Hi everyone im XXX my topic is asset allocation portfolio

So why im interested in this, because in the inverstment course ,we have seen the markowizt’s MPT right?

And its important because baesd on the MPT we can develop other asset pricing model like CAPM or the fama French three factors

And im wondering if I can use MPT and certain time siries model to form a portfolio that can be use in real life

So how do I plan to do this?

First I look for 4 assets that their beta is closed to 2,1,0,and-1

So I choosed the following 4 stock that Ive heard before

Next I fit the stock’s past 4 year return using ARMA+GARCH

Next I will find the tangency portfolio using model prediction

I will predict the data using moving window that is : using 1 year historical data to predict 10 days return and form a optimal portfolio and then in the next 10days we use its 1 year past data to form another portfoilio

This is my data this yuanda 50反1 友達 大立光 台哥大

And I run adf test to check if it is stationary: all four are reject to be unit root nonstationary

And then I use auto.arima to fit my data and this is the result

And then I test for arch effect by box.testing the residual square

And they all have ARCH effect

So I fit the residual by garch 1,1 and it works. Four garch’s residual have no garch effect. I also check the qqnorm, and it turn outs that I need to use t distribution garch to fit data.

Next I use a 250 days window by rolling days at a time to predict 10days. And use tangencyportfolio to get 10 day portfolio’s weight. Use the weights times the corresponding 10 days cumulated return. And I have following result: 151%return for 3 years(or728trading days and my sharpe ratio is 8.7433% in 3 years

I think this will be useful in upcoming years because Taiwan is going to implement 逐筆交易 which will accelerate the development of programe trading and intraday trading. So I think this topic is quite interesting.