

2020



05

Prices

Neuchâtel 2020

Swiss residential property price index (IMPI)



Schweizerische Eidgenossenschaft
Confédération suisse
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Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Statistical Office FSO

What is the residential property price index (IMPI)?

The residential property price index (IMPI) is an economic indicator that measures price changes in the transactions of properties bought and sold for residential purposes (single-family houses and condominiums). In particular, it is used:

- To monitor financial market stability
- For the Swiss National Bank's monetary policy
- As a basis for decisions on real estate purchases
- In research and analysis
- In other areas of official statistics (the national accounts, for example)
- In international comparison.

The Federal Statistical Office (FSO) started calculating the index in 2020 for every quarter, based on some 7000 real estate transactions carried out in all regions of Switzerland.

Price changes are published for single-family houses and condominiums, classified by type of municipality (the 5 types of municipality are derived from the FSO's urban-rural typology and the typology of municipality 2012).

Where do the data come from?

The data comes from the 26 largest mortgage-lending institutions in Switzerland. As the vast majority of real estate purchases are financed by a mortgage, they cover a very large part of the market.

The prices collected are the actual transaction prices, paid on the open market, for single-family houses and condominiums (preferential prices in the form of partial donations or pre-inheritance are excluded).

In addition to the transaction price, structural variables are also collected, such as the number of rooms, bathrooms, the building's volume, surface area and information on the macro and micro situation, such as a lake or mountain view, noise pollution and travel time to the closest urban centre.

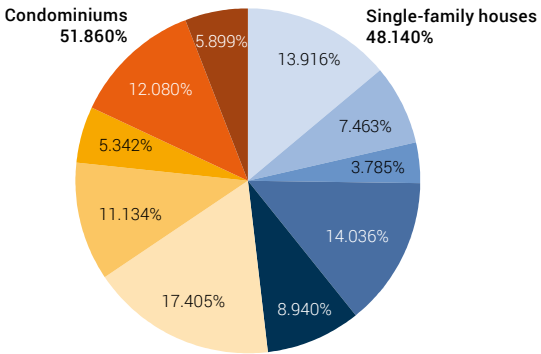
How are price changes measured?

In its simplest form, a price index is calculated by comparing the price of a property A in time T with the price of the same property A in time T-1. The particular challenge posed by the comparison of property prices is that their characteristics vary widely in terms of structure and location. The same property is never sold twice. For

this reason, quality adjustments must be carried out in order to neutralise the qualitative differences between the two properties, the aim being to measure solely the price change (see insert for more information on quality adjustment).

The total index is subdivided into sub-indices (type of property and type of municipality). These are aggregated depending on their relative importance (value of transactions). The source for calculating the weights is the annual data collected from mortgage lending institutions. The 2020 weighting (based on 2019 data) is as follows:

IMPI – Weights of the sub-indices by object type and by municipality type (weights 2020)¹



Single-family houses (SFH)

- SFH – urban municipality of a large agglomeration
- SFH – urban municipality of a medium-sized agglomeration
- SFH – urban municipality of a small or outside agglomeration
- SFH – intermediate municipality
- SFH – rural municipality

Condominiums (CONDO)

- CONDO – urban municipality of a large agglomeration
- CONDO – urban municipality of a medium-sized agglomeration
- CONDO – urban municipality of a small or outside agglomeration
- CONDO – intermediate municipality
- CONDO – rural municipality

¹ When calculating the total index, the individual strata are aggregated. They are weighted according to their share of the transaction volume from the previous year.

What is a price index?

An index expresses price changes over time in the form of a figure (index) defined in relation to the base period established at 100 points. It does not indicate the price level in absolute figures expressed in Swiss francs but enables the average price change percentage to be calculated in relation to the base period or any other reference period.

If, for example,

- In the 1st quarter 2020, the index value was 104.6 (based on 4th quarter 2019 = 100), this would mean that prices rose by 4.6% between the 4th quarter 2019 and the 1st quarter 2020.
- If, in the 2nd quarter 2020 the index value (still in relation to the base of 4th quarter 2019 = 100) is 105.4, the price change between the 1st and 2nd quarter 2020 can be calculated as follows: $((105.4/104.6) - 1) * 100 = 0.8\%$, because both indices are expressed on the same base of 4th quarter 2019 = 100.

When and where are the results published?

The survey is conducted immediately after the end of each quarter. Results are published roughly 45 days after the end of the quarter, i.e. in the middle of the following quarter, in a press release published on the internet www.IMPI.bfs.admin.ch.

More detailed information on the methodology is also available on this website.

Quality adjustments

The FSO has developed a statistical model, known as a "hedonic model" for quality adjustments. This model estimates a value for each of the main characteristics of a property, for example the price of a bedroom, a bathroom, a square metre, the price of a lake view, etc. It enables the characteristics and the prices of residential properties sold during the previous quarter to be compared with the characteristics and prices of residential properties sold during the quarter under observation and to explain the price differences that are due to differences in quality.

For example,

- In the 1st quarter 2020 an apartment A of 80 m², 4 rooms, 2 bathrooms was sold in the canton of Aargau for CHF 850 000.

- In the 2nd quarter 2020, still in the canton of Aargau, an apartment B of 120 m², 6 rooms, 3 bathrooms was sold for CHF 980 000.

Although the property type is the same (condominium), the two apartments are very different in terms of quality, and the increase in the gross price (an index of 115.3 i.e. + 15.3%) is largely explained by a difference in quality.

Based on the price estimated per room, per square metre and per bathroom (etc.) established in the hedonic model, an imputed value “at constant prices” is calculated for the two properties. Assuming that the imputed value for property A is CHF 870 000 and that for property B is CHF 970 000. The change between the two (an index of 111.5 i.e. + 11.5%) reflects the difference in quality. By dividing the gross price index (115.3) by the quality index (111.5), the actual price change is obtained: 103.4 i.e. a price increase of 3.4%.

Existing price indices in the real estate sector

Several private institutions and businesses, as well as cantonal statistical offices, provide information on the real estate sector (price indices, average prices, at varying geographic levels). The offer in this sector, whether for residential, commercial or investment property, is vast and varied and able to satisfy many users. Each one has its own data sources and its own methodology, which has to be well understood in order to use the information properly. The FSO is expanding this offer with a new set of official statistics at a highly aggregated level, based on international standards and in addition to the other official price indices produced¹. Switzerland was the last country to have no official residential real estate price index – this gap has now been filled.

¹ The consumer price index, the producer and import price index, the construction price index and the health insurance premium index.

Access to land registers: a medium to long-term project

Since the start of the project, the FSO has been interested in the administrative data held in the land registers. Transmitted to the FSO since 2020 in order to produce statistics on the types of property owners, these data could be used in the medium term to establish the total number of real estate transactions in our country. This information will make it possible to calculate exactly the current coverage of our sample and the weights based on all transactions conducted in our country. In the much longer term, these data could be used to calculate price changes directly: to do this transaction prices would have to be registered in a uniform manner in all land registers of the 26 cantons. This is currently not the case.

Published by:	Federal Statistical Office (FSO)
Information:	IMPI@bfs.admin.ch, tel. +41 58 463 60 69
Editor:	IMPI team, FSO
Series:	Swiss Statistics
Topic:	05 Prices
Original text:	French
Translation:	FSO language services
Layout:	DIAM Section, Prepress/Print
Graphics:	DIAM Section, Prepress/Print
Online:	www.statistics.admin.ch
Print:	www.statistics.admin.ch Federal Statistical Office, CH-2010 Neuchâtel, order@bfs.admin.ch , tel. +41 58 463 60 60 Printed in Switzerland
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FSO number:	2074-2003