



Paper

Price level measurement Caribbean Netherlands 2015 - Final report

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October 2015**

Summary

In 2015, Statistics Netherlands studied the price levels of consumption expenditure for the three islands that make up the Caribbean Netherlands (Bonaire, St Eustatius and Saba). The study shows that consumer prices in Saba are 10 percent higher than in Bonaire. This makes Saba the most expensive island, as was found in the previous price level measurement in 2010. In St Eustatius, consumer prices are 7 percent higher than in Bonaire. Compared to Bonaire and Saba, prices in St Eustatius have increased the most since 2010.

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1. Introduction

At the request of the Ministry of Social Affairs and Employment, Statistics Netherlands conducted a study on the interrelationship of price levels on the three islands of the Caribbean Netherlands (Bonaire, St Eustatius and Saba) in 2015. The study examines the relative price differences in consumption expenditure in St Eustatius and Saba in comparison with Bonaire. A similar study was first carried out by Statistics Netherlands in 2010¹.

This report covers the approach that was applied, the price monitoring and the calculation of the relative price levels on the islands (Chapter 2). The results are explained in Chapter 3.

¹ Relative price levels Caribbean Netherlands, Arthur Giesberts, November 4, 2010.

2. Approach

A price comparison between different locations has the following general design:

- A single list of representative products is compiled (a monitoring list of goods and services). The products are closely defined to ensure that (as many as possible) identical products can be monitored at each location.
- The representative products are grouped into commodity groups. This is done on two levels: at a relatively low level (called LCOICOP) where more than a hundred groups are distinguished and at a higher aggregated level which includes twelve groups (COICOP divisions, see Appendix 1 for a description).
- Per commodity group (LCOICOP as well as COICOP divisions) and per location a weight is determined. The weight represents the share that consumers spend on that specific group.
- The prices of the products on the monitoring list are monitored at the various locations.
- For each location, an average price of the products is calculated.

A weighted average price ratio is calculated on the basis of the average prices and weights.

2.1 Basket of goods and services

At the start of the study more than a thousand products were defined initially, subdivided into more than one hundred LCOICOP commodity groups. These products were defined as precisely as possible (e.g. rice: Mahatma, wholegrain brown, 907 grams) to ensure that the products were as homogeneous as possible across the islands. If it turned out that a single product could not be monitored for at least two islands, it was decided to combine products (make them less homogeneous). This approach made it possible to compare prices for a sufficient number of products on the various islands.

Within some product groups, representative prices could not be monitored. Depending on the situation one of the following choices was made:

- Exclusion from the price level study
Within the context of the study it was impossible for Statistics Netherlands to make statements about the price levels of products within this group. In this study, the product group of rentals for housing was excluded for this reason. At the start of the study of price levels in the Caribbean Netherlands a separate study was carried out to investigate the possibility of including rentals for housing. In 2010 it proved to be impossible to do so, and this time again insufficient data were available² to include rentals for housing in the price level study.
- Equal price level assumed on each island
Not all products are available on every island and some products are mainly purchased elsewhere by the islanders. They do so during vacations and online, for instance. Especially if it is expected that many products in a group will be purchased online, the islanders can basically shop in the same place and pay the same price. Differences in shipping costs are not reflected in a price difference for the product in question, but this difference is included via the monitored prices for mail and parcel services.

² Pre-study rentals for housing Caribbean Netherlands, Arlen Hoebergen, April 2, 2015.

This situation primarily applies to the following product groups (also see Appendix 2 for an overview):

- Clothing and footwear;
 - Furniture and related products (lamps, flooring);
 - Domestic appliances (freezers, refrigerators, washing machines);
 - Consumer electronics (audio or video equipment, computers);
 - Books.
- Allocation of the weight to (adjacent) higher product groups
It concerns products that can't be adequately monitored and for which the price level will likely show a similar image to that of an (adjacent) higher product group. This was done, for example, for (rolling) tobacco and cigars (for which the weight was added to that of cigarettes) and for crustaceans and shellfish (for which the weight was added to that of fresh and preserved fish).

Ultimately, the prices of 788 different products in 86 LCOICOP commodity groups were monitored (see Appendix 2).

2.2 Monitoring

Prices were monitored in three different ways:

- Regional monitoring (on location in stores);
- Central monitoring (via Internet or e-mail);
- Monitoring based on consumer price index (for a limited number of products, the existing monitoring for the regular CPI of the Caribbean Netherlands was used).

Regional monitoring was done in two sessions: the first one took place in May/June and the second one in August/September. Monitoring prices in two different periods will prevent that temporary offers and occasional spikes in prices have a disproportionate effect on the price monitoring. The monitoring was mostly carried out by the same people, which increases the homogeneity of the observations and thus the quality of the price monitoring.

2.3 Weighting

The weighting of product groups was based on the weighting for the consumer price index (CPI) of the Caribbean Netherlands in 2015 and the budget study that was conducted in 2013. The weighting for the CPI (which in turn was based on the budget study) served as the point of departure. Since the price level measurement is slightly more detailed for some product groups than the CPI, weights of the CPI were distributed using data from the budget study. In addition, the weights of product groups that were excluded from the price level study were distributed amongst the product groups that were included in the price level study. The final weights at the level of COICOP divisions are shown in Appendix 3.

2.4 Calculation

The method used for calculating the ratio of price levels is consistent with the method used in the European Comparison Program³. The same method was used for the price level measurement in the Caribbean Netherlands in 2010.

With this calculation method, the weighted prices of products per country (island) are aggregated step by step. While doing so, it is ensured that the results meet two key requirements:

- Reciprocity
This means that the price level of Saba compared to that of Bonaire is equal to the reciprocal of the price level of Bonaire compared to that of Saba.
- Transitivity
This means that the directly calculated price level of Saba compared to that of Bonaire is equal to the indirectly calculated price level (Saba compared to St Eustatius first, and then St Eustatius compared to Bonaire).

2.5 Differences with the consumer price index

A price level measurement and a consumer price index (CPI) each have their own objective and their own methodology. The aim of a consumer price index is to follow the development of the price level in one location (one country) over time. Therefore, it must be possible to follow the monitored products over time and these products must reflect the consumption habits of the country's population. The weights of product groups may change over time, just as the consumption pattern of consumers will change in the course of time. Because a CPI makes use of a fixed reference period the CPI is non-reversible, in contrast to the price levels in a price level measurement.

The objective of a price level measurement is to compare the price level at different locations, but at the same point in time (the same year). The monitored products at the various locations should be closely comparable and the prices are monitored within the same period. The weights can vary by location, as is the case for the consumption patterns of consumers in the various locations. However, with a price level measurement there is no "preferred location" and no fixed reference location.

This results in the following differences:

- Monitored products
Some of the monitored products (i.e. individual articles) in the CPI of the Caribbean Netherlands and in the price level measurement are different. This is caused by the fact that there are products which are available on one island and included in that island's CPI, but are not available on all of the islands.
In addition, the CPI partially includes rentals for housing (in Bonaire and St Eustatius this regards social housing), whereas rentals for housing are not considered at all in the price level measurement (see paragraph 2.1).

³ This method is described in the Eurostat-OECD Methodological Manual on Purchasing Power Parities.

- Weighting of commodity groups
The weights used in the price level measurement correspond well with the weights that have been used in the CPI since 2014, but they deviate from the weights that were used in the CPI prior to 2014.
However, the calculation also makes the price levels transitive. The result is that the weightings of the islands are averaged to a certain extent, which will also create deviations from the CPI.
- Scope and delimitation
Various commodity groups are monitored on one of the islands for the CPI, but not for the price level measurement. In Bonaire in particular, more groups are monitored for the CPI. Products in these commodity groups are not (or only scarcely) available in Saba and St Eustatius, which makes a comparison impossible.
In addition, for some products that are hard to find on the islands, the monitoring of the statistical bureau of Curaçao or St Maarten was used for the CPI (the consumer price index of Curaçao or St Maarten was used for the commodity groups in question). For the price level measurement it was not feasible to individually monitor products in Curaçao or St Maarten. Since these products are also purchased regularly online (and, therefore, everyone can buy these products at the same store), it was assumed for the purpose of the price level measurement that there is no price difference between the islands.

2.6 Differences with the price level measurement of 2010

There are also differences between the execution of the price level measurement of 2010 and that of 2015. Over the years, the consumption pattern on the islands has changed and the weighting of the commodity groups also varies greatly between the measurements performed in 2010 and 2015 (see Appendix 3). In 2010, the same weighting was used for each island at the level of COICOP divisions, partly because no reliable information was available regarding the consumer spending per island. That situation changed after 2013, when a budget study was carried out to determine the weights.

Furthermore, there are differences in the commodity groups that were monitored. Some commodity groups were monitored in 2015 and not in 2010, but the opposite is true as well. Clothing and footwear, for example, were monitored in 2010, but as it turned out it was no longer possible to monitor closely comparable products within this category on the three islands in 2015. Clothing and footwear are also often purchased elsewhere by islanders. In 2015 it was therefore assumed that there are no differences in prices for clothing and footwear on the three islands.

Finally, of course, there are also differences between the monitored products in 2010 and 2015. This has everything to do with changes in the product offering of stores and the availability of products.

3. Results

The study shows that consumer prices on Saba are 10 percent higher than on Bonaire. This makes Saba the most expensive island, as was found in the previous price level measurement in 2010. Consumer prices on St Eustatius are 7 percent higher than on Bonaire. Compared to Bonaire and Saba, the prices on St Eustatius increased the most since 2010. Table 1 lists the price levels of St Eustatius and Saba in 2010 and 2015 relative to those of Bonaire.

Table 1. The price levels of St Eustatius and Saba compared to those of Bonaire.

	2010	2015
Sint Eustatius	102%	107%
Saba	108%	110%

3.1 Comparison according to commodity group

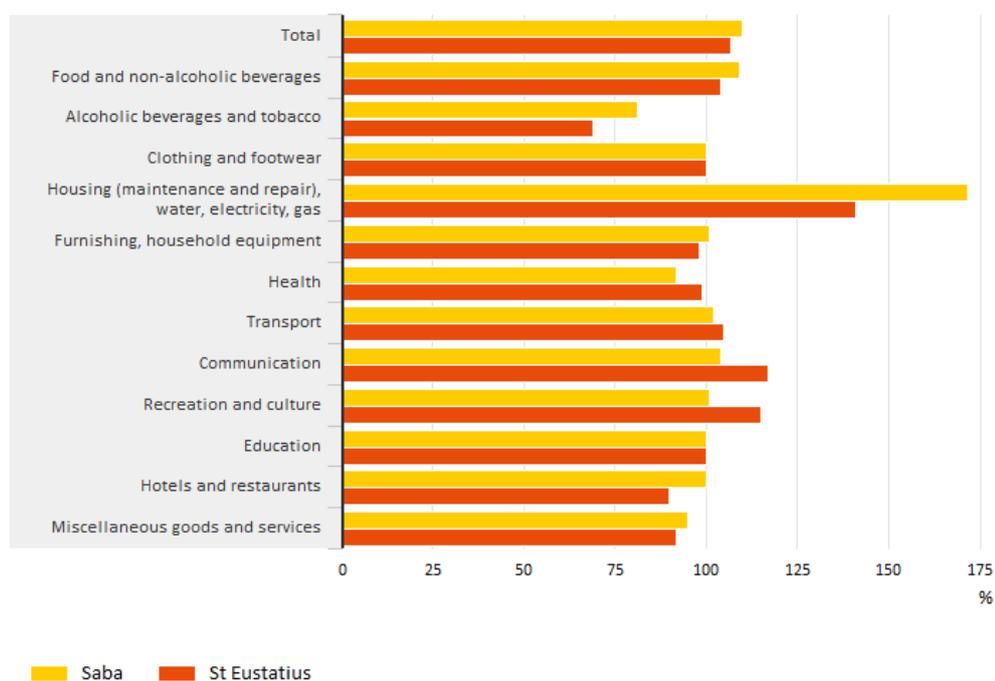
Table 2 and Figure 1 show the price levels of St Eustatius and Saba in 2015 compared to those of Bonaire, broken down by commodity group. Two commodity groups clearly stand out in Table 2. Alcoholic beverages and tobacco are relatively inexpensive in St Eustatius and Saba because these products are free of duty there, in contrast to Bonaire. The price level of commodity group 4 (Housing (maintenance and repair), water, electricity, gas) is relatively high in St Eustatius and Saba. This is mainly due to the water and gas prices.

Furthermore, the price level of commodity group 8 (Communication) is relatively high in St Eustatius. This is mainly due to the relatively higher Internet rates. The high price level in commodity group 9 (Recreation and culture) in St Eustatius is caused by many different products, such as TV subscriptions, the vet, and office supplies such as paper and pens.

Table 2. The price level by commodity group in 2015 (Bonaire = 100%).

	St Eustatius	Saba
Total	107%	110%
1 Food and non-alcoholic beverages	104%	109%
2 Alcoholic beverages and tobacco	69%	81%
3 Clothing and footwear	100%	100%
4 Housing (maintenance and repair), water, electricity, gas	141%	172%
5 Furnishing, household equipment	98%	101%
6 Health	99%	92%
7 Transport	105%	102%
8 Communication	117%	104%
9 Recreation and culture	115%	101%
10 Education	100%	100%
11 Hotels and restaurants	90%	100%
12 Miscellaneous goods and services	92%	95%

Figure 1. Price levels by commodity group in 2015 (Bonaire = 100%)



3.2 Comparison with 2010

Table 3 and Figure 2 show the price levels of St Eustatius in 2010 and 2015 compared to Bonaire, broken down to commodity group. Communication has become relatively more expensive on St Eustatius, whereas housing (maintenance and repair), water, electricity, gas have become relatively cheaper. The latter is mainly due to a drop in water prices on St Eustatius, although water is still more expensive than on Bonaire.

Table 3. The price levels by commodity group in St Eustatius (Bonaire = 100%).

	2010	2015
Total	102%	107%
01 Food and non-alcoholic beverages	98%	104%
02 Alcoholic beverages and tobacco	57%	69%
03 Clothing and footwear	84%	100%
04 Housing (maintenance and repair), water, electricity, gas	154%	141%
05 Furnishing, household equipment	97%	98%
06 Health	80%	99%
07 Transport	106%	105%
08 Communication	93%	117%
09 Recreation and culture	106%	115%
10 Education	100%	100%
11 Hotels and restaurants	99%	90%
12 Miscellaneous goods and services	93%	92%

Figure 2. Price levels by commodity group in St. Eustatius (Bonaire = 100%)

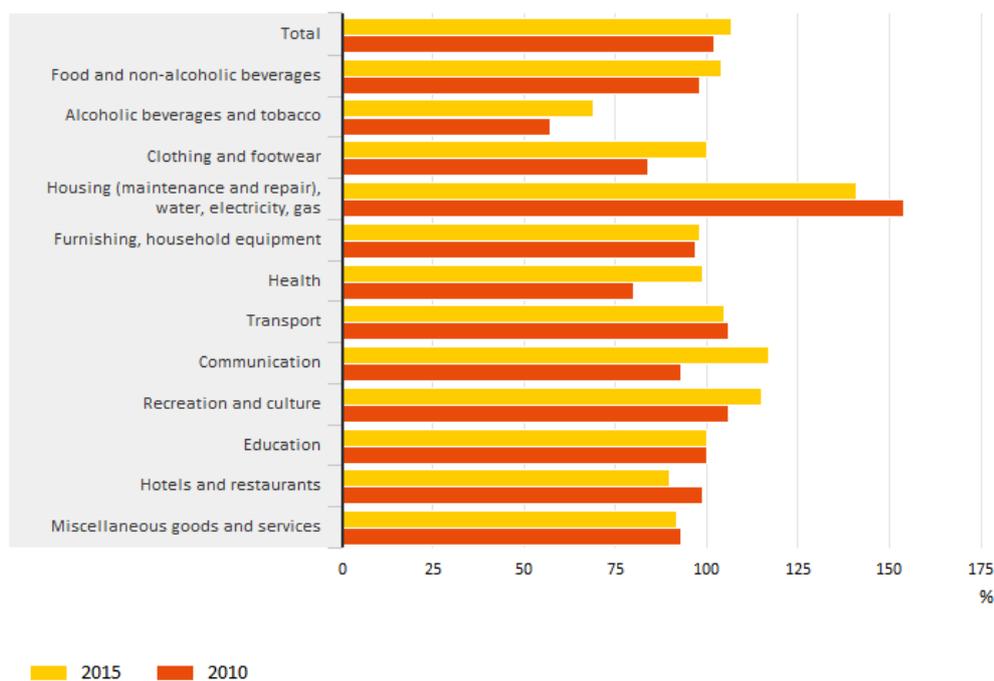
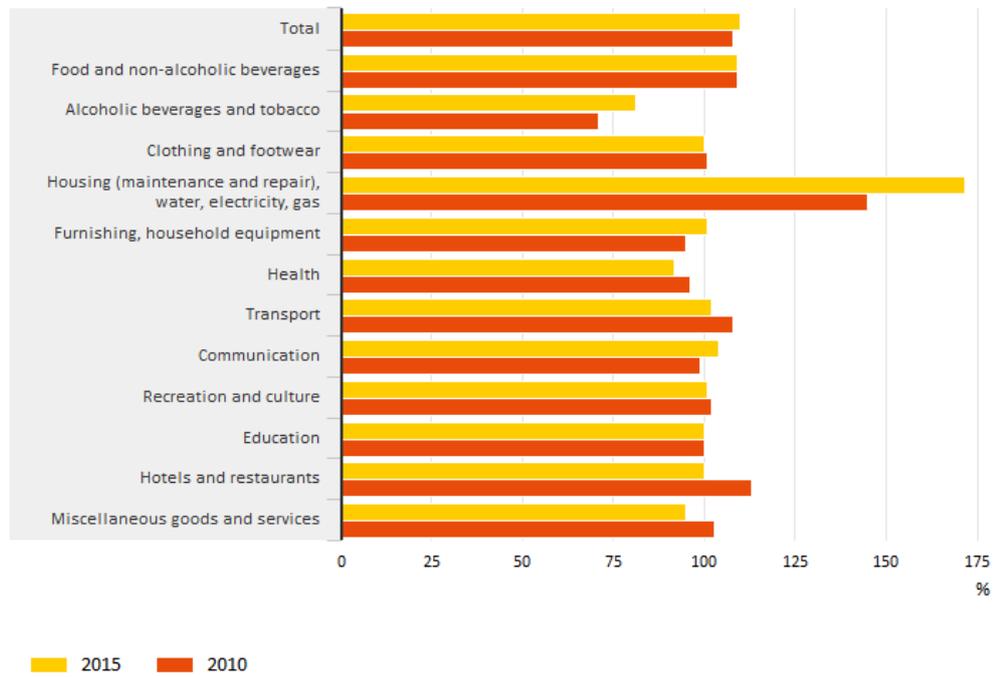


Table 4 and Figure 3 show the price levels of Saba in 2010 and 2015 compared to Bonaire, broken down to commodity group. On Saba, restaurants and hotels have become relatively cheaper whereas housing (maintenance and repair), water, electricity, gas, by contrast, have become relatively more expensive. The latter is mainly due to the development of water and gas prices.

Table 4. The price levels by commodity group in Saba (Bonaire = 100%).

	2010	2015
Total	108%	110%
01 Food and non-alcoholic beverages	109%	109%
02 Alcoholic beverages and tobacco	71%	81%
03 Clothing and footwear	101%	100%
04 Housing (maintenance and repair), water, electricity, gas	145%	172%
05 Furnishing, household equipment	95%	101%
06 Health	96%	92%
07 Transport	108%	102%
08 Communication	99%	104%
09 Recreation and culture	102%	101%
10 Education	100%	100%
11 Hotels and restaurants	113%	100%
12 Miscellaneous goods and services	103%	95%

Figure 3. Price levels by commodity group in Saba (Bonaire = 100%)



Appendix 1. Specification of COICOP divisions

COICOP division	Contents (no comprehensive listing):
01 Food and non-alcoholic beverages	Bread and cereals, meat, fish, milk, cheese and eggs, fruit, vegetables, sugar, confectionery, salt, spices and herbs, ready meals. Coffee, tea, mineral waters, soft drinks, fruit and vegetable juices.
02 Alcoholic beverages and tobacco	Spirits, wine and beer. Cigarettes and cigars.
03 Clothing and footwear	Garments for men, women, children and infants, other articles of clothing and clothing accessories, cleaning, repair and hire of clothing. Shoes and other footwear including repair of footwear.
04 Housing (maintenance and repair), water, electricity, gas	Materials for the maintenance and repair of the dwelling, water supply, electricity, gas and other fuels.
05 Furnishing, household equipment	Furniture and furnishings, carpets, household textiles, household appliances, glassware, tableware and household utensils, tools and equipment for house and garden, goods and services for routine household maintenance.
06 Health	Medicinal drugs, corrective eye-glasses and contact lenses, medical services and dental services.
07 Transport	Motor cars, motor cycles, bicycles, fuels, spare parts and maintenance for personal transport equipment, passenger transport by railway, road, air and sea.
08 Communication	Postal services, telephone and internet services.
09 Recreation and culture	Audio-visual equipment, computers, recording media such as cd's and usb-sticks, games, toys and hobbies, equipment for sport, camping and open-air recreation veterinary services, subscriptions to television networks.
10 Education	Regular education and educational programmes for adults.
11 Hotels and restaurants	Restaurants, cafés and the like, accommodation services.
12 Miscellaneous goods and services	Personal care, jewellery, clocks and watches, nursery, insurance and notary services.

Appendix 2. Commodity groups and form of monitoring

Coicop subclass	Price data collected	Price level assumed to be equal
011110	Rice	x
011120	Wheat flour	x
011130	Bread and rusks	x
011140	(Salt) biscuits, pastry	x
011150	Pasta	x
011160	Instant (breakfast) cereals	x
011210	Beef	x
011230	Pork	x
011240	Poultry	x
011250	Meat products and meat dishes	x
011310	Fresh and frozen fish	x
011330	Non-perishable fish	x
011410	Milk	x
011420	Yoghurt, cream, desserts, etc,	x
011430	Cheese	x
011440	Eggs	x
011510	Butter	x
011520	Margarine, etc.	x
011530	Edible oils	x
011610	Fresh fruit	x
011620	Dried fruit and nuts	x
011630	Fruit in syrup and fruit puree	x
011710	Fresh vegetables	x
011720	Frozen and other vegetables	x
011730	Potatoes	x
011740	Potato products	x
011810	Sugar	x
011820	Sweet fillings	x
011830	Chocolate	x
011840	Sweets	x
011850	Ice cream	x
011910	Spices, etc.	x
011920	Sauces, mayonnaise, etc.	x
011930	Soups and broth	x
011940	Instant food, frozen food	x
011960	Other food	x
012110	Coffee and cacao	x
012120	Tea	x
012210	Mineral waters	x
012220	Soft drinks	x
012230	Fruit juices, vegetable juices	x
021100	Spirits	x
021200	Wine	x
021300	Beer	x
022100	Cigarettes	x
031210	Men's wear	x
031220	Ladies' wear	x
031230	Children's wear	x
031240	Baby clothes	x
031300	Other clothing and accessories	x
032110	Men's footwear	x
032120	Ladies' footwear	x
032130	Sports shoes for adults	x
032140	Children's and baby shoes	x
043100	Products maint./ repair dwellings	x
044100	Water supply	x
045100	Electricity	x
045200	Gas	x
045300	Solid and liquid fuels	x

Coicop subclass	Price data collected	Price level assumed to be equal
051110	Furniture	x
051120	Lighting, home decoration	x
051200	Carpets and other floor coverings	x
052100	Curtains, blinds, screens, etc.	x
052200	Bed clothes	x
052300	Household linen	x
053110	Refrigerators and freezers	x
053120	Dishwashers, washing mach., etc.	x
053130	Gas cookers, (microwave)ovens, etc.	x
053140	(Water) heaters, geysers etc.	x
053150	Sewing mach. vacuum cleaners, etc.	x
053200	Small household appliances	x
054000	Glassware, pottery, household art.	x
055000	Tools and eq. for house and garden	x
056110	Detergents, fabric softeners	x
056120	Dishwasher detergents	x
056130	Other cleaning products, etc.	x
056140	Other non-durable articles	x
061100	Pharmaceutical products	x
061200	Other medical products, equipment	x
062200	Dental services	x
071110	New cars	x
071120	Second-hand cars	x
071200	Motorcycles, scooters, mopeds	x
072110	Spare parts and accessories cars	x
072210	Petrol	x
072220	Diesel	x
072240	Lubricants	x
072300	Maint. and repair priv. transport	x
073300	Passenger transport by air	x
081000	Postal services	x
083000	Telephone and internet services	x
091110	Audio equipment	x
091120	Television sets, video equipment	x
091200	Photo, film, optical equipment	x
091300	Information processing equipment	x
091430	Videotapes, CD-Rs unrecorded	x
091440	Photography and film	x
093400	Pets and related products	x
093500	Veterinary and other serv for pets	x
094240	Subsc. cable TV/radio system	x
095100	Books	x
095200	Newspapers and magazines	x
095300	Other printed matter, stationery	x
100000	Education	x
111110	Restaurants	x
121110	Men's and children's hairdressers	x
121120	Ladies' hairdressers	x
121200	Electric appliances for pers. care	x
121310	Toilet articles	x
121320	Beauty prod./perfumes/deodorants	x
121330	Other articles for personal care	x
123100	Jewellery, clocks and watches	x
123200	Other articles for personal use	x
124000	Social protection	x
125000	Insurance services	x
127000	Other services n.e.c.	x

Appendix 3. Weighting of COICOP divisions

COICOP division	2015	2015	2015	2010
	Bonaire	St Eustatius	Saba	Bonaire St Eustatius Saba
01 Food and non-alcoholic beverages	19210	22996	26187	14468
02 Alcoholic beverages and tobacco	1485	1380	1534	1333
03 Clothing and footwear	3679	4676	4257	7593
04 Housing (maintenance and repair), water, electricity, gas	15887	13117	10660	12616
05 Furnishing, household equipment	4694	5280	5120	8729
06 Health	1845	1508	1732	2707
07 Transport	19950	15378	14077	19530
08 Communication	9164	11152	8986	7800
09 Recreation and culture	2831	4430	2886	7346
10 Education	612	1547	2275	1999
11 Hotels and restaurants	6757	8580	7531	2982
12 Miscellaneous goods and services	13887	9956	14754	12895
Total	100000	100000	100000	100000

Explanation of symbols

Empty cell	Figure not applicable
.	Figure is unknown, insufficiently reliable or confidential
*	Provisional figure
**	Revised provisional figure
2014–2015	2014 to 2015 inclusive
2014/2015	Average for 2014 to 2015 inclusive
2014/'15	Crop year, financial year, school year, etc., beginning in 2014 and ending in 2015
2012/'13–2014/'15	Crop year, financial year, etc., 2012/'13 to 2014/'15 inclusive

Due to rounding, some totals may not correspond to the sum of the separate figures.

Publisher

Statistics Netherlands
Henri Faasdreef 312, 2492 JP The Hague
www.cbs.nl

Prepress

Studio BCO, Den Haag

Design

Edenspiekermann

Information

Telephone +31 88 570 70 70
Via contact form: www.cbs.nl/information

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