



An Phríomh-Oifig Staidrimh
Central Statistics Office

information notice

The Irish Consumer Price Index (CPI)

A brief introduction

The Consumer Price Index (CPI) is the official measure of inflation in Ireland. It is compiled and published every month by the Central Statistics Office (CSO). It is an accurate, objective measure of consumer price change. Such a measure is essential for monitoring the purchasing power of money and the successful management of the economy. The aim of this article is to explain how the CPI is constructed, what it measures, and what it does not measure.

Logistics

During the week containing the second Tuesday of each month and up to the third Tuesday of the month, approximately 80 price collectors collect prices in 84 locations (cities and towns) throughout the country. Over 50,000 prices are collected in this way. In addition, a further 3,000 prices are collected centrally by the CSO from 128 postal, e-mail and telephone inquiries along with internet price collection. The index is published approximately four weeks after the survey is conducted i.e. approximately two weeks after the reference month.

The 'Basket'

Every household purchases a different combination of goods and services. Individual household purchases differ from each other in two ways: (1) the items differ and (2) the quantities of each item differ. While the CPI represents all private households in Ireland, obviously not every item purchased by every household can be included in the basket. A selection of the most representative goods and services is made.

In addition, the expenditure of institutional households and tourists on holiday in Ireland is also included.

This selection is made using the results of the large-scale national Household Budget Survey (HBS) conducted by the CSO. The most recent HBS was conducted in 2009/2010 where the actual spending of approximately 5,900 households was recorded. We refer to this representative selection of goods and services as the basket. Currently, 634 items have been selected. These include not only the day to day items you would expect like food, clothing and footwear, petrol and so on, but also items like cars, computers, mobile telephones, medical insurance, bank charges, electricity and gas, mortgage interest repayments, etc.

Not only do individual households have different baskets, but the composition of these baskets changes over time. Tastes change, new items become available, and others become obsolete or simply go out of fashion. The CSO must continuously ensure that the index accurately reflects the proportion of household spending on the different goods and services available. For this reason the HBS is conducted every 5 years.

Weighting

The *weighting* of each item is a way of expressing the importance of the amount spent on each item. These *weights* are critical to the index accurately reflecting the relative importance of each item included in the basket. As weights are based on the amount of money spent, they are referred to as *expenditure weights*. This is an important point. Weights are not based on volumes (i.e. the number of units sold) but on expenditures. If weights were based on volumes, then day-to-day items like milk, bread, bus fares etc. would have exaggerated weights, while infrequently purchased items like cars, electrical-goods, furniture etc. would have underestimated weights.

In December 2011, the expenditure weights were constructed from the results of the HBS. From January 2013 onwards, the expenditure weights at sub-index (i.e. 4-digit COICOP) level are updated annually using National Accounts 'Household Final Monetary Consumption Expenditure' (HFMCE) data for year t-2, price updated to t-1 as a primary source. The weights below sub-index level, (i.e. item weights), are recalculated on a pro rata basis using the proportions from the December 2011 rebase.

The expenditure weights in the current CPI can be summarised in percentage terms as follows:

COICOP divisions as shown in the CPI release:

(Classification of Individual Consumption by Purpose)		%
01	Food and Non-Alcoholic Beverages	11.189
02	Alcoholic Beverages and Tobacco	5.188
03	Clothing and Footwear	4.357
04	Housing, Water, Electricity, Gas and Other Fuels	15.237
05	Furnishings, Household Equipment and Routine Household Maintenance	4.796
06	Health	2.832
07	Transport	13.546
08	Communications	3.234
09	Recreation and Culture	7.470
10	Education	2.681
11	Restaurants and Hotels	17.637
12	Miscellaneous Goods and Services	11.833
Total – ALL ITEMS		100.000

Expenditure weights are not the only weights employed in the construction of the index. As the CPI measures inflation for the country as a whole, prices must be collected nationwide. Prices collected in the cities represent a greater population and account for a larger proportion of retail turnover than prices collected in small towns. The index calculation takes account of this, not only in the sample design (i.e. the distribution and number of prices collected in each pricing location) but also through the use of *area weights*. The country is split into 5 'areas' derived from eight Nomenclature of Territorial Units for Statistics 3 (NUTS 3) regions. Area A covers Dublin region; area B covers the South West region; area C covers the Border, Midland and West regions; area D covers the Mid West and Mid East regions; and area E covers the South East region. The 8 NUTS 3 regions have been combined into 5 'areas' for CPI administration purposes.

Area A – Dublin region;
Area B – South West region;
Area C – Border, Midland and West regions;
Area D – Mid West and Mid East regions; and
Area E – South East region.

The area weights were derived from HBS data and Quarterly National Household Survey (QNHS) population estimates. These weights take account of the distribution of consumption throughout the different areas of the state.

Prices

The index measures the change in the average level of prices. The prices used are those actually incurred i.e. those paid in market transactions, including all indirect taxes and duties.

It is impractical and unnecessary to collect prices for all the items purchased by all individual households in the country. Therefore prices are only collected for a representative selection. These prices are used as indicators, e.g. instead of surveying every brand and model of car available on the market, every month a selection of the most popular cars is surveyed. From this, a *price indicator* for cars is calculated. The expenditure weight for cars to which this price indicator is applied represents the total household expenditure on all cars.

Approximately 53,000 prices are used to compile the index every month. This means that 53,000 prices are collected, matched with and compared to 53,000 prices from the previous month. The index is not concerned with the actual price levels but with the change in those price levels over time. For example, if an expensive item, say skiing holidays, is included in the basket it does not necessarily push up the index. If the average price of skiing holidays is falling over time, their inclusion will put downward pressure on the index, despite the high price. Only if skiing holiday prices are increasing will their inclusion exert upward pressure on the index.

Index Calculation

To ensure that the fixed basket does remain identical, rigorous checking of prices must be done every month. For an item to be comparable, the brand, model, size, composition etc. and quality must not change from one month to the next. In addition, the retail outlet where the item was surveyed must not change.

Once prices have been checked and any necessary adjustments or corrections have been made, prices are then aggregated into *average prices*. These average prices are weighted averages, where the weights used are the area weights. Sub-indices for each item in the index are constructed by comparing matched average prices from one period to another. Using the expenditure weights, these individual sub-indices are then combined together to produce the overall index.

The index expresses the current cost of purchasing a fixed basket of consumer goods and services as a percentage of the cost of purchasing the same identical basket at the base period (December 2011). In technical terms, the index is calculated as a modified fixed weight Laspeyres type index. Effectively this means the exact *same* item must be priced in the *same* retail outlet each month. The price of each item is then compared to its preceding price from last month. The idea is to isolate the real change in price rather than changes in price due to other factors, like for example changes in quality.

Quality

As noted earlier, household consumption patterns change over time. For this reason, the basket composition of the index is reviewed and updated every 5 years. Frequently however, items change slightly (television sets become increasingly reliable and require fewer repairs, cars have ABS brakes fitted as standard etc.) during that 5 year period.

As far as possible, the effects of quality and quality changes are taken into account in order to isolate the real price change. This is often very difficult to achieve for goods and almost impossible for services. For this reason, discontinuities occur from time to time in the monthly sets of price quotations. These discontinuities are particular to the specific item where the change in quality occurred, and the relevant price is excluded. This method is the best way to measure such quality variations in an objective and consistent manner.

Housing

House prices are not included in the index. The CPI measures changes in the level of consumer prices for goods and services. The purchase of a house is considered to be a capital acquisition or investment rather than consumer expenditure. Furthermore, a house is not purchased in the same way that most goods are purchased. A house is generally financed with a mortgage loan. For this reason, mortgage interest repayments are included in the index as this is considered a cost to the household. The principal element of the repayment is excluded as it is contributing to, or servicing, the investment.

The CPI also includes several items related to housing, such as rents, refuse collection charges, sewage collection charges, house insurance (buildings and contents) and maintenance and repairs. The maintenance and repairs are only those that do not add to the value of the house, e.g. expenditure on house extensions is not included in the index.

Other Items Excluded

As the CPI is a price index, it excludes goods and services which either have no price or cannot be priced. For this reason, charity donations, personal cash allowances, and betting payments are excluded from the index. Expenditure on items like life assurance policies, pension contributions, mortgage capital repayments, and the capital expenditure on the outright purchase of a house are also excluded as they are considered to be savings

or investments. The value of own farm or garden produce and other benefits in kind consumed by households are also excluded as the items were not purchased and hence no actual transactions took place.

Cost of living

Although frequently referred to as one, the CPI is *not* a cost of living index. A cost of living index measures the change in households' real disposable income and therefore must take into account changing consumption patterns, the effects of households reacting to price or quality changes by substituting one item for another, changes to income levels, family composition, direct tax rates or bands, social insurance contributions and payments, social welfare payments, etc. The CPI is a price index. It measures the change in the cost of purchasing a fixed basket of goods and services. However, one of the more important factors determining changes in the cost of living is the extent to which consumer prices for goods and services vary. The CPI measures this particular aspect of the cost of living.

More Information

For a detailed description of the current methodology used to compile the CPI, including a full listing of the items priced, see the publication "Consumer Price Index, Introduction of Updated Series (Base: December 2011=100)" published by the CSO and available on the CSO website.

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