

## JP – Japan

The Japan Real Estate Institute (JREI) publishes a nationwide, residential urban land price index dating back to 1955. It is based on appraisals of residential urban land, where the market value is determined as if the land was vacant. The index is based on the average price change of three appraisals made according to urban area rankings (superior, average and inferior). Residential land located in a “medium” neighborhood from each rank is appraised. Thus, mix-adjusted techniques are used in the construction of this index.

Prices are reported per-square-meter in an attempt to control for changes in price that are associated with varying plot size. The index is published at a semi-annual frequency, updated at the end of March and the end of September. The index is calculated by multiplying the index of the preceding period by the average percentage change during the subsequent half a year. We interpolate the semi-annual series using the quadratic-match average method to obtain a consistent quarterly series for Japanese house prices.

We re-base the interpolated series to 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 semi-annual series for Japan one period ahead using the BSTS model.<sup>35</sup> The quarterly estimates obtained using interpolated nowcasts will be subsequently replaced as the official semi-annual JREI 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 Japanese data by including a Personal disposable income (PDI) series, reported in *per capita* terms. Household disposable income and working-age population were obtained from the OECD Economic Outlook database. The source of the PDI series and the working age population data have changed. This affects the PDI *per capita* series for the 2012 first quarter update and all subsequent updates. The PDI series is obtained from the Japanese Cabinet Office. It is reported at a quarterly frequency beginning in 2001, but it is only updated annually. The series is largely influenced by seasonal factors, so we use the BSTS model in state-space form to identify and systematically extract the seasonal and excessively volatile components of the data. The same BSTS model is used to estimate quarterly values in between the annual updates, which are subsequently replaced after actual data becomes available. The series is extended by the PDI series obtained from the OECD Outlook 91 database. Working age population data are now obtained from the OECD Main Economic Indicators database. The series is reported at a monthly frequency beginning in January of 1970, which we average to a quarterly frequency. We use the PCE deflator to report the PDI series in real terms. Both nominal and real PDI measures are re-based to 2005=100.

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<sup>35</sup> Prior to the third quarter of 2012 release, nowcasting was computed with an AR(3) model.

*Information Resources:*

Japan Real Estate Institute Data

<http://www.reinet.or.jp/en/index.html>

Ministry of Land, Infrastructure, Transport and Tourism Data

<http://www.mlit.go.jp/toukeijouhou/chojou/stat-e.htm>

<http://tochi.mlit.go.jp/english/index.html>

Japan Cabinet Office Data

[http://www.esri.cao.go.jp/en/sna/data/kakuhou/files/2010/24annual\\_report\\_e.html](http://www.esri.cao.go.jp/en/sna/data/kakuhou/files/2010/24annual_report_e.html)

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