



Central Statistics Office

An Phríomh-Oifig Staidrimh

Consumer Price Index

Introduction of Updated Series

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Chapter 1 Introduction

1.1 Overview

This manual describes the 5 yearly updating, of the Consumer Price Index (CPI) and the procedures applied by the Central Statistics Office (CSO) to produce the CPI, the Harmonised Indices of Consumer Prices (HICP) and associated price indices.

This manual is designed for users who wish to know the concepts and statistical methods underlying the different indices and how the data are collected. While it does not attempt to go into every detail, which would require a publication many times the size of this one, it will address many of the questions that the CSO is usually asked about consumer price indices' methodology and practice.

This manual is mostly written in terms of the CPI but most of the methods and procedures in Chapter 2 to 7 are also applicable to the HICP. The two indices are calculated from the same underlying price data, although they differ in a number of respects. These differences are described in Chapter 8.

1.2 Description and definition of the CPI

All the goods and services that consumers purchase have a price and that price may vary over time. Consumer price indices are designed to measure such changes. A useful way to understand the nature of these indices is to imagine a very large shopping basket comprising of a fixed set of goods and services bought by a typical private household. The quantity of each item in this basket is proportional to the average amount purchased by all private households in the country as determined by the Household Budget Survey (HBS). As the prices of individual items in this basket change, the total cost of the basket will change - the consumer price index measures the change from month to month in this total cost.

No two households spend their money in exactly the same way. Each household's or person's experience will be different. The CPI and HICP are measures of average inflation, based on average household expenditure on the items in the shopping basket.

The CPI is technically defined as an *average measure* of *change* in the prices of *goods and services* bought for the purpose of *consumption* by all *private households* in the country and by *foreign tourists* on holiday in Ireland.

There are several important points to note in this definition:

- *average measure*: a single figure that combines, or averages, all of the price changes covered.
- *change*: its purpose is to measure how prices change over time, not absolute levels of prices.
- *goods and services*: it does not just measure price change for essentials like food, heating and clothing but a wide variety of items purchased by most households.
- *consumption*: not for the purpose of investment. Also, because they are not consumed, savings and direct taxes are excluded (section 1.8.3).
- *private households and foreign tourists*: it measures price changes affecting private households, but excludes price changes that only affect businesses or Government. People living in institutions are also excluded but foreign tourists spending money in Ireland are included (section 1.8.2). This coverage is referred to as the domestic concept.

1.3 CPI is not a cost of living index

The CPI measures price change. It is specifically designed *not* to take into account changes made by households to their pattern of expenditure (e.g. switches from expensive meat cuts to cheaper cuts, or vice versa) in response to changes in prices, income levels, family composition, tastes, consumer preferences or market conditions. Furthermore, payments such as income tax and social insurance contributions, which determine disposable income, are not covered.

The CPI is a price index, not a cost of living index. However, the most important factor determining changes in the cost of living is the extent to which prices of consumer goods and services vary. It is only this particular aspect of the cost of living, which is measured by the CPI.

1.4 Historical background

Despite continual changes in consumer tastes and preferences, and in the range of goods and services available on the market, household purchasing patterns generally change slowly over time. It is this relative stability in the pattern of household purchases which permits the use of fixed weighting patterns in the compilation of the CPI.

However, the basket of goods and services and the index weights must be periodically updated if they are to continue to be representative of current expenditure patterns. Eleven different weighting bases have been used to date in the compilation of the index since the foundation of the State in 1922. The main features of the earlier index series are briefly described in Appendix 1. Since 1996 major updates or rebases have been undertaken on a five-year cycle.

1.5 Updating and rebasing

From January 2017 onwards, the CPI will be published to base mid-December 2016 as 100 using weights derived from the results of the 2015/2016 HBS. Indices for the previous base periods continue to be calculated and made available.

The sample of goods and services surveyed by the CPI and the retail outlets and businesses where they are priced throughout the country have also been updated to ensure that they continue to be representative of current consumer tastes, purchasing practices and retailing structures.

1.6 Changes made in current

The following are the main changes made in the current updating:

Updating of the sample of goods and services priced

The representative sample of goods and services covered by the index is updated at each rebasing to ensure that it continues to be representative of consumer tastes and purchasing practices. In the 2011 base index, there were 632 item headings covering a comprehensive range of consumer goods and services. Water supply and sewage collection were added in January 2015 bringing the item headings to 634. The CSO commenced a review of the coverage of goods and services during 2016. This review process involved a significant amount of research. This research combined with results from the 2015/2016 HBS allowed a comprehensive update to be undertaken. In reviewing the coverage of goods and services, 30 new item headings were added while 53 item headings were removed. Also, 4 existing item headings had their definition extended to include a broader range of items. In addition, 5 existing items were split into 12 more specific item headings and 6 existing items were combined together to make 3 new item headings. Consequently, the updated CPI basket contains 615 item headings as of December 2016.

A full list of all items added, deleted or modified is contained in Appendix 2 and the full list of 615 item headings is contained in Appendix 3.

Updating of weights

The item heading weights were updated based on the results of the 2015/2016 HBS. This was done to ensure that the relative importance of the different divisions in the CPI is in line with current consumer spending behaviour. See Chapter 5 for more detail.

Updating of the sample of locations

Prices are collected for the CPI in 84 cities and towns across the State. There is at least one pricing location in each county. During the rebase, the sample of locations was reviewed with three main considerations. The first consideration was population. The overall sample of locations is divided into 5 areas, namely:

- Dublin
- South West region
- Border, Midland and West regions
- Mid-West and Mid-East regions
- South East region

While prices are collected in Dublin and all of the regional cities (Cork, Limerick, Waterford and Galway), a sample is taken within the towns with population between 10,000 and 20,000, between 5,000 and 10,000 and less than 5,000. The three categories of towns were reviewed based on the preliminary results of the 2016 Census of Population. The second consideration was geographical location. The sample was reviewed at county, region and State level to ensure good geographical coverage was maintained. Finally, the sample was reviewed with regard to representation of shopping locations.

This effort ensures that the sample continues to be representative of population and shopping behaviour trends.

Updating of the sample of outlets

Minor adjustments were made to the existing panel of retail outlets in which prices were surveyed to ensure that it remained representative of retail distribution structures (e.g. inclusion of new shopping centres and the increase in the proportion of supermarkets).

1.7 Uses of the CPI

The CPI is used in many ways by the Government, businesses, society at large and internationally. The uses fall under three broad headings.

1.7.1 Macro-economic indicator

A measure of inflation

There is no single definition of the word 'inflation'. However, most consumers might think of inflation as a fall in the value of money reflecting a more or less continuous increase in the price of the goods and services that they purchase. Simplistically therefore, inflation can be thought of as the amount of extra money needed in period y to purchase the same basket of goods and services purchased with a given sum of money in an earlier period x .

Prices may also fall. For example, overall prices, as measured by the CPI, were lower than their value 12 months earlier (i.e. negative annual inflation) from December 2014 to July 2015.

The amount of money needed to purchase a fixed basket of goods and services is also known as the **internal purchasing power of the currency**, which can be expressed in two ways. Firstly, it is the amount of money needed in period y to purchase the same basket of goods and services that one Euro could purchase in an earlier period x . Conversely, it is the amount of money needed in an earlier period x , which could buy the same basket of goods and services that one Euro purchases in period y .

It is also generally accepted that it is desirable for any society to measure some concept of its inflation. A fall in the value of money over time affects most households and persons, through the purchasing power of their wages, the 'real' value of their savings and so on. Economists regard measures of inflation as vital tools for monitoring the economy.

For international comparisons

A variant of the CPI is used to compare Irish inflation with that of other countries. Consumer price inflation is a convergence criterion given in the Maastricht treaty as a pre-requisite for joining the proposed European Monetary Union (EMU). However, problems arise because definitions and methodology vary between countries. In particular, the treatment of housing costs varies markedly between countries, so they are often excluded for international comparison purposes. For the requirements of the convergence criteria, countries in the European Union (EU) have developed a HICP to improve inflation comparisons. However, the HICP is not intended to replace the CPI for domestic use. The HICP is described in more detail in Chapter 8 of this publication.

Deflation of expenditure

For many purposes, comparisons over time are more useful when the effect of price changes is eliminated. For instance, estimates are made of gross domestic product (GDP) and its main components in each period and re-valued at the average prices in a selected year (called the ‘base year’). The CPI and its components are used to adjust current levels of consumers’ expenditure and other economic series to produce a constant price series. This is typically done by deflating estimates of expenditure at current prices by appropriate price indices, derived from the CPI.

1.7.2 Income adjustment

Indexation of tax allowances: Some tax allowances and thresholds are revised annually in line with changes in the CPI. For progressive taxes, inflation means that Revenue takes a growing share of a person’s income as increased wages raise them from a lower to a higher tax bracket. This tendency is known as *fiscal drag*; to offset this, the Minister of Finance frequently raises the tax threshold to take account of changes to the CPI. Conversely, for specific taxes (i.e. taxes levied per unit of a commodity irrespective of price) such as excise duty, inflation will reduce the real tax burden. This tendency is known as *fiscal boost* and as a result, excise duties are often increased in line with inflation.

Indexation of incomes: The change in the CPI is an important factor in wage bargaining; some pay agreements explicitly link pay rises to the CPI.

Indexation of pensions and benefits: Many State benefits and some occupational pensions are revised in line with changes in the CPI.

1.7.3 Price adjustment

Private contracts: Many contracts link payments due, such as rent, to the change in the CPI.

Other price regulation: Many pieces of legislation refer to the CPI as a way of adjusting prices, e.g. changes in the environmental levy on plastic bags are linked to the CPI.

1.8 Scope and coverage of the CPI

The scope and coverage of the CPI has been defined as follows:

Scope: All monetary transactions incurred by households and foreign tourists on consumption expenditure on the economic territory of Ireland.

Coverage: Those transactions within the scope, which it is possible to identify and measure in practice. This is determined by the expenditure divisions for which weights are compiled.

The different elements of the scope and coverage are outlined below:

1.8.1 Geographical

The whole of the State.

1.8.2 Reference population

Since November 1975, the CPI weighting has been representative of the expenditure patterns of all private households in the State. These households include over 97 per cent of the total population. With effect from January 2002 the coverage of the CPI was extended to include the expenditure of foreign tourists within Ireland. The CPI weights do not reflect the expenditure of persons resident in institutions and other non-private households such as business and commercial enterprises.

1.8.3 Expenditure items

These are the goods and services bought by the reference population (private households and foreign tourists in Ireland) for the purposes of consumption. Thus expenditure for savings and investment purposes, direct taxes, national insurance contributions, cash gifts are excluded from the scope of the CPI. Other expenditure included in the scope but excluded from the coverage is expenditure on illegal transactions (e.g. narcotics).

House purchases could represent the acquisition of a major capital asset (investment) rather than consumption, so purchase without a mortgage and capital repayments of a mortgage are excluded. Mortgage interest payments are included, since for most homeowners they are the best measure of the shelter cost of utilising their dwelling. Major home improvements, such as building an extension, are capital investments and so are excluded but re-decoration and maintenance are included.

Most capital goods other than houses are included, such as cars, furniture and large electrical goods.

The CPI measures the price of goods and services paid for by consumers. Anything completely free at the point of consumption is outside the scope of the CPI, even if consumers have paid for it indirectly by taxes or social insurance payments. For example, State education and visits to doctors under the medical card scheme are free, and so are excluded. For some goods and services provided or partly paid for by the State, a charge is made at the point of consumption, such as the supply of prescription medicines and dental treatment under the medical card scheme. These charges are included in the CPI, but not the full economic cost of the goods or services. When deriving the weights, again only the costs paid by the consumer at point of delivery are included.

1.8.4 Transaction prices

The prices used in the calculation of the CPI should reflect the cash prices typically paid by the reference population for the goods and services within the scope of the CPI.

Consumption expenditure can be measured in three ways:

Acquisition means that the total value of all goods and services delivered during a given period, whether or not they were wholly paid for during the period, is taken into account.

Use means that the total value of all goods and services consumed during a given period is taken into account.

Payment means that the total payments made for goods and services during a given period, whether or not they were delivered, is taken into account.

For practical purposes, these three concepts cannot be distinguished in the case of non-durable items bought for cash and they do not need to be distinguished for many durable items bought for cash. The distinction is important for purchases financed by some form of credit, notably major durable goods, which are acquired at a certain point of time, used over a considerable number of years, and paid for, at least partly, sometime after they were acquired, possibly in a series of instalments. Housing costs paid by owner-occupiers are an obvious example.

The difference between the three concepts of consumption is not just a matter of timing. If payment follows acquisition, interest may be charged on top of the equivalent of the cash price.

When use extends over many years, the value of this use will reflect the price level of those years, not the price at the date of acquisition.

Which concept should we use?

Which concept is preferred depends on the uses of the CPI. If the main use is as a general indicator of inflation, an index is required that measures the change in price level of current output. Thus one would not want a retrospective element relating to prices in previous months, so the *acquisition* concept is the best. For indexation of money, incomes and benefits, it may be that the *payment* approach is the most suitable. Alternatively, some may argue that the *use* approach is better, as it is closer to the cost of living, which should take account of the flow of the good or service being consumed.

Since the CPI is used for all of these and other purposes, there is no simple answer as to which definition of consumption should be used. The CPI mostly measures the *acquisition* of goods and services, but there are some notable exceptions where it has been decided that this is not the most appropriate, namely mortgage interest and insurance where a *payment* approach is adopted.

Chapter 2 Sampling procedures

2.1 Introduction

In order to construct a perfectly accurate CPI, one would need to know and record the price of every variety of every good or service available in every retail outlet in the State. This is not feasible in practice, so it is necessary to sample prices. There are four levels of sampling for local price collection: locations, retail outlets within location, items within retail outlets and product varieties.

2.2 Sampling of locations

To ensure the State is fully represented, the country is divided into 8 Nomenclature of Territorial Units for Statistics 3 (NUTS 3) regions. The regions are combined into 5 areas: Dublin; South West; Border, Midland and West; Mid-West and Mid-East and South East regions.

Purposive (or judgmental) sampling is then applied, whereby Dublin and the regional cities (Cork, Limerick, Waterford and Galway) are automatically included in the sample while a sample of towns (locations) are selected from the remaining strata with the constraining factor that each county in the State must be represented. As of December 2016, there are 84 cities and towns in the CPI sample of locations.

2.3 Sampling of retail outlets

A purposive sampling approach is also applied to select the sample of retail outlets within a location (i.e. retail outlets are chosen which are the most popular). As the CPI is intended to reflect only price change, the sample of retail outlets remains the same for as long as possible during the life span of the series. This ensures that extraneous factors unconnected with price change, which would otherwise affect the index calculations, are strictly controlled. However, when appropriate, new retail outlets or locations may be added, e.g. Dundrum Shopping Centre was included in the sample at the time of its opening to ensure ongoing representation. The number of retail outlets in the CPI sample, as of December 2016, is in excess of 3,000.

2.4 Sampling of representative items

It would be both impractical and unnecessary to measure the price change of every variety of every item bought by every household in compiling the CPI. It is necessary to select a sample of specific goods and services that give a reliable measure of price movements for a broad range of similar items. For example, price changes for an electric drill might be considered representative of price changes for other electronic tools. The selection of these representative items in the CPI is purposive.

There are two main inputs into the selection of the sample of goods and services used for the CPI. The first source is the HBS, which gives a detailed breakdown of household spending. This information is supplemented by a large-scale research process. This ranges from contact with retailers, to use of market research and trade magazines. The CSO also collects information through price collectors on actual developments in retail outlets. The CSO uses this full range of information to ensure the basket of goods and services is representative of consumer spending behaviour.

As of December 2016, the CPI basket contains 615 individual goods and services (also known as item headings), which are organised according to the COICOP¹ classification (see Appendix 3). The number of items chosen to represent price changes within each of the twelve COICOP divisions depends both on the weight of the division and the variability of price changes between the various items that could be chosen to represent that division (reflecting, for example, the diversity of products available). Intuitively, it makes sense to select more items in a division where spending is high as this helps to minimise volatility in estimates of price changes for high-weighted divisions and therefore in the CPI overall. If price movements for all possible items in a given division are very similar, it is sufficient to collect prices for only a few items. By contrast, if price movements within a division are very different, a much larger selection of

¹ COICOP/HICP 2000 – Classification of Individual Consumption by Purpose Adapted to the Needs of Harmonised Indices of Consumer Prices (2000)

representative items will be needed to get a reliable estimate of price change for the division as a whole. This explains why a very varied group such as food has a large number of items, whereas a relatively homogenous group such as tobacco contains only 3 items.

Representative items are chosen centrally for the whole of the State. Actual price observations are collected each month in the various pricing locations. Consistent with the principle of a fixed basket, the weight of the 615 goods and services are held fixed over the index reference period while the sample of individual price observations collected may vary.

The detailed contents of the CPI basket, and the ongoing changes to the sample, should not be accorded significance beyond their purpose as representative items. Indeed, within each product grouping, there is usually a point at which the number, choice of items and the precise weights attached to them become a matter of judgement. At this detailed level, it is unlikely that such choices have any significant impact on the CPI overall. For example, a selection of specific household appliances has been chosen to represent spending on small electrical goods, including irons, kettles and food processors. However, other selections would clearly be possible and equally valid.

Examples of typical item descriptions are given below:

- white sliced pan large (800g);
- tinned peas;
- mens 2-piece suit;
- diesel (litre) and
- stout draught – bar (1 pt).

2.5 Selection of products and varieties

For most goods, the selection of products and varieties within retail outlets is purposive. In each retail outlet, the price collectors choose one representative variety from all products matching the specification of each item heading to be priced in that retail outlet. To facilitate this, price collectors can seek assistance from staff in the retail outlet. As it is vital that the same product is priced each month, price collectors must record enough detail about the product, such as size, make and model, to ensure that it is uniquely identified. In practice, a wide variety of brands and products are sampled for each item heading across the different pricing locations. This gives a better representation of the price movements of the item heading in question, than would be realised if a single narrowly defined identical variety was priced in all locations.

In order that the CPI remains representative of consumer spending patterns over time, the selection of specific varieties for which prices are collected in specific locations is reviewed on an ongoing basis although the overall selection of 615 item headings will remain constant.

For example, in the present CPI series, one of the item headings is *tinned peas*. No further specifications are given and individual price collectors are free initially to select any of the different varieties of tinned peas available locally for regular pricing. Over time the price collector may change to a different brand of tinned peas if a particular brand becomes more popular or an existing brand is no longer available. However, at all times the price collector will be asked to collect a price for tinned peas.

The 478 item headings priced locally are organised by NUTS 3 regions. The eight NUTS 3 regions have been combined into 5 pricing areas for CPI administrative purposes.

Chapter 3 Collection of prices

3.1 Methods of price collection

The reference day for pricing was the second Tuesday of each month up to 2010. Since February 2010, prices are collected over a period of more than one working week, i.e. Monday prior to the second Tuesday of the month up to and including the third Tuesday of the month. This is necessary to meet the requirements of Council Regulation (EC) No. 701/2006 regarding the temporal coverage of price collection in the Harmonised Indices of Consumer Prices (HICP).

There are two basic price collection methods: local and centralised.

Local collection is used for 478 of the 615 item headings; prices are collected by approximately 80 price collectors in retail outlets in 84 locations around the country. Approximately 48,000 quotations are obtained by this method. These item headings account for 50.4% of the total weight of the CPI basket.

Centralised collection is used for 137 of the 615 item headings; prices are collected centrally by the CSO with minimal field work. In practice, this involves the use of postal, e-mail and telephone enquiries along with internet price collection. Approximately 3,000 quotations are obtained by this method. These item headings account for 49.6% of the total weight of the CPI basket.

3.2 Local price collection: general procedure

The collection is undertaken by a specially recruited team of price collectors, with prices collected using Electronic Data Capture (EDC) smartphone devices. In 2016, the EDC system was modernised to take advantage of new technology for mobile data collection. The new system allowed the implementation of new data checks by the price collectors in the field and more efficient transfer of information to CSO.

If a particular product becomes unavailable, then the price collector substitutes an alternative representative product in its place. If a particular retail outlet can no longer be used (e.g. goes out of business), the price collector replaces it with a similar popular retail outlet in the same area. The EDC system is designed to allow the detailed specification of the new product or retail outlet to be recorded. The relevant prices are excluded from the index calculations until two consecutive monthly quotations are again obtained for the substitute product or retail outlet.

3.2.1 Prices observed

The price used is that for a cash transaction. This means that charges for paying by instalments or for use of credit cards, and discounts for paying by direct debit etc., are ignored. Value Added Tax (VAT) and compulsory service charges are included.

3.2.2 Treatment of price changes - indicator codes

Price collectors are required to record if there are any special features associated with the prices recorded. Certain indicator codes are used:

1. sale or special offer (explains a reduction in price);
2. multiple offer, where there is no change in the actual price, but the quantity has increased. For example, 2 for the price of 1, 20% extra free etc.;
3. recovery from sale/special/multiple offer (explains a price jump); is not necessarily the same price as before the sale/special/multiple offer;
4. verified, when a change in price has been rechecked and verified;

5. changed product or variety but not significantly different from the product or variety which was previously priced, i.e. comparable product;
6. non-comparable product or variety to that which was previously priced;
7. new item introduced is on sale;
8. item is temporarily unavailable;
9. item is not available in this area;
10. retail outlet is under new ownership.

A price should only be recorded if the exact product being priced is on display or in stock at the retail outlet.

3.3 Centralised price collection: general procedure

Central price collection is typically used where national pricing applies (e.g. health insurance), or where local price collection would not be suitable. There are 137 item headings for which prices are collected centrally through postal, e-mail, telephone enquiries along with internet price collection (see Appendix 4 for full list). All 137 item headings are used in the compilation of the CPI, and 128 item headings are used in the compilation of the HICP (e.g. mortgage interest is excluded from the HICP).

Price data are collected from one central source (e.g. trade associations, Government departments etc.) whenever possible. Where appropriate, prices are collected from a sample of retailers/service providers for the good or service in question. Frequency of enquiry varies across the range of item headings with monthly, quarterly or annual price collection being used as appropriate. In some limited number of cases, price changes will be included as necessary. Typically, this would apply to services where prices are set by a service provider and change at a particular pre-announced point in time, e.g. electricity.

Example: Motor car insurance

This survey is carried out on a monthly basis. Motor insurance companies are surveyed for prices for specifically identified insurance policies e.g., fully comprehensive for a person of a particular age and gender in a specific location with a particular model and year of car.

The previous month's premium (price) is supplied on the survey form sent to the companies, who, in turn, record the current month's premium. Once the price data has been validated, the data is used in conjunction with weights data to compile a motor car insurance index.

Chapter 4 Validation procedures

The following validation checks are applied to all prices collected locally.

4.1 Data checks

The most important data check is price change. The price recorded is compared (i.e. validated) with the price for the same product in the same retail outlet in the previous month. Prices outside the relevant price range are re-checked by CPI staff to determine inclusion or exclusion for the purpose of the CPI compilation for that month.

Once the price data is correct and complete, preliminary item indices are calculated using the prices, which passed the data checks, plus those that have been manually accepted. These preliminary item indices are in turn checked to ensure price changes have been correctly reflected in the calculations.

Both micro- and macro-edits are applied, checking price ratios for individual items, elementary aggregates and higher levels of aggregation.

4.2 Field audits

To check that price collections are carried out correctly, CPI personnel carry out monthly quality audits on individual local price collections. There are two types of quality audits. The first involves an auditor accompanying a price collector on a price collection. The second consists of audits, which take place no later than three days after the price collection (back check), where an auditor repeats the price collection to determine if the price collector has collected the correct prices. Multiple locations are visited each month and price collectors do not know in advance which locations will be chosen for the quality control checks.

4.2.1 Supervised visits

An auditor who accompanies a price collector on a price collection examines the price collection to ensure that

- suitable products are chosen;
- the correct indicator codes are used;
- the correct prices are recorded;
- the prices are collected in the correct retail outlet type;
- the price is only recorded when the correct variety is available; and
- any need for training of a price collector is identified, to help improve the quality of the price collection.

4.2.2 Back check of price collection

The back check quality audit involves an auditor visiting the retail outlet where the price was recorded by the price collector, and checking to see that the price was correctly recorded.

The back check quality audit covers accuracy of price collection and other aspects (e.g. the quality of item descriptions and the use of indicator codes) which are important to sustain the comparability of price collection across months and to better inform CPI staff involved in the validation process.

Chapter 5 Weights

5.1 Introduction

The CPI measures the change in the cost of a representative basket of goods and services. This involves weighting together aggregated price indices for different categories of goods and services so that each takes its appropriate share within household budgets. For instance, as most people spend far more on electricity than on processed fruit, a price rise for electricity must have more effect on overall price rises than a similar-sized increase for processed fruit. At the lowest level therefore, each elementary aggregate (see section 6.2.1) should receive a weight equal to the proportion of total expenditure by households on goods and services represented by that aggregate.

Since 2012 these weights are updated annually using National Accounts data, in particular the Household Final Monetary Consumption Expenditure (HFMCE) data.

5.2 Household Final Monetary Consumption Expenditure (HFMCE)

Household Final Monetary Consumption Expenditure (HFMCE) is expenditure made by households on goods or services for the direct satisfaction of individual needs or wants. It concerns that part of final consumption expenditure which is by households, irrespective of their nationality or residence status, in monetary transactions, on the economic territory of Ireland, on goods and services that are used for the direct satisfaction of individual needs or wants.

Some adjustments were made to this data. For example, estimates of the average household expenditure on tourism expenditure (i.e. package holidays, airfares and boat fares) were adjusted with reference to estimates based on the results of the latest Household Travel Survey (HTS).

The adjusted HFMCE data for 2015 were then updated for price changes up to mid-December 2016 using the percentage changes between 2015 and mid-December 2016 in the indices at 4 digit COICOP level. These updated HFMCE data were then used to allocate December 2016 CPI weights at 4 digit COICOP level.

We then supplemented this National Accounts data with data from the 2015/16 Household Budget survey.

5.3 Household Budget Survey (HBS)

The HBS is a survey of the expenditure patterns of private households based on a representative sample of around 6,800 households. It is currently conducted by the CSO every five years primarily for the purpose of updating the weights used to compile the CPI. The latest HBS undertaken by the CSO refers to the period February 2015 to February 2016.

Using up to date expenditure data ensures that the indices remain representative of current expenditure patterns. Updating is also necessary so that the weights reflect the introduction of new items and the deletion of those items no longer representative.

The sample of households, which participated in the survey provided particulars of household composition, accommodation, facilities and regular household expenses (e.g. rent, electricity and gas expenses, etc.). Individual household members aged fifteen years and over also provided details of their income and regular personal expenditure (e.g. motor car insurance premiums, motor tax, etc.), and maintained detailed records of their day-to-day expenditure over a period of fourteen consecutive days.

The responses from individual households were compiled to give overall average household expenditure for the State for a detailed list of expenditure headings.

This data was used to determine the proportion of the weight to be allocated to the items within each 4 digit COICOP. Each CPI item heading was given an integer weight in parts per hundred so that the sum of the division weights is 100 (see Appendix 3).

Example: The 2015 HFMCE figure for COICOP 01.1.1 (Bread and Cereals) was €1.274 billion. When this and the other 4 digit COICOP figures were price updated to December 2016, this resulted in a CPI weight (December 2016) of 1.77% of the overall basket for COICOP 01.1.1.

The relative weights at item level were then determined using HBS 2015/16 data, which showed that of spending on Bread and Cereals, 4.1% was on rice, 2.1% was on flour and other cereals, and so on. So the resulting item weights (December 2016) are $1.77\% * 4.1\% = 0.07\%$ for rice and so on.

The weights at 4 digit COICOP will be updated each year based on the most recent HFMCE data. The proportions at item level will stay constant until the next rebase and HBS survey. So for example the weight for rice will continue to stay at 4.1% of the annually updated weight for Bread and Cereals until the next rebase and HBS survey.

5.4 Area Weights

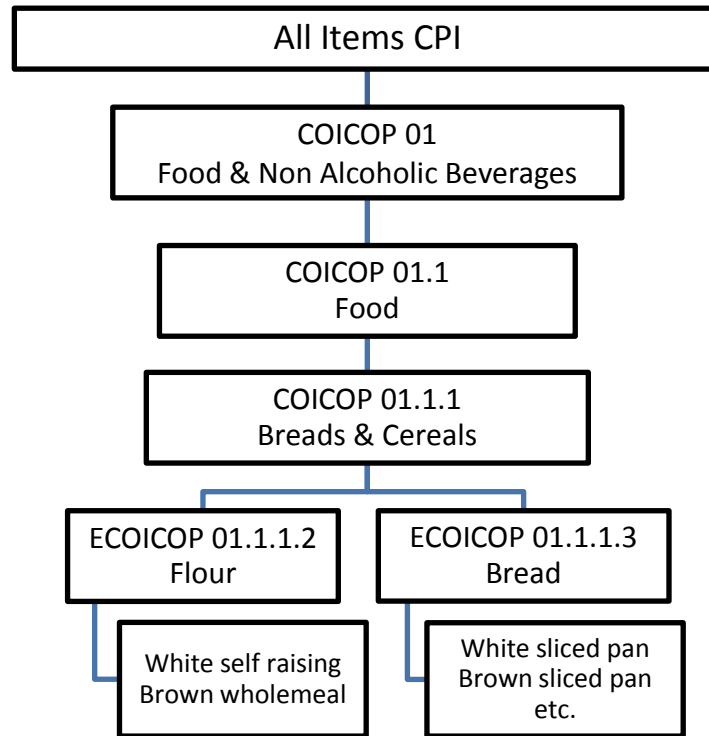
Area weights are used in the compilation of the CPI. The HBS provides average household expenditure by COICOP division (2-digit), group (3-digit), class (4-digit) and NUTS 3 region. The area weights were calculated using HBS data on average household expenditure by NUTS 3 region and the 2016 census preliminary results for population by NUTS 3 region.

Chapter 6 CPI construction

6.1 Structure of the CPI

The CPI is produced in stages, with indices obtained at each stage weighted together to give higher level indices. Figure 6.1 shows how the data are combined together specifically within COICOP 01, Food & Non-Alcoholic Beverages. A similar structure is applied for all other COICOP divisions. At the lowest level there are 615 item headings. These can be combined from 2017 into ECOICOP 5 groups (e.g. Bread) which are in turn combined into COICOP 4, 3 and 2 digit groups. Finally the All Items CPI is the combination of all 615 item headings.

Figure 6.1. Structure of the CPI



6.2 Calculation methodologies

While the same hierarchical structure applies for all item headings, there are some differences in the calculation methodologies used at the lowest level. Specifically, different methodologies are used for the 478 directly priced item headings; as compared to the 137 special inquiries item headings (see Appendix 4 for list of the special inquiry item headings).

6.2.1 Area average price calculation

The first step of the calculation process for the 478 directly priced item headings is the calculation of area average prices. For CPI purposes, the sample of locations is divided into the eight NUTS 3 regions. These regions are combined into 5 CPI pricing areas as follows:

- Dublin
- South West
- Border, Midland and West
- Mid-West and Mid-East
- South East

The prices for each item heading are divided into the five areas. An area average price is calculated as the geometric mean of the prices within the given area, e.g. the average price for 1 litre of low fat milk in Dublin is the geometric mean of the prices for 1 litre of low fat milk collected in the various retail outlets in Dublin. The area average price is technically known as an **elementary aggregate** as it is the lowest level of calculation within the CPI. Each month, an area average price is calculated both for the current month and the previous month based only on matched price observations between the two periods. The technical form of this calculation is explained below:

Geometric Mean

If prices $P_{i,c-1}$ to $P_{n,c-1}$ are obtained in the previous month $c-1$ and matching prices $P_{i,c}$ to $P_{n,c}$ are obtained for the same commodities in the current month c , then we have:

$$GM : \quad I_{c,c-1} = \frac{\sqrt[n]{\prod_{i=1}^n P_{i,c}}}{\sqrt[n]{\prod_{i=1}^n P_{i,c-1}}}$$

The Geometric Mean (GM) is therefore computed for an elementary aggregate by:

1. Multiplying all the prices quotations collected for a particular index variety (e.g. 1 litre of low fat milk) together, and then
2. find the n -th root of the product where n is the number of price quotations.

It is essential that matching prices are used. If, in any month, there is no price corresponding to one in the previous month, then that previous month's price must be excluded from the calculations.

6.2.2 National average price (NAP) calculation

The next step is the calculation of a national average price (NAP) for each of the 478 item headings. This is the weighted average of the area average prices with a different weight applied to each area. Each month, a selection of these NAPS (68 in total) is published (see Appendix 5 for list of item headings for which NAPS are published). Again, each month, a NAP for both the current and previous month is calculated based on matched price observations only.

6.2.3 Item relatives calculation

Directly priced item headings

Item relatives are calculated for the directly priced and special inquiry item headings.

For the 478 directly priced item headings, the item relative is the ratio of the national average price for the current month to the national average price for the previous month (a price relative is the ratio of a price at a given time to the price for the same commodity at another time). This item relative is known as a ratio of averages (RA). The technical compilation of a ratio of averages is described below:

If a national average price $NAP_{i,c-1}$ is obtained in the previous month ($c-1$) and matching national average price $NAP_{i,c}$ is obtained for the same item heading in the current month (c), then we have:

$$RA : \quad I_{c,c-1} = \frac{NAP_{i,c}}{NAP_{i,c-1}} \quad (\text{ratio of averages})$$

Special inquiry item headings

Item relatives are also calculated for the 137 special inquiry item headings. In this case, prices are centrally collected. Item relatives are calculated using either geometric or arithmetic mean formulae as appropriate.

At this point in the calculation process, a full set of 615 item heading price relatives are available. These form the basis for the index calculations as described below.

6.3 Index calculation

The CPI expresses the current cost of a *fixed* market basket of consumer goods and services as a percentage of the cost of the *same* identical basket at the base period mid-December 2016. Since November 1996, the basket has undergone a complete revision every five years. Since the December 2011 rebase, in addition to a five yearly update of the basket, the weights are also updated annually (see Chapter 5).

The CPI is a fixed quantity price index: it measures the change in the price of a basket of fixed composition, quantity and as far as is possible quality. This is often summarised by saying that the CPI uses a *fixed basket*. The index $I_{t,0}$ at time t based on time 0 is a Laspeyres-type or fixed base weight index, being the price of the basket at a given time as a percentage of its price in the base reference period:

$$I_{t,0} = \left(\frac{\sum Q_0 P_c}{\sum Q_0 P_0} \right) \times 100$$

where:

Q_0 and P_0 are the quantity (fixed) and average price respectively, of an index item heading in the base (0) month;

P_c is the average price of the same index item heading in the current (c) month;

Σ represents summation over all index item headings.

A modified version of this formula is used for calculation purposes, namely:

$$I_{t,0} = \left(\frac{\sum (V_{c-1}) \frac{P_c}{P_{c-1}}}{\sum V_0} \right) \times 100$$

where:

V_0 and V_{c-1} are the expenditure value (weight) of an index item heading in the base (0) or previous ($c-1$) month;

P_c and P_{c-1} are the average price of the same index item heading in the current (c) and previous ($c-1$) month;

Σ represents summation overall index item headings.

i.e. the current cost of the fixed quantity of each index item heading (elementary aggregate) is calculated by updating the previous month's cost by the estimated monthly change in its average price. This index is also known as a weighted average of *price relatives*, the weight being the expenditure of an index item heading in the base period. Using the above formula, it is possible to calculate an index for any item heading or combination of item headings, all the way up to and including the All Items CPI.

Chapter 7 Special issues, principles and procedures

7.1 Subsidies and discounts

The prices used in calculating the CPI are those actually paid by households. This may appear simple, but in practice it is difficult to implement in a completely consistent way, and there are several special treatments.

The following guidelines (or principals) are applied to the CPI:

- the CPI reflects the *cash price* commonly charged for goods and services;
- where *subsidies or discounts are available to all potential consumers* (non-discriminatory) the price taken into the CPI should reflect these; and
- where *subsidies or discounts are available only to a restricted group of households* (discriminatory), the price should be measured ‘gross’, i.e. the subsidy or discount is not taken into account. In particular, money off coupons and loyalty cards are ignored.
- If there is a discount for *multiple purchases*, only the price of a single purchase is recorded, i.e. a 50% extra free offer is taken into account whereas a 3 for the price of 2 offer is not. Offers such as ‘50% extra free’ or ‘buy one get one free’ are actually recorded as a price reduction as it is assumed that the price of the original quantity has actually fallen. Where a price reduction on one product is associated with the purchase of another product, this reduction is ignored.
- *Free gifts/extras* such as plastic toys in cereal boxes, ‘send in 20 tokens for a free pen’ and trading stamps are ignored; they are regarded as extras, which may not be wanted by consumers.
- *Sale prices* are recorded if they are temporary reductions on goods likely to be available again at normal prices or end of season reductions. Prices in closing down sales and for special purchases of end of range, damaged, shop soiled or defective goods are not recorded as they are deemed not to be of the same quality as or comparable with, goods previously priced or those likely to be available in future.

7.2 Product substitution, quality adjustments and imputation

One of the more difficult issues in producing the CPI is the accurate measurement and treatment of quality change due to changing product specifications. As a measure of price change alone, the CPI should reflect the cost of buying a fixed basket of goods and services of constant quality. However, products often disappear or are replaced with new versions of a different quality or specification, and brand new products also become available. When such a situation arises, one of the following methods is adopted:

- a. direct comparison;
- b. direct quality adjustment

a. Direct comparison

If there is another product which is directly comparable (that is, it is so similar to the old one that it can be assumed to have the same price in the previous month). For example, an identical garment except that it is a different colour, then the new one directly replaces the old one and its base price remains the same. This is described as “obtaining a replacement which may be treated as essentially identical”, and is equivalent to saying that any difference in price level between the new and the old product is entirely due to price change and not quality differences.

b. Direct quality adjustment

This is the preferred method of dealing with the situation where a replacement product is of a different quality or specification. An attempt is made to place a value on the quality, or specification, difference and the previous month’s price is adjusted accordingly. This section discusses the bridged overlap method. Another method of direct quality adjustment, option costing, can be used when a product changes in specification and it is possible to value separately the components that have changed.

Quality adjustment – bridged overlap

When a specific variety of good or service priced in a retail outlet is no longer available, a replacement must be found in order to continue the measure of price change. Anytime a replacement occurs, the new product’s price may reflect both pure price change and quality change.

When the quality of a substitute item is not comparable with the old item and an overlap price or direct quality adjustment data are not available, a bridged overlap (also known as matched basket) quality adjustment technique is used. Using this technique, no price comparison is made between two varieties when the replacement is brought into the index. The price change between the two observations is imputed as the average change for the other matched price observations for the specific item heading. For a price observation to be brought into the index, it must be available for two consecutive periods.

The following table illustrates the application of the bridged overlap with monthly re-sampling quality adjustment technique in the compilation of the CPI Computer Index for the period May 2014 to July 2014.

Table 1: Example of the application of the bridged overlap method in the calculation of the CPI computer index

	Package Description	May'14 Price	Jun'14 Price	Jun'14 Relative	Jul'14 Price	Jul'04 Relative
1	Packard Bell 15.6 Laptop TM94021	449	449		450	
2	Samsung 15.6 Wide 350V5C Silver	249	249		250	
3	Asus 15.6 Wide Silver 277H	199	199		199	
4	Toshiba 15.6 Widescreen C8050	278	n/a		n/a	
5	Toshiba M50 A 11C	799	799		639	
6	HP 15.6 Wide G62241 Blue	370	370		n/a	
7	Compaq 15.6 Wide CQ58 Black				<i>400</i>	
	Geometric average of all price quotations	349.69	366.11	1.0470	356.05	0.9725
	Recalculated Geometric Average for Jun'14	366.11	366.11	1.0000		
	Recalculated Geometric Average for Jul'14		365.14		345.84	0.9471

Note: The figures in *italic* indicate the introduction of a new product.

For **July 2014**, there are five price quotations for PC packages (i.e. No's 1, 2, 3, 5 and 7) and no quotation for two PC packages (No. 4 and 6). The geometric average price for the five PC packages is €356.05. One can see that PC package No. 7 replaces No. 6 but it is not taken to be comparable. Thus only 4 matched PC packages are available (No's 1, 2, 3 and 5).

To estimate the average change from May'14 to Jun'14 for the computer index, again the bridged overlap technique requires that only the four matched PC packages for both May'14 and Jul'14 are used. The two stages above are followed again:

1. the recalculation of the May'14 average price of the PC packages which becomes €365.14.
2. the average change from May'14 to Jul'14 is then estimated as the average price for PC packages in Jul'14 divided by the recalculated average for May'14 (i.e. € 345.84/ €365.14 = 0.9471).

In this case, one has indirectly adjusted for quality change. The value of the quality change is the difference between the price updated value of the deleted PC package No. 6 (€370 * 0.9471 = €350.43) and the price of PC package No. 7 (€400).

The value of the quality adjustment is €49.57. This means that the price difference of €30 between PC packages No's 6 & 7 has been more than offset by the estimate of quality

improvement between the two PC packages. In this way, one has bridged from one package to another using the prices or price trends of other packages in the sample.

7.3 Owner occupied housing (mortgage interest)

Mortgage interest was first included in the CPI at the November 1975 updating in order to estimate the cost of owner-occupied housing. For a particular mortgage, the interest payment at any given time depends on the rate of interest, which may be fixed, variable or tracker, and on the amount of the mortgage debt still outstanding. The debt outstanding, in turn, depends on the original size of the mortgage, which is linked to the price of the house when the mortgage was taken out and in most cases (i.e. non-endowment) on the age of the mortgage. The fixed expenditure pattern covered by the index reflects the average mortgage interest costs of the full set of mortgages of varying ages which existed in the base period.

As time progresses new mortgages are initiated at current house price levels and old mortgages are terminated early (e.g. house is sold) or paid off. The original loans in these latter instances were quite small because they were entered into when house prices were far lower 20-25 years ago. Because of this, the estimation of changes in mortgage interest costs needs a special type of price indicator adhering as close as possible to the *Laspeyres* concept of a fixed basket as used elsewhere in the index. This is done by estimating, from month to month, the mortgage interest paid by a standard set of households with mortgages of varying ages (i.e. fixed age pattern).

The interest cost for this standard set of mortgages in any month is estimated on the basis of the aggregate debt outstanding for the mortgages of varying ages. This will depend on the house price ruling when the mortgage was taken out, on the percentage advance (assumed constant) and on the amount of interest to be paid for a mortgage of that age (i.e. the amount of interest payable declines over time). In this approach, the monthly change in interest costs reflects both the change in interest rates and the change in estimated house price levels over time. Non interest cost effects are excluded by controlling (i.e. keeping constant) the factors giving rise to them.

Building Society/Bank and Local Authority mortgages are covered in the current index.

The mortgage cost indicator is the product of:

- the index of current interest rates; and
- the index of mortgage debt outstanding for the fixed age pattern of mortgages.

The indicator of mortgage debt outstanding is estimated as the change in the weighted average of house price levels in successive monthly periods, where the relative weights decline with age of mortgage reflecting the reduction in interest payable over time.

In compiling these indicators, the house price levels are estimated using the monthly Residential Property Price Index (RPPI) published by the CSO.

The above described approach is known as a payments approach and is described in section 10.20 of the International Labour Organisation's *Consumer Price Index Manual* (2004).

7.4 Package holidays

The methodology used to measure package holidays in the CPI was revised with the introduction of the mid-November 1996 as 100 series. The previous methodology treated all months' holidays as the same item. This resulted in severe seasonal patterns that did not reflect the experience of consumers - each May the index fell while every August the index rose. This practice also limited the coverage of holiday destinations.

Seasonal baskets approach

The revised methodology, **the seasonal baskets approach**, treats different months' holidays as different items (e.g. January holidays are not considered comparable with May holidays). This means different destinations are priced each month.

As each months' basket is not comparable with another months', they can only be compared to themselves (i.e. February must be compared to February, September with September etc.). This results in a 12 monthly change being calculated for each basket. The monthly change is derived by linking these different items or monthly baskets. This approach is referred to as pricing 'seasonal baskets'.

The prices used for skiing holidays and summer packages are brochure prices only. Obviously, these prices do not reflect the full range of prices presented to consumers. In particular, they do not take into account either possible discounts from travel agents/tour operators or the availability of last minute 'special offers'. However, by using brochure prices only, this allows comparison over time, as discounts or special offers normally have restrictions imposed. Packages to the UK and US are priced via the internet to reflect consumer purchasing behaviour.

Monthly weights

By comparing holidays in January with holidays in January from the previous year, any seasonal distortions are removed. Such comparisons give an accurate 12 monthly change for each monthly basket (i.e. January, February, ..., December). Once the 12 monthly change or relative has been calculated, the baskets must be linked to each other. This link is done by applying *monthly weights*. The monthly weights are derived from expenditure on travel abroad by Irish residents. Business expenditure is excluded as it falls outside the scope of the CPI. Expenditure on visiting friends or relatives etc. is also excluded as these are private travel arrangements. This expenditure is captured by the air fare and boat fare surveys.

As expenditure data is only available on a quarterly basis, the expenditure data was distributed across the months within each quarter using numbers of Irish non-business travellers abroad as the basis for interpolation. These expenditures were then re-scaled to 100 to give a percentage monthly distribution.

The monthly weights are fixed and are not price updated each month. These weights may therefore be thought of as monthly factors or coefficients.

The monthly weights (M) sum to unity:

$$\sum M_{Jan} + \sum M_{Feb} + \dots + \sum M_{Dec} = 1$$

Destination weights

As each month's holidays are treated as different items, an individual basket is constructed for each month. These monthly baskets reflect, not only the different destinations typically visited during each month, but also the changing relative importance of these destinations over the year. This practice allows the coverage of holiday destinations to increase significantly.

For example, while the Canary Islands are a popular destination throughout the year, their relative importance declines during the summer months as other sunshine destinations like Greece and Turkey etc. compete for market share. Other destinations, such as Austria, Italy and Switzerland are very popular and account for a significant proportion of holiday expenditure

during the late winter and early spring months. This is mainly due to the popularity of skiing holidays. By late spring, these skiing resorts are no longer included in the baskets.

The destination weights are constructed from monthly air traffic volumes (i.e. numbers of persons travelling). Only chartered flight volumes are used. Scheduled flights are excluded to avoid double counting, as these flights (i.e. privately arranged travel) are captured by the air fares survey. These volumes not only highlight which destinations should be included in each basket but also the relative importance of these destinations. In order to satisfy the *expenditure weight* criterion, destination volumes are converted to estimated expenditures by applying average prices. These average prices are the average of the most popular resort prices at the base period and are for the most part, based on two people on holiday for a fortnight.

As package holidays to the UK from Ireland are not as popular as tours, some further calculations are required. The basis of the UK weight was *Main Purpose of Journey* surveys taken from scheduled flights.

Calculation of the index

The 12 monthly relative (r) is calculated by comparing the sum of the current (c) price updated destination weights (D) with the previous ($c-1$) price updated destination weights:

$$r = \frac{\left(\sum (P_{c-1} D_0) \frac{P_c}{P_{c-1}} \right)}{\sum P_{c-1} D_0}$$

Where:

P_c and P_{c-1} are the current (c) and previous period ($c-1$) average prices respectively of each destination.

D_0 are the expenditure weights for each destination at the base (0) period.

\sum represents summation over all destination weights for a particular month.

Unlike the monthly weights, the destination weights are price updated each period i.e. the destination weights for each individual monthly basket are price updated once a year.

Linking months

Each month, the appropriate basket is surveyed and the 12 monthly change or relative (r) is calculated as above. To link each month, the appropriate monthly weight or factor (M) is applied to the relative (r) to give the overall monthly change or relative (R).

$$R = 1 + [(r-1) * M]$$

The monthly relative (R) is then applied to the overall *Package Holiday* expenditure weight in the standard way.

It is clear that price changes during the summer months will have a greater impact on the index than changes during the winter months.

7.5 Second Hand Cars

In 2017 a new methodology was introduced for the price collection of Second Hand Cars. The old method, Prices of second hand cars are collected in "The Car Sales Guide" (TCSG) monthly book. TCSG does not give examples of real transactions but prices an average car for sub-models of a given plate category. An indicative mileage is assumed, which is increasing every month for every sub-model. To get the monthly relative, the adjusted price is compared with the actual price of the same sub-model one month before.

The new method that was introduced also uses the TCSG. However, the new methodology uses a natural depreciation method to get the monthly relative.

Example;

Let p_{Apr}^{2010} be the price of the 2010 model in April 2017.

Let p_{Apr}^{2009} be the price of the 2009 model in March 2017.

$$r = (p_{Apr}^{2010} - p_{Apr}^{2009}) / 12$$

is the monthly depreciation rate for the 2010 car in April 2017.

$$\text{Adjusted price } p'_{Apr}^{2010} = p_{Apr}^{2010} + r$$

The adjusted price is compared with the actual price of the same sub-model one month before

Chapter 8 Harmonised Indices of Consumer Prices (HICP)

8.1 Development of the HICP

Harmonised Indices of Consumer Prices (HICP) were developed in the European Union (EU) for the purpose of assessing whether prospective members of the European Monetary Union (EMU) would pass the inflation convergence criterion. It has subsequently acted as the measure of inflation used by the European Central Bank (ECB) to assess price stability in the euro area. One of the main requirements, therefore, was for a measure that could be used to make reliable ‘like-for-like’ comparisons of inflation rates across EU Member States. Such comparisons are not generally possible using national Consumer Price Indices (CPIs) due to differences in index coverage and construction.

The rules underlying the construction of HICP indices for EU Member States are specified in a series of EU Regulations (legal documents). These have been developed by Eurostat (the Statistical Office of the European Communities) in conjunction with the National Statistical Institutes (NSIs) of Member States of the EU. The current framework Regulation was published in 2016 i.e. Regulation (EU) 2016/792 of the European Parliament and of the Council of 11 May 2016 on harmonised indices of consumer prices and the house price index, and repealing Council Regulation (EC) No 2494/95. The framework Regulation is supported by a series of detailed implementing measures.

Many of the methodological developments in the HICP since its introduction in 1996 have also been applied to the CPI. HICPs are not intended to replace national CPIs. These indices are designed expressly for international comparisons within the EU. The NSIs of the Member States and Eurostat have been collaborating closely over the last number of years to ensure comparable standards are applied in the compilation of HICPs.

8.2 Index choice

Eurostat describes the HICP as a Laspeyres-type ‘consumer inflation’ or ‘pure price’ index, “measuring average price change on the basis of the changed expenditure of maintaining consumption patterns of households and the composition of the consumer population in the base or reference period” (Report from the Commission to the Council on Harmonisation of Consumer Price Indices in the European Union, COM (2000)742). ‘Pure’ means that, strictly speaking, only changes to prices are reflected in the index.

Like the CPI, therefore, the HICP measures inflation with reference to the changing cost of a fixed basket of goods and services. The HICP in Ireland is calculated from the same basic price data as the CPI, and uses the same methodology both in compiling and aggregating the component price indices. However, it does differ from the CPI in terms of the coverage and classification of goods and services (see Appendix 6 for details of the differences). The most significant single difference is the exclusion of mortgage interest, as owner occupied housing is currently not included in the coverage of the HICP.

8.3 Reference period

When the HICP was launched it was referenced on 1996=100. It was subsequently re-referenced to 2005=100 in January 2006 and further re-referenced to 2015=100 in January 2016. A change in reference period is always accompanied by a full re-referencing of the retrospective indices back to 1996. For further information see the relevant information note on the CPI Methods page on the CSO website².

The HICP in Ireland is a chain-linked series with links at November 1996, December 1999, December 2000, December 2001, December 2006 and December 2011. It has been annually updated since 2011.

8.4 HICP–Constant tax

Harmonised indices of consumer prices at constant tax rates (HICP-CT) are HICPs where the rates of taxes on products are kept constant in the observation period compared to the reference

² <http://www.cso.ie/en/media/csoie/methods/consumerpriceindex/HICPRefMar2016.pdf>

period, i.e. through time. Hence, in the event of a tax rate change, the difference between the current HICP-CT and HICP would indicate the effect of the tax rate change on price changes assuming tax changes are passed on instantaneously and fully.

Changes in tax rates which enter into force on the 1st day of the month shall be reflected in the compilation of the indices for the same month. Changes in tax rates which enter into force at a later date during the month shall be reflected in the compilation of the indices for the following month.

Coverage and classification of the HICP-CT

- Value added type taxes (VAT)
- Excise duties and special taxes on certain imported products of domestic origin are paid by the producer branch itself
- Taxes on specific services provided by non-resident enterprises to resident units within the economic territory
- Excise duties and consumption taxes (other than those included in taxes and duties on imports)
- Car registration taxes
- Taxes on entertainment
- Taxes on insurance premiums
- Other taxes on specific services: hotels or lodging, housing services, restaurants, transportation, communication, advertising
- Other taxes on products n.e.c

8.5 HICP – Administered prices

The HICP - administered prices (HICP-AP) are a series of inflation indices, which were first released by Eurostat in February 2010. These new indices provide a summary of the development of administered prices (those prices directly set or influenced to a significant extent by the government), and their complement, prices which are not administered.

The HICP-AP is an important tool for analysing the causes of inflation and for forecasting inflation. It should be emphasised that these indices do not provide an exact measure of the development of administered and non-administered prices. In effect, the basic information from which these aggregate measures are derived does not fully distinguish administered and non-administered prices. HICP items which cover more than 50% administered prices are classified as administered

The classification of administered prices is updated on an annual basis. There are no prices which are directly set by government in Ireland but some prices are influenced by government generally through the regulator for that market. See information below on COICOP categories which are administered and the changes that occurred over the last number of years

Fully administered: 04.42 (up to December 2006)

Mainly administered: 04.41 (from January 2015); 04.43 (from January 2015); 04.51 (up to December 2011); 04.52 (up to December 2014); 06.30; 07.31 (from January 2011); 07.32; 07.35 (from January 2011); 08.10; 12.53 (up to December 2008)

8.6 MUICP

Price stability within the euro area is defined by reference to the Monetary Union Index of Consumer Prices (MUICP). The ECB defines price stability as a 'year on year increase in the HICP for the euro area of below but close to 2%'. The HICPs of each member of the euro area are aggregated to calculate the MUICP. The MUICP is a weighted average of each of the countries in the euro area. Each country's share is based on its percentage of the total Household Final Consumption Monetary Expenditure (HFCME) in the euro area. HFCME is defined as:

- that part of final consumption expenditure which is incurred by households, irrespective of nationality or residence status;
- in monetary transactions;
- on the economic territory of the Member State;
- on goods and services that are used for the direct satisfaction of individual needs or wants; and
- in one or both time periods being compared.

Chapter 9 Publication

9.1 Availability The CPI and HICP and associated subindices are first issued in a publication called *Consumer Price Index* at 11am four weeks and two days following the second Tuesday of the reference month with the exception of the December data. There are a number of detailed indices included in the publishing of this release. These indices include more detail about the factors contributing to changes in the percentage change over one month and twelve months for the headline indices. The data is published in electronic format on the CSO's website.

9.2 Revisions Once the CPI indices are published, they are **never** revised. The HICP, on the other hand, is a revisable index although there have been no revisions to date.

9.3 Percentage change between any two months The movement of the CPI, HICP and their subindices are expressed as percentage changes, rather than changes in index points, because index point changes are affected by the level of the index in relation to its base period, whereas percentage changes are not. The example below illustrates the computation of index point and percentage changes.

The Consumer Price Index (All Items base Dec 2016=100) for October 2016 is 100.1 and that for September 2016 is 100.6. Therefore the *index point change* between these two months is

$$100.1 - 100.6 = -0.5 \quad \textit{index point change}$$

To calculate the *percentage change* between these two months, one divides the *index point change* calculated above by the September 2016 index and multiply by 100, i.e.

$$(-0.5 / 100.6) \times 100 = -0.5\% \quad \textit{percentage change}$$

Percentage changes are calculated from the published, rounded indices, and are themselves then rounded to one decimal place.

9.4 Annual averages The annual average index is defined as the arithmetic mean of the twelve monthly indices for the year in question (again using published, rounded indices):

$$I_{12av} = \frac{1}{12} \sum_{t=1}^{12} I_t$$

The annual average percentage change is calculated from the annual average indices, again using rounded data. It is **not** calculated as the average of the annual percentage changes for the twelve months.

9.5 National average prices National average prices (NAPs) are calculated for 68 items (mostly food items) and published each month, one month in arrears. The items are those which are likely to be reasonably homogenous across all retail outlets and over time, so that an average price is reasonably meaningful.

9.6 Rounding policy and the effects of rounding CPI and HICP monthly indices are calculated using maximum precision, and then rounded to one decimal place for publication. All derived statistics – i.e. annual average indices, one, three and twelve month percentage changes - are published rounded to one decimal place. Very occasionally, because of the degree of precision to which decimal fractions are stored electronically, a derived statistic ending with the digit 5 may be rounded downwards.

The CPI approach is transparent in that all derived statistics can be traced back to the published monthly index levels. This is particularly important given the wide range of uses to which the

CPI is put. However, when publishing rounded indices to one decimal place, and then calculating percentage changes from these rounded indices, which are then themselves rounded to one decimal place, some rounding effects can occur.

9.7 Contributions to changes in CPI (All Items)

It is often of interest to estimate the effect of a division or group on the change in the CPI (All Items). The contribution of a component to a change in the CPI (All Items) over a given period of time is defined as the change that would have occurred in the CPI (All Items) if that component had undergone its observed change but all other component indices had remained frozen at their values at the start of the period (and all weights are kept the same). The effect of each component depends on both the size of its change and its weight.

The formula for calculating the contribution of a component to the monthly change in the CPI (All Items) is given below:

Contribution of component i to monthly change in CPI (All Items) =

$$\frac{(I_t^i - I_{t-1}^i)w^i}{I_{t-1}^{all}} \times 100$$

where:

I_t^i = index for component i in month t (current month)

I_{t-1}^i = index for component i in month $t-1$ (previous month)

I_{t-1}^{all} = CPI (All Items) in month $t-1$ (previous month)

w^i = weight (parts per 100) of component i in CPI (All Items)

Contributions can be calculated over any period of time. However, the process is complicated when multiple base periods are involved, as the weights will have changed.

9.8 Index classification

The coverage and classification of the CPI is based on the international classification system for household consumption expenditures known as the ECOICOP (European Classification of Individual Consumption by Purpose). This is a hierarchical classification system comprising: **Divisions (2-digit)** e.g. 01 Food & non-alcoholic beverages, **Groups (3-digit)** e.g. 01.1 Food, **Classes (4-digit)** e.g. 01.1.1 Bread and cereals, and **Sub-Classes (5-digit)** e.g. 01.1.1.2 Flour. The ECOICOP classification system along with the corresponding weights is shown in Appendix 3.

Founded on National Accounts principles, the ECOICOP classification system also defines which transactions constitute household final consumption as opposed to other flows such as taxes, other transfers, or capital and financial transactions. This is the starting point for defining which expenditures, in principle, should be included in the CPI. The broad ECOICOP divisions are listed below:

ECOICOP divisions

01 Food and non-alcoholic beverages

02 Alcoholic beverages and tobacco

03 Clothing and footwear

04 Housing, water, electricity, gas and other fuels

05 Furnishing, household equipment and routine household maintenance

06 Health
07 Transport
08 Communications
09 Recreation and culture
10 Education
11 Restaurants and hotels
12 Miscellaneous goods and services

Special aggregates are also published including *Energy products, Alcohol (alcohol consumed on licensed premises and off-licence sales), Tobacco, CPI excluding Tobacco, CPI excluding Housing, CPI excluding Mortgage Interest and CPI excluding Energy products etc.*

9.9 Linking CPI series with different bases

With each updating, the CPI starts with a new base reference period. For example, the previous series has a reference period of December 2011=100, and covered the period December 2011 to December 2016. The current series has a reference period of December 2016=100 and will cover the period from December 2016 to December 2021 (the date of the next planned updating). It is possible to link these two separate series together at their common month (i.e. December 2016) in order to create a continuous series that will cover the period December 2011 to December 2021.

The following hypothetical example illustrates the method of linking two series in order to produce a continuous series from December 2006 to April 2012 with a base period of December 2011=100.

Period	Dec 2006=100	Dec 2011=100	Dec 2006 Linked to Dec 2011 Base Dec 2006=100
Jan-11	101.7		101.7
Feb-11	102.6		102.6
Mar-11	103.5		103.5
Apr-11	103.9		103.9
May-11	104.0		104.0
Jun-11	103.9		103.9
Jul-11	103.9		103.9
Aug-11	104.1		104.1
Sep-11	104.4		104.4
Oct-11	104.7		104.7
Nov-11	104.7		104.7
Dec-11	104.4	100.0	104.4
Jan-12		99.5	103.9
Feb-12		100.4	104.8
Mar-12		101.4	105.9
Apr-12		101.4	105.9
May-12		101.4	105.9
Jun-12		101.2	105.7
Jul-12		101.1	105.5

The two series are linked by multiplying each of the December 2011=100 based index numbers by the December 2011 index number with a base of December 2006=100 and dividing the result by 100. The resulting continuous series has a base of December 2006=100 and covers the period December 2006 to July 2012.

As of the December 2006 rebase, linking is undertaken using data to full decimal places. Therefore, rounding differences may be found, for example, the July 2012 index was 105.6 when linked using full decimal places and this figure (105.6) was the published figure.

Appendices

Appendix 1 – Previous CPI updating

Despite continual changes in consumer tastes and preferences, standard of living, and in the range of goods and services available on the market, household purchasing patterns generally change slowly over time. It is this relative stability in the pattern of household purchases which permits the use of fixed weighting patterns in the compilation of the CPI. However, these index weights must be periodically updated if they are to continue to be representative of current expenditure patterns. Eleven different weighting bases have been used to date in the compilation of the index since the foundation of the State in 1922. The main features of the earlier index series are briefly described below:

Index with base July 1914 as 100

This was the first official index of consumer prices compiled for the State. It was introduced in respect of March 1922. The expenditure basis represented the purchasing pattern of working class families in 1922 as derived from a Household Budget Inquiry conducted in June of that year. This index was compiled quarterly up to August 1947. The weighting basis was scheduled for revision during the late thirties, but plans for a Household Budget Inquiry necessary for this purpose had to be postponed because of the abnormal pattern of consumer expenditure during the 1939-45 war years and subsequent period. As an interim measure an updated weighting basis was introduced in August 1947 using alternative data sources.

Index with base mid-August 1947 as 100

This second series was titled the *Interim Cost of Living Index (Essential Items)*. It was compiled for each quarter from mid-August 1947 to mid-August 1953. The weighting basis related to the purchasing pattern of non-agricultural employee households. This was estimated from national income and expenditure data combined with the results of the National Nutrition Survey undertaken in 1946. By 1951, consumer expenditure had stabilised to what appeared to be normal post-war patterns and a large-scale urban Household Budget Inquiry was conducted during 1951-52 to provide up-to-date index weights.

Index with base mid-August 1953 as 100

This index series was introduced for mid-November 1953 and was compiled each quarter up to and including mid-November 1968. While the interim index related only to non-agricultural employee households, the weighting basis of the new index extended to *all urban households*. In addition, the coverage of the index was extended to include the full range of consumer goods and services. The former title *Cost of Living Index* was also changed to the present official title *Consumer Price Index* to avoid any possible misunderstanding that the index measured changes in the cost of living rather than price changes.

Index with base mid-November 1968 as 100

This index series was introduced for mid-February 1969 and was compiled each quarter up to mid-November 1975. The weighting basis related to the expenditure pattern of *all urban households* as determined from the results of the 1965-66 Household Budget Inquiry. In addition to the introduction of revised weights, a number of other major updatings of the index were also undertaken. A revised national panel of retail and service outlets representative of the existing retail structure was selected. Prices were collected on both the old and new basis in two separate inquiries with fifteen days intervening during November 1968.

Index with base mid-November 1975 as 100

This index series was introduced for mid-February 1976 and compiled each quarter up to mid-November 1982. The weighting basis of the index was extended to *all households in the country (i.e. urban and rural)* on the basis of the results of the 1973 national Household Budget Survey. No major change was made to the existing panel of local retail outlets in which these items were priced.

Index with base mid-November 1982 as 100

This index series was introduced for mid-February 1983 and was compiled each quarter up to mid-November 1989. The weighting pattern continued to relate to all households in the country based on the results of the 1980 national Household Budget Survey. Other major updatings of the index were also completed. The selection of varieties priced was substantially revised and increased in number from 685 to 722. The selection of local retail outlets in which the prices were surveyed was also extensively overhauled. As with November 1968 updating this necessitated, for continuity purposes, two separate national price collections on the old and new basis, respectively, within fifteen days of each other.

Index with base mid-November 1989 as 100

This index series was introduced for mid-February 1990 and was each quarter up to mid-November 1996. The weighting pattern was based on the results of the 1987 Household Budget Survey. The selection of varieties was reviewed and the number of varieties in the index increased from 722 to 807.

Index with base mid-November 1996 as 100

This index series coincided with the introduction of a monthly CPI. The weighting pattern used in the index was based on the results of the 1994-1995 Household Budget Survey. The selection of varieties was reviewed and their number in the index increased to 985 varieties.

Index with base mid-December 2001 as 100

This index series coincided with the changeover to the Euro and the introduction of the EU Classification of Individual Consumption by Purpose Adapted to the Needs of the Harmonised Indices of Consumer Prices (2000) for the main sectoral analysis of the CPI. The weighting pattern used in the index was based on the results of the 1999-2000 Household Budget Survey. The review of item headings resulted in 613 item headings in the CPI basket of goods and services.

Index with base mid-December 2006 as 100

This index series was introduced for mid-January 2007. The weighting pattern used in the index was based on the results of the 2004-2005 Household Budget Survey. The review of item headings resulted in 616 item headings in the CPI basket of goods and services.

Index with base mid-December 2011 as 100

This index series was introduced for mid-January 2012. The weighting pattern used in the index was based on the results of the 2009-2010 Household Budget Survey. The review of item headings resulted in 632 item headings in the CPI basket of goods and services. This basket was updated in January 2015 to 634 items with the addition of sewage collection and water supply.

Appendix 2 - Changes to the basket of goods and services from December 2016

Replacements - product replaces an already existing product (in brackets)

- TV up to 40" (TV small up to 26")
- TV greater than 40" (TV mid-range 32"-42")
- Potatoes 7.5kg (10kg Potatoes)

Replacements refer to:

where a product has been directly substituted by a corresponding product.

Additions - the new product is brought into the index in addition to the existing products

- Girls' dress
- Single item of cutlery
- Fish ready meals & fish products
- Craft beer, take home bottle
- Candle
- Other products for pets
- Champagne, take home bottle
- Ladies' trainers & runners
- Hake – fresh
- Avocado
- Melon
- Sweet potatoes
- Mat
- Burger & bun - eat in
- Cakes, pastries & other dessert items-eat in
- Pasta & noodles - eat in
- Pizza - eat in
- Soup - eat in
- Children's dry haircut
- Electronic cigarette refills/liquids
- Security services
- Services of medical analysis laboratories & x-ray centres
- Other medical products
- Children's activities
- Streaming services
- Stockbrokers' fees
- E-Readers

Deletions

-the product has been removed due to declining popularity

- Bread and cake mixes
- Fresh fillet of whiting
- Fresh fillet of plaice
- Lamb gigot chops
- Disinfectant-first aid

- Girls skirts
- Crockery combi service set
- Carving knife
- Computer and office furniture
- Ladies body shapers
- Ladies 2 piece suit
- Deep fat fryer
- Ear piercing
- Clock radio
- Smart TVs*
- Home cinema surround sound
- MP4 docking station
- CD(R&RW)
- Film or memory card
- White spirit
- Disposable camera
- Camcorder
- Photo development
- Alteration to trousers
- Gents - wash, cut and blowdry
- Ladies - perm/bodywave
- Library charges
- Other vehicle costs

-the product has been removed from an over covered area of the basket

- Petroleum jelly
- Shoe polish or liquid
- Matches
- Clingfilm
- Dental floss
- Cutlery set
- Bottle opener
- Ironing board
- Chopping board
- Baking utensil
- Sweeping brush
- Clothes line
- Pillow case
- Tea towel
- Hammer
- Screwdriver
- Flashlight
- Envelopes
- Refill pad
- Sellotape
- Lead pencil
- Motorised toy

Modifications and extensions – addition to an already existing product (in brackets)

- Wine-bar (standard glass or 187 ml bottle) (Wine-bar (187 ml bottle))
- Fortified wine, take home bottle (Sherry, take home bottle)

- Knitting/Sewing accessory (Sewing Accessories)
- Audio & film downloads (Music Downloads)
- Fire handy packs/Fire logs (Fire Handy packs)

Combinations – combining of two already existing products (in brackets)

- Cooker (Gas Cooker and Electric cooker)
- Shoe repairs (Ladies Shoe repairs and Men's shoe repairs)
- Pre-recorded media (DVD pre-recorded' and CD Album)

Renaming of an already existing product (in brackets)

- Shellfish not frozen (Fresh/Chilled shellfish)

Splits – splits of an already existing product (in brackets)

- Red wine, take home bottle (Wine, take home bottle)
- Rose wine, take home bottle (Wine, take home bottle)
- Sparkling wine, take home bottle (Wine, take home bottle)
- White wine, take home bottle (Wine, take home bottle)
- Sparkling mineral water - bottled (Mineral water)
- Still mineral water – bottled (Mineral water)
- Letter handling Services (Postage)
- Other postal services (Postage)
- Bundled telecommunication services – Double (Bundled telephone & internet)
- Bundled telecommunication services – Triple (Bundled telephone & internet)
- Legal services (Professional & legal services)
- Other professional services (Professional & legal services)

*Up to December 2016 Smart TV's were priced as a separate item to standard TV's. Due to their increased popularity and extensive availability they have been incorporated into the two new TV sizes being priced. Therefore Smart TV's as a separate item has been deleted from the basket of goods and services.

Appendix 3: COICOP percentage expenditure weights and constituent item headings priced

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	<u>CPI</u>	<u>HICP</u>	
01 Food and non-alcoholic beverages	11.1364	11.8746	
01.1 Food	10.0067	10.6700	
01.1.1 Bread and cereals	1.7744	1.8920	
Rice	0.0743	0.0793	(1) Rice
Flours and other cereals	0.0378	0.0403	(1) Flour - white self-raising (2) Flour - brown wholemeal
Bread	0.5637	0.6011	(1) White sliced pan large (800g) (2) Brown sliced pan large (800g) (3) Brown wholemeal/wholegrain (4) French baguette (5) Specialised breads
Other bakery products	0.6029	0.6429	(1) Cream crackers & other cheese biscuits (2) Plain biscuits (3) Chocolate biscuits (4) Other sweet biscuits (5) Fruit cake (6) Swiss rolls & chocolate logs (7) Other small cakes & buns (8) Large fresh cakes or fruit pies/tarts
Pizza and quiche	0.1125	0.1199	(1) Pizza
Pasta products and couscous	0.0868	0.0925	(1) Noodles (2) Spaghetti (3) Pasta
Breakfast cereals	0.2000	0.2133	(1) Cornflakes (2) Wheat based breakfast cereals (3) Muesli (4) Children's sugar/chocolate cereals (5) Oat based breakfast cereals
Other cereal products	0.0963	0.1027	(1) Cereal bars

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	<u>CPI</u>	<u>HICP</u>	
01.1.2 Meat	2.5258	2.6933	
Beef and veal	0.4042	0.4309	(1) Sirloin steak (2) Striploin steak (3) Roast beef - topside/rib (4) Sliced/diced beef pieces
Pork	0.1440	0.1535	(1) Pork - loin chops (2) Pork steak
Lamb and goat	0.1235	0.1317	(1) Lamb - whole leg/half leg (2) Lamb - loin chops
Poultry	0.6023	0.6423	(1) Chicken - uncooked, medium size (2) Chicken breast fillet (3) Other poultry
Edible offal	0.0047	0.0050	(1) Lambs liver
Dried, salted or smoked meat	0.4541	0.4842	(1) Ham fillet (2) Cooked ham (3) Other cooked meats (4) Best back rashers (5) Pork sausages (6) Black/white pudding
Other meat preparations	0.7932	0.8458	(1) Minced beef (2) Chicken - cooked whole (3) Chicken - prepared fillets (4) Frozen beef burgers (5) Frozen chicken products
01.1.3 Fish	0.3828	0.4082	
Fresh or chilled fish	0.1879	0.2004	(1) Fresh fillet of cod (2) Fresh salmon (3) Fresh hake
Frozen fish	0.0238	0.0254	(1) Frozen fish fillets

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
Fresh or chilled seafood	0.0213	0.0227	(1) Shellfish not frozen
Dried, smoked or salted fish and seafood	0.0361	0.0385	(1) Smoked fish fillets (2) Smoked salmon
Other preserved or processed fish and seafood-based preparations	0.1136	0.1212	(1) Frozen fish fingers (2) Tinned salmon (3) Tinned tuna (4) Fish ready meals & fish products
01.1.4 Milk, cheese and eggs	1.3398	1.4286	
Fresh whole milk	0.2942	0.3137	(1) Milk 2 litre (full fat)
Fresh low fat milk	0.1738	0.1854	(1) Milk 1 litre (low fat)
Yoghurt	0.2769	0.2953	(1) Yoghurt (2) Yoghurt products - childrens
Cheese and curd	0.3010	0.3210	(1) Cheese - processed (2) Irish cheddar cheese (3) Cheese - foreign (4) Cheese products
Other milk products	0.1220	0.1301	(1) Fresh cream (2) Probiotic drinks
Eggs	0.1718	0.1832	(1) Eggs - medium (half dozen) (2) Eggs - large (half dozen)
01.1.5 Oils and fats	0.2798	0.2984	
Butter	0.1411	0.1505	(1) Butter (2) Butter - spreadable
Margarine and other vegetable fats	0.0646	0.0688	(1) Margarine (2) Low fat spreads
Olive oil	0.0279	0.0297	(1) Olive oil
Other edible oils	0.0463	0.0494	(1) Cooking oil & other edible oils

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
01.1.6 Fruit	0.8570	0.9138	
Fresh or chilled fruit	0.7006	0.7470	(1) Lemons (2) Apples - eating (3) Oranges, satsumas, mandarins, clementines (4) Grapes (5) Bananas (6) Kiwi (7) Berries - fresh (8) Avocado (9) Melon
Dried fruit and nuts	0.1371	0.1462	(1) Sultanas & other dried fruits (2) Nuts & edible seeds
Preserved fruit and fruit-based products	0.0193	0.0206	(1) Tinned fruit
01.1.7 Vegetables	1.6030	1.7093	
Fresh or chilled vegetables other than potatoes and other tubers	0.6875	0.7331	(1) Tomatoes (2) Cabbage (3) Broccoli (4) Carrots (5) Peppers (6) Lettuce (7) Onions (8) Mushrooms (9) Garlic
Frozen vegetables other than potatoes and other tubers	0.0422	0.0450	(1) Frozen peas (2) Frozen mixed vegetables
Dried vegetables, other preserved or processed vegetables	0.3069	0.3272	(1) Tinned peas (2) Tinned baked beans (3) Tinned tomatoes (4) Prepared packaged vegetables (5) Prepared green salads (6) Coleslaw & other mixed salads (7) Vegetarian meals/products

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	<u>CPI</u>	<u>HICP</u>	
Potatoes	0.3566	0.3803	(1) Potatoes 2.5kg (2) Potatoes 7.5kg (3) Frozen chips/french fries (4) Other frozen potato products
Crisps	0.1916	0.2043	(1) Potato crisps (2) Premium quality snacks
Other tubers and products of tuber vegetables	0.0182	0.0194	(1) Sweet potatoes
01.1.8 Sugar, jam, honey, chocolate and confectionery	0.8779	0.9361	
Sugar	0.0385	0.0411	(1) Sugar - white granulated
Jams, marmalades and honey	0.0898	0.0957	(1) Jam (2) Marmalade (3) Honey
Chocolate	0.4200	0.4478	(1) Box of chocolates (2) Multi pack/fun size chocolate (3) Chocolate bar
Confectionery products	0.1652	0.1762	(1) Packet of sweets (2) Chewing gum
Edible ices and ice cream	0.1397	0.1489	(1) Ice cream (2) Other ice cream products
Artificial sugar substitutes	0.0247	0.0264	(1) Artificial sweeteners
01.1.9 Food products n.e.c.	0.3662	0.3905	
Sauces and condiments	0.1631	0.1739	(1) Pasta meal sauces (2) Ready mix sauces (3) Oriental stir fry sauces & mixtures (4) Ketchup

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
			(5) Relishes, dressings & other sauces
			(6) Mayonnaise
			(7) Mustard
			(8) Vinegar
Salt, spices and culinary herbs	0.0342	0.0365	(1) Salt
			(2) Black/white pepper
			(3) Mixed herbs & spices
Baby food	0.0243	0.0260	(1) Baby milk compound
			(2) Baby biscuits/rice cakes
			(3) Tin/jar/packet of baby food
Ready-made meals	0.0666	0.0710	(1) Fresh/chilled ready to eat meals - European
			(2) Frozen meals - Indian/Chinese
			(3) Frozen meals - European
			(4) Prepared desserts - ready to eat
			(5) Convenience chilled foods
			(6) Hot deli foods
			(7) Other world cuisine
Other food products n.e.c.	0.0779	0.0831	(1) Meat extract, gravy & casserole mixes
			(2) Garlic bread
			(3) Tinned, pouches, cartons fresh soup
			(4) Dried soup
			(5) Custard
			(6) Gluten free foods
01.2 Non-alcoholic beverages	1.1297	1.2046	
01.2.1 Coffee, tea and cocoa	0.2061	0.2198	
Coffee	0.1071	0.1142	(1) Coffee - instant
			(2) Coffee - filter
Tea	0.0901	0.0960	(1) Specialised teas
			(2) Tea - bags
Cocoa and powdered chocolate	0.0089	0.0095	(1) Cocoa/drinking chocolate

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
01.2.2 Mineral waters, soft drinks, fruit and vegetable juices	0.9236	0.9848	
Mineral or spring waters	0.2213	0.2360	(1) Still mineral water - bottled (2) Sparkling mineral water - bottled
Soft drinks	0.3716	0.3962	(1) Soft drink - can/small bottle (2) Soft drink - large bottle (3) Energy drinks
Fruit and vegetable juices	0.3308	0.3527	(1) Concentrated squash (2) Orange juice (3) Other fruit juices (4) Children's fruit juices (5) Fruit smoothies
02 Alcoholic beverages and tobacco	5.4595	5.8214	
02.1 Alcoholic beverages	2.6881	2.8663	
02.1.1 Spirits	0.3746	0.3994	(1) Whiskey - take home (70cl bottle) (2) Brandy - take home (70cl bottle) (3) Vodka - take home (70cl bottle) (4) Cream liqueur - take home (70cl bottle) (5) Flavoured alcoholic drinks - take home
02.1.2 Wine	1.3618	1.4520	(1) Red Wine - take home bottle (2) White Wine - take home bottle (3) Rose Wine- take home bottle (4) Sparkling Wine- take home bottle (5) Champagne- take home bottle (6) Cider - take home (50cl can) (7) Fortified Wine - take home (75cl bottle)
02.1.3 Beer	0.9518	1.0148	(1) Lager - take home (50cl can) (2) Multi pack beer - take home (bottles) (3) Stout - take home (50cl can) (4) Craft Beer- take home bottle

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
02.2 Tobacco	2.7714	2.9551	
Cigarettes	2.4441	2.6061	(1) Cigarettes - filtered
Other tobacco products	0.3273	0.3490	(1) Cigars (2) Tobacco - flake (3) Electronic cigarette refills/liquids
03 Clothing and footwear	4.8937	5.2181	
03.1 Clothing	3.9897	4.2542	
03.1.2 Garments	3.7496	3.9982	(1) Mens casual overjacket/rain jacket (2) Mens 2-piece suit (3) Mens sports jacket & blazer (4) Mens casual trousers (5) Mens formal trousers (6) Mens jumpers & pullovers (7) Mens tops & t-shirts (8) Mens formal shirts (9) Mens casual shirts (10) Mens underwear (11) Mens vests & white cotton t-shirts (12) Mens pyjamas (13) Mens socks (14) Mens fleeces & similar type jackets (15) Mens tracksuits/separates (16) Mens sweatshirts/rugby shirts (17) Mens replica sports jersey (18) Ladies casual overjacket/rain coat (19) Ladies overcoat (20) Ladies blazer & jacket (21) Ladies dress - formal or informal (22) Ladies jeans & casual trousers (23) Ladies formal trousers (24) Ladies skirt (25) Ladies blouse (26) Ladies knitwear

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
			(27) Ladies tops
			(28) Ladies knickers & panties
			(29) Ladies bras
			(30) Ladies nightdresses & pyjamas
			(31) Ladies tights & stockings
			(32) Ladies swimwear
			(33) Ladies leisure suits
			(34) Childrens casual jacket
			(35) Childrens tracksuits/separates
			(36) Childrens casual trousers
			(37) Childrens jumpers/sweatshirts/hoodies
			(38) Boys shirts - non-school
			(39) Childrens tops & t-shirts
			(40) Girls dress
			(41) Childrens vests
			(42) Childrens pyjamas
			(43) Childrens socks
			(44) School uniforms
			(45) Babies sleep suits/babygros
			(46) Toddlers outfit
03.1.3 Other articles of clothing and clothing accessories	0.1580	0.1684	(1) Neck tie
			(2) Mens clothing accessories
			(3) Ladies clothing accessories
			(4) Cycling helmet
			(5) Knitting/Sewing accessories
03.1.4 Cleaning, repair and hire of clothing	0.0821	0.0876	
Dry cleaning and laundry	0.0738	0.0787	(1) Dry cleaning - man's suit
			(2) Dry cleaning - ladies jacket
			(3) Dry cleaning - ladies trousers
			(4) Laundry
Dress hire and repair of clothing	0.0084	0.0089	(1) Dress hire - morning & evening suits

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
03.2 Footwear	0.9040	0.9639	
03.2.1 Shoes and other footwear	0.8954	0.9548	(1) Mens formal leather shoes (2) Mens dressy casual shoes (3) Mens boots - casual/hiking (4) Mens trainers & runners (5) Ladies low heel shoes (6) Ladies fashion shoes (7) Ladies boots (8) Ladies sandals (9) Ladies trainers & runners (10) Boys shoes (11) Girls shoes (12) Children trainers & runners
03.2.2 Repair and hire of footwear	0.0085	0.0091	(1) Shoe repairs
04 Housing, water, electricity, gas and other fuels	14.3783	12.5824	
04.1/04.2 Actual rentals for housing and imputed rentals for housing	9.3012	6.8745	
04.1.1 Actual rentals paid by tenants (rents)	6.4471	6.8745	
Private rents	5.5744	5.9439	(1) Private rents
Local authority rents	0.8727	0.9305	(1) Local authority rents
04.2.1 Imputed rentals of owner-occupiers (mortgage interest)	2.8541	0.0000	(1) Mortgage interest (CPI only)
04.3 Maintenance and repair of the dwelling	0.7860	1.1323	
04.3.1 Materials for the maintenance and repair of the dwelling	0.2483	0.3550	(1) Floor tiles (2) Paint (3) Paint brush (4) Paint roller

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
			(5) Varnish
			(6) DIY household maintenance products
			(7) Taps/mixer taps
			(8) Building materials (CPI only)
04.3.2 Services for the maintenance and repair of the dwelling	0.5377	0.7774	(1) Plumbers services
			(2) Electricians services
			(3) Services for maintenance of heating systems
			(4) Painters services
			(5) Carpenters services
			(6) Other house maintenance services
04.4 Water supply and miscellaneous services relating to the dwelling	0.3120	0.3326	
04.4.1 Water Supply	0.0000	0.0000	(1) Water Supply
04.4.2 Refuse collection	0.1589	0.1695	(1) Refuse collection
04.4.3 Sewage Collection	0.0000	0.0000	(1) Sewage Collection
04.4.4 Other services relating to the dwelling n.e.c.	0.1530	0.1632	(1) Maintenance charges in apartment blocks
			(2) Chimney sweep
			(3) Security Services
			(4) Building energy rating (BER) assessment fees
04.5 Electricity, gas and other fuels	3.9792	4.2430	
04.5.1 Electricity	2.0284	2.1629	(1) Electricity
04.5.2 Gas	0.6397	0.6822	
Natural gas	0.5966	0.6361	(1) Natural gas
Bottled gas	0.0432	0.0461	(1) Bottled gas
04.5.3 Liquid fuels	0.7385	0.7874	(1) Home heating oil

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
04.5.4 Solid fuels	0.5726	0.6105	(1) Coal (2) Briquettes (3) Firelighters (4) Fire handy packs/firelogs
05 Furnishings, household equipment and routine household maintenance	4.9552	5.2837	
05.1 Furniture and furnishings, carpets and other floor coverings	1.3219	1.4095	
05.1.1 Furniture and furnishings	1.3176	1.4049	(1) Lounge suite (2) Single armchair (3) Bed (4) Mattress (5) Bedroom furniture (6) Dining table (7) Dining chair (8) Kitchen units (9) Bathroom furniture (10) Garden furniture (11) Lamps (12) Childrens furniture (13) Decorative home accessory (14) Cushions (15) Candle
05.1.2 Carpets and other floor coverings	0.0043	0.0046	(1) Carpet (2) Vinyl floor covering (3) Wooden flooring
05.2 Household textiles	0.4059	0.4329	(1) Curtains readymade (2) Continental quilt/duvet (3) Continental quilt/duvet cover (4) Pillow (5) Sheet (6) Throws & other spreads (7) Bath towel (8) Mat

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
05.3 Household appliances	0.5126	0.5466	
05.3.1 Major household appliances whether electric or not	0.4316	0.4603	(1) Fridge freezer (2) Deep freeze (3) Dishwasher (4) Washing machine (5) Tumble dryer (6) Cooker (7) Microwave oven (8) Electric heater (9) Vacuum cleaner
05.3.2 Small electrical household appliances	0.0525	0.0560	(1) Food processor/blender/smoothie maker (2) Kettle (3) Coffee maker (4) Iron (5) Toaster (6) Health grill - electric (7) Baby monitor
05.3.3 Repair of household appliances	0.0284	0.0303	(1) Electrical repairs
05.4 Glassware, tableware and household utensils	0.5613	0.5985	(1) Coffee mug (2) Glass tumbler (3) Wine glass (4) Casserole dish (5) Salt & pepper set (6) Single item of cutlery (7) Saucepan (8) Frying pan (9) Tea pot (10) Kitchen utensil (11) Baking & roasting tins (12) Dustbin (13) Bathroom accessories
05.5 Tools and equipment for house and garden	0.2346	0.2501	

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
05.5.1 Major tools and equipment	0.1333	0.1421	(1) Lawnmower (2) Power drill (3) Other DIY power tools (4) Other outdoor power tools (5) Tool hire
05.5.2 Small tools and miscellaneous accessories	0.1013	0.1081	(1) Garden implement (2) Ladders & steps (3) Battery (4) Light bulb (5) Electrical accessory (6) Smoke alarm (7) Carbon monoxide detector
05.6 Goods and services for routine household maintenance	1.9189	2.0461	
05.6.1 Non-durable household goods	1.0546	1.1245	(1) Automatic washing powder/liquid (2) Fabric conditioner (3) Washing-up liquid (4) Dishwasher detergent (5) Household cleaning products (6) Bathroom cleaning products (7) Disinfectant (8) Air freshener (9) Other cleaning materials (10) Rubber gloves (11) Household mop (12) Kitchen paper (13) Tin foil (14) Plastic rubbish bags (15) Food & sandwich bags (16) Shopping bags
05.6.2 Domestic services and household services	0.8643	0.9216	(1) Gardeners services (2) Carpet cleaning services (3) Other domestic & household services

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
			(i) Cleaners services
			(ii) Window cleaners services
06 Health	2.8691	6.0930	
06.1 Medical products, appliances and equipment	0.9882	1.0537	
06.1.1 Pharmaceutical products	0.8064	0.8599	
Prescribed drugs	0.5054	0.5389	(1) Prescribed drugs (oral) (2) Prescribed drugs (non-oral)
Other medicines	0.3010	0.3210	(1) Vitamins & other supplements (2) Pain reliever (3) Antacid (4) Cough mixture (5) Cold/flu drinks powder
06.1.2 Other medical products	0.0229	0.0244	(1) Condoms (2) Pregnancy test kit (3) Adhesive dressing (4) Other Medical Products
06.1.3 Therapeutic appliances and equipment	0.1588	0.1694	(1) Spectacles & contact lenses (2) Hearing aids (3) Dentures (4) Other therapeutic appliances & equipment
06.2 Out-patient services	1.6668	1.7773	
06.2.1/3 Medical and paramedical services	1.1230	1.1974	
Doctors fees	0.9781	1.0429	(1) General practitioners fees (2) Specialist fees (3) Opticians fees

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
Other medical and paramedical services	0.1449	0.1545	(1) Alternative & complementary medicine (i) Homeopath fees (ii) Chiropractor fees (iii) Acupuncturist fees (2) Physiotherapists fees (3) Services of medical analysis labs & x-ray centres
06.2.2 Dental services	0.5438	0.5799	(1) Dentists fees
06.3 Hospital services	0.2141	3.2620	(1) Hospital charges
07 Transport	13.9978	13.9982	
07.1 Purchase of vehicles	4.8007	5.1189	
07.1.1 Motor cars	4.6973	5.0086	(1) Motor cars (new) (2) Motor cars (second-hand)
07.1.2 Motor cycles	0.0288	0.0307	(1) Motor cycles
07.1.3 Bicycles	0.0746	0.0795	(1) Adult's bicycle (2) Children's bicycle
07.2 Operation of personal transport equipment	6.8216	6.3463	
07.2.1 Spare parts and accessories for personal transport equipment	0.3864	0.4121	(1) Motor car tyres (2) Other motor car parts
07.2.2 Fuels and lubricants for personal transport equipment	3.9946	4.2593	
Petrol	2.0448	2.1804	(1) Petrol
Diesel	1.9440	2.0729	(1) Diesel
Motor oil	0.0057	0.0061	(1) Motor oil

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
07.2.3 Maintenance and repair of personal transport equipment	0.7073	1.1197	(1) Car wash (2) Car maintenance (3) Puncture repair
07.2.4 Other services in respect of personal transport equipment	1.7333	0.5552	
Motor tax	0.7370	0.0000	(1) Motor tax - motor cycle (CPI only) (2) Motor tax - car (CPI only)
Other vehicle costs	0.9964	0.5552	(1) Car rental (2) Parking fees (3) Toll charges (4) Driving lessons (5) Driving test fees (6) Driving licences (7) National car test (NCT)
07.3 Transport services	2.3755	2.5330	
07.3.1 Passenger transport by railway	0.2087	0.2226	(1) Rail fares
07.3.2 Passenger transport by road	0.7705	0.8215	
Bus fares	0.5471	0.5834	(1) Bus fares (2) School transport
Taxi fares	0.2234	0.2382	(1) Taxi fares
07.3.3 Passenger transport by air	1.2887	1.3741	(1) Air fares
07.3.4 Passenger transport by sea and inland waterway	0.0575	0.0614	(1) Boat fares
07.3.5 Combined passenger transport	0.0220	0.0235	(1) Commuter tickets
07.3.6 Other purchased transport services	0.0281	0.0299	(1) Furniture removal

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
08 Communications	3.1562	3.3654	
08.1 Postal services	0.1479	0.1577	(1) Letter Handling Services (2) Other Postal Services
08.2/3.0 Telephone and telefax equipment and telephone and telefax services	3.0083	3.2077	(1) Telephone equipment (2) Telephone services - landline (3) Telephone services - mobile (4) Internet services (5) Bundled telecommunication service double (6) Bundled telecommunication service triple
09 Recreation and culture	7.0887	7.5586	
09.1 Audio-visual, photographic and information processing equipment	0.6076	0.6479	
09.1.1 Equipment for the reception, recording and reproduction of sound and pictures	0.2344	0.2500	(1) Midi system (2) TV up to 40" (3) TV greater than 40" (4) MP4 player (5) Media tablets (6) E-Reader
09.1.2 Photographic and cinematographic equipment and optical instruments	0.0562	0.0599	(1) Digital camera
09.1.3 Information processing equipment	0.0880	0.0938	(1) Computers (2) Computer accessories (3) Computer software
09.1.4 Recording media	0.2047	0.2182	(1) Pre-Recorded Media (2) Downloads and other internet services (3) Hard drives (4) Memory sticks

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
09.1.5 Repair of audio-visual, photographic and information processing equipment	0.0244	0.0260	(1) Computer repairs
09.2 Other major durables for recreation and culture	0.0114	0.0121	
09.2.1/2 Major durables for indoor and outdoor recreation including musical instruments	0.0114	0.0121	(1) Water sports equipment (2) Musical instruments
09.3 Other recreational items and equipment, gardens and pets	1.2277	1.3090	
09.3.1 Games, toys and hobbies	0.7491	0.7988	(1) Computer games console (2) Computer game (3) Group game (4) Child's doll (5) Model car/tractor/lorry (6) Lego & building blocks (7) Educational toy (8) Soft cuddly toy
09.3.2 Equipment for sport, camping and open-air recreation	0.0884	0.0942	(1) Sport & recreation goods (2) Equipment for camping & open-air recreation
09.3.3 Gardens, plants and flowers	0.1432	0.1527	(1) Flower pot (2) Soil, peat & fertiliser (3) Weed killer (4) Cut flowers (5) Flowers/bushes/shrubs for the garden
09.3.4/5 Pets and related products including veterinary and other services for pets	0.2470	0.2633	(1) Pet food (2) Veterinary services & animal care (3) Other products for pets

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
09.4 Recreational and cultural services	2.7211	2.9015	
09.4.1 Recreational and sporting services	0.7767	0.8282	
Sports admittance	0.0510	0.0544	(1) Sports admittance
Sports participation	0.4050	0.4318	(1) Sports participation
Club and society subscriptions	0.3127	0.3334	(1) Club & society subscriptions
Childrens Activities	0.0081	0.0086	(1) Childrens activities
09.4.2 Cultural services	1.9444	2.0733	
Cinema	0.1969	0.2100	(1) Cinema
Nightclubs	0.0835	0.0890	(1) Nightclubs
Cultural admittance	0.3136	0.3343	(1) Theatres & concerts (2) Museums, libraries & zoological gardens
Television services	1.2811	1.3661	(1) Cable & satellite TV services (2) TV licence (3) Streaming Services
Other entertainment	0.0694	0.0740	(1) Passport photo (2) Digital photo printing
09.5 Newspapers, books and stationery	1.3576	1.4476	
09.5.1 Books	0.3746	0.3994	(1) Infant books (2) Paperback books (3) Text books (4) Other non-fiction books
09.5.2 Newspapers and periodicals	0.8101	0.8638	(1) Newspapers (2) Comics (3) Magazines

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	<u>CPI</u>	<u>HICP</u>	
09.5.3/4 Miscellaneous printed matter and stationery and drawing materials	0.1729	0.1844	(1) Greeting cards (2) School copybook (3) Printer paper (4) Ballpoint pen (5) Markers & crayons (6) Other stationery (7) Inkjet cartridge
09.6 Package holidays	1.1633	1.2404	(1) Package holidays
10 Education	2.0431	2.1786	
10.1 Pre-primary and primary education	0.1339	0.1428	(1) Playschools (2) Private primary fees
10.2 Secondary education	0.2893	0.3085	(1) Private second level day fees
10.4 Tertiary education	1.4369	1.5321	(1) Third level tuition (2) Third level accommodation
10.5 Education not definable by level	0.1830	0.1952	(1) Other education & training (2) Examination fees
11 Restaurants and hotels	17.4795	18.6381	
11.1 Catering services	15.2074	16.2154	
11.1.1 Restaurants, cafes and the like	14.4494	15.4071	
Licensed premises	7.5765	8.0788	
Spirits	0.4859	0.5181	(1) Whiskey - bar (2) Brandy - bar (3) Vodka - bar (4) Flavoured alcoholic drinks - bar

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	<u>CPI</u>	<u>HICP</u>	
Wine	1.8567	1.9798	(1) Wine - bar (small bottle) (2) Cider bottle - bar (3) Cider draught - bar (1pt)
Beer	4.3655	4.6548	(1) Lager bottle - bar (2) Lager draught - bar (1pt) (3) Ale draught - bar (1pt) (4) Stout draught - bar (1pt)
Soft drinks and mineral water	0.8684	0.9260	(1) Mineral - bar (2) Mixer - bar
Restaurants, cafes, fast food and take-away food	6.8728	7.3284	(1) Lunch (2) Dinner (3) Meal in ethnic restaurant (4) Chips - small single (5) Fast food meal (6) Take-away meal (7) Tea/coffee - eat-in (8) Tea/coffee - take-away (9) Sandwich/wrap/roll/bagel - eat-in (10) Sandwich/wrap/roll/bagel - take-away (11) Mineral water (500ml) (12) Cakes, pastries and other dessert items - eat in (13) Pasta & noodles - eat in (14) Pizza - eat in (15) Soup - eat in (16) Burger & bun - eat in (17) Rail catering
11.1.2 Canteens	0.7580	0.8083	(1) Canteens
11.2 Accommodation services	2.2721	2.4227	(1) Guest houses & B&Bs (2) Hotels (3) Hostels

Appendix 3 continued

<u>COICOP Headings December 2016</u>	December 2016		<u>Item Heading</u>
	% Expenditure		
	Weights		
	<u>CPI</u>	<u>HICP</u>	
12 Miscellaneous goods and services	12.5424	7.3880	
12.1 Personal care	2.9543	3.1502	
12.1.1 Hairdressing salons and personal grooming establishments	0.8593	0.9163	
Hairdressing	0.6437	0.6863	(1) Gents - dry haircut (2) Childrens - dry haircut (3) Ladies - shampoo & set (4) Ladies - wash, cut & blowdry (5) Ladies - hair colour & highlights
Health and beauty treatments	0.2157	0.2300	(1) Health & beauty treatments
12.1.2 Electric appliances for personal care	0.1093	0.1165	(1) Electric razor (2) Hair dryer/styler
12.1.3 Other appliances, articles and products for personal care	1.9857	2.1173	
Hygiene products	0.5028	0.5361	(1) Toilet paper (2) Liquid soap (3) Shower gel (4) Toothpaste (5) Mouth wash
Hair products	0.2413	0.2573	(1) Shampoo/conditioner (2) Hair gel (3) Hair colour (4) Hairspray
Cosmetics and skincare products	0.7732	0.8245	(1) Shaving foam (2) Baby powder (3) Deodorant (4) Sunscreen/sunblock (5) Self-tanning products

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
			(6) Cleansing cream/wipes
			(7) Moisturiser
			(8) Hand cream
			(9) Perfume
			(10) Aftershave
			(11) Lipstick
			(12) Foundation - make-up
			(13) Mascara
Toilet accessories	0.4684	0.4994	(1) Toothbrush
			(2) Razor blades/cartridges
			(3) Disposable nappies
			(4) Baby wipes
			(5) Tampons
			(6) Sanitary towels/pads
			(7) Tissues
			(8) Cotton wool
12.3 Personal effects n.e.c.	0.8029	0.8561	
12.3.1 Jewellery, clocks and watches	0.3157	0.3366	(1) Jewellery
			(2) Wrist watch
			(3) Clock
12.3.2 Other personal effects	0.4872	0.5195	(1) Suitcase
			(2) Ladies handbag
			(3) Wallet
			(4) Baby's carriage
			(5) Baby/childs car seat
			(6) Cigarette lighter
			(7) Umbrella
			(8) Sunglasses
			(9) Giftware/souvenir
12.4 Social protection	0.9226	0.9837	
Childcare	0.8111	0.8649	(1) Childcare
Other social protection	0.1114	0.1188	(1) Nursing homes
			(2) Home help & day care services for the elderly

Appendix 3 continued

<u>COICOP Headings December 2016</u>	<u>December 2016</u>		<u>Item Heading</u>
	<u>% Expenditure</u>		
	<u>Weights</u>		
	<u>CPI</u>	<u>HICP</u>	
12.5 Insurance	6.1105	1.2682	
12.5.2 Insurance connected with the dwelling	0.6445	0.1035	(1) House insurance - contents (service) (2) House insurance - contents (non-service) (CPI only) (3) House insurance - dwelling (CPI only)
12.5.3 Insurance connected with health	3.6568	0.7176	(1) Health insurance
12.5.4 Insurance connected with transport	1.8092	0.4471	
Motor insurance	1.7568	0.3975	
Motor cycle insurance	0.0116	0.0110	(1) Motor cycle insurance
Motor car insurance	1.7452	0.3865	(1) Motor car insurance (service) (2) Motor car insurance (non-service) (CPI only)
Travel insurance	0.0524	0.0496	(1) Travel insurance
12.6 Financial services	0.3984	0.4248	(1) Financial services (2) Stockbrokers' Fees
12.7 Other services n.e.c.	1.3536	0.7049	(1) Passport fees (2) Birth/death/marriage certificate fees (3) Other licences (4) Legal services (5) Other professional services (6) Funeral services (7) Union subscriptions (CPI only) (8) Newspaper advertisements (9) Weddings (10) Miscellaneous goods & services (CPI only)

Appendix 4 - Special Inquiries

In addition to the 48,000 prices collected directly in retail outlets and businesses on a monthly basis, there are 137 special inquiries conducted as part of the current CPI. On average, over 3,000 price quotations are collected each month from these inquiries. Inquiries are made by post, telephone, e-mail along with internet price collection. They account for the price trends of approximately 49.6% of the basket of goods and services in the All Items CPI.

A list of these files is given below:

- School uniforms
- Laundry
- Dress hire – morning & evening suits
- Private rents
- Local authority rents
- Mortgage interest
- Building materials
- Plumbers services
- Electricians services
- Services for maintenance of heating systems
- Painters services
- Carpenters services
- Other house maintenance services
- Water supply
- Refuse collection
- Sewage collection
- Maintenance charges in apartment blocks
- Security services
- Chimney sweep
- Building energy rating (BER) assessment fees
- Electricity
- Natural gas
- Home heating oil
- Coal
- Kitchen units
- Garden furniture
- Electrical repairs
- Tool hire
- Gardeners services
- Carpet cleaning services
- Other domestic & household services
- Prescribed drugs (oral)
- Prescribed drugs (non-oral)
- Other medical products
- Spectacles & contact lenses
- Hearing aids
- Dentures
- Other therapeutic appliances & equipment
- General practitioners fees
- Specialist fees
- Opticians fees
- Dentists fees
- Services of medical analysis labs & x-ray centres
- Alternative & complementary medicine
- Physiotherapists fees
- Hospital charges
- Motor cars (new)
- Motor cars (second-hand)
- Motor cycles
- Motor car tyres
- Other motor car parts
- Car maintenance
- Puncture repair
- Car rental
- Parking fees
- Toll charges
- Motor tax - motor cycle
- Motor tax - car
- Driving lessons
- Driving test fees
- Driving licences
- National car test (NCT)
- Rail fares
- Bus fares
- School transport
- Taxi fares
- Air fares
- Boat fares
- Commuter tickets
- Furniture removal
- Letter handling services
- Other postal services'
- Telephone equipment
- Telephone services - landline
- Telephone services - mobile
- Internet services
- Bundled telecommunication services - double
- Bundled telecommunication services - triple
- E-readers
- Computers

- Computer accessories
- Audio & film downloads
- Pre-recorded media
- Computer repairs
- Water sports equipment
- Musical instruments
- Sport & recreation goods
- Equipment for camping & open-air recreation
- Veterinary services & animal care
- Sports admittance
- Sports participation
- Childrens activities
- Club & society subscriptions
- Theatres & concerts
- Museums & zoological gardens
- Streaming services
- Cable & satellite TV services
- TV licence
- Text books
- Newspapers
- Package holidays
- Playschools
- Private primary fees
- Private second level day fees
- Third level tuition
- Third level accommodation
- Other education & training
- Examination fees
- Rail catering
- Canteens
- Guest houses & bed and breakfast accommodation
- Hotels
- Hostels
- Health & beauty treatments
- Child care services
- Nursing homes
- Home help & day care services for the elderly
- House insurance - contents (service)
- House insurance - contents (non-service)
- House insurance – dwelling
- Health insurance
- Motor cycle insurance
- Motor car insurance (service)
- Motor car insurance (non-service)
- Travel insurance
- Financial services
- Stockbrokers fees
- Passport fees
- Birth/death/marriage certificate fees
- Other licences
- Legal services
- Funeral services
- Union subscriptions
- Newspaper advertisements
- Weddings
- Other professional services
- Miscellaneous goods & services

Appendix 5 - National average prices

Products for which comparable national average prices (NAPs) are published for successive months

Commodity	Unit	Commodity	Unit
Flours & other cereals:		Eggs:	
Flour - white self-raising	2 kg	Eggs - medium	½ doz
Flour - brown wholemeal	2 kg	Eggs - large	½ doz
Bread:		Fresh or chilled fruit:	
White sliced pan large	800 g	Grapes	1 kg
Brown sliced pan large	800 g	Bananas	1 kg
Pasta products & couscous:		Fresh or chilled vegetables other than potatoes & other tubers:	
Spaghetti	500 g	Tomatoes	1 kg
Beef & veal:		Broccoli	1 kg
Sirloin steak	1 kg	Carrots	1 kg
Striploin steak	1 kg	Onions	1 kg
Roast beef - topside/rib	1 kg	Mushrooms	1 kg
Sliced/diced beef pieces	1 kg	Potatoes:	
Pork:		Potatoes	2.5 kg
Pork - loin chops	1 kg	Potatoes	7.5 kg
Pork steak	1 kg	Dried vegetables, other preserved or processed vegetables:	
Lamb & goat:		Tinned tomatoes	400 g
Lamb - whole leg/half leg	1 kg	Sugar:	
Lamb - loin chops	1 kg	Sugar - white granulated	1 kg
Poultry:		Jam, marmalades & honey:	
Chicken - uncooked, medium size	1.6 kg	Jam	1 lb
Edible offal:		Marmalade	1 lb
Lamb's liver	1 kg	Tea:	
Dried, salted or smoked meat:		Tea - bags	80
Cooked ham	1 kg	Fruit & vegetable juices:	
Ham fillet	1 kg	Orange juice	1 litre
Pork sausages	1 kg	Alcoholic beverages – off licences:	
Best back rashers	1 kg	Spirits:	
Fresh or chilled fish:		Whiskey - take home bottle	70 cl
Fresh salmon	1 kg	Vodka - take home bottle	70 cl
Fresh fillet of cod	1 kg	Brandy - take home bottle	70 cl
Fresh hake	1 kg	Cream liqueur - take home bottle	70 cl
Dried, smoked or salted fish & seafood:		Wine:	
Smoked salmon	1 kg	Cider - take home can	50 cl
Fresh whole milk:		Beer:	
Milk - full fat	2 litre	Lager - take home can	50 cl
Fresh low fat milk:		Stout - take home can	50 cl
Milk - low fat	1 litre		

Appendix 5 - continued

Commodity	Unit	Commodity	Unit
Cheese & curd:		Cigarettes:	
Irish cheddar cheese	1 kg	Cigarettes - filtered	20 pk
Butter:		Alcoholic beverages - licensed premises:	
Butter	1 lb	Wine:	
Cinema:		Cider draught - bar	1 pt
Cinema	fee	Cider bottle - bar	330 ml
Fuels & lubricants for personal Transport equipment:		Beer:	
Petrol	1 litre	Lager bottle - bar	330 ml
Diesel	1 litre	Lager draught - bar	1 pt
Nightclubs:		Ale draught - bar	1 pt
Nightclubs	fee	Stout draught - bar	1 pt
Alcoholic beverages - licensed premises:		Hairdressing:	
Spirits:		Gents - dry haircut	fee
Vodka - bar	½ glass	Ladies - wash, cut & blow dry	fee
Brandy - bar	½ glass		
Whiskey - bar	½ glass		
Flavoured alcoholic drinks - bar	275 ml		

Appendix 6 – Comparison of the CPI and the HICP

The HICP is a subset of the CPI. The main difference between the two indices is in respect of the coverage of goods and services. Certain items included in the CPI are outside the scope of the HICP or differ in respect to definition. It was necessary to make adjustments to the CPI expenditure weights to take these differences into account. To do this, the weights for the CPI had to be modified to exclude the nine items which are deemed to be outside the scope of coverage of the HICP. These items were:

• mortgage interest	2.854%
• building materials	0.039%
• motor tax - motor cycle	0.002%
• motor tax - car	0.735%
• house insurance - contents (non-service)	0.096%
• house insurance - dwelling	0.451%
• motor car insurance (non-service)	1.337%
• union subscriptions	0.229%
• miscellaneous goods & services	0.496%
Total weight of excluded items	6.239%

The treatment of owner occupied housing in the HICP is still under consideration at EU level. As a consequence, mortgage interest, building materials and home insurance – dwelling are excluded.

In respect of insurance, a distinction is made in the premium paid by a household. Insurance is split into two components (a) service charge and (b) non-service charge. The non-service charge elements are excluded from the HICP. In addition to those items excluded above, adjustments have been made to health insurance to exclude insurance refunds from the HICP weights. This results in a further 2.939% being excluded from the HICP.

The total weight of the items excluded is 9.178% which means that 90.822% of the CPI basket is covered in the HICP. This compares to 89.657% in the previous series. To make things easier for calculation purposes, these HICP weights were rescaled to 10,000. The following table shows the new HICP weights compared to the CPI weights and explains the main differences between the two series.

Table 1: Difference between CPI and HICP weights

COICOP Division	CPI	HICP	Reason
01	11.136	11.875	
02	5.459	5.821	
03	4.894	5.218	
04	14.378	12.582	mortgage interest and building materials excluded
05	4.955	5.284	
06	2.869	6.093	
07	13.998	13.998	motor tax excluded
08	3.156	3.365	
09	7.089	7.559	
10	2.043	2.179	
11	17.479	18.638	
12	12.542	7.388	Insurances, taxes and union subscriptions
00	100.000	100.000	

The exclusions in COICOP Divisions 04, 07 and 09 of the items listed above means that the HICP weights are approximately 11.8% greater than the CPI weights except for the three categories where items are specifically excluded.