Replication Code for "Currency Development Through Liquidity Provision": README File

Antonio Coppola* Arvind Krishnamurthy† Chenzi Xu‡

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This README file describes the required data and the overall structure of the replication package for Coppola, Krishnamurthy, and Xu (2025). The main executable Python script (`yield_spread.py`), located in the `code` folder, runs a pipeline comprising two parts. First, it reads Bloomberg government bond yield data and prepares them for analysis. Second, it uses the processed data to generate Figure 1a from the paper. The additional file `model_diagram.tex` produces Figure 1b.

1 Input Data

The code produces Figure 1a using government bond yield data from Bloomberg. These should be placed in the folder `$cxk/data/raw`. Due to restrictions on sharing commercially licensed data, we provide only the tickers of the bonds and indexes used. The input files are:

- **Chinese Sovereign USD-Denominated Bonds:** We collect all historical issuances of semi-annually couponed USD-denominated bonds issued by the Chinese government. The tickers are listed in the file:
  `$cxk/data/raw/cn_gov_usd_bond_mapping.xlsx`
- **U.S. Treasury Bond Index:** We use Bloomberg's U.S. Treasury bond indexes with tenors of 2, 5, 7, and 10 years. The tickers are listed in the file:
  `$cxk/data/raw/us_treasury_benchmark_ticker_bbg.xlsx`

2 File Structure and Technical Notes

The `code` folder contains the following Python script:

- `yield_spread.py` is the main executable script that runs the full replication process. It processes Chinese sovereign USD-denominated bond yields and U.S. Treasury benchmark yields, performs

*Stanford University, Graduate School of Business, and CEPR; acoppola@stanford.edu.
†Stanford University, Graduate School of Business, and NBER; a-krishnamurthy@stanford.edu.
‡University of California Berkeley, NBER, and CEPR; chenzixu@berkeley.edu.

interpolation, and plots the yield spreads shown in Figure 1a. Before running the script, the following option should be set:

  - `<PROJECT_PATH>`: The path to the root directory of the replication package.
  - `<CHN_GOV_YLD_NAME>`: The name of the Excel file containing the yield data for Chinese sovereign USD-denominated bonds.
  - `<TREASURY_YLD_NAME>`: The name of the Excel file containing the benchmark U.S. Treasury yield data.

The script executes the following three steps in sequence:

1. **Reading and Cleaning Data.** The script reads the input files listed above and prepares the data for analysis.
2. **Interpolating Yield Data.** Since yields for Chinese sovereign USD bonds with specific tenors are not always available, we linearly interpolate between the yields of the two bonds whose tenors are closest to the target tenor, using time-based weights. If only one bond is sufficiently close, we use that bond's yield directly.
3. **Plotting Yield Spreads.** Finally, the script generates the plot of the yield spreads between Chinese sovereign USD bonds and U.S. Treasuries shown in Figure 1a.

- `model_diagram.tex` produces Figure 1b using Tikz.

References

Coppola, Antonio, Arvind Krishnamurthy, and Chenzi Xu. 2025. "Currency Development Through Liquidity Provision." *AEA Papers and Proceedings*.