Fractional Integration Parameter Estimation

1. Preliminaries
   1. H=d+0.5
2. Methods of H Parameter Estimation
   1. R/S Plot
      1. General Description:
      2. Pros:
      3. Cons:
   2. Modified R/S Plot
   3. GPH (Geweke-Porter Hudak)
      1. General Description:
      2. Pros:
         1. Easy to derive asymptotic distribution of estimator relative to heuristic methods.
         2. No model assumptions are necessary.



* + 1. Cons:
       1. Residuals of regression are assumed highly skewed (exponential RVS), which renders least squares estimation less efficient.
       2. High bandwidth bias, especially in small samples sizes. I.e. using a large bandwidth increases bandwidth bias but lowers variance of parameter estimate.
    2. Other notes:
       1. Robinson (1991) has conditions for applying minimum-variance bandwidth (m) selections to the GPH-Robinson estimator for a non-Gaussian process.