

Rental Price Index

Svoboda & Williams + VŠE

The Rental Price Index of S&W + VŠE is an analytical tool monitoring the growth of rental prices in the premium segment in Prague newly developed by the Svoboda & Williams real estate agency in cooperation with the Faculty of Informatics and Statistics of the University of Economics in Prague. The data is sourced from actually achieved rents of the flats that were listed by Svoboda & Williams. Annually it amounts to about 1000 properties in the territory of Prague 1 to Prague 10 with 1+kk to 6+1 layouts. Since prices of the products are heterogeneous, we apply a general price index to the development of their prices. It works similarly as the Consumer Price Index compiled by the Czech Statistical Office that measures inflation.

Why a simple comparison using the average price development is not enough

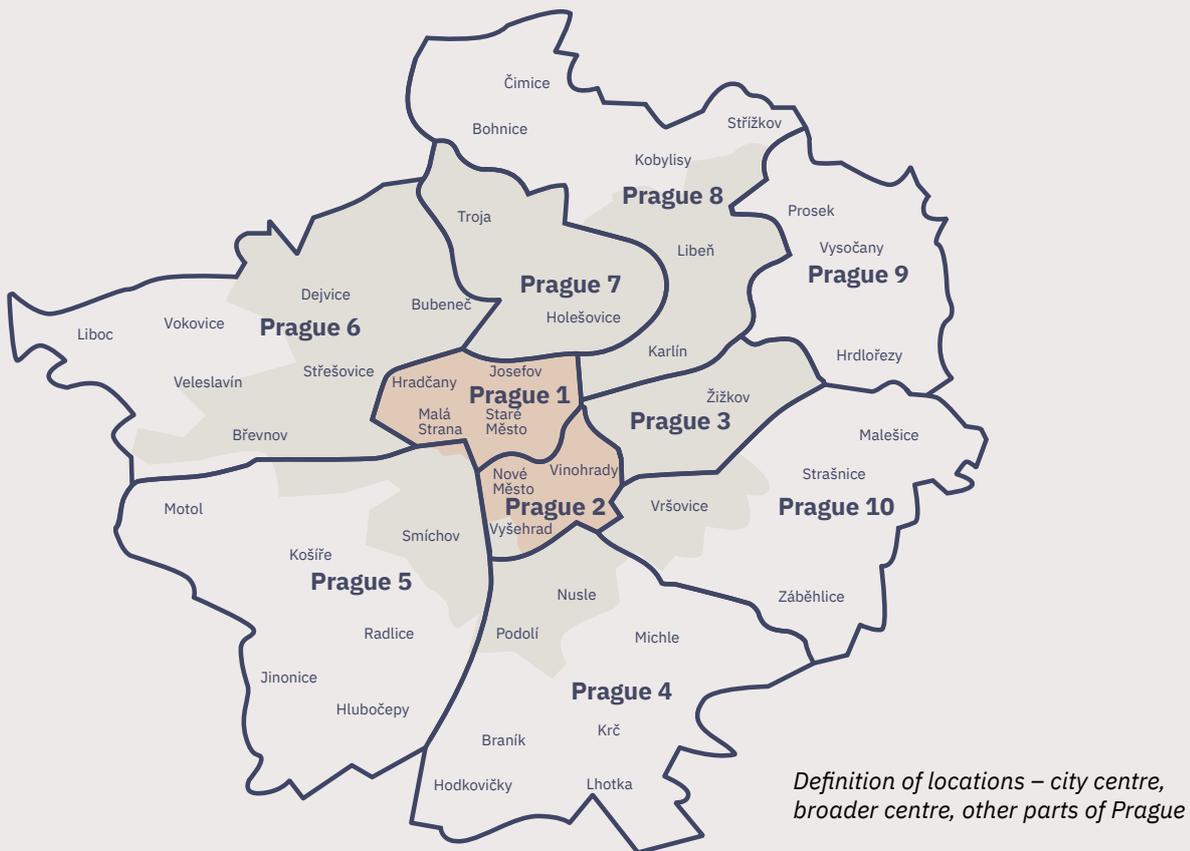
Development of an average rent does not reflect correctly a change of the price level. It is because the average rent is influenced not only by a change of the price level, but also by a change of the product structure. Let's give an example. In two monitored periods a sample of flats including luxury flats in the centre of Prague and cheaper flats in the broader centre have been rented. Prices of both the cheaper and the luxury flats in the second period remain equal, but more units of the more expensive real estate are sold. This will raise average rents, whereas the price index will remain the same. The general price index is based on the assumption of fixed presence of segments of rentals in the portfolio and it expresses a change of the price "cleaned" of a change of the structure of rentals. The index is calculated as the weighted average of segments where their representation in the portfolio (structure) in the selected fixed period is weighted.

Construction of the Rental Price Index of Svoboda & Williams + VŠE

Selection of representatives

The segmentation was performed so as the flats in the same group were as similar as possible and, on the other hand, so as the groups were as different as possible. At the same time, each group must contain a sufficient amount of data. Within the statistical analysis the impact of many factors on the level of rents was examined. These parameters included a specific layout of a flat, location, floor, the existence of a terrace, balcony or loggia, or an option to lease parking. The analysis proved that the level of rents was most affected by **the location** and **the layout** of a flat and therefore we performed the segmentation based on these two factors.

Based on our expertise and the data analysis of the level of rents, Prague was divided into the following **locations**:



We selected **the layout** of a flat as the second factor. Based on the location and the layout we defined 9 segments in total:

Chart 1: Definition of segments – relative representation

Segment	Relative representation in portfolio (%)
city centre – 1+kk to 2+1	15,3
city centre – 3+kk and 3+1	16,6
city centre – 4+kk and larger	9,0
broader centre – 1+kk to 2+1	19,7
broader centre – 3+kk and 3+1	15,7
broader centre – 4+kk and larger	9,6
other parts of Prague – 1+kk to 2+1	4,6
other parts of Prague – 3+kk and 3+1	5,3
other parts of Prague – 4+kk and larger	4,3

Flats with 6+kk layouts and larger are represented too sparsely and they are not included in the analysis.

Selection of weights

We assigned weights to the segments on the basis of the structure of the flats rented during the whole calendar year of 2016. The weight of the segment in the price index is calculated as a proportion of the total rent of the relevant segment to the total rent for all segments brokered in 2016.

In order for the index to be compiled on the basis of a sufficient number of observations, it is compiled on a biannual basis. In practice, biannual indexes are not as common as monthly or quarterly indexes, but they are by no means exceptional. They are, for example, used by the United States Department of Labor for the construction of the consumer price index.

We compile 2 **types of indexes:**

Chain indexes – these monitor price changes between two consecutive periods

Base indexes – these monitor price changes between the current period and the so-called initial period. The stable period considered a long-term default should be selected as the basic period, in our case it is H1 2015.