Table. Relative bias and variance difference between GBIT and MLE for conditional LGM parameters

|  | | **0.05-0.95** | | | **0.1-0.9** | | | **0.2-0.8** | | | **0.3-0.7** | | | **0.4-0.6** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** |
| **type** | **N** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** |
| **I~x1.cov** | **200** | 0.072 | -0.003 | **0.000** | 0.103 | -0.009 | **0.000** | 0.018 | -0.024 | **0.000** | -0.208 | -0.054 | **0.003** | -0.541 | -0.136 | **0.011** |
| **500** | 0.072 | -0.001 | **0.000** | 0.103 | -0.004 | **0.000** | 0.018 | -0.010 | **0.000** | -0.210 | -0.022 | **0.001** | -0.539 | -0.059 | **0.003** |
| **1,000** | 0.072 | -0.001 | **0.000** | 0.103 | -0.002 | **0.000** | 0.018 | -0.005 | **0.000** | -0.210 | -0.011 | **0.000** | -0.540 | -0.033 | **0.001** |
| **2,000** | 0.072 | 0.000 | **0.000** | 0.103 | -0.001 | **0.000** | 0.018 | -0.002 | **0.000** | -0.211 | -0.006 | **0.000** | -0.540 | -0.017 | **0.001** |
| **S~x1.cov** | **200** | -0.234 | -0.003 | **0.000** | -0.441 | -0.009 | **0.000** | -0.722 | -0.025 | **0.002** | -0.887 | -0.059 | **0.004** | -0.976 | -0.157 | **0.011** |
| **500** | -0.237 | -0.002 | **0.000** | -0.441 | -0.003 | **0.000** | -0.723 | -0.010 | **0.001** | -0.887 | -0.026 | **0.002** | -0.977 | -0.066 | **0.004** |
| **1,000** | -0.236 | 0.000 | **0.000** | -0.441 | -0.002 | **0.000** | -0.723 | -0.005 | **0.000** | -0.887 | -0.013 | **0.001** | -0.977 | -0.034 | **0.002** |
| **2,000** | -0.237 | -0.001 | **0.000** | -0.441 | -0.001 | **0.000** | -0.723 | -0.002 | **0.000** | -0.887 | -0.007 | **0.000** | -0.977 | -0.018 | **0.001** |
| **z1~I.cov** | **200** | 0.049 | 0.000 | **0.000** | 0.107 | 0.000 | **-0.001** | 0.160 | -0.001 | **-0.004** | 0.074 | -0.001 | **-0.020** | 0.041 | -0.001 | **-0.062** |
| **500** | 0.049 | 0.000 | **0.000** | 0.106 | 0.000 | **0.000** | 0.157 | 0.000 | **-0.001** | 0.054 | -0.001 | **-0.002** | 0.035 | 0.000 | **-0.039** |
| **1,000** | 0.049 | 0.000 | **0.000** | 0.106 | 0.000 | **0.000** | 0.155 | 0.000 | **-0.001** | 0.053 | 0.000 | **-0.001** | 0.016 | -0.001 | **-0.022** |
| **2,000** | 0.049 | 0.000 | **0.000** | 0.106 | 0.000 | **0.000** | 0.155 | 0.000 | **0.000** | 0.050 | 0.000 | **-0.001** | -0.002 | 0.000 | **-0.005** |
| **z1~S.cov** | **200** | 0.516 | 0.001 | **-0.002** | 1.301 | -0.001 | **-0.019** | 3.369 | -0.005 | **-0.302** | 5.526 | 0.003 | **-4.880** | 14.632 | 0.010 | **-86.399** |
| **500** | 0.522 | 0.002 | **-0.001** | 1.291 | -0.003 | **-0.007** | 3.320 | -0.002 | **-0.109** | 5.082 | 0.001 | **-0.656** | 14.183 | 0.007 | **-51.529** |
| **1,000** | 0.519 | 0.000 | **0.000** | 1.288 | 0.000 | **-0.003** | 3.303 | -0.001 | **-0.053** | 5.036 | 0.002 | **-0.288** | 13.209 | 0.000 | **-28.046** |
| **2,000** | 0.519 | 0.000 | **0.000** | 1.286 | 0.000 | **-0.002** | 3.293 | -0.001 | **-0.025** | 4.966 | 0.000 | **-0.146** | 12.221 | 0.000 | **-7.351** |
| Note. N: sample size; GBIT: generalized tobit estimator; ML: ML estimator with censored data; Number of timepoints and ICC were averaged | | | | | | | | | | | | | | | | |

Table. Relative bias and variance difference between GBIT and MLE for unconditional LGM parameters

|  | | **0.05-0.95** | | | **0.1-0.9** | | | **0.2-0.8** | | | **0.3-0.7** | | | **0.4-0.6** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** | **rBias** | | **VarD** |
| **type** | **N** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** | **ML** | **GBIT** | **.** |
| **I~1** | **200** | 0.000 | 0.000 | **0.000** | 0.004 | 0.000 | **0.000** | 0.038 | -0.001 | **0.000** | 0.110 | -0.002 | **0.001** | 0.193 | -0.005 | **0.004** |
| **500** | 0.000 | 0.000 | **0.000** | 0.004 | 0.000 | **0.000** | 0.038 | 0.000 | **0.000** | 0.110 | -0.001 | **0.000** | 0.193 | -0.003 | **0.001** |
| **1,000** | 0.000 | 0.000 | **0.000** | 0.004 | 0.000 | **0.000** | 0.038 | 0.000 | **0.000** | 0.110 | 0.000 | **0.000** | 0.193 | -0.001 | **0.001** |
| **2,000** | 0.000 | 0.000 | **0.000** | 0.003 | 0.000 | **0.000** | 0.038 | 0.000 | **0.000** | 0.110 | 0.000 | **0.000** | 0.193 | -0.001 | **0.000** |
| **S~1** | **200** | -0.035 | -0.001 | **0.000** | -0.115 | -0.001 | **0.000** | -0.343 | -0.007 | **0.000** | -0.591 | -0.019 | **0.001** | -0.812 | -0.054 | **0.004** |
| **500** | -0.035 | 0.000 | **0.000** | -0.114 | 0.000 | **0.000** | -0.341 | -0.002 | **0.000** | -0.590 | -0.007 | **0.001** | -0.811 | -0.023 | **0.001** |
| **1,000** | -0.035 | 0.000 | **0.000** | -0.115 | -0.001 | **0.000** | -0.342 | -0.001 | **0.000** | -0.590 | -0.004 | **0.000** | -0.811 | -0.013 | **0.001** |
| **2,000** | -0.035 | 0.000 | **0.000** | -0.114 | 0.000 | **0.000** | -0.342 | -0.001 | **0.000** | -0.590 | -0.002 | **0.000** | -0.811 | -0.005 | **0.000** |
| **I~~I** | **200** | 0.069 | -0.006 | **0.000** | 0.074 | -0.015 | **0.001** | -0.112 | -0.032 | **0.010** | -0.481 | -0.066 | **0.041** | -0.847 | -0.121 | **0.126** |
| **500** | 0.071 | -0.002 | **0.000** | 0.075 | -0.007 | **0.001** | -0.109 | -0.013 | **0.004** | -0.480 | -0.028 | **0.016** | -0.846 | -0.060 | **0.049** |
| **1,000** | 0.071 | -0.001 | **0.000** | 0.076 | -0.003 | **0.000** | -0.109 | -0.007 | **0.002** | -0.479 | -0.015 | **0.008** | -0.847 | -0.035 | **0.025** |
| **2,000** | 0.072 | 0.000 | **0.000** | 0.077 | -0.001 | **0.000** | -0.108 | -0.003 | **0.001** | -0.479 | -0.007 | **0.004** | -0.846 | -0.019 | **0.012** |
| **S~~S** | **200** | -0.406 | -0.009 | **0.001** | -0.661 | -0.021 | **0.004** | -0.880 | -0.049 | **0.012** | -0.959 | -0.101 | **0.024** | -0.991 | -0.221 | **0.044** |
| **500** | -0.409 | -0.005 | **0.000** | -0.661 | -0.007 | **0.001** | -0.880 | -0.019 | **0.005** | -0.959 | -0.045 | **0.010** | -0.991 | -0.103 | **0.022** |
| **1,000** | -0.408 | -0.002 | **0.000** | -0.661 | -0.004 | **0.001** | -0.880 | -0.010 | **0.002** | -0.959 | -0.023 | **0.005** | -0.991 | -0.056 | **0.011** |
| **2,000** | -0.408 | -0.001 | **0.000** | -0.661 | -0.002 | **0.000** | -0.880 | -0.004 | **0.001** | -0.959 | -0.012 | **0.002** | -0.991 | -0.029 | **0.006** |
| **I~~S** | **200** | -0.345 | -0.011 | **-0.001** | -0.633 | -0.031 | **0.000** | -0.936 | -0.085 | **0.005** | -1.022 | -0.169 | **0.014** | -1.013 | -0.381 | **0.030** |
| **500** | -0.347 | -0.006 | **0.000** | -0.630 | -0.012 | **0.000** | -0.935 | -0.035 | **0.002** | -1.022 | -0.077 | **0.005** | -1.013 | -0.176 | **0.013** |
| **1,000** | -0.345 | -0.002 | **0.000** | -0.631 | -0.007 | **0.000** | -0.935 | -0.018 | **0.001** | -1.022 | -0.037 | **0.002** | -1.013 | -0.097 | **0.006** |
| **2,000** | -0.346 | -0.002 | **0.000** | -0.631 | -0.003 | **0.000** | -0.935 | -0.009 | **0.000** | -1.022 | -0.021 | **0.001** | -1.013 | -0.052 | **0.003** |
| Note. N: sample size; GBIT: generalized tobit estimator; ML: ML estimator with censored data; Number of timepoints and ICC were averaged | | | | | | | | | | | | | | | | |