

## READ ME FILE

**Title:** Cost-benefit Analysis of Leaning against the Wind

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### Description

This 'read me' file contains details of the code and data used in RDP 2019-05. Publically available plotting data for figures appearing in the RDP can be found in the spreadsheet: rdp-2019-05-graph-data.xls.

The results reported in this RDP were generated using EViews 10 and Stata 13.1.

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

### Running the model

To estimate the model, run the EViews program named '`_main_program.prg`'. This program:

- sets up the EViews workfile and reads in the data,
- defines the values for a number of important strings that are used by the model, and
- runs a succession of sub-programs that estimate the model and put together the graphs/results presented in the paper.

You can change a number of the inputs in '`_main_program.prg`' to test the sensitivity of our results to different assumptions.

### Programs

#### *Eviews programs*

A brief description of the Eviews programs included in this archive is provided below. Further details are provided as comments in the programs.

**`_main_program.prg`:** This program sets up the EViews workfile ('`cost_benefit_results.wf1`') and reads in the data from '`eviews.xlsx`'. It then calls a succession of sub-programs that puts together the estimates.

**`1_credit_and_unemployment.prg`:** Put together the assumed paths for real credit and the unemployment gap.

**`2_crisis_probability.prg`:** Estimate the response of the probability of a crisis to the change in interest rates.

**`3_cost_benefit.prg`:** Estimate costs and benefits of leaning against the wind.

**`4_extension_credit_growth.prg`:** Estimate the sensitivity of cost-benefit analysis to different rates of real credit growth. These results are discussed in Section 5.1.1 in the RDP.

**`5_extension_credit_gap.prg`:** Extend the model so that the probability of a crisis also depends on the credit-to-GDP gap. These results are discussed in Section 5.1.2 in the RDP.

**`6_extension_cost_benefit.prg`:** This program puts together the results for the extensions in Section 5.2 and Appendix B in the RDP.

**`7_graphs_and_tables.prg`:** This program puts together a number of graphs and tables from the paper. This includes Table 2 and Figures 1, 3, 5 (left panel), 7, B1, B3.

**`8_sensitivity_responses_to_interest_rates.prg`:** Estimate how much larger/smaller the responses of the crisis probability and unemployment rate would need to be for costs to equal benefits.

**9\_sensitivity\_crisis\_size\_and\_duration.prg:** Estimate the sensitivity of the cost-benefit results to different assumptions for the size and duration of the crisis unemployment gap.

*Stata programs and data*

Some of the inputs for the EViews programs are estimated in Stata. Specifically, we use Stata to estimate the credit-to-GDP gap and the probability of a financial crisis. These estimates rely heavily on the dataset provided by Schularick and Taylor (2012).

A list of the Stata programs included in this archive is provided below. To run the code, the directory at the start of each program will need to be changed to the new location of the folder. Further details are provided as comments in the programs.

**1\_updated\_australia\_data.do:** Extend the time series for the Australian data in the Schularick and Taylor dataset by 10 years (from 2008 to 2018). This is used to produce more timely estimates of the credit-to-GDP gap, shown in Figure 6 in the RDP.

**2\_creditgap.do:** Calculate the credit-to-GDP gap (i.e. the detrended credit-to-GDP ratio) for all the countries in Schularick and Taylor's dataset. These series are used to estimate the probability model discussed in section 5.1.2 in the RDP.

**3\_crisis\_probability.do:** Estimate models of the probability of a financial crisis. The coefficients from these equations are then hard-coded in the EViews program '2\_crisis\_probability.prg'.

**panel17.dta:** This is the Schularick and Taylor dataset.