

READ ME FILE

Paper title: The Effect of Zoning on Housing Prices

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RDP Number: 2018-03

Description:

This 'read me' file contains details of the data and Stata code included in this archive that were used to generate the results reported in RDP 2018-03.

Data:

Plotting data for the figures appearing in the RDP, with the exception of that data withheld due to confidentiality reasons, can be found in the spreadsheet 'rdp-2018-03-graph-data.xlsx'.

Copies of the data files as used by the code referenced below are included in this archive in the following locations within the zip file:

- (A)\Detached\Regression and decomposition results.xlsx
- (B)\Detached\Structure_values.xlsx
- (C)\Detached\[files ending in .dta] (geographical information files converted into Stata format from ABS geographical boundaries files)
- (D)\Detached\NSW Individual Land Values July 2017
- (E)\Apartments\Apartments data and output.xlsx
- (F)\Apartments\[files ending in .dta] (geographical information files converted into Stata format from ABS geographical boundaries files)

The following data sources were used in deriving our results.

Available in the files above:

- Australian Bureau of Statistics (ABS): Building Activity (B), Producer Price Indexes (B and E), National Accounts (B), Australian Statistical Geography Standard (statistical area 1, statistical area 2 and local government area – C and F above)
- NSW Office of the Valuer General: Bulk land value information (D)
- Queensland Department of Natural Resources and Mines: Valuer-General's Property Market Movement Report – 2015, 2016 and 2017 editions (B)
- Rawlinsons Group: Rawlinsons Construction Cost Guide for Housing, Small Commercial, and Industrial Buildings 2017 Edition (B)
- Rider Levett Bucknall: Riders Digest Sydney 2017 (B and E)

Available direct from the supplier (charges may apply):

- CoreLogic: Unit record property sales dataset
- Victoria Department of Environment, Land, Water and Planning: Custom query for site valuations for detached dwellings by local government area
- Western Australian Land Information Authority (Landgate): Custom query for unimproved land valuations by zoning code by local government area

Stata code:

The results reported in this RDP were generated using Stata 13.0, including the use of four additional functions that need to be installed (instructions included in code files): 'geoinpoly', 'geodist', 'spmap' and 'distinct'.

Included in this archive are the following programs:

\Detached:

Detached master file.do – this master file installs functions (as required), initialises settings, and then runs each of the following code files needed to reproduce the detached housing results in order

0. import & cleaning.do – imports and cleans the CoreLogic property sales and characteristics data

1. create regional data files.do – processes the data and creates a separate data file for each city

X = 2 (Sydney), 3 (Melbourne), 4 (Brisbane), 5 (Perth)

X.1. [City] regressions.do – trims outliers, runs regressions, and exports results for a given city

X.2. [City] mapping.do – maps the local government area results for a given city (must be run following the regression code for that city)

2.3. Sydney Individual VG data.do – processes Sydney unit record land valuations data from the NSW Valuer General, and matches it to the regression data set (optional: output has already been placed in spreadsheets/preceding code files where needed)

6.1. Functional form robustness.do – code for polynomial/log squared alternate hedonic regression specifications

6.X. [City] SA2 group regressions.do – code for creating groups at the statistical area 2 level, running hedonic regressions, and aggregating them

\Apartments:

Units Master File.do – this master file installs functions (as required), initialises settings, and then runs each of the following code files needed to reproduce the detached housing results in order

0. units - import & cleaning.do – imports and cleans the CoreLogic property sales and characteristics data

1. units - create regional data files.do – processes the data and creates a separate data file for each city

1.1. units - identify apartments.do – identifies street addresses with apartments (rather than other types of units)

X = 1 (Sydney), 2 (Melbourne), 3 (Brisbane)

2.X. units - [City] stats.do – calculates and exports sale price and floor area statistics for apartments for each city

Additional notes on code files:

File paths for 'datadir' and 'workingdir' must be updated in the two master files. The datadir path should link to a folder containing the sales and property characteristics comma separate values (.csv) files available for purchase from CoreLogic. The workingdir path should be set to the file path of this zip folder, plus \Detached for the detached master file, and \Apartments for the units master file.

Comment in/out the 'ssc install' lines of code as necessary to install/not install these functions.

Loading in, processing, and storing the CoreLogic data files requires a lot of memory – this code has been tested only on computers with 8 gigabytes and 16 gigabytes of memory.

The code files 3.1., 3.2., 5.1. and 5.2. in the Detached folder (detached housing results and maps for Melbourne and Perth) use land valuation statistics calculated from information obtained from Victoria Department of Environment, Land, Water and Planning and Western Australian Land Information Authority (Landgate) that we are not able to release publically due to contractual agreements. We have replaced the structure value estimates for each local government area that have been derived from these land valuation statistics with zeroes (file 3.1. line 263, file 5.1. line 257) so that the code will still run without these data, but our results will not be replicable without access to them. The spreadsheet 'Structure_values.xlsx' in the detached folder should provide enough information on how to calculate these structure values by local government area, given access to the same raw data.