On **HWK 3**, we ended up with several features collected in real-time every 6-minutes for a set of currency pairs:

1. Timestamp (T),
2. Mean price (P),
3. Maximum price (MAX),
4. Minimum price (MIN),
5. Volatility (VOL = MAX–MIN),
6. Fractal dimension (FD) calculated with a counting process on a modified Ketner Channel, and
7. Return ($R_i = (P_i - P_{i-1})/P_{i-1}$. (The return for the first 6-minutes was zero by construction.)

Then, you created a simple trailing-stop methodology.

On **HWK 4**, we built one-hour estimates on a pre-trained data set and compared the forecasts with actual values.

HWK 5 is to build **an optimized real-time trailing-stop strategy** on the 7 currency pairs used on **HWK 4**. In other words, on **HWK 5**, we will merge the work from **HWK 4** with the methodology developed on **HWK 3** in a two days by 10 hours long experiment (like in the previous homework). Here is the rule:

1. If the estimated and actual values for the previous hour are signal ALIGNED (i.e., if both are simultaneously long or simultaneously short), and the error is SMALL, then we **REINVEST**.
2. If the estimated and actual values for the previous hour are signal ALIGNED, and the error is NOT SMALL, then we **DO NOTHING**.
3. If the estimated and actual values for the previous hour are signal DIVERGENT (i.e., if one is pointing long and the other is pointing short), then we **STOP** the position, whatever the error is.

The definition of SMALL ERROR and NOT SMALL ERROR should be statistically based on previously compiled results. And **the meaning of VOL will change on HWK 5** (for normalization purposes): VOL = {MAX–MIN}/P).

As in the HWK 3, the output is a *.csv file with the P/L of each currency pair.