LaTeX Tables for Bitcoin Mining Stock Analysis

Tim Dombrowski

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1 Data Work and Project Background

See the miningstocks.Rmd R Notebook for a detailed write-up of the data work to generate these tables. More broadly, see this project's GitHub repository for more details on the project background and how to replicate the analysis.

2 Summary Statistics

2.1 Nominal Returns

Table 1: Summary Statistics for the Final Monthly Dataset. Asset nominal returns and growth rates are all annualized and measured in percentage units. Table generated with the stargazer R package (Hlavac, 2022).

Statistic	N	Mean	St. Dev.	Min	Max
INF	43	4.52	3.55	−0.54	15.44
RF	43	3.48	1.02	1.28	4.80
BTC	43	19.72	206.56	−569.18	435.21
MARA	43	−19.13	456.06	−875.59	1,066.74
CLSK	43	−14.64	387.64	−774.01	877.12
RIOT	43	−35.36	371.16	−883.32	737.94
CIFR	43	−24.79	372.69	−687.70	914.57
HUT	43	−13.18	423.12	−781.10	984.05
BTDR	43	6.62	372.04	−1,136.20	987.13
SPY	43	9.89	58.06	−116.40	105.71
Hashrate	43	58.31	58.59	−64.58	227.35
Difficulty	43	57.13	54.70	−56.53	198.74

2.2 Real Returns

Table 2: Summary Statistics for the Final Monthly Dataset. Asset real returns and growth rates are all annualized and measured in percentage units. Table generated with the stargazer R package (Hlavac, 2022).

Statistic	N	Mean	St. Dev.	Min	Max
RF	43	−0.87	3.84	−10.65	4.34
BTC	43	16.18	194.39	−506.41	410.95
MARA	43	−19.57	437.31	−853.49	1,073.04
CLSK	43	−17.48	367.56	−744.09	832.84
RIOT	43	−35.34	354.29	−848.54	686.06
CIFR	43	−24.17	355.38	−609.08	851.75
HUT	43	−13.57	403.91	−740.25	916.93
BTDR	43	2.22	363.06	−1,125.04	954.50
SPY	43	5.59	56.08	−115.61	106.82
Hashrate	43	58.31	58.59	−64.58	227.35
Difficulty	43	57.13	54.70	−56.53	198.74

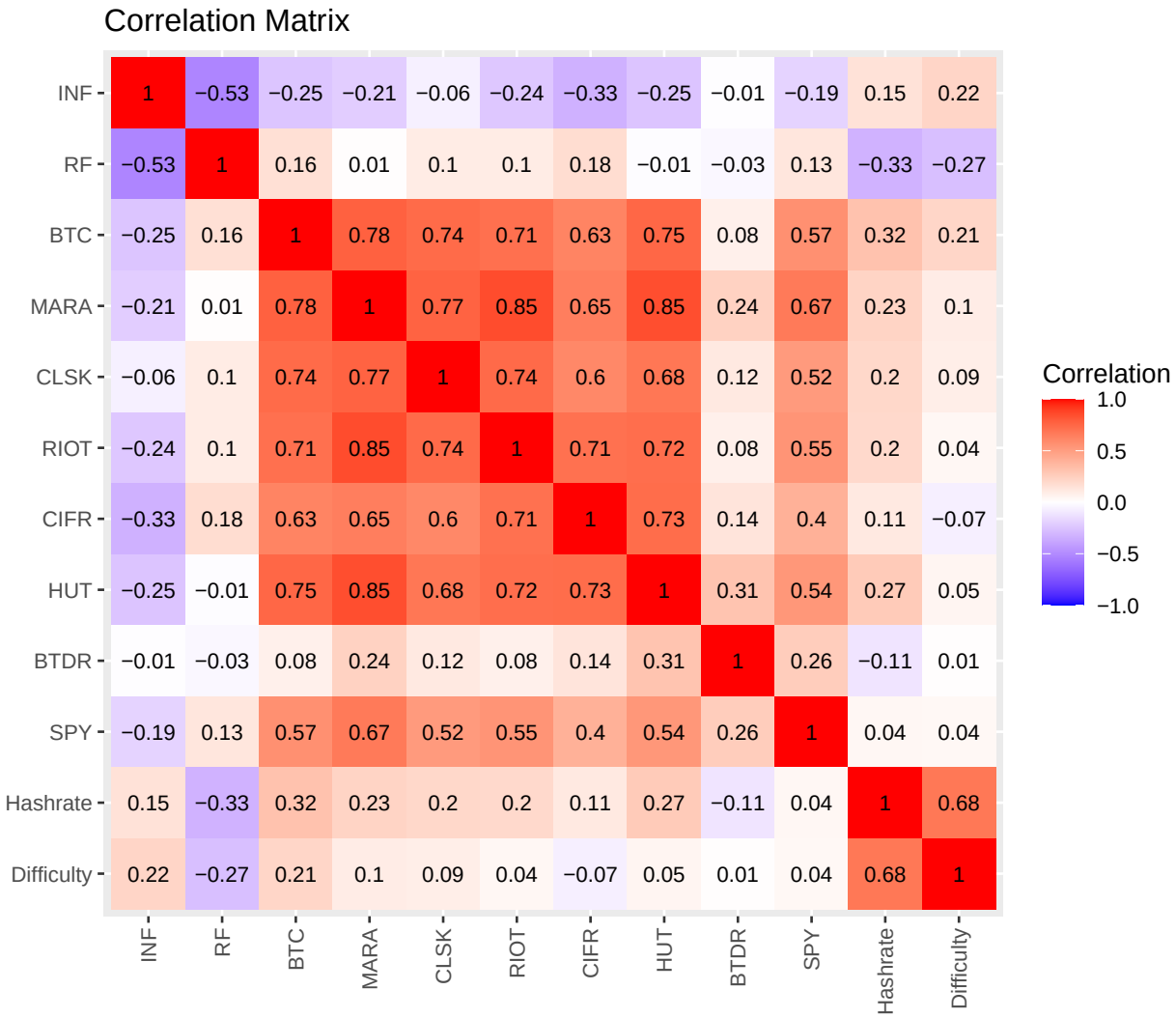
2.3 Excess Returns

Table 3: Summary Statistics for the Final Monthly Dataset. Asset excess returns and growth rates are all annualized and measured in percentage units. Table generated with the stargazer R package (Hlavac, 2022).

Statistic	N	Mean	St. Dev.	Min	Max
BTC	43	17.05	193.46	−495.76	411.47
MARA	43	−18.70	436.63	−854.42	1,069.59
CLSK	43	−16.61	367.25	−742.28	833.35
RIOT	43	−34.48	353.42	−846.73	688.93
CIFR	43	−23.30	354.16	−598.43	854.63
HUT	43	−12.70	403.12	−741.19	919.81
BTDR	43	3.09	363.05	−1,128.71	953.87
SPY	43	6.46	55.25	−114.09	103.37
Hashrate	43	58.31	58.59	−64.58	227.35
Difficulty	43	57.13	54.70	−56.53	198.74

2.4 Nominal Return Correlations

Figure 1: Correlation Matrix Heatmap for Nominal Monthly Returns



3 Model Results

3.1 Marathon Digital Holdings (MARA)

Table 4: Factor Model Results for Marathon Digital Holdings (MARA). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	MARA				
	(1)	(2)	(3)	(4)	(5)
SPY	5.26***	2.64***	2.69***	2.60***	2.70***
	(0.91)	(0.85)	(0.88)	(0.87)	(0.88)
BTC		1.29***	1.26***	1.32***	1.26***
		(0.24)	(0.26)	(0.25)	(0.26)
Hashrate			0.23		0.80
			(0.75)		(1.00)
Difficulty				−0.35	−0.89
				(0.77)	(1.03)
Constant	−71.16	−70.78*	−84.14	−51.05	−66.59
	(53.04)	(40.87)	(60.12)	(60.33)	(63.69)
Observations	43	43	43	43	43
R^2	0.45	0.68	0.68	0.68	0.69
Adjusted R^2	0.44	0.66	0.66	0.66	0.65
Note:					*p<0.1; **p<0.05; ***p<0.01

3.2 Cleanspark (CLSK)

Table 5: Factor Model Results for Cleanspark (CLSK). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	CLSK				
	(1)	(2)	(3)	(4)	(5)
SPY	3.46***	0.99	0.97	0.94	0.98
	(0.89)	(0.85)	(0.88)	(0.87)	(0.89)
BTC		1.22***	1.23***	1.25***	1.23***
		(0.24)	(0.26)	(0.25)	(0.26)
Hashrate			−0.08		0.33
			(0.76)		(1.01)
Difficulty				−0.42	−0.64
				(0.77)	(1.04)
Constant	−48.88	−48.52	−44.12	−24.91	−31.42
	(51.91)	(40.93)	(60.28)	(60.35)	(64.16)
Observations	43	43	43	43	43
R^2	0.27	0.56	0.56	0.56	0.56
Adjusted R^2	0.25	0.53	0.52	0.53	0.51
Note:					*p<0.1; **p<0.05; ***p<0.01

3.3 Riot Blockchain (RIOT)

Table 6: Factor Model Results for Riot Blockchain (RIOT). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	RIOT				
	(1)	(2)	(3)	(4)	(5)
SPY	3.49***	1.32	1.32	1.25	1.34
	(0.84)	(0.83)	(0.86)	(0.84)	(0.86)
BTC		1.07***	1.07***	1.12***	1.07***
		(0.23)	(0.25)	(0.24)	(0.25)
Hashrate			−0.01		0.72
			(0.74)		(0.98)
Difficulty				−0.66	−1.15
				(0.75)	(1.00)
Constant	−69.90	−69.58*	−68.86	−32.16	−46.18
	(48.69)	(39.96)	(58.86)	(58.57)	(61.91)
Observations	43	43	43	43	43
R^2	0.30	0.54	0.54	0.55	0.55
Adjusted R^2	0.28	0.52	0.50	0.51	0.51
Note:					*p<0.1; **p<0.05; ***p<0.01

3.4 Cipher Mining (CIFR)

Table 7: Factor Model Results for Cipher Mining (CIFR). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	CIFR				
	(1)	(2)	(3)	(4)	(5)
SPY	2.60***	0.46	0.34	0.29	0.37
	(0.92)	(0.96)	(0.98)	(0.94)	(0.96)
BTC		1.06***	1.12***	1.16***	1.12***
		(0.27)	(0.29)	(0.27)	(0.29)
Hashrate			−0.55		0.60
			(0.84)		(1.10)
Difficulty				−1.39	−1.80
				(0.84)	(1.13)
Constant	−50.46	−50.15	−18.30	29.05	17.34
	(53.39)	(45.95)	(67.31)	(65.74)	(69.71)
Observations	43	43	43	43	43
R^2	0.16	0.40	0.40	0.44	0.44
Adjusted R^2	0.14	0.37	0.36	0.39	0.38
Note:					*p<0.1; **p<0.05; ***p<0.01

3.5 Hut 8 Mining (HUT)

Table 8: Factor Model Results for Hut 8 Mining (HUT). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	HUT				
	(1)	(2)	(3)	(4)	(5)
SPY	3.90***	1.16	1.26	1.07	1.28
	(0.96)	(0.91)	(0.93)	(0.91)	(0.90)
BTC		1.35***	1.30***	1.41***	1.29***
		(0.25)	(0.27)	(0.26)	(0.27)
Hashrate			0.45		1.67
			(0.80)		(1.03)
Difficulty				−0.78	−1.91*
				(0.81)	(1.06)
Constant	−51.77	−51.37	−77.32	−7.02	−39.54
	(55.97)	(43.37)	(63.63)	(63.45)	(65.32)
Observations	43	43	43	43	43
R^2	0.29	0.58	0.59	0.59	0.62
Adjusted R^2	0.27	0.56	0.55	0.56	0.58
Note:					*p<0.1; **p<0.05; ***p<0.01

3.6 Bitdeer (BTDR)

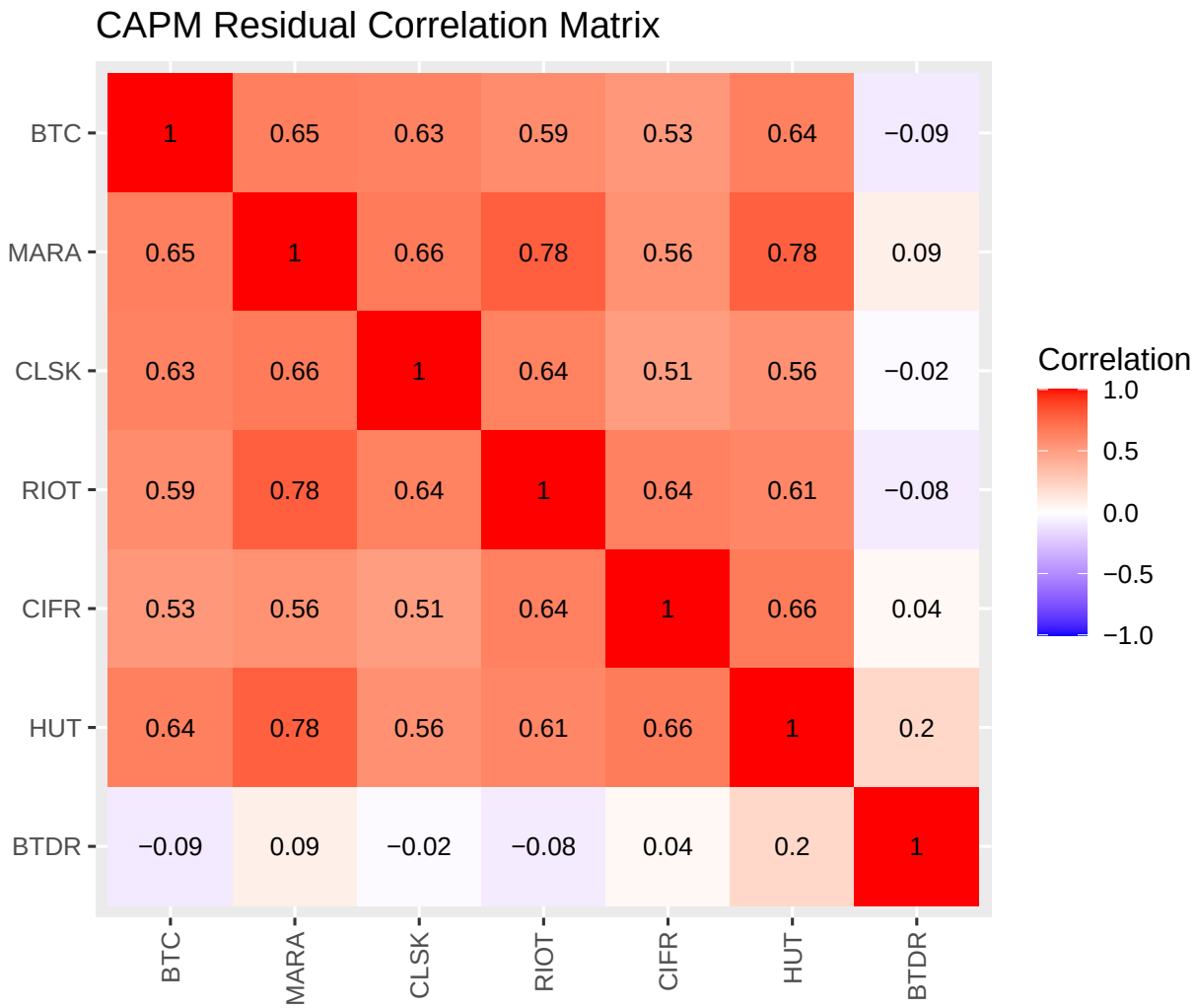
Table 9: Factor Model Results for Bitdeer (BTDR). Table generated with the stargazer R package (Hlavac, 2022).

	Dependent variable:				
	BTDR				
	(1)	(2)	(3)	(4)	(5)
SPY	1.68*	2.07*	1.93	2.09*	1.92
	(0.97)	(1.18)	(1.21)	(1.20)	(1.22)
BTC		−0.19	−0.11	−0.20	−0.11
		(0.33)	(0.36)	(0.35)	(0.36)
Hashrate			−0.68		−1.34
			(1.04)		(1.39)
Difficulty				0.14	1.04
				(1.08)	(1.43)
Constant	−10.02	−10.08	29.04	−17.79	8.38
	(56.22)	(56.69)	(83.04)	(83.87)	(88.21)
Observations	43	43	43	43	43
R^2	0.07	0.08	0.09	0.08	0.10
Adjusted R^2	0.05	0.03	0.02	0.01	0.004
Note:					*p<0.1; **p<0.05; ***p<0.01

4 Model Residual Correlations

4.1 Model (1): CAPM

Figure 2: Correlation Matrix Heatmap for CAPM Residuals



4.2 Model (2): CAPM + BTC

Figure 3: Correlation Matrix Heatmap for CAPM+BTC Residuals