

L^AT_EX Tables for Bitcoin Mining Stock Analysis

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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 | 35 | 4.82 | 3.80 | −0.67 | 14.89 |
| RF | 35 | 3.31 | 1.05 | 1.28 | 4.80 |
| BTC | 35 | 14.03 | 213.73 | −569.18 | 435.21 |
| MARA | 35 | −11.34 | 481.67 | −875.59 | 1,066.74 |
| CLSK | 35 | 5.72 | 402.03 | −774.01 | 877.12 |
| RIOT | 35 | −43.97 | 391.99 | −883.32 | 737.94 |
| CIFR | 35 | −29.88 | 378.26 | −687.70 | 914.57 |
| HUT | 35 | −15.63 | 431.84 | −781.10 | 984.05 |
| BTDR | 35 | 1.89 | 365.30 | −1,136.20 | 987.13 |
| SPY | 35 | 8.92 | 62.87 | −116.40 | 105.71 |
| Hashrate | 35 | 60.67 | 63.17 | −64.58 | 227.35 |
| Difficulty | 35 | 60.35 | 56.29 | −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 | 35 | −1.30 | 4.10 | −10.22 | 5.01 |
| BTC | 35 | 10.66 | 200.30 | −508.38 | 408.31 |
| MARA | 35 | −11.80 | 461.19 | −851.84 | 1,067.65 |
| CLSK | 35 | 1.92 | 379.41 | −741.65 | 828.00 |
| RIOT | 35 | −43.51 | 373.20 | −845.71 | 689.13 |
| CIFR | 35 | −28.70 | 359.70 | −611.54 | 855.48 |
| HUT | 35 | −15.21 | 411.61 | −738.85 | 920.91 |
| BTDR | 35 | −2.25 | 358.00 | −1,126.47 | 960.39 |
| SPY | 35 | 4.41 | 60.67 | −115.68 | 105.87 |
| Hashrate | 35 | 60.67 | 63.17 | −64.58 | 227.35 |
| Difficulty | 35 | 60.35 | 56.29 | −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 | 35 | 11.96 | 199.26 | −498.16 | 409.34 |
| MARA | 35 | −10.50 | 460.40 | −852.55 | 1,064.67 |
| CLSK | 35 | 3.22 | 379.00 | −739.47 | 829.03 |
| RIOT | 35 | −42.21 | 372.31 | −843.52 | 691.63 |
| CIFR | 35 | −27.40 | 358.32 | −601.32 | 857.97 |
| HUT | 35 | −13.91 | 410.60 | −739.56 | 923.41 |
| BTDR | 35 | −0.95 | 357.91 | −1,130.28 | 959.20 |
| SPY | 35 | 5.71 | 59.81 | −114.66 | 102.89 |
| Hashrate | 35 | 60.67 | 63.17 | −64.58 | 227.35 |
| Difficulty | 35 | 60.35 | 56.29 | −56.53 | 198.74 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
| | MARA | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 5.06*** (1.00) | 2.53** (0.94) | 2.57** (0.97) | 2.46** (0.96) | 2.53** (0.96) |
| BTC | | 1.32*** (0.28) | 1.29*** (0.30) | 1.36*** (0.29) | 1.27*** (0.30) |
| Hashrate | | | 0.25 (0.85) | | 1.24 (1.25) |
| Difficulty | | | | -0.47 (0.91) | -1.45 (1.34) |
| Constant | -56.51 (62.66) | -52.45 (48.59) | -67.52 (71.05) | -24.10 (73.72) | -39.70 (75.37) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.44 | 0.67 | 0.67 | 0.67 | 0.68 |
| Adjusted R ² | 0.42 | 0.65 | 0.64 | 0.64 | 0.64 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
| | CLSK | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 3.36*** (0.95) | 1.02 (0.91) | 1.00 (0.93) | 0.97 (0.93) | 0.99 (0.95) |
| BTC | | 1.22*** (0.27) | 1.23*** (0.29) | 1.24*** (0.28) | 1.23*** (0.30) |
| Hashrate | | | -0.14 (0.82) | | 0.20 (1.23) |
| Difficulty | | | | -0.33 (0.88) | -0.49 (1.32) |
| Constant | -24.21 (59.33) | -20.48 (46.93) | -12.16 (68.69) | -0.23 (71.34) | -2.73 (74.10) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.28 | 0.56 | 0.56 | 0.56 | 0.56 |
| Adjusted R ² | 0.25 | 0.53 | 0.52 | 0.52 | 0.50 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
| | RIOT | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 3.43*** (0.91) | 1.45 (0.93) | 1.45 (0.95) | 1.39 (0.95) | 1.43 (0.96) |
| BTC | | 1.03*** (0.27) | 1.03*** (0.30) | 1.06*** (0.29) | 1.02*** (0.30) |
| Hashrate | | | -0.02 (0.84) | | 0.54 (1.25) |
| Difficulty | | | | -0.39 (0.90) | -0.82 (1.34) |
| Constant | -74.54 (56.77) | -71.38 (47.97) | -70.03 (70.24) | -47.56 (72.86) | -54.33 (75.48) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.30 | 0.52 | 0.52 | 0.52 | 0.52 |
| Adjusted R ² | 0.28 | 0.49 | 0.47 | 0.47 | 0.46 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
| | CIFR | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 2.40** (0.96) | 0.57 (1.03) | 0.50 (1.06) | 0.42 (1.04) | 0.45 (1.06) |
| BTC | | 0.95*** (0.30) | 1.01*** (0.33) | 1.04*** (0.31) | 1.00*** (0.33) |
| Hashrate | | | -0.43 (0.93) | | 0.63 (1.37) |
| Difficulty | | | | -1.05 (0.98) | -1.54 (1.47) |
| Constant | -51.32 (60.11) | -48.39 (53.37) | -22.39 (77.87) | 14.99 (79.86) | 7.15 (82.70) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.16 | 0.36 | 0.36 | 0.38 | 0.38 |
| Adjusted R ² | 0.13 | 0.32 | 0.30 | 0.32 | 0.30 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|
| | HUT | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 3.68*** (1.01) | 1.30 (0.99) | 1.40 (1.02) | 1.19 (1.01) | 1.33 (0.98) |
| BTC | | 1.24*** (0.29) | 1.16*** (0.32) | 1.30*** (0.30) | 1.14*** (0.31) |
| Hashrate | | | 0.56 (0.89) | | 2.33* (1.27) |
| Difficulty | | | | -0.74 (0.95) | -2.58* (1.36) |
| Constant | -48.43 (63.24) | -44.63 (51.42) | -78.34 (74.83) | 0.27 (77.59) | -28.90 (76.45) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.29 | 0.54 | 0.55 | 0.55 | 0.60 |
| Adjusted R ² | 0.26 | 0.51 | 0.50 | 0.51 | 0.54 |

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).

| | <i>Dependent variable:</i> | | | | |
|-------------------------|----------------------------|-------------------|------------------|-------------------|------------------|
| | BTDR | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| SPY | 1.57 (0.97) | 2.58** (1.16) | 2.46** (1.18) | 2.58** (1.19) | 2.49** (1.19) |
| BTC | | -0.53 (0.34) | -0.44 (0.37) | -0.53 (0.36) | -0.42 (0.37) |
| Hashrate | | | -0.67 (1.04) | | -1.47 (1.54) |
| Difficulty | | | | 0.001 (1.12) | 1.16 (1.66) |
| Constant | -12.10 (60.97) | -13.71 (59.74) | 26.81 (86.88) | -13.79 (91.01) | 4.59 (93.19) |
| Observations | 35 | 35 | 35 | 35 | 35 |
| R ² | 0.07 | 0.14 | 0.15 | 0.14 | 0.16 |
| Adjusted R ² | 0.04 | 0.08 | 0.07 | 0.05 | 0.05 |

Note:

*p<0.1; **p<0.05; ***p<0.01