

## FR – France

The *Institut National de la Statistique et des Études Économiques* (INSEE) produces a nationwide house price index for all types of existing dwellings (detached houses and apartments).<sup>26</sup> The index is calculated using the hedonic method, where the price of each dwelling is defined by a combination of a fixed number of characteristics, such as location and quality of the dwelling. Dwelling prices are quoted in Euros. Mix-adjustment techniques are also implemented, as dwellings are grouped in zones where prices are more homogeneous and price evolutions are roughly parallel. In each group a reference stock of dwellings is created from all dwellings sold during 1998-2001. Price data for dwellings sold within a current period is adjusted to be representative of the dwelling characteristics in the reference stock, capturing the price movements of a fixed set of dwellings regardless of whether they have been sold at a given date. Data is reported at a quarterly frequency and begins in the first quarter of 1996.

To extend the data, we use a nationwide house price index produced by the *Conseil Général de l'Environnement et du Développement Durable* (CGEDD) for existing apartments and individual houses.<sup>27</sup> The CGEDD series is reported at an annual frequency, and constructed using the repeat sales method prior to 1999. Under the repeat sales method used until 1999, apartments included in the index must have been sold more than once, since the method compares a dwelling's most recent (current) transaction price with its previous transaction price. Only existing apartments that were more than 5 years old at the time of the previous transaction were included. Dwelling prices are quoted in Euros, using the irrevocable exchange rate of 6.55957 francs per euro. After 1999, annualized values of the quarterly INSEE index are used in the CGEDD series. We interpolate the annual CGEDD series at quarterly frequency with the quadratic-match average method and use its growth rates to extend the quarterly INSEE series.

A change in the quarterly house price index produced by the INSEE occurred in Q3 2011. This affects our calculations for the February 2012 update and future updates. The index is now reported with a base on the first quarter 2010=100. The house price series are not seasonally-adjusted by the sources. We seasonally-adjust the spliced series using the Census X-12 multiplicative method and re-base it to 2005=100. We deflate this house price series using the Personal Consumption Expenditure (PCE) deflator from the OECD Economic Outlook database.

We complete the French data with data on Personal disposable income (PDI) reported on a *per capita* basis. We obtained an extended PDI and working age population series from the OECD Economic Outlook database. The source of the current PDI and working age population data has changed, affecting the PDI *per capita* series in the 2012 first quarter update and all subsequent updates. Gross disposable income for households is obtained from INSEE and consumption of fixed capital for households from Eurostat. Both series are reported at a quarterly frequency. The gross disposable income series begins in 1949, and the consumption of fixed capital series begins

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<sup>26</sup> A single-family dwelling refers to housing intended to be occupied by a single household, and consists usually of just one dwelling unit. A detached house or dwelling refers to a house that does not share an inside wall with any other dwelling. It, therefore, excludes dwellings such as duplexes, linked houses (semi-detached) as well as all terraced houses (row houses) and most apartment blocks (where each building unit can be assigned to a single-family but the entire building can hold multiple single-family units).

<sup>27</sup> CGEDD falls under the jurisdiction of the Ministry of Ecology, Sustainable Development, Transport and Housing (French: Ministère de l'Écologie, du Développement Durable, des Transports et du Logement, MEDDTL).

in 1980 as of the 2016 first quarter update (previously 1999). To extend the consumption of fixed capital series, we computed the difference between the gross measure from INSEE and the net measure from the OECD. Annual data from the OECD Outlook 79 database (from 1975-1977) was spliced with annual data from the OECD Outlook 86 database (from 1978-1998). The spliced annual series was interpolated to a quarterly frequency using the quadratic-match average method. This interpolated series was subtracted from the gross disposable income, and the resulting series was used to extend the consumption of fixed capital data from Eurostat. The extended consumption of fixed capital series was subtracted from gross disposable income series to produce net PDI. The source of the historical PDI data has changed, affecting the 2015 third quarter update and all subsequent updates. We now use an annual consumption of fixed capital series from the OECD before 1980 (1999 before the 2016 first quarter update). The data starts in 1978, and since we could not find reliable data to extend the series backwards, we had to make an exception and backcast three years of data. The resulting series is interpolated to a quarterly frequency and subtracted from the gross disposable income series to produce net PDI.

All quarterly data comes seasonally adjusted from the source. Current working age population data is now obtained from the OECD Main Economic Indicators database. It is reported at a quarterly frequency and begins in the first quarter of 2003. 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. We divide this extended series by the quarterly working-age population taken from the OECD Economic Outlook database to obtain a nominal PDI *per capita*. We use the PCE deflator to express the series in real terms. Both nominal and real measures are re-based to 2005=100.

#### *References:*

Gouriéroux and Laferrère (2006): “Managing Hedonic Housing Price Indexes: The French Experience.”

#### *Information Resources:*

##### INSEE Data

[http://www.indices.insee.fr/bsweb/servlet/bsweb?action=BS\\_RECHGUIDEE&BS\\_IDARBO=05000000000000](http://www.indices.insee.fr/bsweb/servlet/bsweb?action=BS_RECHGUIDEE&BS_IDARBO=0500000000000)

Note on base change: [http://www.insee.fr/fr/indicateurs/ind96/prixloge\\_m.pdf](http://www.insee.fr/fr/indicateurs/ind96/prixloge_m.pdf)

##### CGEDD Data (contains long-historical series as well)

[http://www.cgedd.developpement-durable.gouv.fr/rubrique.php3?id\\_rubrique=137](http://www.cgedd.developpement-durable.gouv.fr/rubrique.php3?id_rubrique=137)

##### Eurostat Consumption of Fixed Capital 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)

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