<https://d1wqtxts1xzle7.cloudfront.net/34875275/SSRN-id2495434.pdf?1411667387=&response-content-disposition=inline%3B+filename%3DQuantifying_Randomness_A_New_Model_for_M.pdf&Expires=1630349801&Signature=OTS260EIRBIU4NxreI86sx4Mtn7YRq81rjdbKzQa46cfPiGGkf7LE6--j9z94b~baZGkAyfM9i0P8xoHSaiqtMjfytmzSRHQ~Tjb9oh2uTwm6oQvhORIaIditZZzNTJH~UHxlX-hKEkp6oWQiMjqwj1g80MdrlZAxw5yu6j24IeFmNEXyc0jx0Wm~sAZ5rA4wRUkcOEz2UavtSg3-xyMFiSDzjc71qglXLSxRRmgtpBkcvVhpANIrO0anGAeE7VRzb3hRZaLF1~~0ewMhXpA~p5sCuWYyjIi2m2sMppqj374z-r7m3t1dhAR3z5bhYDcsN-tfQv6ZTyaNwppGPQSrQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA>

Model:

Run Ratio = Total Runs/ Total Trading Sessions

Runs = Amount of times direction changed, where change is defined if price above or below previous close.

Randomness = Zcal(Run Ratio) + zcal(Risk(SD))

Ztest = x-xbar/(sd)

BUY RULE

Buy when daily close price > \_\_\_\_\_ Day SMA\*

SELL RULE Sell when daily close price < \_\_\_\_\_ Day SMA\*

The SMA\* is applied based on performance of the stock during in the sample period for tested SMA rules.

Sharpe 1.6 compares to benchmark of .548 from 2009-2013

<https://poseidon01.ssrn.com/delivery.php?ID=968120070017097017069090009070083081127015066012065038099100068095067126118101093000019101125033110002058115103118064019089115013010054030001011071070094069097072090049001040002022117082116115119005081117084096081103065100025071031127125007029026086004&EXT=pdf&INDEX=TRUE>

Model:

Buy = RSI above 40 for previous T days, sell when fall below 40

40% success rate.

1. RSI Bull Range: RSI fluctuates between 40 and 100 over N days.

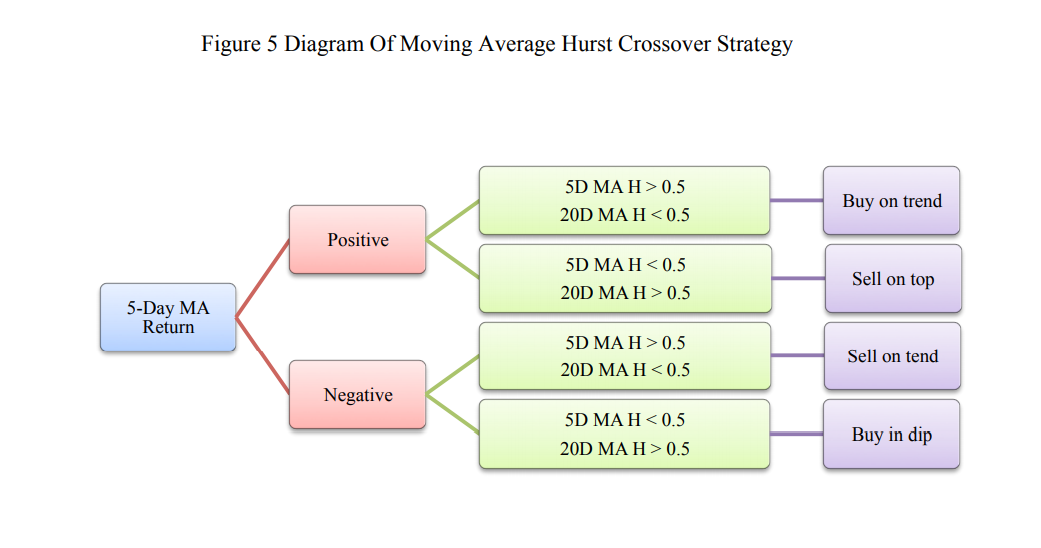
2. RSI Bear Range: RSI fluctuates between 0 and 60 over N days

3. RSI Bull Momentum: highest high value of RSI is greater than 70 over N days

4. RSI Bear Momentum: lowest low value of RSI is less than 30 over N days

5. RSI Bull Range-Momentum: combination of 1 and 3 over N days

https://core.ac.uk/display/79051119



Model:

Use the Hurst exponent to calculate random walk or not.

A value of 0<H<0.5 indicates a time series with negative autocorrelation (e.g. a decrease between values will probably be followed by another decrease),

A value of 0.5<H<1 indicates a time series with positive autocorrelation (e.g. an increase between values will probably be followed by another increase),

A value of H=0.5 indicates a "true random walk," where it is equally likely that a decrease or increase will follow from any particular value (e.g. the time series has no memory of previous values)

https://towardsdatascience.com/introduction-to-the-hurst-exponent-with-code-in-python-4da0414ca52e

def get\_hurst\_exponent(time\_series, max\_lag=20):

"""Returns the Hurst Exponent of the time series"""

lags = range(2, max\_lag)

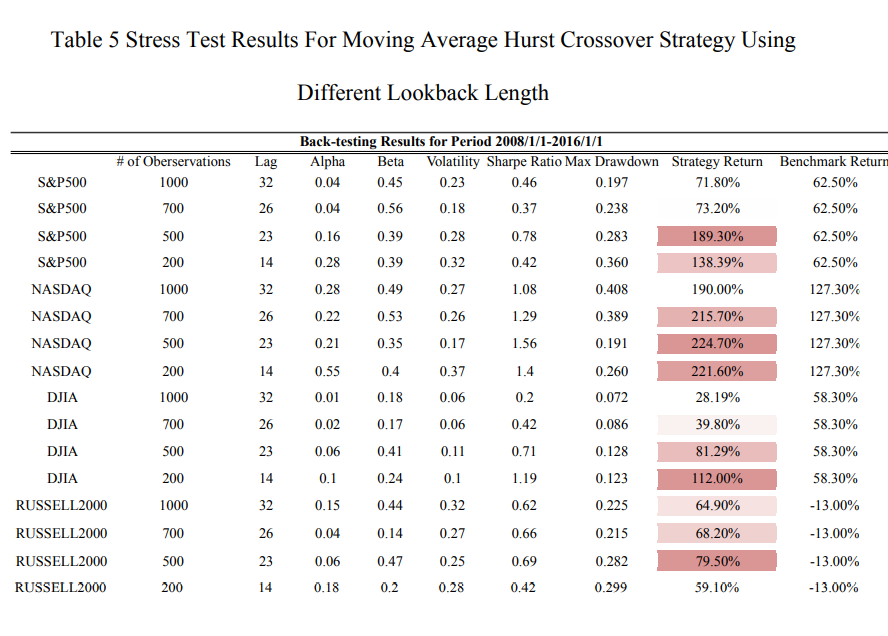
# variances of the lagged differences

tau = [np.std(np.subtract(time\_series[lag:], time\_series[:-lag])) for lag in lags]

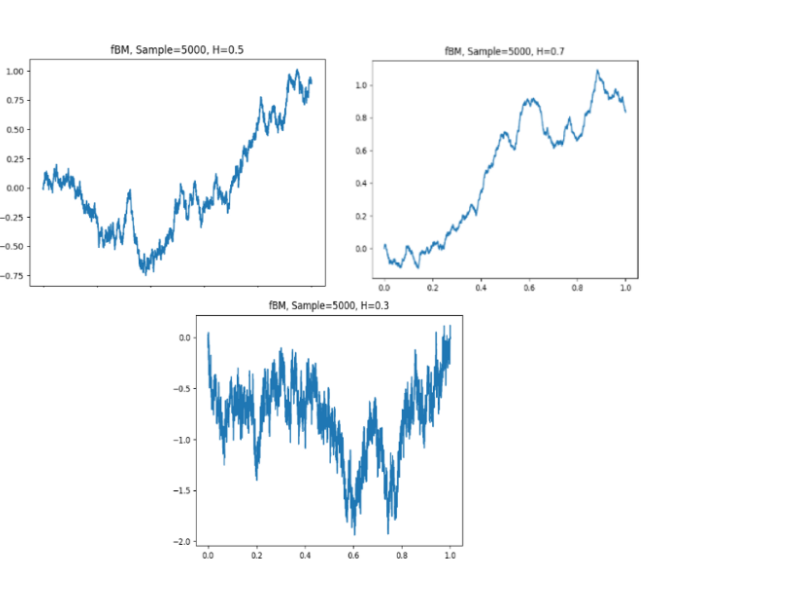
# calculate the slope of the log plot -> the Hurst Exponent

reg = np.polyfit(np.log(lags), np.log(tau), 1)

return reg[0]



<https://volquant.medium.com/a-brief-history-of-volatility-models-cc0bbefe8b90>



<https://derivvaluation.medium.com/trend-following-trading-system-quantitative-trading-in-python-e0c8c3f8dcec>

Model:

If 3-day simple moving average > 200-day simple moving average, buy $10000 worth of stock

Exit if 3-day simple moving average < 200-day simple moving average

“Protects against spikes”