

advisable to use figures referring to the most recent base year. Sometimes, the use of indices referring to an old reference year is inevitable. For example, when adjustments in tenancy agreements are based on the rent sometimes agreed decades ago. In such a case, it is possible to calculate the adjustment by applying the so-called fixed denominator method.

*Calculation of rent adjustment.*

Monthly as well as annual figures are used to calculate adjustments. The annual figure is the arithmetic average of the monthly price indices of a particular year. The indexation clauses of tenancy agreements usually specify which type of index figure is to be used. The contracts also specify which method should be used to index rent levels. The most commonly used methods are the so-called year-on-year method and the fixed denominator method.

The Year-on year method	
In the year-on-year method, the current price is multiplied by the quotient of the index figures of two consecutive years. Both figures should have the same reference year!	
<i>Example:</i> In 2003 the rent of a house was € 400 a month. The CPI for all households with reference year 2000 is used to make the adjustment.	The CPI all households for:
	2002 = 107.6
	2003 = 109.9
	2004 = 111.2
	2005 = 113.1
	2006 = 114.4
<b>Rent in 2004:</b>	
$109.9/107.6 = 1.021 * € 400.00 = € 408.40$	
<b>Rent in 2005:</b>	
$111.2/109.9 = 1.012 * € 408.40 = € 413.30$	
<b>Rent in 2006:</b>	
$113.1/111.2 = 1.017 * € 413.30 = € 420.33$	
<b>Rent in 2007:</b>	
$114.4/113.1 = 1.011 * € 420.33 = € 424.95$	

The fixed denominator method	
This method takes the originally agreed rent as a starting point. This amount is multiplied by a fraction whose numerator varies each year, while the denominator remains the same.	
<i>Example:</i> The rent of a house is € 900 since 1 January 2003. The contract stipulates that the rent is to be adjusted for the first time on 1 July 2003 and subsequently on an annual basis. The CPI for all households for March with reference year 2000 is used to make the adjustment.	The CPI for all households of:
	September 2002 = 108.8
	March 2003 = 109.9
	March 2004 = 111.1
	March 2005 = 113.1
	March 2006 = 114.2
<b>As of 1-7-2003:</b>	
$109.9/108.8 = 1.010 * € 900.00 = € 909.00$	
<b>As of 1-7-2004:</b>	
$111.1/108.8 = 1.021 * € 900.00 = € 918.90$	
<b>As of 1-7-2005:</b>	
$113.1/108.8 = 1.040 * € 900.00 = € 936.00$	
<b>As of 1-7-2006:</b>	
$114.2/108.8 = 1.050 * € 900.00 = € 945.00$	
The use of this method often requires data of old base years. You can contact Statistics Netherlands to obtain information on this subject.	



# The consumer price index

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Each month Statistics Netherlands (CBS) publishes information on the consumer price index (CPI). The CPI is used to calculate the Dutch inflation rate. In this brochure Statistics Netherlands describes the CPI, how the CPI is compiled and how it is used in practice. The public and private sectors are frequent users of the CPI, for instance in wage negotiations, indexation of rents, annuities and insurance premiums.

## The consumer price index (CPI)

Each month, Statistics Netherlands publishes data on the inflation rate in the Netherlands. The inflation rate is an indication of the price increase or decrease of a basket of goods and



Inflation is calculated as the year-on-year percentage change of the CPI

services purchased by an average Dutch household in one year. The basket is based on the spending pattern of an average household. Inflation is measured as the year-on-year change of the CPI, expressed as a percentage. Statistics Netherlands regularly adjusts the contents of the basket, if the goods and services no longer accurately reflect the spending pattern of the average Dutch household. Each month, Statistics Netherlands measures the prices of the goods and services in the basket. It contains day to day shopping items, spending on durable consumer goods, such as washing machines and cars, rents, school and tuition fees and consumption-related taxes such as road tax. Since 2007, supplementary health insurance premiums

are also included in the CPI. The compulsory basic health insurance is not included in the CPI. Other expenses not included in the CPI are income tax and social premiums, which are also compulsory and therefore are not part of the consumer's free disposable income.

## Price data collection

Approximately 250 interviewers of Statistics Netherlands visit a range of shops throughout the country and record over 65 thousand prices of 1,400 different articles. Items and collection method are constantly adapted to recent developments in society. Price data are collected during three weeks every month. The change in the level of house rent, an important component of the CPI, is measured annually. Part of the prices are collected by means of written and telephone surveys and, if possible, through the Internet. Statistics Netherlands uses scanner data to monitor price changes for some supermarkets. These data files contain information on the amount of goods sold and turnover of those supermarkets and are used to calculate average prices.

## Base and reference year

The various goods and services in the basket have not all been attributed the same weight. The weight depends on the household spending pattern in a particular year, the so-called base year. The base year for the CPI in the period 2003-2006 was 2000. Until 2007, the base year was adjusted every five years,

The base year – the basket of goods and services on which the CPI is based – is updated annually

but since 2007 the contents of the basket and the base year are updated annually. This is a substantial improvement, because the CPI is now more responsive to shifting spending patterns of the consumer. Table 1 shows how the relative importance of a number of product groups changes over time. Costs of housing of the average Dutch household, for instance, rose from 21.8 percent in 2000 to 23.5 percent in 2006. The shares of other categories such as clothes, furnishing and household appliances declined. In the future, these shares will be updated every year after the most recent figures become available. In addition to the term base year, the term reference year is used to refer to the price level of the year which was taken as the basis for the calculations. In the years to come the reference year will be 2006, which implies that prices will be compared to 2006. This is indicated by "2006 = 100". Until 2007 base year and reference year were identical but since the beginning of 2007 this is no longer the case. The scheme looks as follows:

CPI of	Base year	Reference year
2007	2006	2006
2008	2007	2006
2009	2008	2006

Table 1: Weights in the CPI (%)

	2000	2006
Food and non-alcoholic beverages	11.1	10.8
Alcoholic beverages and tobacco	3.1	3.0
Clothing and footwear	6.4	5.4
Housing, water, electricity and gas	21.8	23.5
Furnishings, household equipment and routine maintenance of the house	7.1	6.2
Health	0.6	1.1
Transport	12.1	11.3
Communication	3.6	4.7
Recreation and culture	11.5	10.2
Education	0.1	0.1
Hotels and restaurants	4.4	4.6
Miscellaneous goods and services	10.2	11.1
Consumption-related taxes and government services	3.4	3.4
Consumption abroad	4.6	4.6
Total	100.0	100.0

## Various versions of the CPI

In addition to the 'normal' consumer price index, two other versions are calculated and published. The first one is the constant tax rate consumer price index (CPI-CT), which takes into account tax rate changes. The second version is the harmonised consumer price index (HICP). This index complies with European agreements and allows comparison with other EU member states.

## The constant tax rate consumer price index

The constant tax rate consumer price index (CPI-CT) is equal to the CPI but without the effect of changes in the rates of product-related taxes (for instance VAT and excise duty on alcohol and tobacco) and subsidies. The CPI-CT answers the question how prices change, if tax rates remain the same. CPI-CT index figures are frequently used by the government and in wage negotiations.

## The harmonised consumer price index

The harmonised index of consumer prices (HICP) has been developed with the sole purpose of creating a standard to compare the inflation rates in the various EU coun-

The CPI is often used in contracts, especially rents

tries. Eurostat, the statistical bureau of the European Union, uses the HICPs of the EU member states to calculate inflation in the euro zone (i.e. the countries which have adopted the euro as their currency) and in the European Union. The national CPIs are not suitable for that purpose, because the calculation methods of the EU countries differ widely. The HICP is used by the European Central Bank to formulate its European monetary policy (interest). The main difference between the CPI and the HICP is the contents of the basket of goods and services the HICP is based on. Rental value (house owners), consumption-related taxes (e.g. road tax) and membership fees for sports clubs, social organisations etc. are included in the CPI, but not in the HICP. Another difference between both indices lies in the fact that the CPI includes price increases in private consumption by Dutch tourists. The HICP, on the other hand, includes private consumption by foreigners in the Netherlands.



## Using the CPI in practice

Price developments usually lead to adjustments in wages, rents, social benefits, insurance premiums or other regular payments. Statistics Netherlands' CPI is frequently used in agreements between businesses and private persons. Which index figures? In general, Statistics Netherlands advises to use the CPI for all households as a basis for tenancy agreements or if current contracts are subject to revision. Occasionally, contracts drawn up in the past include index figures which have become obsolete. In such cases, the current series of CPI for all households can be linked to the old series. These linked series are available on request at Statistics Netherlands.

## Which reference year?

Some contracts refer to an 'old' reference year, for example 1990 = 100. Indices are no longer calculated on the basis of the consumption pattern of 1990. In such cases, it is