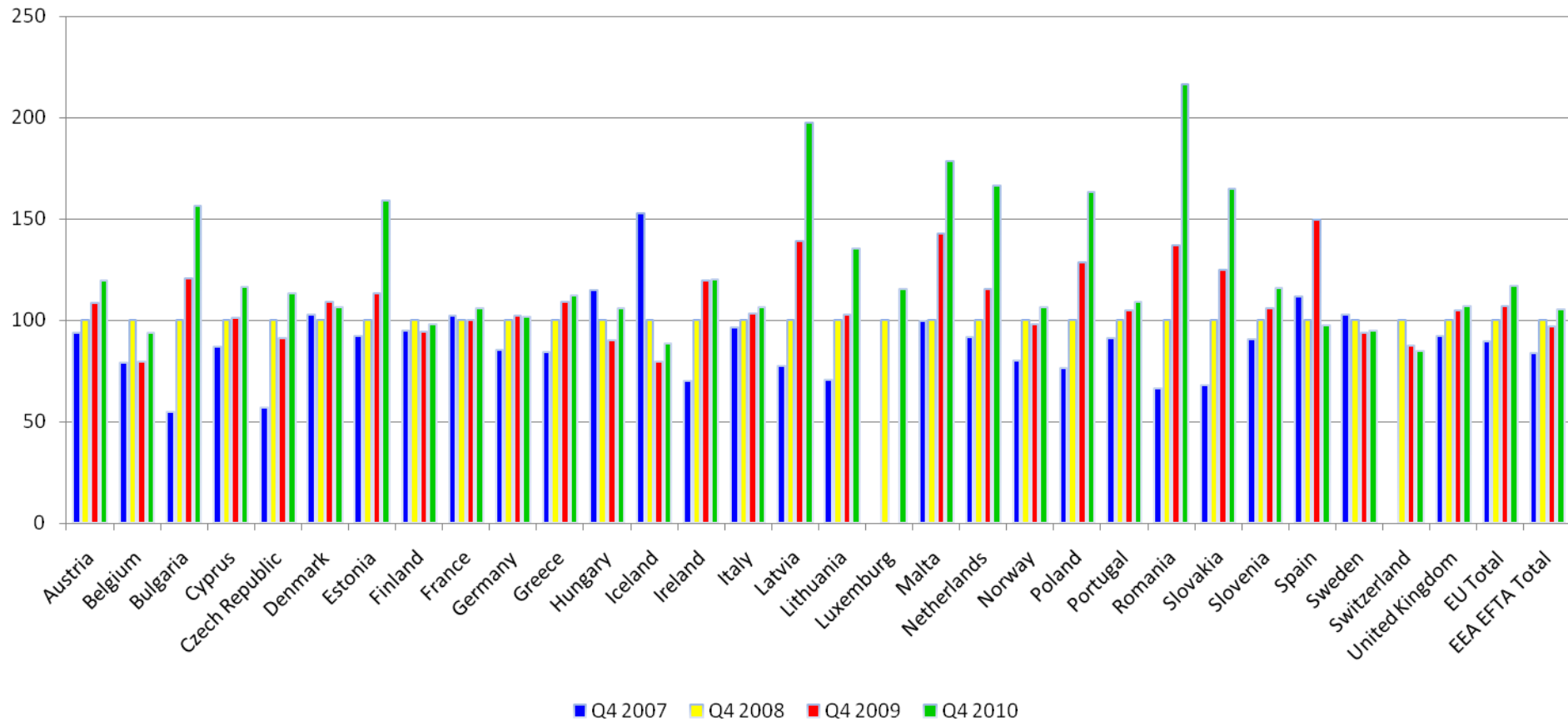
**Figure 6a: Volumes of EU/EEA EFTA calls received (all consumers excluding special corporate)
(Actual minutes, Q4 2008 = 100)**



EU average: Q3 2008 = 142.0; Q3 2009 = 152.5; Q3 2010 = 161.1.

For calls received, most countries reported an increase year on year, with a few reporting strong increases in 2010.

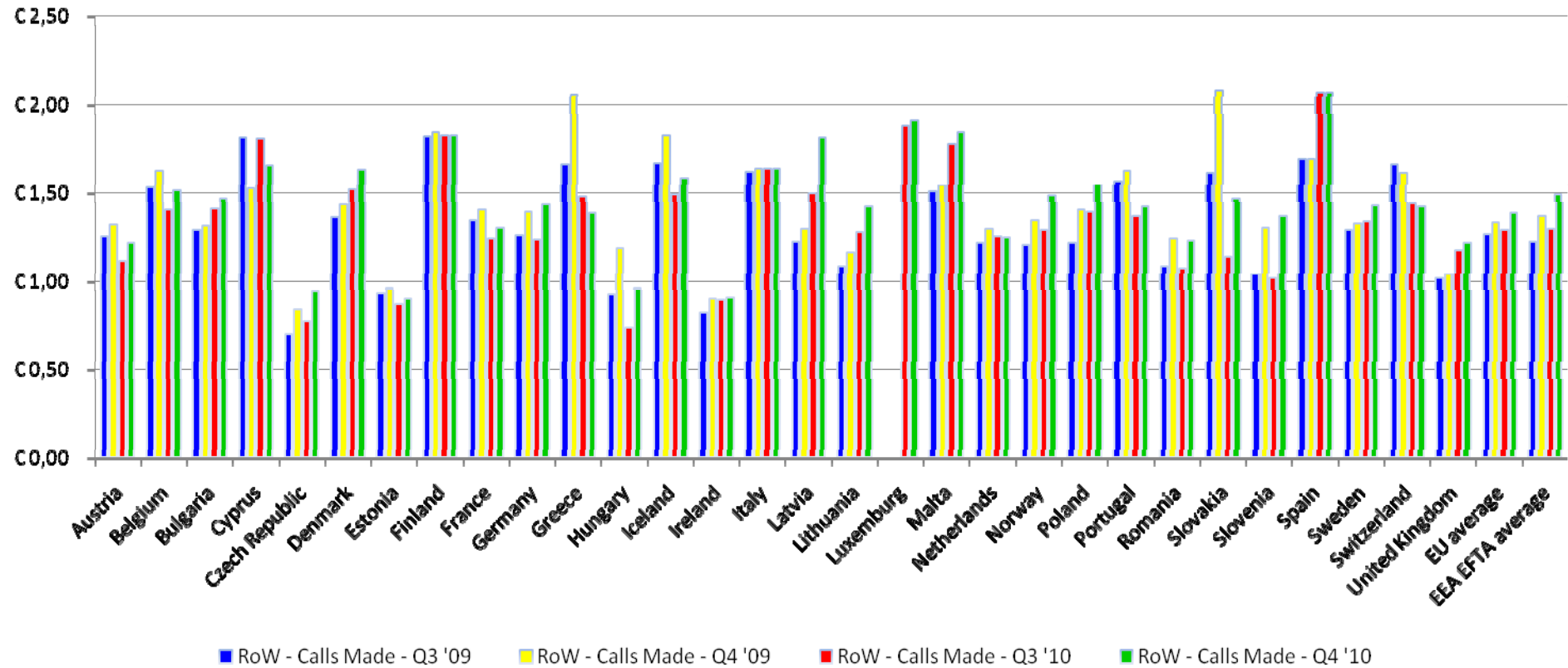
**Figure 6b: Volumes of EU/EEA EFTA calls received (all consumers excluding special corporate)
(Actual minutes, Q4 2008 = 100)**



EU average: Q4 2007 = 89.7; Q4 2008 = 100.0; Q4 2009 = 106.6; Q4 2010 = 116.8.

For calls received, most countries followed a trend similar to the EU average, with higher growth in volumes year-on-year in Q4 2010 compared to 2009.

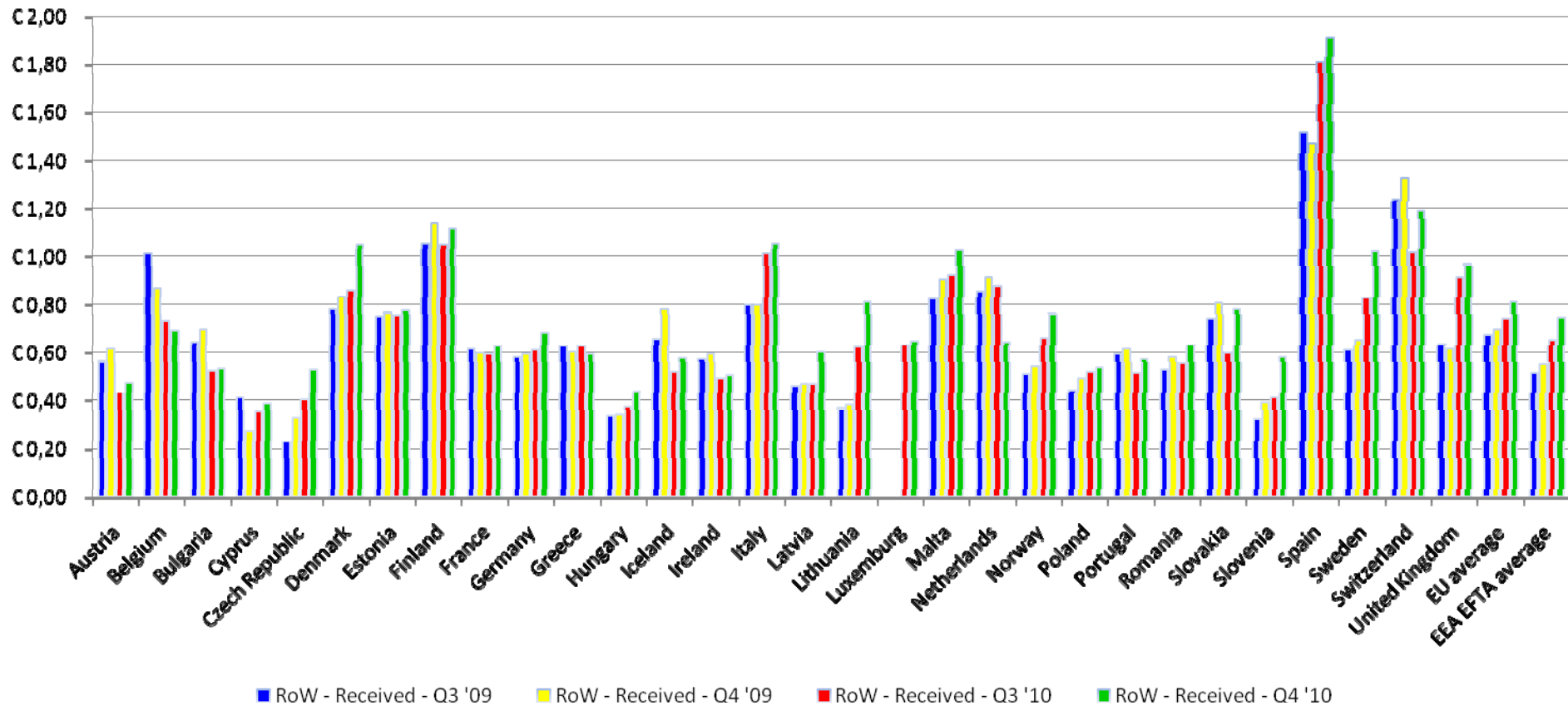
Figure 7: Average retail price per minute voice call made for all consumers (excluding special corporate): Rest of World tariffs (based on billed minutes)



EU average: Q3 2009 = € 1.270; Q4 2009 = € 1.337; Q3 2010 = € 1.298; Q4 2010 = € 1.389.

Figure 7 gives an overview of developments in average prices for making calls from the EU/EEA EFTA to non-EU/EEA EFTA countries, from non-EU/EEA EFTA countries to the EU/EEA EFTA, or between non-EU/EEA EFTA countries. There does not appear to be a clear discernable trend.

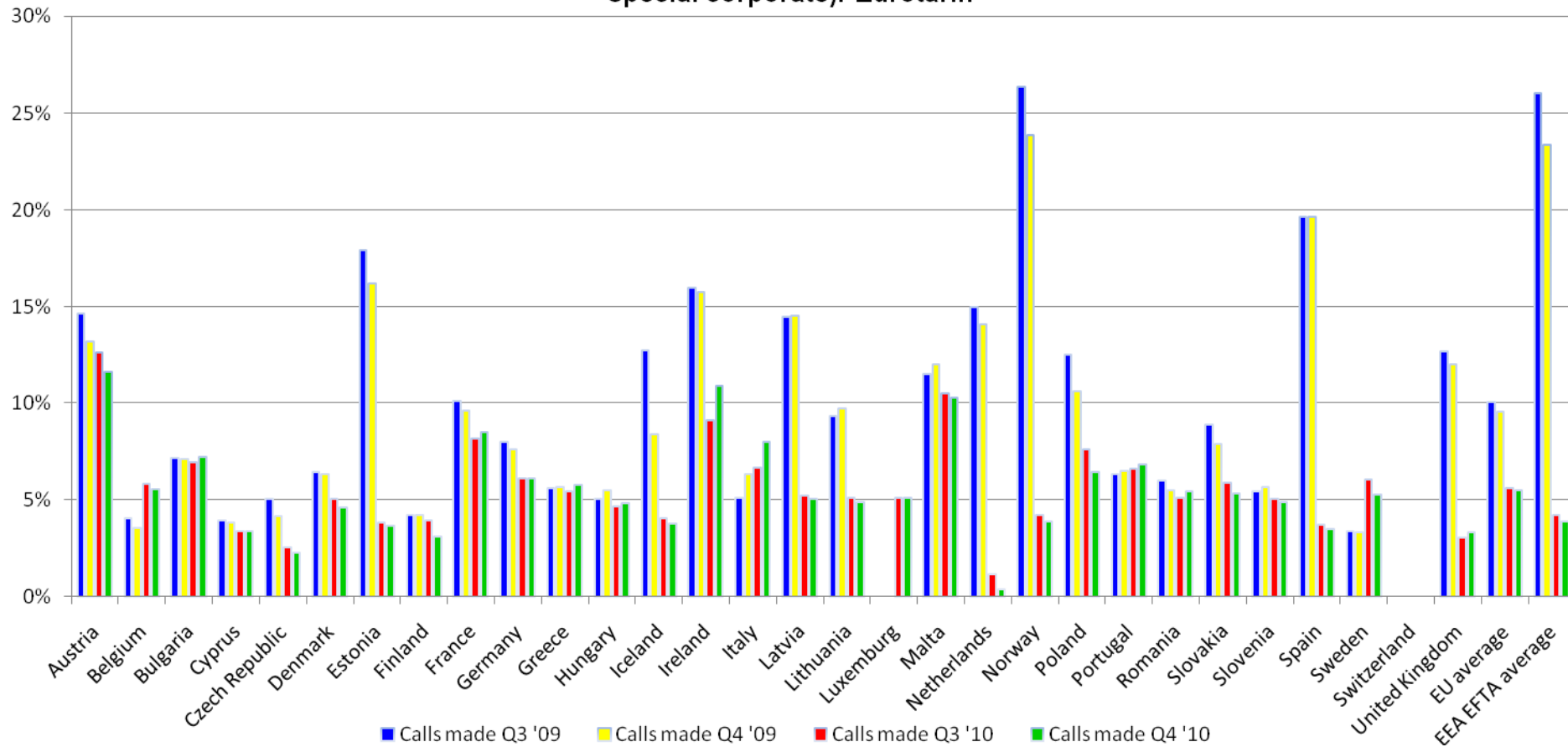
Figure 8: Average retail price per minute voice call received for all consumers (excluding special corporate): Rest of World tariffs (based on billed minutes)



EU average: Q3 2009 = € 0.678; Q4 2009 = € 0.701; Q3 2010 = € 0.746; Q4 2010 = € 0.812.

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

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

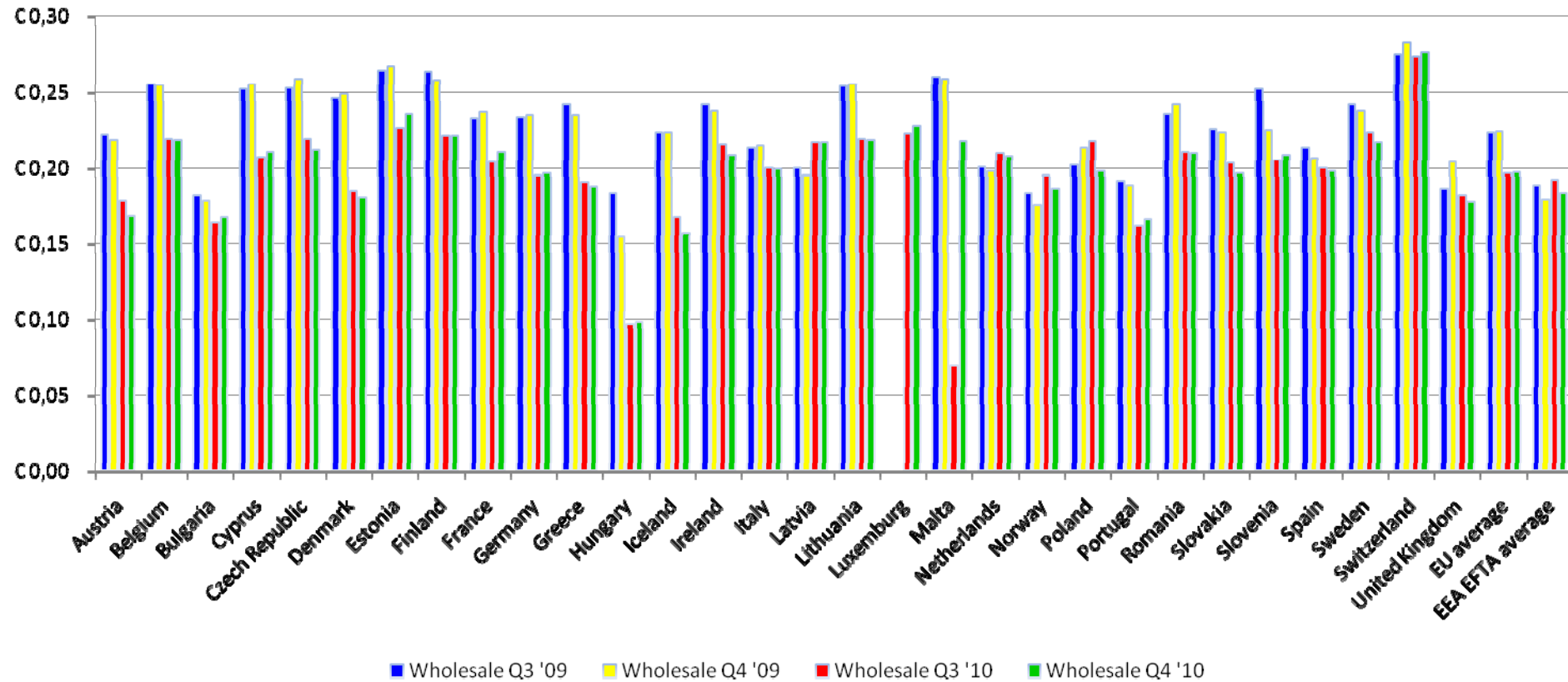


EU average: Calls made Q3 2009 = 10.0%; Calls made Q4 2009 = 9.5%; Calls made Q3 2010 = 5.6%; Calls made Q4 2010 = 5.5%.

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.

Wholesale voice

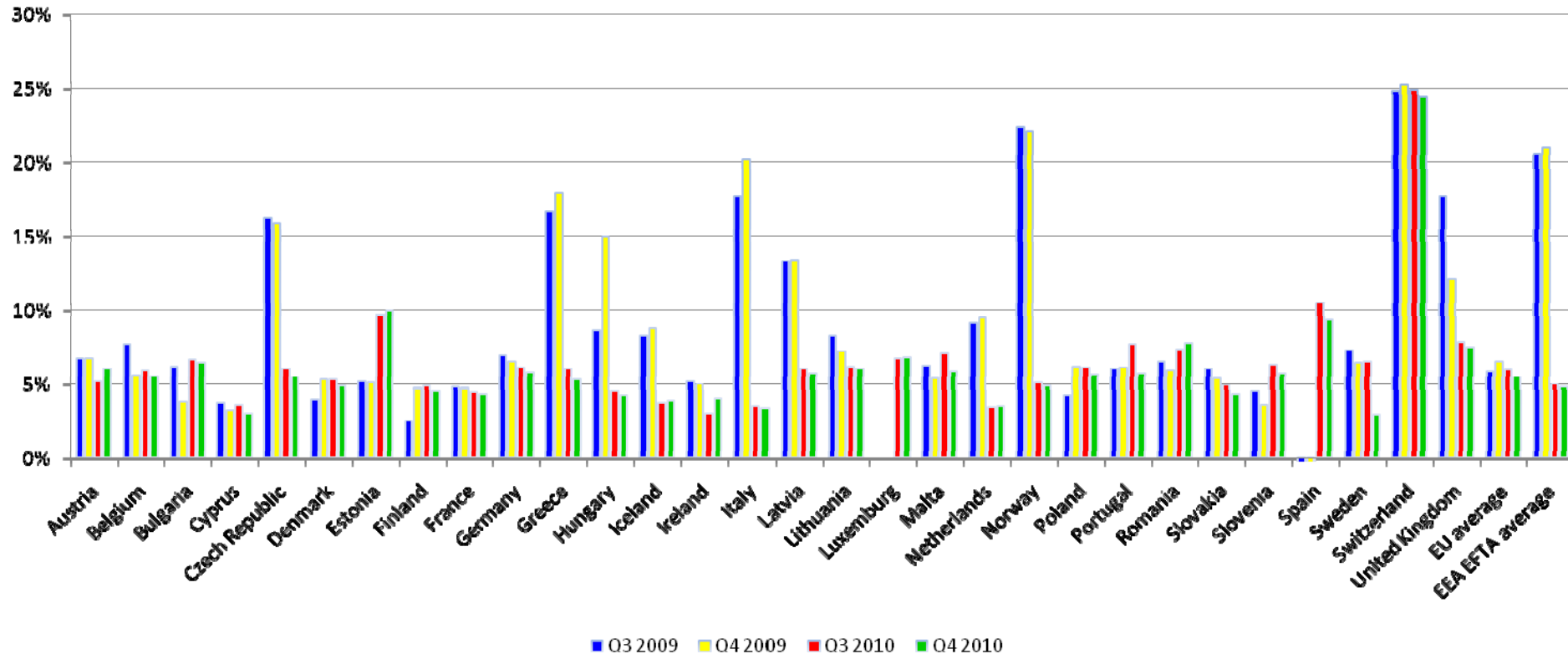
Figure 10: Average wholesale price per minute voice call: EU/EEA EFTA, non-group companies (based on billed minutes)



EU average: Q3 2009 = € 0.224; Q4 2009 = € 0.225; Q3 2010 = € 0.196; Q4 2010 = € 0.197.

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 EFTA, non-group companies)**



EU average: Q3 2009 = 6.0%; Q4 2009 = 6.6%; Q3 2010 = 6.1%; Q4 2010 = 5.6%.

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 EFTA countries, where the amended Regulation came into effect during Q2 2010.

**Figure 12: EU/EEA EFTA averages prices per minute for wholesale non-group voice calls
(based on billed minutes)
(EU only for Q2 2009 -Q1 2010)***

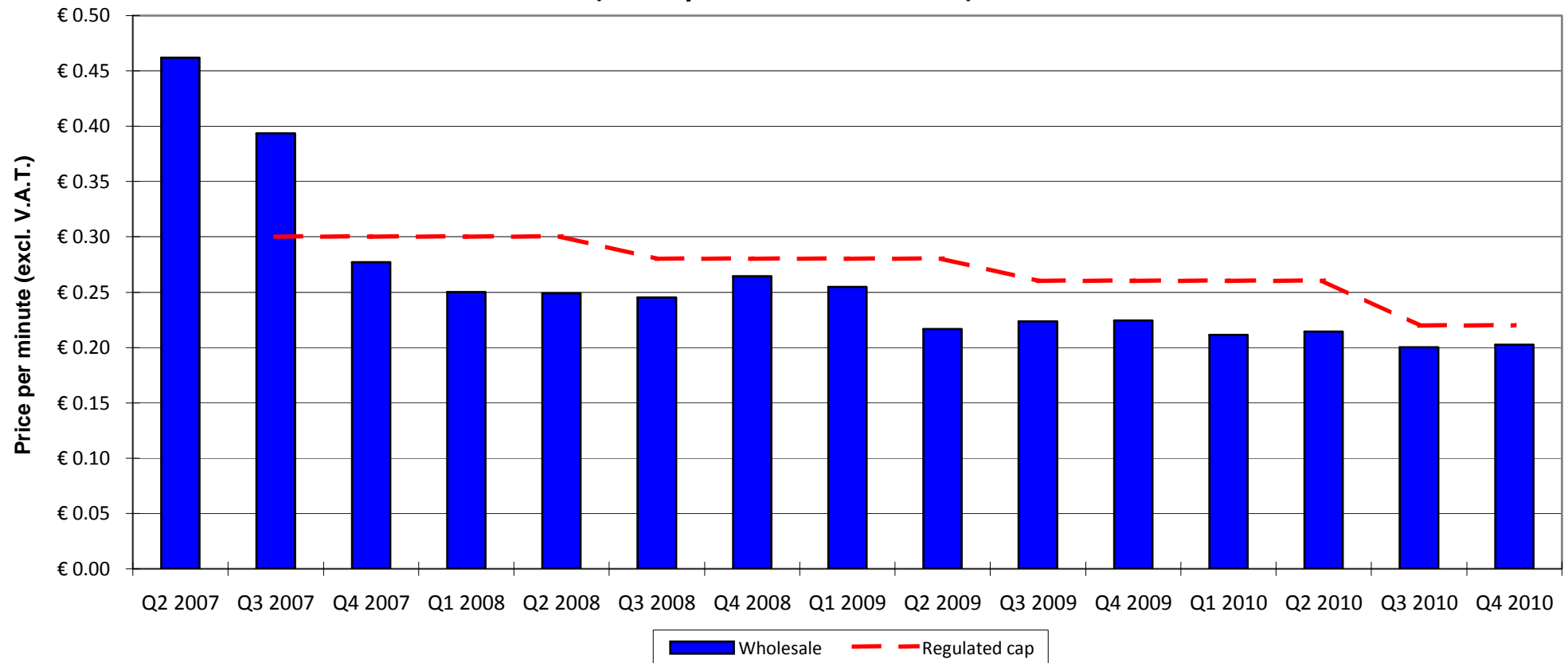
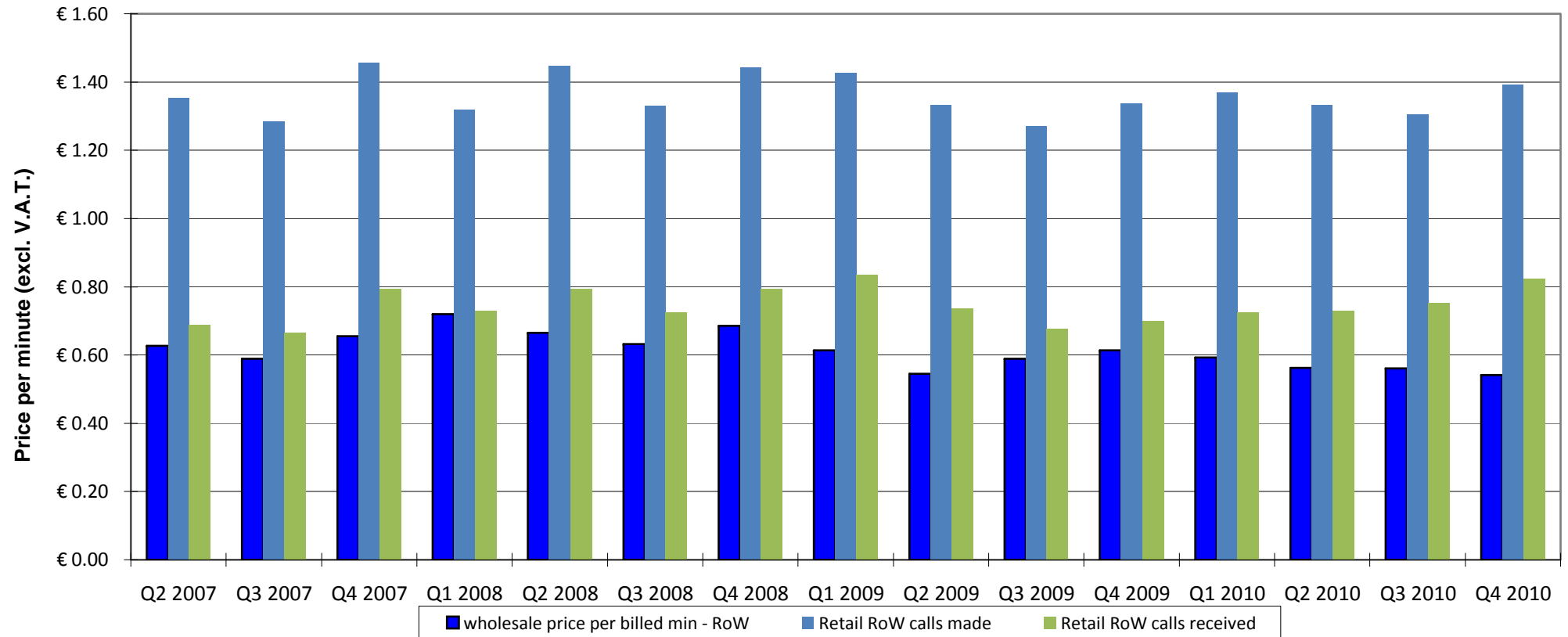


Figure 12 illustrates the EU/EEA EFTA average price at the wholesale level from Q2 2007 to Q4 2010 (with the EU-only average for Q2 2009 – Q1 2010). It illustrates the clear drop in the average soon after the implementation of the 2007 Regulation. Since then, the average wholesale price has been below the regulated cap with a varying margin.

**Figure 12A: EU/EEA EFTA average wholesale prices RoW versus RoW retail prices
(EU only for Q2 2009 -Q1 2010)***



EU average: Wholesale: Q3 2007 = € 0.589; Q3 2008 = € 0.632; Q3 2009 = 0.589; Q3 2010 = 0.561

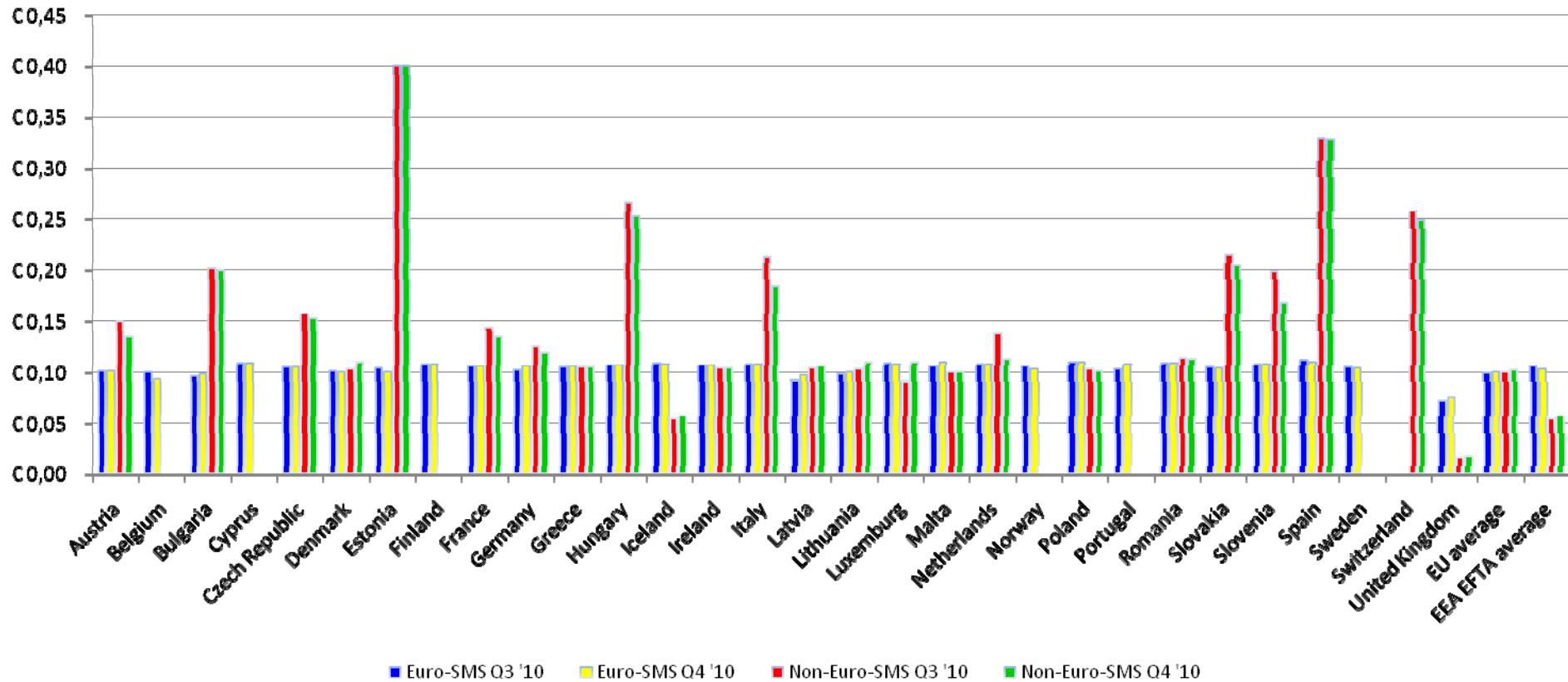
Retail calls made: Q3 2007 = € 1.285; Q3 2008 = € 1.330; Q3 2009 = € 1.270; Q3 2010 = € 1.304

Retail calls received: Q3 2007 = € 0.666; Q3 2008 = € 0.725; Q3 2009 = € 0.678; Q3 2010 = € 0.753

Average wholesale and retail prices have fluctuated year on year, usually in the same direction. In the last half of 2010, wholesale prices fell slightly while retail prices rose, especially for calls received.

Retail SMS

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



EU average: Euro-SMS Q3 2010 = € 0.099; Euro-SMS Q4 2010 = € 0.101; Non-Euro-SMS Q3 2010 = € 0.100; Non-Euro-SMS Q4 2010 = € 0.102.

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

**Figure 14: EU/EEA EFTA average price per retail SMS
(EU only for Q2 2009 -Q1 2010)***

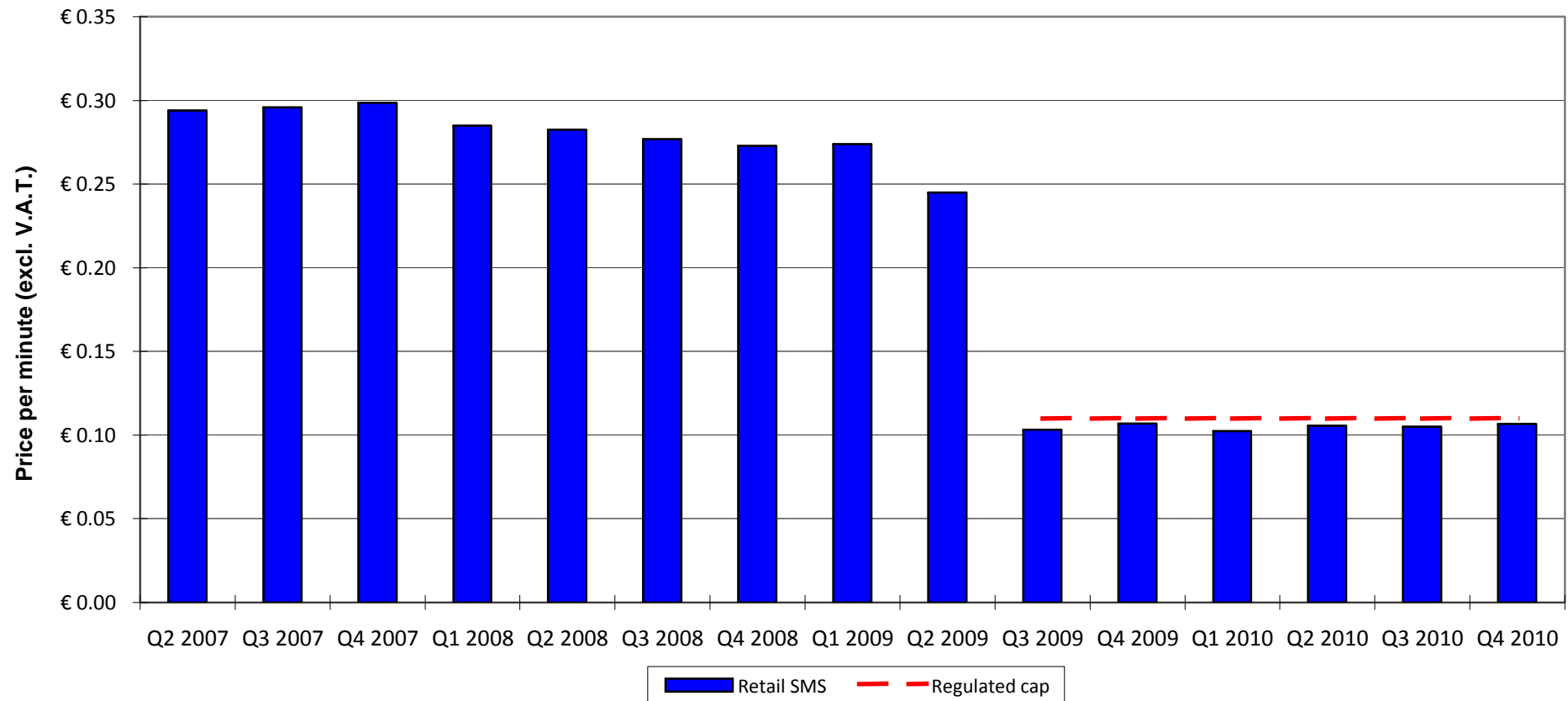
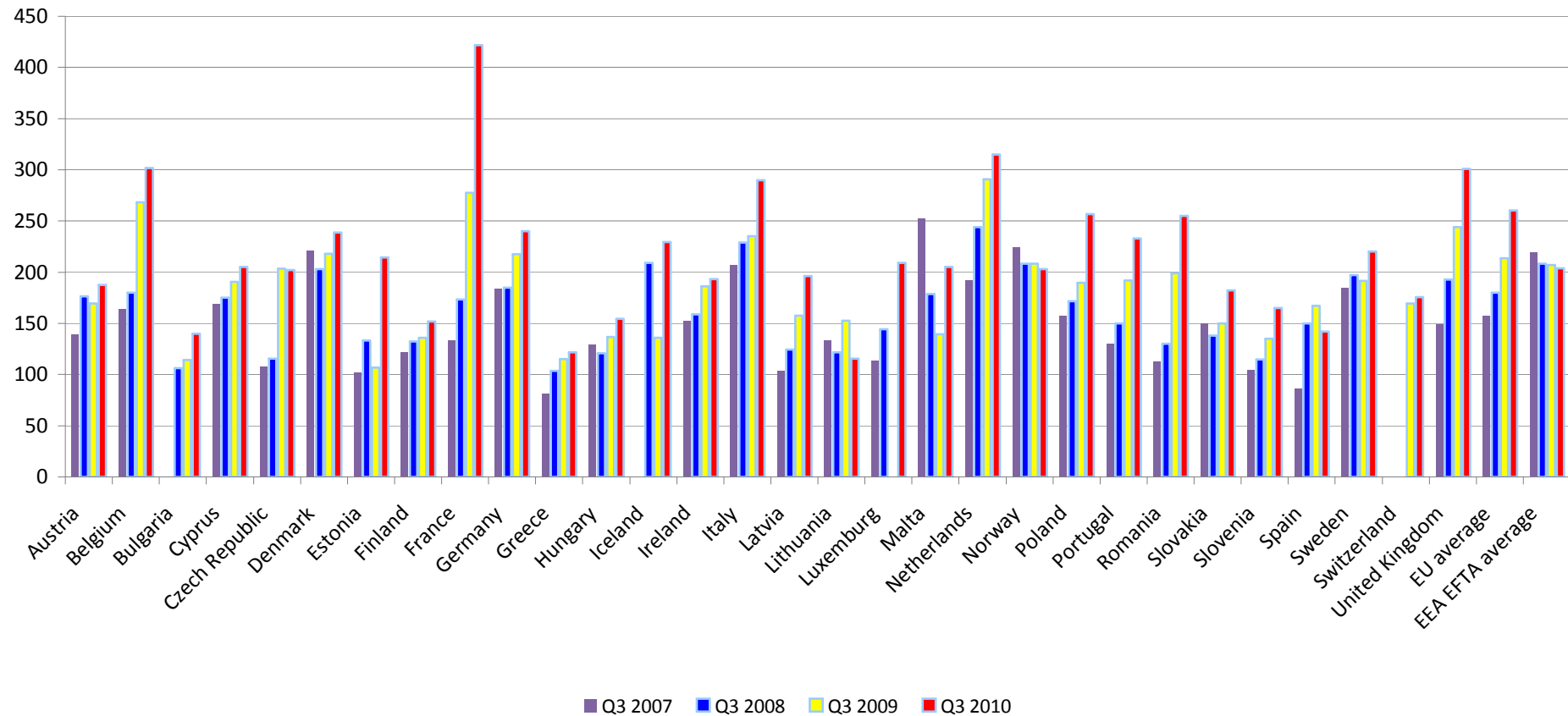


Figure 14 gives an overview of the EU/EEA EFTA average price for SMS messages (with the EU-only average for Q2 2009 – Q1 2010), and the subsequent introduction of the regulated Euro-SMS in Q3 2009. The average is slightly below the regulated cap.

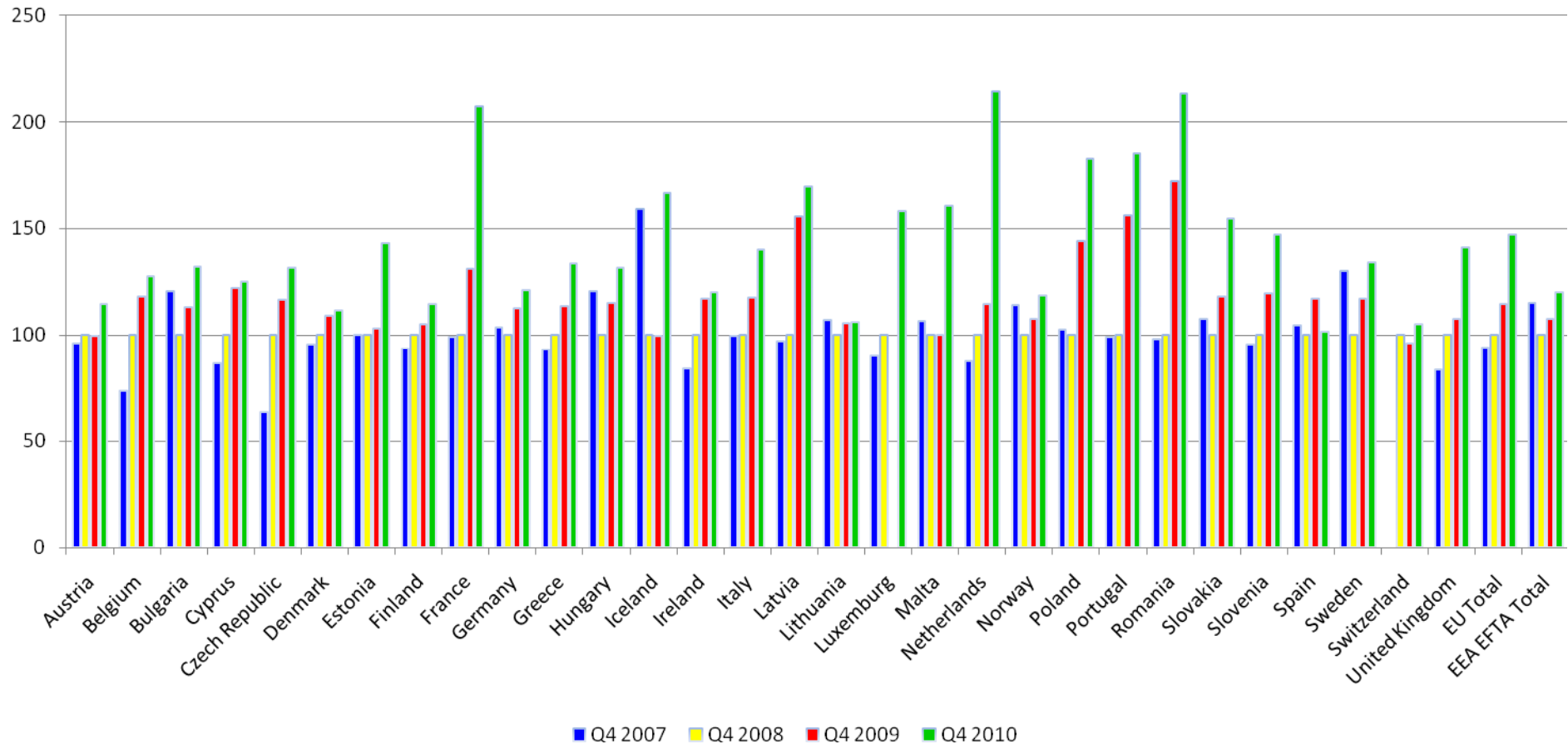
Figure 15a: Volumes of retail EU/EEA EFTA SMS sent (Q4 2008 = 100)



EU average: Q3 2008 = 179.83; Q3 2009 = 213.46; Q3 2010 = 260.12.

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 EU/EEA EFTA SMS sent (Q4 2008 = 100)



EU average: Q4 2007 = 93.7; Q4 2008 = 100.0; Q4 2009 = 114.6; Q4 2010 = 146.9.

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.

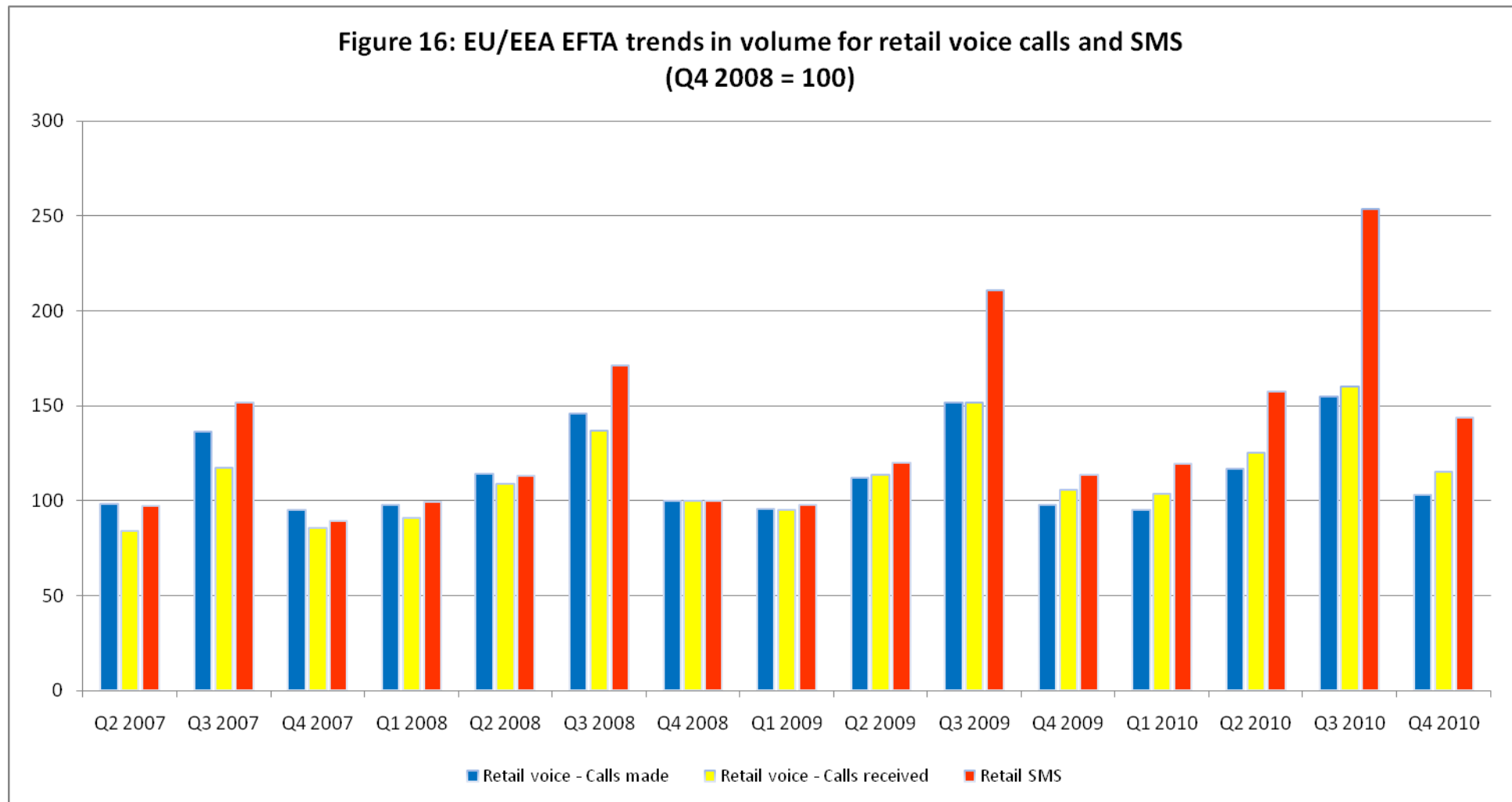
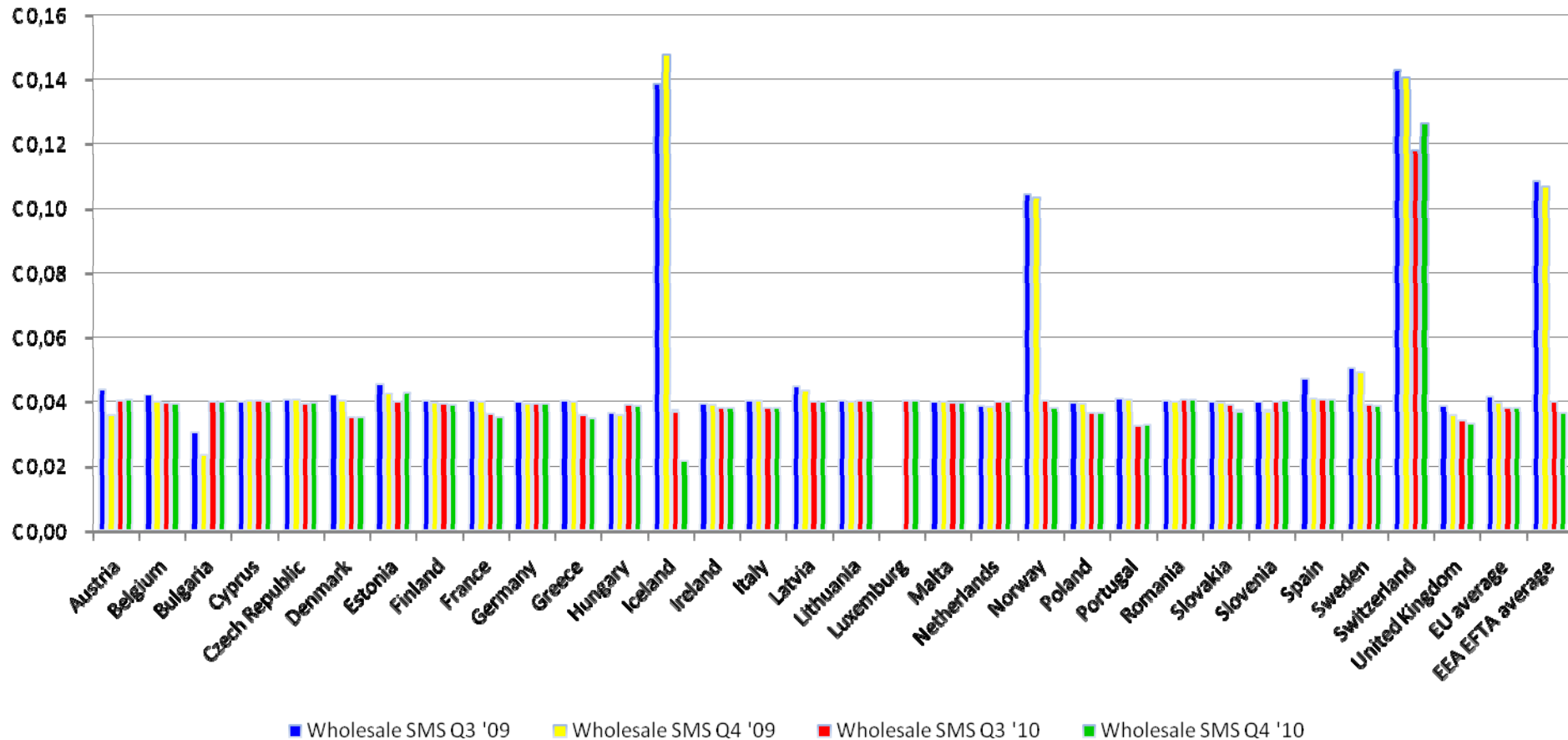


Figure 16 compares the changes in EU/EEA EFTA volumes for retail voice calls made and received and the volumes of SMS messages sent. It shows a similar trend for all services, largely seasonal, with a slightly larger growth in volumes calls received than for calls made, and more significant growth for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

Wholesale SMS

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

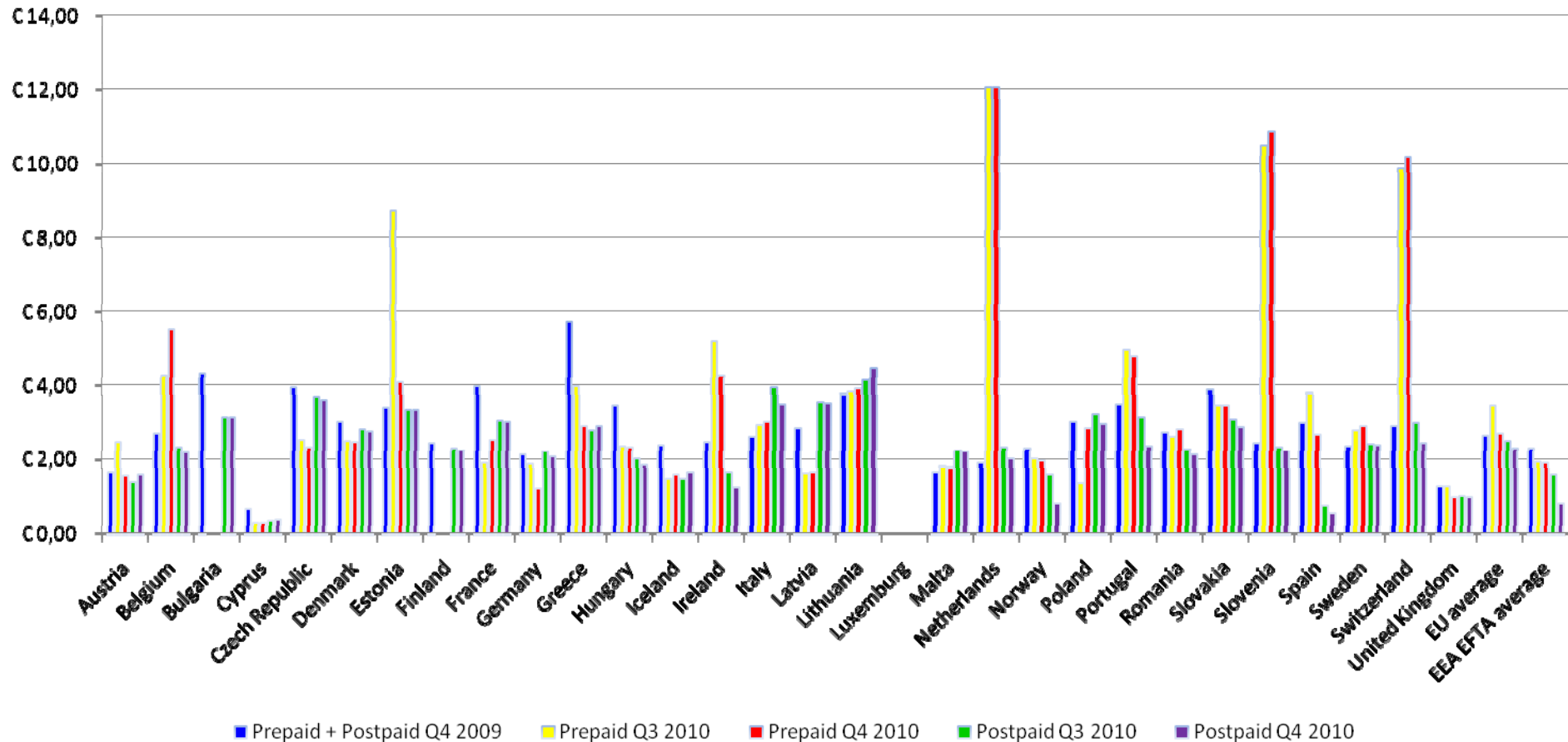


EU average: Q3 2009 = € 0.042; Q4 2009 = € 0.039; Q3 2010 = € 0.038; Q4 2010 = € 0.038.

Average wholesale prices comply with the regulated cap of € 0.04. In EEA EFTA countries the impact of the adoption of the amended Regulation is clear.

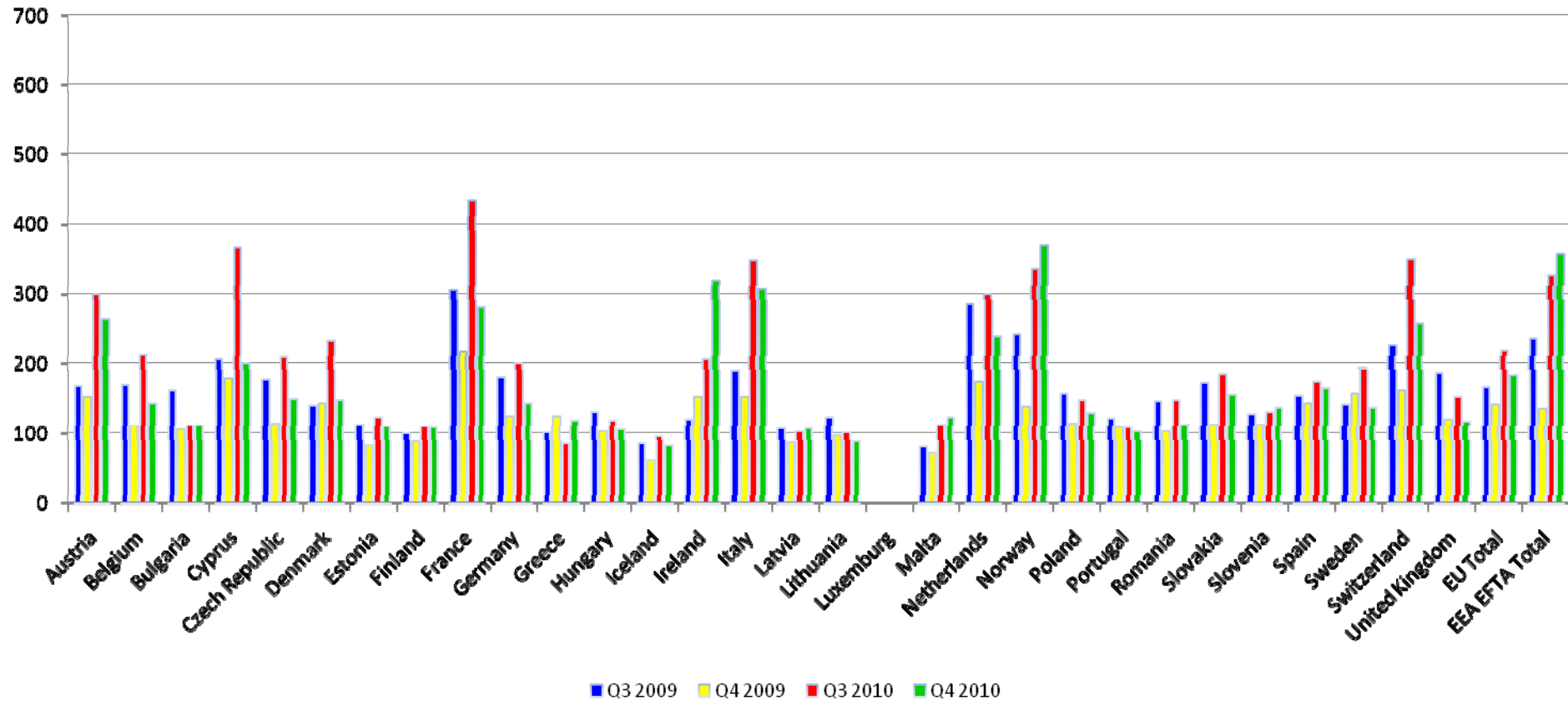
Retail data

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



EU average: Prepaid+Postpaid Q4 2009 = € 2.668; Prepaid Q3 2010 = € 3.463; Prepaid Q4 2010 = € 2.712; Postpaid Q3 2010 = € 2.512; Postpaid Q4 2010 = € 2.309.

BEREC began to collect data for prepaid and postpaid separately in 2010.

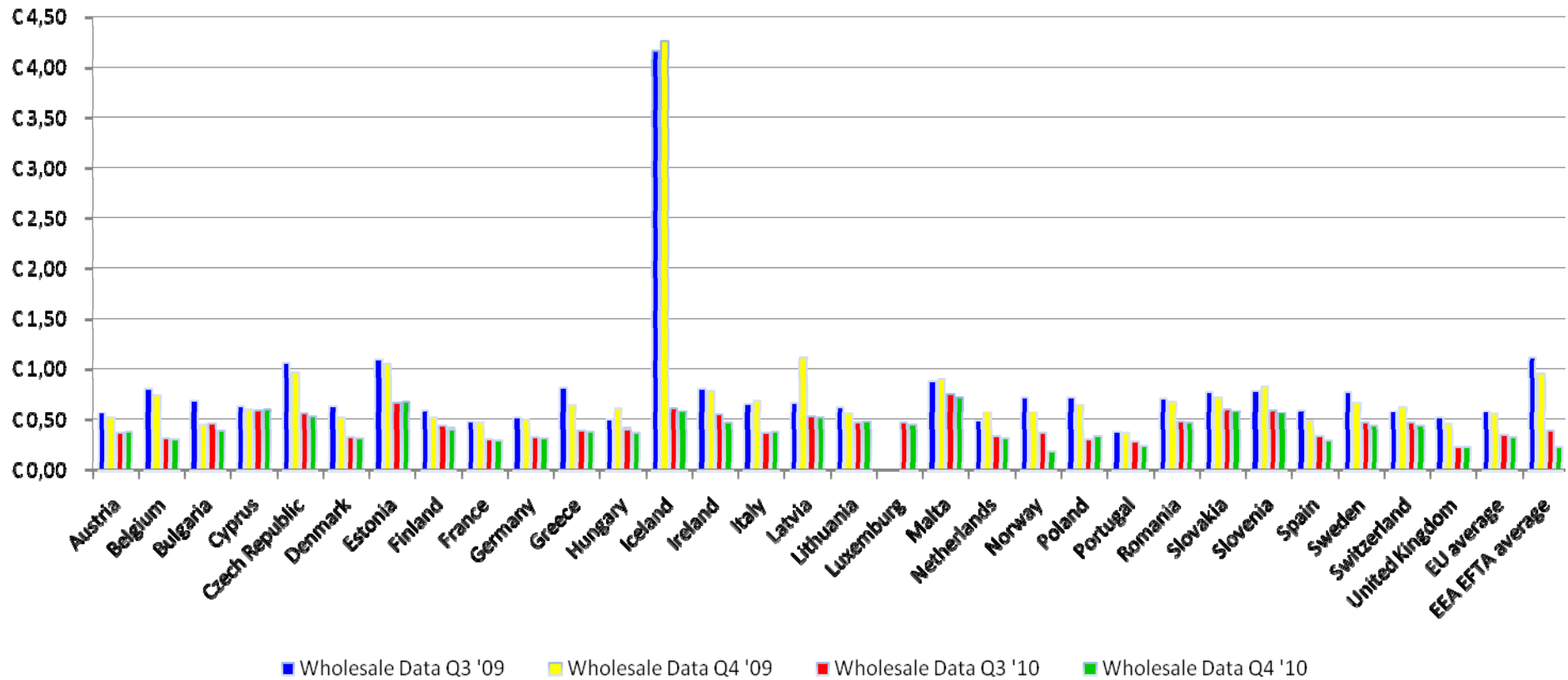
Figure 19: Volumes of (on-net and off-net) EU/EEA EFTA retail data (Q4 2008 = 100)

EU Average: Q3 2009 = 166.59; Q4 2009 = 141.25; Q3 2010 = 220.03; Q4 2010 = 183.70

There has been a significant increase in data volumes in various countries since Q4 2008, with a seasonal peak in Q3 often visible.

Wholesale data

Figure 20: Average wholesale price per data MB for inbound roaming: EU/ EEA EFTA, non-group companies (based on billed megabytes)



EU average: Q3 2009 = € 0.585; Q4 2009 = € 0.554; Q3 2010 = € 0.353; Q4 2010 = € 0.340.

All countries show wholesale averages well below the regulated safeguard cap of € 0.80 per Mb, with an overall decrease in the EU average year on year.

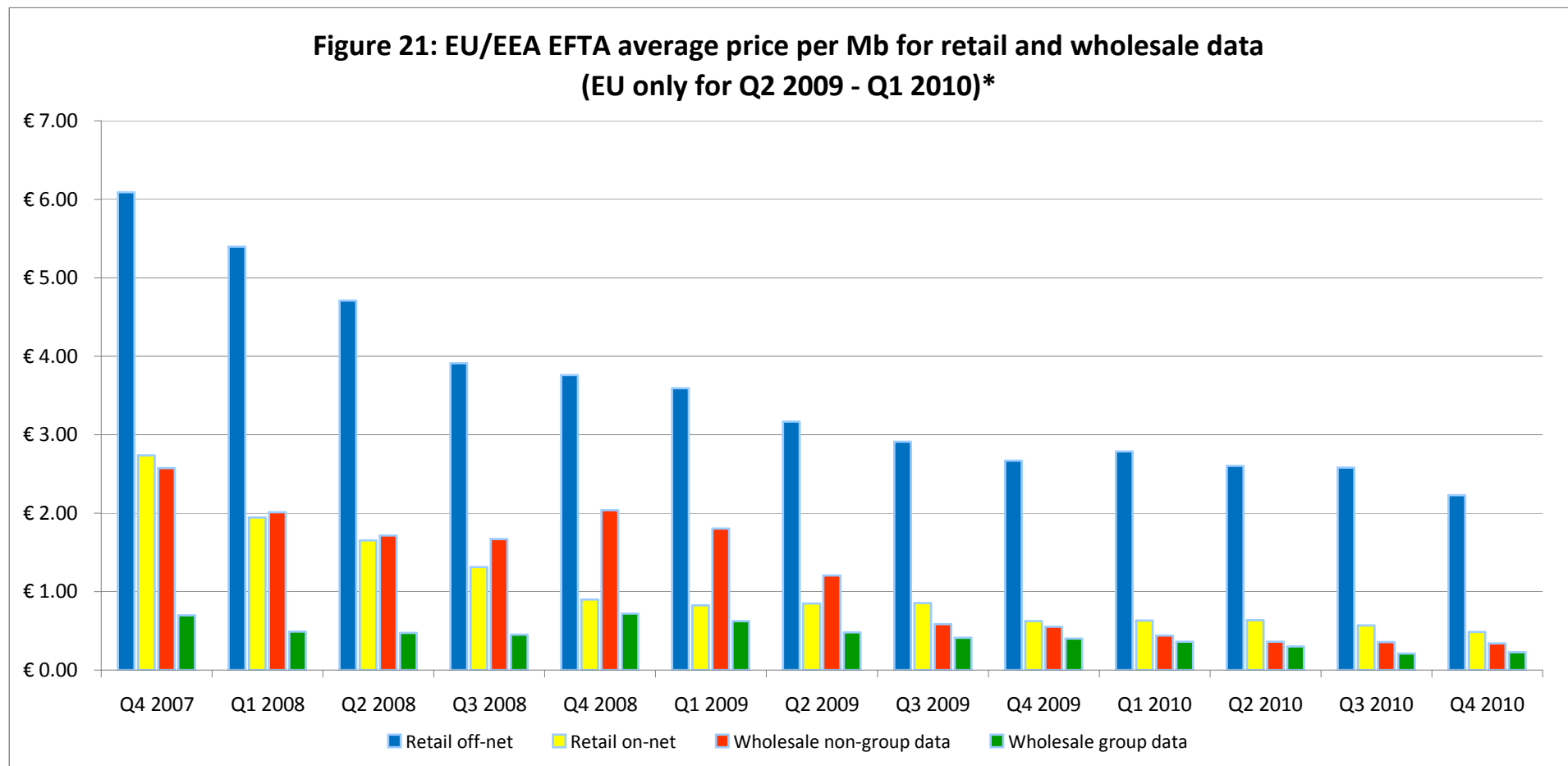


Figure 21 compares the average EU/EEA EFTA price trends for retail and wholesale data services (EU-only averages were used from Q2 2009 – Q1 2010). It shows the continued downward trend in the average price for data services at both the retail and wholesale levels. The impact of the Regulation on wholesale 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 (136%), reaching a peak in Q2 2010 (612%) and slightly decreasing since (555% in Q4 2010).

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 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.

4.6 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 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

4.7 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 for 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

4.8 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 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

4.9 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 EFTA 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.

Specific cases

EEA EFTA adoption of the amended 2009 Regulation

4.14 The Swedish NRA, PTS, notes that its operators included all EEA EFTA countries in EU/EEA EFTA figures for the period 1 January - 31 March 2010. Since the EEA EFTA (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.

Special corporate figures

4.15 For Portugal, two out of three MNOs include special corporate volumes and revenues in their retail SMS and retail data figures. For France, most operators have also included

special corporate revenues for retail SMS and data. ARCEP has identified some problems with the definition of special corporate revenues and volumes. One operator reported having difficulties identifying customers on the Eurotariff but benefitting from bespoke discounts at the end of the year. Another operator was unable to split special corporate figures at all. However, the impact should be low given the very low number of special corporate consumers concerned. BEREC will review its definition of 'special corporate' for the next data collection.

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

4.16 Average prices for alternative tariffs in Denmark in Q3 and Q4 2010 are noticeably higher than for the first half of the year (previous Report). This is because alternative voice tariffs only make up a very small proportion of total voice volumes. This can lead to fluctuations over time.

4.17 In Hungary, most volumes for alternative tariffs come from one MNO, which confirms that there is considerable seasonal variation in revenues per minute. This has led to a lower average price for Q3 2010, compared to Q4 2010.

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

4.18 Both Estonia and Latvia reported low average prices for Eurotariff calls received, compared to the regulated cap. In the case of Estonia, all MNOs automatically provide lower rates to customers roaming in the Baltic States and Finland (no other conditions). For Latvia, customers receive Eurotariff calls free of charge if they select a network that is within the same group, or associated with, their home operator when roaming in Lithuania, Estonia or Sweden.

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

4.19 The average surcharge for Austria appears high. This is mainly because one operator is unable to distinguish between Eurotariff, non-Eurotariff and rest of world volumes. It has provided estimates, but these are likely to be imprecise, especially for the Eurotariff.

4.20 France reports a fairly high surcharge; apparently French consumers' behaviour is quite different when roaming than in the domestic market, with an increase in the proportion of short calls. Estonia found a similar tendency.

4.21 Irish operators also reported a high number of short calls, lasting less than the 30 second minimum charge allowed under the regulation. It also noted that one operator had included a regional tariff as a Eurotariff as the price is under the regulated cap. However, it is billed on a per minute basis, leading to a higher surcharge. BEREC will seek to include this as an 'alternative tariff' in future collections.

Average retail and wholesale SMS prices (Figures 13 and 17)

4.22 For Spain, at the retail level one MNO (out of four) has included MMS data. Two MNOs are unable to differentiate between intra-Community SMS and Rest of World SMS.

4.23 At the wholesale level, the Spanish data includes some wholesale revenues and volumes for EFTA and Rest of World SMS sent by intra-Community roamers.

Average retail and wholesale data prices and volumes (Figures 18 – 21)

4.24 For Greece, the volumes reported for prepaid retail data were very low (less than 2,000MB), and the volumes reported for on-net prepaid retail data were significantly lower. The average price for off-net prepaid retail data was therefore not considered reliable, and an average of on and off-net prepaid data prices have been included in Figure 18.

4.25 Also for Figure 18, Latvia noted that volumes for prepaid retail data are significantly lower than for postpaid, which has lead operators to offer lower prepaid prices, unlike the common trend of lower postpaid prices.

4.26 The Czech Republic commented that the average price for postpaid off-net retail data is higher than for prepaid due to aggregation – while individual operators mostly offer similar tariffs for prepaid and postpaid consumers, one operator has a significantly higher average price for all data, significantly greater traffic volumes for postpaid customers and lower or similar volumes for prepaid customers. This increases the average postpaid price (Figure 18). Similarly, while operators charge a similar tariff when their customers roam on and off-net, the difference in the tariffs and volumes of different operators means that the average on-net price seems higher than off-net.

4.27 For Germany, Spain and Italy, an average of on and off-net prices has been included in Figure 18 rather than off-net only. Although some operators had reported separate on and off-net values, in fact no operators distinguish between on and off-net traffic in their tariff plans, meaning such splits were unreliable. BEREC will review the way that separate on and off-net and prepaid and postpaid data is collected, to ensure that the request for data is clear and the results are as reliable as possible.

4.28 For the UK, figures from less MNOs have been included in Figures 18 – 21 than in previous collections, due to inaccuracies in the figures from certain operators. As a result, the increase in data volumes shown in Figure 19 is not as significant as in reality.

4.29 The above comments affect Figure 21, which shows average EU/EEA EFTA prices for retail and wholesale data over time.

Future data collection

4.30 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 January 2011 to 30 June 2011. BEREC expects to report on this data in early autumn 2011.

Annex 1

List of respondents

Below are the operators that provided data for the period 1 July 2010 – 31 December 2010.

Austria	Orange France
A1 Telekom Austria	SFR
T-Mobile Austria	
Orange Austria	Germany
Hutchison 3G Austria	E-Plus Mobilfunk GmbH & Co. KG
Yesss!	Telefónica-O2 Germany GmbH & Co. OHG
	Telekom Deutschland GmbH
Belgium	Vodafone D2 GmbH
Belgacom Mobile	
KPN Group Belgium (Base)	Greece
Mobistar	COSMOTE Mobile
	Telecommunications S.A.
Bulgaria	Vodafone Panafon S.A.
BTC AD	Wind HellasTelecommunications S.A.
Cosmo Bulgaria Mobile EAD	
Mobitel EAD	
	Hungary
Cyprus	Telenor Magyarország Zrt
Cytamobile-Vodafone	T-Mobile
EAD MTN Cyprus (Areeba Ltd)	Vodafone Magyarország Zrt
Czech Republic	Iceland
Telefónica O2 Czech Republic	Nova
T-Mobile Czech Republic	Síminn hf.
Vodafone Czech Republic	Vodafone Iceland
Denmark	Ireland
3	Eircom Mobile
TDC	Hutchison 3G Ireland
Telenor	Meteor Mobile Communications
TeliaSonera	O2 Communications Ireland
	Tesco Mobile
Estonia	Vodafone Ireland
AS EMT	
Elisa Eesti AS	Italy
OÜ Top Connect	Carrefour Italia Mobile
ProGroup Holding OÜ	Coop Voce
TELE 2 Eesti AS	Daily Telecom Mobile
	Fastweb
Finland	H3G Italia
Alands Mobiltelefon Ab	Noverca Italia
DNA Ltd	Poste Mobile
Elisa Corporation	Telecom Italia
TeliaSonera Finland Oyj	Tiscali Italia
	Vodafone Omnitel
France	Wind Telecomunicazioni
Bouygues Telecom	
Orange Caraïbe	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
 PING

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.
 Si.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
 O2 UK
 Everything Everywhere, Orange UK
 Everything Everywhere, T-Mobile UK
 Vodafone UK
 BT Mobile
 Tesco Mobile
 Virgin Mobi