Table 4: Comparison of the gross performance for mean-expected shortfall porfolios for *Classical Models*, *Gaussian-Cholesky Models* and *Factor-HGH Models*. $*$ in the top row denotes annualized quantities. CMkt - return on the market factor; ⧅ denotes an identity matrix, ◪ denotes lower triangular matrix. All portfolios are long-only. Dataset: hourly returns of 42 cryptocurrencies from 01-01-2021 until 16-06-2021. Rebalancing every 5 hours. Note: because we only have one factor, the cases where $L^{(f)}$ = ⧅ and $L^{(f)}$ = ◪ are identical. So the lower triangular one is dropped from the table.

| | *Return** | *Volatility** | *Total Return* | *Max. Drawdown* | *Turnover** | *Sharpe** | *Sortino** | *STARR$_{98.5\%}$%** | *ES$_{98.5\%}$** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | *Classical Models* | | | | | |
| Intercept-Only | 12.32 | 8.55 | 5.30 | -5.62 | 104.35 | 1.44 | 1.93 | 1.35 | 26.28 |
| CAPM | 15.46 | 10.71 | 6.64 | -8.98 | 128.84 | 1.44 | 1.87 | 1.33 | 33.35 |
| | | | | *Gaussian-Cholesky Models* | | | | | |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,⧅) | 12.15 | 10.00 | 5.16 | -8.47 | 124.12 | 1.21 | 1.58 | 1.17 | 29.81 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,◪) | 18.18 | 8.60 | 8.00 | -5.62 | 110.98 | 2.11 | 2.85 | 2.00 | 26.12 |
| | | | | *Factor-HGH Models* | | | | | |
| No-Factors | 21.16 | 9.72 | 9.35 | -3.11 | 99.52 | 2.18 | 3.28 | 2.40 | 25.32 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,⧅) | 25.50 | 10.04 | 11.40 | -2.90 | 80.63 | 2.54 | 3.94 | 2.79 | 26.28 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,◪) | 19.10 | 9.66 | 8.38 | -3.12 | 97.52 | 1.98 | 2.95 | 2.15 | 25.51 |

Table 5: Comparison of the gross performance for mean-expected shortfall porfolios for *Classical Models*, *Gaussian-Cholesky Models* and *Factor-HGH Models*. $*$ in the top row denotes annualized quantities. CMkt - return on the market factor; ⧅ denotes an identity matrix, ◪ denotes lower triangular matrix. All portfolios are long-only. Dataset: hourly returns of 41 cryptocurrencies (excluding PAX) from 01-01-2021 until 16-06-2021. Rebalancing every 5 hours. Note: because we only have one factor, the cases where $L^{(f)}$ = ⧅ and $L^{(f)}$ = ◪ are identical. So the lower triangular one is dropped from the table.

| | *Return** | *Volatility** | *Total Return* | *Max. Drawdown* | *Turnover** | *Sharpe** | *Sortino** | *STARR$_{98.5\%}$%** | *ES$_{98.5\%}$** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | *Classical Models* | | | | | |
| Intercept-Only | 51.30 | 88.62 | 5.04 | -75.44 | 965.43 | 0.58 | 0.75 | 0.47 | 312.76 |
| CAPM | 186.19 | 65.80 | 103.44 | -51.06 | 749.78 | 2.83 | 3.76 | 2.00 | 268.43 |
| | | | | *Gaussian-Cholesky Models* | | | | | |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,⧅) | 73.43 | 89.72 | 15.08 | -74.82 | 975.09 | 0.82 | 1.05 | 0.65 | 322.83 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,◪) | 51.37 | 88.63 | 5.06 | -75.45 | 965.95 | 0.58 | 0.75 | 0.47 | 312.84 |
| | | | | *Factor-HGH Models* | | | | | |
| No-Factors | 270.12 | 86.72 | 173.21 | -47.04 | 977.95 | 3.12 | 4.62 | 2.54 | 305.69 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,⧅) | 263.51 | 90.01 | 162.26 | -46.56 | 599.67 | 2.93 | 4.36 | 2.39 | 317.44 |
| CMkt & $(\mathbf{L}^{(f)}, \mathbf{L}^{(r)})$ = (⧅,◪) | 242.96 | 85.93 | 143.64 | -49.17 | 841.54 | 2.83 | 4.14 | 2.29 | 305.37 |