



IMPROVED URA PROPERTY PRICE INDEX



The URA Property Price Index reflects the broad price trends in Singapore's private housing market

Why revise?

Greater diversity in unit size and age
e.g. more shoebox units since last index revision

What are the improvements?

1. More attributes included to better differentiate properties

Current



Tenure



Completion Status



Property Type



Location

New



Property Attributes
(e.g. size, age)



Micro-Location
(e.g. proximity to
MRT station)

2. Change in methodology

- **Stratification Method -**
Similar properties are grouped into cells and price change over time is computed using the median price in each cell
- 12-quarter moving average weights
- Base period of 4Q1998



- **Stratified Hedonic Regression Method -**
Regression is able to control for differences in housing characteristics and better reflect changes over time
- 5-quarter fixed weights
- Base period of 1Q2009

3. More comprehensive coverage of transactions

Using IRAS stamp duty data to supplement existing data sources

KEY CHANGES TO THE PROPERTY PRICE INDEX (PPI) METHODOLOGY

New Stratified Hedonic Regression Method

1. The current PPI is computed using the stratification method. Under this method, transacted properties are grouped into different categories based on property type, tenure, completion status, and region. The median prices for each category are then aggregated using 12-quarter moving average weights to derive the PPI.
2. Starting 1st Quarter 2015, URA will use a new “stratified hedonic regression methodology” to compute the PPI. Variations in the attributes of private properties transacted such as age and unit size are controlled for by using hedonic regression, and price movements are aggregated using 5-quarter fixed weights to derive the aggregate price change. The weights will be updated once every 3 years.
3. Back-testing of the PPI using the new method on data from 2014 shows that there is no change in the broad trend of price movements for private housing. Quarterly changes are similar to those computed using the current method (See Table 1).

Table 1: Back-testing of PPI based on existing and revised methods

Time Period	All Residential		Landed Property		Non Landed Property	
	Existing	Revised	Existing	Revised	Existing	Revised
1Q2014	-1.2%	-0.7%	-0.7%	-0.9%	-1.3%	-0.7%
2Q2014	-1.1%	-1.0%	-1.7%	-0.7%	-0.8%	-1.2%
3Q2014	-0.7%	-0.8%	-1.8%	-1.8%	-0.4%	-0.3%
4Q2014	-1.1%	-0.8%	-1.3%	-1.5%	-1.0%	-0.6%

Updated Base Period

4. The base period of all existing price indices will be updated to 1Q2009 from 4Q1998. This means the indices will be rescaled and will have a value of 100 for 1Q2009. The adjustment only affects the absolute levels of the indices till 4Q2014, but the quarterly percentage changes of the original and rebased PPIs are the same (See Chart 1 and Table 2).

Chart 1: Example of Rebasing the Existing PPI (All Residential)

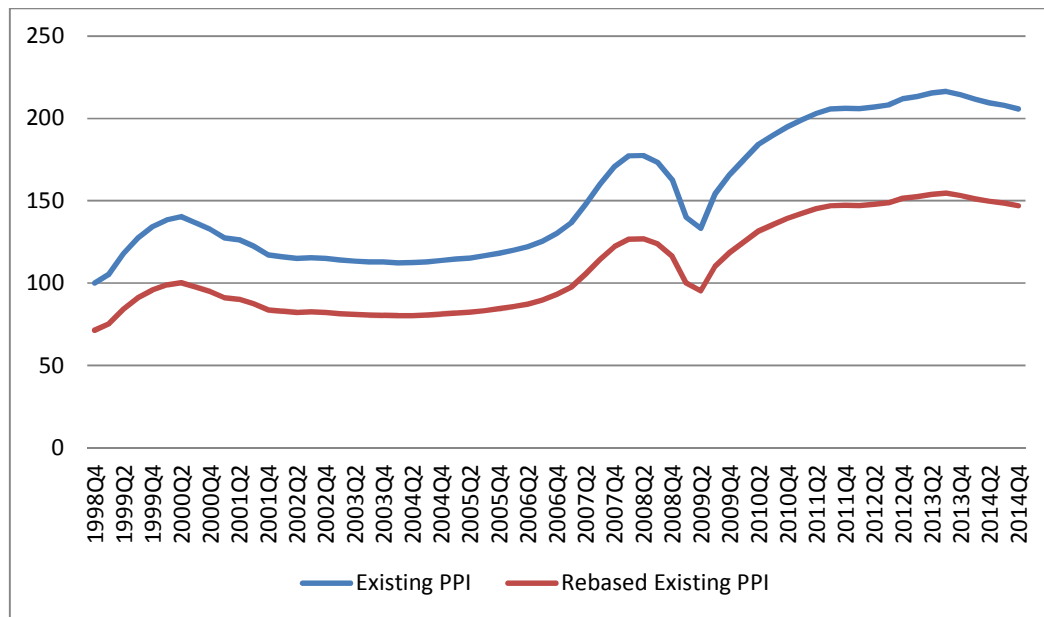


Table 2: Example of Rebasing the Existing PPI (All Residential)

	Existing PPI – (a)	Rebased Existing PPI – (b) = (a)*100/139.9
1Q2009	139.9	100
2Q2009	133.3	95.3
3Q2009	154.3	110.3
4Q2009	165.7	118.4

Due to rounding, there could be some differences in the quarterly price change compared to the PPI series before rebasing

More comprehensive coverage of transactions

5. To compute the current PPI, we use data from caveats lodged with the Singapore Land Authority for subsales and resales. For new sale transactions (i.e. units sold by developers), we have complete data from a regular survey of developers. All discounts and rebates provided by the developers are deducted to derive the nett prices for new sale transactions.
6. To enhance the PPI's coverage of transactions, we now supplement the existing data sources with stamp duty data from the Inland Revenue Authority of Singapore. With this, the improved PPI will capture all private housing transactions.

Adopting the New Stratified Hedonic Regression Method for Rental Indices

7. We will also revise the methodology used to compute the private residential rental indices to the stratified hedonic regression methodology when we release the real estate statistics for 1st Quarter 2015. The base period of the rental indices will similarly be updated to 1Q2009 from 4Q1998.

Streamlining the Number of Price Indices

8. As the PPI is intended to show broad price trends rather than detailed property price movements at a micro or localised level, we will only be publishing the following indices going forward:
 - (a) PPI of Residential Properties
 - (b) PPI of Landed Residential Properties
 - (c) PPI of Non-Landed Residential Properties
 - (d) PPI of Non-Landed Residential Properties in Core Central Region
 - (e) PPI of Non-Landed Residential Properties in Rest of Central Region
 - (f) PPI of Non-Landed Residential Properties in Outside Central Region
9. The public can continue to access detailed price information in specific projects or locations, including individual unit-level property price data, via the [Private Residential Property Transactions e-Service](#) on the URA website.