Read Me File for 'Estimating the Effects of Monetary Policy in Australia Using Sign-restricted Structural Vector Autoregressions'

Data

The data are publically available and are contained in VARData.xlsx. These are obtained from a variety of sources and are described in Table 1 below.

Programs

The results were obtained using Matlab R2021b on a desktop computer running Microsoft Windows 10 Enterprise with an Intel Core i7-9700 CPU @ 3.00GHz, 8 cores and 128 GB RAM. The Matlab code uses the Optimization, Parallel Computing, and Statistics and Machine Learning toolboxes.[1] Note that it can take a long time to generate the results, particularly those obtained under variations of Restriction (6); for example, the results for Restriction (6) (presented in Figure 6) took about 18 hours.

To replicate the results underlying Figures 1–11 and Tables 1–3, run runall.m. This will:

1. Generate the results under Restrictions (1)–(6) and in the robustness exercises from Section 5 of the paper. Full results for each model are saved to a .mat file. The results underlying the figures are saved to FigureData.xlsx and the results underlying Table 3 (posterior lower probabilities) are saved to TableData.xlsx (posterior upper probabilities are also saved here).

2. Compute the informativeness measure under each set of restrictions (presented in Table 1) and display this in the command window.

3. Compute the posterior probability that zero is included within the identified set for the impact response of the cash rate under (presented in Table 2) and the posterior plausibility (described in the text of Section 3.6.1) under each set of restrictions, and display these in the command window.

[1] Researchers without access to the Optimization Toolbox can replicate the main results after replacing checkBoundedIS_Read with checkBoundedIS_GKV in mainfile.m (within the auxFunctions folder). Researchers without access to the Parallel Computing Toolbox can run the code after replacing 'parfor' with 'for' in drawQs.m (within the auxFunctions folder). Researchers without access to the Statistics and Machine Learning Toolbox could run the code after writing their own functions to draw random variables from the inverse Wishart distribution (replacing Matlab's iwishrnd function) and to compute sample percentiles (replacing Matlab's prctile function); this would require modifying mainfile.m and mainfile_proxy.m in the auxFunctions folder.

Table 1: Variable Definitions and Sources

Variable	Details	Source
$CASH_t$	Interbank overnight cash rate, %, quarterly average	RBA statistical table F1.1 Interest Rates and Yields – Money Market
GDP_t	Chain volume measure, $m, seasonally adjusted	ABS Cat No 5206.0 'Australian National Accounts: National Income, Expenditure and Product'
CPI_t	Excluding interest and tax changes, index, seasonally adjusted	ABS Cat No 6401.0 'Consumer Price Index, Australia'; data prior to September 2002 calculated by RBA using ABS methodology
TWI_t	Australian dollar trade-weighted exchange rate, index, end of period	ABS Cat No 5202.0 'Balace of Payments and International Investment Position, Australia'
TOT_t	Goods and services terms of trade, index, seasonally adjusted	ABS Cat No 5302.0 'Balance of Pyments and International Investment Position, Australia'
$USGDP_t$	Chain volume measure, $b, seasonally adjusted	Federal Reserve Bank of St. Louis, FRED database (identifier GDPC1)
FFR_t	Effective federal funds rate, %, quarterly average	Federal Reserve Bank of St. Louis, FRED database (identifier FEDFUNDS)
m_t	'Unanticipated' series from Beckers (2020)	Supplementary information from Beckers (2020)
MMS_t	Percentage point difference between 3-month bank-accepted bill rate and risk-free rate. Risk-free rate is 3-month Australian dollar overnight indexed swap rate after September quarter 2001 and is estimated 3-month zero-coupon forward rate (**?**) otherwise.	RBA statistical table F1.1 Interest Rates and Yields - Money Market and Historical data: F17 Zero-coupon Interest Rates – Analytical Series – 1992 to 2008
UR_t	%, derived from quarterly averages of seasonally adjusted unemployed persons and labour force	ABS Cat No 6202.0 'Labour Force, Australia'