READ ME FILE

Title: The Distributional Effects of Monetary Policy: Evidence from Local Housing Markets

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Description

This 'read me' file details the replication files for RDP 2020-02.

These files are not designed to fully reproduce the estimates in the paper, but rather to help individuals understand the methodology used. As some of the data are not available for public release, we have used random numbers to fill some of the data. This ensures the code will run, but the results produced will be different.

The files are set up using an R Project. Please double click the .Rproj file before running any of the code. The code was run on R version 3.6.1 (64 bit).

If you make use of any of these files you should clearly attribute the authors in any derivative work.

Folder structure

The main folder contains an R Project, rdp-2020-02-read-me.pdf and session-information.txt. The xlsx file 'rdp-2020-02-graph-data.xlsx' provides the data for all figures as printed in the RDP in excel format.

It also contains the following folders:

analysis

This folder contains the files you can use to reproduce the analysis. Each file's name corresponds to a figure or table in the RDP.

In general, the files to recreate the figures follow the same general pattern:

1) Attach required libraries

2) Import functions from 'R/' and data from 'data/'

3) Series of steps to complete specific figure

4) Graph the output

- The code will create an object called graph_data. This will be run from the fake data. So that the graphs produced resemble that of the RDP, graph_data will then be overwritten with the actual data used for the graph (files live in 'data/figure-data'). The graphs will then be produced using ggplot2.

data

The 4 files in the *data* folder are the primary inputs to the *analysis* files:

1) corelogic_data_raw.RDS – this contains the SA3 CoreLogic dataframe. Due to confidentiality reasons we have randomly generated the data in this dataframe. It in no way resembles that of the original CoreLogic data. Specifically, the columns calculation_value and observations are randomly generated.

2) grouping_variables.RDS – this contains a dataframe with characteristics of SA3 regions. These variables are used in the 'analysis/table-1-2.R' script. You can see how this dataframe gets made in the user defined function build_grouping_variables. The data are primarily sourced from the ABS, ABS Census and ATO. The analysis also uses variables from HILDA and zoning estimates at the SA3 level (based on the

methodology used in Kendall and Tulip (2018)). However, the data from HILDA and the zoning estimates have been randomised.

This includes the variables:

a. Land, zoning and structure variables – prop_*

b. HILDA variables – owner, hdebtor1, htm, whtm, phtm, nworth, liqnworth, illiqnworth

3) monetary_policy_shocks.RDS – this contains a dataframe of monetary policy 'shock' series used in the analysis. This includes the cash rate changes (sourced from statistical table F1 Interest Rates and Yields – Money Market) and the Romer and Romer-style shocks used in Beckers (2020).

4) sa3_mapping.csv – this file maps SA3 regions to other ABS ASGS regions. It is sourced from the ABS.

This folder also contains a series of subfolders including:

ato-data

Contains data from the ATO and a correspondence between postcodes and SA3 regions.

Source: https://data.gov.au/dataset/ds-dga-540e3eac-f2df-48d1-9bc0-fbe8dfec641f/details

Functions to access these data can be found in 'R/import_ato_data.R'.

census-data

Contains census data from the datapack: https://datapacks.censusdata.abs.gov.au/datapacks/

And some historical census data that was received from the ABS and can be found in 'data/census-data/historical-census.xlsx'.

local-unemployment

Contains SA4 unemployment data seasonally adjusted using the seasonal package. Raw data is sourced from the ABS.

figure-data

Data to recreate the figures as they are in the RDP in .RDS format. This is the data used to graph the output in the scripts in the *analysis* folder. The name of the files also correspond to the figures. Specific SA3 regions are deidentified for Figures 2 and 7.

regression-output

Contains regression output (in a dataframe) for the unrestricted and restricted models estimated in the RDP. Most of the data are similar to the figure data but here controls are included.

A typical table will look like this:

```
output <- readRDS(here::here("data", "regression-output", "figure-4.RDS" ))
head(output, 12)

## # A tibble: 12 x 10
##      term  estimate std.error statistic p.value horizon mp_shock_lag
##      <chr>    <dbl>     <dbl>     <dbl>   <dbl>   <int>        <dbl>
##  1 10 m~   -0.151     0.217    -0.695   0.487       1            0
##  2 10 m~   -0.108     0.277    -0.392   0.695       1            0
##  3 10 m~   -0.0799    0.214    -0.373   0.709       1            0
##  4 10 m~   -0.114     0.182    -0.628   0.530       1            0
##  5 10 m~   -0.259     0.190    -1.36    0.173       1            0
##  6 10 m~   -0.166     0.117    -1.42    0.155       1            0
##  7 10 m~   -0.370     0.196    -1.88    0.0595      1            0
##  8 10 m~   -0.280     0.262    -1.07    0.285       1            0
##  9 10 m~   -0.484     0.289    -1.67    0.0941      1            0
## 10 11 m~    0.394     0.448     0.880   0.379       1            1
## 11 11 m~   -0.0768    0.201    -0.382   0.703       1            1
## 12 11 m~    0.0335    0.217     0.154   0.878       1            1
## # ... with 3 more variables: interaction_var <chr>,
## #   interaction_var_level <dbl>, shock_sign <chr>
```

For each `term` you will find the estimate, standard error, test statistic, p-value and horizon it was estimated for. The term names are structured as follows: l[lag length]_[variable]_interaction_[group/decile number]

R

Contains user defined functions used in the analysis.

References

Becker B (2020), 'Credit Spreads, Monetary Policy and the Price Puzzle', RBA Research Discussion Paper No 2020-01.

Kendall R and P Tulip (2018), 'The Effect of Zoning on Housing Prices', RBA Research Discussion Paper No 2018-03.

Contact information

Any questions can be directed to Calvin He.

17 February 2020