

```
In [3]: # take two moving averages and apply the sign-function, adjust by volatility  
def f(price, fast=32, slow=96, volatility=32):  
    s = price.ewm(com=slow, min_periods=300).mean()  
    f = price.ewm(com=fast, min_periods=300).mean()  
    std = price.pct_change().ewm(com=volatility, min_periods=300).std()  
    return np.sign(f-s)/std
```

```
In [6]: form = EasyForm("Configuration")
form.addTextField("fast")
form.addTextField("slow")
form.addTextField("volatility")
form.addButton("Go!", tag="run")
form
```

```
In [9]: portfolio = Portfolio(prices=prices, position=prices.apply(f, fast=int(form["fast"]   
analysis(portfolio.nav()))
```

- This is a **univariate** trading system, we map the (real) price of an asset to its (cash)position
- Only 3 **free parameters** used here.
- Only 4 lines of code
- Scaling the bet-size by volatility has improved the situation.

Results do not look terrible but...

- No concept of risk integrated

Often hedge funds outsource the risk management to some board or committee and develop machinery for more systematic **parameter-hacking**.