Figure 1a. DM/USD Exchange Rate: June 4, 1973 – Dec 31, 1996

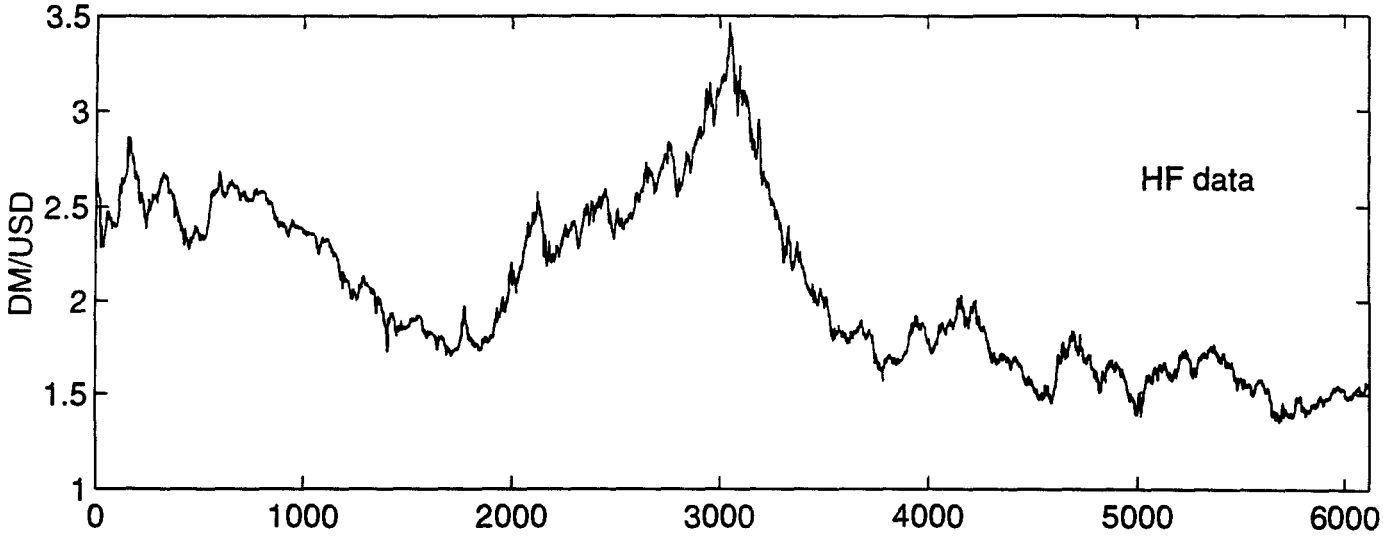


Figure 1b. DM/USD First Differences: June 4, 1973 – Dec 31, 1996

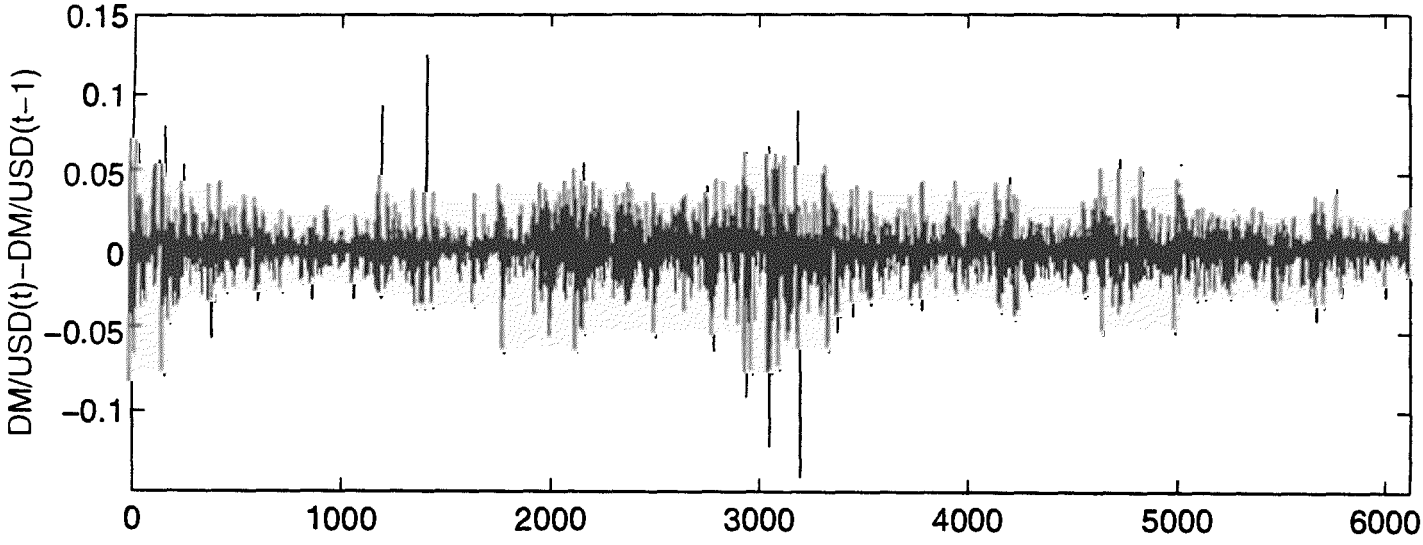


Figure 1c. ln(DM/USD) First Differences: June 4, 1973 – Dec 31, 1996

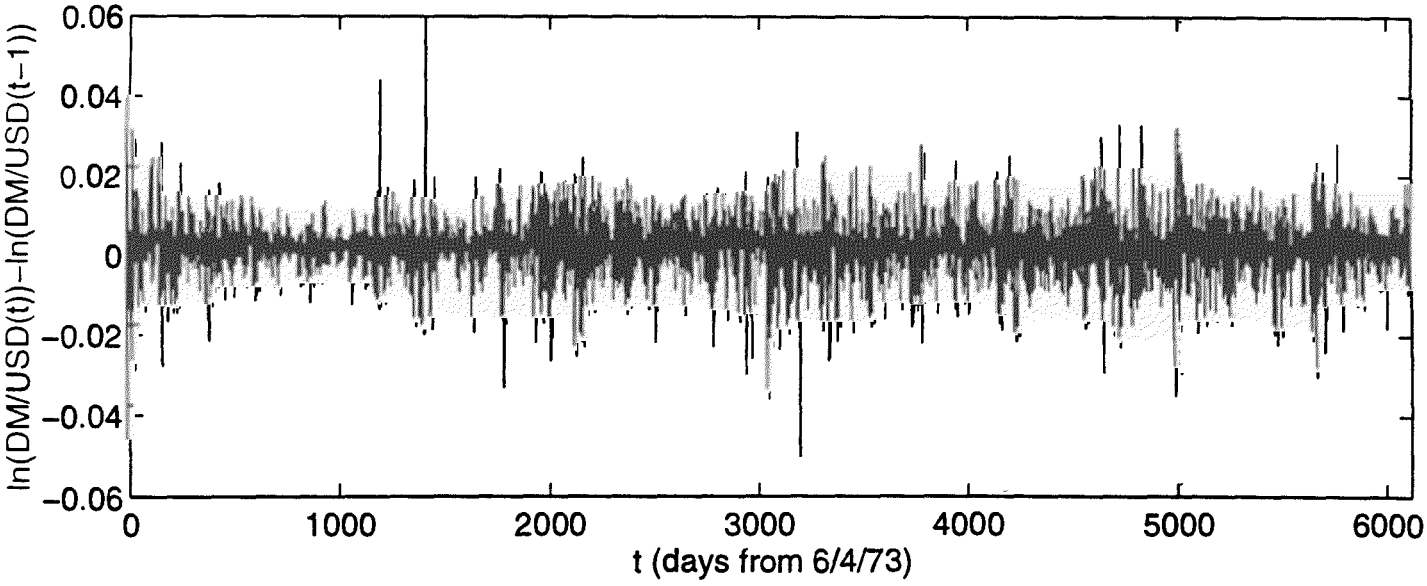


Figure 2. Brownian Motion Scaling, q=[1.5–2.5 by .25, 3–5 by 1]

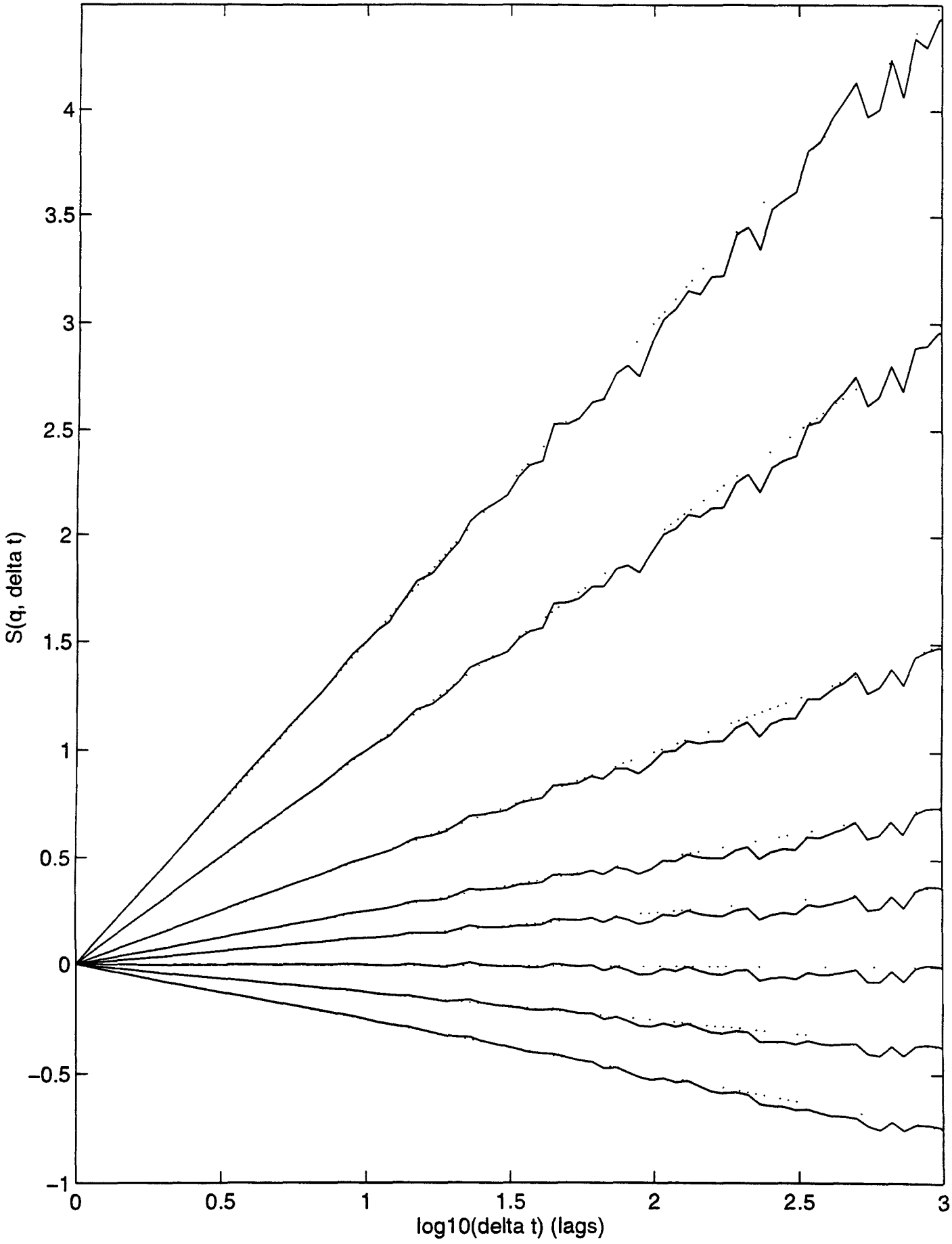


Figure 3. Fractional Gaussian Noise, H=.2 (d=−.3)

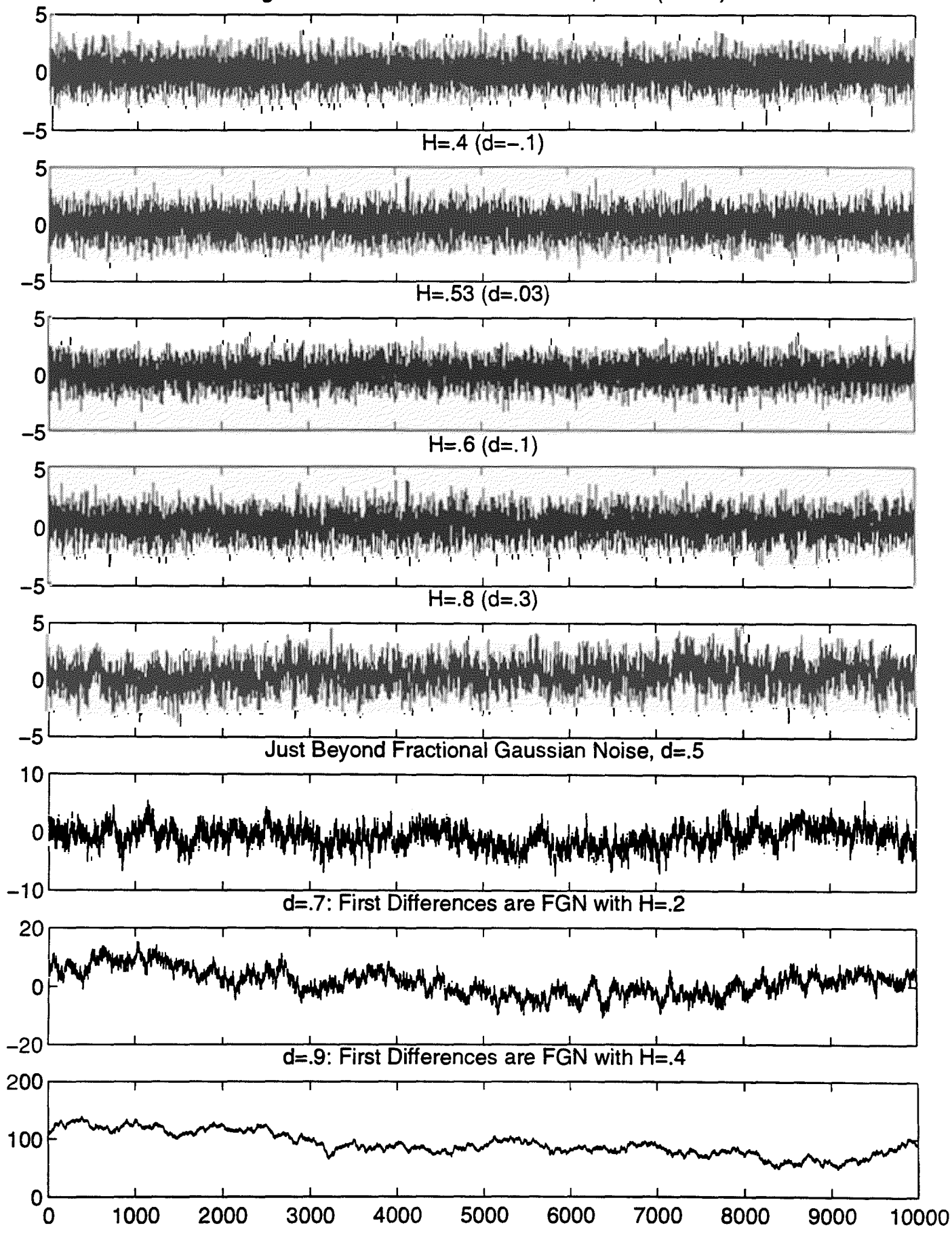


Figure 4. Partition Functions of Fractional Gaussian Noises

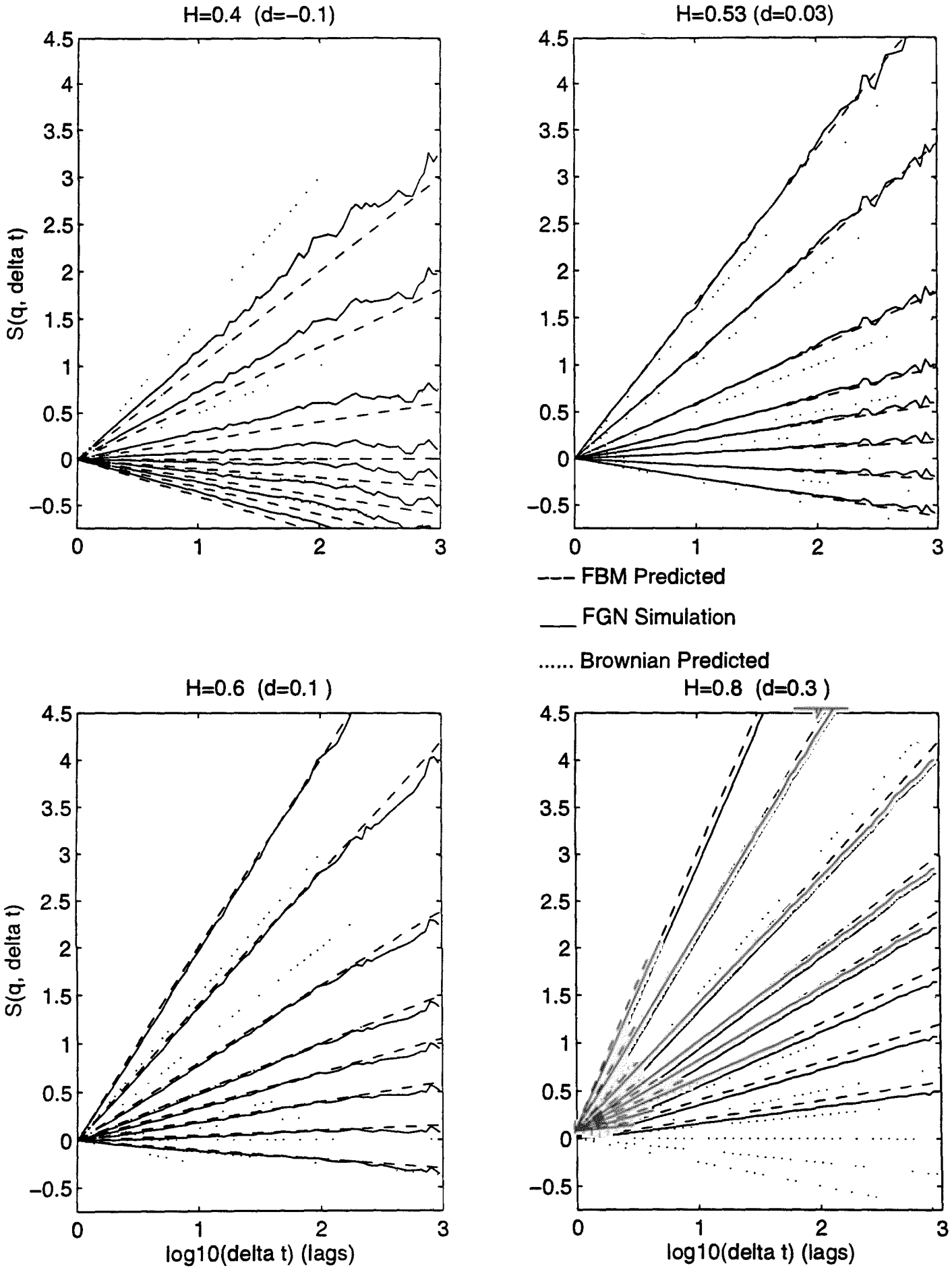


Figure 5a. DM/USD Weekly Seasonality in Quotes/Clock Time

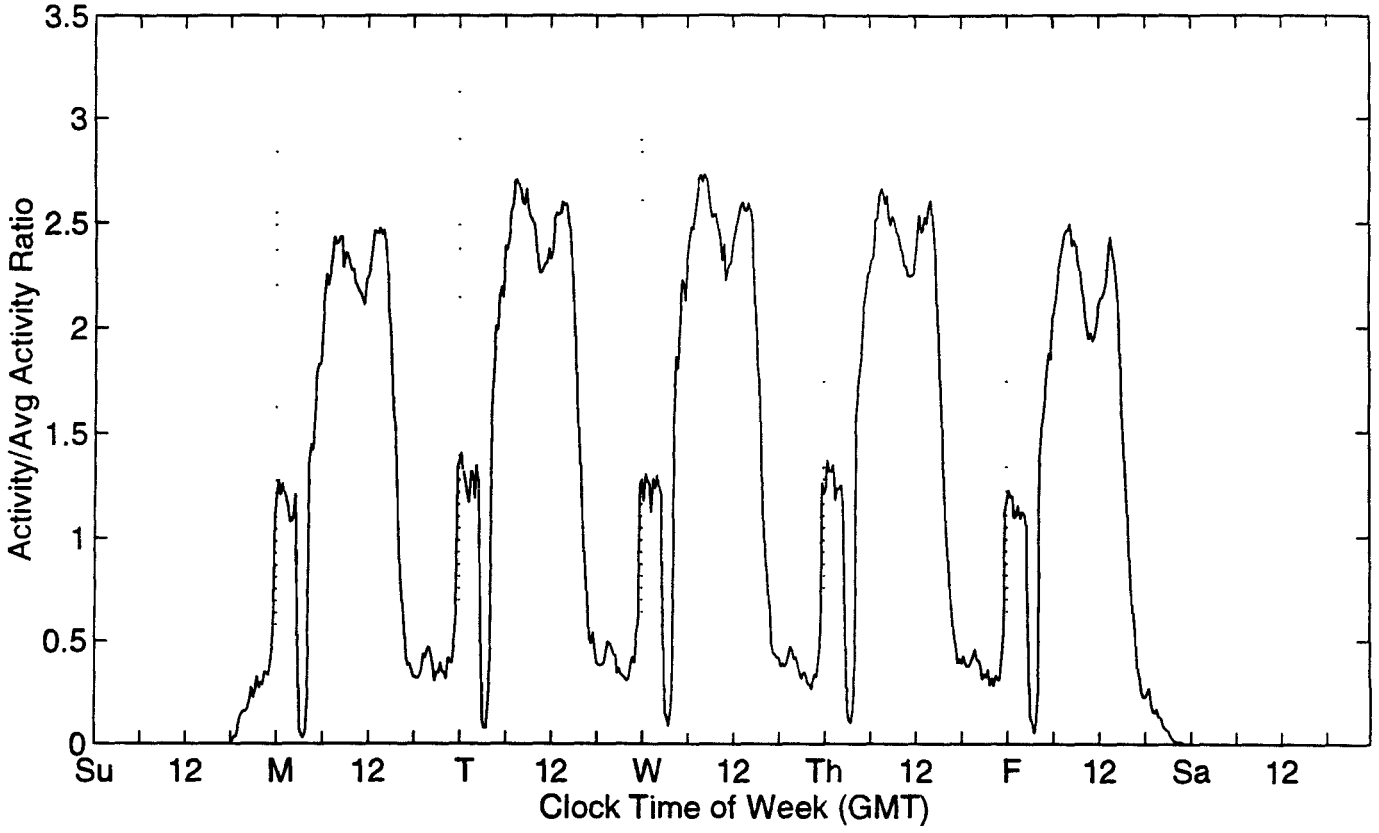


Figure 5b. DM/USD Weekly Seasonality in Absolute Returns

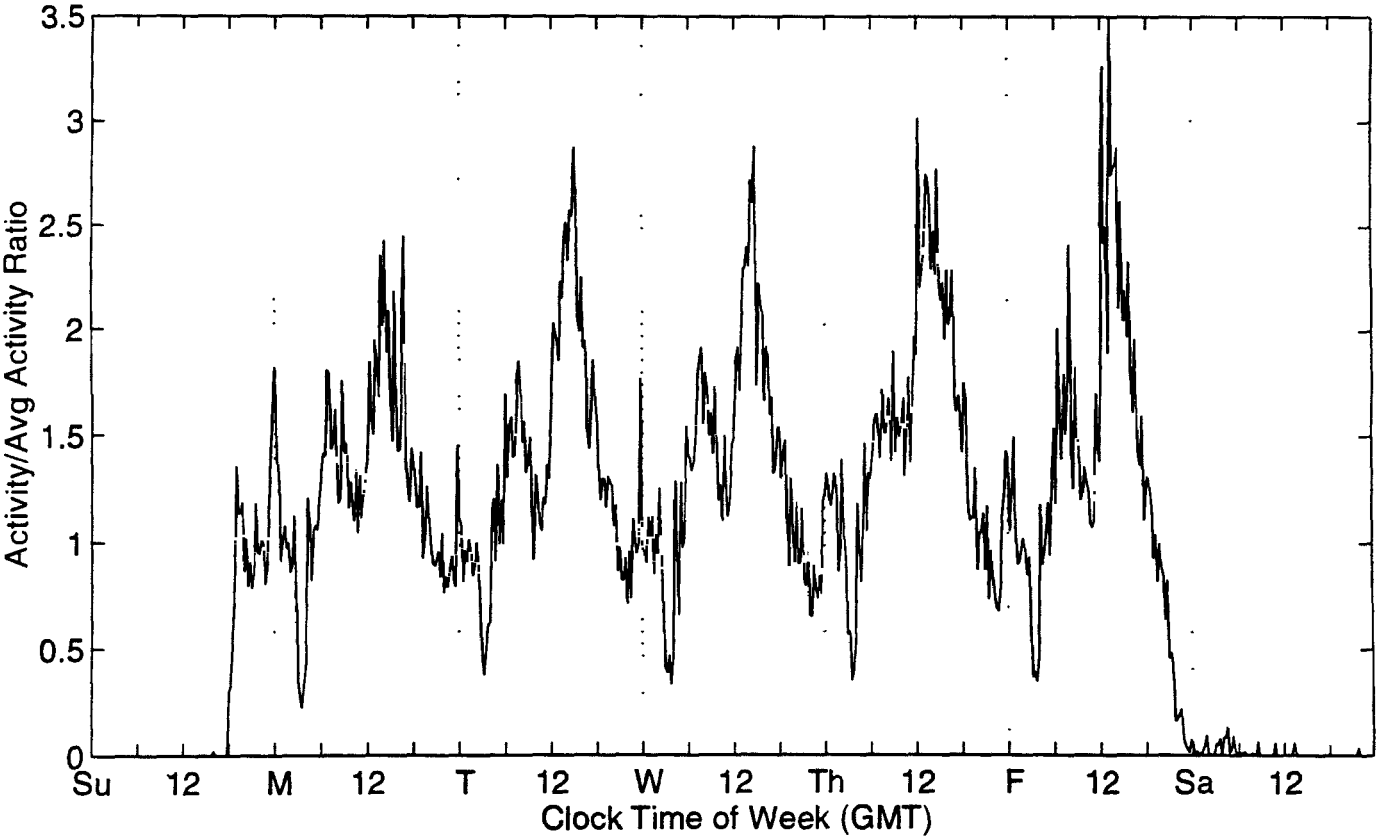


Figure 6. DM/USD Scaling, SEAS2 Prefilter, q=[1.75, 1.9, 2, 2.1, 2.25]

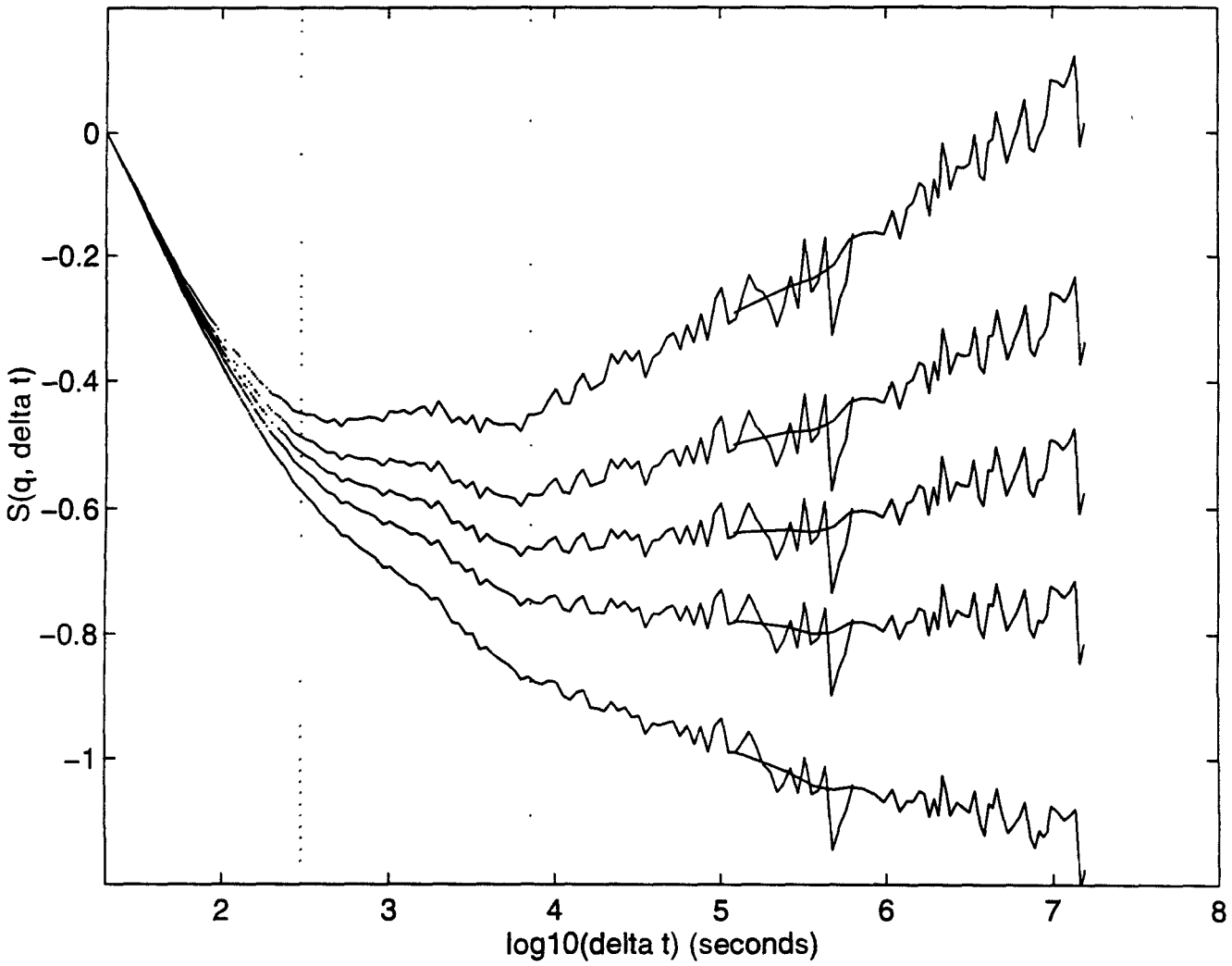


Figure 7. DM/USD Scaling, SEAS2 Prefilter, q=[1.5–2.5 by .25, 3–5 by 1]

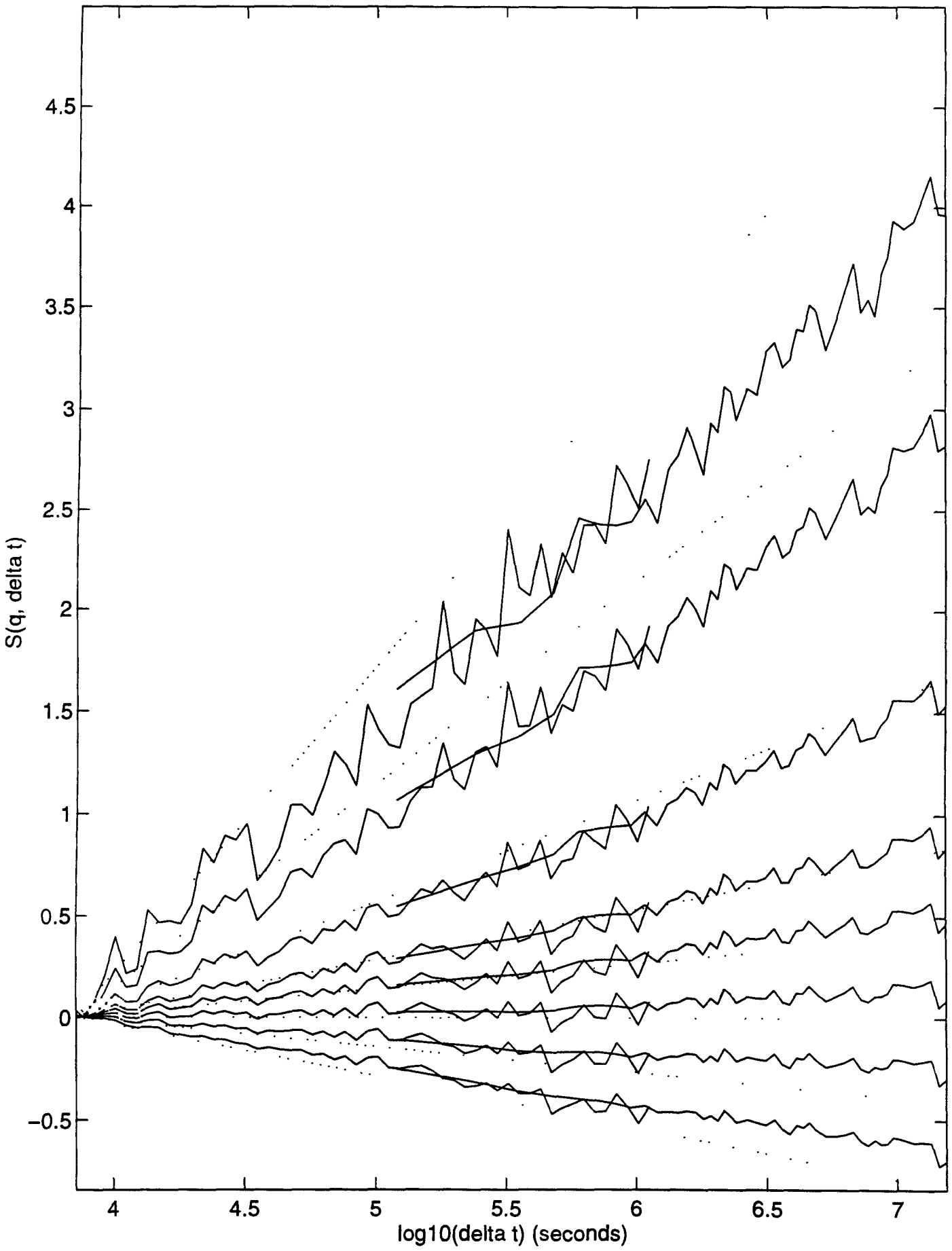


Figure 8. The Multifractal Diagram of a Process

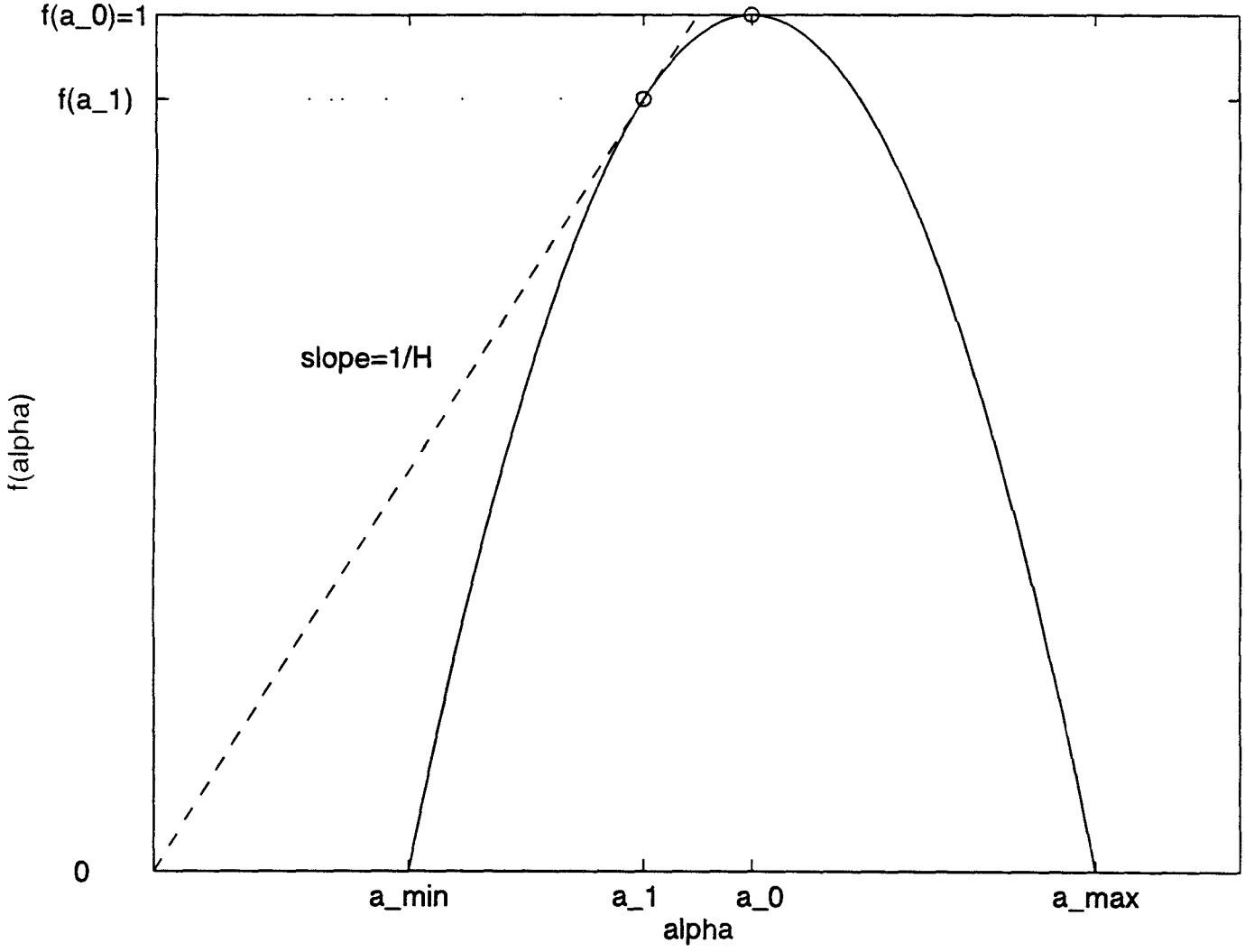
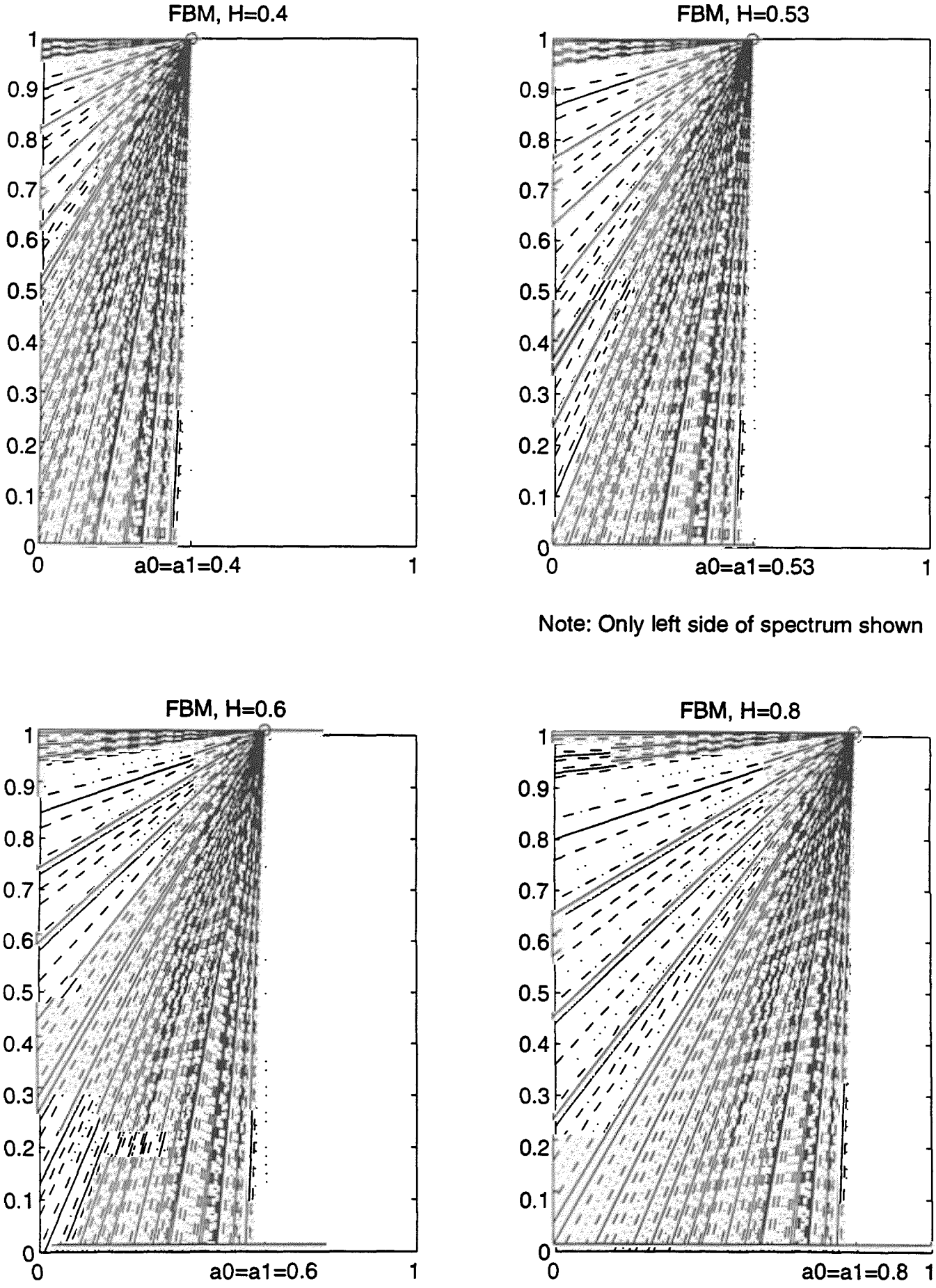


Figure 9. Single–Valued Multifractal Spectrum of FBMs



Note: Only left side of spectrum shown

Figure 10a. DM/USD Scaling Function

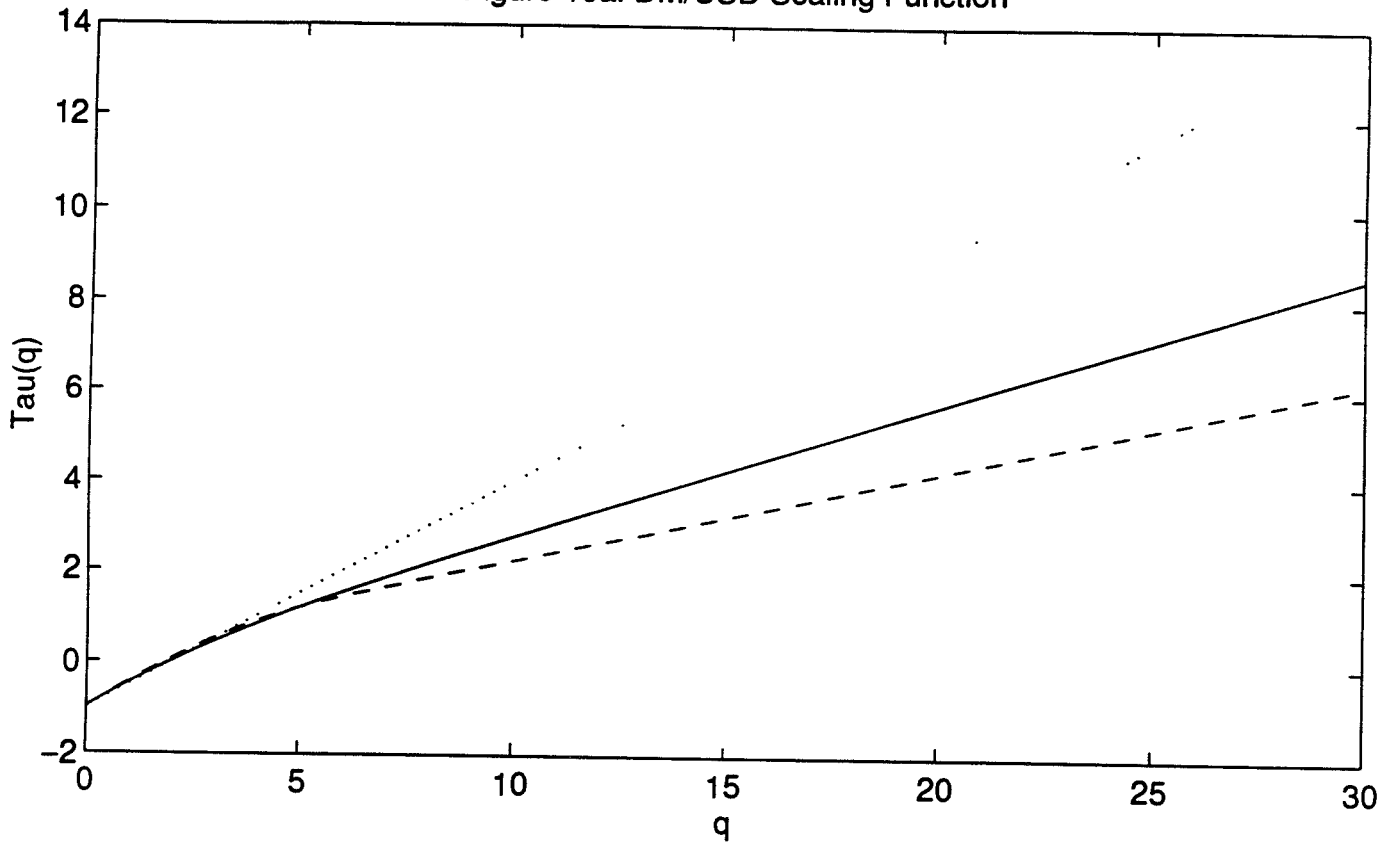


Figure 10b. DM/USD Scaling Function, Low Moments

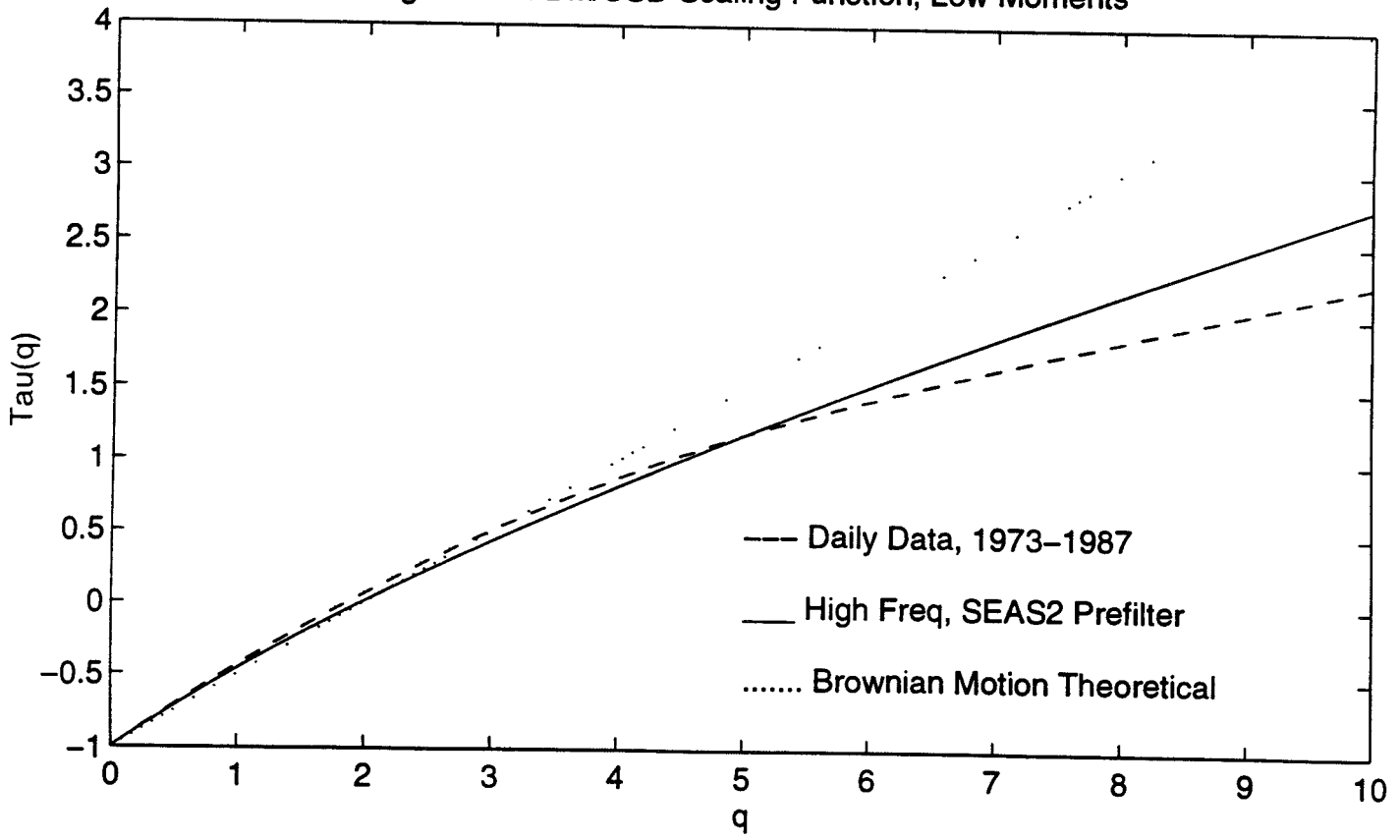


Figure 11. DM/USD Multifractal Spectrum of High Frequency Data, SEAS2 Prefilter

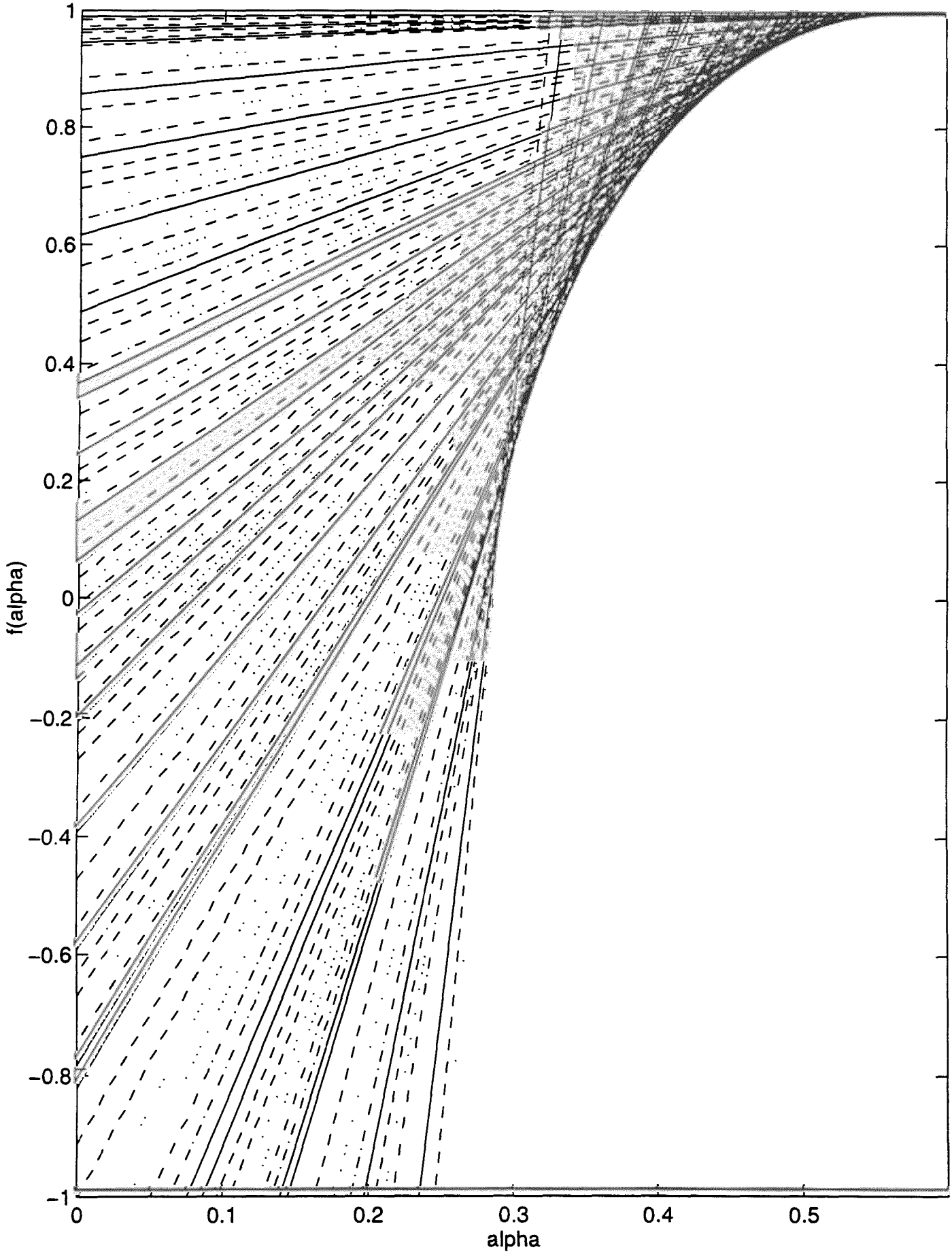


Figure 12. DM/USD Multifractal Spectrum of Daily Data

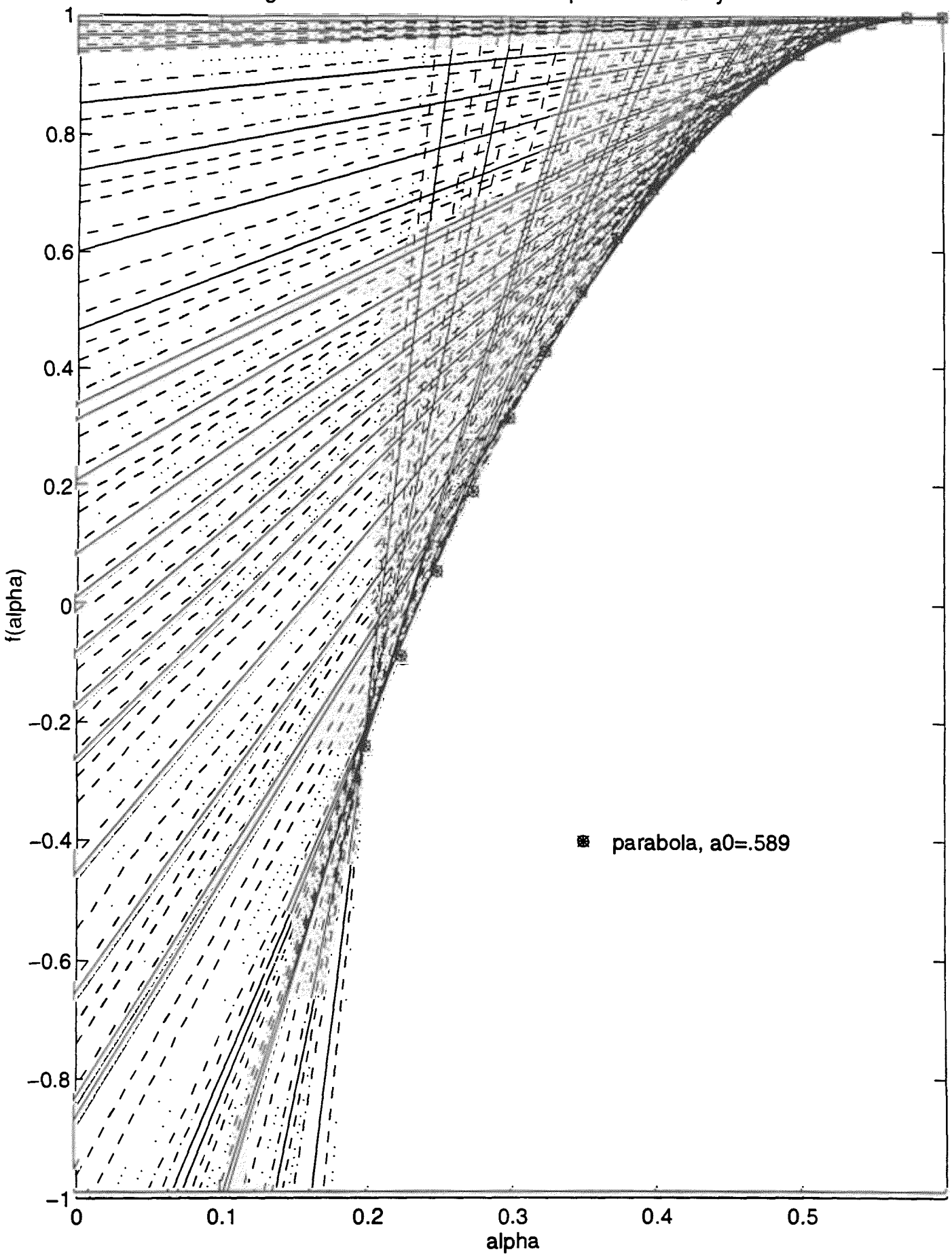


Figure 13a. Selected MMAR Simulations, Limit Lognormal, n=6200, H=1/1.88

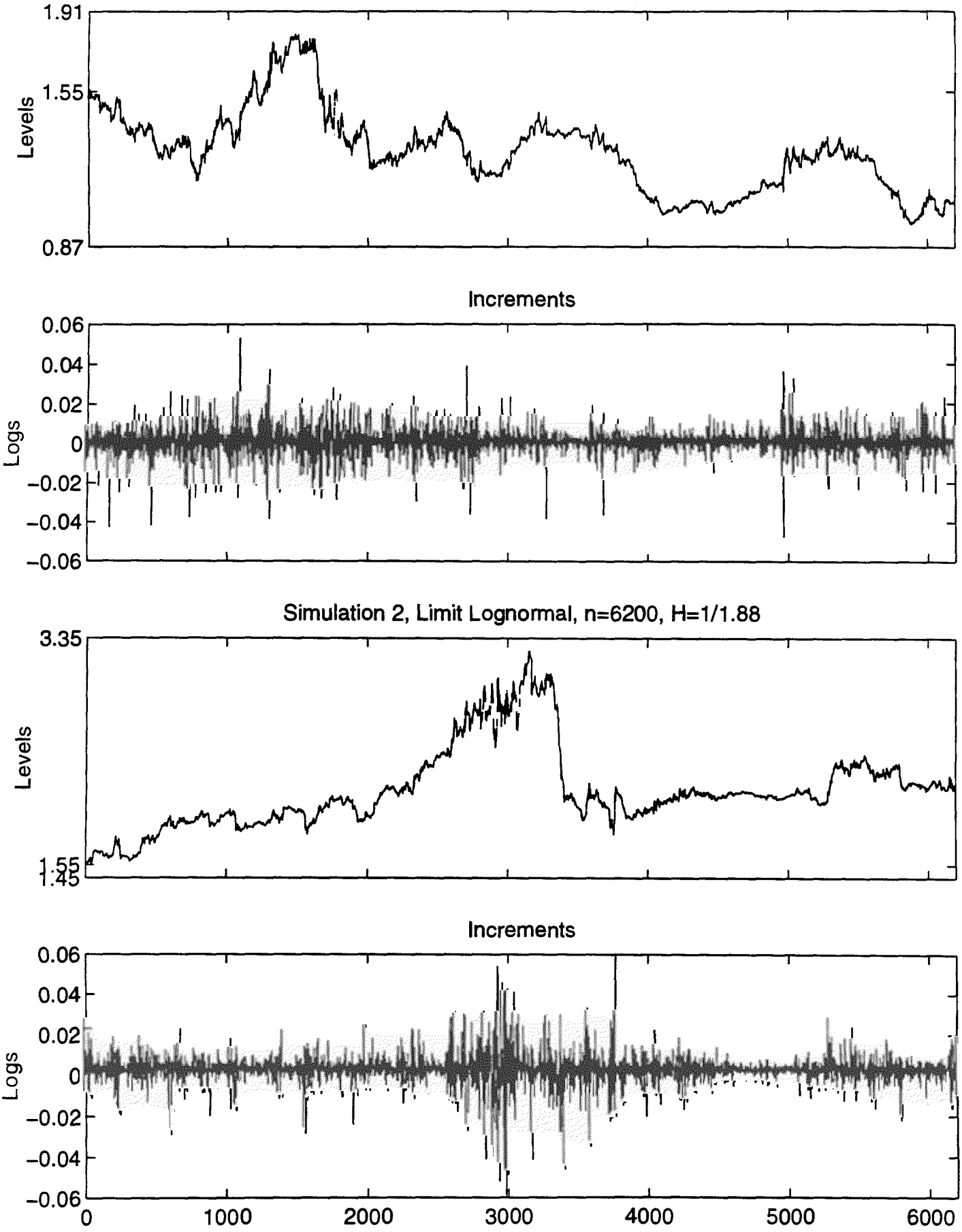


Figure 13b. Simulation 3, Limit Lognormal, n=6200, H=1/1.88

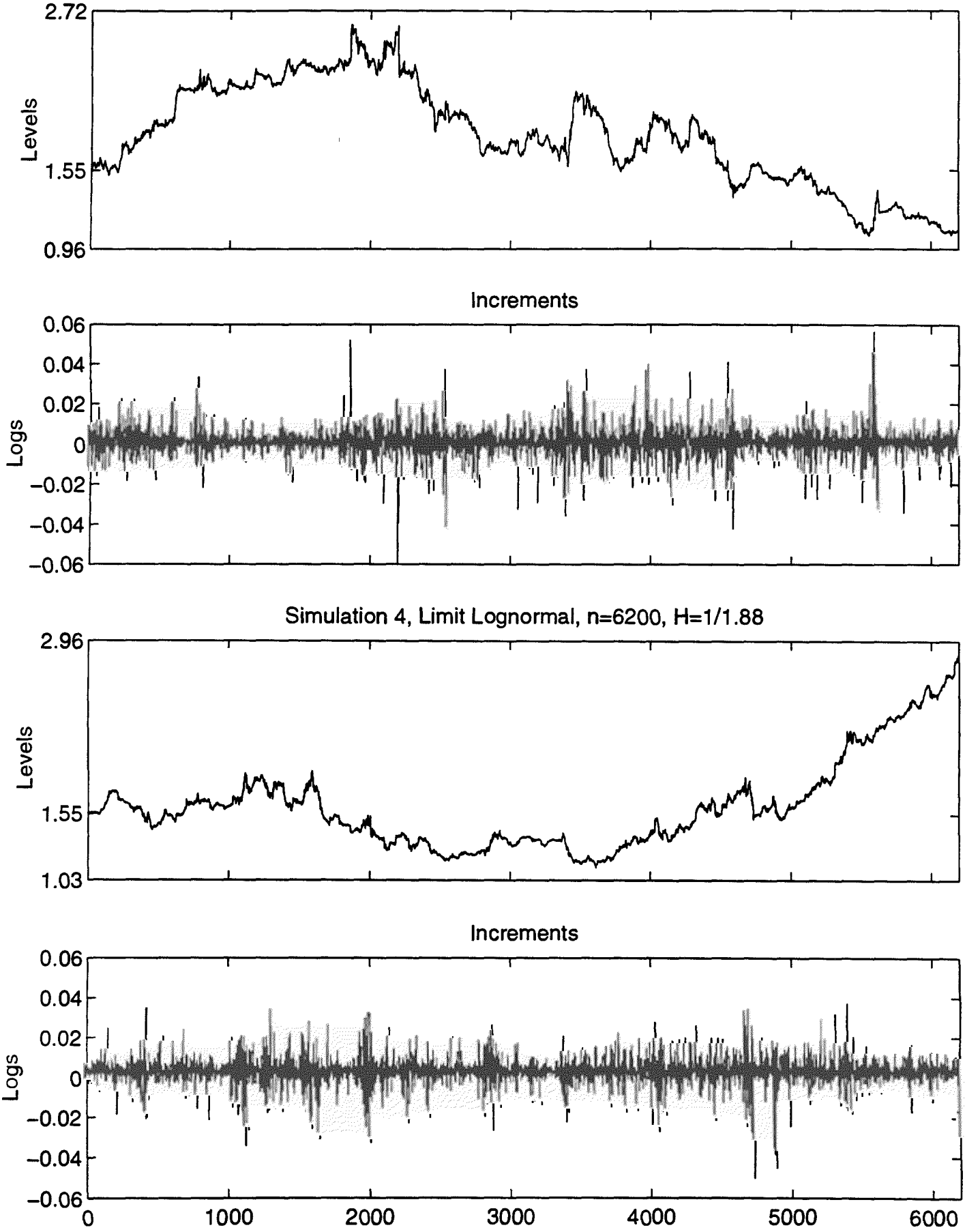


Figure 13c. Simulation 5, Limit Lognormal, n=6200, H=1/2

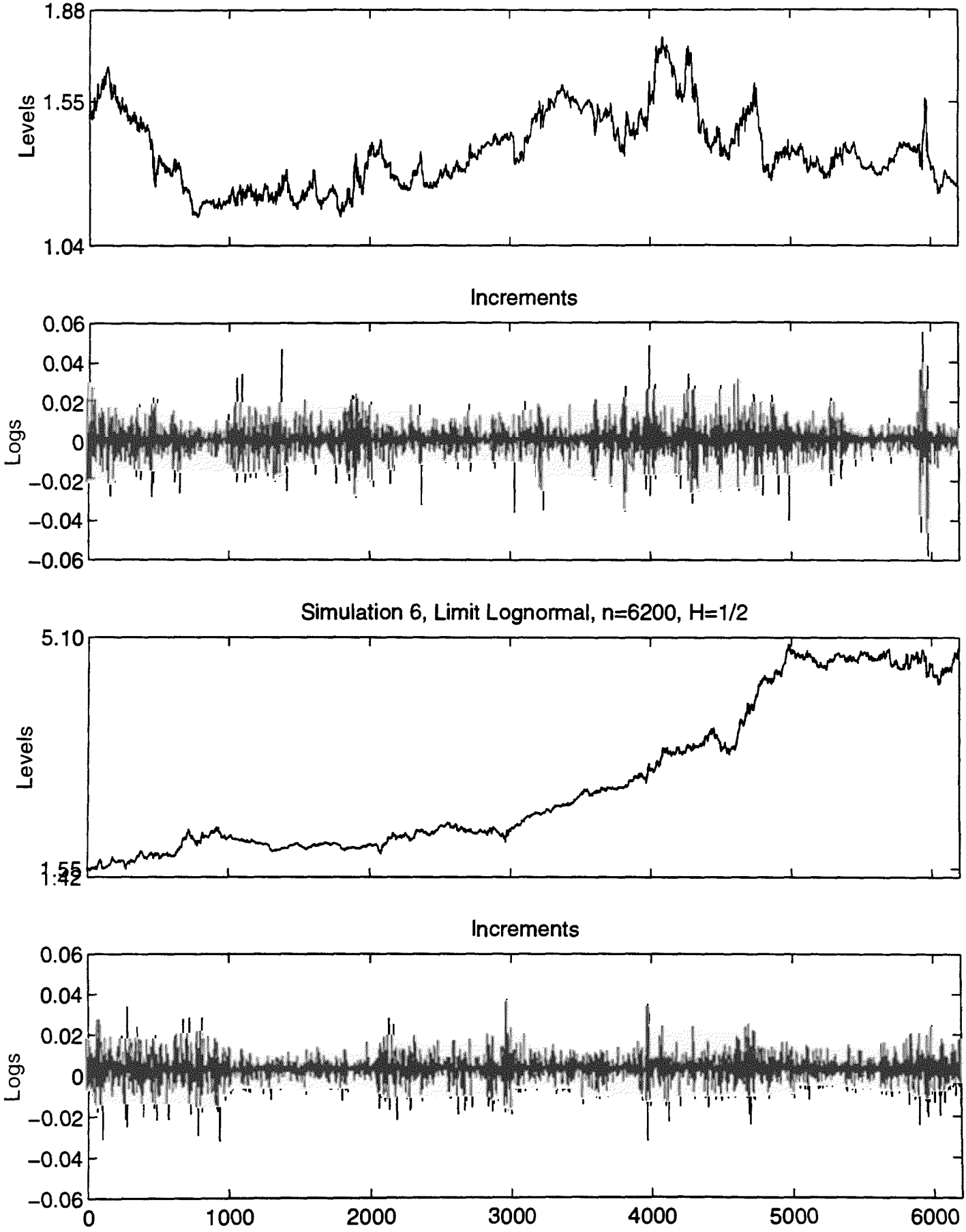


Figure 13d. Simulation 7, Limit Lognormal, n=6200, H=1/2

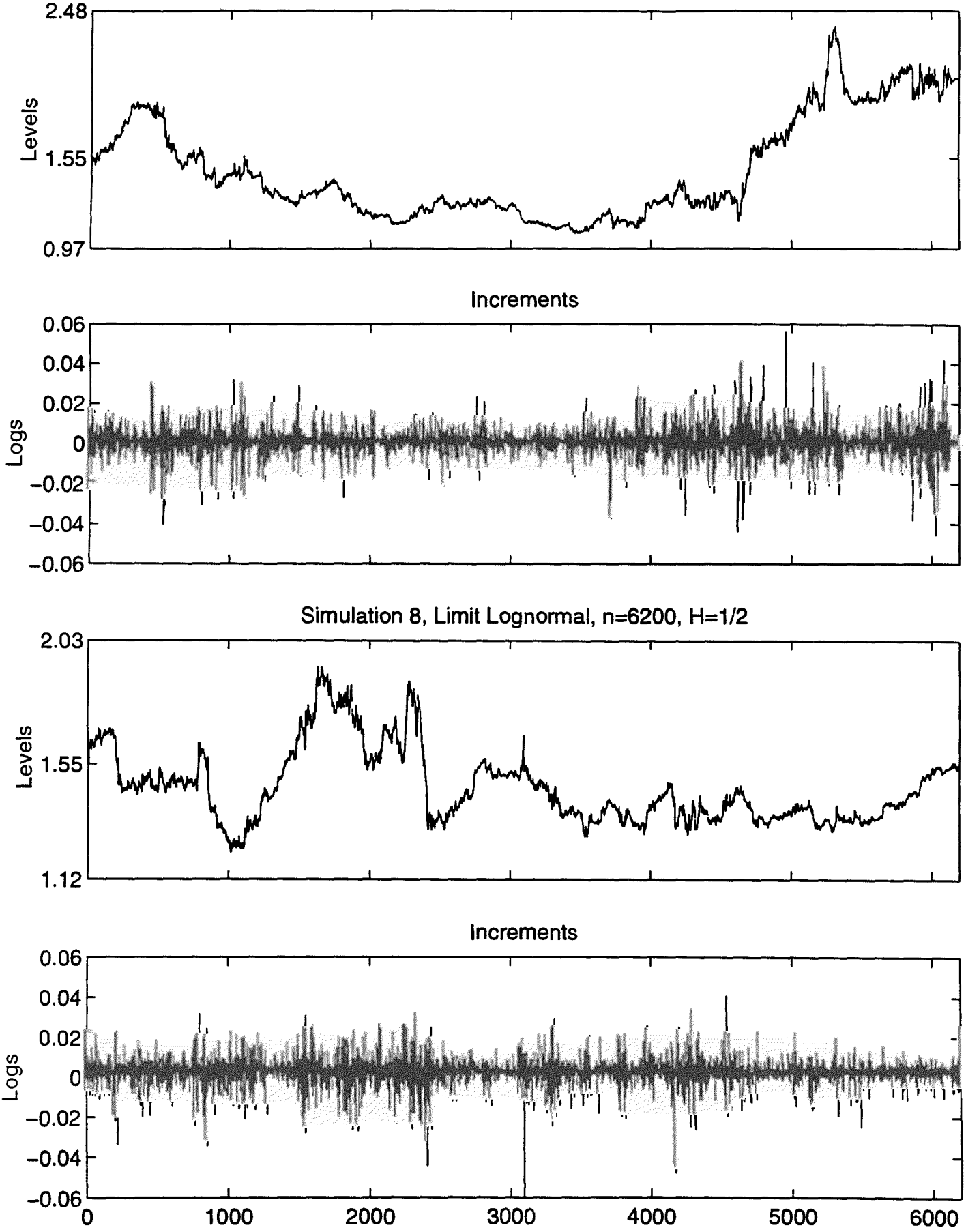


Figure 13e. Simulation 9, Limit Lognormal, n=40000, H=1/2

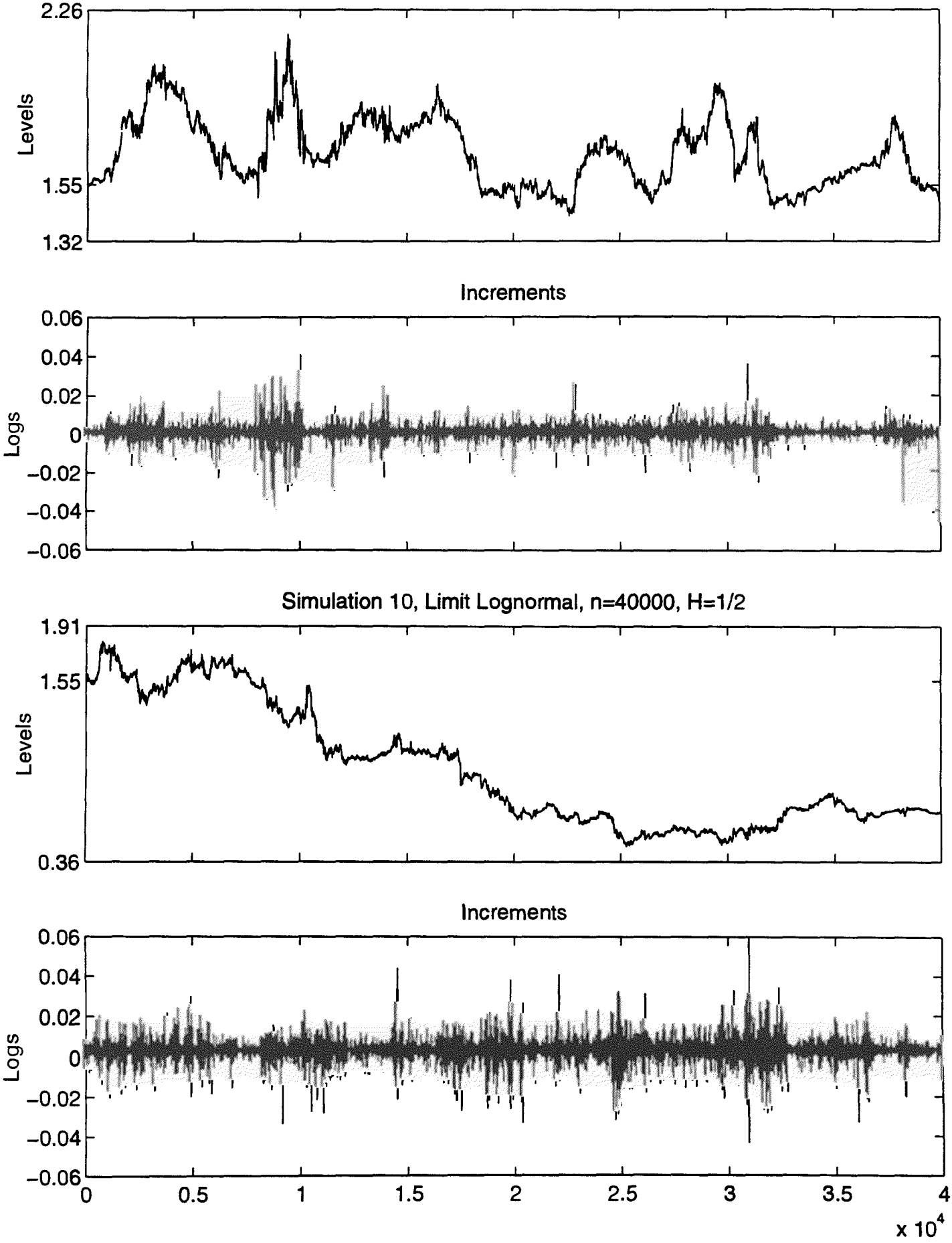


Figure 13f. Simulation 11, Limit Lognormal, n=40000, H=1/2

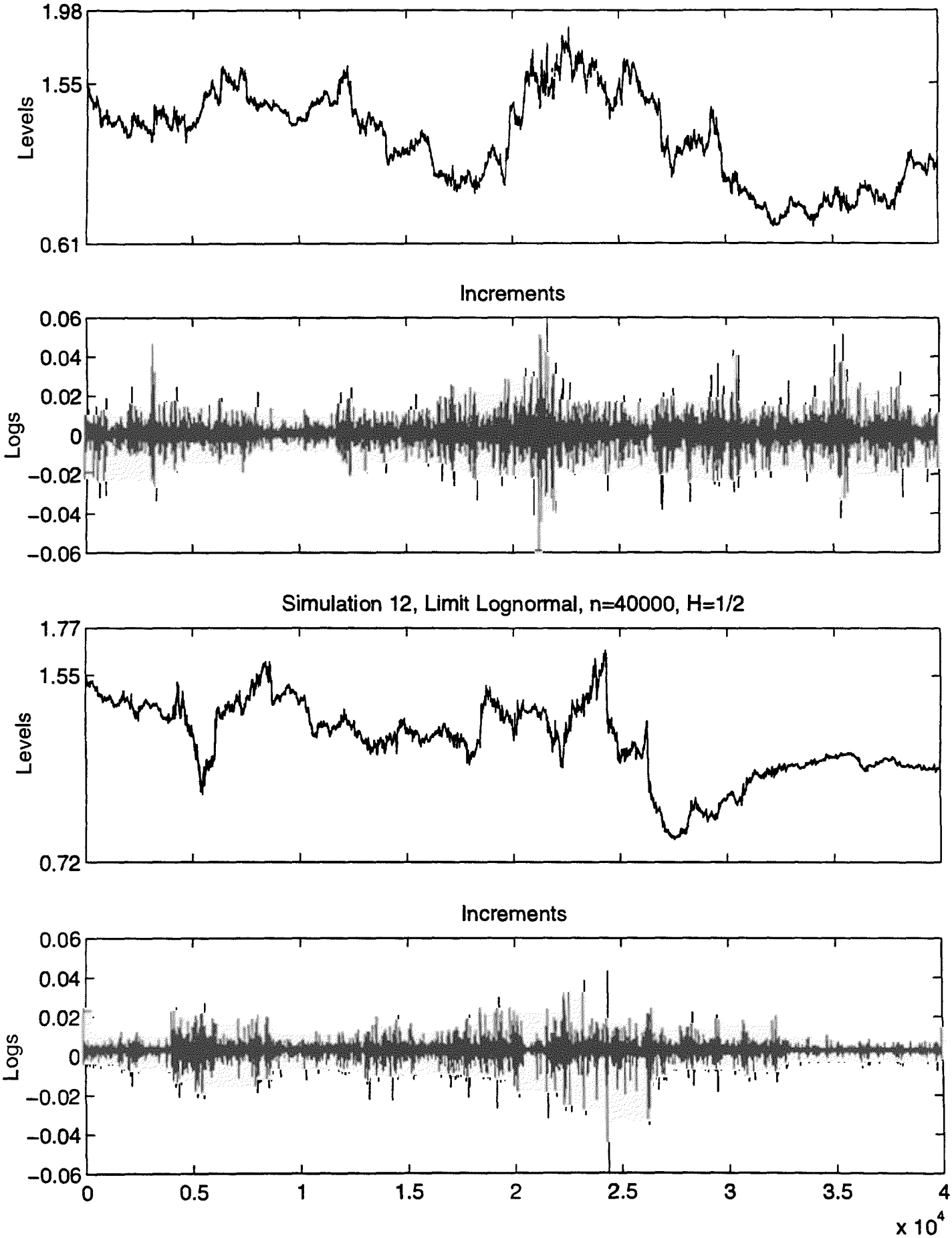


Figure 14. Selected (4 of 20) Simulated MMAR Partition Functions, n=6200

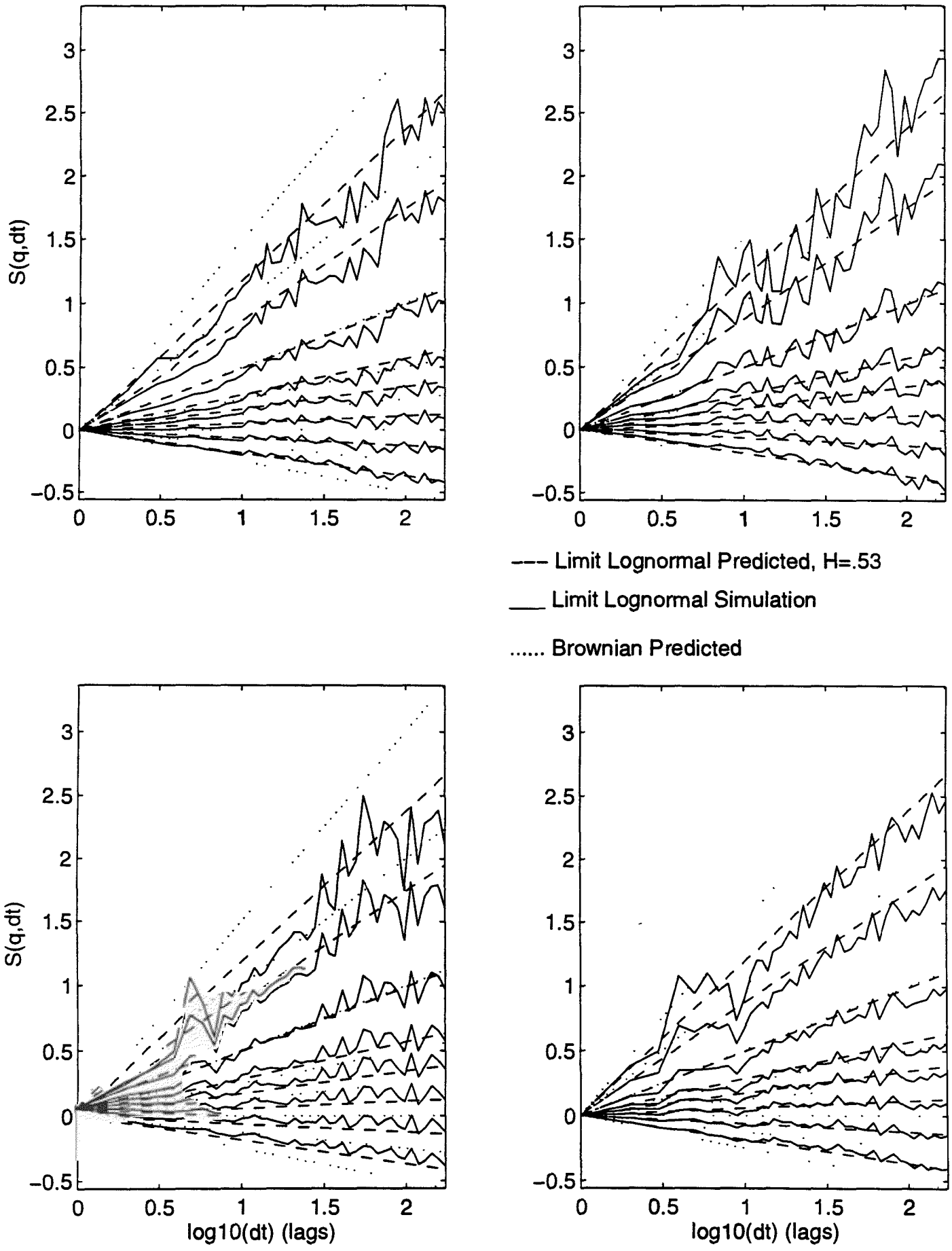
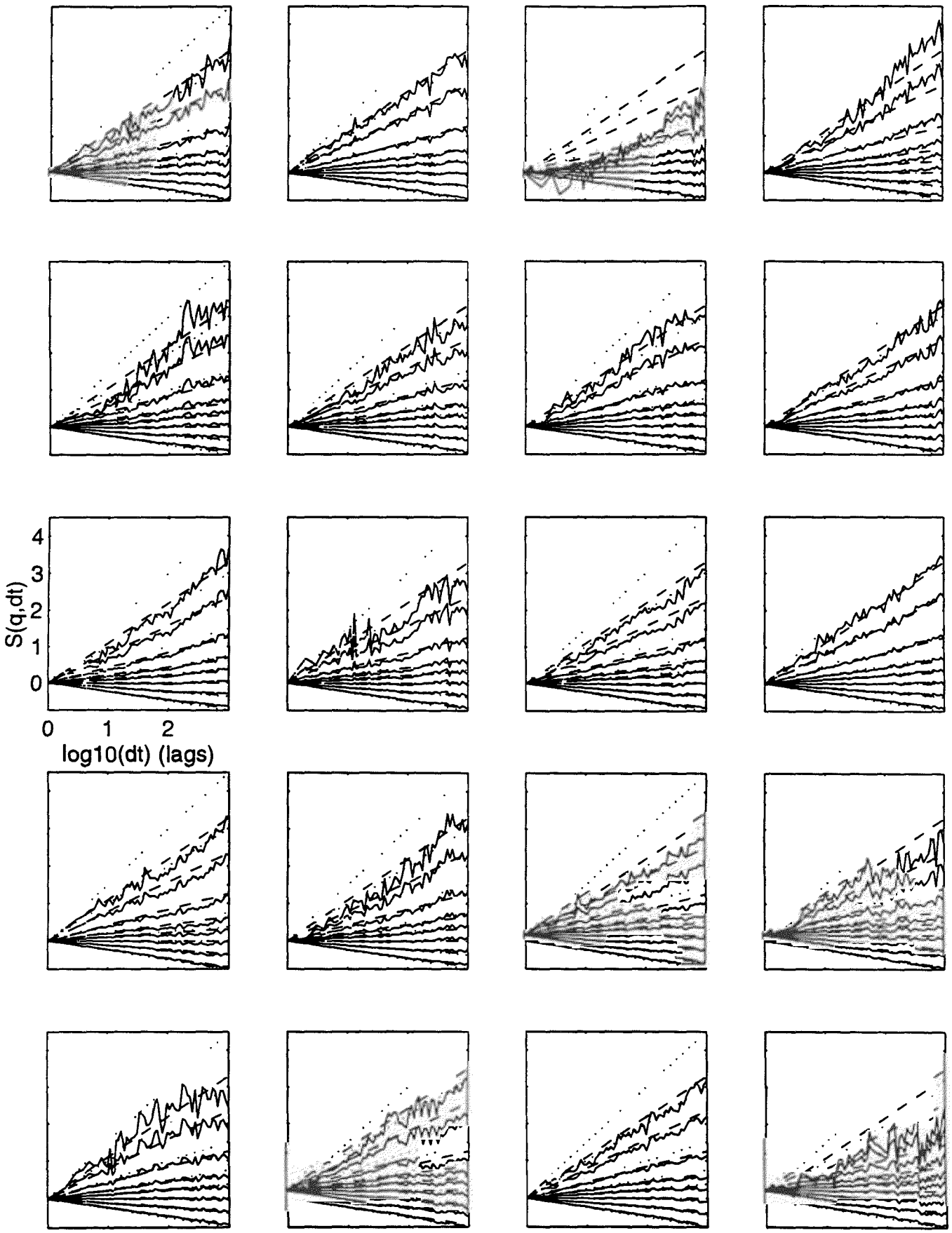


Figure 15a. Simulated MMAR Partition Functions, n=10^5, High Moments

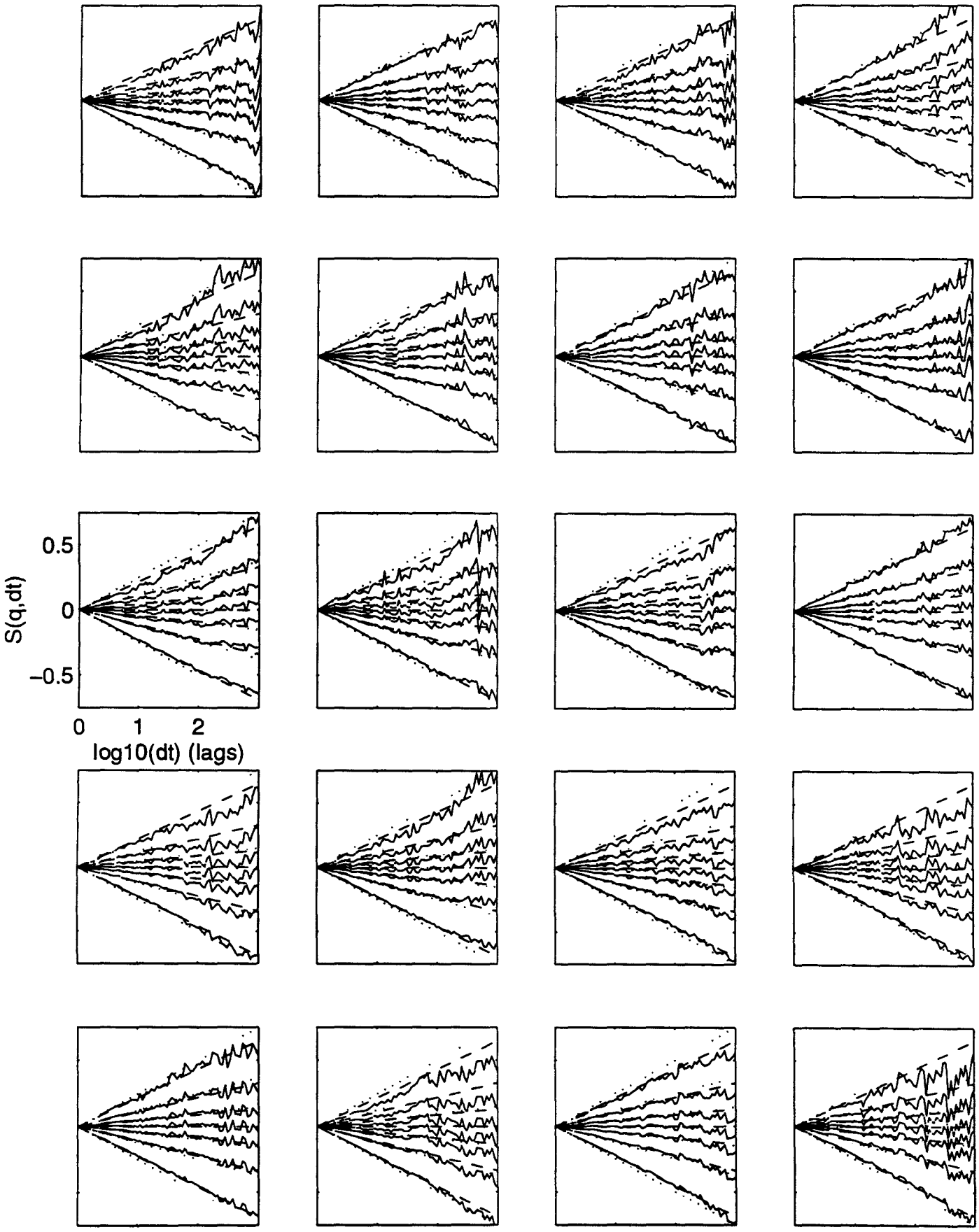


--- Limit Lognormal Predicted, H=1/2

..... Brownian Predicted

___ Limit Lognormal Simulation

Figure 15b. Simulated MMAR Partition Functions, n=10^5, Low Moments



--- Limit Lognormal Predicted, H=1/2

..... Brownian Predicted

___ Limit Lognormal Simulation

Figure 16. Twenty Simulated Multifractal Spectra, n=10^5

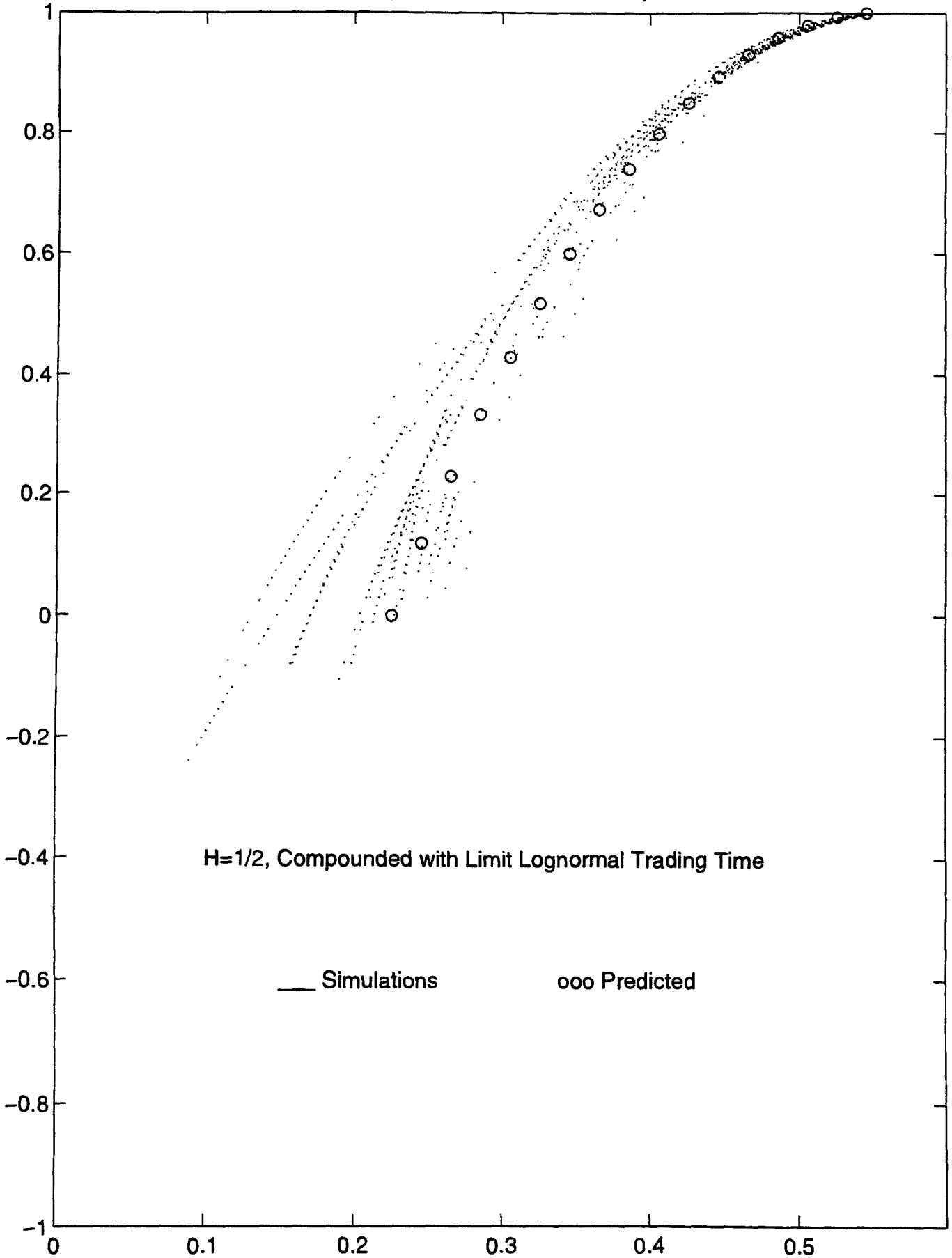


Figure 17. Simulated GARCH(1,1) Increments, n=40000

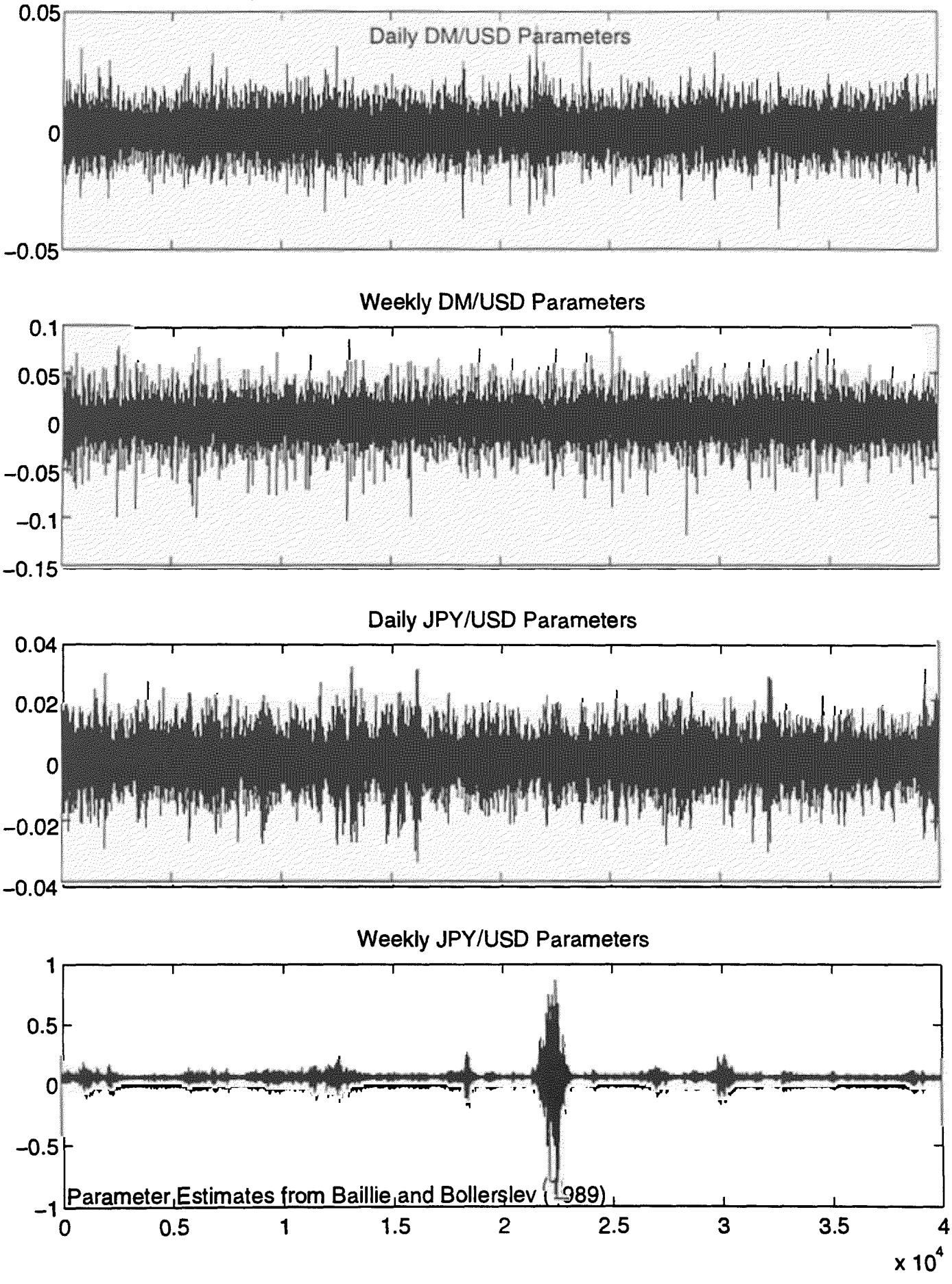


Figure 18. Simulated GARCH(1,1) Partition Functions

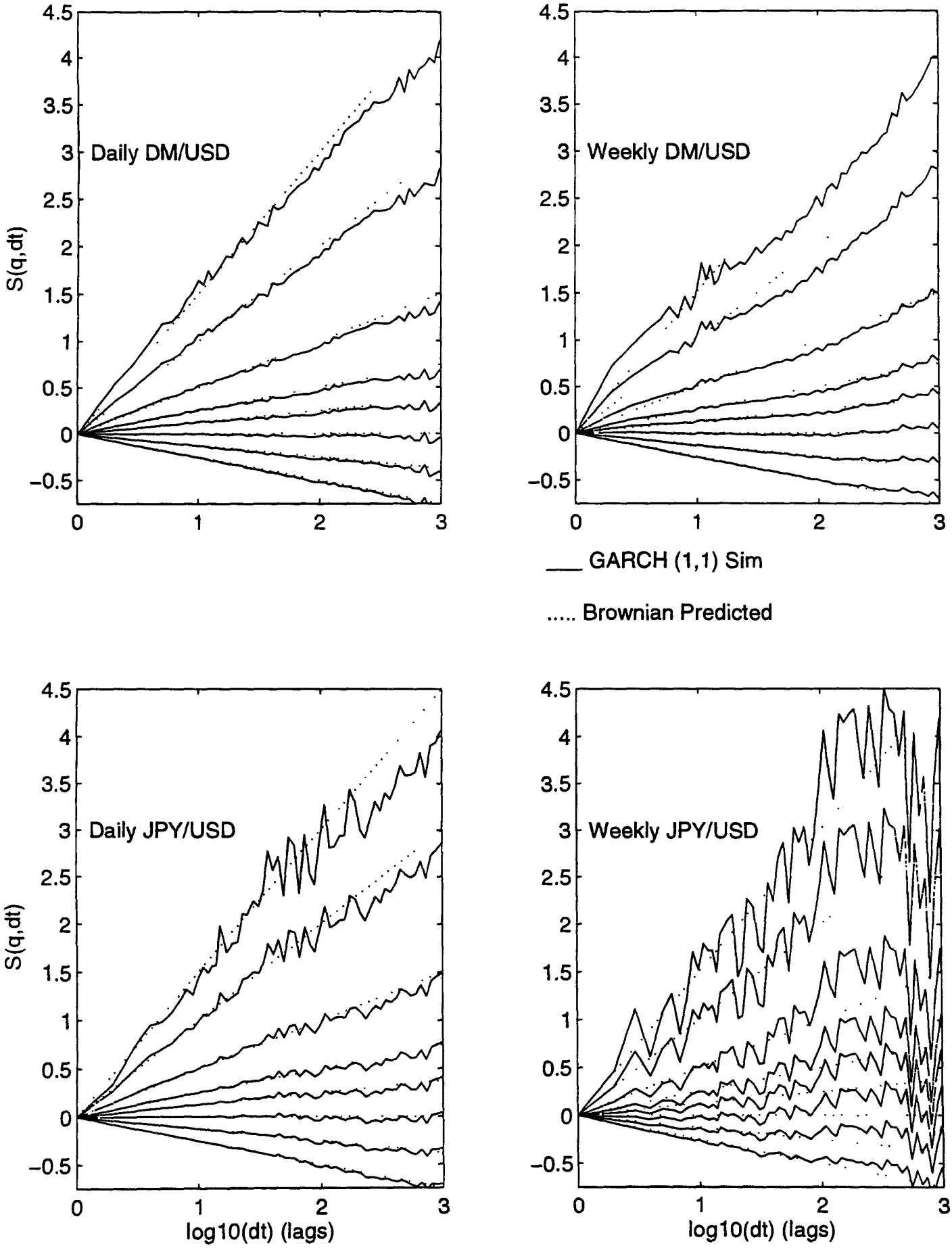


Figure 18b. Simulated GARCH(1,1) Partition Functions, With Trends

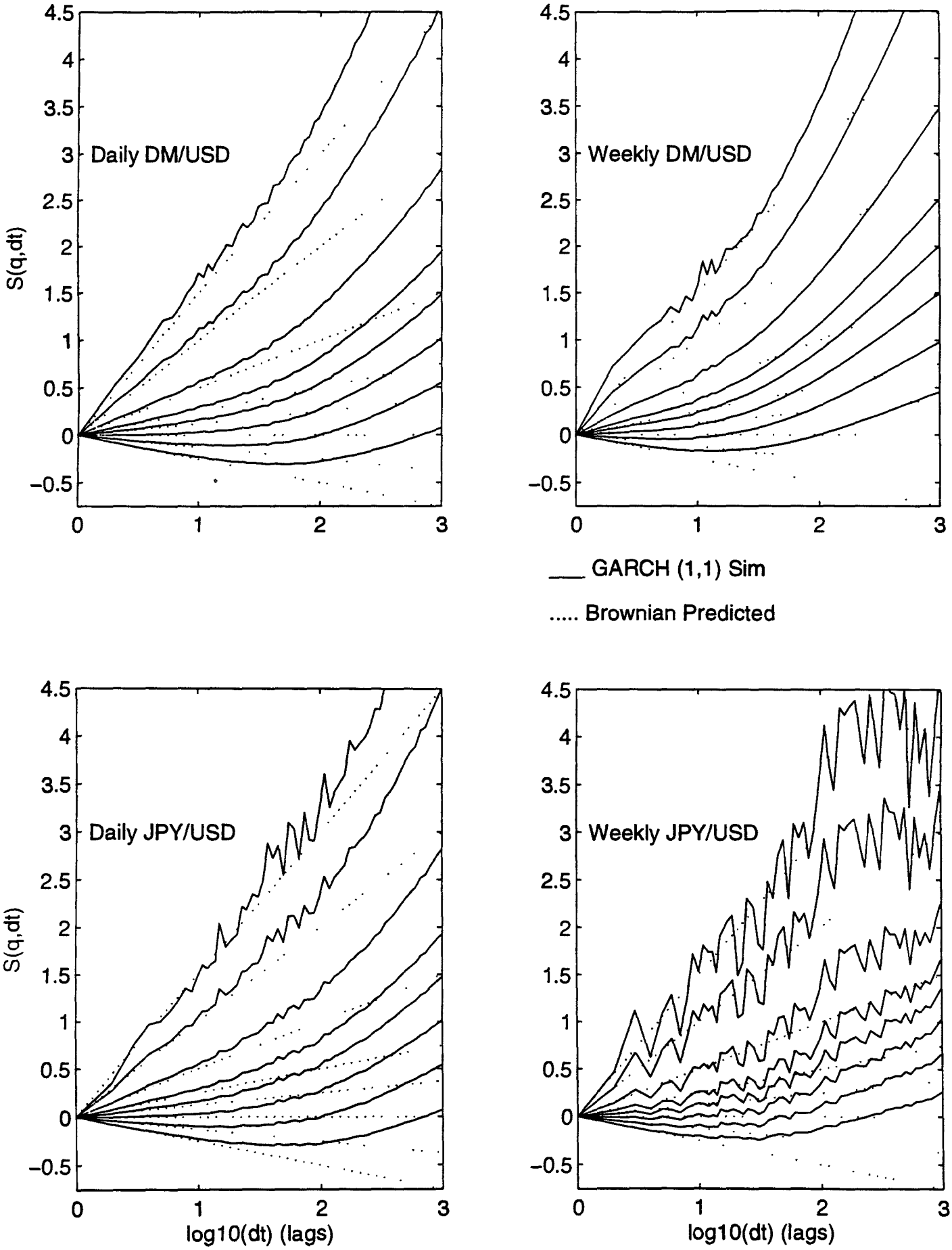


Figure 19a. FIGARCH Simulations, n=6200

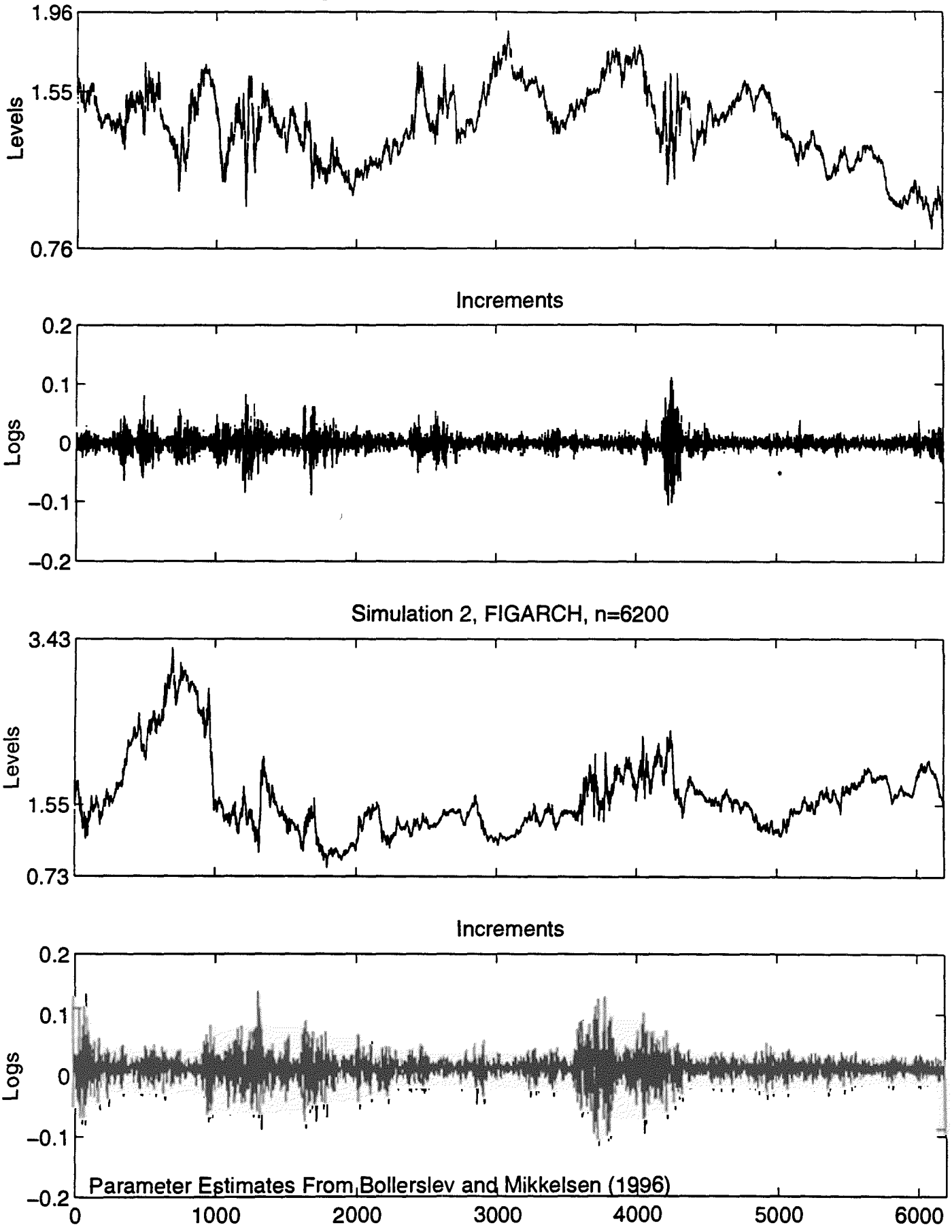


Figure 19b. Simulation 3, FIGARCH, n=6200

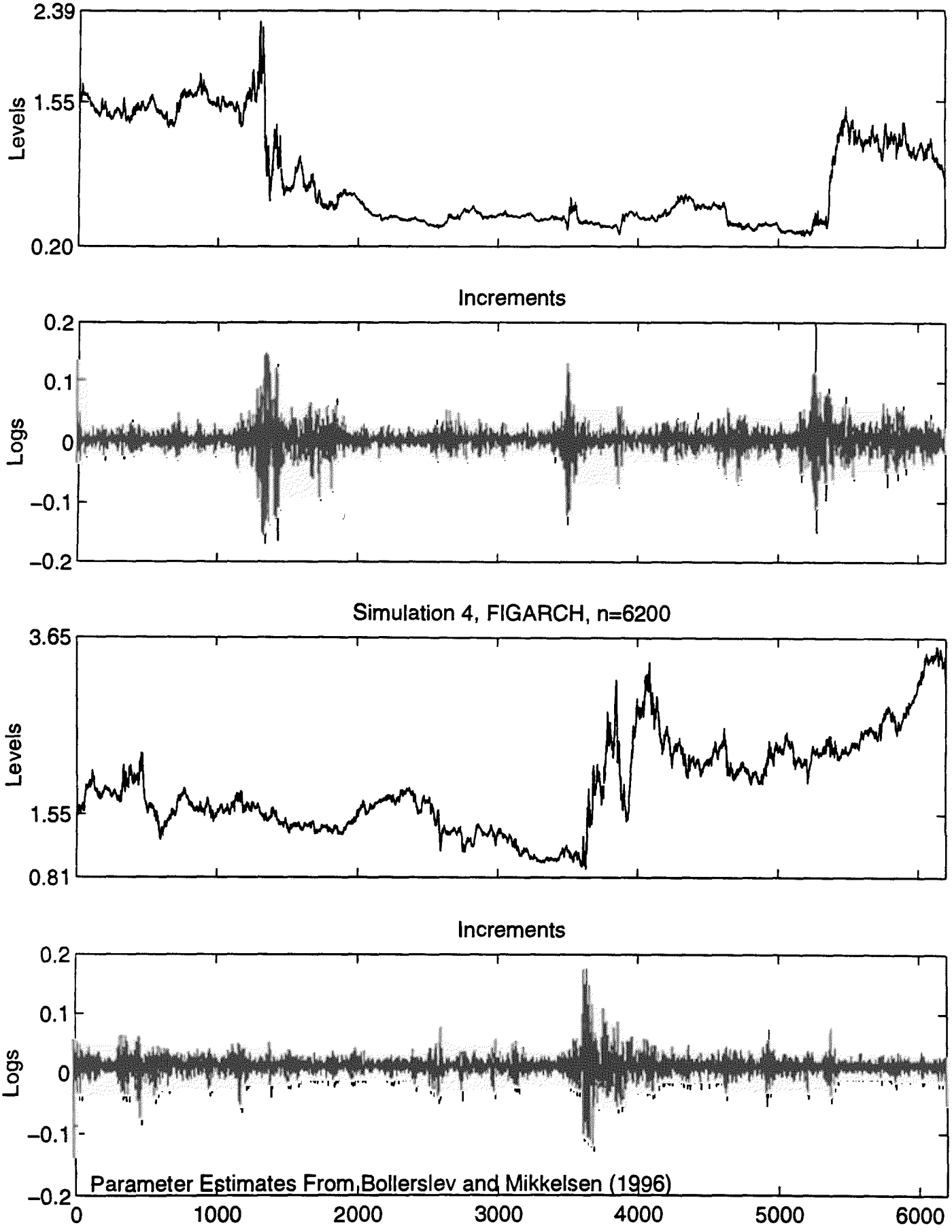


Figure 19c. FIGARCH Simulations, n=40000

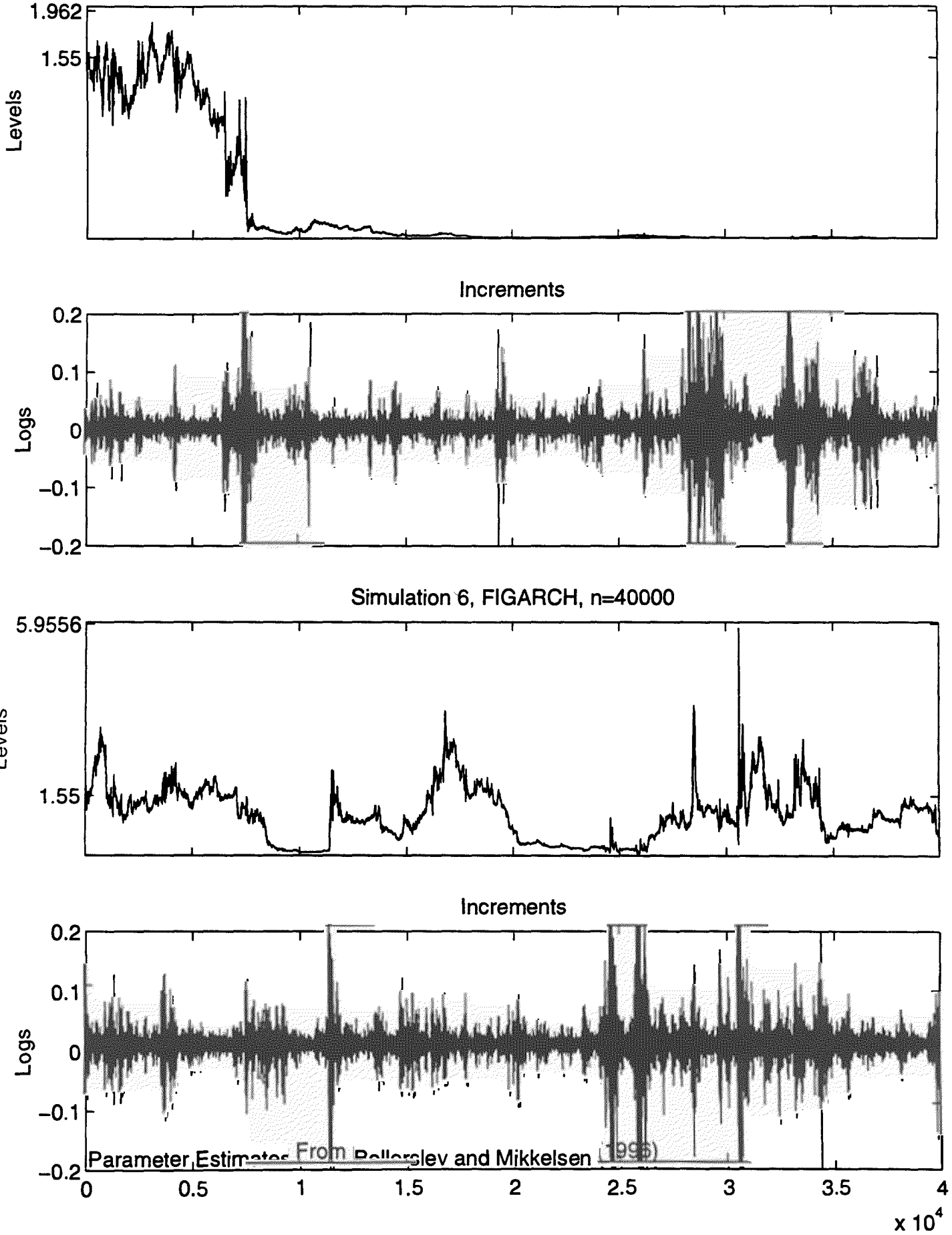
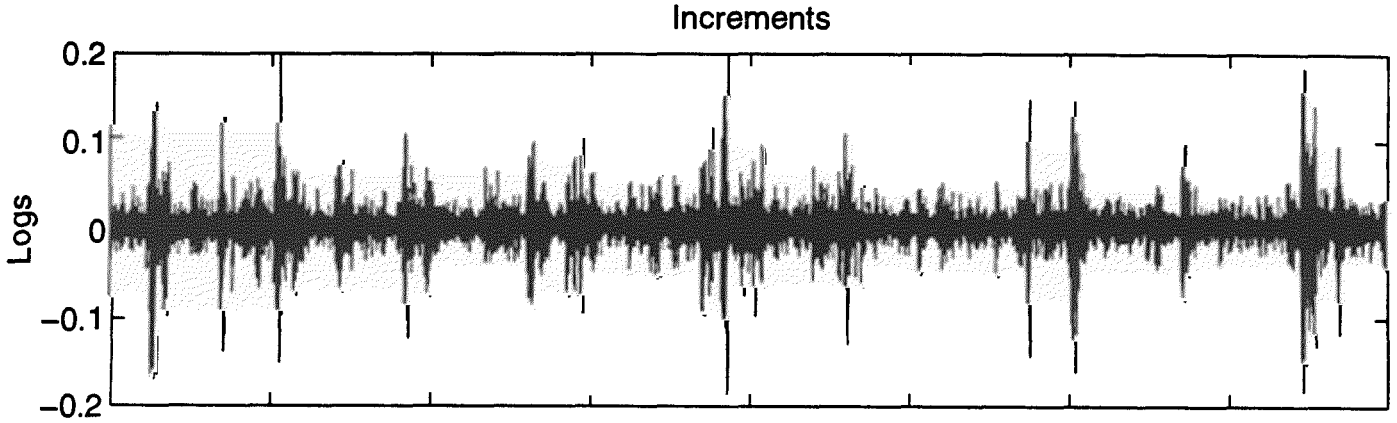
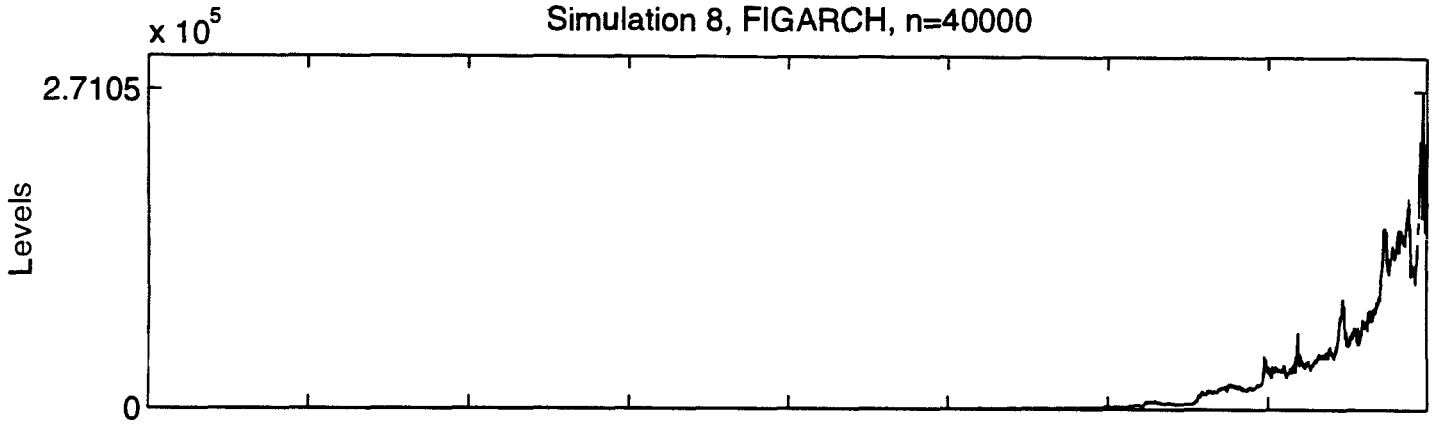
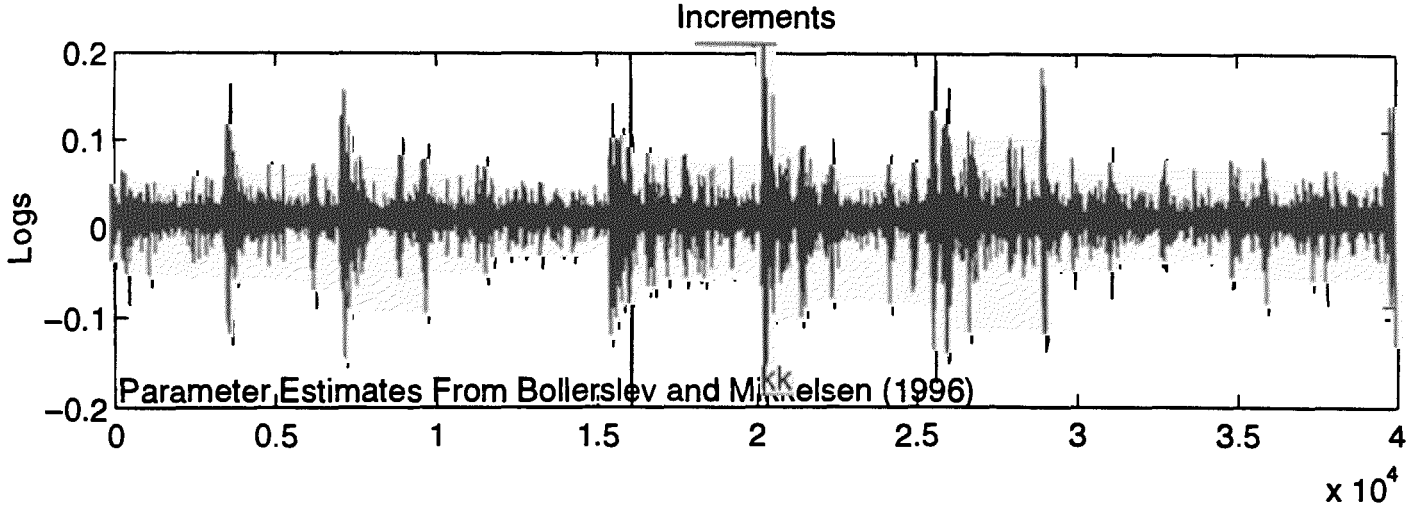


Figure 19d. Simulation 7, FIGARCH, n=40000

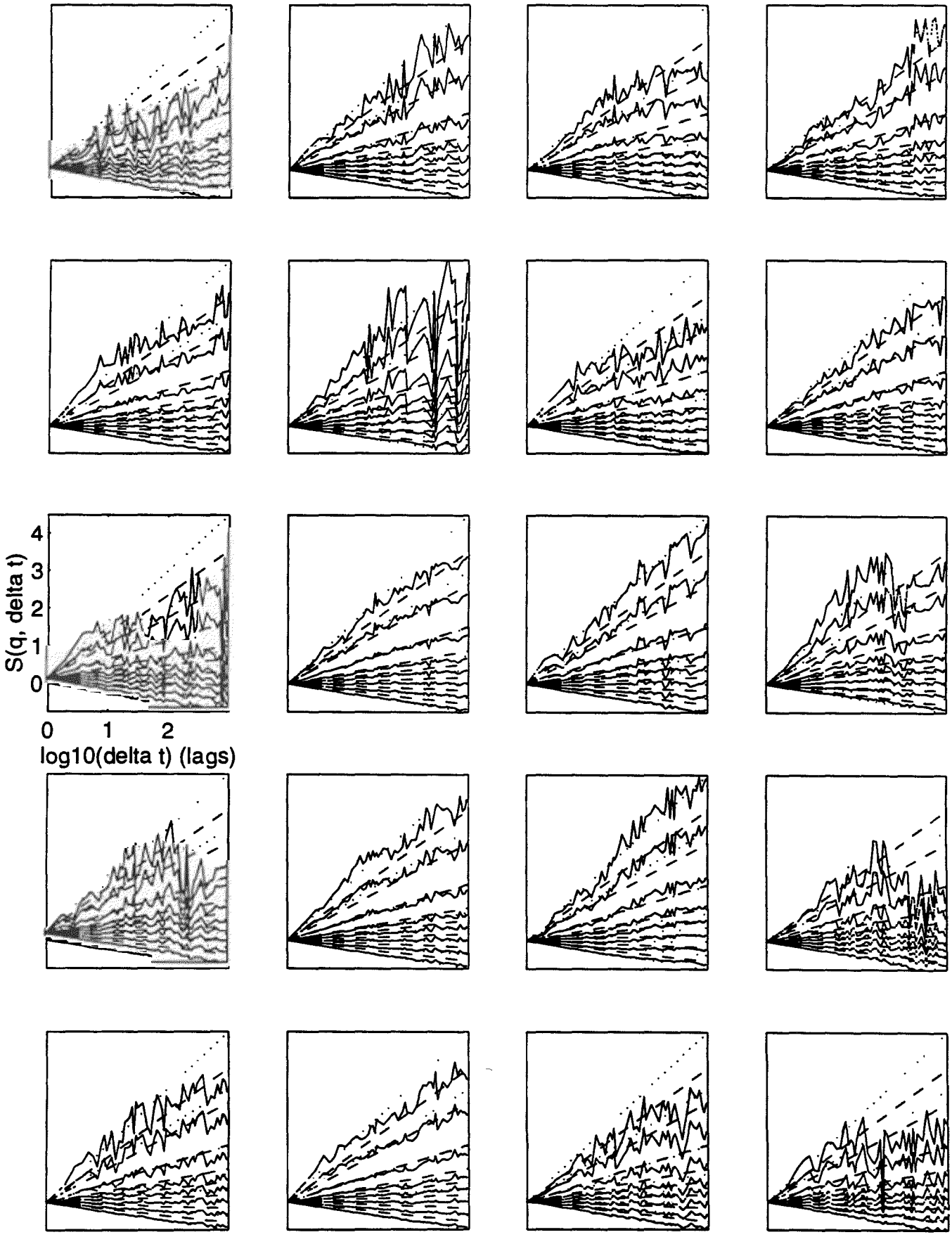






Parameter Estimates From Bollerslev and Mikkelsen (1996)

Figure 20a. Simulated FIGARCH Partition Functions, n=10^5, High Moments

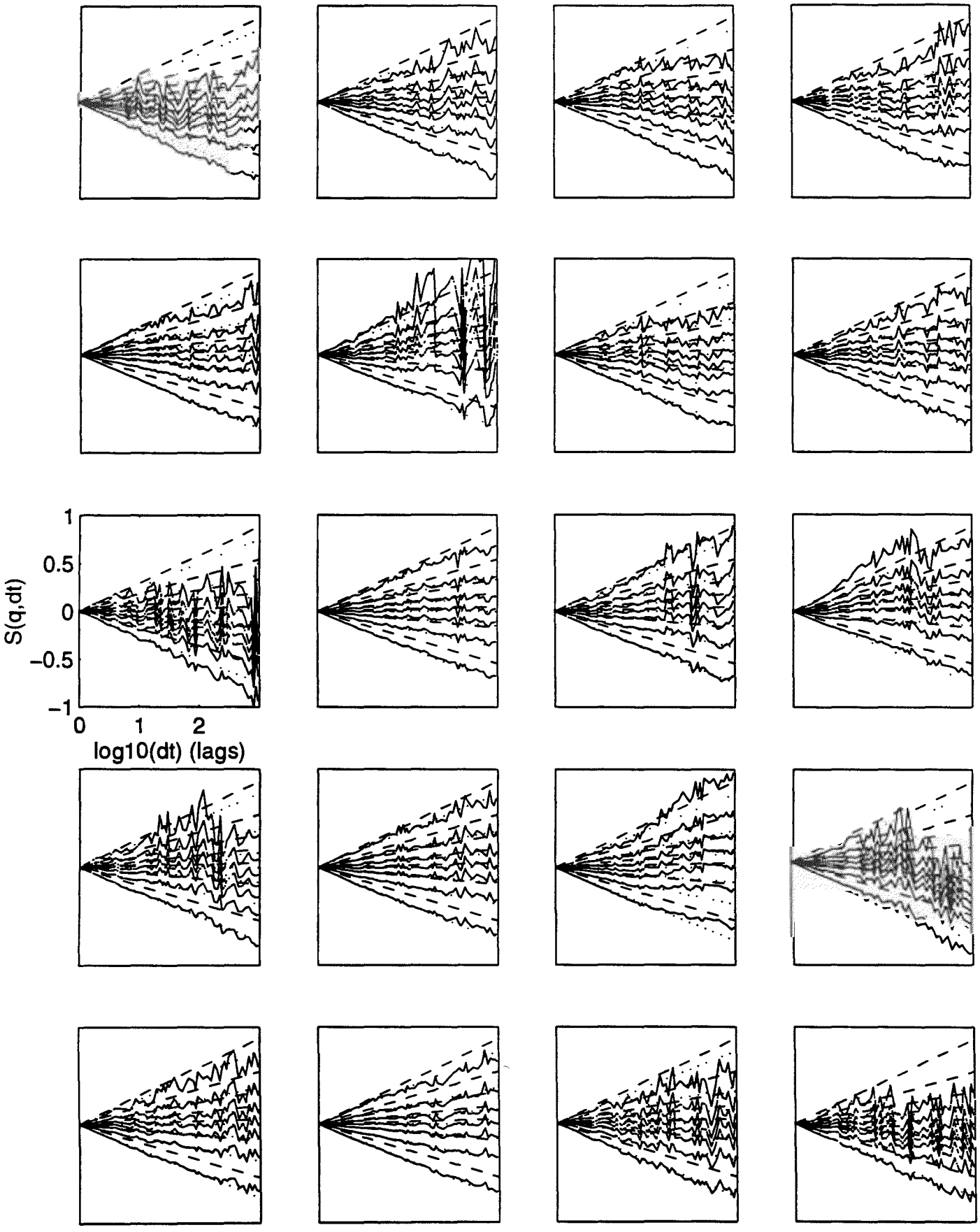


--- DM/USD OLS Fitted

..... Brownian Predicted

___ Figarch Simulation

Figure 20b. Simulated FIGARCH Partition Functions, n=10^5, Low Moments



--- DM/USD OLS Fitted

..... Brownian Predicted

___ Figarch Simulation

Figure 21. Robustness of DM/USD Scaling to Change in Daily Data

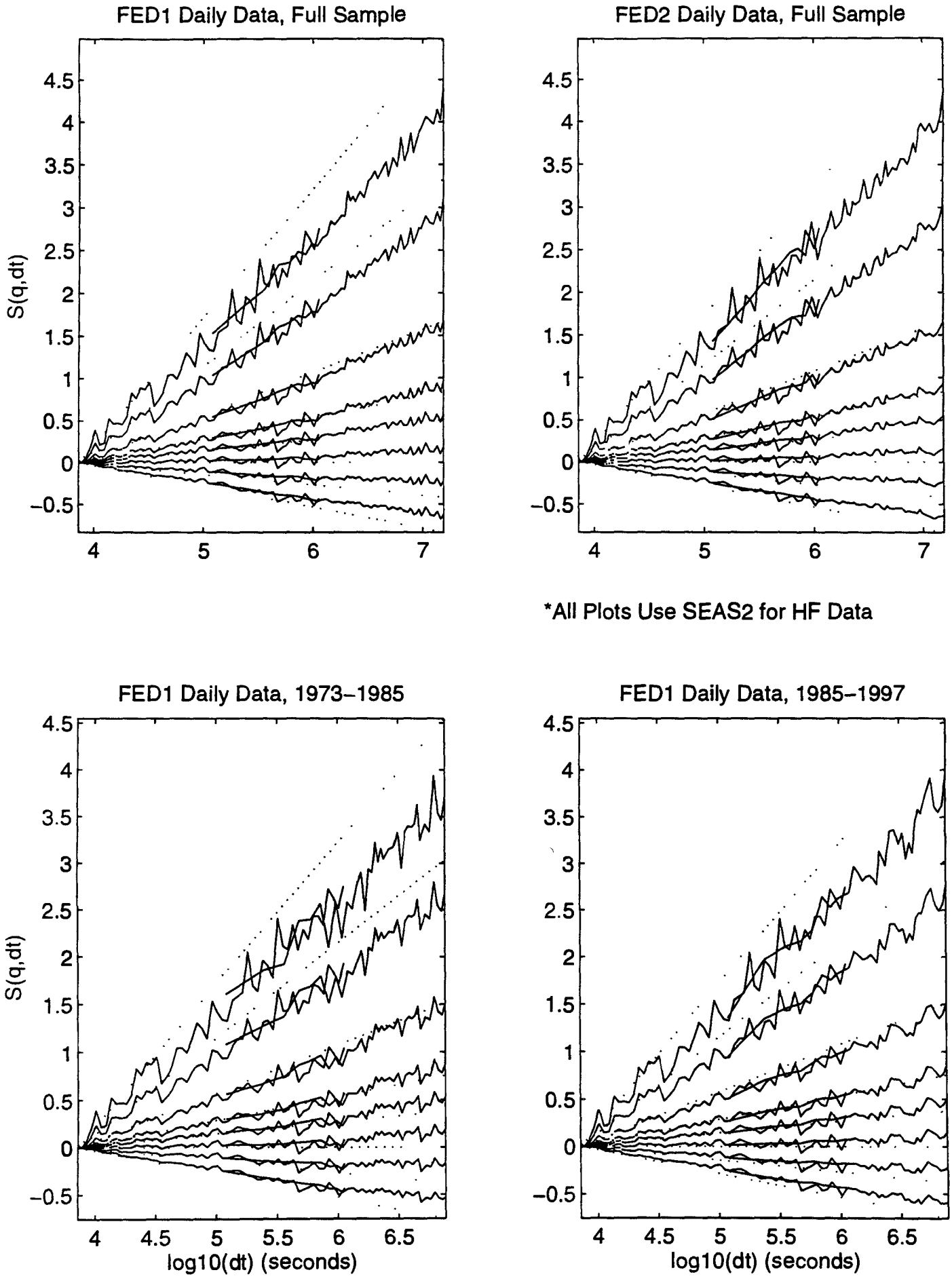
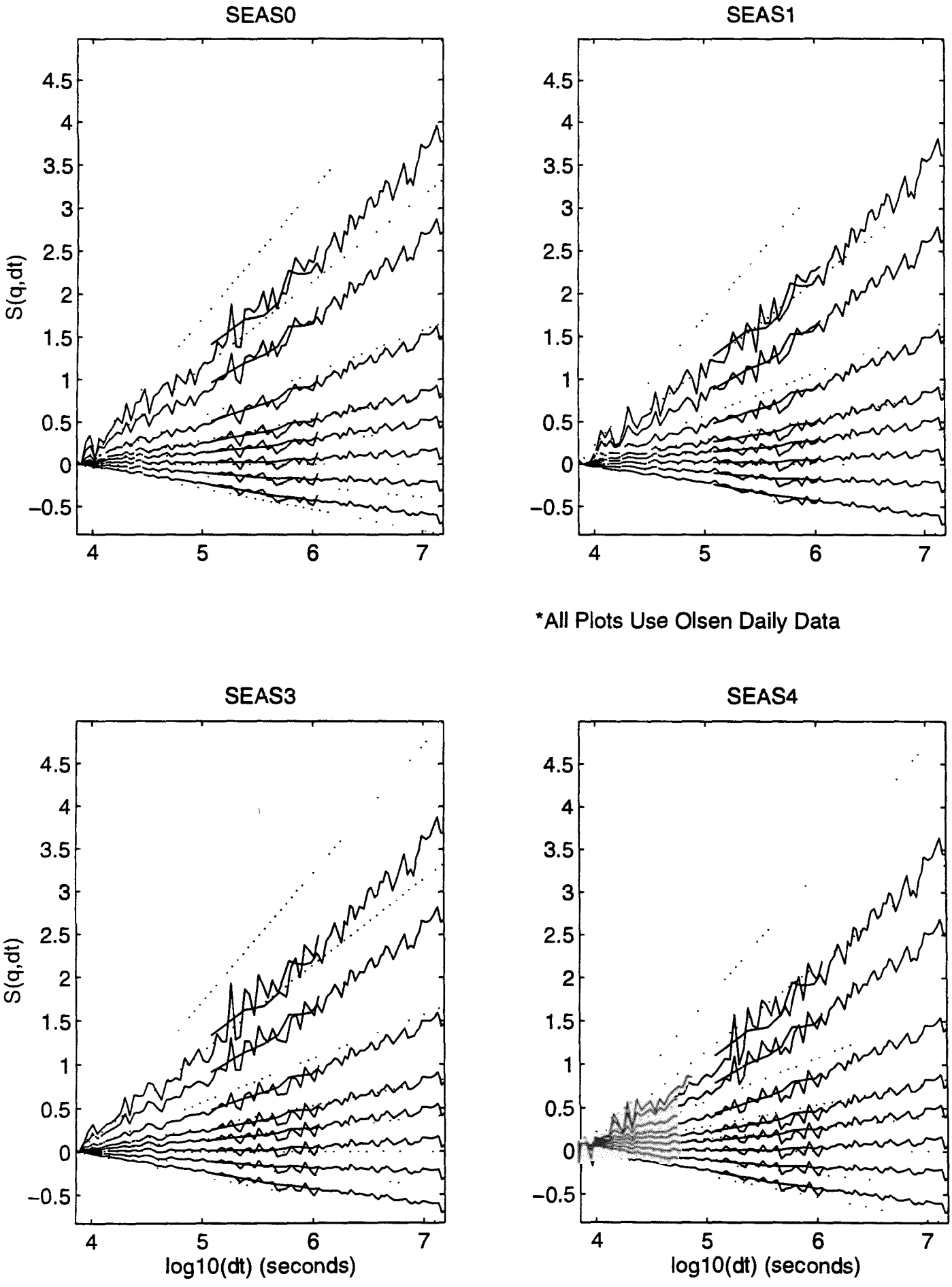


Figure 22. Robustness of DM/USD Scaling to Change in Seasonal Filter



*All Plots Use Olsen Daily Data

Figure 23. Robustness of Estimated DM/USD Multifractal Spectra

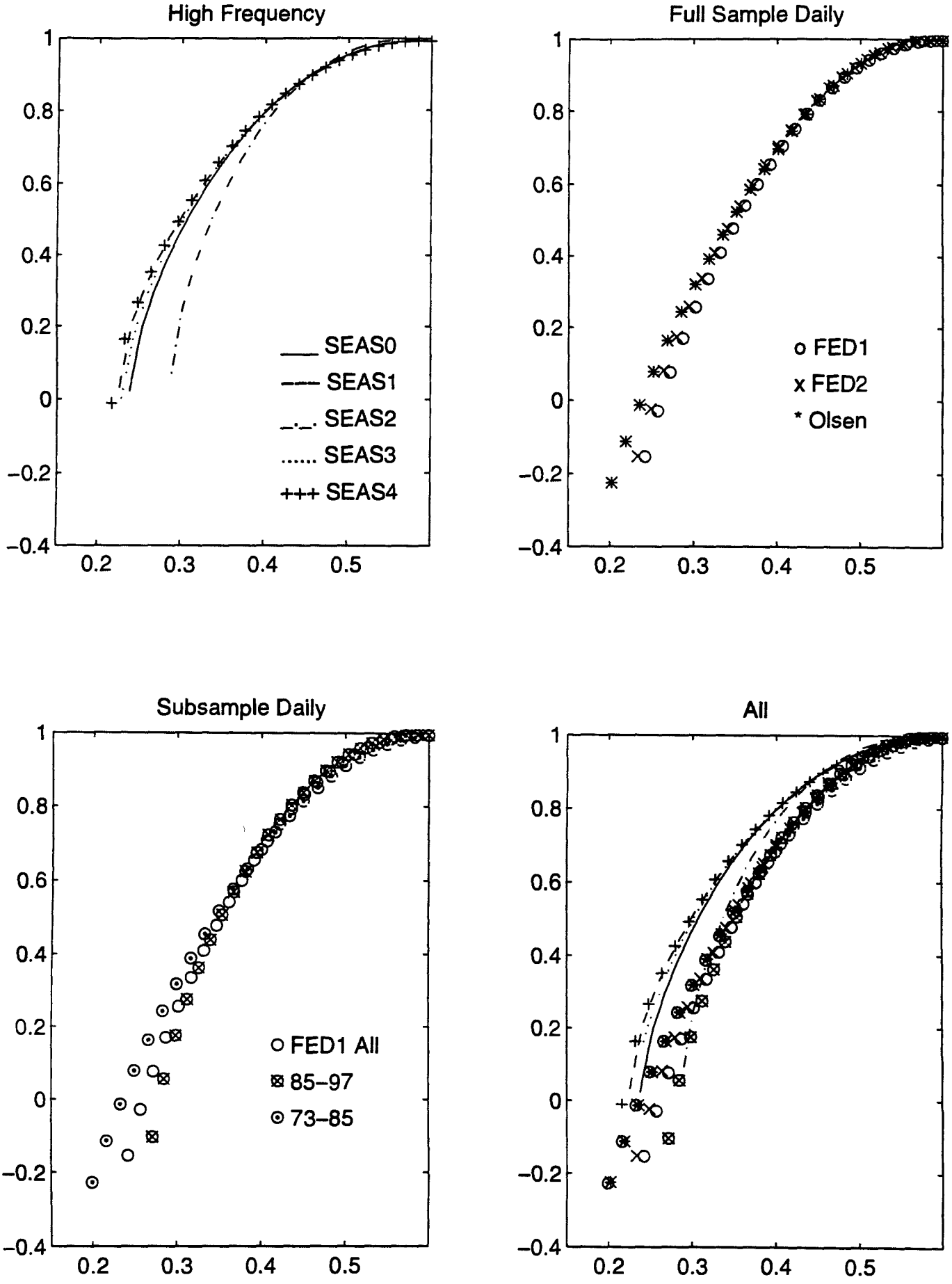


Figure 24. JPY/USD Exchange Rate: June 4, 1974 – June 3, 1997

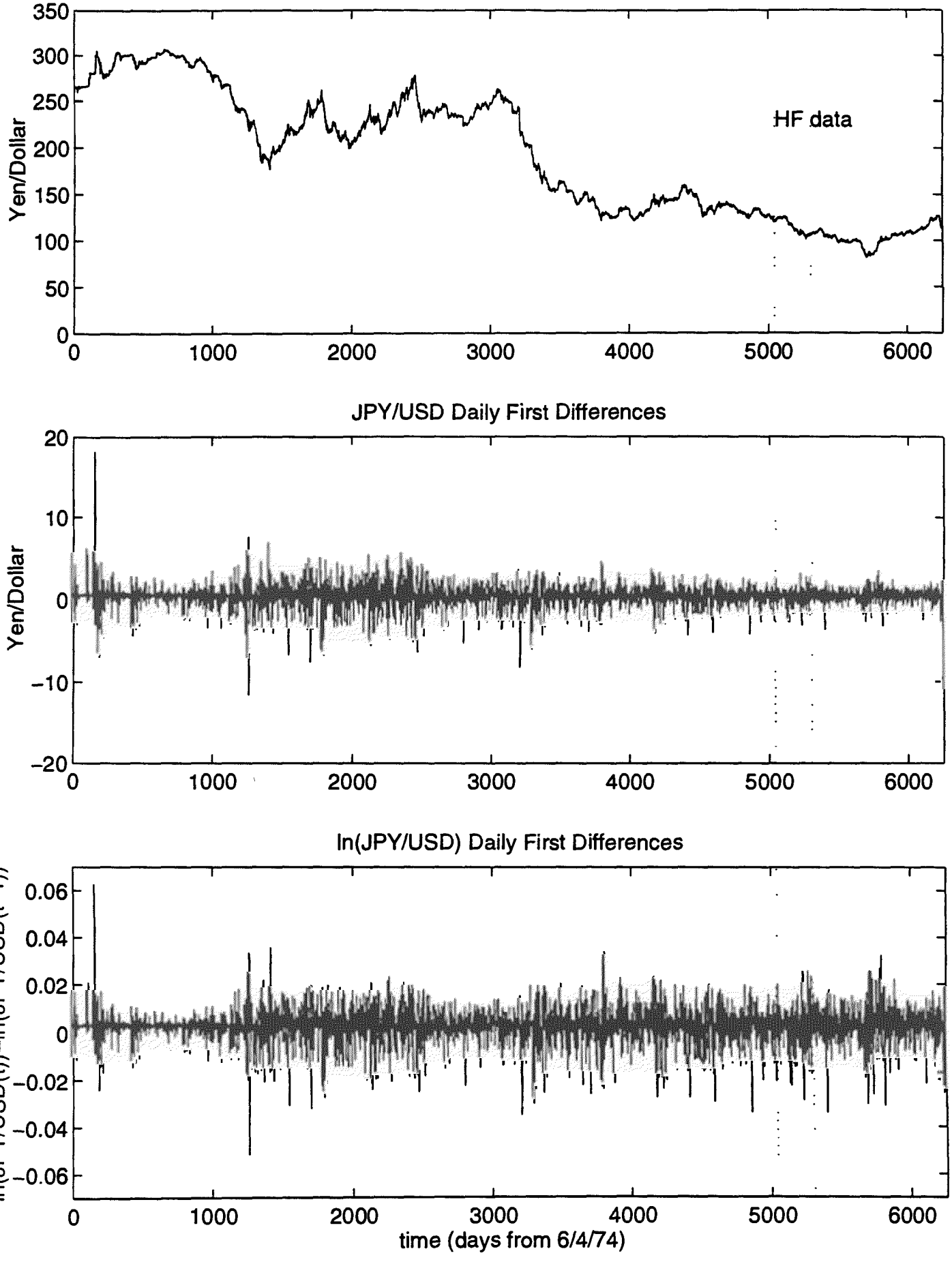


Figure 25a. JPY/USD Weekly Seasonality in Quotes/Clock Time

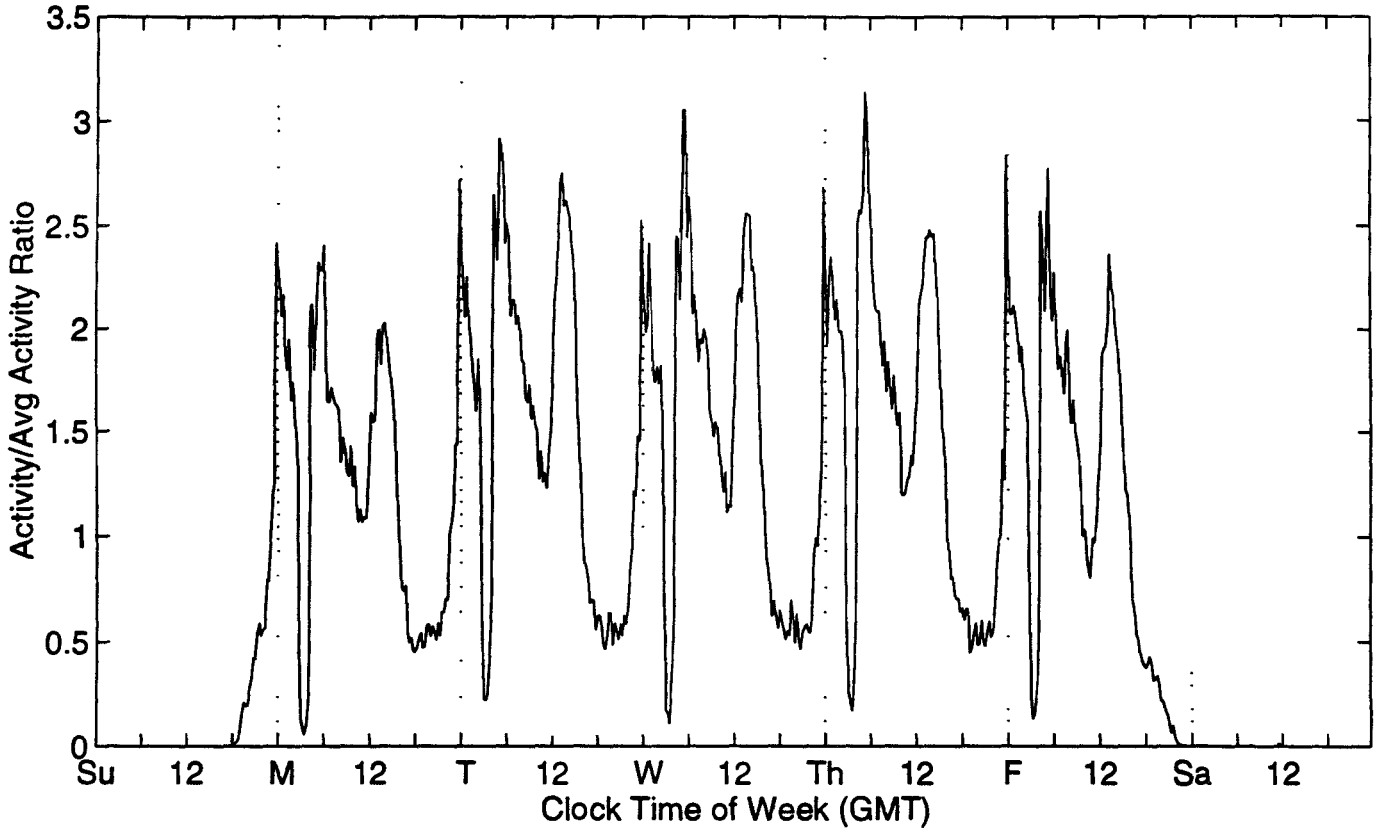


Figure 25b. JPY/USD Weekly Seasonality in Absolute Returns

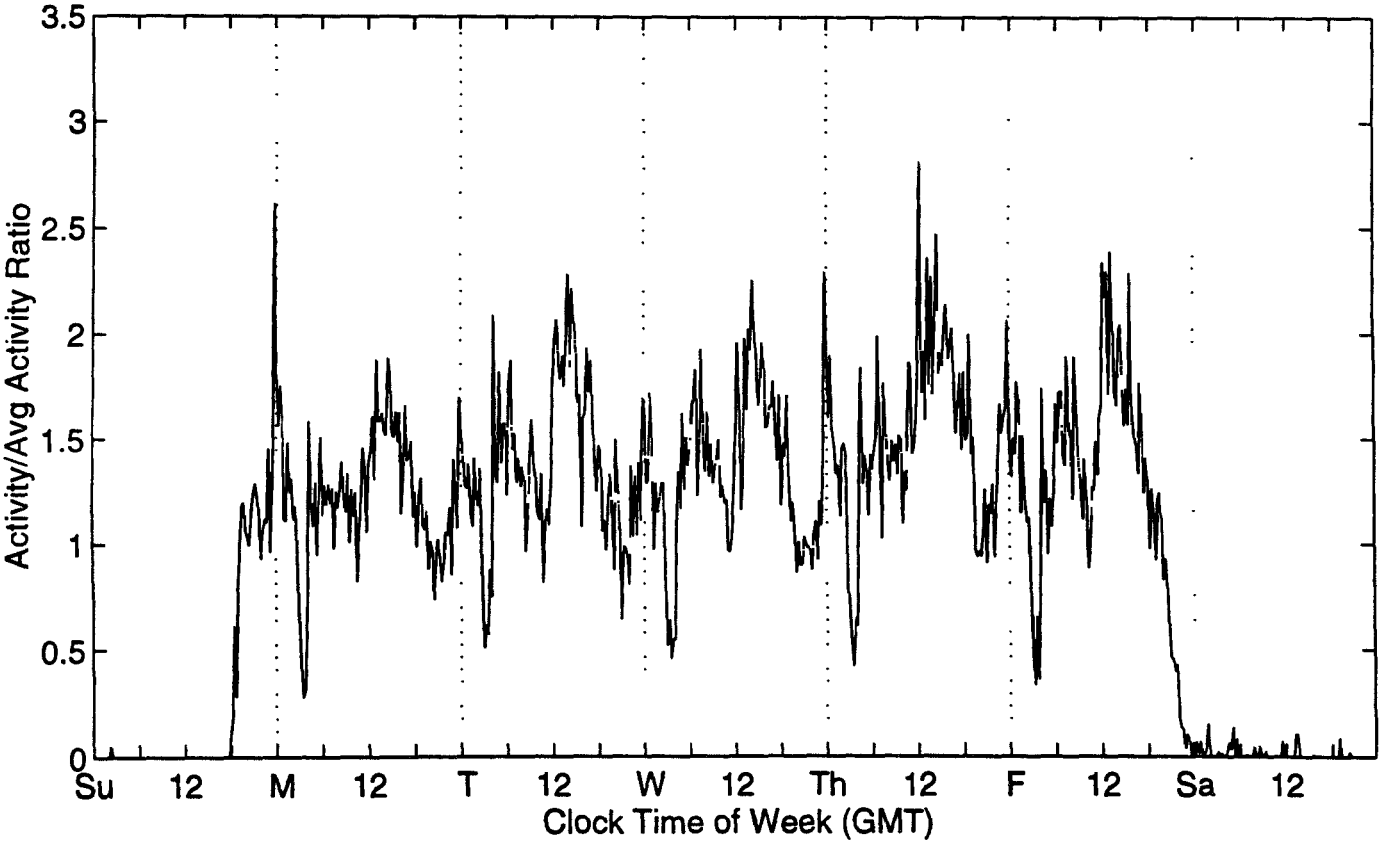


Figure 26. JPY/USD Partition Function, SEAS2