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## **International comparison of broadband prices**

**- November 2006 -**

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## Summary

- Download speeds offered in Portugal are similar or even greater than those in the other countries surveyed, with offers of speeds of up to 24 Mbps.
- Portugal is the only country of those surveyed with offers (specifically, offers of the historic operator) that have different traffic limits according to traffic origin (national/international).
- The minimum price of broadband in Portugal is 3.6 percent below the average of the countries surveyed. The minimum price practiced by the historic operator in Portugal is 2nd lowest of all the historic operators in the 13 countries surveyed.
- The minimum download prices practiced in Portugal are also below the average of the countries surveyed for the most common access speeds. With 8 Mbps access, the prices in Portugal are 17.9 percent below average.
- If instead of the minimum price, the simple average of minimum prices practiced by the various ISPs for a range of transmission speeds is taken, Portugal's ranking in some speeds is lower. In Portugal this indicator is slightly higher than the average in offers with maximum download speeds of 24 Mbps and lower than the average for the other speeds.
- The monthly fees charged by Portugal's historic operator for offers with maximum connection speeds of 512 Kbps, 1 Mbps and 8 Mbps are, respectively, 25.9 percent, 12.6 percent and 21.9 percent below the average price practiced by the historic operators of the countries surveyed. On the other hand the fees for 2 Mbps offers are 6.6 percent above the average.
- The minimum price for the offers of 8 Mbps in Portugal is the fourth lowest of the countries surveyed. This is the offer of the operator CATV. In Portugal, the majority of the alternative operators' 8 Mbps offers have prices between €24.40 (ex. VAT) and €30.00 (ex. VAT). The analysis of the results for this connection speed reveals that the prices practiced in Portugal are not above average European levels.
- The minimum prices for 2 Mbps in Portugal are also the fourth lowest of the countries surveyed. Taking into the account the range of variation and the average price of the 2 Mbps offers in countries surveyed, it is concluded that the prices in Portugal are also in line with the European average.

## **1. Introduction**

This report presents the main results of a survey into international comparisons of the price of broadband, carried out by ICP-ANACOM in November 2006.

Chapter 2 looks at and compares the components that make up the broadband offers in the countries surveyed. Access technology, transmission speed, traffic limits and tariff structures are presented and compared.

Chapter 3 looks at the following indicators in each country: “minimum price of broadband”, “minimum price by download speed” and “average price by download speed”. The range of price variation for 2 Mbps and 8 Mbps access in each country is also presented.

The methodology used in the compilation of these results is described in the Annex.

## **2. Structure of offers**

This chapter brings together a range of information on the structure of available broadband offers in 13 European countries.

On the basis of this information it is possible to determine how far the providers of broadband access services in Portugal satisfy the needs of the consumers in terms of availability and diversity.

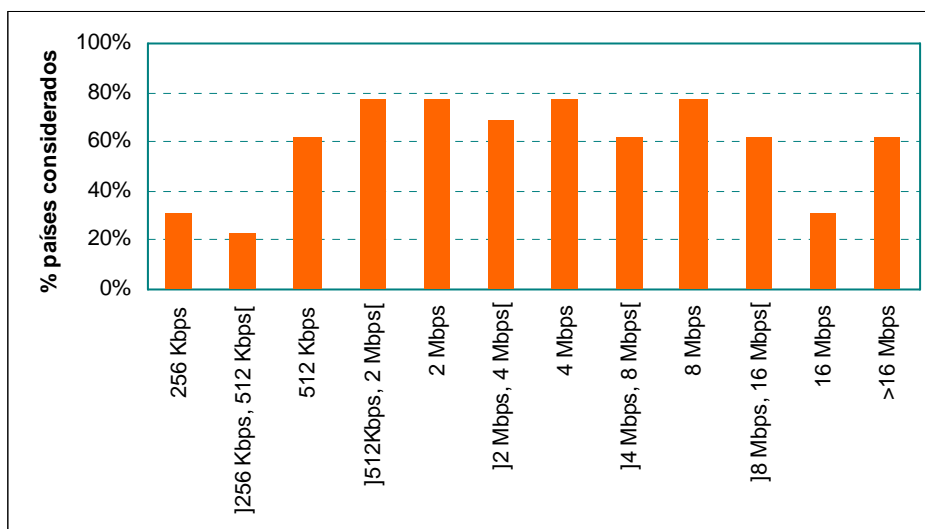
### ***Access technology***

In Portugal, as in the other countries, there are offers based on ADSL (LLU and PTC wholesale offers) and cable modem. In some countries there are offers based on fibre (e.g. Sweden). In Portugal (AIR Telecom) and in Ireland there are residential offers based on FWA. There were also offers in Portugal (Onitelecom) based on Powerline technology, which, however, have in the meantime been discontinued.

### ***Transmission speeds***

Download speeds offered in Portugal are similar to or greater than those offered in most of the countries surveyed.

It is considered that, currently, the main broadband offers in Portugal are already above the average of the remaining countries.

**Graph 1– Download speeds in the countries surveyed**

### **Structure of tariffs**

As in other countries, in Portugal there are tariffs that are included in bundles (TV, FTS, terminal equipment, PC, etc...)

There are also both metered and non-metered offers, as in many of the countries surveyed.

The items that make up the tariff for this service are also similar to those existing in other countries: activation price, installation price, equipment price (modems etc.), monthly fees *flat-rate* (access + traffic), price per minute (in the case of metered offers) and price for traffic in excess of the defined limits. It is also common to find offers that include email and web hosting space. In many cases, the ISPs impose minimum contracts of 12 months.

There is some price linearity in relation to the speed of download and the speed of upload.

There are often promotional offers consisting of free sign-up/activation/installation, reduced or zero monthly fees in the first months following subscription, the offer of terminal equipment, the offer of content, etc...

Some tariff discrimination can be seen as regards the following: residential/non-residential; students/non-students.

### **Traffic limits**

All the countries surveyed have offers with traffic limits. In countries such as Austria, Belgium, Ireland, Luxemburg and Portugal offers with traffic limits constitute the majority of offers. It should be noted that there were a significant number of offers where it was not possible to identify traffic limits.

Traffic limits are of three types: (1) Traffic in MB (total; in peak periods; *download/upload*); (2) traffic in hours; (3) “*fair use policy*” (undefined/unpublished limits).

Portugal is the only countries of those surveyed with offers, specifically from the historic operator, that have separate traffic limits depending on traffic origin (national/international).

When the traffic limits are exceeded, the following penalties were identified: (1) a fee is charged by amount of traffic or time; (2) the data-communication speeds of the offer are downgraded to the level below or to narrowband levels; (3) the user is invited to subscribe to alternative offers. (In some cases, the ISP provides an optional tariff that allows users to acquire blocks of additional traffic.)

In Portugal, when the traffic limits are exceeded, the operators charge set sums for each MB.

### **3. Broadband monthly fees**

A comparison of the monthly fees for broadband in the countries surveyed is given below.

The first indicator presented is the minimum monthly fee found in each country. This indicator, which favours those countries that have offers with lower transmission speeds, can be interpreted as being the monthly minimum price for broadband access. This indicator was calculated for all ISPs and for historic operators.

The second set of indicators presented consists of the minimum and average prices in each country for each transmission speed. The minimum price by access speed is the price of the offer that would be chosen by a consumer looking for the lowest monthly fee for offers with a speed equal or greater to that required. The average price is an indicator that is close to the average of the monthly fees charged by ISPs in each country for each class of access.

The minimum prices practiced by the historic operators per access speed and the range of prices variation for 1 Mbps, 2 Mbps and 8 Mbps access are also presented.

### **Minimum price of the broadband**

As can be seen in **Table 1** the minimum price of broadband in Portugal and the minimum price of broadband charged by the historic operator are below of the average price of the countries surveyed.

The minimum price of broadband in Portugal is 3.6 percent below the average of the countries surveyed and is similar to that practiced in Sweden and Ireland. The minimum price practiced by the historic operator in Portugal is the 2nd lowest of the historic operators in the 13 countries surveyed.

**Table 1 – Minimum monthly fee for broadband– November 2006**

Country	Minimum price		Minimum price – Historic Operator	
	Price	Ranking	Price	Ranking
Germany	16.33	10	23.22	10
Austria	15.75	8	16.58	3
Belgium	12.36	2	24.75	12
Denmark	17.06	12	17.06	5
Spain	15.90	9	29.90	13
France	16.64	11	23.33	11
Holland	12.56	4	12.56	1
Ireland	14.87	7	20.65	7
Italy	12.42	3	16.63	4
Luxemburg	19.13	13	22.61	8
<b>Portugal</b>	<b>14.46</b>	<b>5</b>	<b>15.28</b>	<b>2</b>
United Kingdom	12.27	1	22.64	9
Sweden	14.83	6	17.57	6
<b>Total/Average ex. Portugal</b>	<b>15.01</b>		<b>20.63</b>	
<b>% difference of Portugal compared to the average</b>	<b>-3.6%</b>		<b>-25.9%</b>	

Values in € ex. VAT

### **Minimum price by access speed<sup>1</sup>**

When the minimum prices for broadband by download speed in Portugal is compared to the average of prices in the other countries surveyed, it is seen that the prices in Portugal are below the average, particularly for the more common access speeds (see **Table 2**).

The price practiced in Portugal for offers of 8 Mbps is the 6th best among the countries surveyed -17.9 percent lower than the average.

<sup>1</sup>The following Table only presents the results for the more common transmission speeds in Portugal. Accounting criteria: Minimum monthly fee of offers with maximum connection speeds equal to or greater than the indicated speed

The lowest price in Portugal for offers of maximum speed up to 8 Mbps is for access through cable modem. In the case of the remaining speeds, the offers presented refer to ADSL through unbundled local loop.

**Table 2– Minimum price of broadband by access speed - November 2006**

Country	2 Mbps		4 Mbps		8 Mbps		20 Mbps		24 Mbps	
Germany	21.54	10	24.95	9	25.85	8	-		-	
Austria	24.92	11	40.00	11	57.50	11	-		-	
Belgium	20.45	8	20.45	7	28.84	9	28.84	4	-	
Denmark	21.35	9	49.25	12	69.42	12	92.17	8	-	
Spain	35.00	13	35.00	10	36.00	10	36.00	7	-	
France	16.64	6	16.64	5	16.64	3	16.64	1	16.64	1
Holland	12.56	2	12.56	2	20.13	4	20.13	2	-	
Ireland	14.87	5	14.87	3	14.87	2	-		-	
Italy	14.08	3	16.63	4	24.96	7	30.79	6	-	
Luxemburg	32.87	12	-		-		-		-	
<b>Portugal</b>	<b>14.46</b>	<b>4</b>	<b>22.73</b>	<b>8</b>	<b>24.38</b>	<b>6</b>	<b>28.84</b>	<b>4</b>	<b>28.84</b>	<b>3</b>
United Kingdom	12.27	1	12.27	1	12.27	1	-		-	
Sweden	17.57	7	19.24	6	20.22	5	21.98	3	21.98	2
<b>Average excl. Portugal</b>	<b>20.34</b>		<b>23.80</b>		<b>29.70</b>		<b>35.22</b>		<b>19.31</b>	
<b>% difference of Portugal compared to the average</b>	-28.9%		-4.5%		-17.9%		-18.1%		49.4%	

Values in € ex. VAT

It should be noted that the relatively small number of offers of maximum speed equal or greater than 25 Mbps and the dispersion of the prices of these offers do not allow firm conclusions to be reached on the level of prices practiced in Portugal.

### ***Average price by access speed***

If instead of the lowest price, the simple average of the lowest prices practiced by a range of ISPs for a range of transmission speeds is taken, Portugal's ranking improves slightly for some connection speeds.



**Table 3– Average of the minimum prices of broadband by access speed - November 2006-**

Country	2 Mbps		4 Mbps		8 Mbps		20 Mbps	
Germany	25.83	7	25.78	4	-		-	
Austria	31.17	9	40.83	9	57.50	9	-	
Belgium	-		27.21	5	42.98	7	-	
Denmark	29.22	8	51.82	10	77.58	10	-	
Spain	-		37.00	8	39.07	6	-	
France	-		-		27.51	4	25.00	1
Holland	18.21	2	22.23	3	45.78	8	-	
Ireland	22.72	4	-		14.87	1	-	
Italy	15.35	1	20.17	2	-		-	
Luxemburg	38.98	10	-		-		-	
<b>Portugal</b>	<b>19.96</b>	<b>3</b>	<b>27.83</b>	<b>6</b>	<b>32.62</b>	<b>5</b>	<b>41.15</b>	<b>3</b>
United Kingdom	24.66	6	31.46	7	22.60	2	-	
Sweden	23.57	5	19.24	1	26.53	3	30.50	2
<b>Average excl. Portugal</b>	<b>25.52</b>		<b>30.64</b>		<b>39.38</b>		<b>27.75</b>	
<b>% difference of Portugal compared to the average</b>	-21.8%		-9.2%		-17.2%		48.3%	

Values in € ex. VAT

**Price by access speed - historic operators**

In view of the importance of the historic operators in terms of market share, the prices practiced by the historic operators of each country are compared below (see Table 4).

As can be seen, the monthly fee for offers with maximum connection speeds of at least 256 Kbps, 1 Mbps and 8 Mbps of the historic operator in Portugal is, respectively, 25.9 percent, 12.6 percent and 21.9 percent lower than the monthly fees practiced by the historic operators of the countries surveyed.

The 2 Mbps offer is 6.6 percent above the average.

**Table 4– Minimum price of broadband by access speed: historic operators  
– November 2006**

Country	256 Kbps		1 Mbps		2 Mbps		4 Mbps		8 Mbps	
Germany	23.22	10	23.22	7	34.47	11	34.47	8	38.78	6
Austria	16.58	3	24.92	9	24.92	5	-		-	
Belgium	24.75	12	33.02	13	33.02	9	33.02	7	49.55	8
Denmark	17.06	5	27.79	11	34.23	10	+		+	
Spain	29.90	13	29.90	12	39.07	13	39.07	9	39.07	7
France	23.33	11	23.33	8	27.51	7	27.51	3	27.51	2
Holland	12.56	1	12.56	1	12.56	1	16.76	1	62.98	9
Ireland	20.65	7	20.65	3	24.79	4	-		-	
Italy	16.63	4	16.63	2	16.63	2	30.79	6	30.79	5
Luxemburg	22.61	8	22.61	5	34.87	12	-		-	
<b>Portugal</b>	<b>15.28</b>	<b>2</b>	<b>20.65</b>	<b>3</b>	<b>29.40</b>	<b>8</b>	<b>29.40</b>	<b>4</b>	<b>29.40</b>	<b>3</b>
United Kingdom	22.64	9	22.64	6	22.64	3	22.64	2	22.64	1
Sweden	17.57	6	26.39	10	26.39	6	29.93	5	29.93	4
<b>Average excl. Portugal</b>	<b>20.63</b>		<b>23.64</b>		<b>27.59</b>		<b>29.27</b>		<b>37.66</b>	
<b>% difference of Portugal compared to the average</b>	<b>-25.9%</b>		<b>-12.6%</b>		<b>6.6%</b>		<b>0.5%</b>		<b>-21.9%</b>	

"+": Offers whose prices are excessively high.

Values in € ex. VAT

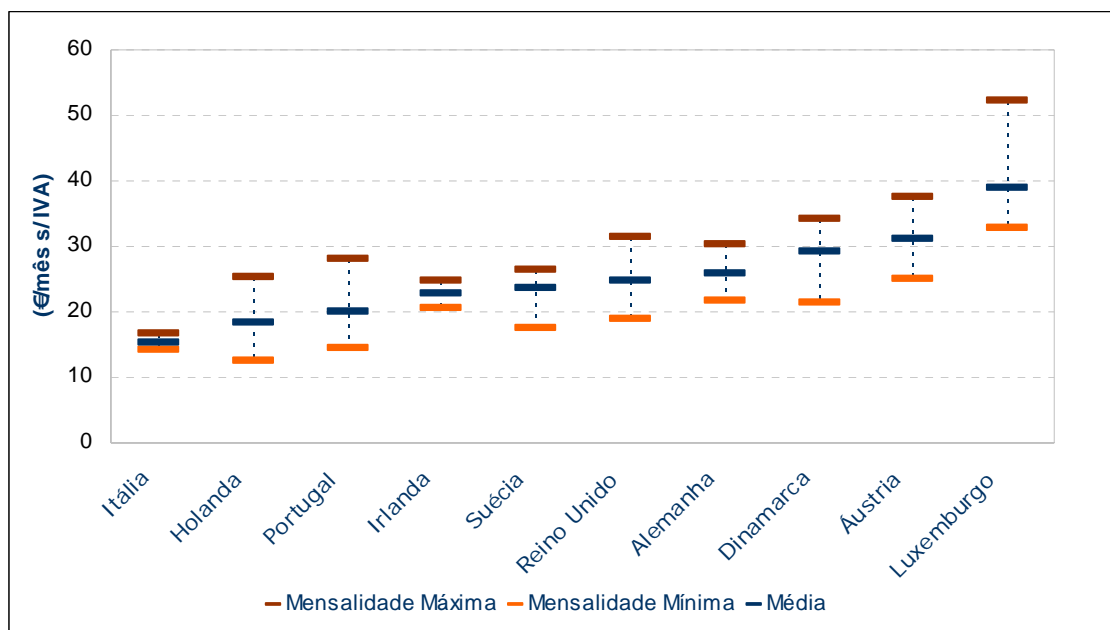
It should be noted that among the historic providers surveyed, only the Danish provider (in offers with maximum speed of 256 Kbps) and the Dutch (in the offers with maximum speeds up to 2 Mbps) have offers which are the lowest found in their respective countries.

### ***Prices of the 2 Mbps and 8 Mbps access<sup>2</sup>***

This section looks at some additional details on the prices of 2 Mbps and 8 Mbps offers.

The minimum price of offers of 2 Mbps practiced in Portugal is the fourth lowest of the countries surveyed. This is the offer of the operator CATV. In Portugal, the majority of the alternative operators' 2 Mbps offers have prices between €14.50 (ex. VAT) and €28.00 (ex. VAT), with there being, however, offers which have lower monthly fees but higher connection speeds.

<sup>2</sup> This point only includes offers with maximum download speeds of 1Mbps, 2 Mbps and 8 Mbps. Therefore in calculating the minimum prices (and maximum prices) offers were excluded where they had higher maximum connection speeds, even though such offers had lower (higher) prices.

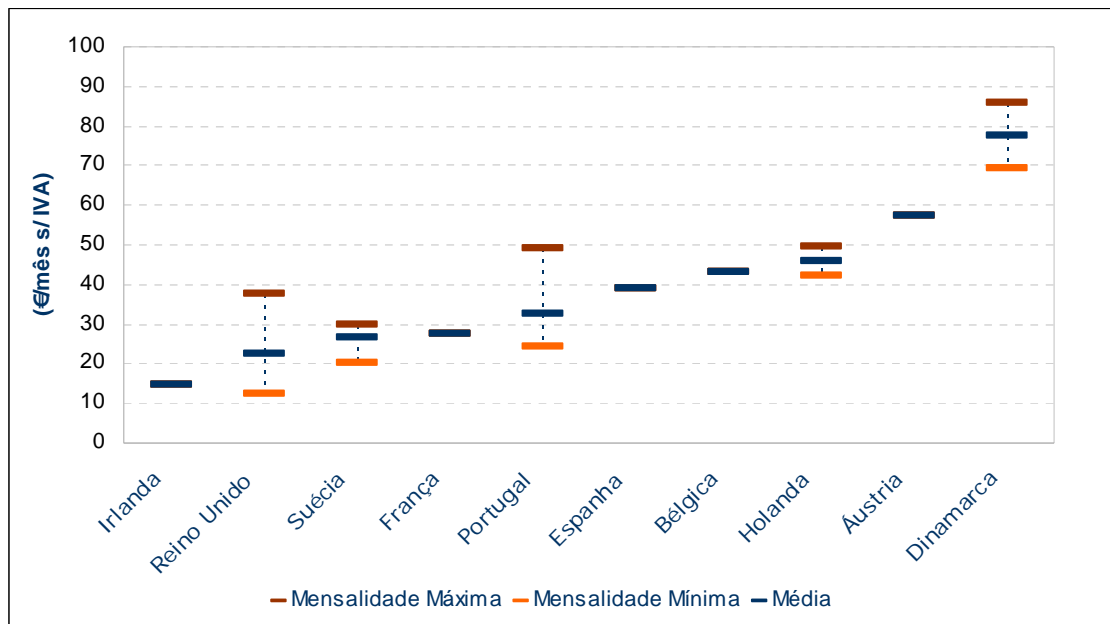
**Graph 2 – Range of variation and average of prices for 2 Mbps**

The minimum price of the 8 offers of Mbps practiced in Portugal is the fourth lowest of the countries surveyed. This is the offer of the operator CATV. In Portugal, the majority of the alternative operators' 8 Mbps offers have prices between €24.40 (ex. VAT) and €30.00 (ex. VAT).

Taking the range of variation<sup>3</sup> into account, together with the average price of 8 Mbps offers in the countries surveyed, it is concluded that the prices practiced in Portugal is not above the European average.

<sup>3</sup> The interval of variation given does not take into account all the prices practised in a country for each class of connection speed, but only the most competitive prices of each ISP of a determined country. Accordingly more expensive offers which include optional extras (e.g. higher upload speeds or raised traffic limits) and which could distort the averages were excluded.

**Graph 3 – Range of variation and average of the prices of 8 Mbps offers**



## **ANNEX - Methodology**

The following section details the method and hypotheses used to select the countries, service providers (ISP) and offers for inclusion in the survey and the indicators used for comparison.

### **1. Selection of countries**

To select the countries for this comparison, the OECD's graph of broadband penetration in July 2006<sup>4</sup> was used to identify the European countries that have penetration rates similar to or greater than Portugal's. The resulting list of countries therefore corresponds "*grosso modo*" to the countries of the EU15.

Of these 15 countries, Greece was excluded due to the weak implementation of the service in this country, and Finland due to difficulty in compiling information.

Accordingly the survey included the following countries:

- Germany;
- Austria;
- Belgium;
- Denmark;
- Spain;
- France;
- Holland;
- Ireland;
- Italy;
- Luxemburg;
- Portugal;
- United Kingdom;
- Sweden.

### **2. Selection of ISPs**

For each one of these countries, the ISPs that represented at least 70-80% of the market were identified.

For this purpose, documents of the European Commission, the sites of the national regulators, the reports and accounts of several operators and press articles were consulted. In some situations, it was not possible to determine the market share of the ISPs and in these cases Internet search engines were used.

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<sup>4</sup> See <http://www.oecd.org/dataoecd/40/16/34919335.xls>.

### 3. Selection of offers

The information was compiled over November 2006.

The offers of the ISPs with the above criteria and that met the following conditions were used:

- Offers available on the sites of the ISPs;
- Residential offers;
- Offers for analogue lines (ISDN offers were not considered);
- Non-promotional offers;
- New offers for new broadband subscribers.

All the components that constitute the selected offers were taken into account. However, it was assumed that the decision to subscribe to broadband would be incremental (i.e. a cable modem broadband subscriber already has cable TV, an ADSL broadband is already an FTS customer, etc...), and it was considered that a new subscriber would choose the options that would keep the monthly fee to a minimum (i.e. if there is a discount for payment by bank transfer, the subscriber would choose payment by bank transfer).

The **Table 5** gives the number of offers included in this report:

**Table 5 – Number of offers selected**

Country	Considered information	
	No. of ISPs	No. of offers
Germany	7	18
Austria	4	26
Belgium	7	24
Denmark	4	28
Spain	4	12
France	5	8
Holland	8	31
Ireland	4	13
Italy	6	12
Luxemburg	5	22
<b>Portugal</b>	<b>10</b>	<b>50</b>
United Kingdom	10	29
Sweden	6	23
<b>Total</b>	<b>80</b>	<b>296</b>

During the process of calculation of the results, offers with downstream speeds less than 256 Kbps and metered offers were excluded.

#### 4. Calculated indicators

Based on the information compiled, 3 indicators were calculated:

- “Minimum Price”: Broadband offer with the lowest monthly fee in each country. This indicator favours the countries that have broadband offers with lower speeds;
- “Minimum Price by download speed”: Lowest monthly fee in each country for the offers whose maximum download speed is equal to or greater than the indicated speed.
- “Average price by download speed”: Rather than being a simple average of all the prices practised for each class of connection speed, this is an average of the most competitive prices practised by each ISP in a determined country for each class of connection speed. Accordingly more expensive offers which include optional extras (e.g. higher upload speeds or raised traffic limits) and which could distort the averages were excluded.

These indicators were calculated for two different samples: all the ISPs of a country and for the historic operator (in view of the importance of the market shares of the historic operators in all of the countries surveyed).

It should be noted that the presented results refer only to the monthly fee (not promotional values). Besides discounts and promotions, the following variables were not taken into consideration: installation and sign-up costs; equipment prices (not included in offers); traffic limits; upstream speed; number of mailboxes, space for mailbox, offers of web hosting space; offers of software; equipment offers (e.g. MP3 reader); offers of multimedia applications; training courses; offers connected to PC sales.

#### 5. Use of values that exclude VAT and calculated without Purchasing power parity (PPP)

The values presented exclude VAT and PPP was not used. This is because it was intended that the relative position of the ISPs in each country should not be affected by factors that are beyond their control.

It is also considered, as far as PPP is concerned, that the telecommunications business is relatively capital intensive and that a good part of the productive factors and intermediate consumptions used by the companies of the sector in its productive process are acquired in the global market. Thus, it is considered that, given the cost structures of the companies, the international comparisons of prices of telecommunications should include results calculated using the current rates of exchange.

Furthermore, the OECD itself states that:

*“[i]t would be a mistake to think of PPP’s as a complete substitute for exchange rates in making international comparisons. In fact they are complementary because PPP based comparisons are useful in specific situations, such as when comparing output levels or productivity levels*

*between countries, while exchange rate based comparisons are more appropriate in others.”<sup>5, 6</sup>*

However, the results calculated on the basis of PPP reflect, above all, the fact that Portugal has a standard of living which is below the European average<sup>7</sup>; the results presented reflect, in great part, factors that are beyond the remit of the electronic communications operators.

It is further noted that, since the adoption of fixed conversion rates by the members of the single currency, the two main objections to the use of exchange rates presented by the OECD - volatility and the fact they reflect other factors beyond the relative prices between goods<sup>8</sup>, have disappeared.

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<sup>5</sup> OECD, *Purchasing Power Parities (PPPs) Frequently Asked Questions #14*, available at [http://www.oecd.org/faq/0,2583,fr\\_2825\\_495691\\_1799281\\_1\\_1\\_1\\_1,00.html#1799243](http://www.oecd.org/faq/0,2583,fr_2825_495691_1799281_1_1_1_1,00.html#1799243). It is perhaps for this reason that the publications of this organisation, especially those that give comparisons of telecommunication prices, present prices calculated using PPP and current exchange rates.

<sup>6</sup> In this scope, see also, the opinion of Dr. Campos e Cunha on international price comparisons as indicators of competitiveness, available on ANACOM's website at: <http://www.anacom.pt/template12.jsp?categoryId=195823>

<sup>7</sup> The standard of living in Portugal is around 27% below the EU average. Accordingly, while the nominal prices practiced in Portugal are increased by around 36% due to the effect of reduced purchasing power, prices in Denmark decrease by around 21% due to the same effect.

<sup>8</sup> OECD, *Purchasing Power Parities (PPPs) Frequently Asked Questions #12*, available at [http://www.oecd.org/faq/0,2583,fr\\_2825\\_495691\\_1799281\\_1\\_1\\_1\\_1,00.html#13609241](http://www.oecd.org/faq/0,2583,fr_2825_495691_1799281_1_1_1_1,00.html#13609241).