Mean model equation

* is the logarithm of the risk factor level at day
* is the (fractional) trend term
* is the array of exogenous variables (this includes 12 monthly sinusoidal functions and 6 weekday dummy variables (Monday to Saturday). If includes 7 weekday dummies covering all days of the week)
* is the lag polynomial, . For a variable ,
* is the disturbance term
* is the fractional difference operator

is the memory length coefficient . The closer the value of to 1 the more persistant the price or else it exhibits *long memory* (current price incorporates the effect of past shocks)

Case , (short memory)

Case , (infinite memory)

From the main equation, we get

Prices exhibit long memory through the term , is a fractional (power decaying) trend