

## Reproducibility Certificate

This is to certify that the results in the paper below have been assessed and found to meet the requirements of the cascada reproducibility policy for a rating of RRR.

### Efficient Estimation of Bid-Ask Spreads from Open, High, Low, and Close Prices

**Authors:** David Ardia, Emanuele Guidotti, Tim A. Kroencke

**Type of certification:** Free (Guest researchers)

**Certification date:** 06/26/2024

**Major Concerns:**

None. Using the researchers' pre-processed data, we reproduced Tables 2-4, I.2, and I4-I.9 and Figures 1-8 and I.2 with accuracy.

**Minor Concerns:**