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Is it still possible to publish a single consumer price index that satisfies all needs?

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Abstract
The resurgence of inflation, not only in Switzerland but throughout the world, has given the consumer price index a sudden and massive revival of interest. Not only are our figures of interest to the public, but also the way in which they are calculated. They have such an impact on everyday life that everyone is looking for the loophole that will allow them to be called into question. Over the last two years, a number of debates have resurfaced: households' perception of inflation, the cost-of-living index, socio-economic price indices and income-based price indices. So how do we strike the right balance between statistical validity and meeting needs? Is the publication of a single consumer price index still realistic? Should price indices also be produced for social policy? If so, how can users be guided through this forest of indices? We'll take a look at the issues surrounding the CPI and the possible outcomes in terms of communication. One thing is certain: the return of inflation has brought back a few ghosts.

1. One for all, all for one

Most countries, with a few exceptions, calculate only one indicator of consumer price movements, which is used both for the national central bank's monetary policy and for indexing wages, old-age pensions, contracts or deflation of nominal values, such as national accounts, wages or retail sales.

While the CPI is appropriate for central bank monetary policy and the deflation of nominal statistical series, some believe that it is less appropriate for indexing wages, old-age pensions, maintenance payments and other monetary values. This is because the CPI only covers consumer spending, which accounts in Switzerland for 60% of total household expenditure, with the remaining 40% representing compulsory transfer spending, such as taxes, social security contributions deducted directly from wages and compulsory health insurance. In Switzerland, the indexation of monetary values represents billions of francs each year.

The CPI is one of the statistics that directly affects households' wallets. That's why, when inflation is relatively high, it often finds itself in the middle of a political and social battle. Everyone is concerned by the CPI, which should cover all needs, and some people do not hesitate to say so openly and publicly:

- "The CPI does not accurately reflect price trends for the poorest sections of the population".
- "The CPI does not measure the changes in the cost of living that households are actually experiencing".
- "Health insurance premiums are not included in the standard basket, yet they are a major drain on household purchasing power".
- "The CPI has become so complex that nobody understands it any more".
- "Private households' perception of inflation is much higher than the official figures".
- "The CPI is a poor reflection of people's real loss of purchasing power".

Over the past three years, the CPI has been in the news quite often, first falling during the pandemic and then rising during the post-COVID boom and the sharp rise in commodity prices. During the pandemic, the CPI did not fall sufficiently in relation to household perceptions, and after the pandemic, it did not rise sufficiently. This created opportunities for private institutes and academics to take centre stage by producing and disseminating their "own CPI". According to some, the CPI as a universal indicator of inflation based on an average no longer met needs.

2. Is it necessary to produce several CPIs?

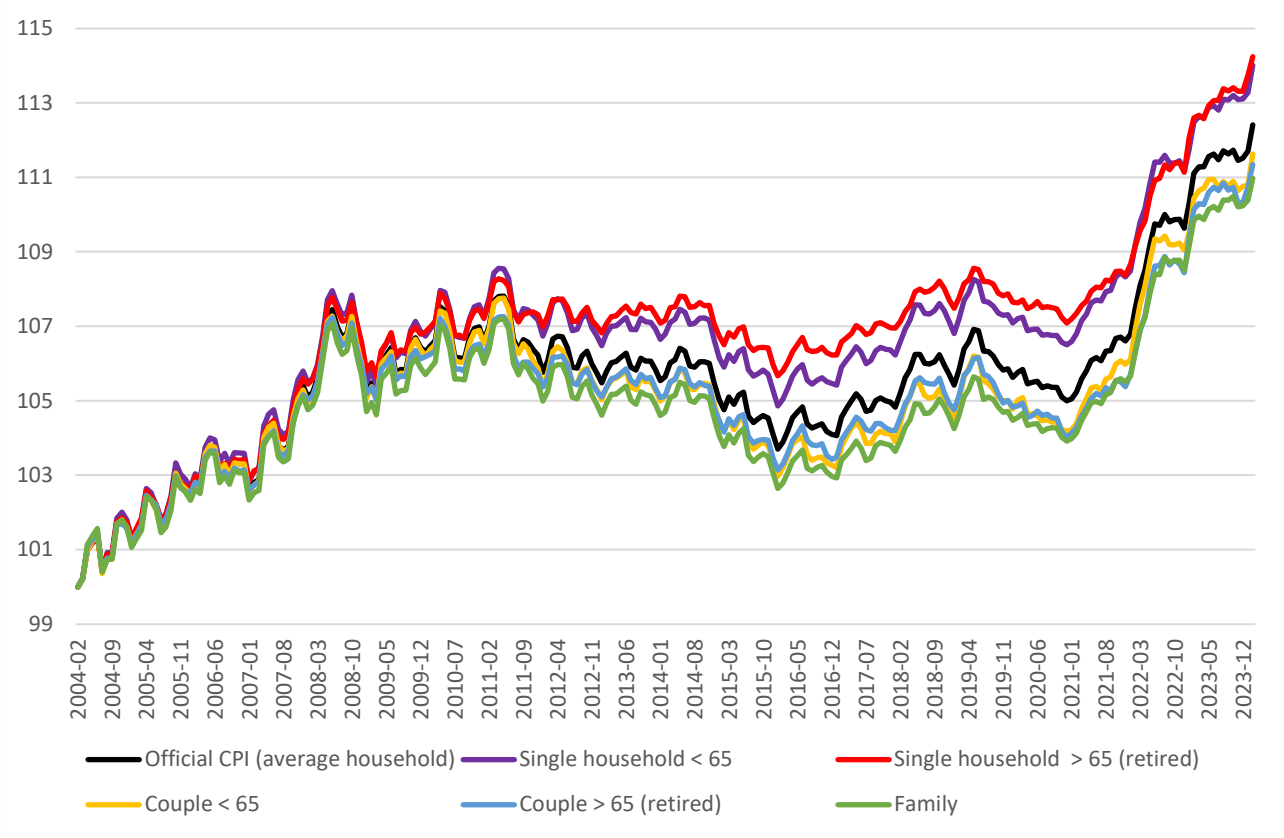
How should we respond to this criticism and to these competing CPIs? Should the statistical offices responsible for producing inflation rates broaden their range of indices and meet the needs of the public?

Our individual inflation calculator (FSO - Personal Inflation), developed and used for over a decade, has regained a certain amount of interest since the COVID crisis. Very simple to use and based on published price indices, it allows users to build their own standard basket, estimate their own inflation and compare it with official inflation[1]. In particular, it has made it possible to respond to one of the criticisms: "*Yes, Mrs Mill's inflation is different from official inflation because Mrs Mill consumes differently from the average Swiss household. No, the CPI does not publish Mrs Mill's inflation. Would you like to estimate Mrs Mill's inflation? Then use the individual inflation calculator.*"

We then extended the calculator's functionality, defining 5 types of household (single non-retired, single retired, non-retired couple, retired couple and family)[2]. This tool makes it possible to estimate price movements for these 5 socio-economic groups in comparison with the average household:

[1] Although the analogy with the official method exists to a large extent, this is a very simplified calculation model that is primarily intended for analytical purposes.
[2] The data used to calculate the weighting of household types and income categories comes from the annual household budget survey, which was specially processed for our purposes and provided us with consumption expenditure by category.

Figure 1: Consumer price index of socio-economic groups in the last 20 years



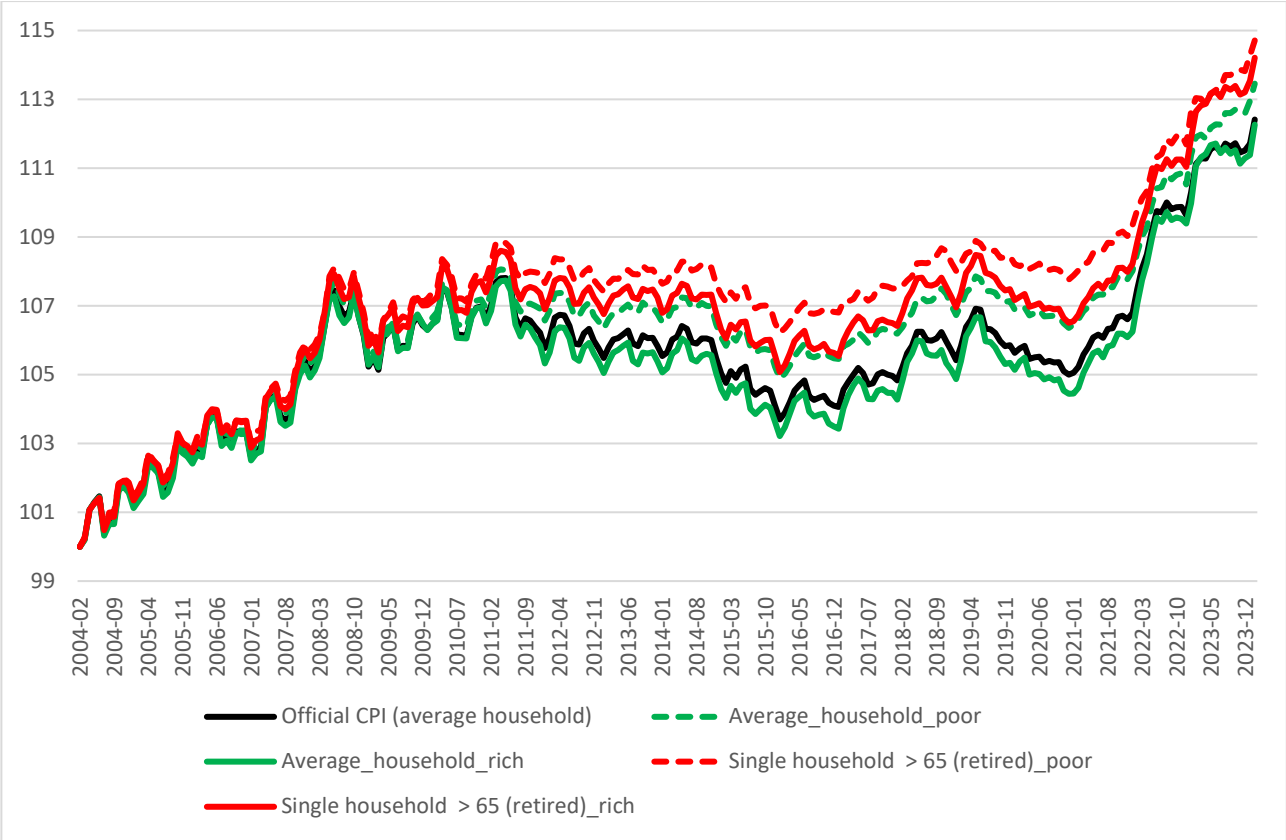
If we look at the differences over a 20-year period (February 2004 to February 2024), people living alone, whether retired or not, face slightly higher inflation. This is because the main group 'housing and energy' has a higher weighting for single people than for the average household; housing rents are constantly rising, so their contribution to inflation is greater for this group of households. But the differences are not staggering (+12.4% for the official CPI compared with +14.4% for retired single people over a 20-year period). Retired and non-retired couples and families have inflation rates very close to the official average household. Socio-economic groups, and household size in particular, do not therefore appear to be a major factor in inflationary differences.

During the period of relatively high inflation (2022), it was often said that the poorest households suffer much higher inflation than the average household. We have therefore supplemented our individual inflation calculator with the 'income' variable»[3].

The average least well-off household spends relatively more on food, housing and energy, and health; they spend relatively less on clothing, household equipment, transport, and restaurants and hotels.

[3] 5 income classes have been determined (quintiles). A weighting was estimated for each of the quintiles, for the 5 socio-economic groups, giving us 35 weighting schemes.

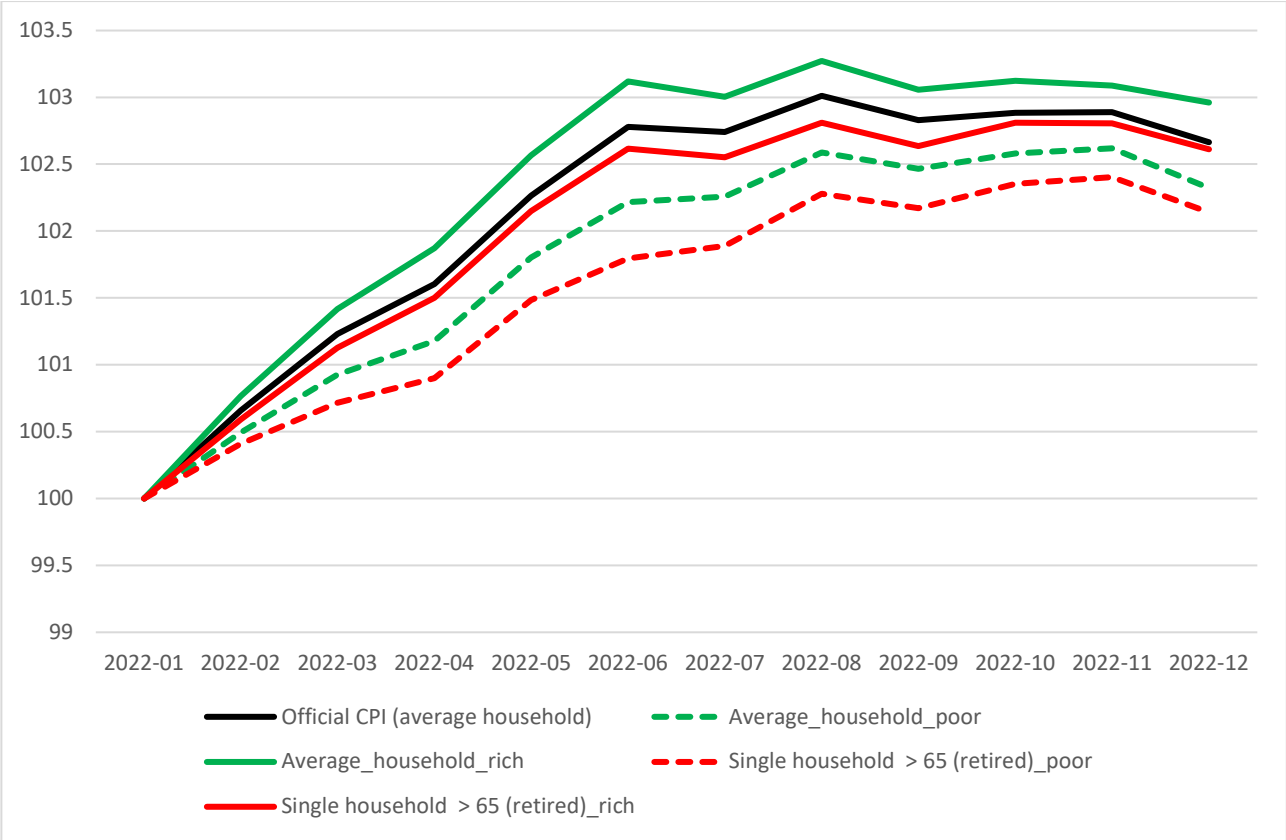
Figure 2: Consumer price index of socio-economic groups and class revenue in the last 20 years



Over 20 years, the poorest households have actually experienced slightly higher inflation than the average household: the poorest single-person households have experienced inflation of 14.7%, compared with 14.2% for the richest and 14.4% for the average. The poorest average household have experienced inflation of 13.5%, compared with 12.3% for the richest and 12.4% for the average household.

In 2022, on the other hand, it is actually the richest households that have experienced slightly higher inflation (+3% compared with 2.7% for the average household) than the poorest households (+2.3%). The poorest single retired households experienced the lowest inflation (+2.1%). And if this type of household eats little, doesn't smoke, doesn't drink alcohol, rents a very small flat, dresses warmly instead of heating, travels only on foot, doesn't fly and never goes on organised trips, it can bring its inflation down to 1.5%!

Figure 3: Consumer price index of socio-economic groups and class revenue in 2022



This individual inflation calculator has evolved from a fun tool into a tool for analysing inflation according to different socio-economic categories and income classes. Admittedly, it is based on a relatively simple model, since only the structure of spending is changed, everything else being equal. But it nevertheless provides useful information for public authorities in terms of social and income policy. We still publish a single Consumer Price Index, but derive a large number of useful indices to better understand who is most affected by inflation, a flexible way of offering several indices while only publishing one officially.

3. Are inflation perception indices or indices from private sources useful?

Inflation perception indices resurface when inflation rises. The reason is that households have the impression that inflation is much higher than that measured by the national statistical offices. In Switzerland, we have had a consumer price index whose weights are based on frequency of purchase, not expenditure[4]. For example, bread, bought almost daily, has a much higher weighting than rent, paid 12 times a year. In most cases, a simple example of the potential impact of this kind of method silences the most convinced:

[4] See global_investor_110_en.pdf (unifr.ch) or Indice de l'inflation perçue — Wikipédia (wikipedia.org)

Figure 4 : inflation perception index versus CPI

Products	Previous price	Current price	Index	Quantity based weights	Expenditure based weights
Bread 1 kg	1.-	1.-	100.0	6.0%	0.2%
Housing rent	1500.-	1650.-	110.0	0.4%	19.9%
Perception index (quantity based weights)			**100.6**		
CPI (expenditure based weights)			**109.9**		

Households will have to spend an extra 150 to maintain the same level of consumption, yet they will only be compensated by 0.6% instead of 10% according to this perception index.

We have also seen a private CPI with a restricted basket[5] : only everyday consumer goods are considered, excluding durable goods and housing rents. And when food, energy and fuel prices rise, as they did in the first half of 2022, the index is obviously much higher than the official index. But when housing rents start to rise as a result of the increase in the benchmark mortgage rate, the situation reverses and this private indicator loses interest.

Private institutes or academic circles that take up the theme of inflation are sure to gain in visibility and recognition. In fact, all these parallel indices, whether they measure perception or something else, are useful to us: they force us to explain further and in a vulgarised way why it is important to weight the standard basket by expenditure and why the standard basket must be complete. Our methods must not only be statistically correct, they must also be understood by the public. These parallel indices also help to explain why inflation can be perceived differently from that officially calculated. Instead of fighting them, we need to welcome them, make the most of them and make the methodological explanations of the CPI even more widely available. After all, the CPI is built on solid foundations.

4. The cost-of-living index: the ghost that haunts us through time

On average, Swiss households spend 60% of their gross income on consumption, 30% on compulsory transfers from households to the state (tax, social security contributions for old age, retirement, unemployment and accident insurance) and compulsory transfers from households to health insurance funds, and 10% on savings. Their salaries are indexed to the CPI, even though it covers less than two-thirds of their expenses.

Living is not just about consumption: it also includes all the compulsory expenditure. While transfers to the state have remained relatively stable over time, compulsory health insurance contributions continue to rise. Between 1999 and 2023, these rose by 137% (the CPI itself rose by 16%)[6].
Compulsory health insurance in Switzerland is a per capita “social” insurance paid directly by households; it is treated as a transfer because of its compulsory status, but is managed by private

[5] Indice des prix à la consommation : l’inflation en Suisse (comparis.ch)
[6] The rise in compulsory health insurance premiums is due to a volume and quality effect, not a price effect. Tariffs and prices in the healthcare sector fell by more than 3% between 1999 and 2023

health insurers who are subject to the Lamal, the law on compulsory health insurance. The freedom of households to change health insurers and the obligation of the latter to accept them is supposed to guarantee competition and maintain a certain pressure on premium levels. Per capita premiums depend on age and canton of residence. There are several dozen health insurance companies in Switzerland. All health insurance companies provide the same services under the Lamal.

Compulsory health insurance premiums represent between 4% and 15% of gross household income, depending on income bracket and household size. Less well-off households receive state subsidies.

Since the Lamal came into force in 1996, there has been considerable pressure to include compulsory health insurance premiums in the standard CPI basket: parliamentary intervention, motions, media pressure, social realities. In response, we have been producing the health insurance premium index[7], which measures changes in gross premiums over time and estimates the impact of a change in gross premiums on growth in household disposable income. In more than 20 years, this growth has been reduced by around 5%. But these figures are not really used in annual pay negotiations, and employees remain unhappy.

What are our options ?

a) We could create an additional indicator that includes compulsory health insurance gross premiums and treats them as private insurance[8]. However, if we retain the CPI methodology, the weighting (services) would be very low, given that on average 95% of premiums are used to pay for/reimburse financed healthcare goods and services consumed by households. So even a 10% rise in premiums would have virtually no impact on the total CPI.

b) We could merge the consumer price index with the estimate of the impact of a change in premiums on growth in household disposable income. This would require finding a common denominator for both indicators.

c) We could create an additional indicator that includes all household transfer expenditure. The model basket of an "expenditure or cost of living index" and its weighting could be as follows[9]:

Expenditure	**Weights**
Consumption	62%
Social insurances	13%
Old-age insurance (1st pillar)	*5%*
Unemployment insurance	*1%*
Accident insurance	*1%*
Old-age insurance (2nd pillar)	*6%*
Compulsory health insurance	9%
Taxes	16%
Total	100%

[7] Primes d'assurance-maladie | Office fédéral de la statistique (admin.ch) (only available in French, German, Italian)
[8] Private insurance (home, liability, vehicle, supplementary health) is included in the CPI basket. The weighting of these sub-indices is based on service charges (gross premiums minus claims), whereas the index is based on gross premiums as a proxy (due to the lack of an appropriate method for estimating movement in the service charges).
[9] Data from the 2021 household budget survey - average for all households

Contributions to the first three social insurance schemes (old-age insurance 1st pillar, unemployment insurance and accident insurance) are national - the rates are the same for all employees. Contributions to the second pillar of old-age insurance (occupational pensions) depend on the employer, age and employment status. In recent years, in response to the ageing of the population, instead of increasing contributions, benefits have been steadily reduced once people reach retirement age. Compulsory health insurance premiums depend on age and canton of residence. Depending on the benefits paid at cantonal level, they can vary from one canton to another and from one age group to another - not forgetting state subsidies, which can vary from year to year depending on the financial situation of the cantons. There are three levels of taxation in Switzerland: communal, cantonal and federal; each commune and canton has its own tax rate and tax system. A federal system is good for the people, but not for statistics!

What to keep fixed? Utility? Impossible to estimate in practice. Our idea is rather to define typical households and keep their gross income fixed over time. It should also be noted that such an index is unlikely to provide what households expect. Social insurance remains very stable over time, which will greatly attenuate the rise in health insurance gross premiums.

5. Conclusion

We produce a single consumer price index but provide a wealth of information on inflation using our individual inflation calculator. This information is primarily for social and income policy purposes, because indexation should remain based on a single official indicator, to keep it simple, understandable and unambiguous. For us, it's a good compromise. This calculator also allows us to explain what the national CPI is based on and why inflation for certain population or income groups differs from the official figures.

The bottom line is that inflation in Switzerland is not that different depending on socio-economic background or income class. Households may have the impression that certain categories of the population have inflation multiplied by two or three, but this is not the case. For the poorest sections of the population, it is probably very difficult to save for an unexpected expense. Any price increase therefore has major consequences and can tip a barely balanced financial situation into a precarious one.

The CPI provides essential information for society. Even if it is an indicator calculated on solid bases and foundations, every criticism must be taken seriously and used to make the concepts and principles applied accessible to a wider audience. We introduced a new communications policy

many years ago, with explanations[10], videos and improvements to the content of our website Consumer Prices | Federal Statistical Office (admin.ch). It's well worth the investment.

The CPI is not a universal indicator that meets everyone's needs. It cannot answer all questions and solve all social problems. But we must keep an open mind, listen to criticisms and needs, and respond to them in the most judicious and relevant way possible. Price statistics have a direct impact on people's lives, that's what makes them so exciting and that's what makes our work rewarding.

[10] Price statistics in brief (youtube.com); Consumer Prices | Federal Statistical Office (admin.ch); How does the consumer price index work (youtube.com) Subtitles in French, German, Italian and English; CPI, standard basket, inflation : FSO explains (youtube.com) Subtitles in French, German, Italian and English