

## Problem 2

Positive means buy, negative means sell

<u>Trades rebalancing</u>	
AA	0.104679
BB	-0.078272
CC	0.025861
DD	0.046388
EE	-0.000499
FF	-0.005758
GG	-0.151755
HH	0.094594
II	-0.000870
JJ	-0.034367

The total return of the portfolio at the end is 0.9668%.

<u>Day</u>	<u>Portfolio return</u>
0	0.997284
1	0.990859
2	0.986116
3	1.010409
4	1.015976
5	1.005011
6	0.995919
7	0.991468
8	1.013101
9	1.018278
10	1.014029
11	1.007406
12	1.010307
13	1.015277
14	1.009668

### Problem 3

<b>Dep. Variable:</b>	Price_barrick	<b>R-squared:</b>	0.482
<b>Model:</b>	OLS	<b>Adj. R-squared:</b>	0.478
<b>Method:</b>	Least Squares	<b>F-statistic:</b>	115.6
<b>Date:</b>	Mon, 14 Jun 2021	<b>Prob (F-statistic):</b>	3.35e-36
<b>Time:</b>	21:11:20	<b>Log-Likelihood:</b>	678.87
<b>No. Observations:</b>	251	<b>AIC:</b>	-1352.
<b>Df Residuals:</b>	248	<b>BIC:</b>	-1341.
<b>Df Model:</b>	2		

	coef	std err	t	P>  t	[0.025	0.975]
<b>const</b>	0.0010	0.001	0.953	0.342	-0.001	0.003
<b>Price_copper</b>	0.1027	0.077	1.325	0.186	-0.050	0.255
<b>Price_gold</b>	1.4167	0.097	14.541	0.000	1.225	1.609

<b>Omnibus:</b>	19.836	<b>Durbin-Watson:</b>	2.176
<b>Prob(Omnibus):</b>	0.000	<b>Jarque-Bera (JB):</b>	55.249
<b>Skew:</b>	-0.255	<b>Prob(JB):</b>	1.01e-12
<b>Kurtosis:</b>	5.241	<b>Cond. No.</b>	97.8

The only significant coefficient is the price of gold. Copper price has no significant impact on barrick prices.

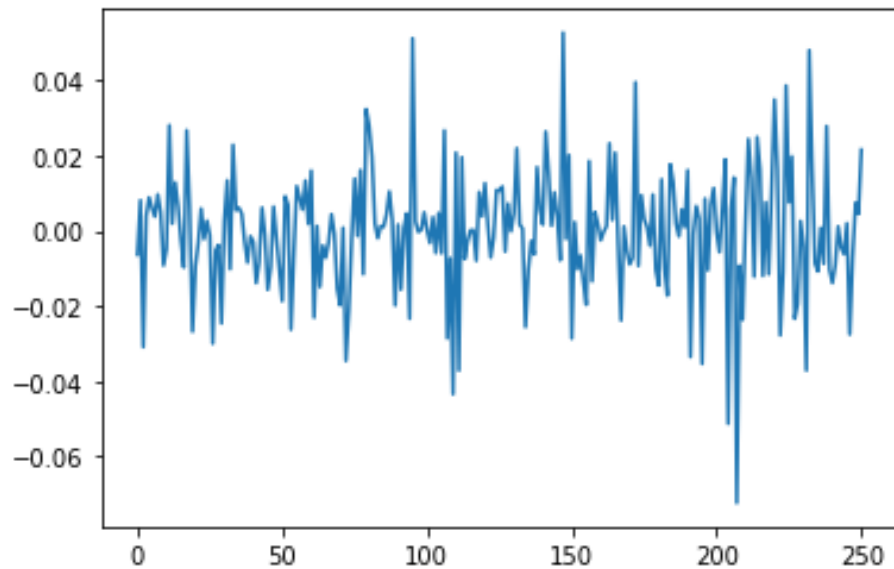


Figure 1: residuals

There does not seem to be serial correlation between residuals