

MATLAB Code Documentation for
“Forecasting the Equity Risk Premium:
The Role of Technical Indicators”

(Documentation Version: September 3, 2013)

- Original data are contained in the Excel file **Returns_econ_tech_data.xls**.
- Results are written to the Excel file **Returns_econ_tech_results.xls**.
- Some programs utilize functions from James LeSage’s Econometrics Toolbox for MATLAB (available at <http://www.spatial-econometrics.com/>).
- Run the following programs in order.
 - **Generate_variables.m** generates the equity risk premium, 14 macroeconomic variables, and 14 technical indicators from the original data. Summary statistics for the log equity risk premium and 14 macroeconomic variables are reported in Table 1 of the paper.
 - **Generate_wild_bootstrapped_pseudo_samples.m** generates 2,000 pseudo samples using the wild bootstrap procedure described in the Online Appendix.
 - * The pseudo samples generated by the wild bootstrap procedure are stored in the data file **Generate_wild_bootstrapped_pseudo_samples.dat** and are used to compute p -values for the t -statistics reported in Table 2 of the paper.
 - **Estimate_predictive_regressions_in_sample.m** generates the slope coefficient estimates, t -statistics, and R^2 statistics reported in Table 2; principal components and loadings shown in Figures 1 through 4; and in-sample equity risk premium forecasts shown in Figure 5 of the paper.
 - * The program calls the function **Perform_selection_IC.m** (provided).
 - * The program loads the data file **Generate_wild_bootstrapped_pseudo_samples.dat**.
 - **Estimate_predictive_regressions_in_sample_breaks_cycle.m** generates the R^2 statistics computed separately during NBER-dated expansions and recessions reported in Table 2 of the paper and the \widehat{qLL} statistics reported in Table A1 of the Online Appendix.
 - * The program calls the function **Perform_EM_test.m** (provided).
 - **Estimate_peak_trough_regressions_in_sample.m** generates the coefficient estimates shown in Figure 6 of the paper.
 - * The coefficient estimates and standard errors are stored in the data file **Estimate_peak_trough_regressions_in_sample.dat**.
 - **Generate_wild_bootstrapped_pseudo_samples_dSENT.m** generates 2,000 pseudo samples using the wild bootstrap procedure described in the Online Appendix.
 - * The pseudo samples generated by the wild bootstrap procedure are stored in the data file **Generate_wild_bootstrapped_pseudo_samples_dSENT.dat** and are used to compute p -values for the t -statistics reported in Table A2 of the paper.

- **Estimate_predictive_regressions_in_sample_dSENT.m** generates the slope coefficient estimates, t -statistics, and R^2 statistics reported in Table A2 of the Online Appendix.
 - * The program loads the data file
Generate_wild_bootstrapped_pseudo_samples_dSENT.dat.
- **Estimate_predictive_regressions_in_sample_dSENT_cycle.m** generates the R^2 statistics computed separately during NBER-dated expansions and recessions reported in Table A2 of the Online Appendix.
- **Estimate_conditional_asset_pricing_model_in_sample.m** generates the χ^2 statistics for the conditional asset pricing models reported in Table A3 of the Online Appendix.
 - * The program calls the function **olsWhite.m** (provided).
- **Estimate_predictive_regressions_out_of_sample.m** generates the out-of-sample forecasting results reported in Table 3 of the paper.
 - * The program calls the functions **Perform_CW_test.m** and **Perform_HLN_test.m** (provided).
 - * The out-of-sample forecasts are stored in the data file
Estimate_predictive_regressions_out_of_sample.dat.
- **Perform_reality_check.m** computes the maxMSFE- F statistic and wild fixed-regressor bootstrapped p -value reported in the last paragraph of Section 3 of the paper.
 - * The program loads the date file
Estimate_predictive_regressions_out_of_sample.dat.
- **Estimate_utility_gains_out_of_sample.m** generates the portfolio performance (without transaction costs) results reported in Table 4 of the paper.
 - * The program calls the functions **Perform_selection_IC.m** and **Perform_asset_allocation.m** (provided).
- **Estimate_utility_gains_TC_out_of_sample.m** generates the net-of-transactions-costs CER gains reported in Table 4 of the paper.
 - * The program calls the functions **Perform_selection_IC.m** and **Perform_asset_allocation.m** (provided).