**Table 1.** First principal component coefficients for $Sa(T_i) - Sa(T_j)$ models

| **IMs** | 0.01 | 0.05 | 0.075 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.75 | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.05 | 0.72/0.70 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.07 | 0.72/0.69 | 0.71/0.70 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.10 | 0.72/0.70 | 0.71/0.71 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| 0.20 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 1 | - | - | - | - | - | - | - | - | - | - |
| 0.30 | 0.69/0.73 | 0.67/0.74 | 0.67/0.74 | 0.67/0.74 | 0.69/0.72 | 1 | - | - | - | - | - | - | - | - | - |
| 0.40 | 0.68/0.73 | 0.66/0.75 | 0.66/0.76 | 0.66/0.75 | 0.68/0.73 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - |
| 0.50 | 0.68/0.73 | 0.66/0.75 | 0.65/0.76 | 0.66/0.75 | 0.68/0.73 | 0.70/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - |
| 0.75 | 0.68/0.73 | 0.66/0.75 | 0.65/0.76 | 0.65/0.76 | 0.69/0.73 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - |
| 1.00 | 0.68/0.73 | 0.66/0.76 | 0.64/0.77 | 0.65/0.76 | 0.69/0.73 | 0.71/0.70 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 1 | - | - | - | - | - |
| 1.50 | 0.69/0.72 | 0.66/0.75 | 0.65/0.76 | 0.66/0.76 | 0.70/0.71 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 1 | - | - | - | - |
| 2.00 | 0.72/0.70 | 0.69/0.73 | 0.68/0.74 | 0.69/0.73 | 0.73/0.68 | 0.75/0.66 | 0.76/0.65 | 0.75/0.66 | 0.74/0.68 | 0.73/0.69 | 0.72/0.70 | 1 | - | - | - |
| 3.00 | 0.74/0.67 | 0.71/0.70 | 0.71/0.71 | 0.72/0.70 | 0.76/0.65 | 0.78/0.63 | 0.78/0.63 | 0.77/0.64 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.72/0.70 | 1 | - | - |
| 4.00 | 0.76/0.65 | 0.73/0.68 | 0.73/0.69 | 0.74/0.67 | 0.79/0.62 | 0.80/0.60 | 0.80/0.61 | 0.78/0.62 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.72/0.69 | 0.71/0.70 | 1 | - |
| 5.00 | 0.76/0.65 | 0.74/0.68 | 0.73/0.68 | 0.75/0.67 | 0.80/0.61 | 0.81/0.59 | 0.80/0.60 | 0.79/0.61 | 0.77/0.64 | 0.76/0.65 | 0.74/0.67 | 0.73/0.69 | 0.71/0.70 | 0.71/0.71 | 1 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 2.** First principal component coefficients for $Sa_{avg2}(T_i)$–$Sa_{avg2}(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.20 | 0.70/0.72 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.30 | 0.69/0.72 | 0.70/0.72 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.40 | 0.69/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 | 0.68/0.73 | 0.69/0.72 | 0.70/0.72 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| 0.60 | 0.68/0.73 | 0.69/0.72 | 0.70/0.72 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - |
| 0.75 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - |
| 0.80 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - |
| 0.90 | 0.69/0.73 | 0.70/0.72 | 0.70/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - |
| 1.00 | 0.69/0.72 | 0.70/0.72 | 0.71/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - |
| 1.20 | 0.69/0.72 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - |
| 1.50 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 1 | - | - | - | - |
| 2.00 | 0.72/0.69 | 0.73/0.68 | 0.74/0.68 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 1 | - | - | - |
| 2.50 | 0.73/0.68 | 0.74/0.67 | 0.75/0.66 | 0.75/0.66 | 0.75/0.66 | 0.75/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.71/0.70 | 1 | - | - |
| 3.00 | 0.74/0.67 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.66 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 1 | - |
| 4.00 | 0.75/0.66 | 0.76/0.65 | 0.77/0.64 | 0.77/0.64 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 1 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 3.** First principal component coefficients for $Sa_{avg3}(T_i)$–$Sa_{avg3}(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.20 | 0.70/0.72 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.30 | 0.69/0.72 | 0.70/0.71 | 0.70/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.40 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| 0.60 | 0.70/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - | - | - | - | - |
| 0.75 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - | - | - | - |
| 0.80 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - |
| 0.90 | 0.71/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - | - |
| 1.00 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - |
| 1.20 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - |
| 1.50 | 0.73/0.68 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 1 | - | - | - | - |
| 2.00 | 0.75/0.66 | 0.75/0.66 | 0.76/0.65 | 0.75/0.66 | 0.75/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 1 | - | - | - |
| 2.50 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - |
| 3.00 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 1 | - |
| 4.00 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 1 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 4.** First principal component coefficients for $FIV3(T_i)$–$FIV3(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.15 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.20 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.30 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.40 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.50 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - | - | - | - |
| 0.60 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - | - | - | - | - |
| 0.75 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 1 | - | - | - | - | - | - | - | - | - |
| 0.80 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - | - | - |
| 0.90 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - | - | - | - | - |
| 1.00 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - | - |
| 1.20 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - | - |
| 1.50 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 1 | - | - | - | - |
| 2.00 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 1 | - | - | - |
| 2.50 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.71/0.71 | 1 | - | - |
| 3.00 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 1 | - |
| 4.00 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.71/0.71 | 1 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 5.** First principal component coefficients for $Sa(T_i)$–$Sa_{avg2}(T_j)$ models

| **IMs** | 0.01 | 0.05 | 0.075 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.75 | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.71/0.70 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.72/0.70 | 0.73/0.68 | 0.74/0.67 | 0.75/0.67 | 0.75/0.67 | 0.75/0.66 | 0.74/0.67 | 0.71/0.70 | 0.69/0.73 | 0.66/0.75 | 0.66/0.75 |
| 0.15 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.71/0.70 | 0.73/0.69 | 0.74/0.68 | 0.74/0.68 | 0.74/0.68 | 0.74/0.68 | 0.73/0.69 | 0.70/0.71 | 0.67/0.74 | 0.65/0.76 | 0.64/0.77 |
| 0.20 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.71/0.71 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.71/0.70 | 0.69/0.73 | 0.66/0.75 | 0.64/0.77 | 0.63/0.78 |
| 0.30 | 0.70/0.72 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.66/0.76 | 0.64/0.77 | 0.63/0.78 |
| 0.40 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 | 0.68/0.73 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.66/0.75 | 0.64/0.77 | 0.64/0.77 |
| 0.50 | 0.69/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.72 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.66/0.75 | 0.65/0.76 | 0.64/0.77 |
| 0.60 | 0.69/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.72 | 0.71/0.70 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.69/0.73 | 0.67/0.74 | 0.65/0.76 | 0.65/0.76 |
| 0.75 | 0.69/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.67/0.74 | 0.66/0.75 | 0.66/0.75 |
| 0.80 | 0.70/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.69/0.72 | 0.68/0.74 | 0.67/0.75 | 0.66/0.75 |
| 0.90 | 0.70/0.72 | 0.68/0.73 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.72/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.75 |
| 1.00 | 0.70/0.71 | 0.68/0.73 | 0.68/0.74 | 0.68/0.73 | 0.71/0.71 | 0.72/0.69 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.72 | 0.69/0.73 | 0.68/0.74 | 0.67/0.74 |
| 1.20 | 0.71/0.71 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.71/0.70 | 0.73/0.68 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.73 | 0.68/0.73 |
| 1.50 | 0.72/0.70 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.73/0.69 | 0.74/0.67 | 0.75/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 2.00 | 0.73/0.68 | 0.71/0.70 | 0.71/0.71 | 0.71/0.70 | 0.74/0.67 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.74/0.68 | 0.73/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 |
| 2.50 | 0.74/0.67 | 0.72/0.69 | 0.72/0.70 | 0.73/0.69 | 0.76/0.65 | 0.77/0.64 | 0.77/0.64 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 3.00 | 0.75/0.66 | 0.73/0.68 | 0.73/0.69 | 0.74/0.67 | 0.77/0.64 | 0.78/0.63 | 0.78/0.63 | 0.77/0.64 | 0.75/0.66 | 0.75/0.66 | 0.74/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 4.00 | 0.75/0.66 | 0.74/0.68 | 0.73/0.68 | 0.75/0.67 | 0.78/0.62 | 0.79/0.62 | 0.79/0.62 | 0.78/0.63 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.73/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 6.** First principal component coefficients for $Sa(T_i)$–$Sa_{avg3}(T_j)$ models

| **IMs** | 0.01 | 0.05 | 0.075 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.75 | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.71/0.70 | 0.73/0.69 | 0.73/0.68 | 0.74/0.68 | 0.74/0.68 | 0.74/0.68 | 0.73/0.69 | 0.70/0.72 | 0.67/0.74 | 0.65/0.76 | 0.64/0.77 |
| 0.15 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.71/0.71 | 0.72/0.70 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.68/0.73 | 0.66/0.75 | 0.64/0.77 | 0.63/0.78 |
| 0.20 | 0.70/0.72 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.66/0.76 | 0.64/0.77 | 0.63/0.78 |
| 0.30 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.68/0.73 | 0.70/0.72 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.66/0.75 | 0.65/0.76 | 0.64/0.77 |
| 0.40 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.69/0.73 | 0.67/0.74 | 0.66/0.76 | 0.65/0.76 |
| 0.50 | 0.69/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.67/0.74 | 0.66/0.75 | 0.66/0.75 |
| 0.60 | 0.70/0.72 | 0.68/0.73 | 0.67/0.74 | 0.68/0.73 | 0.70/0.71 | 0.72/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.75 |
| 0.75 | 0.70/0.71 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.71/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 |
| 0.80 | 0.71/0.71 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.71/0.70 | 0.73/0.68 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.73 | 0.68/0.73 |
| 0.90 | 0.71/0.70 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.72/0.69 | 0.73/0.68 | 0.74/0.67 | 0.74/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 |
| 1.00 | 0.72/0.70 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.73/0.69 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 |
| 1.20 | 0.72/0.69 | 0.70/0.71 | 0.70/0.71 | 0.71/0.71 | 0.73/0.68 | 0.75/0.66 | 0.75/0.66 | 0.75/0.66 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 |
| 1.50 | 0.73/0.68 | 0.72/0.70 | 0.71/0.70 | 0.72/0.69 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.65 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.71 |
| 2.00 | 0.75/0.67 | 0.73/0.69 | 0.72/0.69 | 0.73/0.68 | 0.77/0.64 | 0.77/0.63 | 0.77/0.63 | 0.77/0.64 | 0.75/0.66 | 0.75/0.67 | 0.74/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 2.50 | 0.75/0.66 | 0.73/0.68 | 0.73/0.69 | 0.74/0.68 | 0.77/0.64 | 0.78/0.63 | 0.78/0.63 | 0.77/0.64 | 0.76/0.65 | 0.75/0.66 | 0.74/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 3.00 | 0.75/0.66 | 0.73/0.68 | 0.73/0.69 | 0.74/0.67 | 0.77/0.63 | 0.78/0.62 | 0.78/0.62 | 0.77/0.63 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.73/0.69 | 0.72/0.70 | 0.71/0.71 | 0.71/0.71 |
| 4.00 | 0.75/0.66 | 0.73/0.69 | 0.72/0.69 | 0.73/0.68 | 0.77/0.63 | 0.78/0.62 | 0.78/0.62 | 0.77/0.63 | 0.76/0.65 | 0.75/0.66 | 0.74/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 7.** First principal component coefficients for $Sa(T_i)$–$FIV3(T_j)$ models

| **IMs** | 0.01 | 0.05 | 0.075 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.75 | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.70/0.72 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.70/0.71 | 0.72/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 |
| 0.15 | 0.70/0.72 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.70/0.71 | 0.72/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 |
| 0.20 | 0.70/0.72 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.70/0.71 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 |
| 0.30 | 0.70/0.72 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.71/0.71 | 0.72/0.69 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.40 | 0.70/0.71 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.71/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.72 | 0.69/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.50 | 0.70/0.71 | 0.68/0.73 | 0.67/0.74 | 0.68/0.74 | 0.71/0.70 | 0.73/0.68 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 |
| 0.60 | 0.71/0.71 | 0.68/0.73 | 0.67/0.74 | 0.68/0.73 | 0.72/0.70 | 0.74/0.68 | 0.74/0.67 | 0.74/0.68 | 0.73/0.69 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.73 | 0.68/0.73 |
| 0.75 | 0.71/0.70 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.72/0.69 | 0.74/0.67 | 0.75/0.67 | 0.74/0.67 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.73 | 0.69/0.73 |
| 0.80 | 0.71/0.70 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.73/0.69 | 0.74/0.67 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.73 | 0.69/0.73 |
| 0.90 | 0.71/0.70 | 0.69/0.72 | 0.68/0.73 | 0.69/0.72 | 0.73/0.68 | 0.75/0.67 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 |
| 1.00 | 0.72/0.70 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.73/0.68 | 0.75/0.66 | 0.75/0.66 | 0.75/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.20 | 0.72/0.69 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.74/0.68 | 0.75/0.66 | 0.75/0.66 | 0.75/0.66 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 |
| 1.50 | 0.72/0.69 | 0.70/0.71 | 0.70/0.72 | 0.70/0.71 | 0.74/0.67 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 |
| 2.00 | 0.72/0.69 | 0.70/0.72 | 0.69/0.72 | 0.70/0.71 | 0.74/0.68 | 0.75/0.66 | 0.76/0.65 | 0.75/0.66 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 |
| 2.50 | 0.72/0.70 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.73/0.68 | 0.75/0.66 | 0.75/0.66 | 0.75/0.67 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 3.00 | 0.71/0.70 | 0.69/0.73 | 0.68/0.73 | 0.69/0.73 | 0.73/0.69 | 0.75/0.67 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 4.00 | 0.71/0.70 | 0.69/0.73 | 0.68/0.74 | 0.69/0.73 | 0.73/0.69 | 0.75/0.67 | 0.75/0.66 | 0.74/0.67 | 0.73/0.68 | 0.73/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 |

($a$/$b$) denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 8.** First principal component coefficients for $Sa_{avg2}(T_i)$–$Sa_{avg3}(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.68/0.73 | 0.67/0.74 | 0.66/0.75 | 0.65/0.76 |
| 0.15 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.67/0.74 | 0.66/0.75 | 0.65/0.76 | 0.64/0.77 |
| 0.20 | 0.69/0.72 | 0.70/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.73 | 0.67/0.74 | 0.66/0.75 | 0.65/0.76 | 0.64/0.77 |
| 0.30 | 0.69/0.73 | 0.69/0.72 | 0.70/0.72 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.67/0.74 | 0.66/0.75 | 0.66/0.75 | 0.65/0.76 |
| 0.40 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.66/0.75 | 0.66/0.75 |
| 0.50 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 | 0.66/0.75 |
| 0.60 | 0.69/0.73 | 0.70/0.72 | 0.70/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 |
| 0.75 | 0.69/0.72 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.73 |
| 0.80 | 0.70/0.72 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.73 |
| 0.90 | 0.70/0.71 | 0.71/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 |
| 1.00 | 0.71/0.71 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.20 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 |
| 1.50 | 0.73/0.69 | 0.73/0.68 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 |
| 2.00 | 0.74/0.67 | 0.75/0.66 | 0.75/0.66 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 2.50 | 0.74/0.67 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 3.00 | 0.74/0.67 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.75/0.67 | 0.74/0.67 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 |
| 4.00 | 0.74/0.67 | 0.75/0.66 | 0.76/0.65 | 0.76/0.65 | 0.76/0.65 | 0.75/0.66 | 0.75/0.66 | 0.74/0.67 | 0.74/0.67 | 0.74/0.67 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 9.** First principal component coefficients for $Sa_{avg2}(T_i)$–$FIV3(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.15 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.20 | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.30 | 0.68/0.73 | 0.70/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 |
| 0.40 | 0.69/0.73 | 0.70/0.72 | 0.71/0.71 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.68/0.73 | 0.68/0.74 |
| 0.50 | 0.69/0.73 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.73 |
| 0.60 | 0.69/0.72 | 0.71/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 | 0.68/0.73 |
| 0.75 | 0.70/0.72 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 |
| 0.80 | 0.70/0.72 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 |
| 0.90 | 0.70/0.71 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 |
| 1.00 | 0.70/0.71 | 0.72/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.20 | 0.71/0.71 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.50 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.69/0.72 |
| 2.00 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 |
| 2.50 | 0.70/0.71 | 0.72/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 3.00 | 0.70/0.72 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 |
| 4.00 | 0.70/0.72 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 10.** First principal component coefficients for $Sa_{avg3}(T_i)$–$FIV3(T_j)$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 0.69/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.68/0.74 |
| 0.15 | 0.69/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 | 0.67/0.74 | 0.67/0.74 | 0.68/0.74 |
| 0.20 | 0.70/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.68/0.74 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 |
| 0.30 | 0.70/0.72 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.74 | 0.68/0.74 | 0.68/0.73 |
| 0.40 | 0.70/0.72 | 0.71/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 |
| 0.50 | 0.70/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 | 0.68/0.73 |
| 0.60 | 0.71/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.68/0.73 | 0.69/0.73 |
| 0.75 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 | 0.69/0.73 | 0.69/0.72 |
| 0.80 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 | 0.69/0.72 |
| 0.90 | 0.71/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.00 | 0.72/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.20 | 0.72/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 1.50 | 0.72/0.69 | 0.74/0.68 | 0.74/0.67 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.70/0.72 | 0.70/0.72 |
| 2.00 | 0.72/0.69 | 0.73/0.68 | 0.74/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.70/0.72 |
| 2.50 | 0.72/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 3.00 | 0.71/0.70 | 0.72/0.69 | 0.73/0.68 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |
| 4.00 | 0.71/0.70 | 0.72/0.69 | 0.73/0.69 | 0.73/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.
$IM_i$–$IM_j$ denotes the pair of intensity measures analysed, where the column periods correspond to $IM_i$ and the row periods correspond to $IM_j$.

**Table 11.** First principal component coefficients for $Sa(T_i)$–$PGA$ and $Sa(T_i)$–$PGV$ models

| **IMs** | *PGA* | *PGV* | 0.01 | 0.05 | 0.075 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.75 | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PGA** | 1 | 0.70/0.72 | 0.71/0.71 | 0.70/0.72 | 0.69/0.72 | 0.70/0.72 | 0.71/0.70 | 0.73/0.69 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.73/0.68 | 0.72/0.69 | 0.70/0.72 | 0.67/0.74 | 0.65/0.76 | 0.65/0.76 |
| **PGV** | 0.72/0.70 | 1 | 0.69/0.72 | 0.68/0.74 | 0.67/0.74 | 0.68/0.74 | 0.70/0.71 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.71/0.70 | 0.70/0.71 | 0.69/0.72 | 0.68/0.74 | 0.67/0.75 | 0.66/0.75 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.

**Table 12.** First principal component coefficients for $Sa_{avg2}(T_i)$–$PGA$ and $Sa_{avg2}(T_i)$–$PGV$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PGA** | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.72 | 0.68/0.73 | 0.67/0.74 | 0.66/0.75 | 0.66/0.76 |
| **PGV** | 0.68/0.73 | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 | 0.67/0.74 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.

**Table 13.** First principal component coefficients for $Sa_{avg3}(T_i)$–$PGA$ and $Sa_{avg3}(T_i)$–$PGV$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PGA** | 0.71/0.71 | 0.71/0.70 | 0.72/0.70 | 0.72/0.69 | 0.72/0.69 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.69/0.72 | 0.68/0.73 | 0.67/0.75 | 0.66/0.75 | 0.66/0.75 | 0.66/0.75 |
| **PGV** | 0.69/0.72 | 0.70/0.71 | 0.71/0.71 | 0.71/0.70 | 0.71/0.71 | 0.71/0.71 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 | 0.68/0.73 | 0.67/0.74 | 0.67/0.74 | 0.67/0.74 | 0.67/0.74 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.

**Table 14.** First principal component coefficients for $FIV3(T_i)$–$PGA$ and $FIV3(T_i)$–$PGV$ models

| **IMs** | 0.10 | 0.15 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.75 | 0.80 | 0.90 | 1.00 | 1.20 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PGA** | 0.72/0.70 | 0.72/0.70 | 0.72/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.70 | 0.71/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.72 | 0.70/0.72 | 0.70/0.71 | 0.70/0.71 |
| **PGV** | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.71 | 0.70/0.72 | 0.70/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 | 0.69/0.73 | 0.69/0.73 | 0.69/0.73 | 0.69/0.72 | 0.69/0.72 | 0.69/0.72 |

$(a/b)$ denotes the first principal component coefficient, where $a$ refers to the row intensity measure and $b$ refers to the column intensity measure.