

Table 1: $\tilde{R}_f^2 = .1$

| n | K | $\text{Cov}(\varepsilon, v_2)$ | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-----|-----|--------------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|---------|--------|---------|-------|-------|
| 100 | 5 | -0.9 | 0.083 | 0.056 | -0.319 | -0.021 | -0.385 | 0.271 | 0.199 | 0.074 | 0.053 | 0.651 | -0.011 | -0.211 | 0.176 | 0.125 |
| 100 | 5 | -0.5 | 0.079 | 0.051 | -0.168 | 0.362 | -0.501 | 0.101 | 0.053 | 0.074 | 0.052 | -0.163 | -0.069 | -0.040 | 0.081 | 0.044 |
| 100 | 5 | 0.5 | 0.067 | 0.045 | 0.182 | 0.368 | -0.428 | 0.106 | 0.056 | 0.071 | 0.049 | 0.084 | 0.250 | -0.154 | 0.084 | 0.043 |
| 100 | 5 | 0.9 | 0.075 | 0.048 | 0.325 | 0.058 | 0.260 | 0.283 | 0.207 | 0.070 | 0.049 | -0.460 | -0.060 | -0.201 | 0.183 | 0.128 |
| 100 | 10 | -0.9 | 0.124 | 0.092 | -0.493 | -0.216 | -0.305 | 0.394 | 0.300 | 0.096 | 0.079 | 9.585 | 0.177 | 1.654 | 0.188 | 0.136 |
| 100 | 10 | -0.5 | 0.083 | 0.051 | -0.275 | 0.588 | -0.880 | 0.107 | 0.053 | 0.081 | 0.059 | -0.244 | 0.544 | -6.190 | 0.074 | 0.033 |
| 100 | 10 | 0.5 | 0.087 | 0.059 | 0.277 | -0.649 | 0.945 | 0.111 | 0.056 | 0.077 | 0.052 | 0.246 | -0.051 | 4.174 | 0.075 | 0.037 |
| 100 | 10 | 0.9 | 0.116 | 0.089 | 0.497 | 0.217 | 0.306 | 0.388 | 0.295 | 0.095 | 0.077 | 0.159 | 1.161 | -0.340 | 0.188 | 0.132 |
| 100 | 30 | -0.9 | 0.139 | 0.117 | -0.716 | -0.442 | -0.284 | 0.480 | 0.322 | 0.146 | 0.130 | -0.434 | 0.313 | 0.917 | 0.190 | 0.115 |
| 100 | 30 | -0.5 | 0.109 | 0.079 | -0.395 | 0.798 | -1.220 | 0.085 | 0.033 | 0.097 | 0.071 | -0.743 | 0.260 | -36.108 | 0.047 | 0.019 |
| 100 | 30 | 0.5 | 0.116 | 0.086 | 0.394 | -0.791 | 1.221 | 0.081 | 0.027 | 0.105 | 0.081 | -0.087 | -0.981 | -2.041 | 0.040 | 0.012 |
| 100 | 30 | 0.9 | 0.137 | 0.113 | 0.715 | 0.439 | 0.285 | 0.495 | 0.339 | 0.139 | 0.124 | -55.386 | -1.238 | -0.512 | 0.178 | 0.110 |
| 250 | 5 | -0.9 | 0.093 | 0.059 | -0.142 | -0.025 | -0.103 | 0.194 | 0.130 | 0.083 | 0.053 | -0.188 | 0.053 | 0.116 | 0.136 | 0.086 |
| 250 | 5 | -0.5 | 0.098 | 0.067 | -0.075 | 0.130 | -0.162 | 0.110 | 0.059 | 0.088 | 0.060 | 0.012 | 0.075 | 0.073 | 0.098 | 0.052 |
| 250 | 5 | 0.5 | 0.103 | 0.070 | 0.080 | -0.153 | 0.187 | 0.115 | 0.061 | 0.088 | 0.062 | -50.385 | -0.106 | -0.029 | 0.097 | 0.052 |
| 250 | 5 | 0.9 | 0.088 | 0.055 | 0.140 | 0.024 | 0.103 | 0.184 | 0.123 | 0.075 | 0.045 | -0.006 | -0.050 | -0.072 | 0.130 | 0.082 |
| 250 | 10 | -0.9 | 0.088 | 0.047 | -0.283 | -0.099 | -0.185 | 0.300 | 0.217 | 0.061 | 0.036 | -0.046 | -0.013 | 0.072 | 0.144 | 0.093 |
| 250 | 10 | -0.5 | 0.079 | 0.046 | -0.159 | 0.255 | -0.392 | 0.128 | 0.073 | 0.077 | 0.049 | 0.047 | 0.066 | 0.058 | 0.099 | 0.054 |
| 250 | 10 | 0.5 | 0.081 | 0.041 | 0.158 | -0.253 | 0.390 | 0.122 | 0.064 | 0.074 | 0.045 | -0.076 | -0.080 | -0.035 | 0.093 | 0.049 |
| 250 | 10 | 0.9 | 0.086 | 0.046 | 0.287 | 0.104 | 0.180 | 0.310 | 0.226 | 0.060 | 0.036 | -0.077 | -0.061 | -0.069 | 0.147 | 0.093 |
| 250 | 30 | -0.9 | 0.132 | 0.098 | -0.545 | -0.287 | -0.263 | 0.621 | 0.514 | 0.073 | 0.046 | -2.191 | 0.274 | 0.095 | 0.155 | 0.107 |
| 250 | 30 | -0.5 | 0.106 | 0.065 | -0.305 | 0.492 | -0.798 | 0.145 | 0.074 | 0.066 | 0.041 | 0.433 | 0.366 | 0.052 | 0.088 | 0.041 |
| 250 | 30 | 0.5 | 0.111 | 0.067 | 0.304 | -0.488 | 0.796 | 0.140 | 0.073 | 0.065 | 0.034 | 0.749 | -0.136 | -0.048 | 0.078 | 0.038 |
| 250 | 30 | 0.9 | 0.132 | 0.098 | 0.544 | 0.285 | 0.264 | 0.620 | 0.515 | 0.076 | 0.046 | 0.100 | -0.058 | -0.106 | 0.159 | 0.107 |

(a), (b): Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e): Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g): Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i): Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l): Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n): Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 1 (Cont.): $\tilde{R}_f^2 = .1$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-------|----|---------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|-------|-------|
| 1000 | 5 | -0.9 | 0.126 | 0.092 | -0.037 | -0.008 | -0.022 | 0.127 | 0.070 | 0.102 | 0.068 | -0.001 | 0.006 | 0.011 | 0.112 | 0.057 |
| 1000 | 5 | -0.5 | 0.130 | 0.094 | -0.021 | 0.033 | -0.041 | 0.107 | 0.058 | 0.106 | 0.077 | -0.001 | 0.013 | 0.006 | 0.103 | 0.055 |
| 1000 | 5 | 0.5 | 0.128 | 0.098 | 0.019 | -0.035 | 0.041 | 0.107 | 0.059 | 0.105 | 0.079 | -0.001 | -0.015 | -0.008 | 0.103 | 0.058 |
| 1000 | 5 | 0.9 | 0.112 | 0.080 | 0.035 | 0.007 | 0.022 | 0.114 | 0.062 | 0.087 | 0.061 | -0.001 | -0.007 | -0.011 | 0.101 | 0.053 |
| 1000 | 10 | -0.9 | 0.093 | 0.057 | -0.087 | -0.028 | -0.054 | 0.167 | 0.101 | 0.082 | 0.054 | 0.003 | 0.009 | 0.013 | 0.116 | 0.063 |
| 1000 | 10 | -0.5 | 0.093 | 0.061 | -0.048 | 0.064 | -0.101 | 0.108 | 0.058 | 0.085 | 0.059 | 0.002 | 0.014 | 0.008 | 0.094 | 0.050 |
| 1000 | 10 | 0.5 | 0.099 | 0.063 | 0.048 | -0.064 | 0.102 | 0.113 | 0.059 | 0.091 | 0.061 | -0.002 | -0.014 | -0.008 | 0.100 | 0.051 |
| 1000 | 10 | 0.9 | 0.092 | 0.052 | 0.089 | 0.030 | 0.054 | 0.163 | 0.099 | 0.082 | 0.049 | 0.000 | -0.006 | -0.010 | 0.110 | 0.061 |
| 1000 | 30 | -0.9 | 0.095 | 0.043 | -0.243 | -0.102 | -0.140 | 0.373 | 0.269 | 0.085 | 0.040 | 0.010 | 0.010 | 0.013 | 0.112 | 0.064 |
| 1000 | 30 | -0.5 | 0.096 | 0.047 | -0.135 | 0.171 | -0.300 | 0.148 | 0.080 | 0.090 | 0.051 | 0.006 | 0.016 | 0.009 | 0.097 | 0.051 |
| 1000 | 30 | 0.5 | 0.093 | 0.049 | 0.137 | -0.169 | 0.299 | 0.147 | 0.080 | 0.090 | 0.050 | -0.004 | -0.013 | -0.007 | 0.098 | 0.049 |
| 1000 | 30 | 0.9 | 0.098 | 0.047 | 0.245 | 0.102 | 0.141 | 0.385 | 0.289 | 0.090 | 0.044 | -0.009 | -0.010 | -0.014 | 0.120 | 0.068 |
| 10000 | 5 | -0.9 | 0.133 | 0.101 | -0.003 | 0.000 | -0.002 | 0.103 | 0.050 | 0.105 | 0.073 | 0.001 | 0.001 | 0.002 | 0.103 | 0.050 |
| 10000 | 5 | -0.5 | 0.134 | 0.098 | -0.002 | 0.003 | -0.004 | 0.101 | 0.053 | 0.105 | 0.073 | 0.000 | 0.001 | 0.000 | 0.100 | 0.052 |
| 10000 | 5 | 0.5 | 0.138 | 0.100 | 0.001 | -0.004 | 0.004 | 0.101 | 0.048 | 0.107 | 0.074 | -0.001 | -0.002 | -0.001 | 0.101 | 0.048 |
| 10000 | 5 | 0.9 | 0.127 | 0.097 | 0.004 | 0.001 | 0.002 | 0.101 | 0.050 | 0.102 | 0.070 | 0.001 | 0.000 | 0.000 | 0.100 | 0.048 |
| 10000 | 10 | -0.9 | 0.106 | 0.068 | -0.010 | -0.003 | -0.006 | 0.107 | 0.051 | 0.093 | 0.057 | 0.000 | 0.000 | 0.001 | 0.102 | 0.048 |
| 10000 | 10 | -0.5 | 0.099 | 0.063 | -0.005 | 0.006 | -0.010 | 0.095 | 0.046 | 0.086 | 0.054 | 0.000 | 0.001 | 0.000 | 0.093 | 0.045 |
| 10000 | 10 | 0.5 | 0.105 | 0.070 | 0.005 | -0.006 | 0.010 | 0.102 | 0.050 | 0.092 | 0.060 | 0.000 | -0.001 | 0.000 | 0.100 | 0.049 |
| 10000 | 10 | 0.9 | 0.106 | 0.068 | 0.009 | 0.003 | 0.006 | 0.109 | 0.054 | 0.094 | 0.059 | 0.000 | -0.001 | -0.001 | 0.102 | 0.050 |
| 10000 | 30 | -0.9 | 0.105 | 0.059 | -0.031 | -0.011 | -0.019 | 0.129 | 0.074 | 0.098 | 0.054 | 0.001 | 0.001 | 0.002 | 0.101 | 0.055 |
| 10000 | 30 | -0.5 | 0.094 | 0.053 | -0.017 | 0.020 | -0.036 | 0.109 | 0.054 | 0.090 | 0.050 | 0.001 | 0.002 | 0.001 | 0.100 | 0.050 |
| 10000 | 30 | 0.5 | 0.098 | 0.053 | 0.018 | -0.019 | 0.036 | 0.100 | 0.054 | 0.093 | 0.051 | 0.000 | -0.001 | 0.000 | 0.094 | 0.049 |
| 10000 | 30 | 0.9 | 0.101 | 0.052 | 0.033 | 0.013 | 0.019 | 0.135 | 0.071 | 0.095 | 0.050 | 0.001 | 0.000 | 0.000 | 0.105 | 0.053 |

(a), (b):

Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e):

Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g):

Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i):

Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l):

Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n):

Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 2: $\tilde{R}_f^2 = .01$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-----|----|---------------------------|-------|-------|--------|--------|---------|-------|-------|-------|-------|--------|--------|----------|-------|-------|
| 100 | 5 | -0.9 | 0.079 | 0.063 | -0.786 | 4.853 | -26.963 | 0.165 | 0.101 | 0.114 | 0.104 | 0.211 | -0.454 | -0.407 | 0.117 | 0.070 |
| 100 | 5 | -0.5 | 0.073 | 0.056 | -0.437 | 11.208 | -2.254 | 0.071 | 0.032 | 0.110 | 0.087 | -0.182 | -1.761 | 2.824 | 0.047 | 0.020 |
| 100 | 5 | 0.5 | 0.074 | 0.056 | 0.424 | -1.250 | 0.516 | 0.072 | 0.035 | 0.113 | 0.088 | 1.795 | -0.434 | -0.089 | 0.051 | 0.023 |
| 100 | 5 | 0.9 | 0.079 | 0.062 | 0.789 | 0.371 | -0.095 | 0.175 | 0.104 | 0.116 | 0.103 | 0.868 | 0.555 | 0.944 | 0.124 | 0.066 |
| 100 | 10 | -0.9 | 0.103 | 0.080 | -0.839 | -0.549 | -0.367 | 0.166 | 0.092 | 0.128 | 0.118 | -1.027 | 0.070 | -0.802 | 0.098 | 0.051 |
| 100 | 10 | -0.5 | 0.098 | 0.076 | -0.464 | 0.893 | -1.366 | 0.076 | 0.036 | 0.120 | 0.097 | 1.366 | 1.900 | 1.106 | 0.051 | 0.021 |
| 100 | 10 | 0.5 | 0.103 | 0.078 | 0.465 | -0.626 | 1.041 | 0.076 | 0.042 | 0.116 | 0.092 | -0.420 | -0.941 | -1.322 | 0.051 | 0.026 |
| 100 | 10 | 0.9 | 0.095 | 0.073 | 0.841 | 0.557 | 0.353 | 0.155 | 0.086 | 0.132 | 0.119 | 1.275 | 0.634 | 0.325 | 0.098 | 0.051 |
| 100 | 30 | -0.9 | 0.111 | 0.086 | -0.879 | -0.647 | -0.245 | 0.101 | 0.038 | 0.123 | 0.111 | -1.062 | -0.362 | 4.060 | 0.051 | 0.017 |
| 100 | 30 | -0.5 | 0.128 | 0.100 | -0.491 | 1.238 | -1.831 | 0.062 | 0.024 | 0.129 | 0.101 | -1.494 | 0.300 | -1.298 | 0.029 | 0.011 |
| 100 | 30 | 0.5 | 0.131 | 0.102 | 0.490 | -1.369 | 2.012 | 0.065 | 0.023 | 0.126 | 0.101 | 2.390 | 0.312 | 0.575 | 0.034 | 0.011 |
| 100 | 30 | 0.9 | 0.120 | 0.090 | 0.881 | 0.648 | 0.246 | 0.102 | 0.036 | 0.133 | 0.119 | 0.422 | 0.770 | -0.198 | 0.049 | 0.015 |
| 250 | 5 | -0.9 | 0.087 | 0.068 | -0.654 | -0.248 | -0.508 | 0.291 | 0.198 | 0.117 | 0.105 | -1.096 | -5.062 | 0.067 | 0.194 | 0.126 |
| 250 | 5 | -0.5 | 0.064 | 0.049 | -0.365 | 0.939 | -1.781 | 0.087 | 0.042 | 0.099 | 0.076 | 6.415 | -2.154 | 3.037 | 0.062 | 0.027 |
| 250 | 5 | 0.5 | 0.070 | 0.052 | 0.358 | 0.533 | -1.259 | 0.084 | 0.039 | 0.096 | 0.077 | 3.870 | 0.568 | -0.153 | 0.058 | 0.027 |
| 250 | 5 | 0.9 | 0.097 | 0.071 | 0.644 | 0.246 | 0.777 | 0.282 | 0.198 | 0.126 | 0.111 | -0.017 | 0.103 | 1.463 | 0.194 | 0.132 |
| 250 | 10 | -0.9 | 0.105 | 0.083 | -0.761 | -0.458 | -0.370 | 0.294 | 0.197 | 0.140 | 0.125 | -2.293 | 2.689 | -1.646 | 0.168 | 0.106 |
| 250 | 10 | -0.5 | 0.101 | 0.080 | -0.420 | 1.172 | -1.694 | 0.082 | 0.039 | 0.113 | 0.087 | -0.216 | -0.173 | -2.339 | 0.055 | 0.025 |
| 250 | 10 | 0.5 | 0.095 | 0.074 | 0.420 | -1.510 | 1.873 | 0.088 | 0.042 | 0.104 | 0.081 | 0.338 | 0.154 | -0.238 | 0.055 | 0.027 |
| 250 | 10 | 0.9 | 0.103 | 0.083 | 0.765 | 0.461 | 0.369 | 0.302 | 0.209 | 0.139 | 0.123 | 0.919 | -0.556 | 1.143 | 0.182 | 0.114 |
| 250 | 30 | -0.9 | 0.111 | 0.088 | -0.851 | -0.607 | -0.256 | 0.239 | 0.131 | 0.139 | 0.122 | -0.268 | -0.123 | 0.360 | 0.121 | 0.064 |
| 250 | 30 | -0.5 | 0.128 | 0.096 | -0.467 | 1.090 | -1.626 | 0.080 | 0.036 | 0.118 | 0.091 | -0.349 | -0.621 | 2301.508 | 0.044 | 0.018 |
| 250 | 30 | 0.5 | 0.127 | 0.095 | 0.472 | -1.175 | 1.730 | 0.085 | 0.037 | 0.116 | 0.091 | 1.462 | 0.868 | 1.380 | 0.045 | 0.016 |
| 250 | 30 | 0.9 | 0.102 | 0.084 | 0.850 | 0.606 | 0.255 | 0.246 | 0.139 | 0.133 | 0.117 | 0.425 | -4.846 | -0.131 | 0.128 | 0.064 |

(a), (b): Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e): Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g): Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i): Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l): Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n): Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 2 (Cont.): $\tilde{R}_f^2 = .01$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-------|----|---------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|-------|-------|
| 1000 | 5 | -0.9 | 0.082 | 0.053 | -0.319 | -0.032 | -0.714 | 0.283 | 0.208 | 0.074 | 0.054 | 0.297 | -0.078 | -0.004 | 0.181 | 0.129 |
| 1000 | 5 | -0.5 | 0.065 | 0.041 | -0.178 | 0.692 | -1.210 | 0.107 | 0.057 | 0.072 | 0.049 | -0.111 | 0.892 | 0.138 | 0.083 | 0.043 |
| 1000 | 5 | 0.5 | 0.068 | 0.047 | 0.182 | -0.513 | 0.627 | 0.109 | 0.057 | 0.071 | 0.051 | -0.105 | -0.448 | -0.446 | 0.087 | 0.043 |
| 1000 | 5 | 0.9 | 0.078 | 0.048 | 0.321 | -0.002 | 0.588 | 0.284 | 0.207 | 0.072 | 0.051 | 1.232 | 1.518 | -0.451 | 0.176 | 0.125 |
| 1000 | 10 | -0.9 | 0.116 | 0.089 | -0.508 | -0.231 | -0.314 | 0.416 | 0.329 | 0.089 | 0.071 | -1.070 | 0.420 | 0.225 | 0.197 | 0.141 |
| 1000 | 10 | -0.5 | 0.079 | 0.049 | -0.281 | 0.171 | -0.281 | 0.124 | 0.065 | 0.071 | 0.050 | 0.040 | -0.695 | -0.380 | 0.085 | 0.039 |
| 1000 | 10 | 0.5 | 0.078 | 0.051 | 0.283 | -0.752 | 1.120 | 0.124 | 0.064 | 0.073 | 0.050 | 0.308 | -0.306 | -0.476 | 0.083 | 0.041 |
| 1000 | 10 | 0.9 | 0.119 | 0.086 | 0.513 | 0.229 | 0.317 | 0.428 | 0.341 | 0.088 | 0.072 | -3.469 | -0.562 | 0.427 | 0.202 | 0.147 |
| 1000 | 30 | -0.9 | 0.154 | 0.128 | -0.730 | -0.456 | -0.285 | 0.634 | 0.518 | 0.159 | 0.138 | 1.529 | 1.751 | 1.379 | 0.237 | 0.174 |
| 1000 | 30 | -0.5 | 0.120 | 0.089 | -0.407 | 0.827 | -1.263 | 0.117 | 0.065 | 0.082 | 0.057 | -0.039 | 0.239 | 0.452 | 0.064 | 0.032 |
| 1000 | 30 | 0.5 | 0.123 | 0.087 | 0.401 | -0.811 | 1.241 | 0.124 | 0.064 | 0.091 | 0.064 | 6.117 | 0.397 | 0.054 | 0.069 | 0.033 |
| 1000 | 30 | 0.9 | 0.144 | 0.115 | 0.731 | 0.457 | 0.286 | 0.630 | 0.525 | 0.152 | 0.132 | 0.086 | 0.618 | 2.252 | 0.243 | 0.178 |
| 10000 | 5 | -0.9 | 0.127 | 0.091 | -0.038 | -0.007 | -0.024 | 0.132 | 0.074 | 0.102 | 0.070 | 0.001 | 0.009 | 0.014 | 0.116 | 0.064 |
| 10000 | 5 | -0.5 | 0.131 | 0.096 | -0.021 | 0.038 | -0.044 | 0.108 | 0.058 | 0.106 | 0.074 | 0.001 | 0.016 | 0.009 | 0.103 | 0.053 |
| 10000 | 5 | 0.5 | 0.125 | 0.093 | 0.020 | -0.038 | 0.044 | 0.104 | 0.055 | 0.102 | 0.073 | -0.002 | -0.017 | -0.010 | 0.098 | 0.052 |
| 10000 | 5 | 0.9 | 0.121 | 0.088 | 0.039 | 0.007 | 0.024 | 0.125 | 0.067 | 0.100 | 0.064 | -0.001 | -0.008 | -0.013 | 0.109 | 0.058 |
| 10000 | 10 | -0.9 | 0.097 | 0.060 | -0.096 | -0.032 | -0.059 | 0.178 | 0.109 | 0.087 | 0.057 | 0.001 | 0.007 | 0.012 | 0.121 | 0.070 |
| 10000 | 10 | -0.5 | 0.103 | 0.063 | -0.053 | 0.071 | -0.111 | 0.118 | 0.062 | 0.096 | 0.061 | 0.001 | 0.016 | 0.009 | 0.106 | 0.051 |
| 10000 | 10 | 0.5 | 0.095 | 0.058 | 0.053 | -0.069 | 0.111 | 0.112 | 0.058 | 0.087 | 0.056 | -0.002 | -0.014 | -0.007 | 0.097 | 0.050 |
| 10000 | 10 | 0.9 | 0.106 | 0.057 | 0.096 | 0.030 | 0.059 | 0.182 | 0.114 | 0.090 | 0.055 | -0.002 | -0.009 | -0.014 | 0.125 | 0.068 |
| 10000 | 30 | -0.9 | 0.096 | 0.046 | -0.263 | -0.112 | -0.149 | 0.416 | 0.316 | 0.089 | 0.046 | 0.007 | 0.008 | 0.013 | 0.130 | 0.078 |
| 10000 | 30 | -0.5 | 0.098 | 0.043 | -0.144 | 0.184 | -0.322 | 0.151 | 0.085 | 0.090 | 0.045 | 0.007 | 0.018 | 0.011 | 0.099 | 0.049 |
| 10000 | 30 | 0.5 | 0.096 | 0.047 | 0.146 | -0.185 | 0.323 | 0.158 | 0.096 | 0.096 | 0.053 | -0.004 | -0.018 | -0.010 | 0.109 | 0.058 |
| 10000 | 30 | 0.9 | 0.090 | 0.045 | 0.260 | 0.110 | 0.150 | 0.398 | 0.297 | 0.085 | 0.039 | -0.014 | -0.012 | -0.014 | 0.118 | 0.069 |

(a), (b):

Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e):

Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g):

Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i):

Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l):

Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n):

Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 3: $\tilde{R}_f^2 = .001$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-----|----|---------------------------|-------|-------|--------|--------|---------|-------|-------|-------|-------|--------|---------|--------|-------|-------|
| 100 | 5 | -0.9 | 0.075 | 0.061 | -0.889 | -0.570 | -0.675 | 0.073 | 0.035 | 0.112 | 0.100 | -3.829 | -1.026 | 1.025 | 0.055 | 0.023 |
| 100 | 5 | -0.5 | 0.075 | 0.062 | -0.483 | 0.448 | -0.353 | 0.067 | 0.033 | 0.111 | 0.088 | 0.525 | 0.278 | -0.113 | 0.047 | 0.023 |
| 100 | 5 | 0.5 | 0.071 | 0.053 | 0.496 | 1.125 | -1.867 | 0.066 | 0.026 | 0.118 | 0.092 | 1.225 | 4.624 | 1.264 | 0.045 | 0.016 |
| 100 | 5 | 0.9 | 0.074 | 0.057 | 0.889 | 0.445 | 1.200 | 0.075 | 0.035 | 0.108 | 0.099 | -1.444 | 0.229 | 0.799 | 0.053 | 0.024 |
| 100 | 10 | -0.9 | 0.097 | 0.073 | -0.897 | -0.641 | -0.307 | 0.072 | 0.035 | 0.115 | 0.103 | 1.787 | -0.397 | -1.203 | 0.047 | 0.022 |
| 100 | 10 | -0.5 | 0.099 | 0.076 | -0.494 | 8.848 | -11.073 | 0.074 | 0.035 | 0.125 | 0.098 | -0.592 | -0.178 | -0.364 | 0.044 | 0.020 |
| 100 | 10 | 0.5 | 0.104 | 0.081 | 0.493 | -2.152 | 3.012 | 0.070 | 0.030 | 0.120 | 0.097 | -0.183 | 0.002 | 5.183 | 0.046 | 0.020 |
| 100 | 10 | 0.9 | 0.104 | 0.083 | 0.894 | 0.643 | 0.297 | 0.077 | 0.034 | 0.116 | 0.105 | 1.015 | 0.354 | 0.356 | 0.045 | 0.019 |
| 100 | 30 | -0.9 | 0.123 | 0.096 | -0.899 | -0.674 | -0.238 | 0.066 | 0.024 | 0.128 | 0.111 | 0.023 | -0.162 | -3.941 | 0.030 | 0.010 |
| 100 | 30 | -0.5 | 0.143 | 0.113 | -0.498 | 1.344 | -1.943 | 0.059 | 0.022 | 0.132 | 0.102 | -1.145 | 1.174 | -1.674 | 0.031 | 0.011 |
| 100 | 30 | 0.5 | 0.134 | 0.102 | 0.496 | -1.374 | 1.967 | 0.060 | 0.021 | 0.133 | 0.107 | 1.103 | 0.084 | 1.864 | 0.031 | 0.009 |
| 100 | 30 | 0.9 | 0.130 | 0.100 | 0.899 | 0.677 | 0.233 | 0.064 | 0.023 | 0.145 | 0.129 | 3.627 | 0.432 | 0.810 | 0.033 | 0.009 |
| 250 | 5 | -0.9 | 0.069 | 0.057 | -0.879 | -0.554 | -0.472 | 0.101 | 0.054 | 0.108 | 0.100 | -0.942 | -0.731 | -0.955 | 0.070 | 0.037 |
| 250 | 5 | -0.5 | 0.077 | 0.061 | -0.488 | 0.124 | 0.496 | 0.071 | 0.035 | 0.115 | 0.088 | -0.223 | -0.081 | -2.908 | 0.053 | 0.025 |
| 250 | 5 | 0.5 | 0.072 | 0.056 | 0.482 | -2.101 | 2.004 | 0.067 | 0.027 | 0.112 | 0.084 | 0.598 | -1.594 | 0.462 | 0.052 | 0.021 |
| 250 | 5 | 0.9 | 0.075 | 0.059 | 0.866 | -0.569 | 3.607 | 0.092 | 0.047 | 0.108 | 0.098 | 0.609 | 0.506 | 0.703 | 0.066 | 0.033 |
| 250 | 10 | -0.9 | 0.096 | 0.075 | -0.885 | -0.630 | -0.305 | 0.095 | 0.046 | 0.114 | 0.103 | -0.687 | -0.532 | -0.859 | 0.059 | 0.026 |
| 250 | 10 | -0.5 | 0.102 | 0.081 | -0.490 | 0.857 | -1.391 | 0.075 | 0.034 | 0.122 | 0.096 | -0.527 | 0.560 | -0.522 | 0.045 | 0.018 |
| 250 | 10 | 0.5 | 0.095 | 0.074 | 0.494 | 0.995 | -1.052 | 0.081 | 0.043 | 0.128 | 0.102 | 0.602 | -1.542 | 1.038 | 0.054 | 0.028 |
| 250 | 10 | 0.9 | 0.091 | 0.069 | 0.886 | 0.627 | 0.323 | 0.092 | 0.047 | 0.112 | 0.100 | 0.899 | 11.037 | 1.408 | 0.058 | 0.028 |
| 250 | 30 | -0.9 | 0.137 | 0.105 | -0.896 | -0.671 | -0.236 | 0.083 | 0.034 | 0.130 | 0.111 | -0.958 | -2.857 | -1.518 | 0.042 | 0.016 |
| 250 | 30 | -0.5 | 0.129 | 0.102 | -0.496 | 1.287 | -1.881 | 0.071 | 0.033 | 0.122 | 0.095 | -0.072 | -19.293 | -1.457 | 0.040 | 0.014 |
| 250 | 30 | 0.5 | 0.132 | 0.102 | 0.498 | -1.532 | 2.210 | 0.076 | 0.035 | 0.117 | 0.093 | 0.918 | -6.431 | 2.620 | 0.041 | 0.016 |
| 250 | 30 | 0.9 | 0.118 | 0.092 | 0.893 | 0.670 | 0.235 | 0.083 | 0.037 | 0.128 | 0.109 | 1.835 | 0.845 | 1.804 | 0.045 | 0.020 |

(a), (b): Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e): Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g): Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i): Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l): Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n): Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 3 (Cont.): $\tilde{R}_f^2 = .001$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-------|----|---------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|---------|--------|--------|-------|-------|
| 1000 | 5 | -0.9 | 0.077 | 0.059 | -0.789 | 0.840 | -4.199 | 0.179 | 0.108 | 0.110 | 0.100 | -0.889 | -0.824 | -2.031 | 0.121 | 0.069 |
| 1000 | 5 | -0.5 | 0.073 | 0.054 | -0.446 | -0.048 | 5.907 | 0.073 | 0.034 | 0.102 | 0.080 | -0.867 | -2.262 | 6.907 | 0.052 | 0.023 |
| 1000 | 5 | 0.5 | 0.072 | 0.056 | 0.428 | 0.331 | -0.686 | 0.078 | 0.036 | 0.116 | 0.088 | -16.449 | -0.768 | -0.552 | 0.057 | 0.026 |
| 1000 | 5 | 0.9 | 0.083 | 0.065 | 0.785 | 0.713 | -0.319 | 0.182 | 0.114 | 0.119 | 0.109 | 0.737 | -0.648 | -1.221 | 0.129 | 0.078 |
| 1000 | 10 | -0.9 | 0.092 | 0.071 | -0.844 | -0.561 | -0.350 | 0.178 | 0.103 | 0.120 | 0.107 | -0.210 | 0.052 | -8.943 | 0.112 | 0.057 |
| 1000 | 10 | -0.5 | 0.094 | 0.071 | -0.465 | 2.543 | -3.949 | 0.081 | 0.040 | 0.114 | 0.086 | -1.156 | 1.470 | 0.567 | 0.051 | 0.025 |
| 1000 | 10 | 0.5 | 0.103 | 0.080 | 0.463 | -0.491 | 0.777 | 0.079 | 0.037 | 0.117 | 0.091 | 1.239 | 1.620 | 1.792 | 0.048 | 0.022 |
| 1000 | 10 | 0.9 | 0.104 | 0.080 | 0.839 | 0.559 | 0.351 | 0.174 | 0.103 | 0.128 | 0.114 | 0.706 | 2.577 | 0.774 | 0.118 | 0.065 |
| 1000 | 30 | -0.9 | 0.118 | 0.094 | -0.880 | -0.649 | -0.240 | 0.150 | 0.078 | 0.127 | 0.109 | 0.358 | -0.933 | -1.012 | 0.079 | 0.042 |
| 1000 | 30 | -0.5 | 0.121 | 0.092 | -0.482 | 0.851 | -1.361 | 0.086 | 0.043 | 0.122 | 0.095 | 2.553 | -0.739 | -3.123 | 0.047 | 0.021 |
| 1000 | 30 | 0.5 | 0.130 | 0.097 | 0.490 | -1.390 | 2.023 | 0.085 | 0.040 | 0.116 | 0.091 | 0.551 | 19.829 | -1.686 | 0.048 | 0.020 |
| 1000 | 30 | 0.9 | 0.113 | 0.087 | 0.878 | 0.646 | 0.243 | 0.144 | 0.080 | 0.131 | 0.116 | 0.071 | 0.914 | 1.270 | 0.079 | 0.040 |
| 10000 | 5 | -0.9 | 0.083 | 0.053 | -0.313 | -0.052 | -0.424 | 0.285 | 0.218 | 0.076 | 0.055 | -0.163 | 0.187 | 0.166 | 0.181 | 0.131 |
| 10000 | 5 | -0.5 | 0.075 | 0.050 | -0.177 | 0.419 | -0.539 | 0.120 | 0.061 | 0.075 | 0.053 | 0.088 | 0.551 | 0.952 | 0.094 | 0.047 |
| 10000 | 5 | 0.5 | 0.071 | 0.045 | 0.179 | -0.355 | 0.465 | 0.112 | 0.062 | 0.073 | 0.051 | -0.128 | 0.305 | -0.142 | 0.088 | 0.048 |
| 10000 | 5 | 0.9 | 0.078 | 0.050 | 0.313 | 0.083 | 0.009 | 0.268 | 0.199 | 0.068 | 0.053 | -0.081 | -0.187 | 0.234 | 0.167 | 0.121 |
| 10000 | 10 | -0.9 | 0.121 | 0.086 | -0.513 | -0.226 | -0.329 | 0.436 | 0.347 | 0.093 | 0.076 | -1.780 | -1.366 | 0.314 | 0.201 | 0.143 |
| 10000 | 10 | -0.5 | 0.087 | 0.057 | -0.284 | 0.245 | -0.352 | 0.114 | 0.061 | 0.072 | 0.050 | 0.119 | 0.018 | -0.050 | 0.074 | 0.036 |
| 10000 | 10 | 0.5 | 0.085 | 0.057 | 0.287 | -0.678 | 1.033 | 0.124 | 0.068 | 0.076 | 0.056 | -0.173 | -1.388 | -0.806 | 0.084 | 0.045 |
| 10000 | 10 | 0.9 | 0.120 | 0.091 | 0.518 | 0.222 | 0.336 | 0.432 | 0.352 | 0.088 | 0.071 | 1.861 | -0.249 | -0.479 | 0.202 | 0.149 |
| 10000 | 30 | -0.9 | 0.149 | 0.121 | -0.728 | -0.454 | -0.287 | 0.637 | 0.534 | 0.153 | 0.129 | 3.319 | -0.462 | 0.502 | 0.241 | 0.182 |
| 10000 | 30 | -0.5 | 0.131 | 0.096 | -0.402 | 0.797 | -1.220 | 0.128 | 0.070 | 0.094 | 0.070 | 0.054 | 0.604 | -2.006 | 0.073 | 0.037 |
| 10000 | 30 | 0.5 | 0.117 | 0.084 | 0.407 | -0.841 | 1.281 | 0.125 | 0.068 | 0.083 | 0.060 | 1.048 | 0.805 | -0.097 | 0.071 | 0.035 |
| 10000 | 30 | 0.9 | 0.157 | 0.131 | 0.730 | 0.452 | 0.291 | 0.655 | 0.550 | 0.152 | 0.132 | 0.170 | 0.878 | -3.419 | 0.247 | 0.185 |

(a), (b):

Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e):

Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g):

Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i):

Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l):

Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n):

Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 4: $\tilde{R}_f^2 = .3$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-----|----|---------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|-------|-------|
| 100 | 5 | -0.9 | 0.108 | 0.066 | -0.099 | -0.018 | -0.067 | 0.169 | 0.101 | 0.085 | 0.055 | 0.008 | 0.026 | 0.041 | 0.129 | 0.071 |
| 100 | 5 | -0.5 | 0.110 | 0.082 | -0.058 | 0.100 | -0.127 | 0.113 | 0.057 | 0.095 | 0.065 | 0.000 | 0.021 | 0.017 | 0.102 | 0.051 |
| 100 | 5 | 0.5 | 0.116 | 0.082 | 0.058 | -0.100 | 0.125 | 0.113 | 0.056 | 0.096 | 0.064 | -0.004 | -0.047 | -0.035 | 0.102 | 0.049 |
| 100 | 5 | 0.9 | 0.103 | 0.069 | 0.095 | 0.013 | 0.068 | 0.160 | 0.102 | 0.082 | 0.058 | 0.011 | -0.032 | -0.048 | 0.125 | 0.074 |
| 100 | 10 | -0.9 | 0.093 | 0.045 | -0.213 | -0.076 | -0.129 | 0.246 | 0.158 | 0.072 | 0.040 | -0.015 | 0.026 | 0.040 | 0.136 | 0.079 |
| 100 | 10 | -0.5 | 0.089 | 0.054 | -0.118 | 0.171 | -0.267 | 0.118 | 0.064 | 0.081 | 0.058 | -0.014 | 0.055 | 0.026 | 0.094 | 0.051 |
| 100 | 10 | 0.5 | 0.083 | 0.046 | 0.119 | -0.176 | 0.273 | 0.112 | 0.058 | 0.073 | 0.048 | -0.041 | -0.050 | -0.152 | 0.090 | 0.044 |
| 100 | 10 | 0.9 | 0.085 | 0.044 | 0.210 | 0.073 | 0.132 | 0.236 | 0.149 | 0.062 | 0.037 | -0.040 | -0.020 | -0.043 | 0.118 | 0.067 |
| 100 | 30 | -0.9 | 0.116 | 0.082 | -0.450 | -0.222 | -0.228 | 0.461 | 0.326 | 0.069 | 0.032 | 0.644 | 0.068 | 0.041 | 0.124 | 0.068 |
| 100 | 30 | -0.5 | 0.099 | 0.052 | -0.250 | 0.371 | -0.612 | 0.109 | 0.046 | 0.064 | 0.034 | 0.070 | 0.078 | 0.076 | 0.070 | 0.026 |
| 100 | 30 | 0.5 | 0.097 | 0.055 | 0.250 | -0.375 | 0.615 | 0.117 | 0.048 | 0.069 | 0.039 | 0.063 | -0.056 | -0.851 | 0.073 | 0.029 |
| 100 | 30 | 0.9 | 0.105 | 0.074 | 0.451 | 0.220 | 0.230 | 0.473 | 0.332 | 0.063 | 0.029 | -0.033 | -0.041 | -0.054 | 0.126 | 0.070 |
| 250 | 5 | -0.9 | 0.118 | 0.084 | -0.037 | -0.007 | -0.024 | 0.118 | 0.068 | 0.092 | 0.065 | 0.002 | 0.009 | 0.013 | 0.105 | 0.056 |
| 250 | 5 | -0.5 | 0.126 | 0.092 | -0.023 | 0.035 | -0.044 | 0.104 | 0.051 | 0.102 | 0.069 | -0.001 | 0.013 | 0.006 | 0.100 | 0.047 |
| 250 | 5 | 0.5 | 0.126 | 0.089 | 0.022 | -0.035 | 0.044 | 0.101 | 0.054 | 0.098 | 0.070 | 0.000 | -0.014 | -0.007 | 0.096 | 0.051 |
| 250 | 5 | 0.9 | 0.124 | 0.088 | 0.039 | 0.008 | 0.024 | 0.123 | 0.068 | 0.099 | 0.066 | 0.001 | -0.007 | -0.012 | 0.111 | 0.056 |
| 250 | 10 | -0.9 | 0.096 | 0.054 | -0.092 | -0.029 | -0.057 | 0.166 | 0.096 | 0.082 | 0.051 | 0.004 | 0.009 | 0.014 | 0.114 | 0.058 |
| 250 | 10 | -0.5 | 0.104 | 0.065 | -0.050 | 0.072 | -0.109 | 0.117 | 0.061 | 0.091 | 0.061 | 0.004 | 0.019 | 0.011 | 0.103 | 0.052 |
| 250 | 10 | 0.5 | 0.097 | 0.061 | 0.051 | -0.068 | 0.108 | 0.110 | 0.058 | 0.087 | 0.059 | -0.002 | -0.015 | -0.008 | 0.095 | 0.050 |
| 250 | 10 | 0.9 | 0.102 | 0.053 | 0.094 | 0.032 | 0.057 | 0.166 | 0.100 | 0.086 | 0.050 | -0.001 | -0.006 | -0.011 | 0.114 | 0.060 |
| 250 | 30 | -0.9 | 0.098 | 0.048 | -0.253 | -0.107 | -0.144 | 0.363 | 0.255 | 0.093 | 0.042 | 0.009 | 0.009 | 0.013 | 0.117 | 0.067 |
| 250 | 30 | -0.5 | 0.097 | 0.046 | -0.141 | 0.178 | -0.311 | 0.142 | 0.069 | 0.086 | 0.048 | 0.006 | 0.018 | 0.010 | 0.092 | 0.040 |
| 250 | 30 | 0.5 | 0.099 | 0.049 | 0.138 | -0.178 | 0.308 | 0.134 | 0.070 | 0.093 | 0.048 | -0.008 | -0.019 | -0.011 | 0.094 | 0.043 |
| 250 | 30 | 0.9 | 0.096 | 0.045 | 0.254 | 0.108 | 0.143 | 0.357 | 0.251 | 0.088 | 0.037 | -0.007 | -0.008 | -0.012 | 0.117 | 0.066 |

(a), (b): Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e): Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g): Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i): Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l): Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n): Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.

Table 4 (Cont.): $\tilde{R}_f^2 = .3$

| n | K | Cov(ε, v_2) | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) |
|-------|----|---------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|-------|-------|
| 1000 | 5 | -0.9 | 0.137 | 0.096 | -0.009 | -0.002 | -0.006 | 0.109 | 0.053 | 0.105 | 0.071 | 0.000 | 0.002 | 0.003 | 0.103 | 0.051 |
| 1000 | 5 | -0.5 | 0.138 | 0.099 | -0.005 | 0.009 | -0.010 | 0.103 | 0.053 | 0.107 | 0.075 | 0.001 | 0.004 | 0.002 | 0.101 | 0.052 |
| 1000 | 5 | 0.5 | 0.137 | 0.102 | 0.004 | -0.009 | 0.010 | 0.105 | 0.053 | 0.109 | 0.073 | -0.001 | -0.004 | -0.003 | 0.104 | 0.052 |
| 1000 | 5 | 0.9 | 0.130 | 0.099 | 0.010 | 0.003 | 0.006 | 0.107 | 0.057 | 0.104 | 0.076 | 0.001 | -0.001 | -0.002 | 0.103 | 0.055 |
| 1000 | 10 | -0.9 | 0.101 | 0.062 | -0.024 | -0.008 | -0.015 | 0.116 | 0.057 | 0.090 | 0.054 | 0.000 | 0.001 | 0.003 | 0.101 | 0.050 |
| 1000 | 10 | -0.5 | 0.112 | 0.075 | -0.014 | 0.016 | -0.027 | 0.112 | 0.056 | 0.101 | 0.067 | 0.000 | 0.003 | 0.001 | 0.108 | 0.053 |
| 1000 | 10 | 0.5 | 0.107 | 0.075 | 0.014 | -0.017 | 0.027 | 0.108 | 0.055 | 0.096 | 0.064 | 0.001 | -0.003 | -0.001 | 0.103 | 0.053 |
| 1000 | 10 | 0.9 | 0.097 | 0.060 | 0.023 | 0.007 | 0.015 | 0.108 | 0.056 | 0.084 | 0.053 | -0.001 | -0.003 | -0.004 | 0.095 | 0.049 |
| 1000 | 30 | -0.9 | 0.100 | 0.050 | -0.078 | -0.029 | -0.047 | 0.176 | 0.106 | 0.094 | 0.048 | 0.001 | 0.002 | 0.003 | 0.107 | 0.053 |
| 1000 | 30 | -0.5 | 0.097 | 0.053 | -0.042 | 0.050 | -0.090 | 0.121 | 0.062 | 0.092 | 0.052 | 0.002 | 0.005 | 0.003 | 0.103 | 0.050 |
| 1000 | 30 | 0.5 | 0.103 | 0.055 | 0.043 | -0.049 | 0.089 | 0.122 | 0.068 | 0.097 | 0.053 | 0.000 | -0.004 | -0.002 | 0.101 | 0.051 |
| 1000 | 30 | 0.9 | 0.105 | 0.058 | 0.079 | 0.030 | 0.047 | 0.188 | 0.106 | 0.098 | 0.055 | 0.000 | -0.001 | -0.003 | 0.109 | 0.058 |
| 10000 | 5 | -0.9 | 0.125 | 0.091 | -0.001 | 0.000 | -0.001 | 0.092 | 0.041 | 0.097 | 0.064 | 0.000 | 0.000 | 0.000 | 0.092 | 0.041 |
| 10000 | 5 | -0.5 | 0.130 | 0.096 | 0.000 | 0.001 | -0.001 | 0.097 | 0.049 | 0.101 | 0.068 | 0.001 | 0.001 | 0.001 | 0.097 | 0.049 |
| 10000 | 5 | 0.5 | 0.125 | 0.092 | 0.000 | -0.001 | 0.001 | 0.093 | 0.052 | 0.097 | 0.072 | 0.000 | 0.000 | 0.000 | 0.093 | 0.052 |
| 10000 | 5 | 0.9 | 0.138 | 0.100 | 0.001 | 0.000 | 0.001 | 0.103 | 0.052 | 0.107 | 0.074 | 0.000 | 0.000 | 0.000 | 0.102 | 0.052 |
| 10000 | 10 | -0.9 | 0.113 | 0.071 | -0.003 | -0.001 | -0.001 | 0.109 | 0.050 | 0.099 | 0.059 | 0.000 | 0.000 | 0.000 | 0.108 | 0.049 |
| 10000 | 10 | -0.5 | 0.103 | 0.069 | -0.001 | 0.002 | -0.003 | 0.098 | 0.050 | 0.090 | 0.060 | 0.000 | 0.001 | 0.000 | 0.098 | 0.050 |
| 10000 | 10 | 0.5 | 0.106 | 0.072 | 0.002 | -0.001 | 0.003 | 0.103 | 0.052 | 0.092 | 0.062 | 0.001 | 0.000 | 0.000 | 0.102 | 0.052 |
| 10000 | 10 | 0.9 | 0.108 | 0.070 | 0.002 | 0.001 | 0.001 | 0.103 | 0.050 | 0.093 | 0.060 | 0.000 | 0.000 | 0.000 | 0.102 | 0.049 |
| 10000 | 30 | -0.9 | 0.097 | 0.052 | -0.009 | -0.003 | -0.005 | 0.105 | 0.054 | 0.091 | 0.048 | 0.000 | 0.000 | 0.000 | 0.097 | 0.049 |
| 10000 | 30 | -0.5 | 0.095 | 0.054 | -0.005 | 0.005 | -0.009 | 0.093 | 0.048 | 0.090 | 0.051 | 0.000 | 0.000 | 0.000 | 0.091 | 0.047 |
| 10000 | 30 | 0.5 | 0.099 | 0.058 | 0.005 | -0.005 | 0.009 | 0.101 | 0.055 | 0.094 | 0.053 | 0.000 | 0.000 | 0.000 | 0.098 | 0.054 |
| 10000 | 30 | 0.9 | 0.102 | 0.054 | 0.009 | 0.003 | 0.005 | 0.110 | 0.053 | 0.097 | 0.050 | 0.000 | 0.000 | 0.000 | 0.102 | 0.049 |

(a), (b): Actual sizes of the new test based on 2SLS with nominal sizes = 10%, and 5%

(c), (d), (e): Mean biases of forward and reverse 2SLS, and mean of $\hat{\beta}$

(f), (g): Actual sizes of the tests based on nR^2 of the residual of forward 2SLS with nominal sizes = 10%, and 5%

(h), (i): Actual size of the new test based on Nagar with nominal size = 10%, and 5%

(j), (k), (l): Mean biases of forward Nagar, reverse Nagar, and LIML

(m), (n): Actual sizes of the tests based on nR^2 of the residual of forward Nagar with nominal sizes = 10%, and 5%

The reported numbers are based on 5000 Monte Carlo replications.