Bitcoin Price Prediction

by

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Dependent Variables

Records : **635** days from SEP 2016 – SEP 2021

Variables : 3 (looked at 24)

- 1. S&P 500 close price
- 2. Wallet Activity - New Accounts to send and receive bitcoin.
- 3. Miner Thermocap – sum of all miner rewards/btc price

Summary Statistics

| Feature	R^2 value	Mean	SD	Min	Pctl. 25	Pctl. 50	Max
BTC close price	1	16294	15926	602	6517	9359	63286
Miner Thermocap	0.643	21.4 billion	6.4 billion	1.8 billion	10.5 billion	15.7 billion	30.1 billion
Wallet activity	0.693	47.1 million	16.6 million	7.6 million	34 million	45.6 million	76.6 million
S&P 500 Price	0.776	3217	685.39	2072	2817	2996	4535
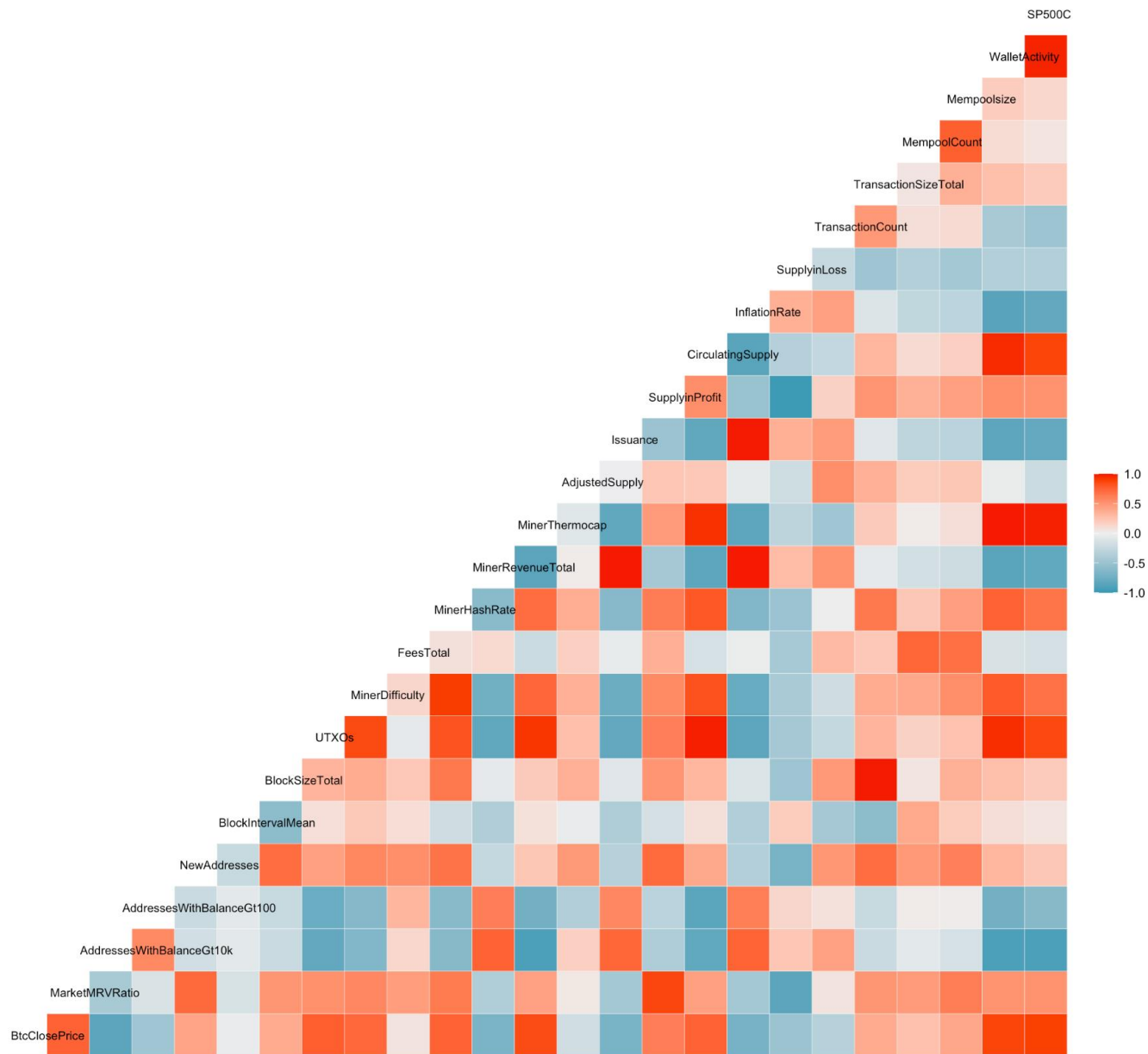
Correlation charts

- The features used in the model were converted to their respective z score
- Features with a high positive correlation to Bitcoin have a darker red color while features with the lighter blue color have a strong negative correlation
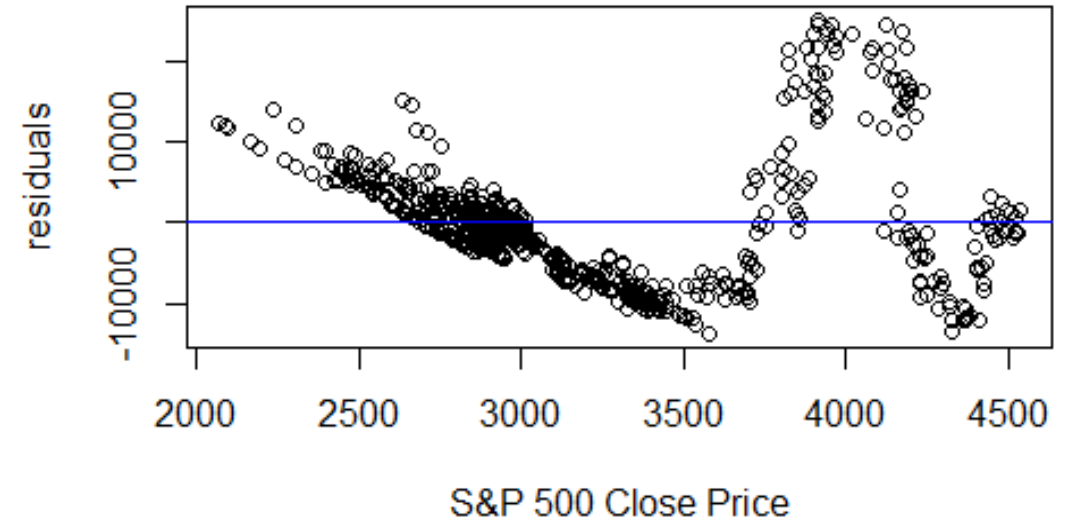
Timeseries chart

Linear Regression Models

BTC vs S&P 500
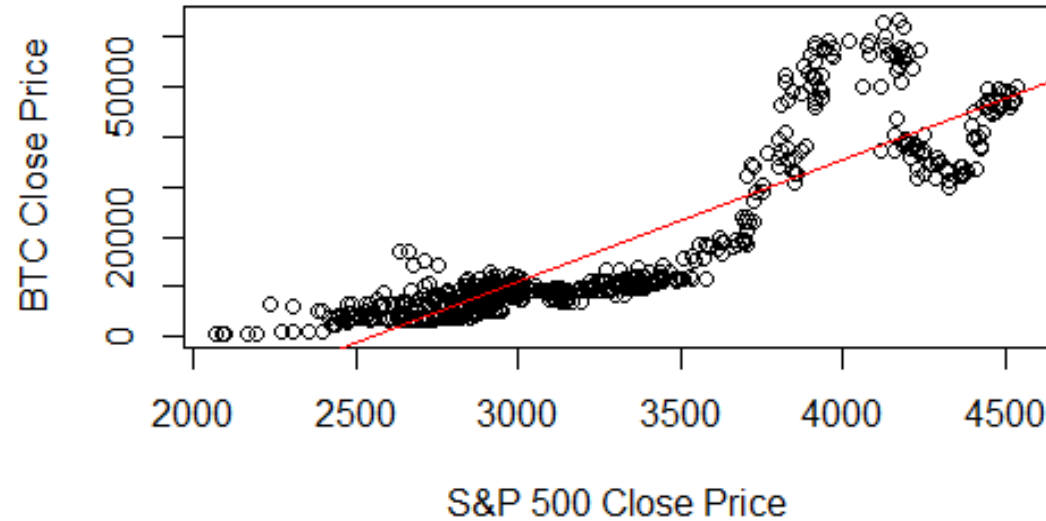
S&P 500 Residuals

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-62201.0989	1704.5228	-36.49	<0.0000000000000002
SP500ClosePrice	24.3983	0.5216	46.78	<0.0000000000000002

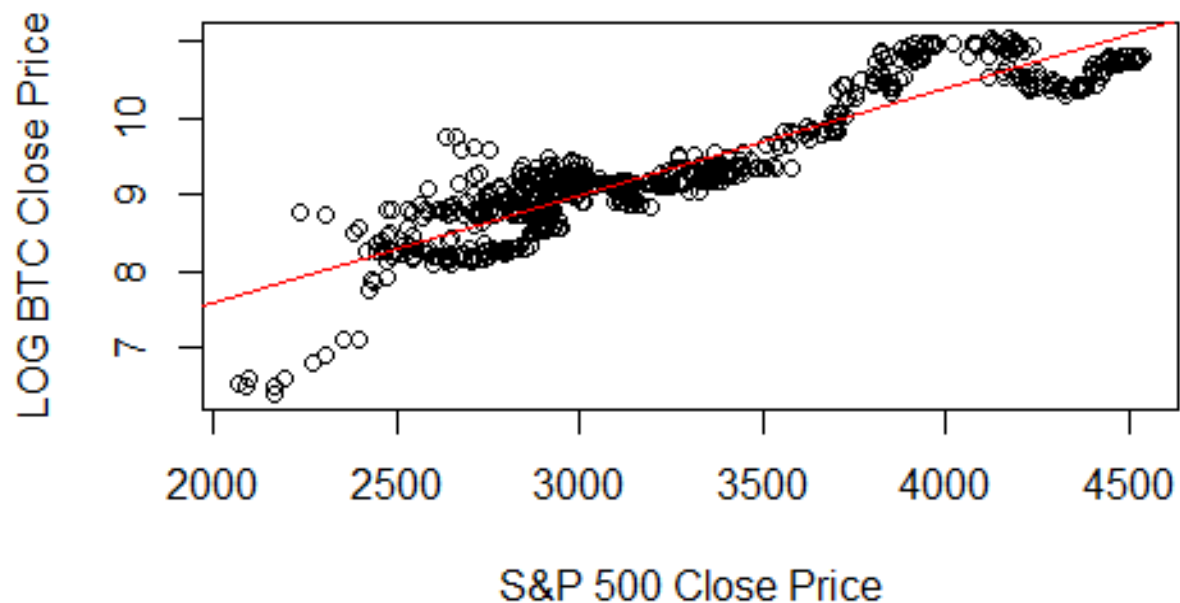Residual standard error: 7549 on 633 degrees of freedom

Multiple R-squared: 0.7756, Adjusted R-squared: 0.7753

F-statistic: 2188 on 1 and 633 DF, p-value: < 0.00000000000000022

Residuals:

Min	1Q	Median	3Q	Max
-13747.5	-4661.4	-923.7	2599.0	25102.1

LOG BTC vs S&P 500

S&P 500 Residuals

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	4.80136628	0.07916475	60.65	<0.0000000000000002
SP500ClosePrice	0.00139886	0.00002422	57.75	<0.0000000000000002

Residual standard error: 0.3506 on 633 degrees of freedom

Multiple R-squared: 0.8405, Adjusted R-squared: 0.8402

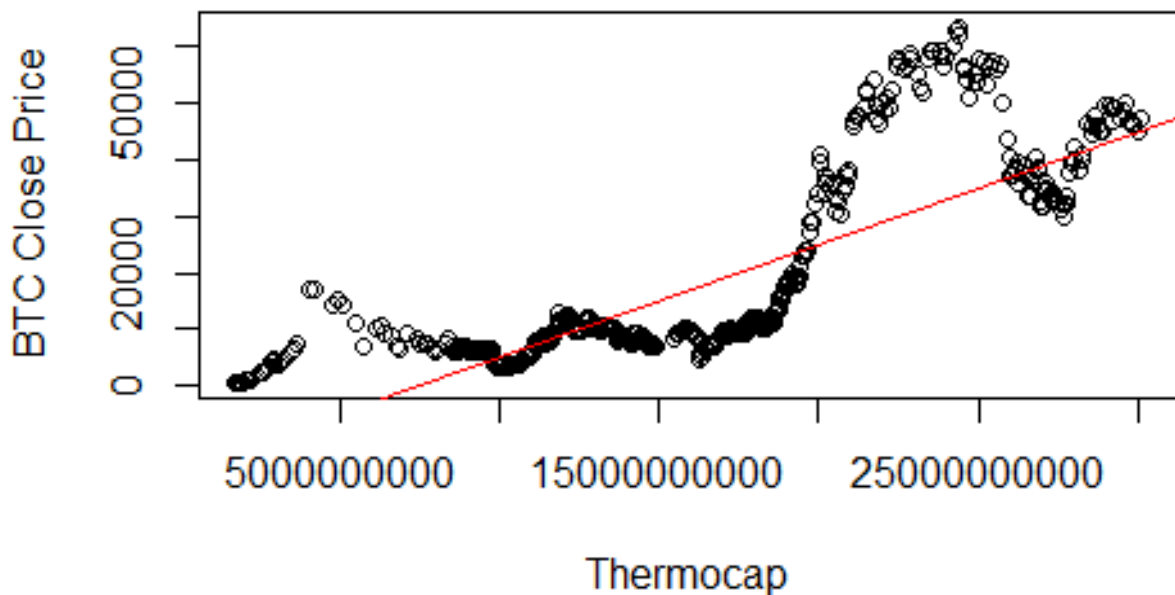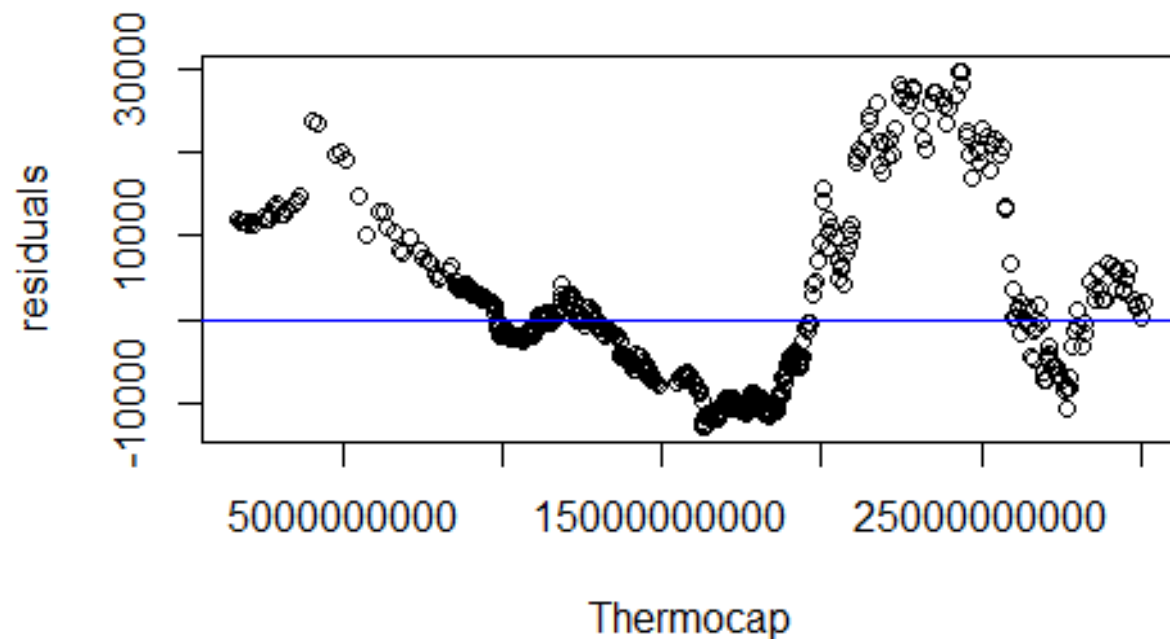F-statistic: 3335 on 1 and 633 DF, p-value: < 0.00000000000000022
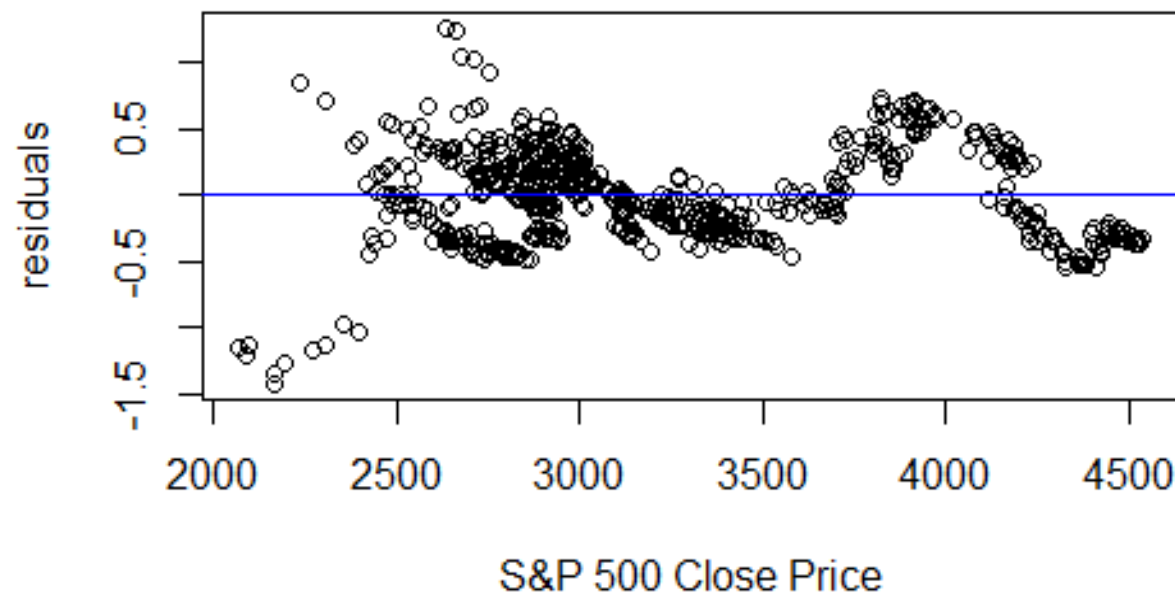
Residuals:

Min	1Q	Median	3Q	Max
-1.42990	-0.26747	-0.01746	0.24316	1.25929

BTC vs Thermocap

Thermocap Residuals

Coefficients:

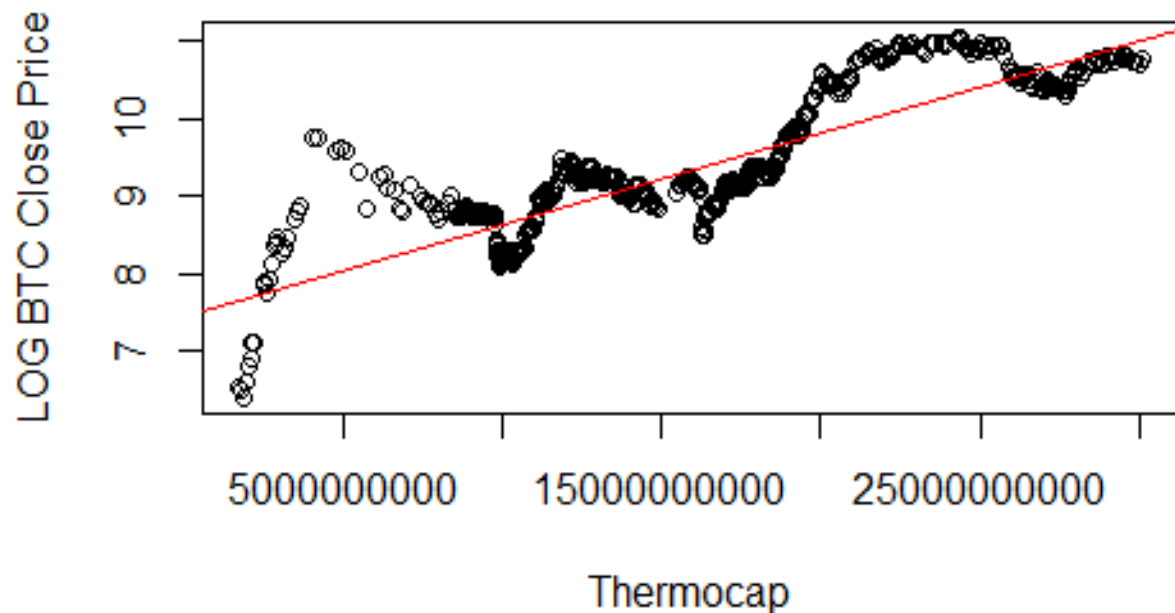|	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-14733.06223915259	992.68483432233	-14.84	<0.0000000000000002
Thermocap	0.00000198610	0.00000005877	33.80	<0.0000000000000002

Residual standard error: 9517 on 633 degrees of freedom

Multiple R-squared: 0.6434, Adjusted R-squared: 0.6429

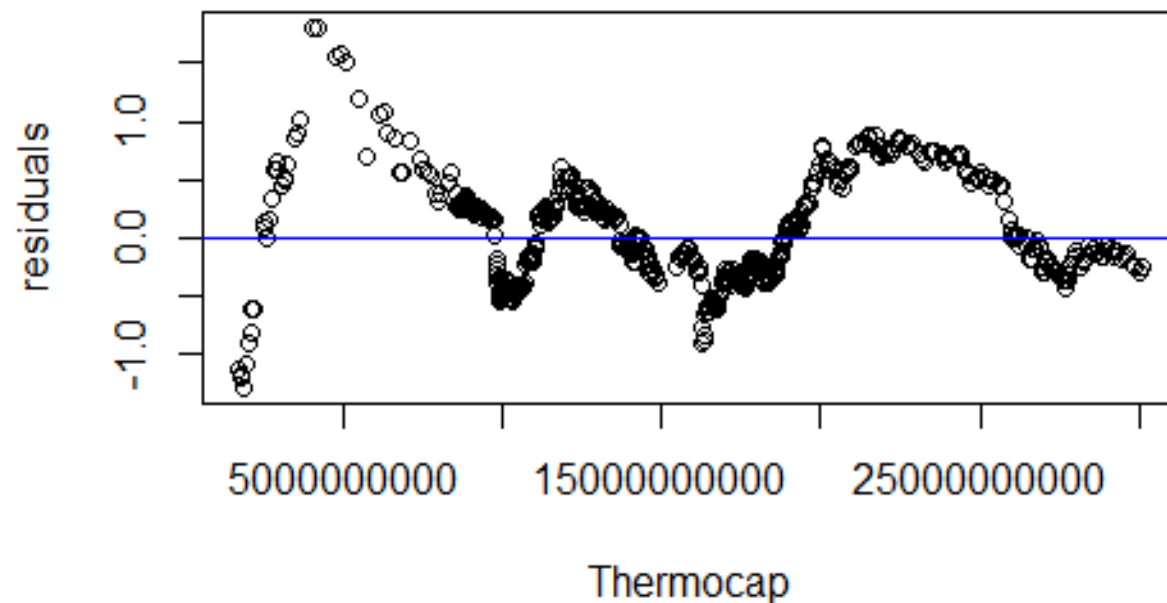F-statistic: 1142 on 1 and 633 DF, p-value: < 0.00000000000000022

Residuals:

Min	1Q	Median	3Q	Max
-12790	-7201	-1543	3149	29643

LOG BTC vs Thermocap

Thermocap Residuals

Coefficients:

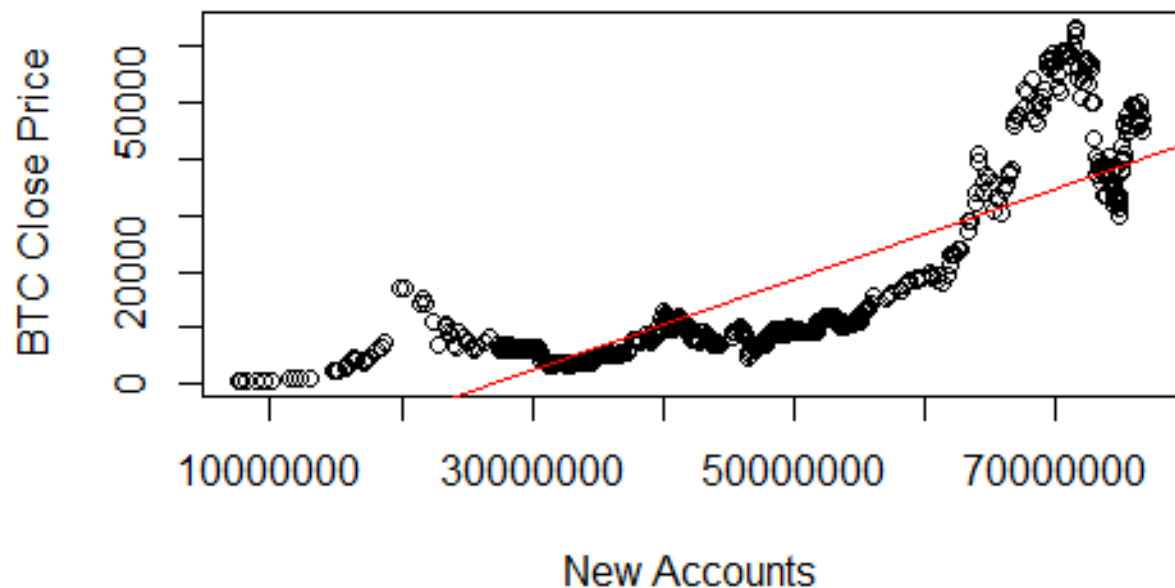|	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	7.456195805892115	0.045737329547282	163.02	<0.0000000000000002
Thermocap	0.000000000118142	0.000000000002708	43.63	<0.0000000000000002

Residual standard error: 0.4385 on 633 degrees of freedom

Multiple R-squared: 0.7505, Adjusted R-squared: 0.7501

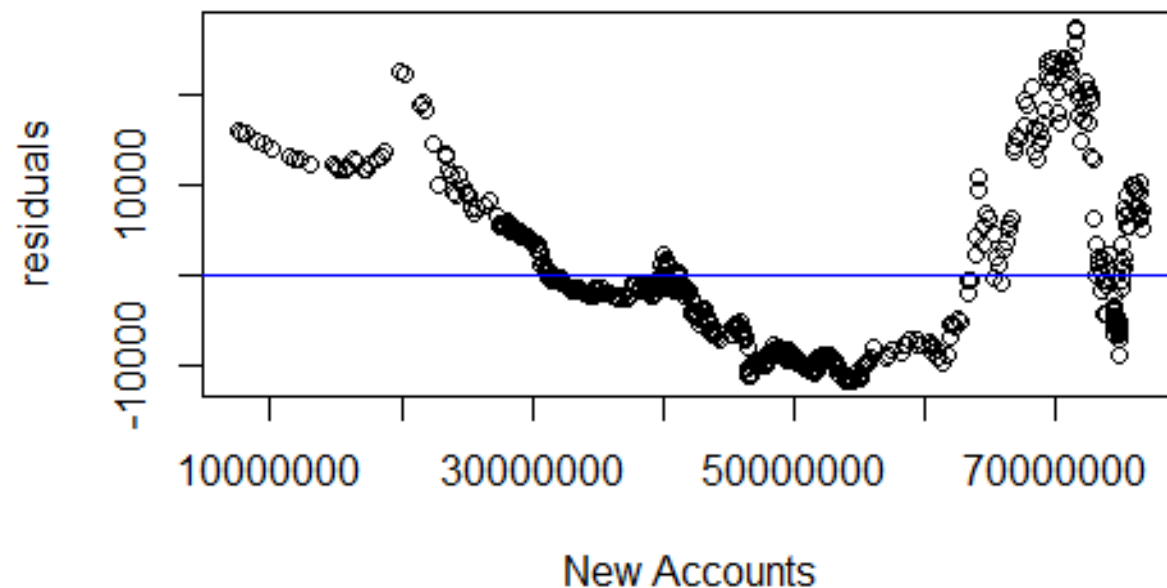F-statistic: 1904 on 1 and 633 DF, p-value: < 0.00000000000000022

Residuals:

Min	1Q	Median	3Q	Max
-1.28365	-0.33597	-0.09768	0.26516	1.80830

BTC vs New Accounts

New Account Residuals

Coefficients:

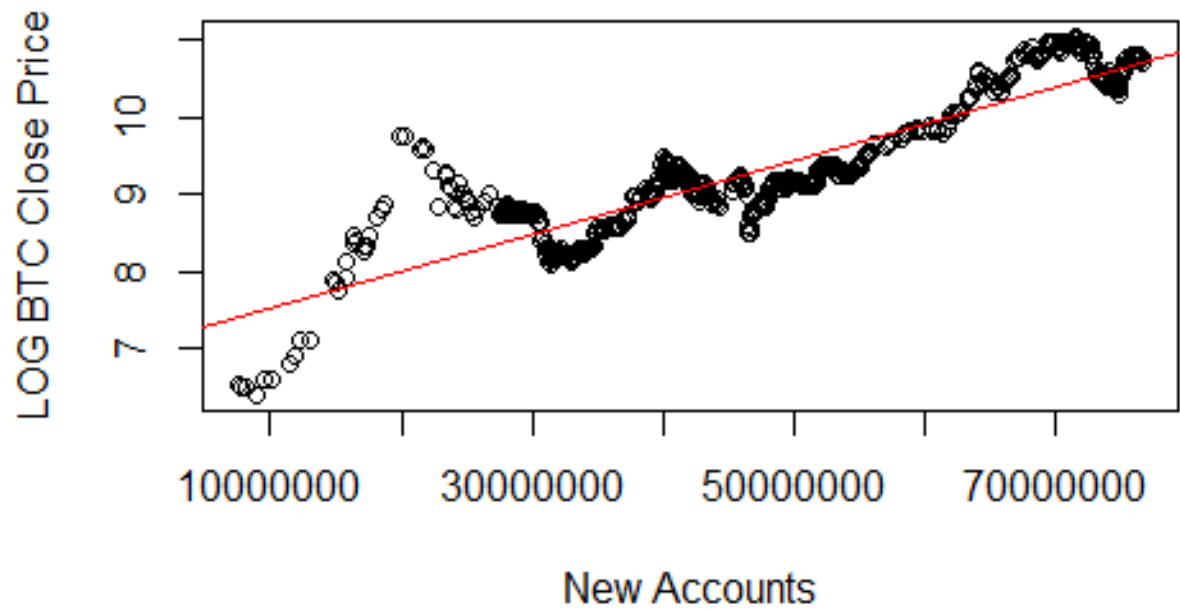|	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	-21392.64498128	1056.61311630	-20.25	<0.0000000000000002
New Accounts	0.00080094	0.00002118	37.81	<0.0000000000000002

Residual standard error: 8830 on 633 degrees of freedom

Multiple R-squared: 0.6931, Adjusted R-squared: 0.6926

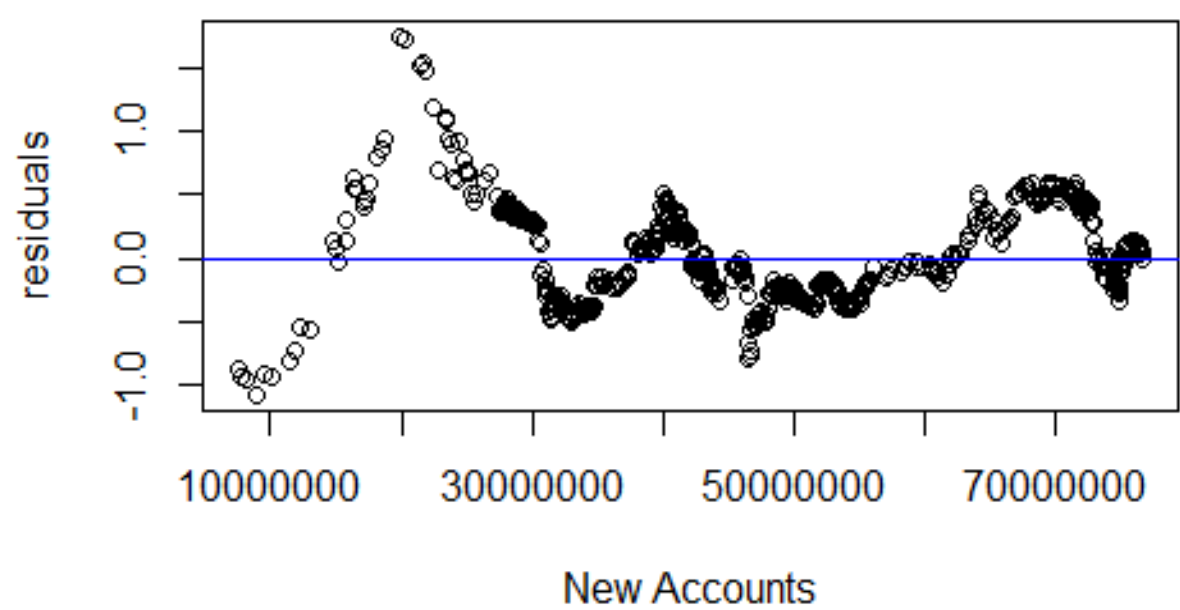F-statistic: 1429 on 1 and 633 DF, p-value: < 0.00000000000000022

Residuals:

Min	1Q	Median	3Q	Max
-11654	-6917	-1566	4858	27420

LOG BTC vs New Accounts

New Account Residuals

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	7.0551360033022	0.0455547632992	154.87	<0.0000000000000002
New Accounts	0.0000000477476	0.0000000009134	52.28	<0.0000000000000002

Residual standard error: 0.3807 on 633 degrees of freedom

Multiple R-squared: 0.8119, Adjusted R-squared: 0.8116

F-statistic: 2733 on 1 and 633 DF, p-value: < 0.00000000000000022

Residuals:

Min	1Q	Median	3Q	Max
-1.0778	-0.2820	-0.0624	0.2871	1.7460