



## SE – Sweden

Statistics Sweden publishes a nationwide house price index for new and existing, one- and two-family dwellings. This includes detached houses, terraced houses and linked buildings. The index is constructed by first grouping dwellings by similar characteristics, implementing a mix-adjustment technique. However, the main method of index construction is the sales price appraisal ratio (SPAR) method. Since the SPAR method does not control for the compositional changes of dwellings sold, mix-adjustment techniques are combined with the SPAR method. Dwellings are first grouped according to type and location, then the ratio of the average sales price and average appraisal value is computed for each group.

In Sweden, appraisal data is provided by the official real estate registry. This is used to group dwellings by assessed value and region. Appraisal data is then coupled with current transaction data, to produce a ratio of the average sale price and average appraisal value for each dwelling group. Dwelling stock is used to weight each ratio. Dwellings are re-appraised each year, which creates an annually chain-linked index (Laspeyres). An annual index is available from 1975 onwards, and a quarterly index is available beginning in the first quarter of 1986. We interpolate the annual index at quarterly frequency using the quadratic-match average method and use the resulting growth rates to extend the current quarterly series back to the first quarter of 1975.

The house price series is not seasonally-adjusted by the source. We seasonally-adjust the series using the BSTS model and re-base it to 2005=100. We deflate this house price series using the Personal Consumption Expenditure (PCE) deflator obtained from the OECD Economic Outlook database.

We complete the data for Sweden by including a personal disposable income (PDI) series, reported in *per capita* terms. To create this per capita series, we used the PDI and working age population series from the OECD Economic Outlook database. The source of the current PDI and working age population data changed, affecting the PDI *per capita* series in the 2012 first quarter update and all subsequent updates. Net disposable income data for households was collected from Statistics Sweden, reported at a quarterly frequency starting in 1993. The source has changed again for the current PDI data, affecting the PDI *per capita* series in the 2013 second quarter update and all subsequent updates. Gross disposable income and consumption of fixed capital for households are now collected from Eurostat. Both series are reported at a quarterly frequency and began in 1999 until the 2017 third quarter update. Starting with the 2017 third quarter update, the series start in the first quarter of 1980. Consumption of fixed capital is subtracted from the gross disposable income series to produce PDI. The series is largely influenced by seasonal factors, so we use a structural time series model in state-space form to identify and systematically extract the seasonal and excessively volatile components of the data.

To extend the PDI series back to 1975 we use the net disposable income series from the OECD Outlook 86 database, which is reported at an annual frequency. We interpolate it to a quarterly frequency using the quadratic-match average method. The resulting quarterly growth rates are used to extend the current series. Current working age population data is now obtained from the OECD Main Economic Indicators database as of the 2012 first quarter update. It is reported at a quarterly frequency and begins in the first quarter of 2001. We use the quarterly growth rates of

the discontinued working age population series from the OECD Outlook 90 database to extend the series to the first quarter of 1975.

To calculate the *per capita* series, we divide the PDI by the working-age population. We use the PCE deflator to report the PDI *per capita* in real terms. Both nominal and real PDI measures are re-based to 2005=100.

*Information Resources:*

Statistics Sweden Data (in Swedish)

[http://www.scb.se/Statistik/BO/BO0501/2011K01/BO0501\\_2011K01\\_SM\\_BO40SM1102.pdf](http://www.scb.se/Statistik/BO/BO0501/2011K01/BO0501_2011K01_SM_BO40SM1102.pdf)

Eurostat Data

[http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database)