| h  | 1                                 |            | 2        |            | 3     |       | 6     |       | 9     |       | 12    |       |
|----|-----------------------------------|------------|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------|
|    | p-val                             | $R^2$      | p-val    | $R^2$      | p-val | $R^2$ | p-val | $R^2$ | p-val | $R^2$ | p-val | $R^2$ |
| k  | Panel A                           | A: Realize | d downsi | de varianc | ce    |       |       |       |       |       |       |       |
| 1  | 0.001                             | 0.013      | 0.622    | -0.0       | 0.0   | 0.019 | 0.911 | -0.0  | 0.691 | -0.0  | 0.532 | -0.0  |
| 2  | 0.622                             | -0.0       | 0.0      | 0.019      | 0.911 | -0.0  | 0.691 | -0.0  | 0.532 | -0.0  | 0.02  | 0.004 |
| 3  | 0.0                               | 0.019      | 0.911    | -0.0       | 0.691 | -0.0  | 0.532 | -0.0  | 0.02  | 0.004 | 0.0   | 0.02  |
| 6  | 0.911                             | -0.0       | 0.691    | -0.0       | 0.532 | -0.0  | 0.02  | 0.004 | 0.0   | 0.02  | 0.0   | 0.067 |
| 9  | 0.691                             | -0.0       | 0.532    | -0.0       | 0.02  | 0.004 | 0.0   | 0.02  | 0.0   | 0.067 | 0.705 | -0.0  |
| 12 | 0.532                             | -0.0       | 0.02     | 0.004      | 0.0   | 0.02  | 0.0   | 0.067 | 0.705 | -0.0  | 0.473 | 0.0   |
| k  | Panel B: Realized upside variance |            |          |            |       |       |       |       |       |       |       |       |
| 1  | 0.0                               | 0.043      | 0.003    | 0.011      | 0.0   | 0.025 | 0.436 | 0.001 | 0.002 | 0.012 | 0.0   | 0.014 |
| 2  | 0.003                             | 0.011      | 0.0      | 0.025      | 0.436 | 0.001 | 0.002 | 0.012 | 0.0   | 0.014 | 0.0   | 0.018 |
| 3  | 0.0                               | 0.025      | 0.436    | 0.001      | 0.002 | 0.012 | 0.0   | 0.014 | 0.0   | 0.018 | 0.0   | 0.022 |
| 6  | 0.436                             | 0.001      | 0.002    | 0.012      | 0.0   | 0.014 | 0.0   | 0.018 | 0.0   | 0.022 | 0.0   | 0.031 |
| 9  | 0.002                             | 0.012      | 0.0      | 0.014      | 0.0   | 0.018 | 0.0   | 0.022 | 0.0   | 0.031 | 0.015 | 0.013 |
| 12 | 0.0                               | 0.014      | 0.0      | 0.018      | 0.0   | 0.022 | 0.0   | 0.031 | 0.015 | 0.013 | 0.0   | 0.033 |

|    | $R^2$ |      |                                  | 0.016 | 0.017 | 0.032 | 0.078 | 0.014            | 0.043 |
|----|-------|------|----------------------------------|-------|-------|-------|-------|------------------|-------|
| 12 | al    | down |                                  | 0.208 | 0.604 | 0.0   | 0.0   | 0.172            | 0.005 |
|    | p-val | dn   |                                  | 0.0   | 0.001 | 0.0   | 0.0   | 0.009            | 0.0   |
|    | $R^2$ |      |                                  | 0.015 | 0.016 | 0.017 | 0.032 | 0.078            | 0.014 |
| 6  | /al   | down |                                  | 0.124 | 0.208 | 0.604 | 0.0   | 0.0              | 0.172 |
|    | p-val | dn   |                                  | 0.002 | 0.0   | 0.001 | 0.0   | 0.0              | 0.009 |
|    | $R^2$ |      |                                  | 0.001 | 0.015 | 0.016 | 0.017 | 0.032            | 0.078 |
| 9  | val   | down |                                  | 0.503 | 0.124 | 0.208 | 0.604 | 0.0              | 0.0   |
|    | p-val | dn   |                                  | 0.353 | 0.002 | 0.0   | 0.001 | 0.0              | 0.0   |
|    | $R^2$ |      |                                  | 0.033 | 0.001 | 0.015 | 0.016 | 0.017            | 0.032 |
| 3  | /al   | down |                                  | 0.006 | 0.503 | 0.124 | 0.208 | 0.604            | 0.0   |
|    | p-va] | dn   |                                  | 0.001 | 0.353 | 0.002 | 0.0   | 0.001            | 0.0   |
|    | $R^2$ |      |                                  | 0.011 | 0.033 | 0.001 | 0.015 | 0.016            | 0.017 |
| 2  | /al   | down |                                  | 92.0  | 0.006 | 0.503 | 0.124 | 0.208            | 0.604 |
|    | p-val | dn   | remium                           | 0.005 | 0.001 | 0.353 | 0.002 | 0.0              | 0.001 |
|    | $R^2$ |      | k Panel A: Variance Risk Premium | 0.044 | 0.011 | 0.033 | 0.001 | 0.015            | 0.016 |
| 1  | p-val | down | down<br>L: Varian                | 0.238 | 0.76  | 0.006 | 0.503 | 0.124            | 0.208 |
|    |       | dn   | Panel A                          | 0.0   | 0.005 | 0.001 | 0.353 | $0.002_{ \rm G}$ | 0.0   |
| h  |       |      | 첫                                | ₽     | 2     | 33    | 9     | 6                | 12    |