

**International Roaming
BEREC Benchmark Data Report
July 2011 – December 2011**

May 2012

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Section 1

Executive summary

- 1.1. This BEREC Benchmark Report on International Roaming (the “Report”) presents the results of the ninth round of data collection on European international roaming services undertaken by the Body of European Regulators for Electronic Communications (BEREC). The Report covers the period 1 July 2011 – 31 December 2011, i.e. quarter 3 and quarter 4 2011. The Report also includes data from previous rounds of data collection conducted by BEREC and its predecessor, the European Regulators Group (ERG), to provide context for the current figures. The earliest data is from quarter 2 2007, when regulation was about to enter into force.
- 1.2. The applicable regulatory framework for this data collection was the amended Roaming Regulation (EC) No 544/2009¹ applied in the EU (European Union) 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. With regard to the previous quarters included for comparison, it should be noted that from quarter 3 2009 to quarter 1 2010, Regulation 544/2009 applied in the EU while the first Roaming Regulation (EC) No 717/2007 remained in force in Norway, Iceland and Liechtenstein, with slightly higher voice caps, no SMS caps and no wholesale data cap.

BEREC Benchmark Report on International Roaming

- 1.3. This and subsequent Reports will provide information on the evolution of wholesale and retail prices for voice, SMS and data roaming services. The Reports are intended to provide a sound evidence base for the legislative process following the Commission’s July 2011 Report and proposal for a new Regulation³.
- 1.4. The information gathered by BEREC continues to suggest a good level of compliance with the current Roaming Regulation in all EU Member States. At the retail level, all consumers have access to a Eurotariff and a Euro-SMS tariff. At the wholesale level, the voice, SMS and data roaming charges set between operators are in line with the declining regulated average caps. In this collection, some countries still reported average prices that were around €0.001 above the regulated cap, but in a couple of cases up to almost €0.03 above the cap. Since the last report the above retail cap margin grew larger. The NRAs concerned checked compliance with the Regulation by their operators. In some cases, the situation seems to have been caused by inaccuracies in reporting for the data collection itself. In a few instances, the NRA has launched a compliance investigation to gather further information on the possible reasons for this reported price. BEREC will keep monitoring this issue closely. During the data collection period, the applicable caps were⁴:

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’ (European Economic Area, European Free Trade Association) refers to Norway and Iceland. Data from Liechtenstein was not available. Figures from Switzerland are excluded from both “EEA” and “EEA EFTA” averages.

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

⁴Not applicable to Switzerland

Service and Price Cap (ex VAT)	Q3– Q4 2011
<i>Wholesale voice (€/minute)</i>	18
<i>Eurotariff voice (making call) (€/minute)</i>	35
<i>Eurotariff voice (receiving call) €/minute)</i>	11
<i>Wholesale SMS (€/SMS)</i>	4
<i>Euro-SMS sent (€/SMS)</i>	11
<i>Euro-SMS received (€/SMS)</i>	0
<i>Wholesale data (€/MB)</i>	50

- 1.5. In general, average Eurotariff retail voice roaming rates (see Figures 1 and 3) remained fairly near the regulated caps in most EU Member States during the data collection period. For calls made, the EU average Eurotariff was €0.320 in Q3 2011, and €0.313 for Q4 2011, compared to a cap of €0.35 (i.e. on average 3cents less than the cap). In Q3 and Q4 2011, the EU average unregulated voice tariff for calls made (Figures 1 and 3) was lower than during the equivalent period of 2010 (€0.378 and €0.366, compared to €0.404 and €0.395 in Q1 and Q2 2010).
- 1.6. The EU average Eurotariff rate was nearer the cap for calls received at €0.099 during Q3 2011 and €0.097 in Q4 2011, compared to a cap of €0.11. For calls received, unregulated prices were also lower in Q3 and Q4 2011 than in 2010 (€0.158 and €0.145, compared to €0.178 and €0.165 in the same periods in 2010).
- 1.7. As can be seen in Figure 6, the nature of the difference in the average EEA price for regulated and unregulated voice prices has changed over time. EEA average unregulated prices drew closer to average regulated prices in Q1 – Q2 2011, while remaining higher, especially for calls received in Q3 and Q4 2011.
- 1.8. Regarding the effects of billing standardisation for Eurotariff calls (Figure 11), the 2009 amended Regulation requires per second billing for Eurotariff calls made, with the possibility of up to a 30 second minimum initial charging period to cover the costs of setting up the call. This has led to a significant drop in the EU average surcharge for calls made, from around 27% in Q2 2009 to around 5.74% in Q3 2011 and 5.63% in Q4 2011. The Regulation requires per second billing only for Eurotariff calls received, to result in a surcharge of 0%, down from around 18% before the 2009 Regulation.
- 1.9. At the wholesale level (Figures 12 and 14), average voice prices are below the regulated wholesale cap of €0.18, with an EU average of €0.168 for Q3 and €0.172 for Q4 2011.
- 1.10. Under the 2009 Regulation, the average wholesale voice charge must be aggregated on a per second basis, adjusted to take account of the possibility for the operator of the visited network to apply an initial minimum charging period not exceeding 30 seconds. This has led to a significantly lower surcharge (Figure 13) in EU countries, from around 24% in Q2 2009 to around 5.6% in Q3 and Q4 2011.
- 1.11. Considering ‘Rest of World’ retail voice roaming calls (Figures 9 and 10), typical prices are significantly greater than for calls within EU countries. Comparing the same quarters of 2010 and 2011, while there is no consistent trend in average country prices

for calls made or received, the average for all EU-based providers has decreased. There are no clear indications that operators have tended to raise the prices of unregulated 'Rest of World' roaming calls to make up for lost revenue due to the regulated price caps.

- 1.12. The introduction of the Euro-SMS in the EU in accordance with the 2009 Regulation has led to an EU average Euro-SMS price (Figures 15 and 16) of around €0.10 in Q3 – Q4 2011, compared to a regulated cap of €0.11. The EU average price for unregulated SMS is higher at around €0.13 (Q1 and Q2 2011). Before the 2009 Regulation, the EU average SMS price was around €0.27 - €0.24 (Q1 – Q2 2009).
- 1.13. At the wholesale level, the 2009 Regulation has led to a reduction in the average EU SMS price (Figure 20) to €0.037, near the level of the cap. In comparison, the EU average price was €0.136 - €0.133 in Q1 – Q2 2009, before the 2009 Regulation came into force.
- 1.14. Regarding EU volumes of voice, SMS and data roaming services (Figure 19), there is a similar trend for all services, which is largely seasonal with a peak in Q3 of each year, but with a significantly larger growth in volumes for retail data (up around 298% in Q4 2011 compared to Q4 2008). For voice, there is slightly higher growth for voice calls received than for calls made.
- 1.15. Considering data roaming services, EU average off-net retail prices (Figures 21 and 24, meaning prices charged where the home network and foreign host network are not owned by companies within the same group) continue to follow the downward trend noted in previous Reports, to €1.58 (prepaid) and €1.50 (postpaid) in Q4 2011 per MB. There is a considerable difference between EU average on-net and off-net data roaming prices, where on-net is cheaper. Meanwhile the difference between average prepaid and postpaid prices has narrowed. At the same time there are variations at individual country level and between operators.
- 1.16. At the wholesale level, an average data cap of €0.50 applies in the EU in accordance with the 2009 Regulation. The EU average price for non-group wholesale data (Figure 23) has fallen to €0.204 per MB in Q4 2011, compared with an EU average of €1.20 in Q2 2009, just before the Regulation came into effect.
- 1.17. This data collection found continued growth in EU volumes of roaming data services (Figure 22a and Figure 22b), which were around 180% higher in Q4 2011 than in Q4 2009.
- 1.18. 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

- 1.19. For voice roaming services, average EEA prices are near the regulated caps. This suggests that providers see little attraction in competing on Eurotariff rates, despite the fact that there is a significant margin between typical wholesale prices and retail caps.
- 1.20. BEREC has noted from previous data collections that the European average price paid per minute for voice calls made under alternative tariffs was not, as would be expected, below the average price for the Eurotariff. These results were repeated in the second half of 2011. Moreover the gap widened, especially for incoming calls.

- 1.21. This is clearly illustrated in Figure 3. In over half the Member States, the national average price for incoming calls under alternative tariffs is a very significant margin above the Eurotariff average price (a factor of 2x is typical for those Member States).
- 1.22. This is a matter of considerable concern. BEREC (and previously ERG) has supported the flexibility in the Roaming Regulation which allows retail providers to offer alternative tariffs which widen choice for consumers and allow better deals for customers with particular patterns of service demand. The Eurotariffs account for the majority of voice and SMS traffic. Nevertheless, there is a substantial minority of customers who use alternative tariffs. In the second half of 2011, 26.8% of calls made and 29.1% of calls received were based on non Eurotariffs. For text messages sent while roaming within EEA countries, 14.42% of the total volume accounted for non-Euro SMS tariffs.
- 1.23. It is not a problem that customers using alternative tariffs will, from time to time, pay more for a particular call or SMS than they would have done under the Eurotariff. Nevertheless, they would expect to gain on other calls and texts and at least break even overall. However, this appears to be very far from the situation which applies to alternative tariffs in a number of Member States.
- 1.24. For the moment, the reasons for the discrepancy remain a matter of speculation. Some may be attributable to the sale of roaming bundles which are too large to suit most customers in practice. Alternative tariffs may employ larger billing units (per minute, rather than per second) which thereby reintroduces hidden surcharges which regulation has curtailed for the Eurotariff. Or headline rates for alternative tariffs may have remained stable or even increased over time while Eurotariff rates decreased.
- 1.25. Whether a combination of these reasons or another effect accounts for the discrepancy, it seems that a number of consumers have made bad choices. The observed effect was clearly not the outcome intended when Council and Parliament decided that there should be freedom to provide alternative tariffs alongside the Eurotariffs. Clearer information from providers about the relative pros and cons of different tariff options seems a necessary step for the reversal of this extremely undesirable trend. Article 14.3 of the version of the new Regulation requires providers to take necessary steps to provide information to their customers. BEREC will update on compliance with this requirement in the next Benchmark Report.
- 1.26. The picture is different for EEA data roaming, where average wholesale and retail charges have fallen significantly between Q4 2007 and Q4 2011. There was a noticeable slowing in the reduction in prices in late 2009 and early 2010, although the rate of decrease picked up in this collection. EU average retail off-net prices fell between Q4 2010 and Q4 2011 by 39%. This data collection also found a continued drop in EU average charges for wholesale non-group data roaming of around 39% between Q4 2010 and Q4 2011. The average wholesale price is well below the regulated cap but still higher than the (conservative) BEREC cost estimates⁵.
- 1.27. BEREC notes that a sizeable margin remains between the average wholesale and retail prices. While the difference between average non-group wholesale and off-net retail rates has narrowed in relative and absolute terms in the past year, it remains

⁵BoR (11) 46 BEREC Analysis of the European Commission's Proposal for a Regulation on Roaming COM(2011)402 of 6 July 2011, document available on the website:
http://berec.europa.eu/documents/berec_docs/index_en.htm#board

significant (with retail representing a 558% or €1.859 margin over the wholesale rate in Q4 2010, and 630% or €1.283 in Q4 2011).

- 1.28. In its December 2010 Report and its February 2011 response to the Commission's public consultation to inform the Commission's review of the functioning of the 2009 Regulation and future regulatory options⁶, BEREC identified some arguments to support the proposition that market forces are stronger for data roaming than for voice and SMS. In the consultation response, it concluded that: 'In the longer term, retail data roaming could become a reasonably competitive market, given that there are partial substitutes (e.g. via WiFi access), which provide competitive pressure. Subject to a review of tariff developments in the first half of 2011, while retail data roaming seems relatively unlikely to become fully competitive during the Commission's time horizon (up to 2015), it is a reasonable longer-term expectation'.

Section 2

Introduction

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

The 2007 Regulation

- 2.2 In 2005, ERG undertook a study of international roaming that concluded that the EC Regulatory Framework did not provide the necessary tool-kit for NRAs to tackle the problems identified. ERG wrote to the Commission in December 2005 highlighting its concerns.
- 2.3 On 8 February 2006, Commissioner Reding announced an intention to regulate international roaming services with a "call for input" on how this might be undertaken⁷. ERG responded⁸ to the Commission's proposals.
- 2.4 After significant debate, the first Regulation on international roaming services was published on 29 June 2007. The primary provisions capped wholesale and retail charges voice calls and set a number of transparency provisions to help to ensure that consumers were well informed. The provisions of the Regulation entered into force at different times, with retail and transparency provisions taking full effect by the end of September 2007 and wholesale provisions calculated annually from the end of August 2007.

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

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

⁸ 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

The 2009 amended Regulation

- 2.5 On 7 May 2008, the Commission launched a public consultation on the functioning of the 2007 Regulation. ERG's⁹ views expressed in response to the consultation were substantially reflected in the Commission's legislative proposals,¹⁰ 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 2009¹¹.
- 2.7 In particular, the Regulation introduced the following measures, applicable from 1 July 2009 to 30 June 2012:
- an extension of 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
 - 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 Report¹² on the functioning of the 2009 Regulation. The Commission's Digital Agenda for Europe¹³ also included a target for roaming, where 'the difference between roaming and national tariffs should approach zero by 2015'.
- 2.9 In accordance with the 2009 Regulation, BEREC provided advice to the Commission on the functioning of the Regulation and future regulatory options in a December 2010 Report¹⁴, supplemented by its February 2011 response to the Commission's public consultation¹⁵.
- 2.10 The Commission then published a full review of the functioning of the Regulation and legislative proposals for a new Regulation, in July 2011¹⁶.

⁹http://erg.eu.int/doc/publications/erg_08_35rev1_resp_intern_roaming_cons_080729.pdf

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

¹¹<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:167:0012:0023:EN:PDF>

¹²http://ec.europa.eu/information_society/activities/roaming/docs/interim_report2010.pdf

¹³<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>

¹⁴http://erg.eu.int/doc/berec/bor_10_58.pdf

¹⁵http://ec.europa.eu/information_society/activities/roaming/docs/cons11/Berec.pdf

¹⁶http://ec.europa.eu/information_society/activities/roaming/index_en.htm

This Report

- 2.11 This Report is the ninth 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 2011 – 31 December 2011.
- 2.12 Individual NRAs are required “...to monitor developments in wholesale and retail charges” for voice roaming services under the 2007 Regulation, and for voice, SMS and data roaming services under the 2009 Regulation (Art. 7(3)). It shall also include information on inadvertent roaming and traffic steering (Art.11). This monitoring informed the Commission’s interim and full reviews of the functioning of the Regulation.
- 2.13 BEREC believes that the information collected in existing and subsequent reports should provide a sound basis for any decisions regarding future regulation. In addition, BEREC considers it important to collect and publish a wider range of information than that explicitly set out in Articles 7 and 11 in order to give a better picture of the effect of the current Regulation and the state of evolution of roaming services.
- 2.14 BEREC has included data from previous reports for comparison. BEREC considers that the data collected from just before the implementation of the 2007 Regulation for voice and the 2009 Regulation for SMS and wholesale data, can serve as a “benchmark” against which data following implementation can be assessed. 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:
- Simplifying 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, checking it for inconsistencies;
 - Coordinating the actions of individual NRAs, as the data collection exercise uses a single and commonly agreed data collection model, and the process is synchronised and based on the same collection periods. BEREC consults the market players and the Commission before finalising the data collection templates;
 - As far as possible, providing a common response to the different questions posed during the collection process by operators and NRAs, as BEREC serves as the forum where these questions are commonly debated and addressed.
- 2.16 Following publication of previous reports, some operators have provided their NRA with more accurate data for one or more previous periods. These updates have been incorporated into the data used in this Report, which may create some inconsistencies with previous reports. In such cases, the data from the most recent Report takes precedence. Similarly, it is possible that data in this Report might be updated in a subsequent Report.
- 2.17 This Report includes data for Norway and Iceland, where the 2007 Regulation was in force from the end of 2007 to quarter 2 2010, when the 2009 amended Regulation

came into effect. An average of the Norwegian and Icelandic data is shown under 'EEA EFTA average'¹⁷. 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 providers¹⁸, 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 130 providers of international roaming services provided information for this Report. These include virtually all of the mobile network operators in the EU, as well as a significant number of MVNOs that provide EU roaming services. BEREC estimates that this covers around 95% of EU consumers using international roaming services today.

Format of the Report

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

Section 3

Overall data summary

- 3.1. All EU countries took part in this data gathering exercise; Iceland and Norway also participated, given the extension of the 2007 Regulation to those countries from December 2007 and the implementation of the 2009 Regulation in Q2 2010. In addition, Switzerland contributed to this data collection, although the 2007 and the

¹⁷For the purposes of this Report, 'EEA EFTA' refers to Norway and Iceland. Data from Liechtenstein was not available. Figures from Switzerland are excluded from both "EEA" and "EEA EFTA" averages.

¹⁸http://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_memo.pdf

2009 Regulation are not applicable there¹⁹. A comprehensive range of information was requested by NRAs from their national providers of international roaming services.

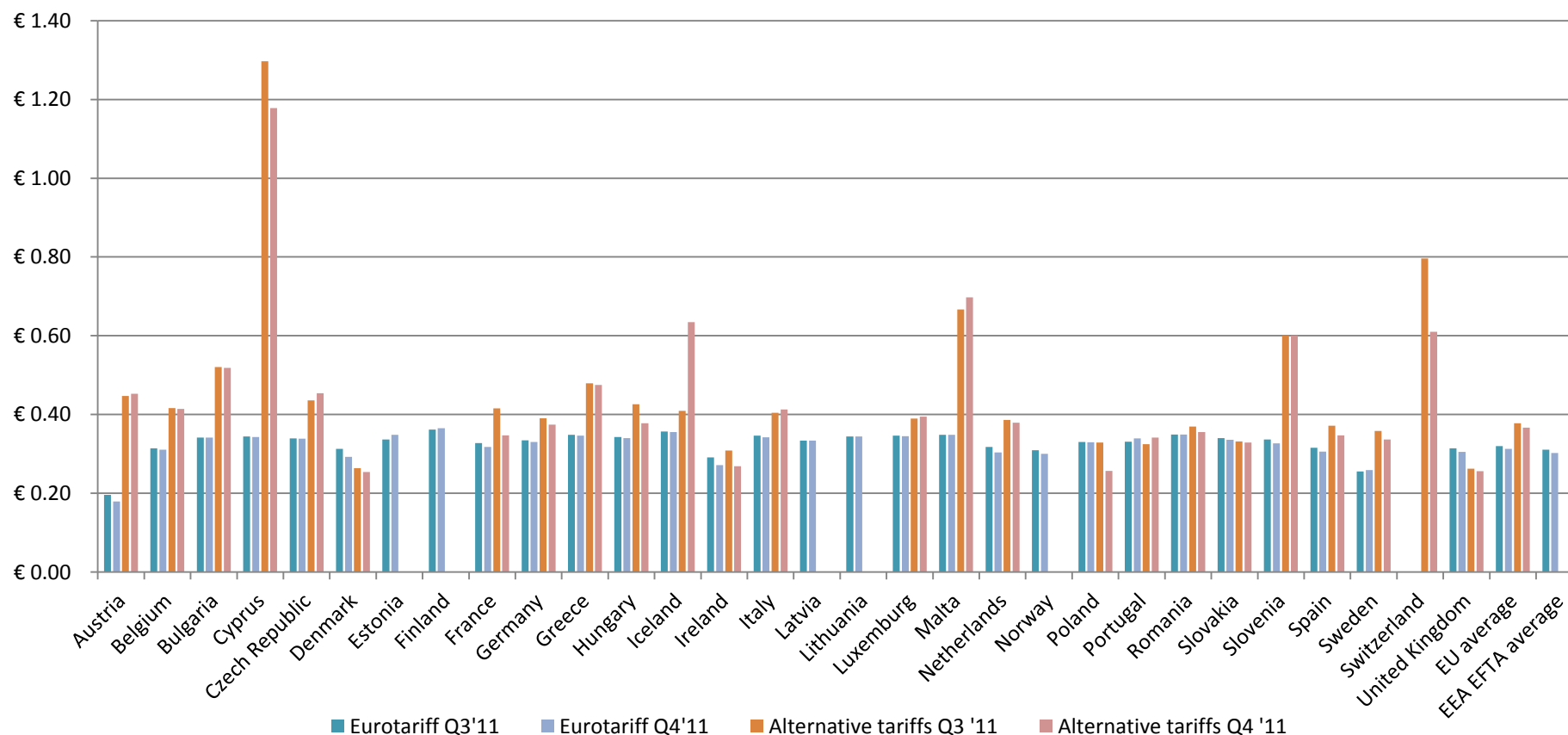
- 3.2. The data presented below represents the results of both the current and previous BEREC and ERG data collections, and provides an overview of international roaming for the period 1 July 2011 to 31 December 2011, split by calendar quarter.
- 3.3. For ease of comparison, all retail prices included in the charts below exclude VAT. They are an average of prices paid by postpaid and prepaid customers, including business users with standard business or consumer tariffs. Prices paid by “special corporate” customers²⁰ 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 customers 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 entered into force in the EU in Q2 2009 but was implemented in the EEA EFTA countries during Q2 2010, this Report contains separate averages for the EU and the EEA EFTA countries in some Figures.

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

²⁰ This means undertakings that have negotiated a bespoke tariff for international roaming that is not available to individual customers.

Retail voice (exc. special corporate)

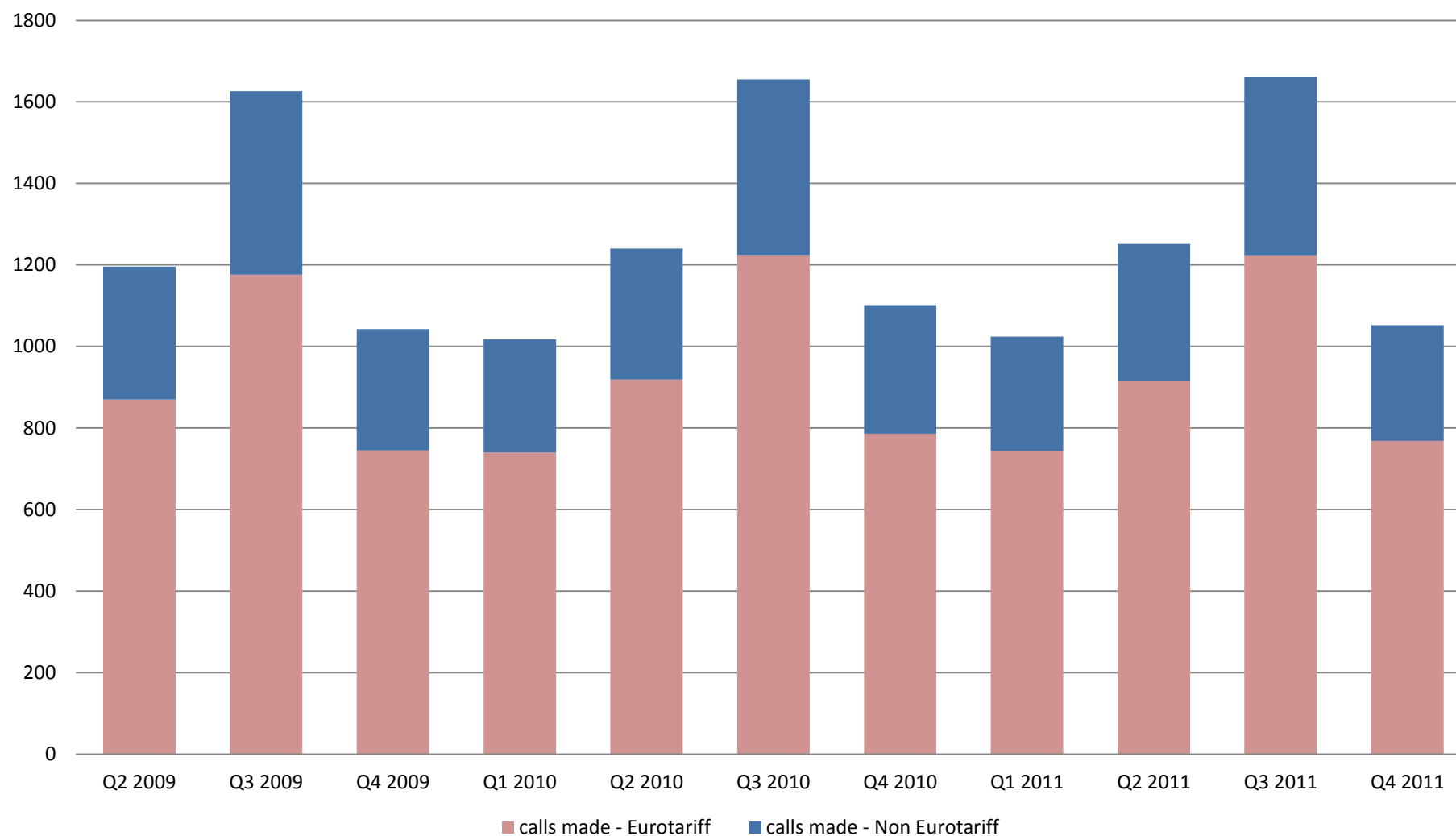
**Figure 1: Average retail price per minute for intra-EEA roaming voice calls made:
Eurotariff and alternative tariffs**



EU average: Eurotariff Q3 2011 = € 0.320; Eurotariff Q4 2011 = € 0.313; Alternative tariffs Q1 2011 = € 0.378; Alternative tariffs Q2 2011 = € 0.366

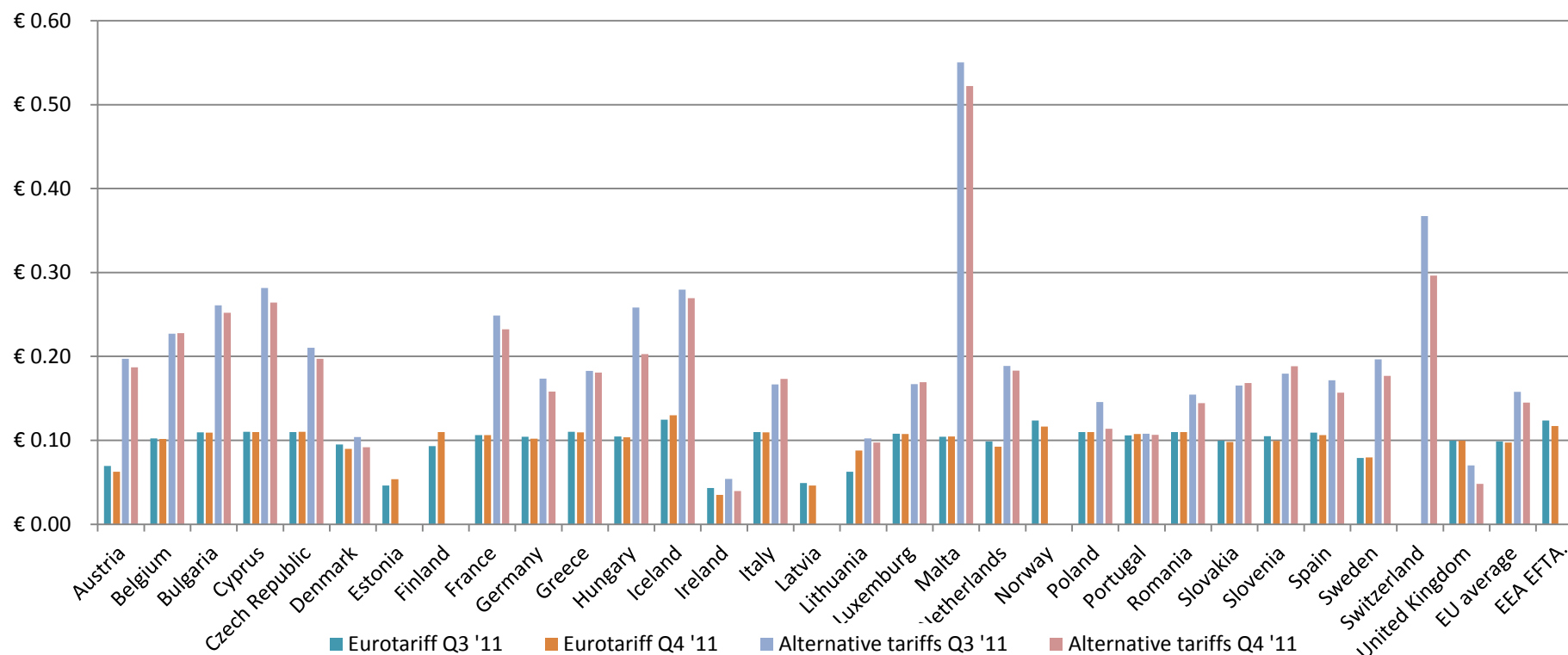
While the average Eurotariff varies between countries, the EU average is around 4 cents below the regulated cap of € 0.35. On average the Eurotariff offered a slightly better deal for calls made than alternative tariff plans.

**Figure 2: Retail roaming voice minutes for intra-EEA roaming voice calls made:
Eurotariff and alternative tariffs (millions of minutes)**



EEA total: Eurotariff: Q3 2011 = 1223.508; Q4 2011: 768.176, Alternative tariffs: Q3 2011 = 437.869; Q4 2011 = 283.851

**Figure 3: Average retail price per minute for intra-EEA roaming voice calls received:
Eurotariff and alternative tariffs**

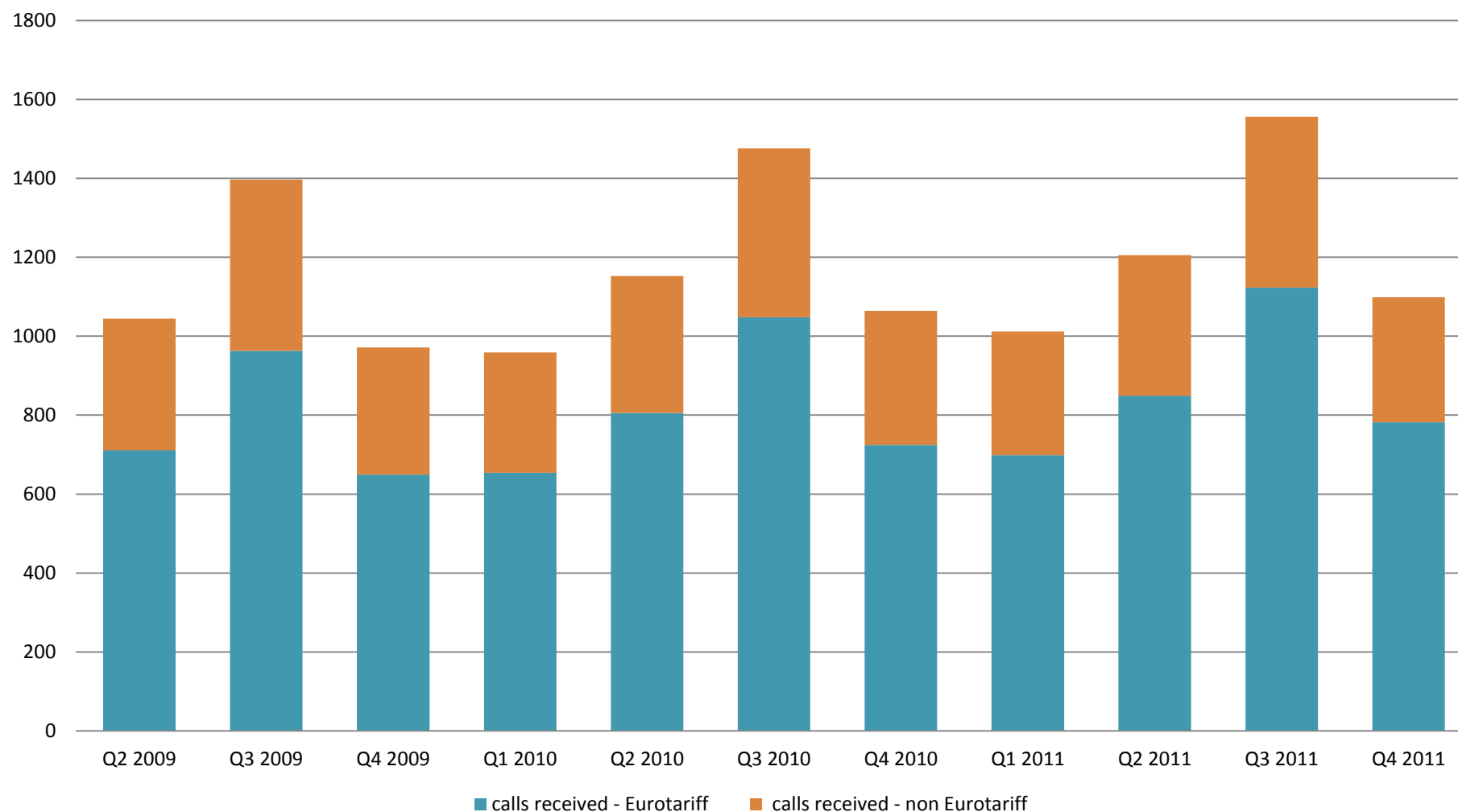


EU average: Eurotariff Q3 2011 = € 0.099; Eurotariff; Q4 2011 = € 0.097; Alternative tariffs Q1 2011 = € 0.158*; Alternative tariffs Q2 2011= € 0.145*

For calls received, the Eurotariff offered a better deal than alternative tariffs in most countries. The EU average for the Eurotariff was below the regulated Eurotariff cap of € 0.11 (difference of around 1€c), while the EU average for alternative tariffs was above the regulated cap in Q3 2011 and in Q4 2011.

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

**Figure 4: Retail roaming voice minutes for intra-EEA roaming voice calls received:
Eurotariff and alternative tariffs (millions of minutes)**



EEA total: Eurotariff: Q3 2011 = 1122.781; Q4 2011: 782.071, Alternative tariffs: Q3 2011 = 433.584; Q4 2011 = 316.998

Figure 5: EEA average retail price per minute for intra-EEA roaming voice calls made: Eurotariff and alternative tariffs (EU only for Q2 2009 - Q1 2010)

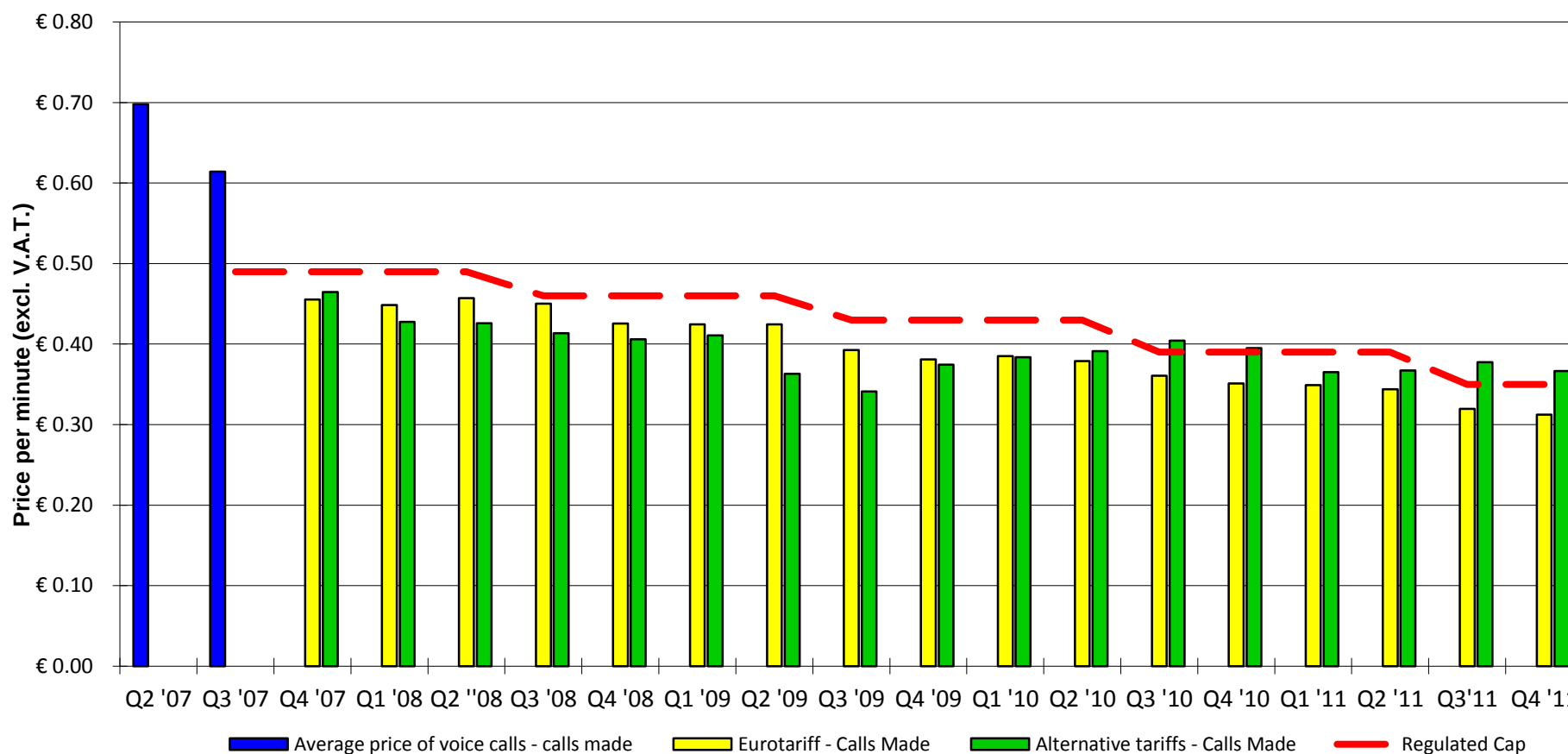


Figure 5 demonstrates how the EEA average price for calls made has evolved since introduction of the Regulation in Q3 2007. The Eurotariff averages are consistently below the Eurotariff cap. The average price of the Eurotariff and alternative voice tariffs have varied over time but fallen overall. The average alternative voice tariffs in Q3 and Q4 2011 were above the regulated cap.

Figure 6: EEA average retail price per minute for intra-EEA retail roaming voice calls received: Eurotariff and alternative tariffs (EU only for Q2 2009 - Q1 2010)

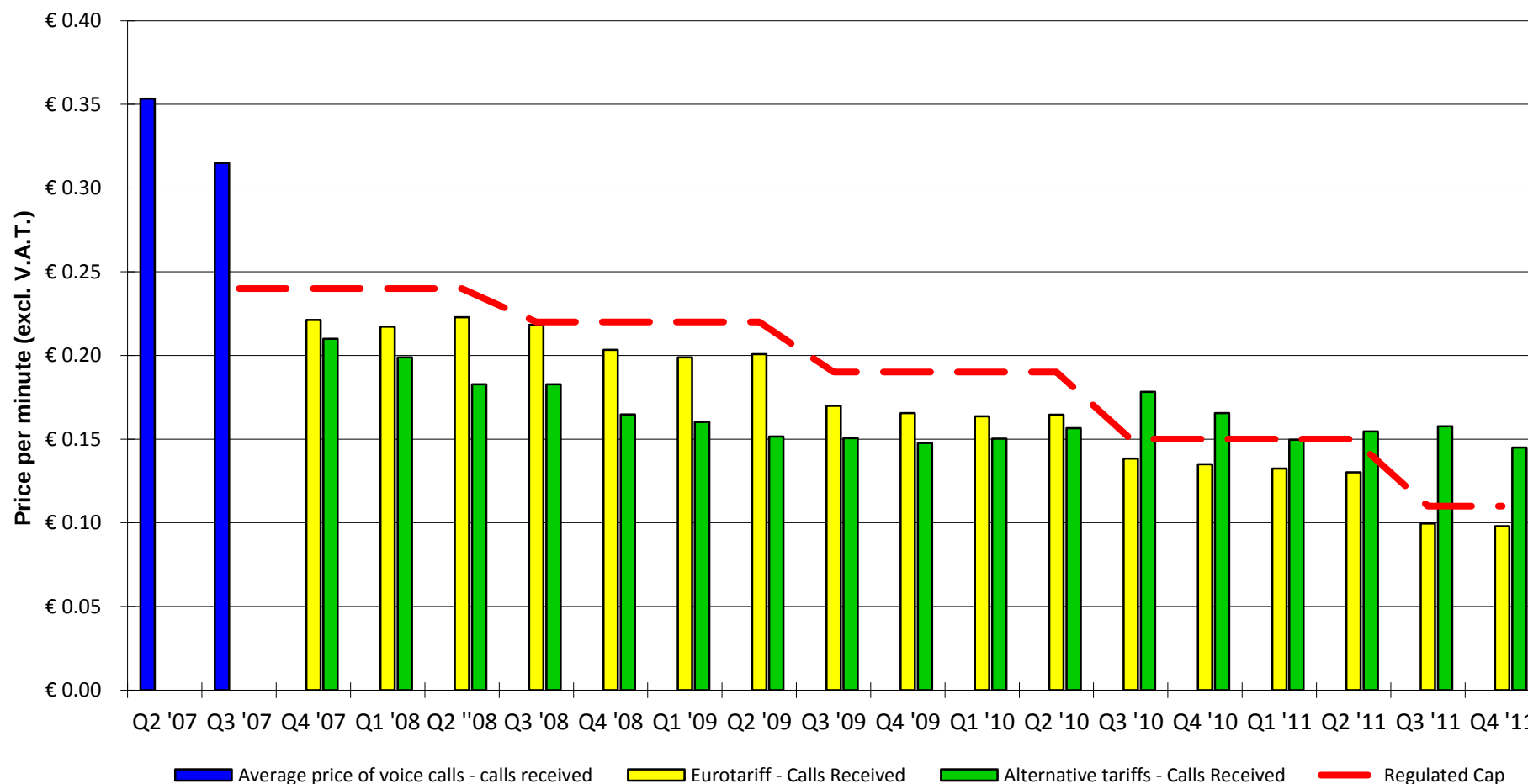
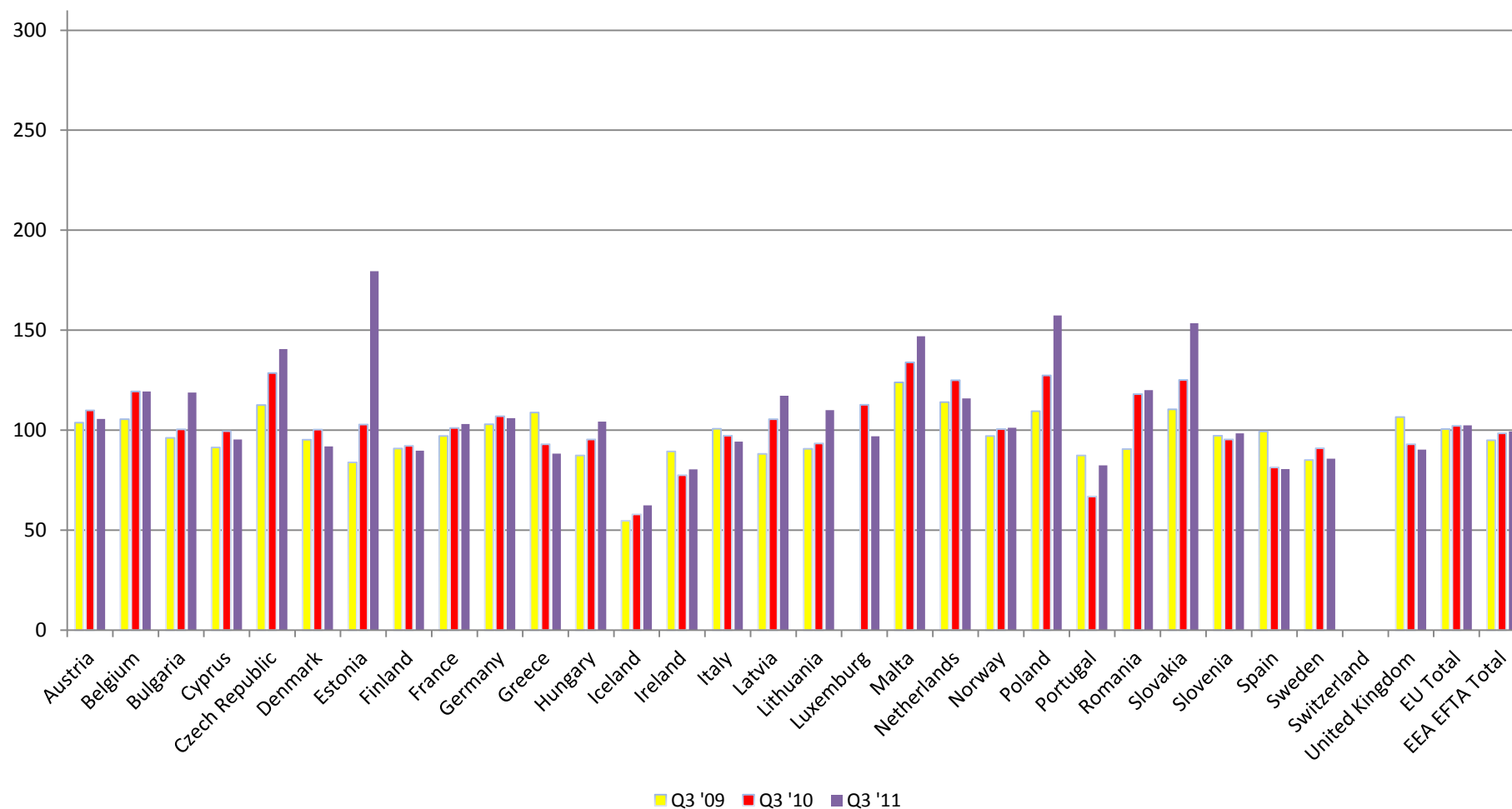


Figure 6 is similar to Figure 3, but for calls received. Originally, average prices for alternative tariffs were consistently lower than average Eurotariff prices. This changed in 2010, when average alternative prices became higher than the Eurotariff cap. Alternative prices have started decreasing but still remain above Eurotariff prices and in 2011 were above the price cap.

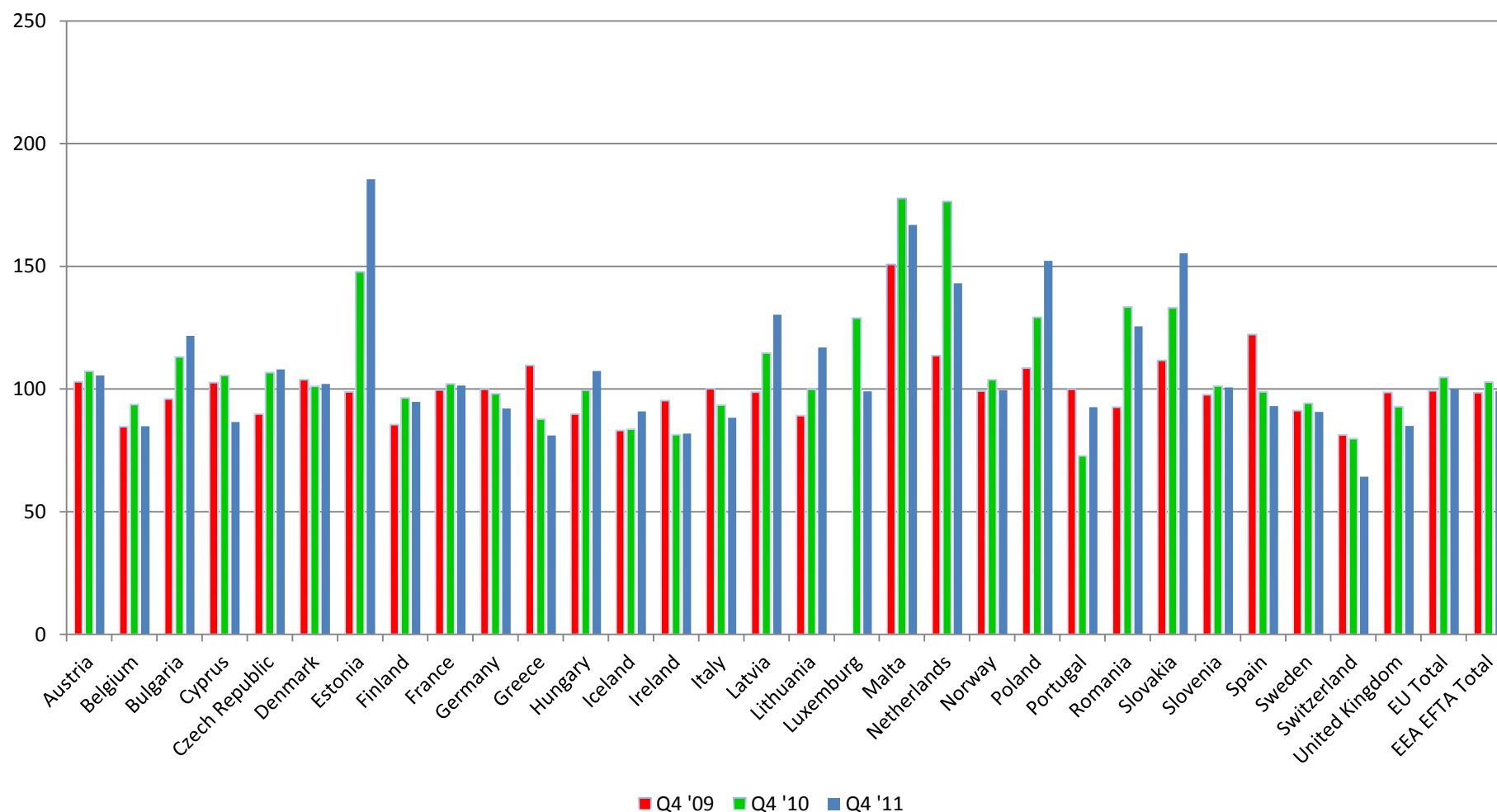
Figure 7a: Volumes of intra-EEA roaming calls made in Q3 2011
(Actual minutes, Q3 2008 = 100)



EU average: Q3 2009 = 100.603; Q3 2010 = 102.130; Q3 2011 = 102.458.

For Q3, the country averages follow no clear trend year on year, while the overall averages are stable.

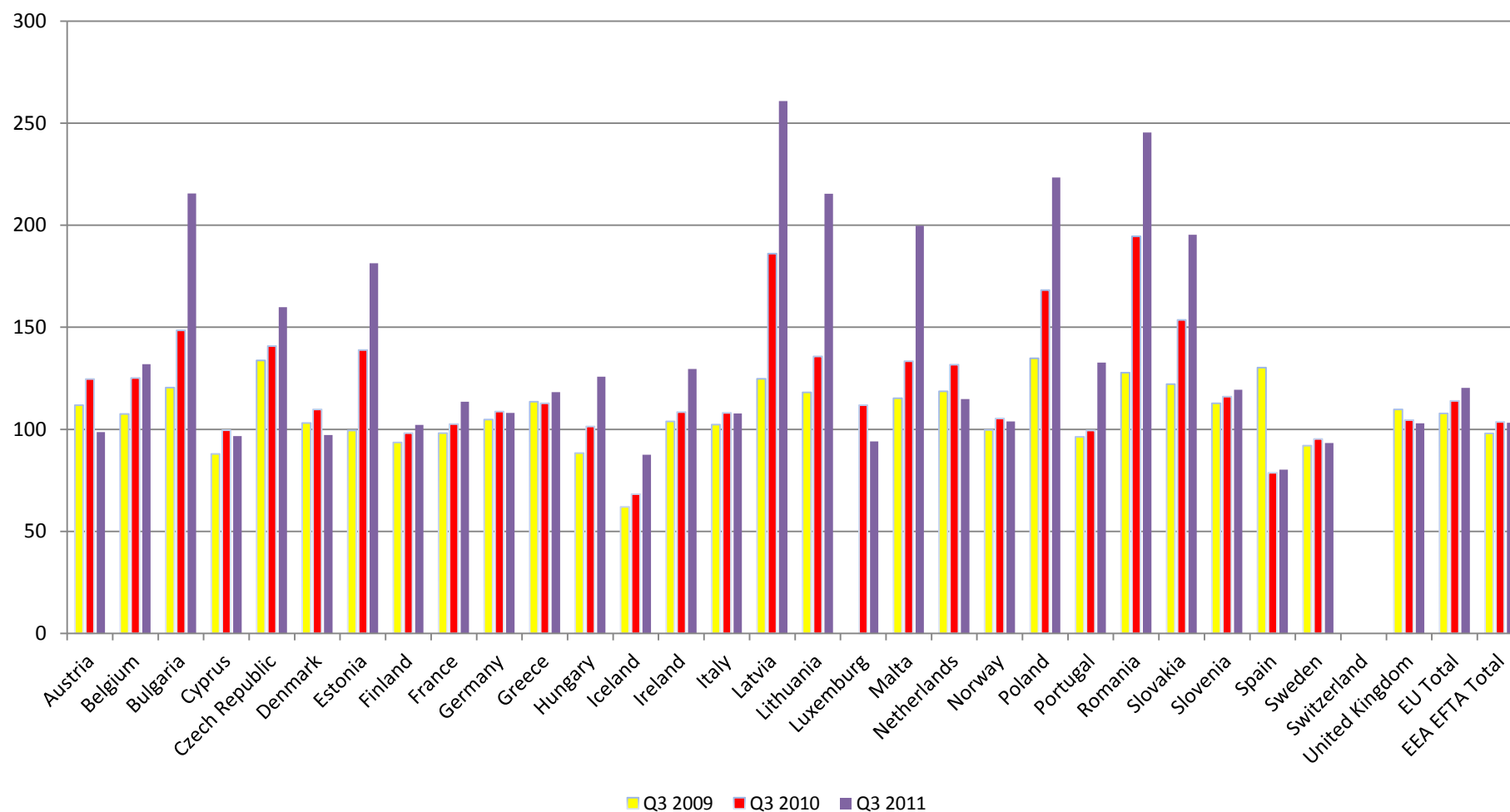
**Figure 7b: Volumes of intra-EEA roaming calls made
(Actual minutes, Q4 2008 = 100)**



EU average: Q4 2009 = 99.320; Q4 2010 = 104.707, Q4 2011 = 100.008

The same picture can be seen in Q4: the country averages follow no clear trend year on year, while the overall averages are stable.

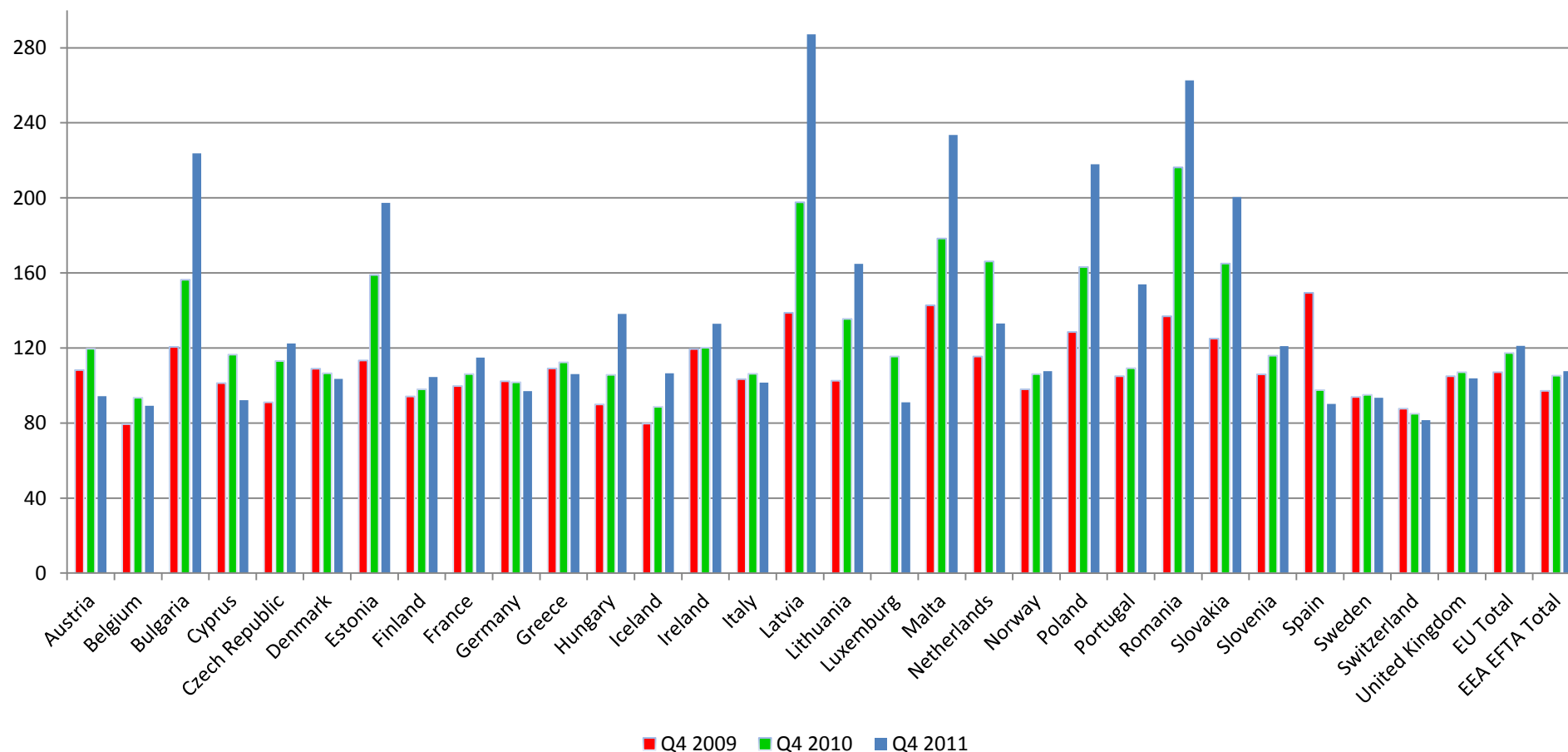
Figure 8a: Volumes of intra-EEA roaming calls received in Q3 2011
 (Actual minutes, Q3 2008 = 100)



EU average: Q32009 = 107.798; Q3 2010 = 113.886; Q3 2011 = 120.328

For Q3 calls received, most countries reported an increase year on year, with a few reporting strong increases in 2011.

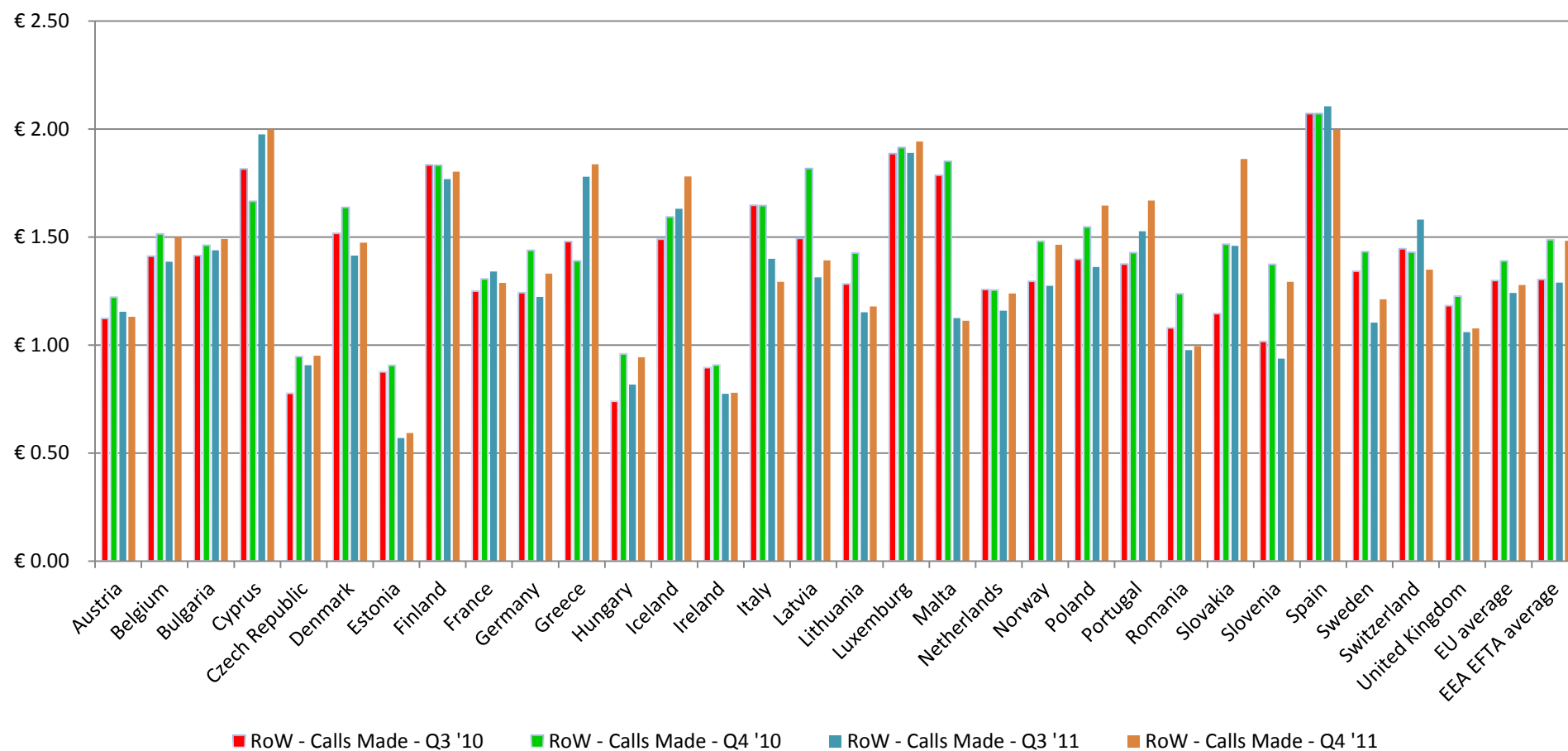
Figure 8b: Volumes of intra-EEA roaming calls received in Q4 2011
(Actual minutes, Q4 2008 = 100)



EU average: Q4 2009 = 107.012; Q4 2010 = 117.303; Q4 2011 = 121.147

For Q4 calls received, a similar pattern can be observed to Q3 – most countries reported an increase year on year, with a few reporting a strong increase in 2011.

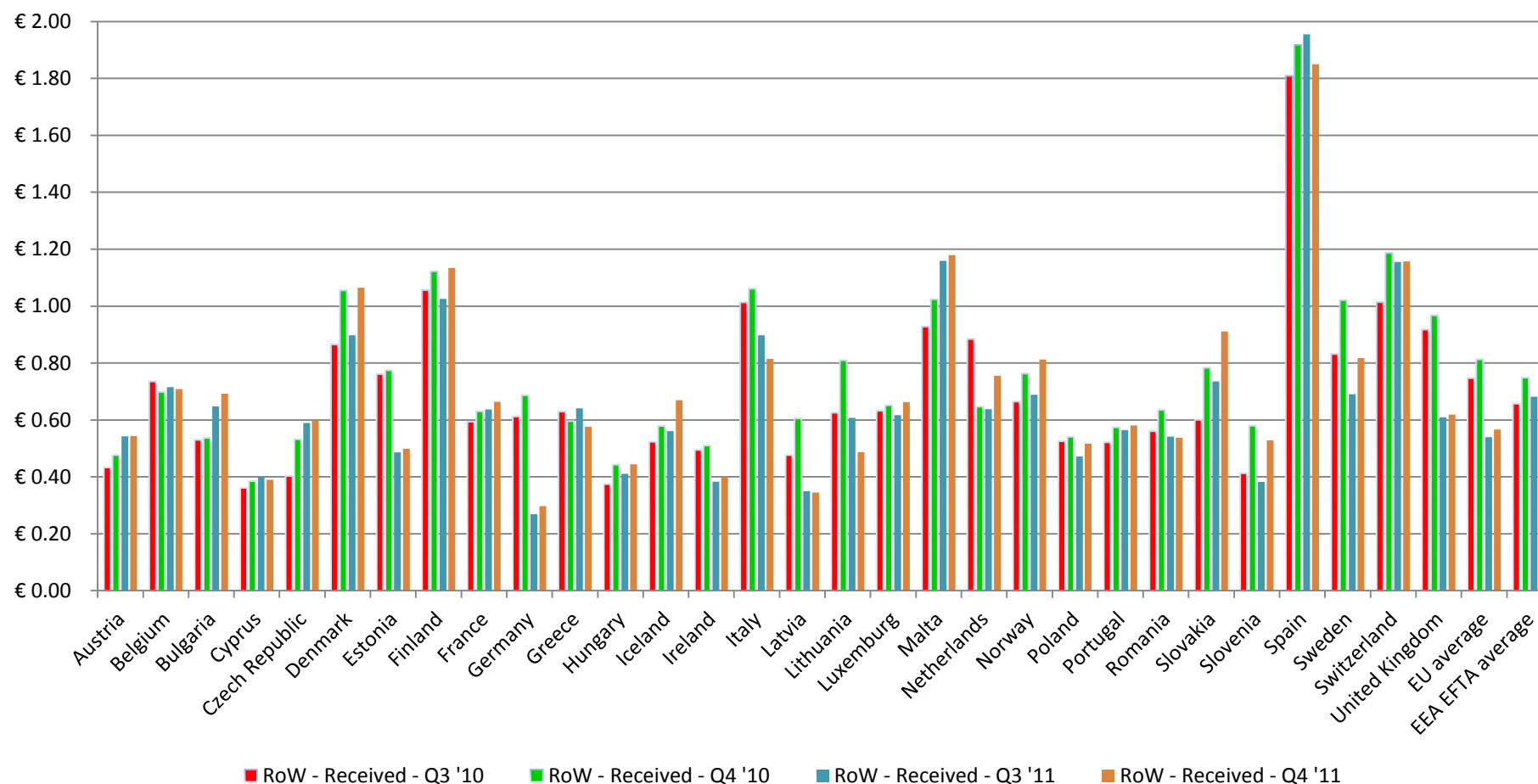
Figure 9: Average retail price per minute for roaming voice calls made by EEA customers outside EEA



EU average: Q3 2010 = € 1.298; Q4 2010 = € 1.389; Q3 2011 = € 1.241; Q4 2011 = € 1.278.

Figure 9 gives an overview of developments in average prices for making calls where either caller or receiver (or both) is outside the EEA. While there is no consistent trend at country level, the average for all EU-based providers has decreased slightly.

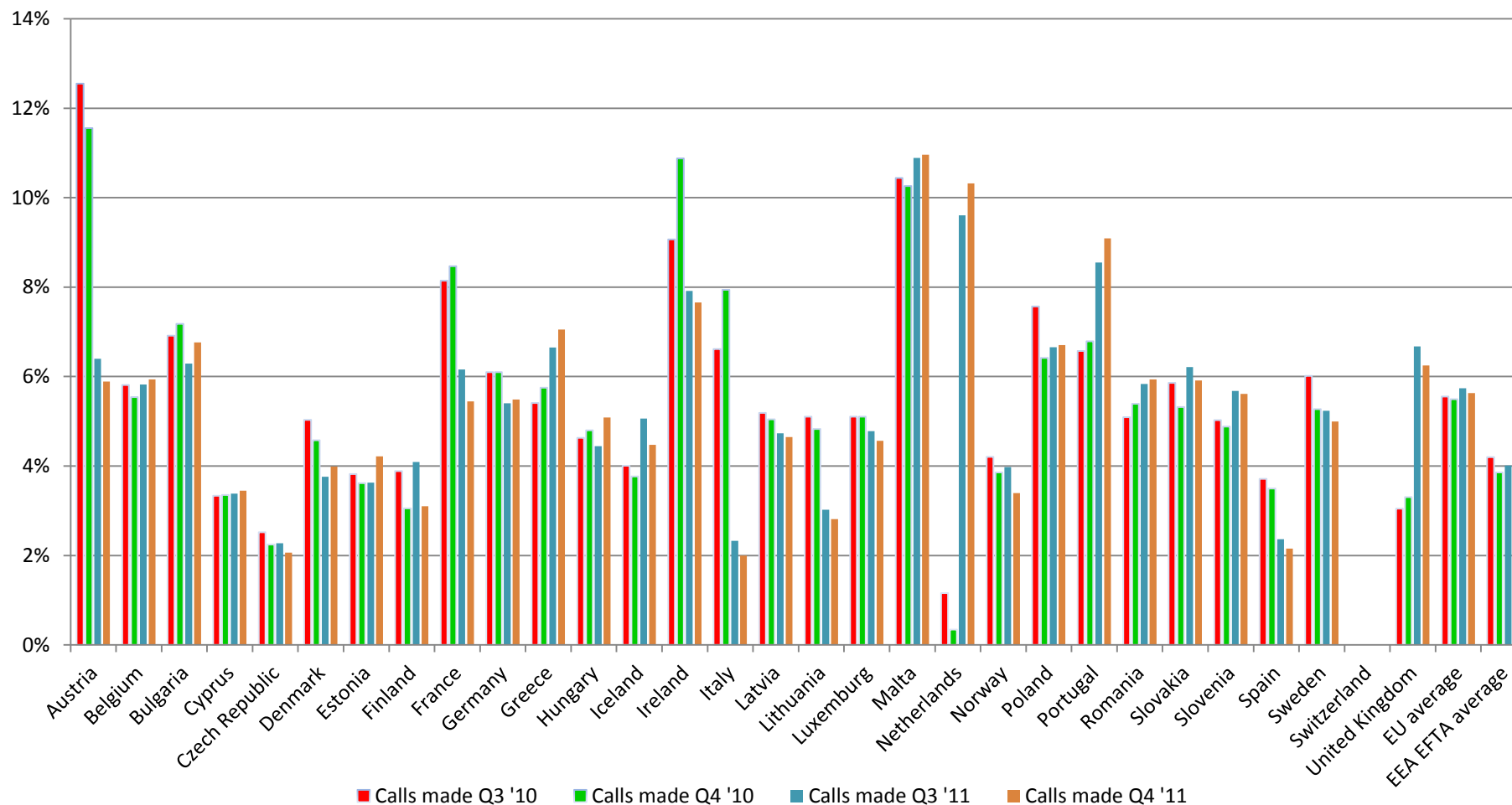
Figure 10: Average retail price per minute roaming voice calls received by EEA customers outside EEA



EU average: Q3 2010 = € 0.746; Q4 2010 = € 0.812; Q3 2011 = € 0.539; Q4 2011 = € 0.567.

Figure 10 shows a similar picture to Figure 7, where either caller or receiver (or both) is outside the EEA. In this case, the EU average has fallen steadily, comparing 2011 to 2010.

Figure 11: Surcharge as a result of billed minutes for intra-EEA roaming voice calls made : Eurotariff

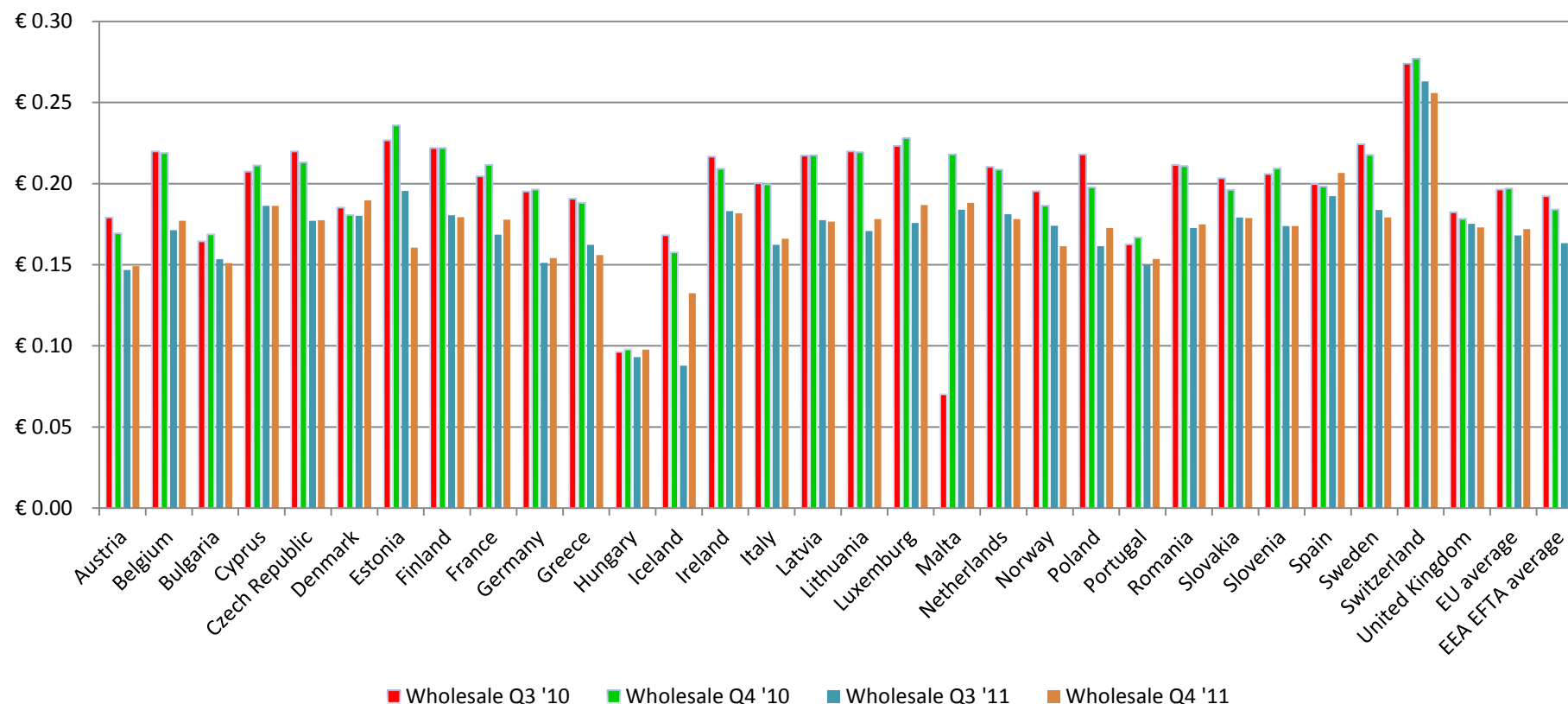


EU average: Calls made Q3 2010 = 5.56%; Calls made Q4 2010 = 5.49%; Calls made Q3 2011 = 5.74%; Calls made Q4 2011 = 5.63%.

Figure 11 illustrates the effects of billing standardisation, whereby the average price calculated on the basis of billed minutes is lower than that calculated on the basis of actual minutes. These figures have reduced sharply since the 2009 Regulation in line with the policy intention.

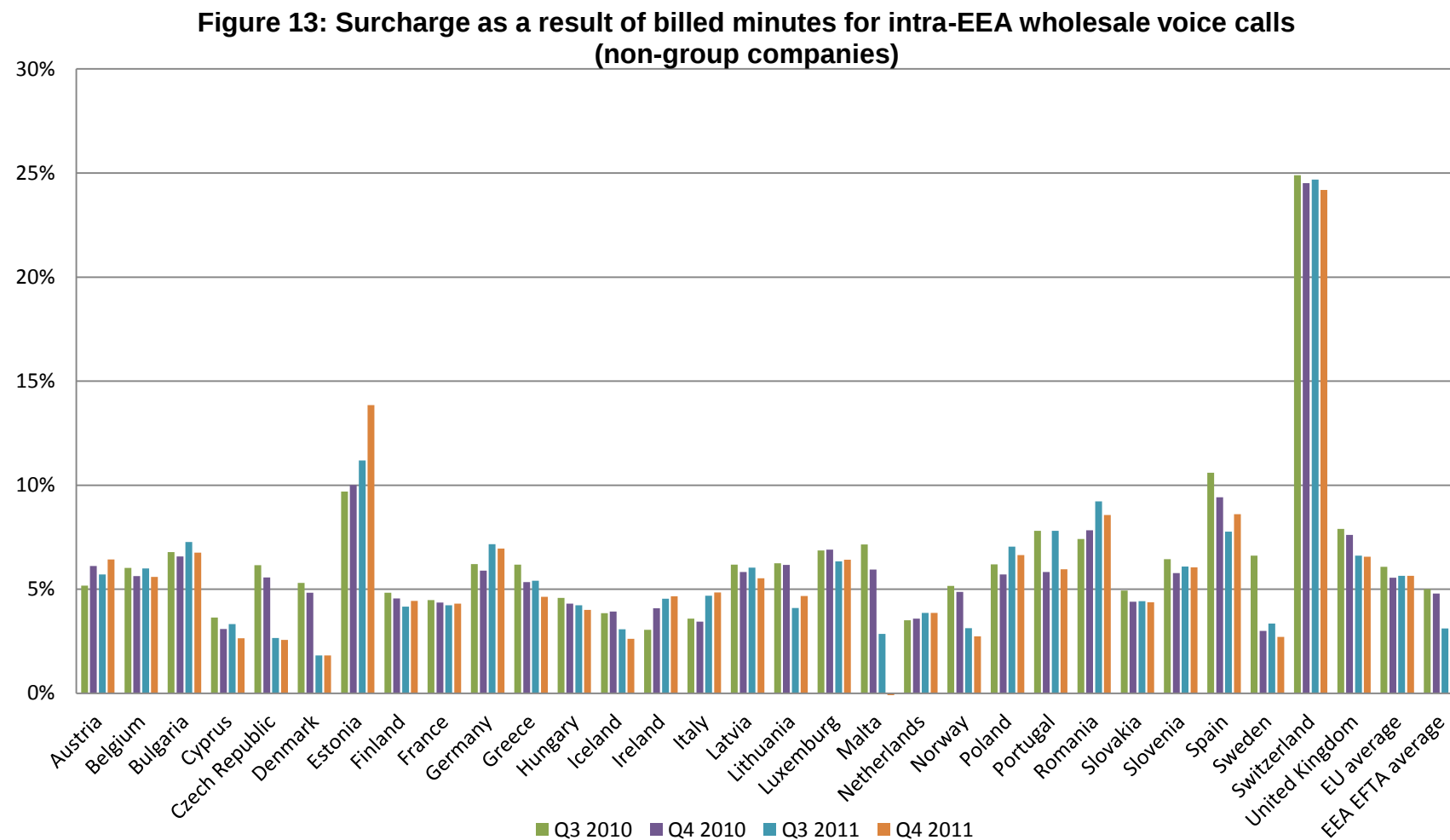
Wholesale voice

Figure 12: Average wholesale price per minute for intra-EEU roaming voice calls: charges to non-group companies



EU average: Q3 2010 = € 0.196; Q4 2010 = € 0.197; Q3 2011 = € 0.168; Q4 2011 = € 0.172

Figure 10 illustrates average prices for voice minutes at the wholesale level. The EU averages are 1 cent below the regulated wholesale price cap of € 0.18 in Q3 – Q4 2011.



EU average: Q3 2010 = 6.08%; Q4 2010 = 5.55%; Q3 2011 = 5.64%, Q4 2011 = 5.64%.

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

**Figure 14: EEA average price per minute for wholesale non-group roaming voice calls
(EU only for Q2 2009 - Q1 2010)**

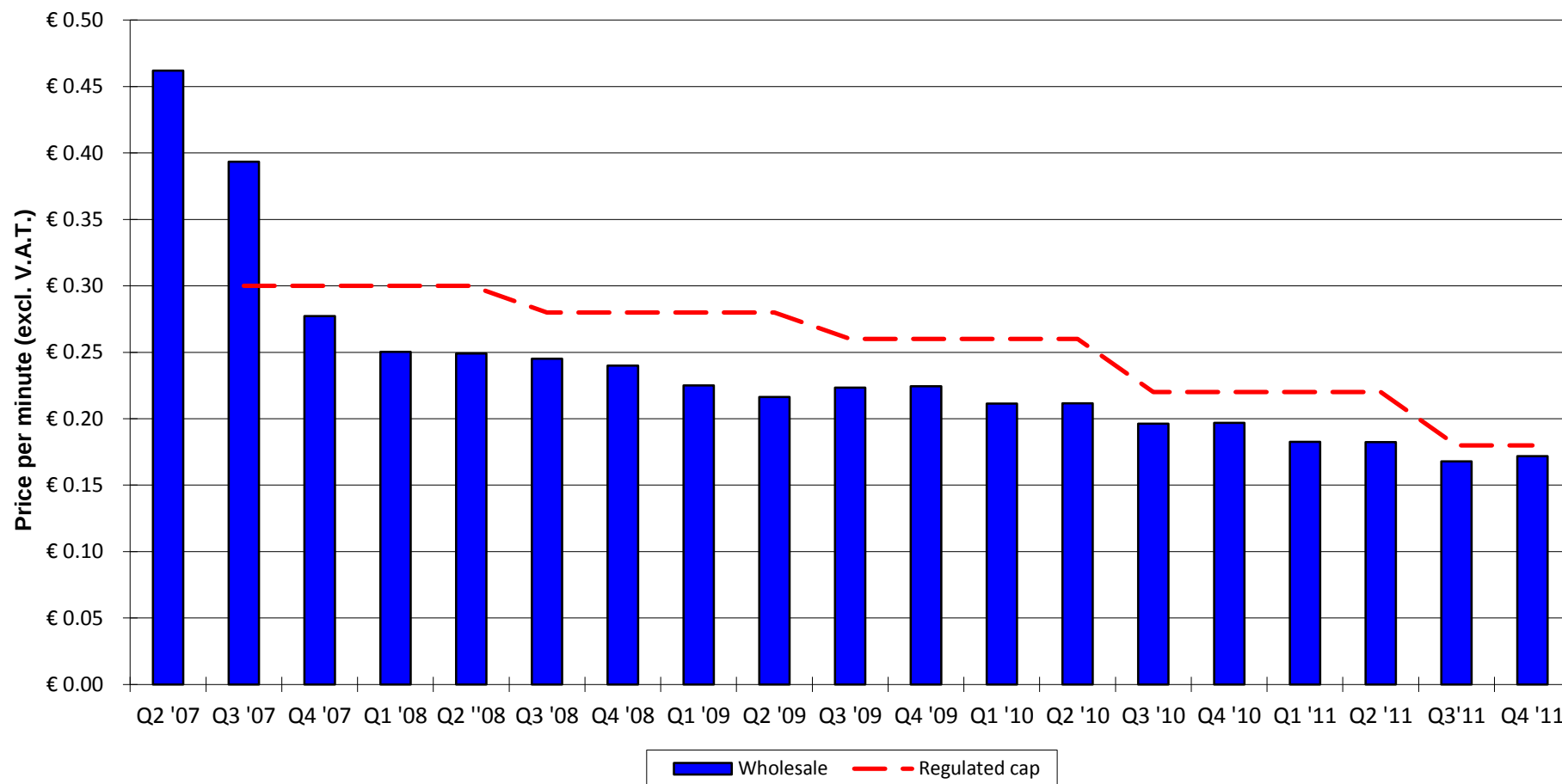
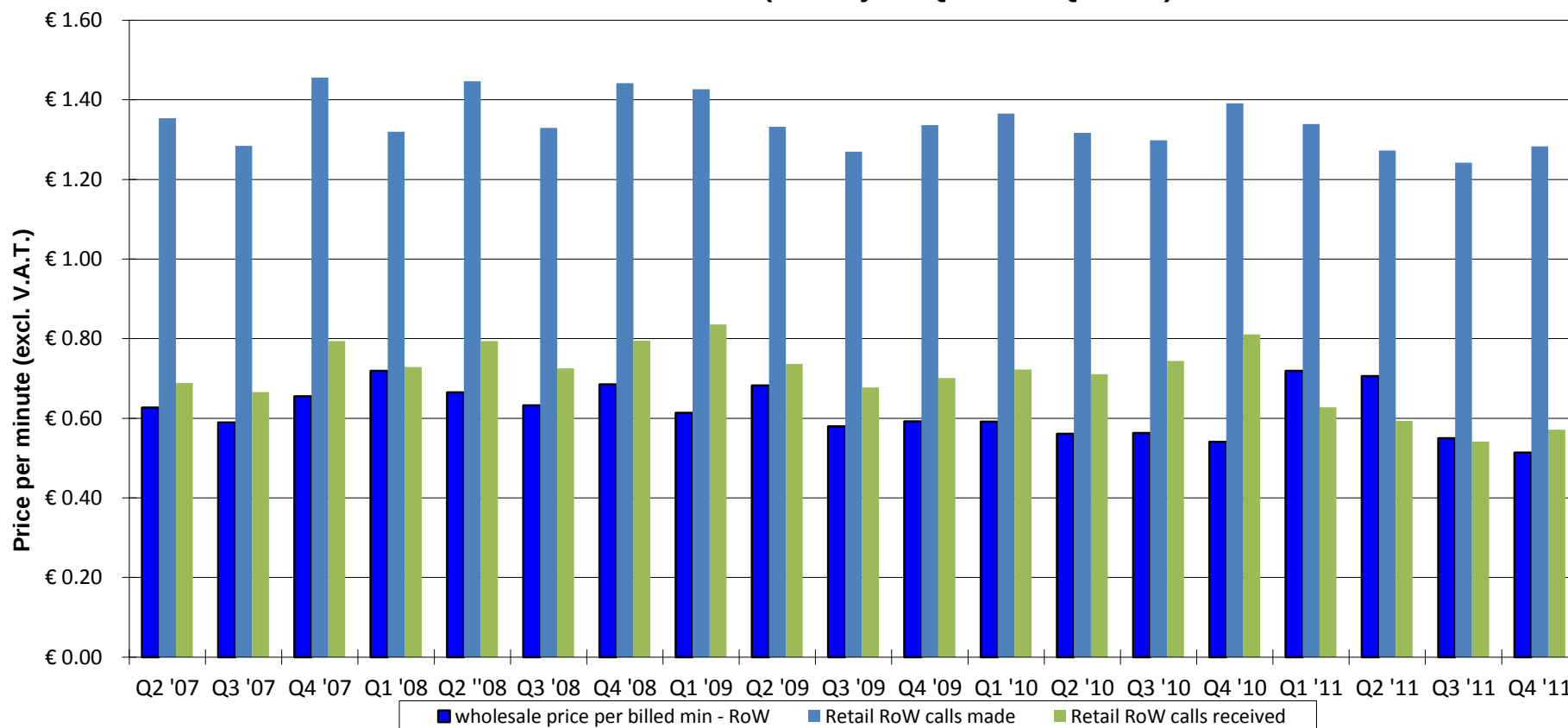


Figure 14 illustrates the EEA average price at the wholesale level from Q2 2007 to Q4 2011 (with the EU-only average for Q2 2009 to Q1 2010). It illustrates the clear drop in the average soon after the implementation of the 2007 Regulation. Since then, the average wholesale price for countries covered by the Regulation has been below the regulated cap by a few €c per minute.

Figure 14A: Average wholesale and retail prices for roaming calls made and received by EEA customers outside EEA (EU only for Q2 2009 - Q1 2010)



EEA average:

Wholesale: Q3 2008: € 0.632; Q3 2009 = € 0.580; Q3 2010 = € 0.563; Q3 2011 = € 0.550

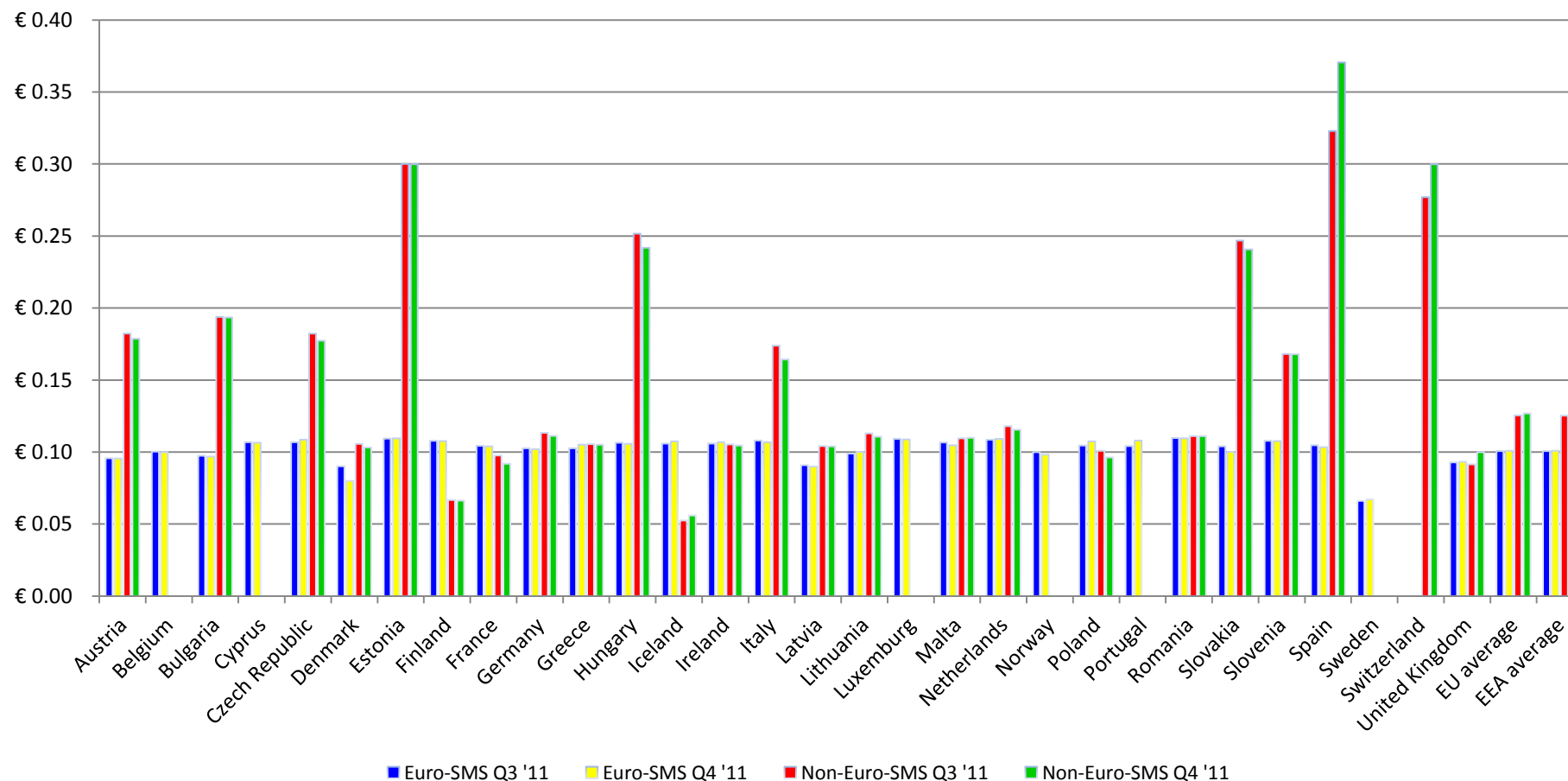
Retail calls made: Q3 2008= € 1.330; Q3 2009= € 1.270; Q3 2010 = € 1.299; Q3 2011= € 1.242

Retail calls received: Q3 2008= € 0.725; Q3 2009= € 0.678; Q3 2010= € 0.744; Q3 2011= € 0.542

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

Retail SMS

Figure 15: Average price for Euro-SMS and Non-Euro-SMS



EU average: Euro-SMS Q3 2011 = € 0.101; Euro-SMS Q4 2011 = € 0.101; Non-Euro-SMS Q3 2011 = € 0.126; Non-Euro-SMS Q4 2011 = € 0.127.

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

**Figure 16: Average price per retail SMS (Euro + Non Euro SMS tariffs)
(EU only for Q2 2009 - Q1 2010)**

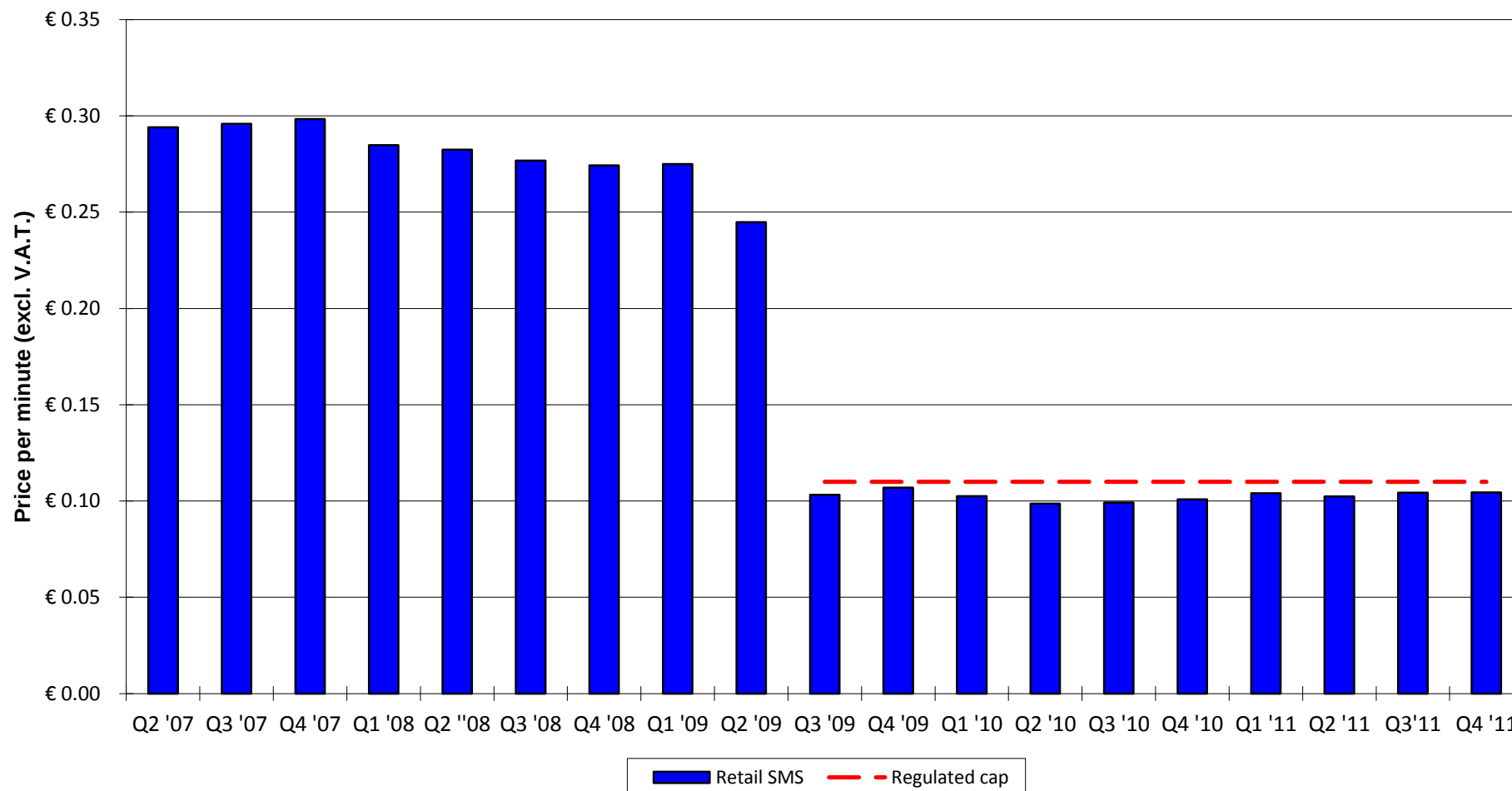
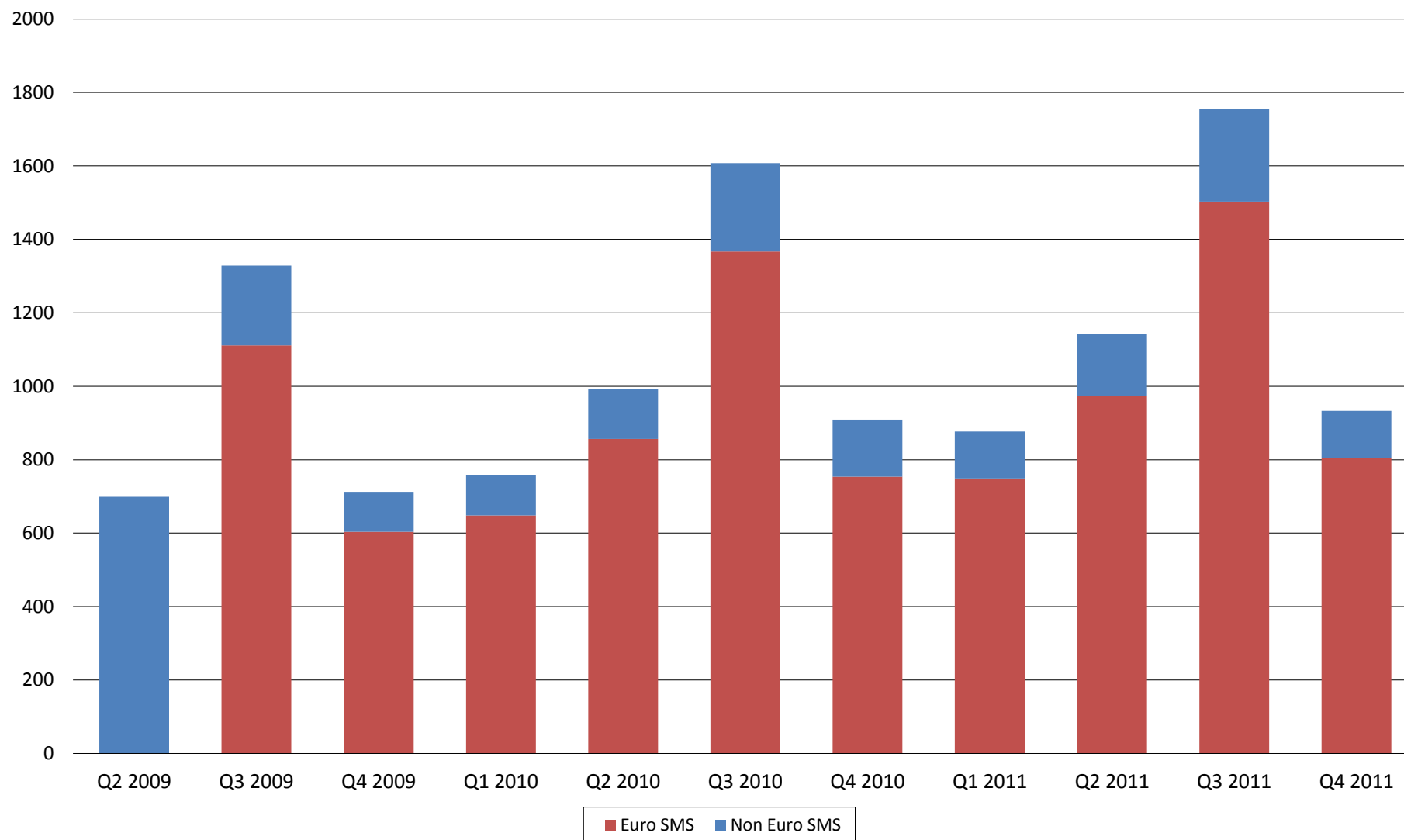
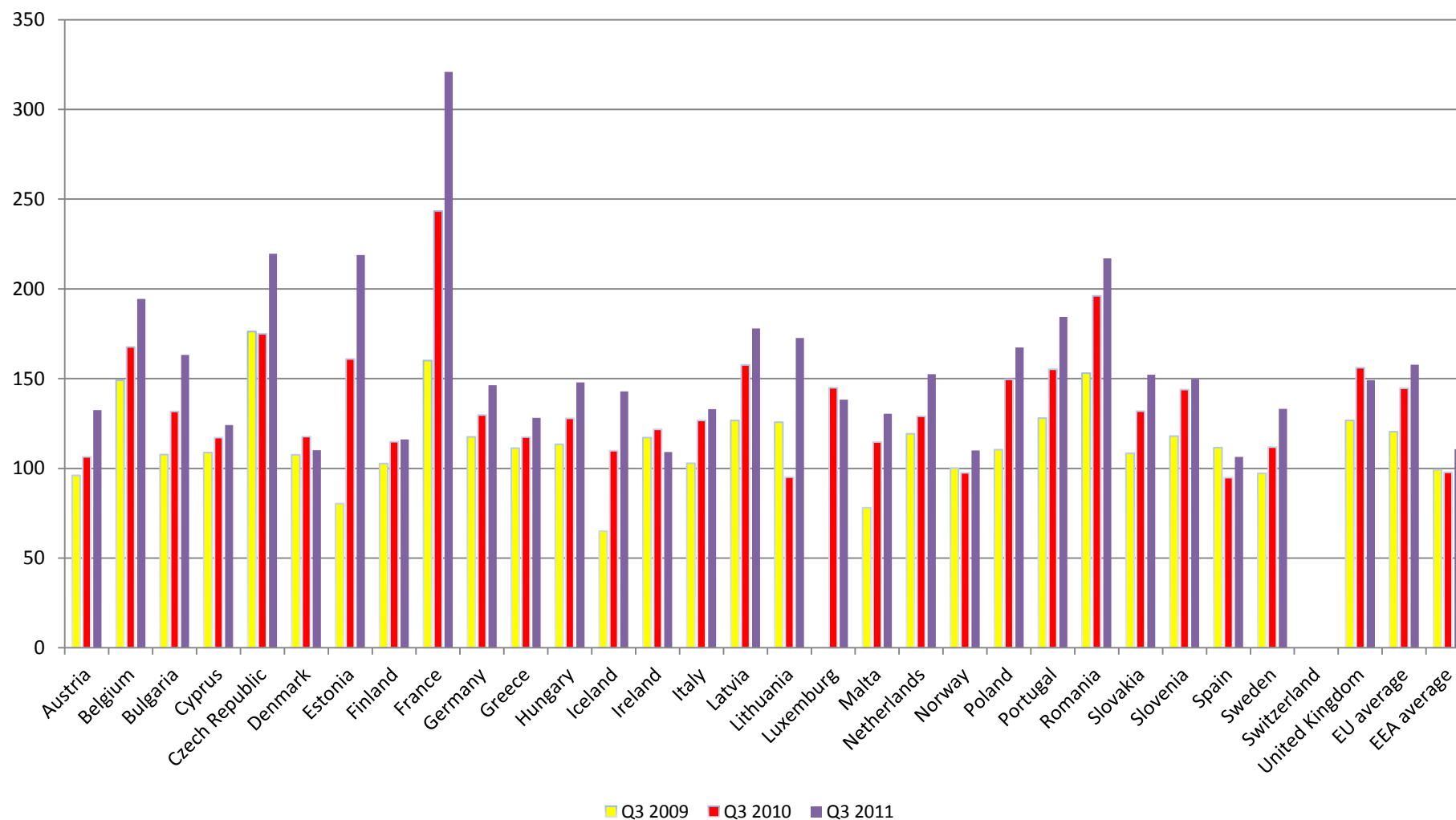


Figure 16 gives an overview of the EEA average price for all retail SMS messages, covering the regulated Euro-SMS tariff and alternative tariffs from Q3 2009 (EU only for Q2 2009 – Q1 2010).

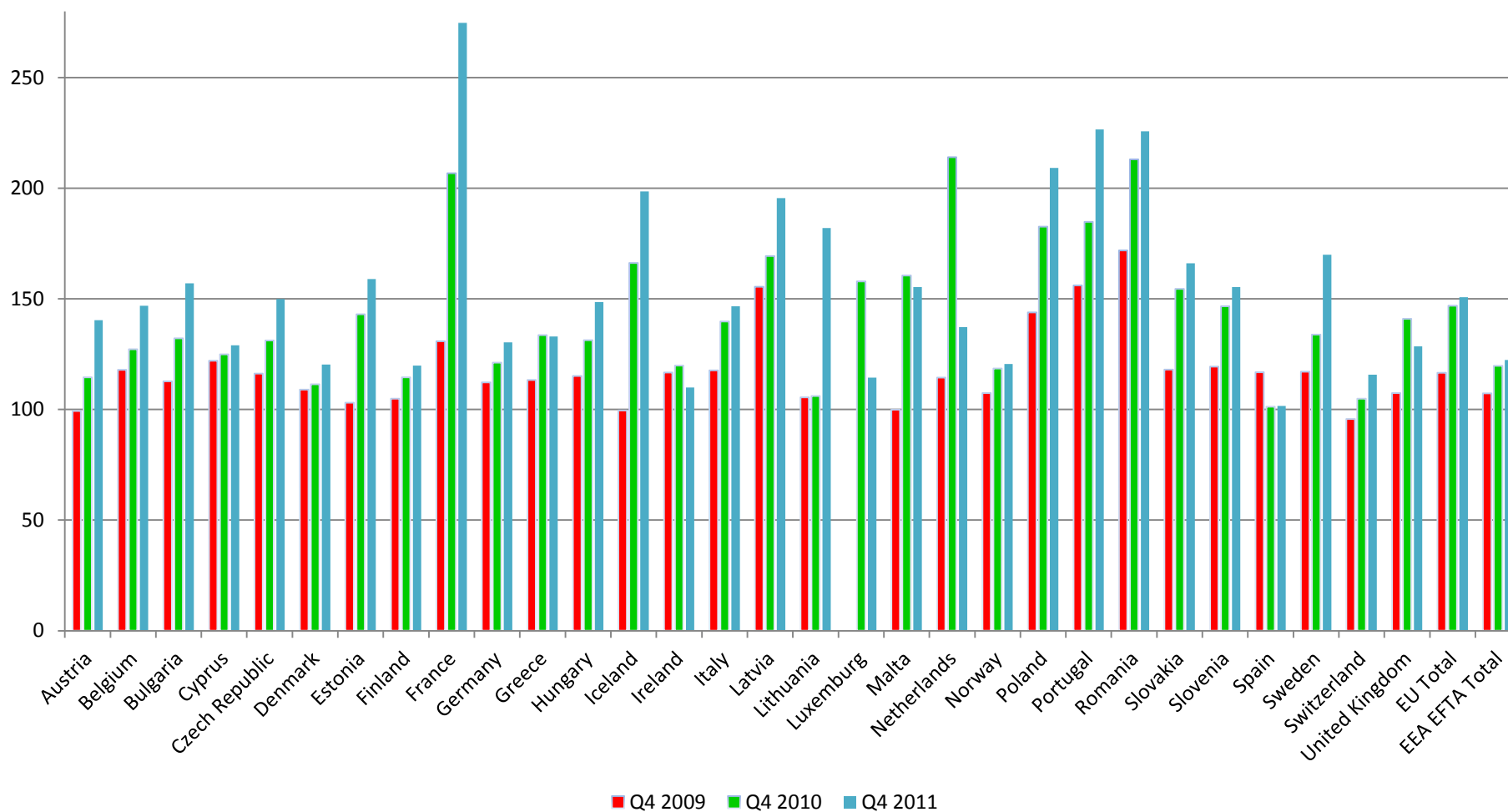
Figure 17: EEA Roaming SMS messages (millions of messages)

EEA average: Eurotariff: Q3 2011 = 1502.899; Q4 2011 = 803.684, Alternative tariffs: Q3 2011 = 252.966; Q4 2011: 128.891

Figure 18a: Volumes of retail intra-EEA roaming SMS sent in Q3 2011 (Q3 2008 = 100)

EU total: Q3 2009 = 120.419; Q3 2010 = 144.650; Q3 2011 = 157.797

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

Figure 18b: Volumes of retail intra-EEA roaming SMS sent in Q4 2011 (Q4 2008 = 100)

EU average: Q4 2009 = 116.627; Q4 2010 = 146.901; Q4 2011 = 150.719

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

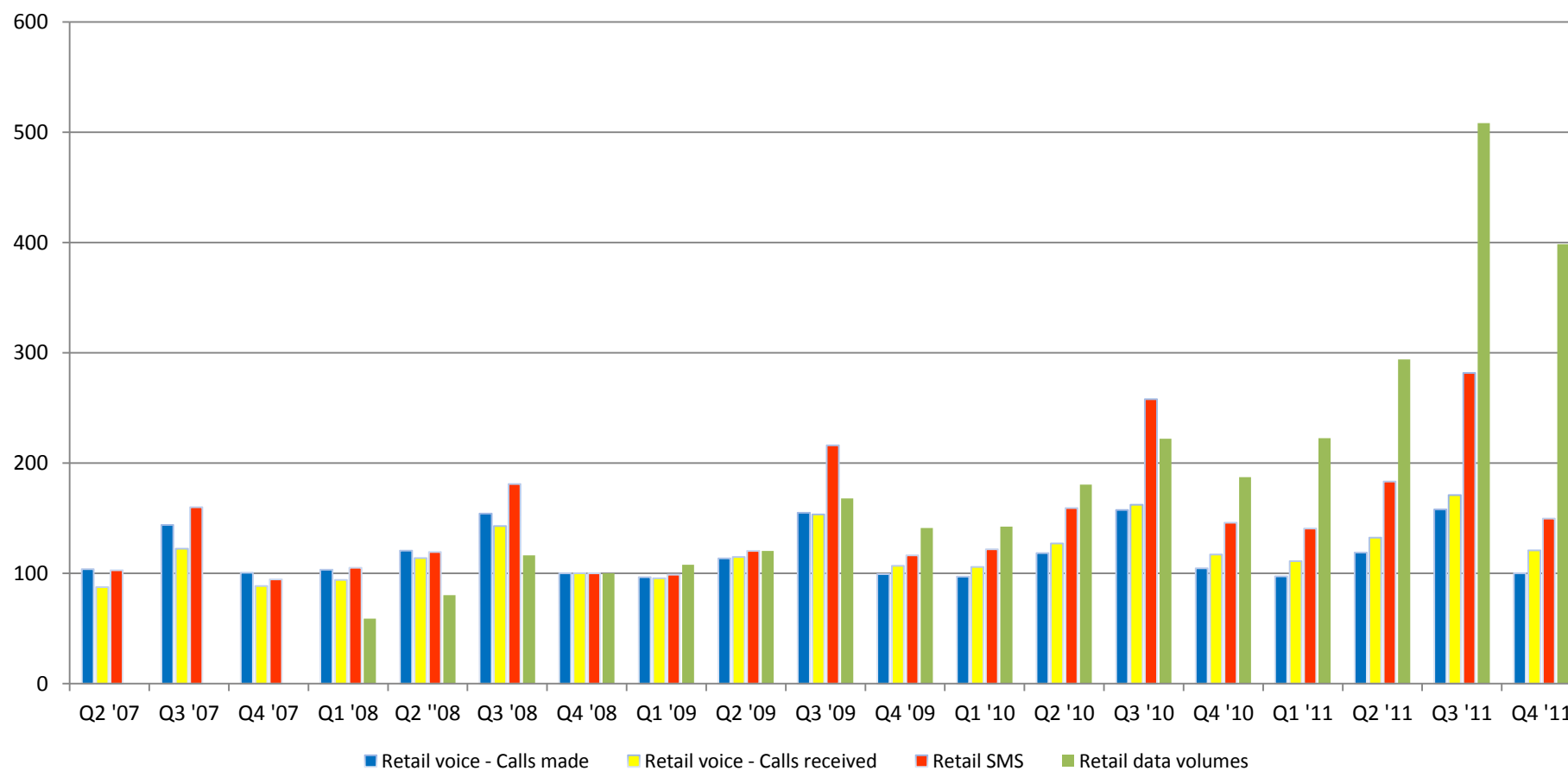
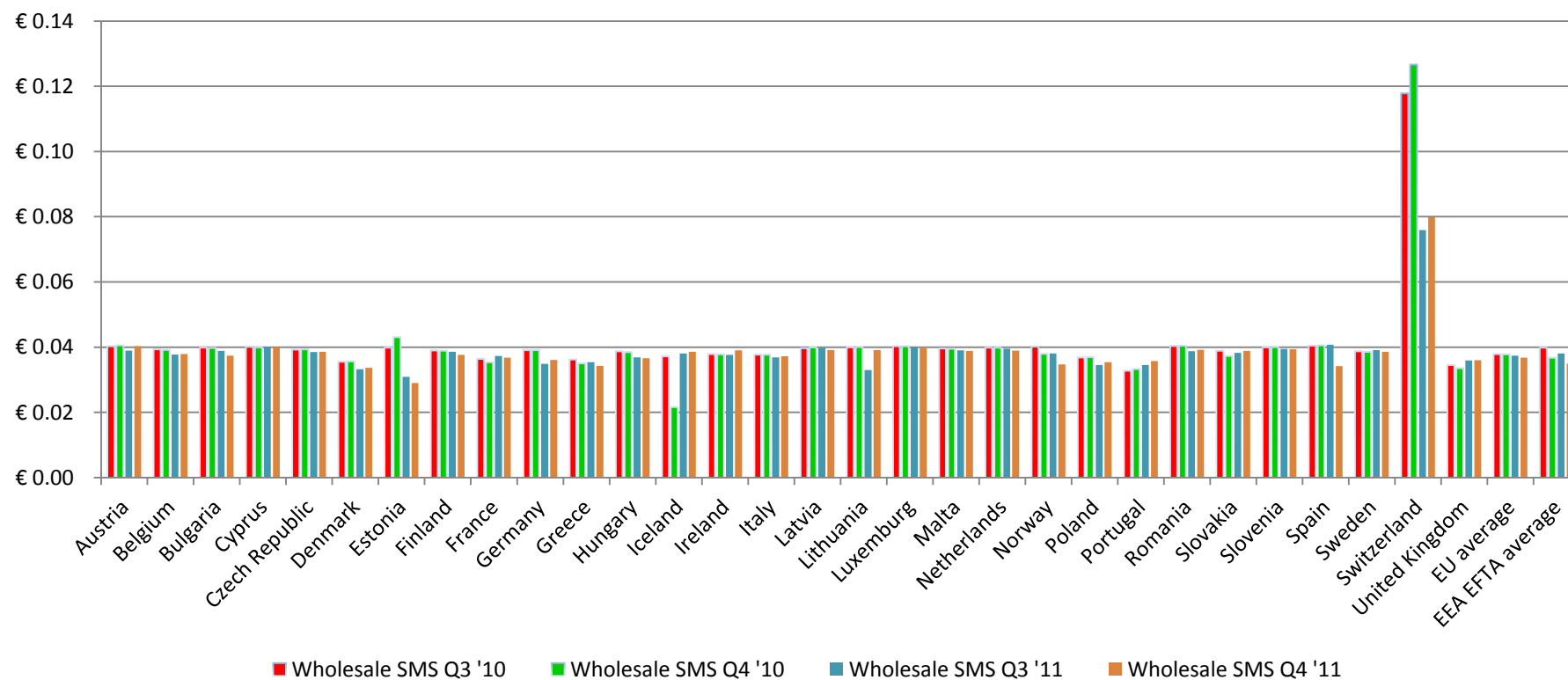


Figure 19 compares the changes in EEA volumes for retail voice calls made and received, the volumes of SMS messages sent and volumes of retail data. It shows a similar trend for all services, largely seasonal, with modest growth in volumes of calls received, and more significant growth for retail data.

Wholesale SMS

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

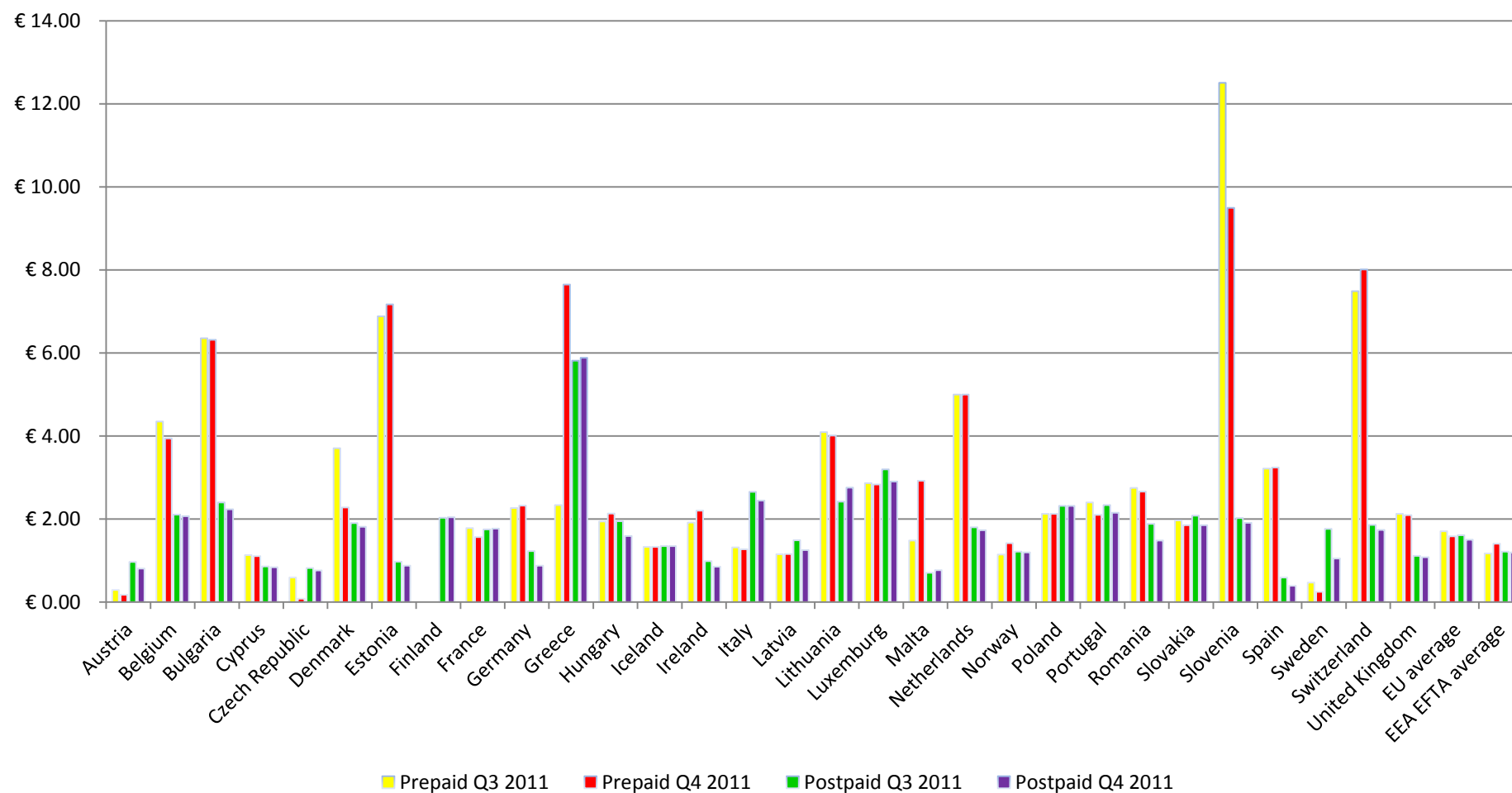


EU average: Q3 2010 = € 0.038; Q4 2010 = € 0.038; Q3 2011 = € 0.037; Q4 2011 = € 0.037.

Average wholesale prices comply with the regulated cap of € 0.04.

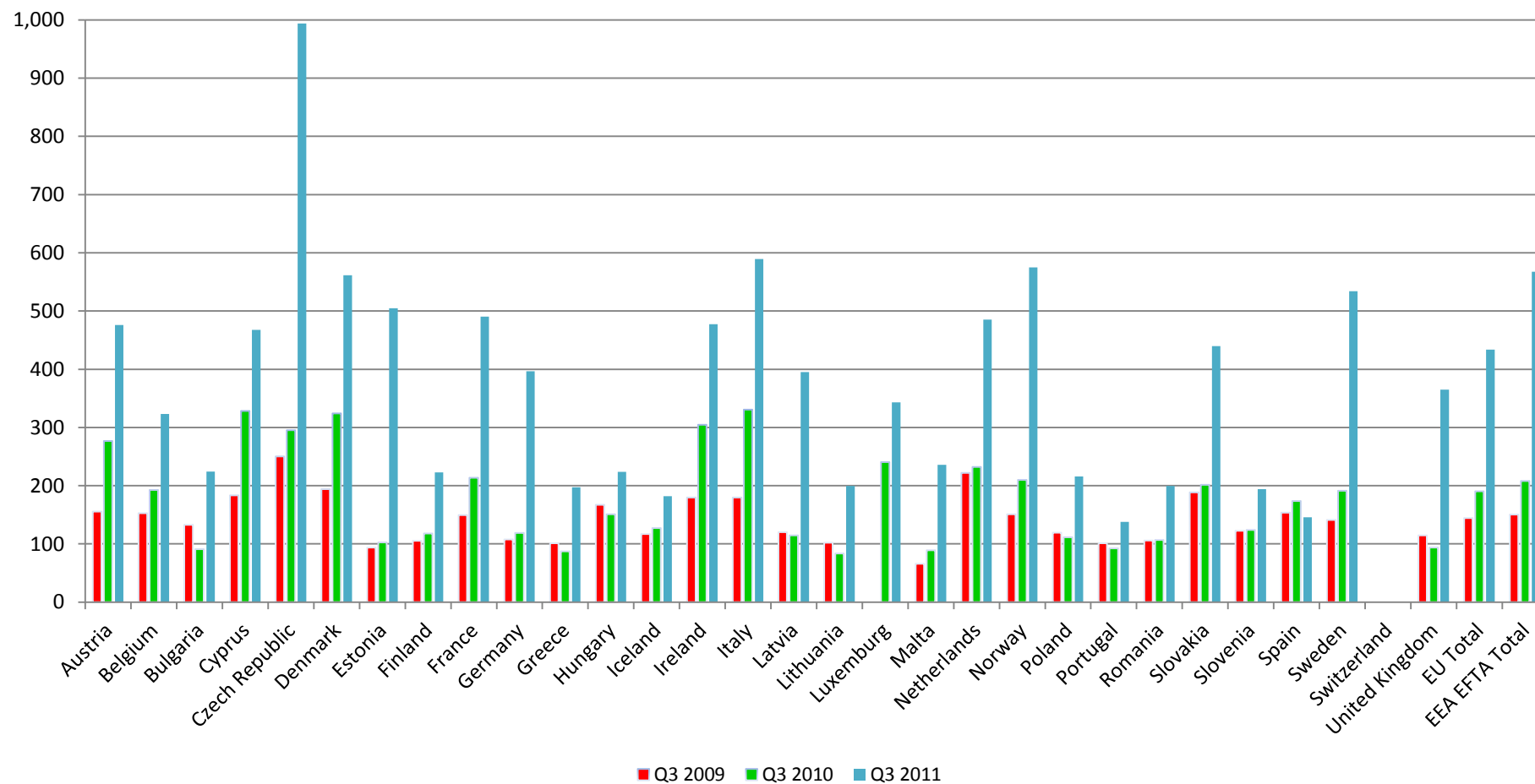
Retail Data

Figure 21: Average off-net retail data price per Mb



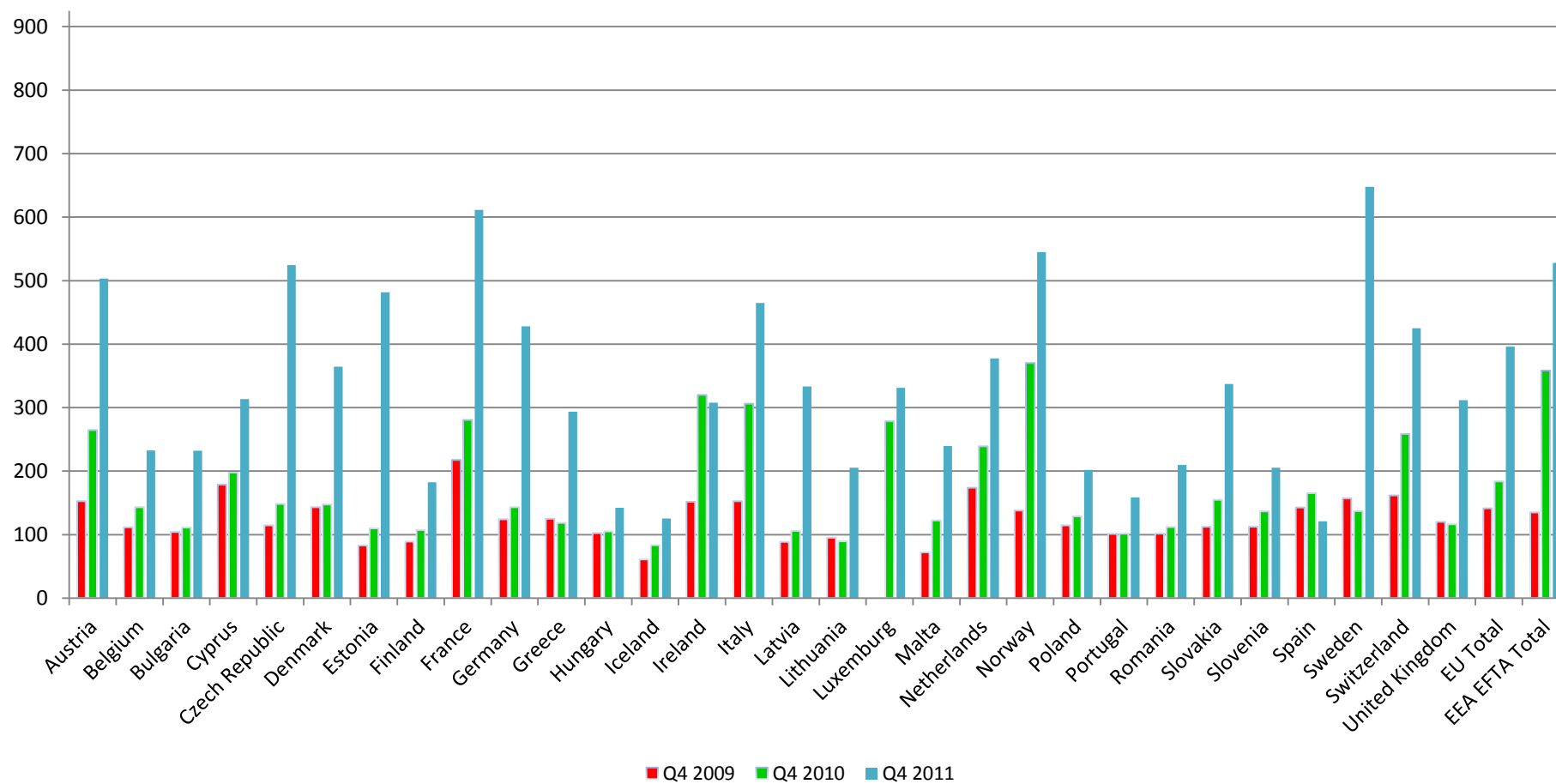
EU average: Prepaid Q3 2011 = € 1.709; Prepaid Q4 2011 = € 1.585; Postpaid Q3 2011 = € 1.609; Postpaid Q4 2011 = € 1.505

Figure 22a: Volumes of (off-net and on-net) retail data in Q3 2011 (Q3 2008 = 100)



EU average: Q3 2009 = 144.237; Q3 2010 = 190.510; Q3 2011 = 433.555.

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

Figure 22b: Volumes of (off-net and on-net) retail data in Q4 2011 (Q4 2008 = 100)

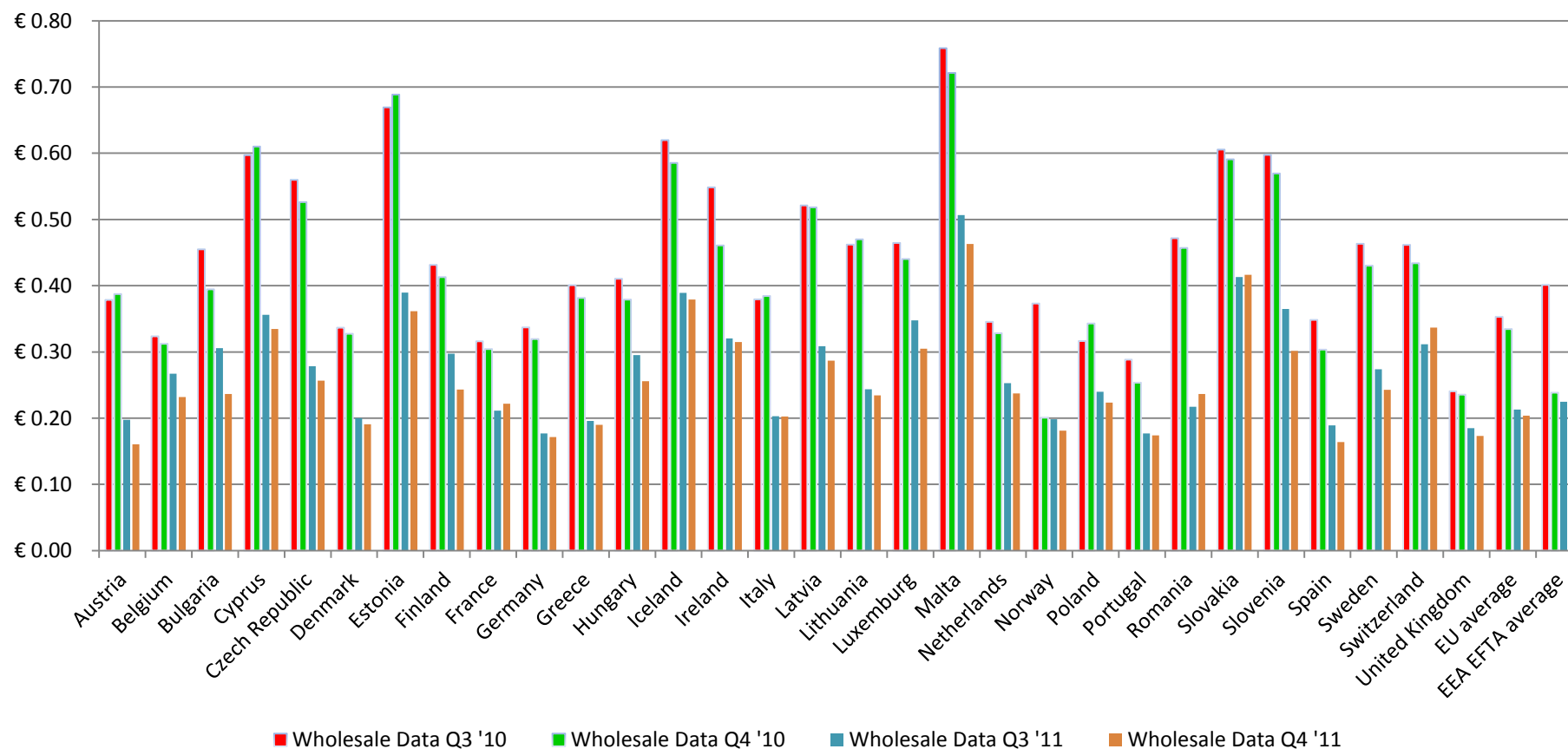
EU average: Q4 2009 = 141.245; Q4 2010 = 183.701 Q4 2011 = 396.073

In Q4 usage of retail data services followed the same trend.

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

Wholesale data

Figure 23: Average wholesale data price per Mb for intra-EEA roaming: charges to non-group companies



EU average: Q3 2010 = € 0.353; Q4 2010 = € 0.335; Q3 2011 = € 0.213; Q4 2011 = € 0.204.

A steady decrease in the EU average wholesale price can be observed year on year. In Q3-Q4 2011, the average in all countries is well below the regulated safeguard cap of € 0.50 per Mb.

**Figure 24: Average price per Mb for retail and wholesale intra-EEA roaming data
(EU only for Q2 2009 - Q1 2010)***

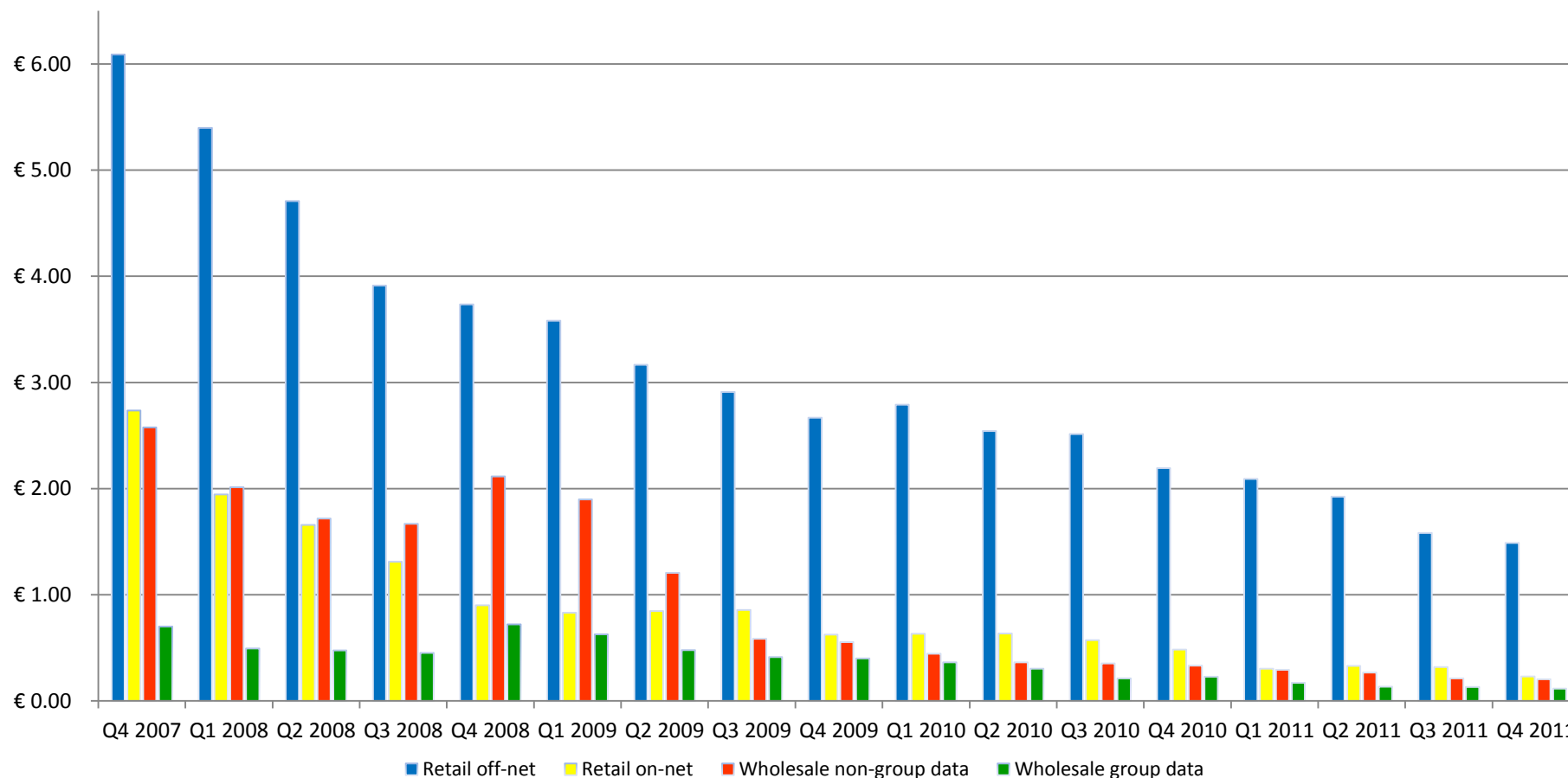
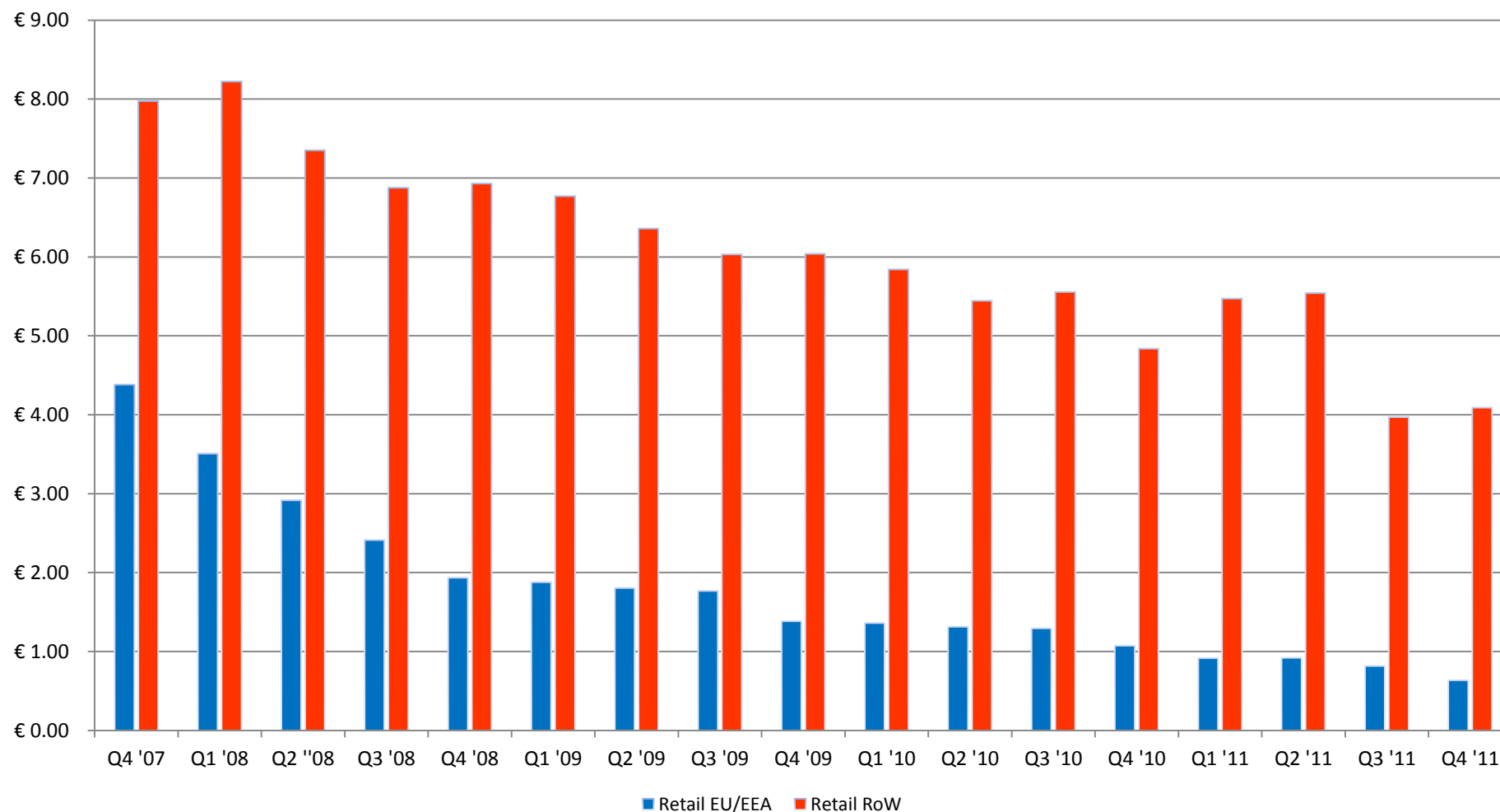


Figure 24 compares the average EEA price trends for retail and wholesale data services (EU-only averages were used for Q2 2009 – Q1 2010). It shows the continued downward trend in the average price for data services at both the retail and wholesale levels. The impact of the 2009 Regulation on wholesale non-group data prices is clearly visible. However, the retail margin for off-net traffic has always been large and has increased significantly since Q4 2007. In Q3 and Q4 2011, it was around 600% of the average non-group wholesale price.

Figure 25: EEA average price per Mb for retail and RoW data



EEA average: Retail price EU/EEA Q3 2011 = € 0.815; Retail price EU/EEA Q4 2011 = € 0.638; Retail price RoW Q3 2011= € 3.971; Retail RoW Q4 2011 = €4.090

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

Section 4

Further issues

Traffic steering

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

Inadvertent roaming

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

Implementation in EEA EFTA countries

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

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

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

Actual/billed minutes

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

Wholesale discounts

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

Varying response rate

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

Exchange rate issues

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

Overview of compliance issues

- 4.11. As stated elsewhere in this Report, overall compliance with the provisions of the 2007 and the 2009 Regulations has generally been good. All mobile operators offer their consumers a Eurotariff and Euro-SMS tariff, wholesale rates appear to have fallen in line with the requirements set out in the Regulations, and consumer transparency has improved.

The Figures

General points

- 4.12. For Luxembourg, all charts related to volumes of traffic in Q3 and Q4 2011 aren't comparable with previous data due to a changed consolidated basis. This incomparability applies to all charts related to volumes.

Average retail price per minute voice calls made and received (Figure 1 and 2)

- 4.13. In Malta, one of the major operators has introduced a new alternative tariff where calls are charged per 10 minute intervals at a reasonable rate. Any subscriber who made calls of 2.5 minutes or more in duration would eventually benefit from lower costs when using such a package, but for calls received the threshold is much higher. This roaming tariff was also offered with new smartphone tariffs. However, the operator noted that a number of calls of a short duration (much less than 10 minutes) were carried out on such a tariff, resulting in an eventual increase in the rate per billed minute since the subscribers were charged the same flat rate for a ten minute call.
- 4.14. In Cyprus, the two mobile operators do not provide alternative EU roaming tariffs other than the Eurotariff. The retail price for alternative tariffs (calls made/received) represents roaming calls outside EU countries ie in the rest of Europe and rest of the World countries.
- 4.15. UK customers that opt into the special tariff offered by the one of the operators pay a one-off connection fee for each call made and are then charged at their standard home rate or can use their inclusive domestic bundle minutes. The result of this charging mechanism is that if a call made via this tariff is less than three minutes, the effective price per minute works out higher than the rate which would have been paid using the Eurotariff price. Alternatively, if a roaming call is longer than three minutes, then the customer will benefit from a lower price per minute compared with the Eurotariff. The operator in question noted that the volumes of shorter calls is increasing, resulting in an increase in the average non-Eurotariff price per minute. This situation is not unique to the UK.
- 4.16. For the UK, in the case of calls received, one of the tariff schemes - with a one-off connection fee - includes a certain number of 'free' minutes. When the package has been used, the customer is charged for every additional minute. Accordingly, if the call is shorter than a certain length of time the non-Eurotariff price will work out as higher than the Eurotariff for the equivalent call.
- 4.17. In Bulgaria one of the operators offers special tariffs. The special tariffs/ bundles include beneficial rates for calls made when not travelling within the EU. On the other hand, consumers often subscribe to bundles but do not consume fully all the minutes/ MBs/ SMS included in the given bundle or do not at all use the bundle itself in certain months. This leads to under-consumption of the bundles.
- 4.18. Germany noted that one operator offers an alternative voice tariff with calls received free of charge up to 60 minutes, and then billed at € 0.19 per minute. This means that the initial billing unit is 60 minutes (or 3600 seconds). One reason why there is a sizeable gap between billed and actual minutes is that apparently most calls last less than an hour. For this tariff, calculations based on actual minutes seem more meaningful than billed minutes, and have been used to calculate the average for Germany in Figure 2.

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

4.19. In relation to increase in volumes for calls made and received, Estonia noted that Roaming voice minutes increased notably in Q3 and Q4 2011 comparing previous quarters/and years by MNOs reseller, who activated PrePaid sales aids at tourist area.

Future data collection

4.20. 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 2012 to 30 June 2012. BEREC expects to report on this data in autumn 2012.

Annex 1

List of respondents

Below are the operators that provided data for the period 1 July 2011 – 31 December 2011:

Austria

A1 Telekom Austria

T-Mobile Austria

Orange Austria

Hutchison 3G Austria

Yesss!

Tele Select Manser

Belgium

Belgacom Mobile

KPN Group Belgium (Base)

Mobistar

Bulgaria

*Bulgarian Telecommunication Company
AD (Vivacom)*

Cosmo Bulgaria Mobile EAD

Mobiltel EAD

Cyprus

Cytamobile-Vodafone

EAD MTN Cyprus (AreebaLtd)

Czech Republic

Telefónica O2 Czech Republic

T-Mobile Czech Republic

Vodafone Czech Republic

Denmark

Hi3G Denmark

TDC

Telenor

TeliaDanmark

Estonia

AS EMT

Elisa Eesti AS

OÜ Top Connect

ProGroup Holding OÜ

TELE 2 Eesti AS

Finland

AlandsMobiltelefonAb

DNA Ltd

Elisa Corporation

TeliaSonera Finland Oyj

*France**Bouygues Telecom**Orange Caraïbe**Orange France**SFR**Germany**E-Plus Mobilfunk GmbH & Co. KG**Telefónica Germany GmbH & Co. OHG**Telekom Deutschland GmbH**Vodafone D2 GmbH**Greece**COSMOTE Mobile**Vodafone Panafon S.A.**Wind HellasTelecommunications S.A.**Hungary**Telenor MagyarországZrt**T-Mobile**Vodafone MagyarországZrt**Iceland**Nova**Síminn hf.**Vodafone Iceland**Ireland**Eircom Mobile**Hutchison 3G Ireland**Meteor Mobile Communications**O2 Communications Ireland**Tesco Mobile**Vodafone Ireland**Italy**Carrefour Italia Mobile**Coop Voce**Fastweb**H3G Italia**Noverca Italia**Poste Mobile**Telecom Italia**Tiscali Italia**Vodafone Omnitel**WindTelecomunicazioni**Latvia**Bite Latvia**LatvijasMobilaisTelefons**Tele2**Lithuania**Bitė Lietuva**Eurocom**Omnitel**Tele2**Teledema**Malta**Melita Mobile Ltd**Mobisle Communications Ltd (GO Mobile)**RedtouchFone Ltd**Vodafone Malta Ltd**YOM**Netherlands**KPN B.V.**Lebara B.V.**Lycamobile Netherlands Ltd**Tele2 Netherlands B.V.**T-Mobile Netherlands B.V.**Vodafone Libertel B.V.*

*Norway**Telenor**NetCom**Network Norway**Tele2**Chess**Lebara**Ventelo**OneCall**Poland**CenterNet S.A.**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 Slovakia**Orange Slovensko**Slovak Telekom**Slovenia**Debiteld.d.**IZI mobild.d.**Mobiteld.d.**Si.mobild.d.**T-2 d.o.o.**Tušmobild.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**BT**Everything Everywhere**Vodafone UK**Tesco Mobile**Virgin Mobil*