

## IT – Italy

The Italian research institute *Nomisma* produces a house price series based on all types of dwellings, new and existing. Only dwellings located in 13 main metropolitan areas are included (Bari, Bologna, Cagliari, Catania, Firenze, Genova, Milano, Napoli, Padova, Palermo, Roma, Torino and Venetia). The series is semi-annual, collected in May and October from a sample of real estate agencies. Dwellings are grouped by type and location within a city. Prices for each group are reported per square meter and represent the average sale price. Dwelling prices are quoted in Euros, using the fixed conversion rate with the Lire prior to 1999. These prices are then weighted according to the groups' location within each city. The 4 locations (and weights) are luxury areas (1/15), town center (2/15), between town center and outskirts (4/15), and outskirts (8/15). The 13 cities are aggregated using population weights from the 1982 Census.

To obtain data prior to 1988, we gather data from the “*Annuario immobiliare*” published by the *Il Consulente Immobiliare* for the same 13 cities. *Il Consulente Immobiliare* is maintained by the Italian business newspaper *Il Sole 24 Ore*. The prices (per-square-meter) refer to new dwellings only. Dwellings are grouped by their location within the city. No aggregation is made by the *Il Consulente Immobiliare*, so we apply the *Nomisma* approach to combine the price data within each city. We select the same 13 metropolitan areas that are included in the *Nomisma* series. Since no distinction is made for dwellings located in luxury areas, we distribute the luxury area weight equally among the three remaining areas resulting in the following weight distribution: town center (7/45), between the town center and outskirts (13/45), and outskirts (25/45). We then calculate a weighted average of the 13 cities using 1982 population data for each city, published by the national statistics office. Data is reported in Italian lire at a bi-annual frequency from 1967 to 2001 and in Euros at annual frequency from 2002 to 2009. We convert the averaged bi-annual series to Euros, using the irrevocable exchange rate of 1936.27 Lire per euro.

The series from *Il Consulente Immobiliare* is interpolated to a semi-annual frequency with the quadratic-match average method and spliced with the semi-annual *Nomisma* series. This spliced semi-annual series is then interpolated to a quarterly frequency using the quadratic-math average method. The house price series are not seasonally-adjusted by the sources. We seasonally-adjust the interpolated and spliced series using the BSTS model and transform the series to an index with base year 2005=100.

Since the primary data is released semi-annually, at least two quarters would elapse before there is sufficient information to include all countries in the database. To avoid this lag and make the public release of the data more timely, we nowcast the spliced semi-annual series for Italy one period ahead, using the BSTS model that can be jointly interpolated with the actual data<sup>34</sup>. The quarterly estimates obtained using interpolated nowcasts will be subsequently replaced as the official *Nomisma* semi-annual data becomes publicly available. We deflate this house price series using the Personal Consumption Expenditure (PCE) deflator obtained from the OECD Economic Outlook database.

We complete the Italian data with Personal disposable income (PDI) reported in *per capita* terms. The interpolated PDI and working age population series came from the OECD Economic

---

<sup>34</sup> Prior to the third quarter of 2012 release, nowcasting was computed with an AR(2) model.

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 and consumption of fixed capital for households is collected from Eurostat. Both series are reported at a quarterly frequency since 1999. Consumption of fixed capital is subtracted from gross disposable income to produce PDI. The series is largely influenced by seasonal factors, so we use the BSTS model to identify and systematically extract the seasonal and excessively volatile components of the data. To extend the PDI series to 1975 we use the net disposable income series from the OECD Outlook 86 database, which is reported at an annual frequency. We interpolate to a quarterly frequency using the quadratic-match average method. The resulting quarterly growth rates are used to extend the series.

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 1998. 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 use the PCE deflator to report the nominal PDI *per capita* in real terms. Both nominal and real PDI measures are re-based to 2005=100.

#### *References:*

Cannari et al. (2006): “House Prices in Italy: The Statistics Used at the Bank of Italy.”  
Il Consulente Immobiliare (2010): “Valori Immobiliari. February 2010.”

#### *Information Resources:*

Bank of Italy Data

[http://www.bancaditalia.it/statistiche;internal&action=\\_setlanguage.action?LANGUAGE=en](http://www.bancaditalia.it/statistiche;internal&action=_setlanguage.action?LANGUAGE=en)

Nomisma Data (in Italian)

<http://www.nomisma.it/>

Il Sole 24 Ore Data (in Italian)

<http://www.immobili24.ilsole24ore.com/>

Population Data

<http://demo.istat.it/dat81-91/PROVIN/Index.htm>

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)

Acknowledgements: Silvio Contessi from the Federal Reserve Bank of St. Louis. Piera Perin from Il Sole 24 Ore S.p.A.