Fund Report
Asset Allocation Workshop

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Past Performance

Over the period 08/10 to 20/10 our portfolio achieved a positive return of 1.54%. In particular, if we analyse singularly each class of our portfolio, we have:

- **Equity :** r = 3.11%

- **Bonds :** r = -0.51 %

- **Commodities :** r = 1.68%

- **Crypto (ETH) :** r = 14.69%

- **Portfolio :** r = 1.54%

Notice that the values of the portfolio are computed using the adjusted closure price which already takes into account dividends, so that we don't have to consider them.

As we expected, bond funds had the worse performance. This is mainly due to the increase of interest rates. Hence, our decision to reduce of 10% its weight in our portfolio turnd out to be correct.

Ethereum had the best performance, keeping the same growth rate of 14%. Both the equity and commodities classes had a positive return, although worse than the last period, with a 3.11% and 1.68% return respectively. Overall the return of the whole 5M investment since the beginning of our invest is 3.99%.

Market Overview

Interest Rates

On the 11th of October the Interest rates are still growing and [MPS daily 11/10] reports that the most likely the FED won't finch from starting the tapering on the 3rd the next month. It also communicated that the rate of reduction could be approximately of 15 billions per month. ([MPS daily 14/10]) Further increment of Interest Rates has also been confirmed by some members of the European Central Bank as a necessary measure against the growth of inflation expectation. Inflation remains high all over the world as chain of production in Japan reaches its maximum since 2009 ([MPS daily 12/10]); although according to the Bank of America Fund Manager Survey 69% of investors still perceive inflation as transitory ([Bloomberg Markets]).

Equities

When interviewed by Bloomberg at [Bloomberg Markets], Cate Faddis (Grace Capital President and CIO) stated that equity still remains the most attractive option when it comes to investment: "[...] I don't see anything changing, [...] Interest rates are still zero, [...] I would be upping my allocations to equities".
On the 11/10 Evergrande misses 3 coupons payments thus entering a grace period of 30 days after which the Chinese giant could start defaulting ([MPS daily 12/10]).

Energy

MPS reports that the increment of TTF price has slowed down since China decleared that will allow domestic prices to rise up to 20% over the benchmark in order to contrast the energy consumption of intense production industries [MPS daily 11/10] .
However the energy prices are still high and cause big concerns regarding inflation and supply chain of production.

Crypto

First future Bitcoin ETF has started trading on the New York stock exchange, as a consequence Bitcoin reached almost its record high of 60.000 dollars and also Ethereum has run high. ([Bloomberg Markets])

Portfolio Optimization

Over the past weeks we observed the same market tendencies remarked in the previous delivery, regarding the rise in interest rates inflation expectation and energy prices. One notable event was the introduction of the first future Bitcoin ETF on the New York stock exchange which makes, in our opinion, the crypto market even more attractive. However we follow our policy of having the value of crypto asset class below the 3% of the total capital invested. Therefore we decided to keep the weights of the 5 different asset classes unchanged from the previous composition.

With respect to the previous delivery we have made some further implementations in the optimization of the weights.

- We added a constraint for the VaR of the admissible portfolios when building the efficient frontier: we put an upper bound of 4% for the Value at Risk computed using the Historical Simulation. We tried using lower bounds but we observed that this constraint was becoming too restrictive and had some undesired effects on the efficient frontier
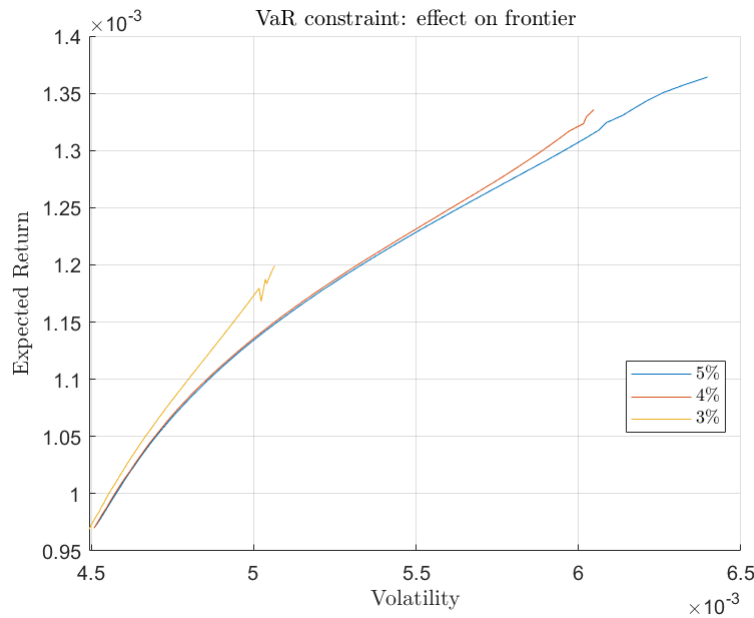
- We performed a re-sampling on the dataset used for the optimization to mitigate the statistical error and to obtain a smoother frontier on the weights. Specifically we simulated multiple times the daily log-returns of our assets in the past using a normal distribution, and for each simulation we computed the efficient frontier. Finally we averaged across frontiers the weights of the corresponding portfolios. We also observed that our

constraints (which are linear, with the exception of the VaR one) are still satisfied by the averaged frontier. A remark about the normality hypothesis: we are aware that this model has some flaws such as neglecting tail events. However we chose it anyway since it allows a fast simulation and furthermore we were interested in the average frontier more than anything else (including extreme events).

- We also computed the efficient frontier from the real data using the Shrinkage estimators. For the Stein estimator we decided to put a target with negative return ($\mu = -0.1\%$) for the bond asset class since from our market analysis we expect the interest rates to rise as the Fed's tapering becomes closer. Instead we anticipate an high return on the short period for Ethereum ($\mu = 3\%$) [1] as we expect more people, who maybe were previously uncomfortable buying currencies directly into the stock exchange, to put money into Crypto. Instead for the equity and commodities asset classes we set a target return of 0, since we don't have a clear view on the possible future performances. We observe however that we obtain a Stein estimator equal to the unbiased average; indeed the Shrinkage frontier is almost indistinguishable from the real one. For this reason we decide to implement our portfolio using the weights maximising the information ratio taken from the average frontier.

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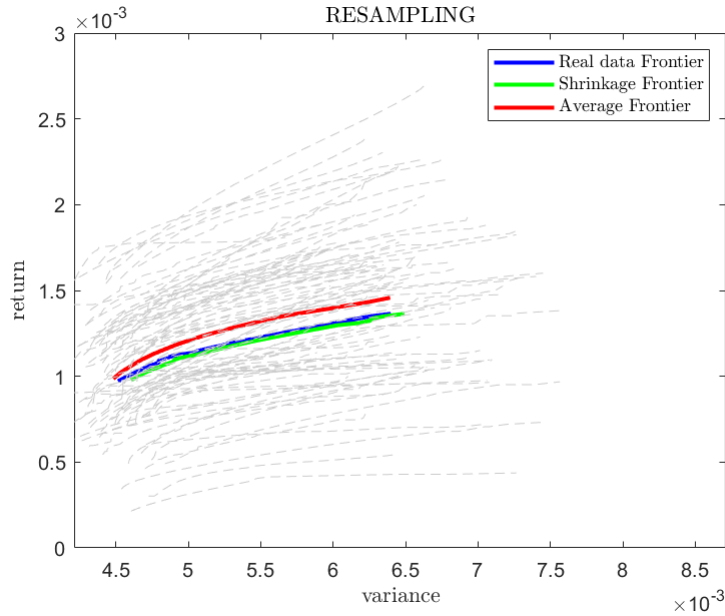
[1] value are taken arbitrarily but on the same order of magnitude of the past returns

References

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