



Introduction of the Harmonised Index of Consumer Prices (HICP) in Switzerland

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As a consequence of the Bilateral Agreement on Statistics which came into force on 1 January 2007, Switzerland has introduced a Harmonised Index of Consumer Prices (HICP) with effect from 2008. Like the national Consumer Price Index (CPI), it too covers the movement of consumer prices. This indicator allows comparison of the inflation experienced by consumers in Switzerland with that of its European neighbours which introduced harmonised indices about ten years earlier.

This text sets out the background to introduction of the HICP in Switzerland, explaining the main differences between the Swiss CPI and the HICP, the harmonisation work involved in publishing a Swiss HICP, as well as the repercussions on the process of producing the two indicators and the initial results.

In the agreement on statistics signed between Switzerland and the EU as part of the Bilateral Agreement framework, Switzerland undertook to produce a consumer price index that complies with the European methodology. Developed in the form of Regulations, this methodology was defined by European statisticians with a view to producing indicators that allowed price movements to be measured using a similar base, thus making them mutually comparable. More than ten years ago, on 7 March 1997, Eurostat published the first set of harmonised price indicators for EU member countries, as well as for Norway and Iceland. Initially, these HICPs were mainly used to assess compliance with the convergence criterion on which membership of the European Monetary Union was conditional. Since this Union became reality in 1999, however, the indices now serve as indicators of consumer price movements in the euro zone.

With the introduction of an HICP, Switzerland has adopted the status of European HICP legislation as per 2008 and therefore now has an indicator that will enable it to measure the change in prices of consumer goods and services in accordance with the same criteria as Union member countries. The HICP represents an additional module which supplements the basic information provided by the CPI and is of particular interest to users wishing to compare consumer price movements in the various European countries.

While both deal with consumer price movements, the aims of the CPI and the HICP differ: the CPI measures the inflation of consumer goods and services at national level, making it

one of the most important and most frequently used economic indicators. It is also used as reference base in many areas, such as monetary policy, wage indexation, pensions and other monetary values, as well as for determining real economic growth, etc. For its part, the HICP is mainly used to compare price movements between different countries, serving as a tool for comparing inflation in European Union member countries, Norway and Iceland. Interest is greatest in the aggregated indices prepared for groups of countries, of which the Monetary Union's Index of Consumer Prices is the best known. This index of vital importance for the EU, but also for Switzerland, is used by the European Central Bank to measure the impact of its price stability policy in the euro zone.

1. Adaptations that were needed

The Swiss HICP was compiled using the CPI which is, in many respects, compatible with European HICP Regulations. For instance:

- both the CPI and the HICP are Laspeyres-type indices. This means that price movements are always measured using the same range of goods and services;
- weightings are reviewed annually to ensure the index always accurately reflects changes in the market and consumption patterns;
- the geometric mean is used at the level of basic aggregates;
- the goods and services used for both indices are based on the same international classification;
- the definition of prices is the same for the CPI and the HICP: in both cases, the price actually paid by consumers on purchasing the products is collected;
- apart from a few exceptions, the area covered by the price collections corresponds to consumption expenditure as defined in the National Accounts. Both the CPI and the HICP are based on the goods and services intended for direct consumption and on monetary transactions.

Despite these points in common which define much of the index, a limited number of adaptations were made to put in place an index that complies with HICP Regulations. The bulk of harmonisation work focused on questions linked to the weighting and frequency of the price collections required by the Regulations.

The most significant adaptations, however, concerned weighting. The CPI and the HICP do not cover the same collection fields, so their weightings obviously have to be different. The CPI covers the consumption expenditure of private households, in Switzerland or abroad, by people resident in Switzerland, while the HICP covers consumer expenditure on Switzerland's economic territory, by private and institutional households, irrespective of nationality and country of residence.

The HICP which confines the scope of collections to the national economic territory is based on the domestic concept. Expenditure by tourists and cross-border workers is to be registered in the country where the money was spent. The situation is exactly the other way

round for the CPI: expenditure abroad by residents of Switzerland is included in the CPI, in accordance with the national concept, whereas this index does not take account of purchases made in Switzerland by people resident abroad.

CPI	Monetary consumption expenditure in Switzerland or abroad of households resident in Switzerland: national concept	Geographic coverage	Monetary consumption expenditure in Switzerland of households resident in Switzerland or abroad: domestic concept	HICP
	Private households	Population coverage	Private households and institutional households	
	Private consumption according to the National Accounts	Definition of goods and services	Private consumption according to the National Accounts	
	COICOP (IPC)	Fixed-basket	COICOP (IPCH)	
	Household Budget Survey	Weighting sources	Household Budget Survey, Tourism Balance of Payments, Health Statistics, etc.	
	Purchasing price	Determining prices	Purchasing price	
	In principle monthly, apart from justified exceptions	Collection frequency	In principle monthly, apart from justified exceptions	
	Goods: purchase concept Services: at time of purchase	Point in time of price inclusion	Goods: purchase concept Services: when consumption can commence	
	Collection of prices during the first two weeks of the month	Temporal coverage	Collection of prices during at least one working week towards the middle of the month	
	Basic aggregate: geometric mean Calculation: Laspeyres chain index	Calculation method	Basic aggregate: geometric or arithmetic mean Calculation: Laspeyres chain index	

Table 1: Overview of the methods used for the CPI and the HICP (the grey-shaded areas indicate differences between the HICP and the Swiss CPI)

The CPI weighting is integrally based on the findings of the Household Budget Survey, which is also based on a national concept. The situation is more complex for the HICP for which there is no large-scale survey that would make it possible to measure the consumption expenditure of resident households, non-resident households and institutional households. The findings of the Household Budget Survey are used to weight most of the expenditure of people resident in Switzerland which represents almost 90% of the expenditure determining the total according to the HICP. The Tourism Balance of Payments, established in the National Accounts, provides the main data required to weight expenditure by people resident abroad (5% of the overall expenditure which determines the total according to the HICP). Lastly, the Health Statistics are used to weight the consumption expenditure of institutional households.

Mention should be made of a further weighting difference between the CPI and the HICP, namely the way expenditure on owner-occupied housing is handled. Because of the problems encountered with harmonizing data capture in countries with very different structures, this expenditure is excluded from the HICP for the time being. In contrast, the CPI takes implicit account of such expenditure by applying the concept of so-called rental equivalence. This concept is particularly appropriate in the Swiss context where 65% of households rent their accommodation.

In addition to the adaptations in connection with weighting, minor adjustments were required in respect of price collection periods and the inclusion of service prices in the index.

CPI price collections were traditionally confined to the first six working days of the month. With the introduction of the HICP and to comply with its Regulations, the price collection period was extended to the first two weeks of the month. Most price collections are used both for the CPI and for the HICP, with the point in time when prices are included in the index being the same, in principle, in both indices. The prices of goods are entered at the time of purchase, but the practice differs for services, especially for those with substantial, systematic divergences between the time of purchase and the time of consumption. This mainly concerns airfares and package holidays for which the CPI enters prices at the time of purchase, and the HICP at the time of consumption.

2. Impact on the production process

The price collection frequency had to be adapted to satisfy the European Regulations. Until 2007, CPI price collections were conducted monthly (fresh foodstuffs, fuel and heating oil) or quarterly (for most other items). However, under Eurostat Regulations, price collections are in principle to be conducted monthly, and from 2008, this frequency applies to most articles in the basket. There are, however, exceptions. For rents, an estimate of the changes between quarterly collections is used, clothing prices are collected six times a year, and administered prices and tariffs are collected when price changes are announced.

The additional data generated by stepping up the frequency of price collections are used for both the HICP and the CPI, which thus benefits from more regular collections. The logistic implications of the monthly frequency were considerable. The number of monthly collections practically doubled, increasing from 30,000 prices collected per month to over 50,000, without substantially increasing the number of price series. The survey institute commissioned to conduct the prices collections at regional level carries out most of the additional collection work, while the Federal Statistical Office collects the necessary additional prices that are valid in Switzerland as a whole.

The work involved in these additional collections, checks and calculations would not be possible without an efficient IT application. Just one application manages all the price collections conducted by the Federal Statistical Office for consumer, production and import prices. This system is based on a dual architecture that rigorously separates the collection module from the calculation module. Basically, introduction of the HICP involved changing the fixed basket designed for the CPI. These changes consisted of strictly disconnecting the

specific collection for the CPI from that incorporated solely into the HICP on the one hand, and completely remodelling the weighting for the HICP on the other. In contrast, the other structural data (sales outlets, for instance) were not directly affected by HICP implementation: these are stored just once, without redundancy, and are available for calculating the CPI, the HICP and the regional indices prepared for certain regions of Switzerland. Consequently, the impact of the extra collections, which substantially increase the amount of information to be managed, was efficiently absorbed.

To analyze the impact of the changes in price collection frequency, a parallel computing environment was set up. The results generated according to the new frequency will be compared with those which would have been generated according to the former frequency.

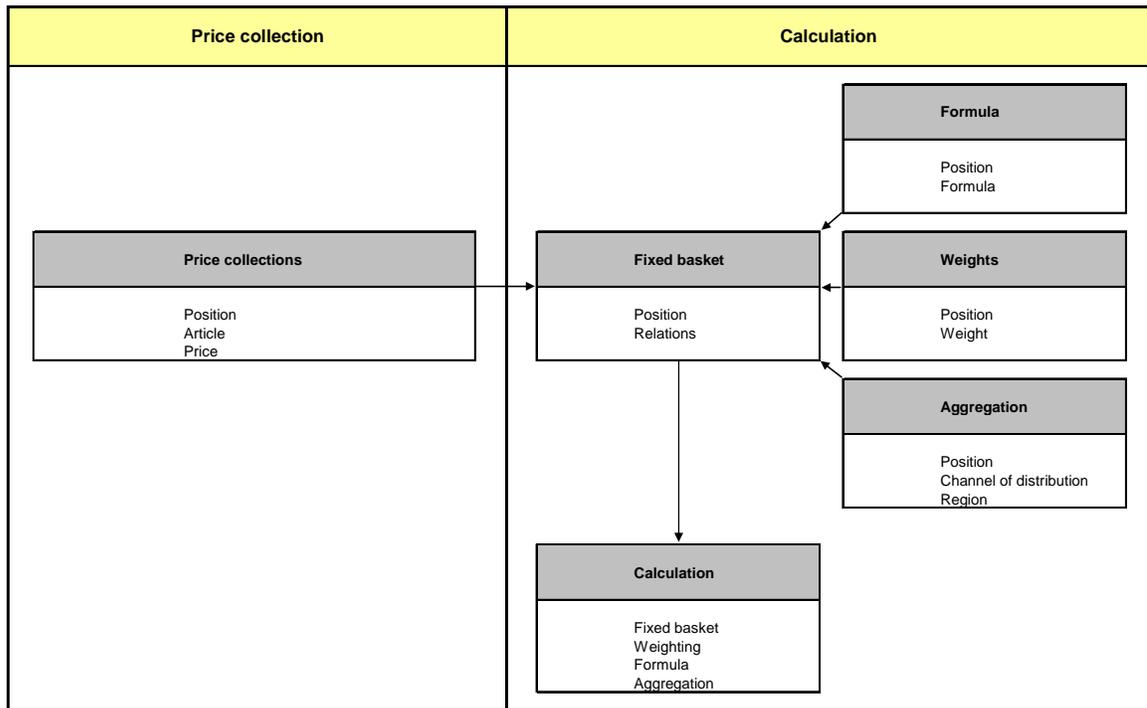


Diagram 1: Processing of price statistics data at the Federal Statistical Office

3. Results

Like all the European HICPs, the Swiss Harmonised Index of Consumer Prices uses the base 2005 = 100, thus allowing direct comparisons between the Swiss index and its European counterparts. To achieve this, the FSO implemented the weightings according to the HICP methodology for 2005, 2006 and 2007, then calculated the corresponding results.

Comparison of CPI and HICP weights reveals major differences. The proportion of expenditure on housing is smaller in the HICP because – unlike the CPI – this index does not take account of owner-occupied housing. In contrast, expenditure on "other goods and services" are much more significant in the HICP because it includes expenditure in relation to homes for the elderly and the disabled. HICP weights between 2005 and 2008 remained

quite stable for the main groups, the biggest changes being noted for health and recreation and culture. On the whole, changes in HICP weightings between 2005 and 2008 followed those of the CPI.

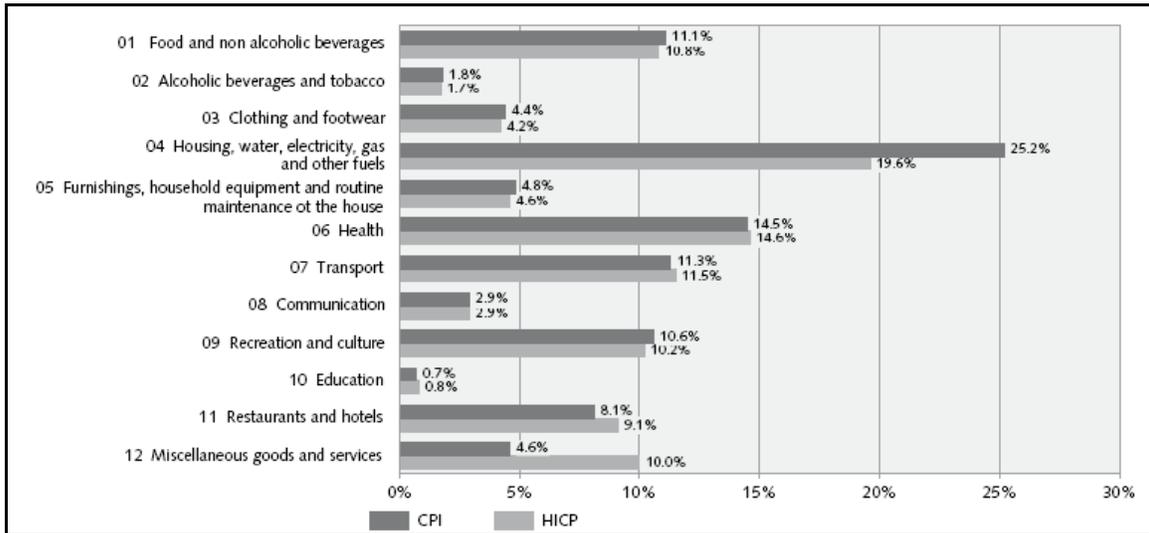


Diagram 2: Weighting of the two fixed baskets in 2008 in percent: CPI and HICP

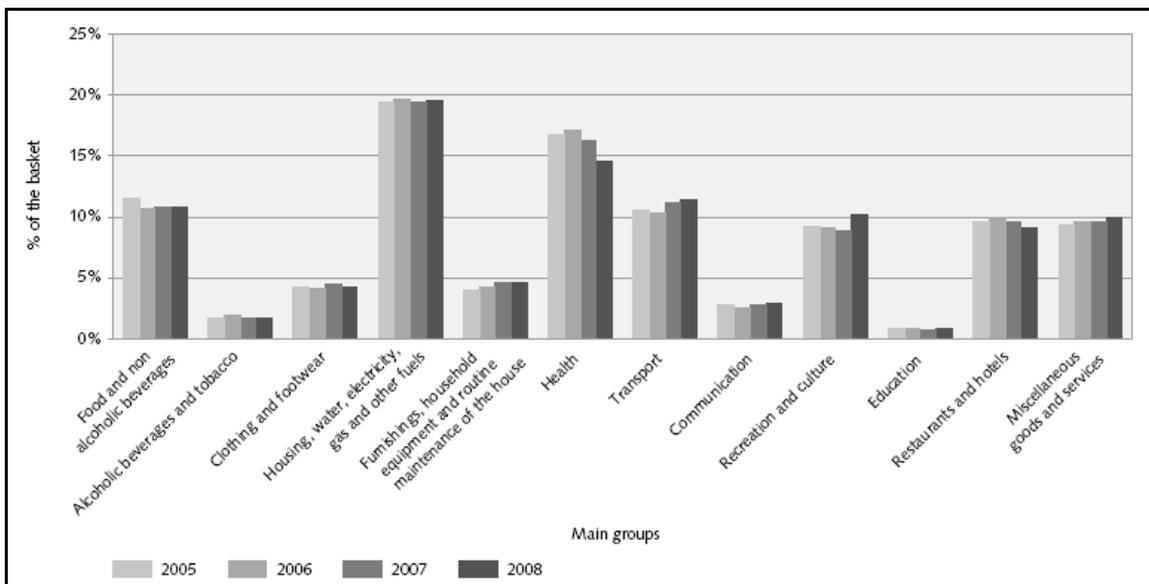


Diagram 3: Changes in the Swiss HICP weighting between 2005 and 2008

The indices calculated between 2005 and 2007 do not comply with all the Regulations governing the HICP, in particular the Regulation on price collection frequency, because it is impossible to increase price-collection frequency a posteriori. Furthermore, certain indices such as airfares, package holidays and social welfare are calculated according to a concept that is not comparable to those required for the HICP or covers a different area. Eurostat nevertheless agreed to publish these findings with the appropriate footnote, thus making it possible to publish the data of the Swiss HICP and the annual changes using the same base

year as the other European countries with effect from 2008. The first index calculated in compliance with the HICP Regulations is that for January 2008.

Generally speaking, there are no differences between the CPI and the HICP at the first level of aggregation because, in most cases, the data base is identical for both indices. The differences concern index coverage and the methods used, particularly the following areas:

- Homes for the elderly and the disabled: the private consumption expenditure in homes for the elderly and the disabled is surveyed in the HICP because these institutions are regarded as institutional households. However, it is excluded from the CPI.
- Airfares and package holidays: airfares are surveyed in the CPI according to the purchase concept in which the date of purchase is decisive. The HICP applies the utilisation concept – in other words, the price is included in the index at the moment the consumption can commence.
- Financial services: services billed in proportion to the transaction value are not included in the CPI. Thus, the HICP includes a higher number of financial services than the CPI.

Included in the CPI but not in the HICP	Included in the HICP but not in the CPI
Consumption expenditure for owner-occupied housing (concept of rental equivalence)	Private consumption expenditure in homes for the elderly and the disabled
Airfares according to the purchase concept	Airfares according to the user concept
Package holidays according to the purchase concept	Package holidays according to the user concept
	Private consumption expenditure for financial services billed in proportion to their transaction value

Table 2: Areas surveyed differently by the HICP and the CPI

In contrast, the HICP and the CPI differ at all aggregated levels because of the different weightings. With certain reservations, calculation of the HICP for 2005 to 2007 brings out the differences between the CPI and the HICP for this period. These variations were slight. Though this was admittedly a period of low inflation, substantial differences emerged for rents (exclusion from the HICP of expenditure on owner-occupied housing), hotels, social protection and financial services (considerable weight differences between the CPI and the HICP).

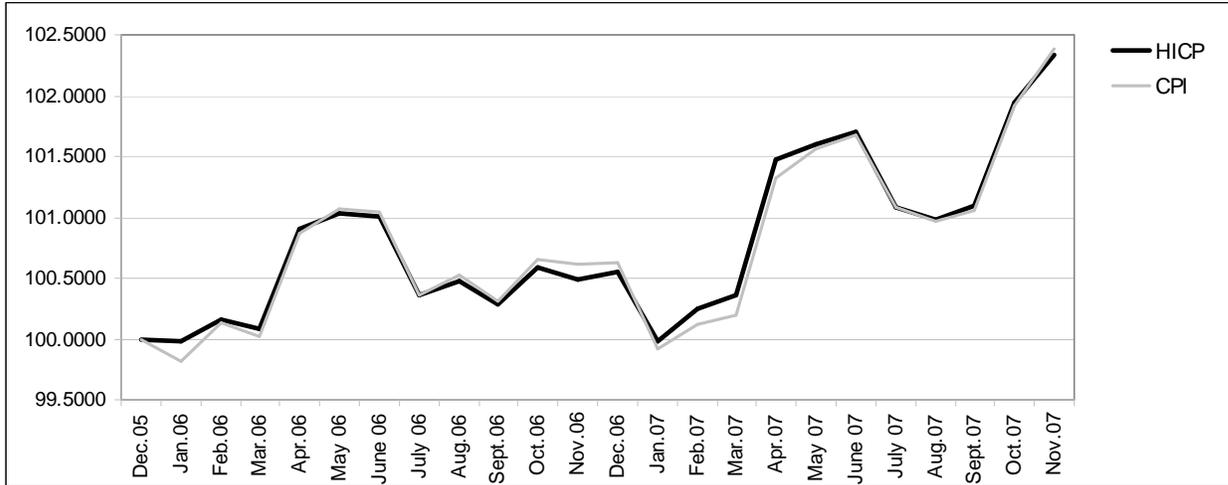


Diagram 4: Changes in the CPI and the HICP with the base December 2005 =100, calculated by the FSO

4. Outlook

The Swiss HICP, such as it was introduced, concentrated on the fundamental adjustments indispensable for publishing an HICP. The next step will be to ensure its quality, as regards weighting for instance. Annual weighting will offer an opportunity for checking whether better sources become available, especially for the expenditure of people not residing in Switzerland. Moreover, the review of the surveys for the CPI in 2010 will provide a chance to revise the frequency of price collections in certain fields. Lastly, the Regulations that currently govern calculation of the HICP are not immutable. In the years to come, other projects may emerge as part of the quest for new harmonised methods, particularly for seasonal goods and owner-occupied housing. Adaptations designed to improve data quality or sample composition cannot be excluded either and each time, the Swiss HICP will have to be amended accordingly.

The Swiss HICP was published for the first time with the January 2008 data. Straightforward access enables users to compare the inflation in Switzerland with that in Europe (www.hicp.bfs.admin.ch). The detailed data are published by Eurostat¹.

¹ www.epp.eurostat.ec.europa.eu/pls/portal/url/page/PGP_DS_HICP