OFFICE FOR NATIONAL STATISTICS

FINAL REPORT TO EUROSTAT

UK 2010 SPATIAL ADJUSTMENTS FOR USE IN THE PPP CALCULATIONS

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Contents

1. Executive summary

This report details the compilation of 2010 Spatial Adjustment Factors (SAFs) for the United Kingdom, prepared by the Office for National Statistics (UK).

The 2010 survey updates the SAFs last delivered in 2005 (with reference period of 2004) and provides an improved and current representation of UK prices relative to the capital city of London. The report details the approach taken to produce the SAFs, the data collection and an analysis of the outputs.

Consumer Price Index (CPI) items were used where possible in producing SAFs so that the collection of price quotes in the field could focus on items with narrow specifications. Additionally a concerted effort to understand where national pricing exists ensured that a targeted data collection process could take place. This resulted in approximately 17,000 prices collected in 2010 compared to approximately 80,000 collected in 2004. The results produced in 2010 align closely with expectations of price level variation from London relative to the United Kingdom.

Typically the SAFs are closer to 1 than they were in 2004. This is in keeping with the nationalisation of markets and the broader access to information that consumers enjoy through means such as the internet.

Transport is a particular area where the 2010 SAFs are different to 2004. In the previous survey several of these categories were given a spatial adjustment factor of 1 with no prices collected. While Transport presented challenges methodologically in this survey, ONS is comfortable with the approach taken and the results produced. Two of the larger areas of difference from 2004 were air and rail fares. The results align with expectations as air fares are more expensive outside of London and rail fares are less expensive.

There is evidence in the 2010 results of improved consistency between utilities which had very different SAFs in 2004. Gas, Water and Electricity have all converged towards 1 which is in keeping with the use of national suppliers who are providing consistent pricing regardless of region.

Producing comprehensive SAFs was a challenging process for ONS and there have been many lessons learnt for future iterations of the survey. Particularly addressing issues related to the size of the project, the engagement and training of collectors in the field and the range of items to be collected from diverse locations will again be important in 2016. It will always be a challenge to conduct a survey every six years but through effective planning and resource allocation the spatial adjustment exercise can be successfully conducted.

2. Background/Overview

In complying with Eurostat Regulation (EC) No 1445/2007 of the European Parliament and of the Council, the United Kingdom has conducted a price collection across the UK for the purpose of producing Spatial Adjustment Factors (SAFs).

In the UK, prices for consumer goods and services are collected in London in accordance with the Purchasing Power Parities (PPP) guidelines. Every six years the United Kingdom is required to produce SAFs to enable the London prices to be adjusted so that they reflect prices within the United Kingdom rather than just London. This survey was last conducted in 2004. The 2010 SAFs provide updated information to be used to adjust subsequent PPP consumer surveys.

The project to produce SAFs commenced in early 2010 with the creation of a small team within the Prices Division of ONS. Its membership came from within the International and General Inflation Branch, the same group who have responsibility for the ongoing European Comparison Programme (ECP) and from the Prices Development Branch whose contribution primarily focussed on methodological, technical and systems support. ONS appointed a project manager. A project board was appointed with the Prices Division Divisional Director as Chair and a senior methodologist from Methodology Directorate as project members, along with the UK Spatial Adjustment Factor project team.

The survey took a vastly different approach to the one conducted in 2004 and many fewer prices were collected. The collection involved a combination of prices collected in the field, the use of Consumer Price Index (CPI) price data where appropriate and prices collected centrally by the ONS. Additionally investing time in identifying areas of national pricing, either by company (e.g. IKEA) or item (e.g. Sony Playstation console) ensured that resources and effort were afforded to the areas where price variation was most expected.

TNS-Research International (TNS-RI) was engaged to conduct the field data collection across the 21 selected locations in the United Kingdom. This collection took place between 27th September and 12th November 2010. TNS-RI also collect field prices for the CPI and have access to experienced CPI collectors across the United Kingdom. TNS-RI also conducted the SAF field collection in 2004.

A comprehensive validating process was undertaken to verify the collected prices from the various sources to ensure a high quality series of SAFs. Additionally, the new factors were compared to the 2004 results. The 2010 dataset is indicative of current UK prices, through the observations collected and research, and as such the factors produced are a representation of relative price levels in the UK at a point in time.

3. Sample Design

3.1. Item sample design

As part of the SAF project, ONS was required to select a sub-sample of the PPP items from the PPP surveys. There were two core issues for this process:

- How many items to include in the sub-sample.
- Which items to include in the sub-sample.

3.1.1 Number of items to include in the sub-sample

ONS made the decision to replicate the sampling methodology used by Eurostat for the European Comparison Programme (ECP). The number of products to be priced per basic heading will depend on the heterogeneity of products covered by the basic heading and on the importance of the basic heading. For each basic heading, the number of representative products selected was commensurate with the price variation within the basic heading and its expenditure at the basic heading.

ONS chose to select a fixed proportion of items from the PPP product list, selecting the same proportion of items from each Basic Heading. The sub-sample contained a minimum of one quarter of the items under each Basic Heading in the PPP product list. For some Basic Headings where CPI data was used extensively, such as for food, more than one quarter of PPP items was selected for the sub-sample. This was due to the availability of existing CPI data for additional PPP items.

3.1.2 Which items to include in the sub-sample

Items were selected purposively from the PPP product list. Firstly, items were selected if they had a direct match with a CPI item, so that CPI data could be used instead of having to collect prices for that particular item. If more items were needed to make up the required sample size, items were selected so there was sufficient coverage of items across the Basic Heading. The sub-sample consisted of 487 PPP items spread across 120 Basic Headings[1]. Of the 487 PPP items, CPI data was used for 204 items. Prices for the remaining 283 items were directly collected either in the field or by office based staff utilising the telephone and internet.

3.2 Location selection

The locations selected for the SAF project were a sub-sample of those locations currently visited for the 2010 UK CPI collection. TNS-RI visits 141

[1] The 120 Basic Headings do not include heating energy. A price level for this BH is not produced in the ongoing PPP process by the UK as it does not exist in the UK.

locations each month, collecting prices for use in the CPI. From this list of 141 locations, locations were selected using purposive sampling, where locations with the largest retail employment in each region were selected[2]. For Northern Ireland, where no retail employment data was available, locations were selected based on their residential population figures taken from the 2001 Census. To ensure sufficient coverage, the 12 Government Office Regions (GORs) across the UK contained at least one location each. The eight GORs within England (excluding London) were combined to produce three larger regions. Each of these regions contained three locations. Prices were collected in three locations in Wales, Scotland and Northern Ireland. Refer to Annex one '*UK Location Sampling for Spatial Adjustment Factors'* illustrating the geographical locations.

Three locations were selected for London, the reference location. This selection was also based on comparative retail employment size. The selected locations also feature in the ongoing PPP survey programme.

3.3 Representative and non-representative items

To ensure that there are adequate prices to allow comparisons between countries, participating countries are required to price both representative products and non-representative products within each basic heading. Therefore, the PPP product list contains items that are both representative and non-representative within the UK. The 2005 edition of the Eurostat-OECD *Methodological Manual on Purchasing Power Parities*[3] states that "representative products usually have a lower price level than unrepresentative products". Since the SAFs will be used to adjust the PPP prices collected in London, ONS felt it was important to include non-representative items in the sub-sample of PPP items to avoid biasing the SAFs, and to remain compliant with Eurostat-OECD PPP methodology.

The number of non-representative items selected in the sub-sample was approximately equivalent to the proportion of non-representative items under each Basic Heading of the PPP item list. As for representative items, non-representative items were purposively selected. In order to reduce the burden on price collectors, only those non-representative items which were believed to be available throughout the UK were selected.

3.4 Number of observations

Eurostat recommends a minimum of ten observations per item for the regular PPP collection. In applying this criterion regionally, the approach was to aim for a maximum of 15 observations with a target of ten for each item in each region. (Noting that there are three locations for each region.)

For many items where there was national pricing, only one price was collected and in many cases it was not possible to source ten observations for an item

[2] In the absence of turnover data, retail employment is considered a suitable proxy.
[3] ISSN 1725-0048

due to their lack of availability. Graph 3, page 15, presents the average number of prices collected per item for each of the six surveys.

3.5 Methodology

There were two procedures required in order to construct the spatial adjustment factors:

3.5.1 Calculating average prices.

i. CPI Data

One of the advantages of using CPI data is that we are able to calculate an annual average price. When using CPI data over a period of 12 months, an annual average price for each region was calculated. This was done by first calculating a monthly average price for each region using an unweighted, arithmetic mean. The annual average price was then calculated by using an unweighted, arithmetic mean of the monthly average prices. The reason for calculating a monthly average price first was due to the fact that the number of prices collected each month differed slightly. Averaging the monthly average prices meant allocating an equal weight for each month. This approach also had the advantage of implicitly weighting by location within a region, as the larger locations generally had more price observations.

ii. Direct Collection

For data collected from the central (collected by ONS) and local (collected by TNS-RI) collections, the average price for each region was calculated by taking the unweighted, arithmetic mean of all prices collected in each region.

3.5.2 Methodology in constructing spatial adjustment factors

3.5.2.1. Using the EKS method

The methodology ONS used to construct the spatial adjustment factors is consistent with the approach used by Eurostat in calculating their PPPs at the basic heading level. The EKS (Èltetö-Köves-Szulc) method was used to impose transitivity on an existing set of intransitive binary indices. The 2005 OECD-Eurostat PPP manual explains that:

> *Transitivity is attained by replacing the Fisher type PPP between each pair of countries by*

the geometric mean of itself squared and all the corresponding indirect Fisher type PPPs between the pair obtained using the other countries as a bridge.

Transitivity is a desirable property as the same result is obtained when comparing PPPs directly between two regions and when comparing PPPs indirectly through the introduction of a third region. In addition to being transitive, the resulting multilateral EKS PPPs differ as little as possible from the original binary PPPs.

The use of EKS can lead to bias when one region has a larger number of representative items than the other region. EKS-S is a modified version of EKS that takes into account the representativity of items in different regions. ONS has assumed equal representativity across the UK; therefore it was not necessary to use the EKS-S method. This assumption was deemed plausible as the items were being compared within a country rather than across countries where more variation would be expected. Therefore, it was considered that the use of EKS should not lead to bias due to representativity differences between regions.

Due to the unavailability of weighting information for PPP items below the basic heading level, a Fisher-PPP index could not be calculated. Instead, a Jevons-PPP index, or an equally weighted geometric mean of the price relatives, was calculated. Although a Jevons index is usually transitive, the use of EKS was still needed to enforce transitivity because some regions contained missing prices.

3.5.2.2 Approach to the construction of the spatial adjustment factors

The following steps were used by ONS to construct the spatial adjustment factors;

i. A bilateral comparison of the PPP item's average price was calculated for each combination of regions. With seven regions, this meant 49 different price relatives for each item.

ii. The price relatives were then mapped to their respective basic heading for each region.

iii. The unweighted, geometric mean of the PPP item price relatives were calculated for each basic heading.

iv. EKS applied to enforce transitivity on the binary PPPs.

v. The unweighted geometric mean of each row in the EKS matrix was taken, giving an adjustment factor where UK=1 for each region.

vi. The inverse of the adjustment factor London (UK=1) was taken to produce the spatial adjustment factor delivered to Eurostat.

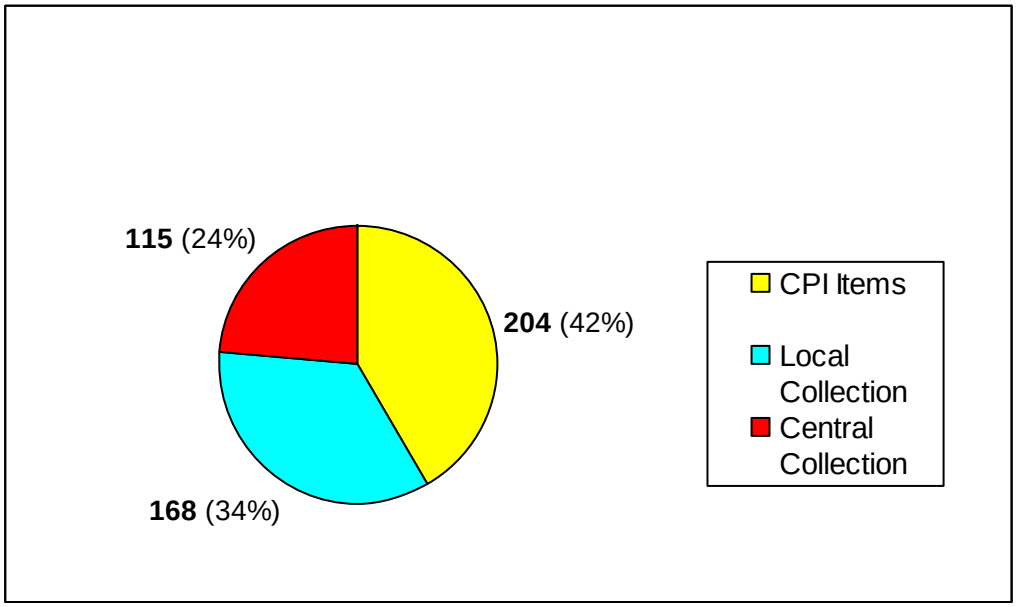
4. Data collection

4.1 Sources of data

The data for the SAF project was sourced from three areas, a central collection conducted by ONS staff, a local collection performed by an external contractor TNS-Research International (TNS-RI) and price data from the UK Consumer Price Index (CPI).

The proportion of items allocated to each collection method is shown in Graph 1. This graph demonstrates the relatively even split between the three collection methods in terms of item coverage.

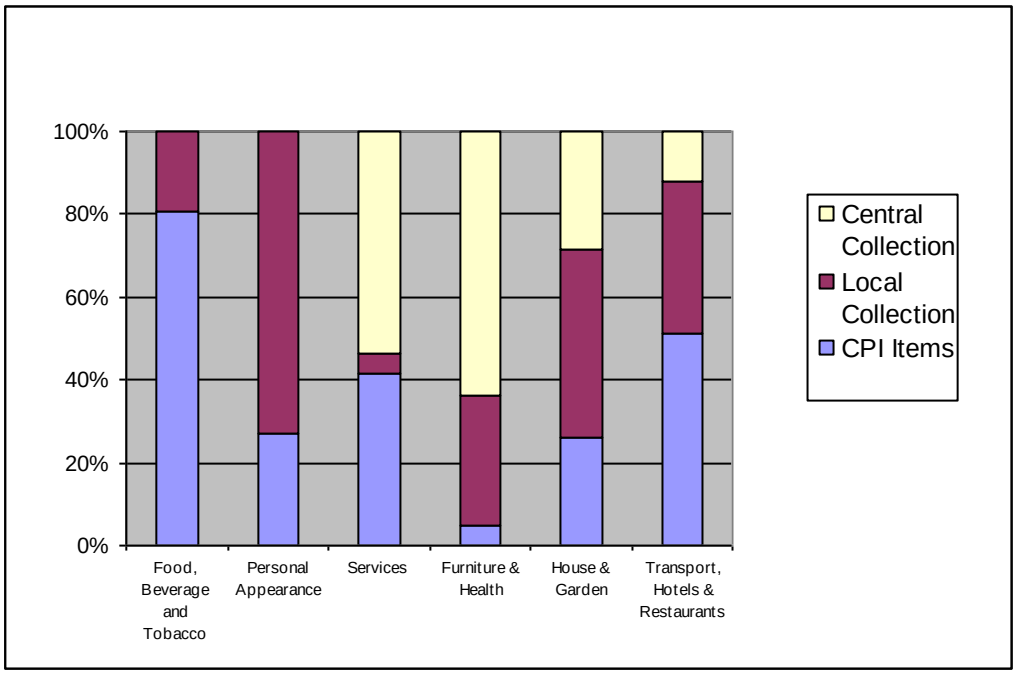
Graph 1: Proportion of items allocated to each collection method



The decision on the mode of collection was made at the individual item level. The first consideration being if it was suitable to use CPI data. If CPI data was deemed unsuitable, but it would be relatively simple to collect prices in the field and regional variation was expected, then local collection for the item was employed. The remaining items were collected centrally from within ONS as they were either viewed as problematic or had national pricing. The result of these decisions ensured that the various surveys typically had a combination of sources as can be shown in Graph 2.

Graph 2 demonstrates the extensive use of CPI for the Food, Beverages and Tobacco survey, while CPI data had limited use in all remaining surveys. The majority of items collected for the Furniture and Health survey were centrally collected. This was primarily the case for the Health based items and some furniture items where national pricing exists (for example IKEA). The majority of furniture items were collected in the field.

Graph 2: Survey by collection method



4.1.1 CPI Data

The use of CPI price data formed an important component of the 2010 SAF project. CPI data collection involves collecting the same product month after month. If the product matches the CPI item description, the actual quality of the product being priced can deviate from location to location. Spatial collection, on the other hand, involves collecting prices for a product ensuring comparable quality across regions. It is for this reason that PPP item specifications are much tighter than CPI item descriptions. For the SAF project, CPI data was only used where comparable quality across regions could be ensured for a particular CPI item.

Price data is collected for around 700 items for use in the UK CPI. The initial stage to determine whether the use of CPI data was appropriate was to map CPI items to PPP items. On a case by case basis, the CPI item description was compared to the PPP item specifications. Decisions were made by the UK project team about whether the CPI item description was comparable to the PPP item specifications. Approximately 250 CPI items were identified as having a sufficiently comparable item description to be considered for use in the SAF project.

In many cases, the decision to use CPI data was relatively straightforward, particularly for food items. For those CPI items where their suitability was not obvious, the Coefficient of Variation (CV) of the arithmetic mean of CPI prices for each item was used to aid in the decision of whether the use of CPI data was appropriate or not. Prior to analysing the CVs, it was

important to understand what these values meant for the purpose of the SAF project. The smaller the CV, the lower the variability, or spread of CPI prices. It was not possible to determine whether the spread of prices was due to differences in price levels across regions, or differences in the quality of the item being priced. For example, a high CV indicates a large variability in prices for a particular item, which may be due to differences in price levels, differences in quality, or both. It was for this reason that the value of the CV was not the only criteria used on determining the suitability of the CPI, but it was a useful tool.

Care was taken to only use CPI data where appropriate for the SAF project. On a case by case basis, consideration was given to both the tightness of the CPI item description and the value of the item's CV. The use of CPI data (more than 415,000 prices was used) was appropriate for 204 PPP items. Utilising the CPI data meant a significant reduction in the number of items that needed to be collected locally, while ensuring the data was fit for purpose in the calculation of SAFs. This in turn allowed the resourced to be effectively employed elsewhere.

To ensure the integrity of the produced statistics, the use of CPI data was limited outside of the Food, Beverages and Tobacco survey. For the other five consumer surveys, in the main, it was felt that the CPI descriptions could not ensure comparisons between items of equal quality. This was especially the case with furniture, where the item specifications needed to be followed very precisely.

4.1.2 Local Collection

The external or local collection was conducted by a company called TNS-Research International (TNS-RI). This company is currently contracted to collect price data for the UK Consumer Price index. TNS-RI was also engaged in the price collection for the 2004 survey. Of the remaining 283 items 168 were allocated to TNS-RI. ONS staff collected additional prices in London to improve coverage and in Wales where staff could be easily deployed from the Newport office (based in Wales) to support the TNS-RI effort.

The external data collection was scheduled to begin on 4th October and cease on 29th October 2010. Verbal agreement was reached with the contractor to begin collection sooner if possible and collection actually commenced on 27th September 2010.

The external collection proved to be a challenging process that required significant ONS resource to manage. While the quality of the data collected was high, the number of prices collected did not meet initial expectations. This was due to two main factors:

- the availability of products in the regions was less than expected, particularly the non-representative items and,

- difficulties faced by the collectors in shifting between the approaches applied to collecting prices for CPI and collecting PPP's.

The collection was complemented by a comprehensive analysis of national pricing and directing the price collection to the areas where coverage was poor. Additionally, the price collection continued until 12th November to ensure that the maximum available price observations were collected in all locations.

Food, Beverages and Tobacco was the most successful category. This is not unexpected as the items are typically easily sourced and also have some similarity to the items collected for CPI which assisted the collectors. The Services, Personal Appearance, Furniture and particularly Transport, Hotels and Restaurants surveys all proved more challenging in reaching targets. These are the areas that the majority of the price collectors had difficulties. ONS' interpretation of the reasons for these difficulties lie mainly with the differences between the PPP collection and the CPI collection that the collectors were familiar with, having to collect non-representative items and less availability of items in regional areas.

4.1.2.1. Pre survey

A pilot study was conducted in the 2004 survey but it was decided not to replicate that process in 2010. The size of the collection was much smaller than in 2004 and the contractors were highly experienced in CPI collection and were confident that they would be in a position to adapt to PPP price collection.

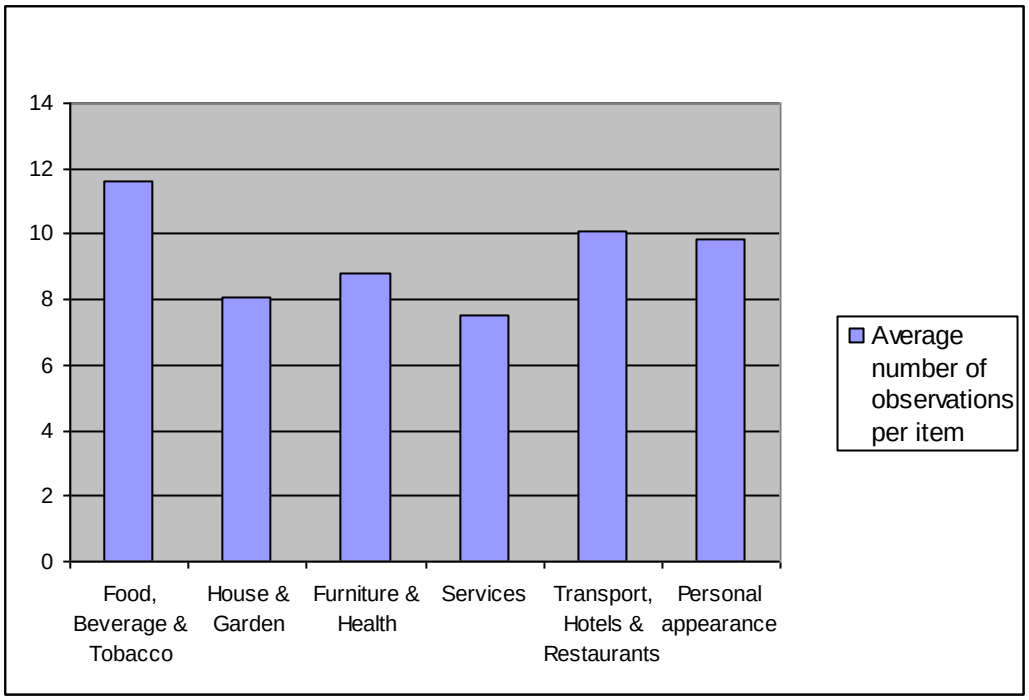
Face to face training for price collectors was strongly considered but, due to logistical and resource challenges this was not pursued. Instead, instruction manuals were provided by ONS to TNS-RI to be distributed to field staff. These manuals provided an overview of the project and its aims with detailed instructions on the collection method that should be adopted and the differences between CPI and PPP collections. Training was provided to the management team of TNS-RI to disseminate more broadly.

An important consideration for future collections of SAF prices should be whether to undertake a small pilot study and some form of personal training of collectors. It is felt this would have greatly reduced issues in the field and the burden placed on ONS to manage the field collection.

4.1.2.2. Survey

Graph 3 details the average number of price observations that were collected in the local and central locations by PPP survey. Items where the number of observations was one (due to invariability through national pricing) or zero (due to unavailability of items) have not been included.

Graph 3: Average number of observations per item by survey



4.1.3 Central Collection

The final 115 items were collected by ONS staff in an internal, central collection. This collection was reserved for items where it was possible to collect reliable quotes by phone or internet such as in transport or service areas, where it was felt that inexperienced PPP collectors may find it difficult to match detailed specifications in stores such as televisions, laptops and for items that had national pricing.

The central collection was conducted by ONS staff experienced in PPP collection and also utilised other staff across the Prices division.

The collection began on the 20th September and ceased on the 11th November 2010. Before the collection began, certain items were deemed to have national pricing policies, these included 29 items for cars and motorcycles. This brought the number of items to be centrally collected to 115. Further research was undertaken, firstly on items where national pricing policies were in effect and secondly for those items where prices could not be collected; this ensured a targeted central collection.

Where items had a national price a single price observation was collected and replicated across all regions where the outlet had been sampled. Intelligence on national pricing was collected direct from retailers and through the analysis of prices as they were received from the local collection. In these cases, once national pricing was identified, collection ceased. It was also identified that for the heading 11.04.55.1 - "Heat Energy" it would not be possible to provide UK prices as the PPP descriptions of the product provided did not match anything provided in the UK.

It became apparent quite early in the survey process that for many items it would not be possible to collect five price quotes from each location selected. An example of this being items relating to flights. Some regions in the UK do not have a large number of airports, for example, Wales has only one national airport, Cardiff and the number of flights matching the PPP specifications was limited. As many of these items was collected as possible, but it was impossible to completely fill the initial requirement for collecting 15 price quotes per region.

5. Data Validation and Data Cleaning

5.1 Data validation and cleaning conducted by TNS-Research International

Limited data validation and data cleaning were conducted by TNS-RI. This was in prior agreement with the ONS project team. TNS-RI was considered the expert in data collection, and this is where their resources were mainly employed. The ONS project team, however, were considered the experts in data validation and therefore conducted the majority of the validation. All checks were carried out progressively as data was received by TNS-RI in the office and on the dataset as a whole before final delivery.

Data validation by TNS-RI was carried out both in the field and in the office to ensure that each price collected was a true representation of the item as specified.

5.1.1 In the Field

Various measures were put in place in the field and in the IPAQ program (hand held device for price collection) to ensure the correct item was collected.

1. Use of experienced and trained price collectors.

2. Built in validation into the IPAQ program.

3. Adherence to item specification. A 100% check of item descriptions was completed by TNS-RI.

5.1.2 In the Office

The data was validated to ensure that the collected item corresponded to the item specification and edited in order to meet ONS' requirements for the output data.

1. *Data validation*. This focussed on the checking of the collectors' descriptions against the ONS item specifications. A 100% check of item descriptions was conducted, so that only valid prices, which were a true representation of the item specification, were included in the final dataset.

2. *Validation of prices*. In addition to adhering to item specifications, the price data was also validated by TNS-RI. This included;

    - Sorting the data by item to allow price comparisons across outlets

- Sorting the data by items to allow price comparisons across all locations
- Comparing price levels for similar types of items.

3. *Deletion of prices*. During the data validation process, TNS-RI deleted approximately 345 prices (2.75% of the total prices collected) from the dataset as they were judged to be invalid.

5.2 Data validation and cleaning conducted by UK Project Team

While basic validation was conducted by TNS-RI, most of the validation was performed by the ONS Project Team. The same validation was also applied to the price collection conducted by ONS.

5.2.1 Validation conducted during the price collection period

The UK Project team received data files from TNS-RI every few days. The validation consisted of the following;

1. *Identification of national pricing*. This is where the price for a particular item is the same in each of the outlets owned by the same company. The number of key retailers and service providers in terms of contributions to the industry adopting national pricing is increasing, particularly with the advent of internet shopping. There were also a number of items, that regardless of which outlet they were purchased from, were identified as having national pricing such as the "Games Console, Nintendo Wii" and "Games Console, Sony PS3".

2. *Unavailability of items*. Validation during the early stage of the data collection allowed the UK Project team to provide TNS-RI with alternative items which could be collected thereby ensuring that representative items were included in the final dataset.

3. *Multiple and Independent retailers*. Checks were made to ensure that each item had the correct ratio of multiple and independent retailers.

4. *Problematic items*. The validation conducted during the price collection period proved invaluable in quickly identifying items which price collectors were finding difficult to price. The project team were able to provide TNS-RI with advice on the way forward.

5. *Branding*. During the validation, checks were made to ensure that the items collected adhered to the correct branding.

5.2.2. Validation conducted following the price collection period

Once the final data file was received from TNS-RI, further comprehensive validation was conducted. This involved the following;

1. Meeting certain validation criteria

    i. identification of £'000s errors
    ii. cross checking of brands
    iii. validation of reference quantities and the resultant prices
    iv. ensuring that the price observation adhered to the item specification

2. Calculation of Spatial Adjustment Factors (SAFs)

    Part of the validation involved the calculation of SAFs at each of the seven regions. The maximum and minimum SAF value was calculated for each of the basic headings. Data was also provided on the counts of the actual number of maximum and minimum items for each region. This highlighted any anomalies which were further investigated.

5.2.3. Back checking of data (checks after price collection)

It was agreed and written into the supplier contract that 'back checking' of data would be conducted by ONS auditors in collaboration with field supervisors from TNS-RI. Back checking is the common term applied to checking the data inputs from a sample of observations, in this case as collected by TNS-RI. This is the regular monthly practice adopted for validating the data that is collected in the field for the UK CPI. For the SAF project, ONS had instructed its auditors to pay special attention to the accuracy of the actual specification firstly and then secondly, where possible, to confirm the price.

Three locations were audited, see annex four. The observations to be audited equated to approximately 2% of total prices collected. This level of auditing is in line with current data collection practise for the UK CPI. The results from the back checking were encouraging with the majority of the observations passing the specification check.

6 Interpreting the 2010 results

6.1 Summary

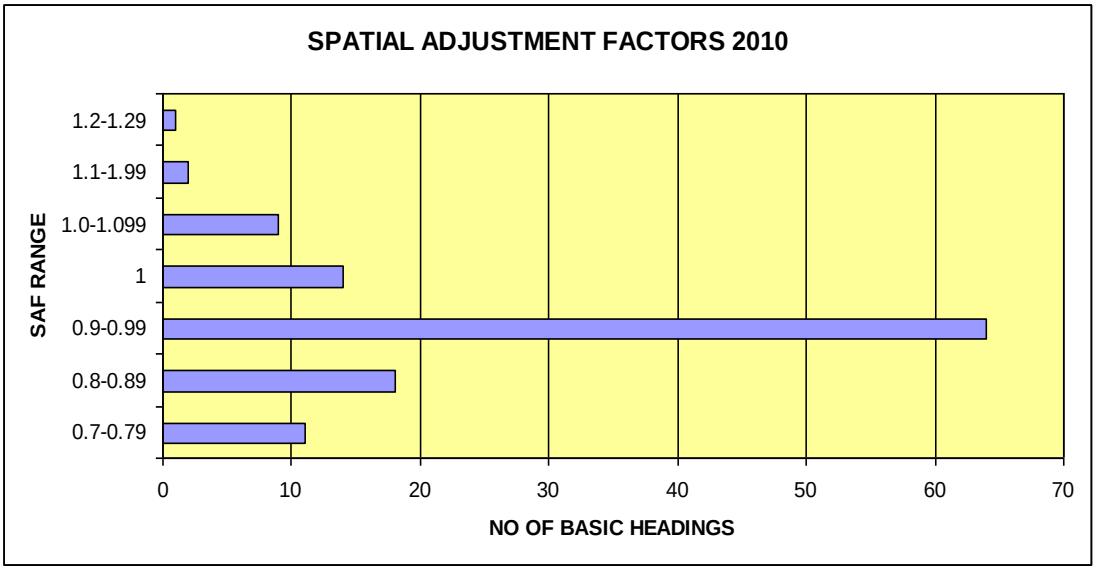
Overall, the dataset is of consistently high quality. The final dataset was considered of a quality suitable for the calculation of the Spatial Adjustment Factors (SAFs) for all of the 120 basic headings. All 120 will be submitted to Eurostat, with the exception of 'Accommodation services', basic heading 11.11.21.1. This heading covers two sub aggregates; Hotel services and Youth hostels; a separate survey for this was conducted at the time of the actual PPP consumer survey Transport, Restaurants and Hotels, in June 2010. The SAF for this heading has already been delivered to, and endorsed by, Eurostat. Refer to Annex two, *Spatial Adjustments for the UK*, for the full list of the 2010 SAFs.

6.2 Interpreting the 2010 results

A significant resource has been invested in interpreting the results. The results show the relative level of prices of goods and services in London compared to the UK national average in 2010 (including London). The results will be used in the calculation of Purchasing Power Parities (PPPs) as part of the Eurostat/OECD European Comparison Programme. The prices required for these calculations are national averages but, for most consumer goods and services, price collection for the UK takes place in London. The results presented in this paper will be used to adjust the London prices to national average prices.

The SAF values range from 0.72 for 'Dental Services' to 1.22 for 'Passenger transport by air'. The majority of basic headings, (64) fall within the range of 0.9 to 0.99, and of these approximately 50% relate to 'Food, beverage and tobacco'. This is not surprising as the vast majority of these items are sold via supermarkets where there is a high level of competition within the UK. Furthermore, the largest retailers, in the main (with only minor regional variation), have adopted a policy of national pricing. Graph 4 illustrates the spread of SAFs. The chart highlights the fact that there are very few basic items where it is cheaper to purchase goods and services in London compared with the rest of the UK.

Graph 4: Spread of Spatial Adjustment factors for 2010



Following is an analysis of the updated SAFs; in particular looking at those that have a factor of 1 and those where the factor is greater than 1.

6.2.1 <u>Basic headings with a Spatial Adjustment Factor of 1</u>

There are 14 Basic Headings which have a factor set at 1. There are a number of reasons for this;

i *National pricing*. Three basic headings come under this category, (1) Newspapers and periodicals (2) postal services and (3) Passenger transport by sea. Postal services and Passenger transport by sea had factors of 1 in 2004 with Newspapers and periodicals having a factor of 0.99.

ii *Domination of market by key retailers and service providers* (who may have adopted a policy of national pricing). There are five basic headings that fall within this category; (1) Telephone and telefax services, (2) Equipment for the reception and recording and reproduction of sound and pictures, (3) Photographic and cinematographic equipment and optical instruments and (4) Information processing equipment and (5) Pharmaceuticals. Importantly, for the factor to be set at 1, all items within the basic heading have to abide by this characteristic of domination within the market. These retailers and service providers are leaders in the market and drive many other retailers towards national pricing to remain competitive.

iii *Eurostat guidelines*. Guidance from Eurostat states that list prices are to be used for both cars and motor cycles (covering a total of six basic headings). The actual transaction price is extremely difficult to measure and therefore to ensure comparability across the countries involved in the European Comparison Programme the factor is set as 1.

6.2.2 Basic headings with spatial adjustment factors greater than 1

i. Overall, the results show London to be more expensive for most categories of goods and services (where the factor is less than 1).

ii. As can be seen from Table 2, there are few basic headings where London prices are cheaper than the national average; of the 120 basic headings only 11 (9%) have factors greater than 1 to two decimal places, indicating lower price levels in London than the UK. Refer below. Two of the headings (highlighted), where the factor is greater than 1.1 are explained in more detail.

Table 2: Basic headings where London prices are lower than the national average

Basic Heading	2010 SAF
Sugar	1.01
Therapeutic appliances and equipment	1.01
Kitchen Furniture	1.01
Equipment for sport, camping	1.02
Electricity	1.02
Lamb, mutton and goat	1.03
Other furniture and furnishings	1.03
Small electrical household appliances	1.07
Major household appliances	1.09
Cleaning, repair and hiring of clothing	**1.19**
Passenger transport by air	**1.22**

1. *Cleaning, repair and hire of clothing with a factor of 1.19.*

In 2004 the factor was calculated at 0.98, indicating that it was marginally more expensive in London then elsewhere. There are four items within this basic heading and CPI data was used for one of these items. Higher demand for this service, the large number of London outlets, and the high level of direct competition within this market has had the impact of pushing these prices lower than the UK national average.

2. *Passenger transport by air, with a factor of 1.22.*

In 2004 this basic heading was considered a *special case* and the factor set at 1; indicating that there was no regional price variation. However, for the 2010 survey, it was felt that due to the sheer volume of London air traffic that there would likely be price variation across the regions. Competition is fierce with multiple airlines offering flights to the same destinations across the five London airports pushing prices down. This compares to the regional airports which have limited carriers operating out of the one airport servicing each region. Therefore, for 2010 a decision was made to conduct price collection with a resultant factor of 1.22 indicating that there is indeed regional price variation.

This basic heading has two main categories, regular and low cost transport. Six (out of a total of 23) items were priced under this basic heading and show London as being at the lower end of the price levels for all six items. Three out of the six items show London as having the lowest price.

The methodology for the pricing of air transport was discussed at length by the project team; a decision was made to price from the airport nearest to the sampled location. In some instances this would mean that more than one flight would be involved, particularly for those locations outside of London. For example, you can obtain a direct flight from London Heathrow but from Cardiff you would fly via a second airport, in this instance, either Dublin or Amsterdam. This has obviously impacted on the price levels. Without exception, all non domestic flights that are non direct routes are the most expensive.

6.3 Comparison with the 2004 results

A comparison has been made between the 2004 and 2010 results. Refer to Annex three, *Comparison between 2010 and 2004* for the complete list of basic headings from both surveys. It is important to note that the UK economy has changed during this six year period. The use of the internet and the increased dominance of large retailers are the two most important changes.

Increased access and use of the internet as a mode of purchasing goods and services has made a large difference to UK markets. This has resulted in many large retailers and service providers adopting national pricing, whereby the price for a particular good or service is the same in every outlet of the same company. There are also a number of items where the manufacturer has made the decision to adopt national pricing which is then followed by retailers. This is particularly true of technological items. As a result of increased national pricing, the number of basic headings moving closer to a factor of 1 has increased.

In the past six years the dominance of large retailers across the regions of the UK has increased. This has meant the market share of independent retailers has diminished. These independent retailers would typically be important contributors to regional price variation and with their decline, prices have become more similar across the UK.

6.3.1 Changes from 2004 in the Transport sector

When comparing the two datasets, the most noticeable changes are in the Transport sector. The biggest change between 2004 and 2010 is basic heading *Passenger Transport by Rail*. This had a SAF of 1.03 in 2004 compared with 0.76 in 2010 (a difference of 26%). However, *Passenger transport by air* is converse to this theory where prices are cheaper in London than the rest of the UK. Refer to the following commentary for further explanation.

1. *Passenger transport by rail (26%):* There are twelve items in this basic heading. As expected, there is regional price variation for this item and the SAF of 0.76 for 2010 shows a large variation from the 2004 SAF of 1.03. For 2010 it is more expensive to travel by rail in London than the UK and this aligns with expectations. The ONS Living Costs and Food Survey supports this view. The average weekly expenditure (using a three year average) for London is over twice that of the UK average - £6.9 compared to £2.8.

2. *Passenger transport by road (24%)* There are twelve items in this basic heading with CPI data being used for one item. The Basic heading demonstrates considerable regional variation with the South and London being noticeably more expensive than most other regions. As with the basic heading of 'Passenger transport by rail' the common perception is that road travel in London is more expensive than the UK; the dataset confirms this.

3. *Passenger transport by air (22%):* refer to section *Passenger transport by air,* (page 22), for explanation.

6.3.2 Basic headings that had a factor greater than 1 in 2004 and less than 1 in 2010 and vice versa.

Approximately a fifth (19%) of the basic headings have changed from either being more expensive in London in 2004 to less expensive in 2010 (9) or in the opposite direction (14).

The majority of the 23 basic headings behaving in such a way have only marginal differences between the two years. However, there are a small number where the change is greater than 20%:

i Passenger transport by railway (-26%)
ii Passenger transport by road (-24%)
iii Passenger transport by air (+22%)
iv Cleaning, repair and hire of clothing (+21%)

The changes to the Transport sector are well documented throughout this report. Refer specifically to section 6.3.1 *Changes from 2004 in the Transport Sector.*

Regarding the basic heading relating to Cleaning, repair and hire of clothing, this is covered in section 6.2.2 Basic Headings with Spatial Adjustment factors of >1.

6.4 Additional analysis

Additional analysis was conducted to ensure consistency within the final dataset:

6.4.1 Similar type basic headings

There are certain classes, for example food, clothing, alcohol and tobacco; and furniture and furnishings, where you would expect that SAFs for the basic headings that fall within the same class would be similar. For example you would expect the SAFs for all food basic headings, for example 'Bread' and 'Other bakery products' to be similar to all other food items. Overall, this is case. This is encouraging and helps to confirm the validity of the dataset.

6.4.2 Utilities

The SAFs for the utilities; gas (0.97), water (0.97) and electricity (1.02) are close to 1. Price levels for electricity have changed by +11% and for water by -13% since 2004 while gas remains virtually unchanged. CPI data was used for 2010. The convergence towards a SAF of 1 is in keeping with the use of national suppliers who are providing consistent pricing regardless of region.

6.4.3 Furniture and Clothing

Both of these sectors were challenging in terms of price collection, due in main to the detailed PPP specifications. It was for this reason that CPI data could not be used and why there is variation in the prices. For example, for both clothing and furniture, the specification of Well Known Brand (WKB) could capture many brands from the low end of WKB to the top end and this in itself creates price variation. Branding for both clothing and furniture has been a long-standing issue for Eurostat and for members of the European Comparison Programme (ECP).

7. Lessons learnt and challenges

Conducting a project every six years presents many challenges. These challenges and the lessons learnt will provide a valuable resource to the subsequent production of Spatial Adjustment Factors in 2016 and a worthy consideration for other National Statistical Institutes undertaking a similar collection.

7.1 Size of the collection

Collecting regional prices is logistically a difficult task and while the experience of conducting regular PPP collections provides valuable assistance in developing the approach to producing SAFS, it does not account for challenges presented through the size of the collection. This issue of size presents itself in various ways:

- collecting for a large number of diverse basic headings
- collecting from diverse locations where knowledge of item availability and PPP collector experience is limited and
- employing a large workforce which requires specific knowledge.

Expanding many of the approaches used in the biannual PPP survey collection to the larger SAF collection presents challenges. In the regular PPP survey, conducted in the capital city of London, a high degree of control can be applied to the management of the collection but in the case of the spatial adjustment project this control is greatly reduced due to its size. Different approaches to the management of the collection need to be developed and applied to ensure the survey progresses smoothly.

7.2 Project management

An approach to assist with the size of the project is the application of effective project management strategies. ONS has well entrenched principles and applied practices for undertaking new projects which are useful in approaching a task such as this. Ensuring accurate timetabling and understanding the dependencies of decisions and actions is critical in terms of achieving a satisfactory final outcome. The experience of this project is that ensuring sufficient time is allocated to prepare for the data collection process, the training of collectors and ensuring a good appreciation of roles and responsibilities for all involved is critical to the success of the project.

7.3 Non-representative items

Eurostat provided advice to ONS that it was suitable to exclude non-representative items. ONS decided to adhere as closely as possible to the regular PPP program guidelines and attempt to price non-representative items. Not unexpectedly, this provided difficulties in price collection due to limited regional availability of some items. This in itself was not such an issue and was anticipated, but in planning for future iterations of the project the

impact on the progress of the collection needs to be considered as substantial resource may be wasted looking for items that are not available. Where price collectors are inexperienced in collecting prices for the purpose of PPPs this presents a real risk to successfully gathering sufficient regional coverage across the surveys.

7.4 Effort in reference location

ONS collects prices from ten locations for the ongoing PPP program. The decision was made to have three locations selected for each region. Therefore London had the same number of locations as every other region.

Through analysis of the results additional prices were collected in London outside of the three selected locations to improve coverage and representation of the diversity of the London market. While ONS is comfortable with the final coverage in London consideration in future projects of this nature should be made to replicate the location coverage that is used in the ongoing PPP collection.

7.5 Use of CPI

It was an ambition of this project to maximise the use of CPI data to reduce the burden on actual collection. More than a third of the items included in the collection were sourced directly from CPI data. ONS view this effort to be a success but felt the temptation to use additional CPI data beyond this point needs to consider the impact on the final results. Under current CPI specifications, the use of CPI data in place of direct collection could not be extended any further.

7.6 Documentation of process and results

Conducting this collection every six years places great importance on the effort of keeping an accurate and useful record of the project to assist with future collections. Considerable effort in this project has been made to document the lessons learnt and recommendations for the next time the survey is conducted. Additionally, understanding the analysis and the explanations behind the 2010 data will prove invaluable in 2016 when the changes between the two collections will be assessed. Unfortunately, there was limited detail from the 2004 collection to help guide this current survey. This presented a significant challenge for the 2010 effort.

8. Conclusion

ONS is pleased to present updated spatial adjustment factors for 2010 for the UK. The project has taken twelve months of intensive effort to arrive at the final results.

The 2010 SAFs present a message of increased national pricing and consistency across regional markets. This is in keeping with improved consumer awareness through access to information and alternative outlets such as the internet, and the increased dominance of market leading companies who are typically large in size and have a strong presence across the regions of UK.

This project has been a successful one on many fronts. A particular achievement was the use of CPI data to account for more than 40% of the total items priced. Through the selective use of CPI the project was able to use a much smaller direct collection than in the 2004 survey. In addition to saving considerable resource this also enabled the project team to direct focus to the more difficult aspects of the data collection.

Annex one

UK Location Sampling for Spatial Adjustment Factors 2010

The following locations were sampled for the 2010 survey

Region	Location
Northern	Leeds Manchester City Centre Newcastle upon Tyne city
Midlands	Birmingham Leicester City Centre Nottingham
Southern	Norwich Swindon Reading
Wales	Cardiff Swansea Torfaen
Scotland	Aberdeen Edinburgh Glasgow
Northern Ireland	Belfast Londenderry Coleraine
London	West End Baker Street Knightsbridge (Sloane St)

Annex two

UK Spatial Adjustment Factors 2010

BASIC HEADING	SAF
Rice	0.86
Other cereals, flour and other cereal products	0.93
Bread	0.92
Other bakery products	0.94
Pasta products	0.90
Beef and veal	0.84
Pork	0.97
Lamb, mutton and goat	1.03
Poultry	0.95
Other meats and edible offal	0.91
Delicatessen and other meat preparations	0.94
Fresh, chilled or frozen fish and seafood	0.96
Preserved or processed fish and seafood	0.92
Fresh milk	1.00
Preserved milk and other milk products	1.00
Cheese	0.97
Butter	0.98
Margarine	0.99
Other edible oils and fats	0.95
Fresh or chilled fruit	0.95
Frozen, preserved or processed fruit and fruit based products	0.90
Fresh or chilled vegetables other than potatoes	0.98
Fresh or chilled potatoes	0.96
Frozen, preserved or processed vegetables and vegetable-based products	0.96
Sugar	1.01
Jams, marmalades and honey	0.97
Confectionery, chocolate and other cocoa preparations	0.97
Edible ice, ice cream and sorbet	0.89
Food products n.e.c	0.92
Coffee, tea and cocoa	0.95
Mineral waters	0.95
Soft drinks and concentrates	0.96
Fruit and vegetable juices	0.89
Spirits	0.98
Wine	1.00
Beer	1.00
Tobacco	0.99
Clothing materials	0.84
Men's clothing	0.97
Women's clothing	0.95

BASIC HEADING	SAF
Children's and infant's clothing	0.90
Other articles of clothing and clothing accessories	0.85
Cleaning, repair and hire of clothing	1.19
Men's footwear	0.93
Women's footwear	0.97
Children's and infant's footwear	0.99
Repair and hire of footwear	0.89
Materials for the maintenance and repair of the dwelling	0.91
Services for the maintenance and repair of the dwelling	0.75
Water supply	0.97
Electricity	1.02
Gas	0.97
Liquid fuels	1.00
Solid fuels	0.74
Kitchen furniture	1.00
Bedroom furniture	0.97
Living-room and dining-room furniture	0.85
Other furniture and furnishing	1.03
Carpets and other floor covering	0.99
Household textiles	0.76
Major household appliances whether electric or not	1.08
Small electric household appliances	1.08
Repair of household appliances	0.74
Glassware, tableware and household utensils	0.96
Major tools and equipment	0.88
Small tools and miscellaneous accessories	0.99
Non-durable household goods	0.89
Domestic services	0.88
Household services	0.72
Pharmaceutical products	1.00
Other medical products	0.97
Therapeutic appliances and equipment	1.01
Medical services	0.77
Dental services	0.72
Paramedical services	0.85
Motor cars with diesel engine	1.00
Motor cars with petrol engine of cubic capacity of less than 1200cc	1.00
Motor cars with petrol engine of cubic capacity of 1200cc to 1699	1.00
Motor cars with petrol engine of cubic capacity of 1700cc to 2999	1.00
Motor cars with petrol engine of cubic capacity of 3000cc and over	1.00
Motor cycles	1.00
Bicycles	0.98
Spare parts and accessories for personal transport equipment	0.94

BASIC HEADING	SAF
Fuels and lubricants for personal transport equipment	0.98
Maintenance and repair of personal transport equipment	0.90
Other services in respect of personal transport equipment	0.94
Passenger transport by railway	0.76
Passenger transport by road	0.85
Passenger transport by air	1.22
Passenger transport by sea and inland waterway	1.00
Other purchased transport services	0.77
Postal services	1.00
Telephone and telefax services	1.00
Equipment for the reception, recording and reproduction of sound and pictures	1.00
Photographic and cinematographic equipment and optical instruments	1.00
Information processing equipment	1.00
Pre-recorded recording media	0.98
Unrecorded recording media	0.96
Repair of audio-visual, photographic and information processing equipment	0.74
Games, toys and hobbies	0.96
Equipment for sport, camping and open-air recreation	1.02
Gardens, plants and flowers	0.81
Pets and related products	0.92
Veterinary and other services for pets	0.84
Recreational and sporting services	0.75
Photographic services	0.93
Other cultural services	0.91
Books	0.99
Newspapers and periodicals	1.00
Miscellaneous printed matter, stationery and drawing materials	0.95
Restaurants services whatever the type of establishment	0.96
Pubs, bars, cafes, tea rooms and the like	0.93
Canteens	0.97
Accommodation services [4]	0.79
Hairdressing salons and personal grooming establishments	0.86
Electric appliances for personal care	0.97
Other appliances, articles and products for personal care	0.93
Jewellery, clocks and watches	0.99
Other personal effects	0.88
Other services n.e.c.	0.86

[4] A separate Spatial Adjustment Factor survey was conducted at the time of the actual PPP Transport, Restaurants and Hotels consumer survey for Accommodation Services in June 2010. The SAF for this heading has already been delivered to and endorsed by Eurostat. The SAF shown above is the result of that survey.

Annex three

Comparison of Spatial Adjustment Factors 2010 and 2004

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Rice	0.86	Rice	0.94	-0.08
Other cereals, flour and other cereal products	0.93	Other cereals, flour and other cereal products	0.98	-0.05
Bread	0.92	Bread	0.93	-0.01
Other bakery products	0.94	Other bakery products	0.96	-0.03
Pasta products	0.90	Pasta products	0.96	-0.06
Beef and veal	0.84	Beef and veal	0.95	-0.11
Pork	0.97	Pork	0.95	0.01
Lamb, mutton and goat	1.03	Lamb, mutton and goat	0.97	0.05
Poultry	0.95	Poultry	0.98	-0.02
Other meats and edible offal	0.91	Other meats and edible offal	1.03	-0.12
Delicatessen and other meat preparations	0.94	Delicatessen and other meat preparations	1.08	-0.15
Fresh, chilled or frozen fish and seafood	0.96	Fresh, chilled or frozen fish and seafood	0.94	0.02
Preserved or processed fish and seafood	0.92	Preserved or processed fish and seafood	0.98	-0.05
Fresh milk	1.00	Fresh milk	0.98	0.01
Preserved milk and other milk products	1.00	Preserved milk and other milk products	1.03	-0.03
Cheese	0.97	Cheese	0.96	0.00
Butter	0.98	Butter	0.98	0.00
Margarine	0.99	Margarine	0.96	0.02
Other edible oils and fats	0.95	Other edible oils and fats	0.97	-0.01
Fresh or chilled fruit	0.95	Fresh or chilled fruit	0.99	-0.03
Frozen, preserved or processed fruit and fruit based products	0.90	Frozen, preserved or processed fruit and fruit based products	0.95	-0.05

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Fresh or chilled vegetables other than potatoes	0.98	Fresh or chilled vegetables other than potatoes	1.01	-0.03
Fresh or chilled potatoes	0.96	Fresh or chilled potatoes	1.07	-0.11
Frozen, preserved or processed vegetables and vegetable-based products	0.96	Frozen vegetables	1.01	-0.06
		Dried vegetables	1.01	-0.06
		Preserved or processed vegetables and vegetable-based products	0.96	-0.01
Sugar	1.01	Sugar	0.95	0.06
Jams, marmalades and honey	0.97	Jams, marmalades and honey	0.92	0.05
Confectionery, chocolate and other cocoa preparations	0.97	Confectionery, chocolate and other cocoa preparations	0.96	0.00
Edible ice, ice cream and sorbet	0.89	Edible ice, ice cream and sorbet	0.93	-0.04
Food products n.e.c	0.92	Food products n.e.c	0.97	-0.05
Coffee, tea and cocoa	0.95	Coffee	0.96	-0.01
		Tea and other infusions	0.92	0.03
		Cocoa, excluding cocoa preparations	0.94	0.01
Mineral waters	0.95	Mineral waters	0.87	0.08
Soft drinks and concentrates	0.96	Soft drinks and concentrates	0.95	0.02
Fruit and vegetable juices	0.89	Fruit and vegetable juices	0.95	-0.06
Spirits	0.98	Spirits	0.95	0.03
Wine	1.00	Wine, cider and perry	0.96	0.04
		Fortified and sparkling wine	0.97	0.03
Beer	1.00	Beer	0.97	0.03
Tobacco	0.99	Cigarettes	0.99	0.00
		Other tobacco products	0.99	0.00
Clothing materials	0.84	Clothing materials	0.83	0.01
Men's clothing	0.97	Men's clothing	0.94	0.03

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Women's clothing	0.95	Women's clothing	0.96	-0.01
Children's and infant's clothing	0.90	Children's clothing	0.93	-0.03
		Infant's clothing	0.99	-0.08
Other articles of clothing and clothing accessories	0.85	Other articles of clothing and clothing accessories	0.95	-0.09
Cleaning, repair and hire of clothing	1.19	Cleaning, repair and hire of clothing	0.98	0.21
Men's footwear	0.93	Men's footwear	0.94	-0.02
Women's footwear	0.97	Women's footwear	1.00	-0.03
Children's and infant's footwear	0.99	Children's and infant's footwear	0.94	0.05
Repair and hire of footwear	0.89	Repair and hire of footwear	0.95	-0.06
Materials for the maintenance and repair of the dwelling	0.91	Materials for the maintenance and repair of the dwelling	0.99	-0.08
Services for the maintenance and repair of the dwelling	0.75	Services for the maintenance and repair of the dwelling	0.78	-0.02
Water supply	0.97	Water supply	1.12	-0.14
		Sewerage collection	1.45	-0.48
Electricity	1.02	Electricity	0.92	0.10
Gas	0.97	Gas	0.96	0.01
Liquid fuels	1.00	Liquid fuels	0.99	0.00
Solid fuels	0.74	Solid fuels	0.75	-0.01
Kitchen furniture	1.00	Kitchen furniture	0.91	0.10
Bedroom furniture	0.97	Bedroom furniture	0.99	-0.02
Living-room and dining-room furniture	0.85	Living-room and dining-room furniture	0.98	-0.13
Other furniture and furnishing	1.03	Other furniture and furnishing	0.88	0.15
Carpets and other floor covering	0.99	Carpets and other floor covering	0.97	0.02
Household textiles	0.76	Household textiles	0.93	-0.17

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Major household appliances whether electric or not	1.08	Refrigerators, freezers and fridge-freezers	1.00	0.09
		Washing-machines, dryers and dishwashers	0.99	0.09
		Cookers, hobs and ovens	0.98	0.11
		Air conditioners, humidifiers and heaters	0.98	0.11
		Other major household appliances	0.99	0.10
Small electric household appliances	1.07	Small electric household appliances	0.99	0.08
Repair of household appliances	0.74	Repair of household appliances	0.73	0.02
Glassware, tableware and household utensils	0.97	Glassware and ceramic ware for households, offices and decoration	0.99	-0.02
		Cutlery, flatware and silverware	0.99	-0.02
		Non-electric kitchen utensils and household articles	0.98	-0.01
Major tools and equipment	0.88	Major tools and equipment	0.90	-0.01
Small tools and miscellaneous accessories	0.99	Small electric accessories	0.95	0.05
		Hand tools, garden tools and other miscellaneous accessories	0.89	0.10
Non-durable household goods	0.89	Household cleaning supplies	0.96	-0.07
		Other non-durable household articles	1.01	-0.12
Domestic services	0.88	Domestic services	0.75	0.12
Household services	0.72	Laundry and dry-cleaning	0.75	-0.03
		Other household services	0.75	-0.03
Pharmaceutical products	1.00	Pharmaceutical products	0.98	0.02
Other medical products	0.97	Other medical products	0.97	0.00

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Therapeutic appliances and equipment	1.01	Eye-glasses and contact lenses	0.96	0.05
		Other therapeutic appliances and equipment	0.97	0.04
Medical services	0.77	Medical services	0.80	-0.03
Dental services	0.72	Dental services	0.80	-0.08
Paramedical services	0.85	Services of medical analysis laboratories and X-ray centres	0.80	0.05
		Services of nurses and midwives	0.75	0.10
		Other paramedical services	0.75	0.10
		Nursing homes	0.93	-0.09
		Other in-patient hospital services	0.93	-0.09
Motor cars with diesel engine	1.00	Motor cars with diesel engine	1.00	0.00
Motor cars with petrol engine of cubic capacity of less than 1200cc	1.00	Motor cars with petrol engine of cubic capacity of less than 1200cc	1.00	0.00
Motor cars with petrol engine of cubic capacity of 1200cc to 1699	1.00	Motor cars with petrol engine of cubic capacity of 1200cc to 1699	1.00	0.00
Motor cars with petrol engine of cubic capacity of 1700cc to 2999	1.00	Motor cars with petrol engine of cubic capacity of 1700cc to 2999	1.00	0.00
Motor cars with petrol engine of cubic capacity of 3000cc and over	1.00	Motor cars with petrol engine of cubic capacity of 3000cc and over	1.00	0.00
Motor cycles	1.00	Motor cycles	1.00	0.00
Bicycles	0.98	Bicycles	0.93	0.05
Spare parts and accessories for personal transport equipment	0.94	Spare parts and accessories for personal transport equipment	1.00	-0.06
Fuels and lubricants for personal transport equipment	0.98	Fuels and lubricants for personal transport equipment	1.00	-0.01
Maintenance and repair of personal transport equipment	0.90	Maintenance and repair of personal transport equipment	0.99	-0.09
Other services in respect of personal transport equipment	0.94	Other services in respect of personal transport equipment	0.83	0.11

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Passenger transport by railway	0.76	Local passenger transport by railway	1.03	-0.27
		Long-distance passenger transport by railway	0.92	-0.16
Passenger transport by road	0.85	Local passenger transport by bus	1.12	-0.27
		Local passenger transport by taxi	0.78	0.07
		Long-distance passenger transport by road	1.20	-0.34
Passenger transport by air	1.22	Passenger transport by air	1.00	0.22
Passenger transport by sea and inland waterway	1.00	Passenger transport by sea and inland waterway	1.00	0.00
Other purchased transport services	0.77	Other purchased transport services	0.78	-0.01
Postal services	1.00	Postal services	1.00	0.00
Telephone and telefax services	1.00	Telephone and telefax services	1.00	0.00
Equipment for the reception, recording and reproduction of sound and pictures	1.00	Television sets and video recorders	1.01	-0.01
		Radios, CD-players and other electro-acoustic devices	0.98	0.02
Photographic and cinematographic equipment and optical instruments	1.00	Photographic and cinematographic equipment and optical instruments	0.99	0.01
Information processing equipment	1.00	Information processing equipment	0.98	0.02
Pre-recorded recording media	0.98	Pre-recorded recording media	1.00	-0.02
Unrecorded recording media	0.96	Unrecorded recording media	0.98	-0.02
Repair of audio-visual, photographic and information processing equipment	0.74	Repair of audio-visual, photographic and information processing equipment	0.73	0.02
Games, toys and hobbies	0.96	Games, toys and hobbies	0.97	-0.02

BASIC HEADING 2010	SAF 2010	BASIC HEADING 2004	SAF 2004	Differences
Equipment for sport, camping and open-air recreation	1.02	Equipment for sport, camping and open-air recreation	1.02	0.00
Gardens, plants and flowers	0.81	Gardens, plants and flowers	1.04	-0.23
Pets and related products	0.92	Pets and related products	0.98	-0.06
Veterinary and other services for pets	0.84	Veterinary and other services for pets	0.73	0.10
Recreational and sporting services	0.75	Recreational and sporting services	0.79	-0.03
Photographic services	0.93	Photographic services	0.99	-0.06
Other cultural services	0.91	Other cultural services	0.95	-0.04
Books	0.99	Books	0.98	0.01
Newspapers and periodicals	1.00	Newspapers and periodicals	0.99	0.01
Miscellaneous printed matter, stationery and drawing materials	0.95	Miscellaneous printed matter, stationery and drawing materials	0.95	0.00
Restaurants services whatever the type of establishment	0.96	Restaurants services whatever the type of establishment	0.95	0.01
Pubs, bars, cafes, tea rooms and the like	0.93	Pubs, bars, cafes, tea rooms and the like	0.96	-0.02
Canteens	0.97	Canteens	1.00	-0.03
Accommodation services	0.79	Accommodation services	0.74	0.05
Hairdressing salons and personal grooming establishments	0.86	Services of hairdressers and the like for men	0.78	0.08
		Services of hairdressers and the like for women	0.78	0.08
Electric appliances for personal care	0.97	Electric appliances for personal care	1.00	-0.03
Other appliances, articles and products for personal care	0.93	Other appliances, articles and products for personal care	0.97	-0.03
Jewellery, clocks and watches	0.99	Jewellery, clocks and watches	0.93	0.06
Other personal effects	0.88	Other personal effects	0.94	-0.06
Other services n.e.c.	0.86	Other services n.e.c.	0.78	0.08

Annex four

Locations selected for the SAF backcheck