Scenrario_test_1223

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_2_1.5_n_200_lambda_location_l1_30_error_independent_FALSE_x_missing_location_1.Rdata table_original

| | $^{\mathrm{rho}}$ | r_sd | $\rm L_inf$ | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_{-}^{2} | L_2_sd | tn0e0 | t0en0 | $\rm tn0e0_sd$ | $t0en0_sd$ |
|--------------|-------------------|--------|--------------|--------------|----------|---------------------|-------------|---------------------|-------|-------|-----------------|-------------|
| FLASSO | 0 | 0 | 0.133 | 0.043 | 0.333 | 0.152 | 0.178 | 0.059 | 0.00 | 1.86 | 0.000 | 1.484 |
| FSCAD | 0 | 0 | 0.122 | 0.061 | 0.260 | 0.155 | 0.156 | 0.080 | 0.01 | 0.76 | 0.100 | 1.224 |
| $_{ m FMCP}$ | 0 | 0 | 0.116 | 0.044 | 0.240 | 0.138 | 0.148 | 0.063 | 0.00 | 0.41 | 0.000 | 1.006 |
| CLASSO | 0 | 0 | 0.212 | 0.089 | 0.519 | 0.214 | 0.280 | 0.103 | 0.00 | 2.06 | 0.000 | 1.510 |
| CSCAD | 0 | 0 | 0.187 | 0.101 | 0.402 | 0.242 | 0.238 | 0.125 | 0.02 | 0.92 | 0.141 | 1.161 |
| CMCP | 0 | 0 | 0.188 | 0.108 | 0.388 | 0.241 | 0.236 | 0.129 | 0.05 | 0.51 | 0.219 | 0.904 |
| PLASSO | 0 | 0 | 0.434 | 0.216 | 1.051 | 0.354 | 0.561 | 0.236 | 0.00 | 3.42 | 0.000 | 1.281 |
| PSCAD1 | 0 | 0 | 0.347 | 0.194 | 0.743 | 0.437 | 0.441 | 0.239 | 0.02 | 0.85 | 0.141 | 1.274 |
| PSCAD2 | 0 | 0 | 0.350 | 0.199 | 0.764 | 0.476 | 0.450 | 0.256 | 0.01 | 0.81 | 0.100 | 1.134 |
| PSCAD3 | 0 | 0 | 0.356 | 0.204 | 0.778 | 0.485 | 0.456 | 0.261 | 0.01 | 0.81 | 0.100 | 1.116 |
| PMCP1 | 0 | 0 | 0.345 | 0.190 | 0.736 | 0.427 | 0.438 | 0.234 | 0.02 | 0.85 | 0.141 | 1.250 |
| PMCP2 | 0 | 0 | 0.347 | 0.182 | 0.768 | 0.440 | 0.447 | 0.229 | 0.01 | 0.85 | 0.100 | 1.123 |
| PMCP3 | 0 | 0 | 0.359 | 0.197 | 0.795 | 0.475 | 0.463 | 0.255 | 0.02 | 0.84 | 0.141 | 1.061 |

intercept: 0

sample size: 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_2_1.5_n_200_lambda_location_11_30_error_independent_FALSE_x_missing_location_3.Rdata table_original

| | $^{\mathrm{rho}}$ | r_sd | L_inf | L_sd | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|---------------|-------------------|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.136 | 0.059 | 0.321 | 0.152 | 0.178 | 0.075 | 0.00 | 1.68 | 0.000 | 1.222 |
| FSCAD | 0 | 0 | 0.127 | 0.065 | 0.265 | 0.166 | 0.160 | 0.086 | 0.00 | 0.71 | 0.000 | 1.085 |
| $_{ m FMCP}$ | 0 | 0 | 0.134 | 0.065 | 0.277 | 0.173 | 0.167 | 0.084 | 0.00 | 0.61 | 0.000 | 1.154 |
| CLASSO | 0 | 0 | 0.237 | 0.082 | 0.592 | 0.238 | 0.317 | 0.103 | 0.00 | 2.03 | 0.000 | 1.494 |
| CSCAD | 0 | 0 | 0.247 | 0.125 | 0.531 | 0.284 | 0.310 | 0.148 | 0.10 | 1.35 | 0.302 | 1.351 |
| $_{\rm CMCP}$ | 0 | 0 | 0.255 | 0.131 | 0.557 | 0.308 | 0.323 | 0.151 | 0.12 | 1.13 | 0.327 | 1.574 |
| PLASSO | 0 | 0 | 0.415 | 0.177 | 1.110 | 0.394 | 0.567 | 0.221 | 0.01 | 3.55 | 0.100 | 1.192 |
| PSCAD1 | 0 | 0 | 0.405 | 0.197 | 0.950 | 0.582 | 0.534 | 0.271 | 0.16 | 1.06 | 0.368 | 1.324 |
| PSCAD2 | 0 | 0 | 0.415 | 0.202 | 0.989 | 0.587 | 0.553 | 0.277 | 0.20 | 1.02 | 0.402 | 1.247 |
| PSCAD3 | 0 | 0 | 0.421 | 0.206 | 1.004 | 0.597 | 0.562 | 0.281 | 0.21 | 0.98 | 0.409 | 1.189 |
| PMCP1 | 0 | 0 | 0.407 | 0.196 | 0.959 | 0.572 | 0.539 | 0.268 | 0.16 | 1.03 | 0.368 | 1.314 |
| PMCP2 | 0 | 0 | 0.415 | 0.203 | 0.991 | 0.587 | 0.553 | 0.277 | 0.19 | 0.98 | 0.394 | 1.197 |
| PMCP3 | С | 0 | 0.421 | 0.213 | 1.002 | 0.608 | 0.562 | 0.290 | 0.19 | 0.98 | 0.394 | 1.180 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_2_1.5_n_200_lambda_location_11_30_error_independent_FALSE_x_missing_location_8.Rdata

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_1 sd | $L_{-}2$ | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|--------------|----------|----------|----------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.131 | 0.051 | 0.331 | 0.167 | 0.176 | 0.068 | 0.00 | 1.71 | 0.000 | 1.493 |
| FSCAD | 0 | 0 | 0.116 | 0.055 | 0.240 | 0.160 | 0.145 | 0.074 | 0.00 | 0.66 | 0.000 | 1.103 |
| $_{ m FMCP}$ | 0 | 0 | 0.119 | 0.054 | 0.262 | 0.189 | 0.154 | 0.080 | 0.00 | 0.60 | 0.000 | 1.279 |
| CLASSO | 0 | 0 | 0.262 | 0.086 | 0.622 | 0.215 | 0.340 | 0.102 | 0.00 | 2.08 | 0.000 | 1.361 |
| CSCAD | 0 | 0 | 0.221 | 0.110 | 0.447 | 0.223 | 0.273 | 0.131 | 0.03 | 1.00 | 0.171 | 0.943 |
| $_{ m CMCP}$ | 0 | 0 | 0.228 | 0.110 | 0.481 | 0.281 | 0.286 | 0.135 | 0.05 | 0.82 | 0.219 | 1.149 |
| PLASSO | 0 | 0 | 0.472 | 0.200 | 1.170 | 0.364 | 0.624 | 0.235 | 0.00 | 3.26 | 0.000 | 1.300 |
| PSCAD1 | 0 | 0 | 0.422 | 0.239 | 0.931 | 0.549 | 0.552 | 0.315 | 90.0 | 0.86 | 0.239 | 1.247 |
| PSCAD2 | 0 | 0 | 0.410 | 0.233 | 0.905 | 0.523 | 0.536 | 0.300 | 0.04 | 0.84 | 0.197 | 1.108 |
| PSCAD3 | 0 | 0 | 0.414 | 0.242 | 0.923 | 0.528 | 0.544 | 0.305 | 0.04 | 0.84 | 0.197 | 1.042 |
| PMCP1 | 0 | 0 | 0.410 | 0.234 | 0.908 | 0.526 | 0.539 | 0.305 | 90.0 | 0.85 | 0.239 | 1.218 |
| PMCP2 | 0 | 0 | 0.408 | 0.232 | 0.901 | 0.520 | 0.532 | 0.298 | 0.04 | 0.80 | 0.197 | 1.064 |
| PMCP3 | 0 | 0 | 0.424 | 0.240 | 0.963 | 0.534 | 0.563 | 0.310 | 0.05 | 0.84 | 0.219 | 1.080 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $file_name: \ ./data/beta_2_1.5_n_200_lambda_location_11_30_error_independent_TRUE_x_missing_location_1.Rdata_ramerantered and the substraction are also beta_rames and the substraction are also beta_r$

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.118 | 0.042 | 0.309 | 0.125 | 0.162 | 0.054 | 0.00 | 2.24 | 0.000 | 1.450 |
| FSCAD | 0 | 0 | 0.097 | 0.046 | 0.206 | 0.130 | 0.122 | 0.060 | 0.00 | 0.78 | 0.000 | 1.133 |
| $_{ m FMCP}$ | 0 | 0 | 0.103 | 0.052 | 0.203 | 0.126 | 0.126 | 0.063 | 0.00 | 0.52 | 0.000 | 1.123 |
| CLASSO | 0 | 0 | 0.216 | 0.096 | 0.529 | 0.179 | 0.286 | 0.101 | 0.00 | 2.41 | 0.000 | 1.571 |
| CSCAD | 0 | 0 | 0.162 | 0.093 | 0.319 | 0.161 | 0.197 | 0.099 | 0.01 | 0.87 | 0.100 | 1.143 |
| CMCP | 0 | 0 | 0.163 | 0.091 | 0.325 | 0.179 | 0.200 | 0.102 | 0.01 | 0.70 | 0.100 | 1.185 |
| PLASSO | 0 | 0 | 0.385 | 0.204 | 0.933 | 0.394 | 0.502 | 0.242 | 0.00 | 3.45 | 0.000 | 1.149 |
| PSCAD1 | 0 | 0 | 0.305 | 0.156 | 0.626 | 0.333 | 0.381 | 0.188 | 0.01 | 0.59 | 0.100 | 1.065 |
| PSCAD2 | 0 | 0 | 0.314 | 0.170 | 0.642 | 0.358 | 0.392 | 0.204 | 0.02 | 0.54 | 0.141 | 0.958 |
| PSCAD3 | 0 | 0 | 0.319 | 0.164 | 0.660 | 0.341 | 0.402 | 0.197 | 0.01 | 0.51 | 0.100 | 0.904 |
| PMCP1 | 0 | 0 | 0.304 | 0.159 | 0.633 | 0.348 | 0.382 | 0.193 | 0.01 | 0.61 | 0.100 | 1.063 |
| PMCP2 | 0 | 0 | 0.309 | 0.161 | 0.631 | 0.336 | 0.385 | 0.193 | 0.01 | 0.49 | 0.100 | 0.847 |
| PMCP3 | 0 | 0 | 0.321 | 0.171 | 0.663 | 0.364 | 0.404 | 0.209 | 0.02 | 0.51 | 0.141 | 0.847 |

intercept: 0

sample size: 200

simulation time: 100

simulation time: 1 loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_11_30_error_independent_TRUE_x_missing_location_3.Rdata_3.Rdata_location_3.Rdata_3.R$ table_original

| | rho | r_sd | L_imf | L_sd | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.131 | 0.042 | 0.354 | 0.123 | 0.181 | 0.051 | 0.00 | 2.56 | 0.000 | 1.520 |
| FSCAD | 0 | 0 | 0.104 | 0.046 | 0.210 | 0.104 | 0.128 | 0.054 | 0.00 | 0.78 | 0.000 | 1.079 |
| FMCP | 0 | 0 | 0.107 | 0.047 | 0.218 | 0.130 | 0.132 | 0.060 | 0.00 | 0.55 | 0.000 | 1.104 |
| CLASSO | 0 | 0 | 0.282 | 0.092 | 0.732 | 0.215 | 0.385 | 0.114 | 0.01 | 2.73 | 0.100 | 1.588 |
| CSCAD | 0 | 0 | 0.278 | 0.127 | 0.553 | 0.215 | 0.341 | 0.134 | 0.13 | 0.98 | 0.338 | 1.271 |
| CMCP | 0 | 0 | 0.269 | 0.127 | 0.533 | 0.212 | 0.331 | 0.135 | 0.16 | 0.06 | 0.368 | 1.139 |
| PLASSO | 0 | 0 | 0.420 | 0.197 | 1.109 | 0.384 | 0.577 | 0.240 | 0.03 | 3.63 | 0.171 | 1.125 |
| PSCAD1 | 0 | 0 | 0.392 | 0.204 | 0.861 | 0.451 | 0.511 | 0.262 | 0.22 | 0.88 | 0.416 | 1.166 |
| PSCAD2 | 0 | 0 | 0.397 | 0.208 | 0.854 | 0.456 | 0.512 | 0.265 | 0.18 | 0.69 | 0.386 | 1.116 |
| PSCAD3 | 0 | 0 | 0.396 | 0.228 | 0.853 | 0.515 | 0.510 | 0.292 | 0.16 | 0.72 | 0.368 | 1.092 |
| PMCP1 | 0 | 0 | 0.393 | 0.198 | 0.854 | 0.434 | 0.507 | 0.251 | 0.21 | 0.88 | 0.409 | 1.140 |
| PMCP2 | 0 | 0 | 0.404 | 0.228 | 0.884 | 0.516 | 0.523 | 0.292 | 0.19 | 0.75 | 0.394 | 0.999 |
| PMCP3 | 0 | 0 | 0.394 | 0.231 | 0.875 | 0.520 | 0.515 | 0.296 | 0.16 | 0.72 | 0.368 | 0.975 |

intercept: 0

sample size : 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_11_30_error_independent_TRUE_x_missing_location_8.Rdata$ table_original

| | $^{\mathrm{rho}}$ | r_sd | L_{-} inf | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $\rm tn0e0_sd$ | $t0en0_sd$ |
|--------|-------------------|--------|-------------|--------------|----------|----------|-------|----------|-------|-------|-----------------|-------------|
| FLASSO | 0 | 0 | 0.132 | 0.044 | 0.359 | 0.140 | 0.181 | 0.056 | 0.00 | 2.52 | 0.000 | 1.586 |
| FSCAD | 0 | 0 | 0.109 | 0.046 | 0.245 | 0.145 | 0.141 | 0.061 | 0.00 | 1.02 | 0.000 | 1.49' |
| FMCP | 0 | 0 | 0.111 | 0.053 | 0.257 | 0.170 | 0.146 | 0.072 | 0.00 | 0.84 | 0.000 | 1.482 |
| CLASSO | 0 | 0 | 0.291 | 0.093 | 0.784 | 0.223 | 0.403 | 0.106 | 0.00 | 2.87 | 0.000 | 1.44′ |
| CSCAD | 0 | 0 | 0.236 | 0.092 | 0.537 | 0.266 | 0.306 | 0.119 | 0.01 | 1.49 | 0.100 | 1.43 |
| CMCP | 0 | 0 | 0.233 | 0.087 | 0.515 | 0.250 | 0.303 | 0.112 | 0.02 | 0.91 | 0.141 | 1.32 |
| PLASSO | 0 | 0 | 0.476 | 0.211 | 1.207 | 0.418 | 0.634 | 0.255 | 0.00 | 3.71 | 0.000 | 1.18 |
| PSCAD1 | 0 | 0 | 0.360 | 0.214 | 0.810 | 0.544 | 0.469 | 0.282 | 0.02 | 1.02 | 0.141 | 1.23 |
| PSCAD2 | 0 | 0 | 0.376 | 0.216 | 0.847 | 0.547 | 0.491 | 0.286 | 0.02 | 0.87 | 0.141 | 1.15 |
| PSCAD3 | 0 | 0 | 0.376 | 0.217 | 0.854 | 0.550 | 0.493 | 0.286 | 0.02 | 0.89 | 0.141 | 1.12 |
| PMCP1 | 0 | 0 | 0.366 | 0.219 | 0.832 | 0.555 | 0.479 | 0.290 | 0.02 | 0.97 | 0.141 | 1.21 |
| PMCP2 | 0 | 0 | 0.374 | 0.218 | 0.852 | 0.553 | 0.491 | 0.288 | 0.02 | 0.92 | 0.141 | 1.15 |
| PMCP3 | 0 | 0 | 0.377 | 0.222 | 0.867 | 0.544 | 0.497 | 0.290 | 0.02 | 0.91 | 0.141 | 1.07 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_1.Rdata

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------|-----|------|-------|-------|---------------|----------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.133 | 0.043 | 0.333 | 0.152 | 0.178 | 0.059 | 0.00 | 1.86 | 0.000 | 1.484 |
| FSCAD | 0 | 0 | 0.122 | 0.061 | 0.260 | 0.155 | 0.156 | 0.080 | 0.01 | 0.76 | 0.100 | 1.224 |
| FMCP | 0 | 0 | 0.116 | 0.044 | 0.240 | 0.138 | 0.148 | 0.063 | 0.00 | 0.41 | 0.000 | 1.006 |
| CLASSO | 0 | 0 | 0.212 | 0.089 | 0.519 | 0.214 | 0.280 | 0.103 | 0.00 | 2.06 | 0.000 | 1.510 |
| CSCAD | 0 | 0 | 0.187 | 0.101 | 0.402 | 0.242 | 0.238 | 0.125 | 0.02 | 0.92 | 0.141 | 1.161 |
| CMCP | 0 | 0 | 0.188 | 0.108 | 0.388 | 0.241 | 0.236 | 0.129 | 0.05 | 0.51 | 0.219 | 0.904 |
| PLASSO | 0 | 0 | 0.434 | 0.216 | 1.051 | 0.354 | 0.561 | 0.236 | 0.00 | 3.42 | 0.000 | 1.281 |
| PSCAD1 | 0 | 0 | 0.347 | 0.194 | 0.743 | 0.437 | 0.441 | 0.239 | 0.02 | 0.85 | 0.141 | 1.274 |
| PSCAD2 | 0 | 0 | 0.350 | 0.199 | 0.764 | 0.476 | 0.450 | 0.256 | 0.01 | 0.81 | 0.100 | 1.134 |
| PSCAD3 | 0 | 0 | 0.356 | 0.204 | 0.778 | 0.485 | 0.456 | 0.261 | 0.01 | 0.81 | 0.100 | 1.116 |
| PMCP1 | 0 | 0 | 0.345 | 0.190 | 0.736 | 0.427 | 0.438 | 0.234 | 0.02 | 0.85 | 0.141 | 1.250 |
| PMCP2 | 0 | 0 | 0.347 | 0.182 | 0.768 | 0.440 | 0.447 | 0.229 | 0.01 | 0.85 | 0.100 | 1.123 |
| PMCP3 | 0 | 0 | 0.359 | 0.197 | 0.795 | 0.475 | 0.463 | 0.255 | 0.02 | 0.84 | 0.141 | 1.061 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./ data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_3.R data_name: ./ data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_3.R data_namer.$

| | rho | r_sd | L_inf | L_sd | L_{-1} | $L_{-}1_{-}\mathrm{sd}$ | L_2 | $L_2 L_2 sd$ | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|-------------------------|-------|--------------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.136 | 0.059 | 0.321 | 0.152 | 0.178 | 0.075 | 0.00 | 1.68 | 0.000 | 1.222 |
| FSCAD | 0 | 0 | 0.127 | 0.065 | 0.265 | 0.166 | 0.160 | 0.086 | 0.00 | 0.71 | 0.000 | 1.085 |
| $_{ m FMCP}$ | 0 | 0 | 0.134 | 0.065 | 0.277 | 0.173 | 0.167 | 0.084 | 0.00 | 0.61 | 0.000 | 1.154 |
| CLASSO | 0 | 0 | 0.237 | 0.082 | 0.592 | 0.238 | 0.317 | 0.103 | 0.00 | 2.03 | 0.000 | 1.494 |
| CSCAD | 0 | 0 | 0.247 | 0.125 | 0.531 | 0.284 | 0.310 | 0.148 | 0.10 | 1.35 | 0.302 | 1.351 |
| CMCP | 0 | 0 | 0.255 | 0.131 | 0.557 | 0.308 | 0.323 | 0.151 | 0.12 | 1.13 | 0.327 | 1.574 |
| PLASSO | 0 | 0 | 0.415 | 0.177 | 1.110 | 0.394 | 0.567 | 0.221 | 0.01 | 3.55 | 0.100 | 1.192 |
| PSCAD1 | 0 | 0 | 0.405 | 0.197 | 0.950 | 0.582 | 0.534 | 0.271 | 0.16 | 1.06 | 0.368 | 1.324 |
| PSCAD2 | 0 | 0 | 0.415 | 0.202 | 0.989 | 0.587 | 0.553 | 0.277 | 0.20 | 1.02 | 0.402 | 1.247 |
| PSCAD3 | 0 | 0 | 0.421 | 0.206 | 1.004 | 0.597 | 0.562 | 0.281 | 0.21 | 0.98 | 0.409 | 1.189 |
| PMCP1 | 0 | 0 | 0.407 | 0.196 | 0.959 | 0.572 | 0.539 | 0.268 | 0.16 | 1.03 | 0.368 | 1.314 |
| PMCP2 | 0 | 0 | 0.415 | 0.203 | 0.991 | 0.587 | 0.553 | 0.277 | 0.19 | 0.98 | 0.394 | 1.197 |
| PMCP3 | 0 | 0 | 0.421 | 0.213 | 1.002 | 0.608 | 0.562 | 0.290 | 0.19 | 0.98 | 0.394 | 1.180 |

intercept: 0

sample size : 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_8.Rdata

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|-------------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.131 | 0.051 | 0.331 | 0.167 | 0.176 | 0.068 | 0.00 | 1.71 | 0.000 | 1.493 |
| FSCAD | 0 | 0 | 0.116 | 0.055 | 0.240 | 0.160 | 0.145 | 0.074 | 0.00 | 0.66 | 0.000 | 1.103 |
| $_{ m FMCP}$ | 0 | 0 | 0.119 | 0.054 | 0.262 | 0.189 | 0.154 | 0.080 | 0.00 | 0.60 | 0.000 | 1.279 |
| CLASSO | 0 | 0 | 0.262 | 0.086 | 0.622 | 0.215 | 0.340 | 0.102 | 0.00 | 2.08 | 0.000 | 1.361 |
| CSCAD | 0 | 0 | 0.221 | 0.110 | 0.447 | 0.223 | 0.273 | 0.131 | 0.03 | 1.00 | 0.171 | 0.943 |
| $_{ m CMCP}$ | 0 | 0 | 0.228 | 0.110 | 0.481 | 0.281 | 0.286 | 0.135 | 0.05 | 0.82 | 0.219 | 1.149 |
| PLASSO | 0 | 0 | 0.472 | 0.200 | 1.170 | 0.364 | 0.624 | 0.235 | 0.00 | 3.26 | 0.000 | 1.300 |
| PSCAD1 | 0 | 0 | 0.422 | 0.239 | 0.931 | 0.549 | 0.552 | 0.315 | 0.06 | 0.86 | 0.239 | 1.247 |
| PSCAD2 | 0 | 0 | 0.410 | 0.233 | 0.905 | 0.523 | 0.536 | 0.300 | 0.04 | 0.84 | 0.197 | 1.108 |
| PSCAD3 | 0 | 0 | 0.414 | 0.242 | 0.923 | 0.528 | 0.544 | 0.305 | 0.04 | 0.84 | 0.197 | 1.042 |
| PMCP1 | 0 | 0 | 0.410 | 0.234 | 0.908 | 0.526 | 0.539 | 0.305 | 0.06 | 0.85 | 0.239 | 1.218 |
| PMCP2 | 0 | 0 | 0.408 | 0.232 | 0.901 | 0.520 | 0.532 | 0.298 | 0.04 | 0.80 | 0.197 | 1.064 |
| PMCP3 | 0 | 0 | 0.424 | 0.240 | 0.963 | 0.534 | 0.563 | 0.310 | 0.05 | 0.84 | 0.219 | 1.080 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_TRUE_x_missing_location_1.Rdata_location_2_1.0_1.Rdata_location_1.Rdata_location_1.Rdata_location_1.Rdata_location_2_1.0_1.Rdata_location_1.Rdata_location_1.Rdata_location_1.Rdata_location_1.Rdata_location_1.Rdata_location_1.Rdata_location_2_1.0_1.Rdata_location_1.Rdata_location_2_1.0_1.Rdata_location_3.Rdata_location_3.Rdata_location_3.Rdata_location_3.Rdata_location_3.Rdata_location_3.Rdata_1.Rda$

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------|-----|------|-------|-------|---------------|----------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.118 | 0.042 | 0.309 | 0.125 | 0.162 | 0.054 | 0.00 | 2.24 | 0.000 | 1.450 |
| FSCAD | 0 | 0 | 0.097 | 0.046 | 0.206 | 0.130 | 0.122 | 090.0 | 0.00 | 0.78 | 0.000 | 1.133 |
| FMCP | 0 | 0 | 0.103 | 0.052 | 0.203 | 0.126 | 0.126 | 0.063 | 0.00 | 0.52 | 0.000 | 1.123 |
| CLASSO | 0 | 0 | 0.216 | 0.096 | 0.529 | 0.179 | 0.286 | 0.101 | 0.00 | 2.41 | 0.000 | 1.571 |
| CSCAD | 0 | 0 | 0.162 | 0.093 | 0.319 | 0.161 | 0.197 | 0.099 | 0.01 | 0.87 | 0.100 | 1.143 |
| CMCP | 0 | 0 | 0.163 | 0.091 | 0.325 | 0.179 | 0.200 | 0.102 | 0.01 | 0.70 | 0.100 | 1.185 |
| PLASSO | 0 | 0 | 0.385 | 0.204 | 0.933 | 0.394 | 0.502 | 0.242 | 0.00 | 3.45 | 0.000 | 1.149 |
| PSCAD1 | 0 | 0 | 0.305 | 0.156 | 0.626 | 0.333 | 0.381 | 0.188 | 0.01 | 0.59 | 0.100 | 1.065 |
| PSCAD2 | 0 | 0 | 0.314 | 0.170 | 0.642 | 0.358 | 0.392 | 0.204 | 0.02 | 0.54 | 0.141 | 0.958 |
| PSCAD3 | 0 | 0 | 0.319 | 0.164 | 0.660 | 0.341 | 0.402 | 0.197 | 0.01 | 0.51 | 0.100 | 0.904 |
| PMCP1 | 0 | 0 | 0.304 | 0.159 | 0.633 | 0.348 | 0.382 | 0.193 | 0.01 | 0.61 | 0.100 | 1.063 |
| PMCP2 | 0 | 0 | 0.309 | 0.161 | 0.631 | 0.336 | 0.385 | 0.193 | 0.01 | 0.49 | 0.100 | 0.847 |
| PMCP3 | 0 | 0 | 0.321 | 0.171 | 0.663 | 0.364 | 0.404 | 0.209 | 0.02 | 0.51 | 0.141 | 0.847 |

 $\mathrm{beta}: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_TRUE_x_missing_location_3.Rdata_location_2.Rdata_location_3.Rdata$

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.131 | 0.042 | 0.354 | 0.123 | 0.181 | 0.051 | 0.00 | 2.56 | 0.000 | 1.520 |
| FSCAD | 0 | 0 | 0.104 | 0.046 | 0.210 | 0.104 | 0.128 | 0.054 | 0.00 | 0.78 | 0.000 | 1.079 |
| FMCP | 0 | 0 | 0.107 | 0.047 | 0.218 | 0.130 | 0.132 | 0.060 | 0.00 | 0.55 | 0.000 | 1.104 |
| CLASSO | 0 | 0 | 0.282 | 0.092 | 0.732 | 0.215 | 0.385 | 0.114 | 0.01 | 2.73 | 0.100 | 1.588 |
| CSCAD | 0 | 0 | 0.278 | 0.127 | 0.553 | 0.215 | 0.341 | 0.134 | 0.13 | 0.98 | 0.338 | 1.271 |
| $_{ m CMCP}$ | 0 | 0 | 0.269 | 0.127 | 0.533 | 0.212 | 0.331 | 0.135 | 0.16 | 0.06 | 0.368 | 1.139 |
| PLASSO | 0 | 0 | 0.420 | 0.197 | 1.109 | 0.384 | 0.577 | 0.240 | 0.03 | 3.63 | 0.171 | 1.125 |
| PSCAD1 | 0 | 0 | 0.392 | 0.204 | 0.861 | 0.451 | 0.511 | 0.262 | 0.22 | 0.88 | 0.416 | 1.166 |
| PSCAD2 | 0 | 0 | 0.397 | 0.208 | 0.854 | 0.456 | 0.512 | 0.265 | 0.18 | 0.69 | 0.386 | 1.116 |
| PSCAD3 | 0 | 0 | 0.396 | 0.228 | 0.853 | 0.515 | 0.510 | 0.292 | 0.16 | 0.72 | 0.368 | 1.092 |
| PMCP1 | 0 | 0 | 0.393 | 0.198 | 0.854 | 0.434 | 0.507 | 0.251 | 0.21 | 0.88 | 0.409 | 1.140 |
| PMCP2 | 0 | 0 | 0.404 | 0.228 | 0.884 | 0.516 | 0.523 | 0.292 | 0.19 | 0.75 | 0.394 | 0.999 |
| PMCP3 | 0 | 0 | 0.394 | 0.231 | 0.875 | 0.520 | 0.515 | 0.296 | 0.16 | 0.72 | 0.368 | 0.975 |

 $\mathrm{beta}: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_11_60_error_independent_TRUE_x_missing_location_8.Rdata_location_11_60_error_independent_TRUE_x_missing_location_8.Rdata_location_11_60_error_independent_11_60_error_ind$

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|--------|-------|---------------|-------------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.132 | 0.044 | 0.359 | 0.140 | 0.181 | 0.056 | 0.00 | 2.52 | 0.000 | 1.586 |
| FSCAD | 0 | 0 | 0.109 | 0.046 | 0.245 | 0.145 | 0.141 | 0.061 | 0.00 | 1.02 | 0.000 | 1.497 |
| $_{ m FMCP}$ | 0 | 0 | 0.1111 | 0.053 | 0.257 | 0.170 | 0.146 | 0.072 | 0.00 | 0.84 | 0.000 | 1.482 |
| CLASSO | 0 | 0 | 0.291 | 0.093 | 0.784 | 0.223 | 0.403 | 0.106 | 0.00 | 2.87 | 0.000 | 1.447 |
| CSCAD | 0 | 0 | 0.236 | 0.092 | 0.537 | 0.266 | 0.306 | 0.119 | 0.01 | 1.49 | 0.100 | 1.432 |
| $_{ m CMCP}$ | 0 | 0 | 0.233 | 0.087 | 0.515 | 0.250 | 0.303 | 0.112 | 0.02 | 0.91 | 0.141 | 1.326 |
| PLASSO | 0 | 0 | 0.476 | 0.211 | 1.207 | 0.418 | 0.634 | 0.255 | 0.00 | 3.71 | 0.000 | 1.183 |
| PSCAD1 | 0 | 0 | 0.360 | 0.214 | 0.810 | 0.544 | 0.469 | 0.282 | 0.02 | 1.02 | 0.141 | 1.239 |
| PSCAD2 | 0 | 0 | 0.376 | 0.216 | 0.847 | 0.547 | 0.491 | 0.286 | 0.02 | 0.87 | 0.141 | 1.152 |
| PSCAD3 | 0 | 0 | 0.376 | 0.217 | 0.854 | 0.550 | 0.493 | 0.286 | 0.02 | 0.89 | 0.141 | 1.127 |
| PMCP1 | 0 | 0 | 0.366 | 0.219 | 0.832 | 0.555 | 0.479 | 0.290 | 0.02 | 0.97 | 0.141 | 1.218 |
| PMCP2 | 0 | 0 | 0.374 | 0.218 | 0.852 | 0.553 | 0.491 | 0.288 | 0.02 | 0.92 | 0.141 | 1.152 |
| PMCP3 | 0 | 0 | 0.377 | 0.222 | 0.867 | 0.544 | 0.497 | 0.290 | 0.02 | 0.91 | 0.141 | 1.074 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_200_lambda_location_120_50_error_independent_FALSE_x_missing_location_1.Rdata table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | L_2 | L_2_sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------------|-----|------|-------|--------------|---------------|--------|-------|--------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.133 | 0.043 | 0.333 | 0.152 | 0.178 | 0.059 | 0.00 | 1.86 | 0.000 | 1.484 |
| FSCAD | 0 | 0 | 0.122 | 0.061 | 0.260 | 0.155 | 0.156 | 0.080 | 0.01 | 0.76 | 0.100 | 1.224 |
| $_{ m FMCP}$ | 0 | 0 | 0.116 | 0.044 | 0.240 | 0.138 | 0.148 | 0.063 | 0.00 | 0.41 | 0.000 | 1.006 |
| CLASSO | 0 | 0 | 0.212 | 0.089 | 0.519 | 0.214 | 0.280 | 0.103 | 0.00 | 2.06 | 0.000 | 1.510 |
| CSCAD | 0 | 0 | 0.187 | 0.101 | 0.402 | 0.242 | 0.238 | 0.125 | 0.02 | 0.92 | 0.141 | 1.161 |
| $_{ m CMCP}$ | 0 | 0 | 0.188 | 0.108 | 0.388 | 0.241 | 0.236 | 0.129 | 0.05 | 0.51 | 0.219 | 0.904 |
| PLASSO | 0 | 0 | 0.434 | 0.216 | 1.051 | 0.354 | 0.561 | 0.236 | 0.00 | 3.42 | 0.000 | 1.281 |
| PSCAD1 | 0 | 0 | 0.347 | 0.194 | 0.743 | 0.437 | 0.441 | 0.239 | 0.02 | 0.85 | 0.141 | 1.274 |
| PSCAD2 | 0 | 0 | 0.350 | 0.199 | 0.764 | 0.476 | 0.450 | 0.256 | 0.01 | 0.81 | 0.100 | 1.134 |
| PSCAD3 | 0 | 0 | 0.356 | 0.204 | 0.778 | 0.485 | 0.456 | 0.261 | 0.01 | 0.81 | 0.100 | 1.116 |
| PMCP1 | 0 | 0 | 0.345 | 0.190 | 0.736 | 0.427 | 0.438 | 0.234 | 0.02 | 0.85 | 0.141 | 1.250 |
| PMCP2 | 0 | 0 | 0.347 | 0.182 | 0.768 | 0.440 | 0.447 | 0.229 | 0.01 | 0.85 | 0.100 | 1.123 |
| PMCP3 | 0 | 0 | 0.359 | 0.197 | 0.795 | 0.475 | 0.463 | 0.255 | 0.02 | 0.84 | 0.141 | 1.061 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_200_lambda_location_120_50_error_independent_FALSE_x_missing_location_3.Rdata table_original

| | $_{ m rho}$ | $r_{\rm sd}$ | $\mathrm{L}_{-\mathrm{inf}}$ | $L_{\rm sd}$ | L_{-1} | $L_1_{ m sd}$ | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|---------------|-------------|--------------|------------------------------|--------------|----------|---------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.136 | 0.059 | 0.321 | 0.152 | 0.178 | 0.075 | 0.00 | 1.68 | 0.000 | 1.222 |
| FSCAD | 0 | 0 | 0.127 | 0.065 | 0.265 | 0.166 | 0.160 | 0.086 | 0.00 | 0.71 | 0.000 | 1.085 |
| $_{ m FMCP}$ | 0 | 0 | 0.134 | 0.065 | 0.277 | 0.173 | 0.167 | 0.084 | 0.00 | 0.61 | 0.000 | 1.154 |
| CLASSO | 0 | 0 | 0.237 | 0.082 | 0.592 | 0.238 | 0.317 | 0.103 | 0.00 | 2.03 | 0.000 | 1.494 |
| CSCAD | 0 | 0 | 0.247 | 0.125 | 0.531 | 0.284 | 0.310 | 0.148 | 0.10 | 1.35 | 0.302 | 1.351 |
| $_{\rm CMCP}$ | 0 | 0 | 0.255 | 0.131 | 0.557 | 0.308 | 0.323 | 0.151 | 0.12 | 1.13 | 0.327 | 1.574 |
| PLASSO | 0 | 0 | 0.415 | 0.177 | 1.110 | 0.394 | 0.567 | 0.221 | 0.01 | 3.55 | 0.100 | 1.192 |
| PSCAD1 | 0 | 0 | 0.405 | 0.197 | 0.950 | 0.582 | 0.534 | 0.271 | 0.16 | 1.06 | 0.368 | 1.324 |
| PSCAD2 | 0 | 0 | 0.415 | 0.202 | 0.989 | 0.587 | 0.553 | 0.277 | 0.20 | 1.02 | 0.402 | 1.247 |
| PSCAD3 | 0 | 0 | 0.421 | 0.206 | 1.004 | 0.597 | 0.562 | 0.281 | 0.21 | 0.98 | 0.409 | 1.189 |
| PMCP1 | 0 | 0 | 0.407 | 0.196 | 0.959 | 0.572 | 0.539 | 0.268 | 0.16 | 1.03 | 0.368 | 1.314 |
| PMCP2 | 0 | 0 | 0.415 | 0.203 | 0.991 | 0.587 | 0.553 | 0.277 | 0.19 | 0.98 | 0.394 | 1.197 |
| PMCP3 | С | 0 | 0.421 | 0.213 | 1.002 | 0.608 | 0.562 | 0.290 | 0.19 | 0.98 | 0.394 | 1.180 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$

 $file_name: ./data/beta_2_1.5_n_200_lambda_location_l20_50_error_independent_FALSE_x_missing_location_8.Rdata_lambda_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_location_8.Rdata_lambda_l$

| | rho | r_sd | L_{-} inf | $L_{\rm sd}$ | L_{-1} | $L_{-}1_{-}\mathrm{sd}$ | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|--------|-------------|--------------|----------|-------------------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.131 | 0.051 | 0.331 | 0.167 | 0.176 | 0.068 | 0.00 | 1.71 | 0.000 | 1.493 |
| FSCAD | 0 | 0 | 0.116 | 0.055 | 0.240 | 0.160 | 0.145 | 0.074 | 0.00 | 0.06 | 0.000 | 1.103 |
| $_{ m FMCP}$ | 0 | 0 | 0.119 | 0.054 | 0.262 | 0.189 | 0.154 | 0.080 | 0.00 | 0.60 | 0.000 | 1.279 |
| CLASSO | 0 | 0 | 0.262 | 0.086 | 0.622 | 0.215 | 0.340 | 0.102 | 0.00 | 2.08 | 0.000 | 1.361 |
| CSCAD | 0 | 0 | 0.221 | 0.110 | 0.447 | 0.223 | 0.273 | 0.131 | 0.03 | 1.00 | 0.171 | 0.943 |
| $_{ m CMCP}$ | 0 | 0 | 0.228 | 0.110 | 0.481 | 0.281 | 0.286 | 0.135 | 0.05 | 0.82 | 0.219 | 1.149 |
| PLASSO | 0 | 0 | 0.472 | 0.200 | 1.170 | 0.364 | 0.624 | 0.235 | 0.00 | 3.26 | 0.000 | 1.300 |
| PSCAD1 | 0 | 0 | 0.422 | 0.239 | 0.931 | 0.549 | 0.552 | 0.315 | 0.06 | 0.86 | 0.239 | 1.247 |
| PSCAD2 | 0 | 0 | 0.410 | 0.233 | 0.905 | 0.523 | 0.536 | 0.300 | 0.04 | 0.84 | 0.197 | 1.108 |
| PSCAD3 | 0 | 0 | 0.414 | 0.242 | 0.923 | 0.528 | 0.544 | 0.305 | 0.04 | 0.84 | 0.197 | 1.042 |
| PMCP1 | 0 | 0 | 0.410 | 0.234 | 0.908 | 0.526 | 0.539 | 0.305 | 0.06 | 0.85 | 0.239 | 1.218 |
| PMCP2 | 0 | 0 | 0.408 | 0.232 | 0.901 | 0.520 | 0.532 | 0.298 | 0.04 | 0.80 | 0.197 | 1.064 |
| PMCP3 | 0 | 0 | 0.424 | 0.240 | 0.963 | 0.534 | 0.563 | 0.310 | 0.05 | 0.84 | 0.219 | 1.080 |

intercept: 0

sample size : 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_location: 1

missing_method: xy

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_200_lambda_location_120_50_error_independent_TRUE_x_missing_location_1.Rdata table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|------------------------|-----|------|-------|--------------|----------|-------------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.118 | _ | 0.309 | 0.125 | 0.162 | 0.054 | 0.00 | 2.24 | 0.000 | 1.450 |
| FSCAD | 0 | 0 | 0.097 | | 0.206 | 0.130 | 0.122 | 0.060 | 0.00 | 0.78 | 0.000 | 1.133 |
| $_{ m FMCP}$ | 0 | 0 | 0.103 | 0.052 | 0.203 | 0.126 | 0.126 | 0.063 | 0.00 | 0.52 | 0.000 | 1.123 |
| CLASSO | 0 | 0 | 0.216 | | 0.529 | 0.179 | 0.286 | 0.101 | 0.00 | 2.41 | 0.000 | 1.571 |
| CSCAD | 0 | 0 | 0.162 | | 0.319 | 0.161 | 0.197 | 0.099 | 0.01 | 0.87 | 0.100 | 1.143 |
| $_{ m CMCP}$ | 0 | 0 | 0.163 | | 0.325 | 0.179 | 0.200 | 0.102 | 0.01 | 0.70 | 0.100 | 1.185 |
| PLASSO | 0 | 0 | 0.385 | | 0.933 | 0.394 | 0.502 | 0.242 | 0.00 | 3.45 | 0.000 | 1.149 |
| PSCAD1 | 0 | 0 | 0.305 | _ | 0.626 | 0.333 | 0.381 | 0.188 | 0.01 | 0.59 | 0.100 | 1.065 |
| PSCAD2 | 0 | 0 | 0.314 | _ | 0.642 | 0.358 | 0.392 | 0.204 | 0.02 | 0.54 | 0.141 | 0.958 |
| PSCAD3 | 0 | 0 | 0.319 | | 0.660 | 0.341 | 0.402 | 0.197 | 0.01 | 0.51 | 0.100 | 0.904 |
| PMCP1 | 0 | 0 | 0.304 | | 0.633 | 0.348 | 0.382 | 0.193 | 0.01 | 0.61 | 0.100 | 1.063 |
| PMCP2 | 0 | 0 | 0.309 | | 0.631 | 0.336 | 0.385 | 0.193 | 0.01 | 0.49 | 0.100 | 0.847 |
| PMCP3 | 0 | 0 | 0.321 | | 0.663 | 0.364 | 0.404 | 0.209 | 0.02 | 0.51 | 0.141 | 0.847 |

intercept: 0

sample size : 200

simulation time: 100

0

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_200_lambda_location_120_50_error_independent_TRUE_x_missing_location_3.Rdata table_original

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_{-}^{2} | L_2_sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------------------------|-----|------|-------|-------|---------------|-------------|-------------|--------|-------|-------|----------|----------|
| LASSO | 0 | 0 | 0.131 | 0.042 | 0.354 | 0.123 | 0.181 | 0.051 | 0.00 | 2.56 | 0.000 | 1.520 |
| $^{7}SCAD$ | 0 | 0 | 0.104 | 0.046 | 0.210 | 0.104 | 0.128 | 0.054 | 0.00 | 0.78 | 0.000 | 1.079 |
| $^{-1}$ MCP | 0 | 0 | 0.107 | 0.047 | 0.218 | 0.130 | 0.132 | 0.060 | 0.00 | 0.55 | 0.000 | 1.104 |
| CLASSO | 0 | 0 | 0.282 | 0.092 | 0.732 | 0.215 | 0.385 | 0.114 | 0.01 | 2.73 | 0.100 | 1.588 |
| CSCAD | 0 | 0 | 0.278 | 0.127 | 0.553 | 0.215 | 0.341 | 0.134 | 0.13 | 0.98 | 0.338 | 1.271 |
| CMCP | 0 | 0 | 0.269 | 0.127 | 0.533 | 0.212 | 0.331 | 0.135 | 0.16 | 0.66 | 0.368 | 1.139 |
| $^{\circ}$ LASSO | 0 | 0 | 0.420 | 0.197 | 1.109 | 0.384 | 0.577 | 0.240 | 0.03 | 3.63 | 0.171 | 1.125 |
| $^{\circ}\mathrm{SCAD1}$ | 0 | 0 | 0.392 | 0.204 | 0.861 | 0.451 | 0.511 | 0.262 | 0.22 | 0.88 | 0.416 | 1.166 |
| $^{\circ}\mathrm{SCAD2}$ | 0 | 0 | 0.397 | 0.208 | 0.854 | 0.456 | 0.512 | 0.265 | 0.18 | 0.69 | 0.386 | 1.116 |
| $^{\circ}\mathrm{SCAD3}$ | 0 | 0 | 0.396 | 0.228 | 0.853 | 0.515 | 0.510 | 0.292 | 0.16 | 0.72 | 0.368 | 1.092 |
| $^{\circ}\mathrm{MCP1}$ | 0 | 0 | 0.393 | 0.198 | 0.854 | 0.434 | 0.507 | 0.251 | 0.21 | 0.88 | 0.409 | 1.140 |
| $^{\circ}\mathrm{MCP2}$ | 0 | 0 | 0.404 | 0.228 | 0.884 | 0.516 | 0.523 | 0.292 | 0.19 | 0.75 | 0.394 | 0.999 |
| $^{\circ}\mathrm{MCP3}$ | 0 | 0 | 0.394 | 0.231 | 0.875 | 0.520 | 0.515 | 0.296 | 0.16 | 0.72 | 0.368 | 0.975 |
| | | | | | | | | | | | | |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_200_lambda_location_120_50_error_independent_TRUE_x_missing_location_8.Rdata

| | rho | r_sd | L_inf | L_sd | $L_{-}1$ | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.132 | 0.044 | 0.359 | 0.140 | 0.181 | 0.056 | 0.00 | 2.52 | 0.000 | 1.586 |
| FSCAD | 0 | 0 | 0.109 | 0.046 | 0.245 | 0.145 | 0.141 | 0.061 | 0.00 | 1.02 | 0.000 | 1.497 |
| FMCP | 0 | 0 | 0.111 | 0.053 | 0.257 | 0.170 | 0.146 | 0.072 | 0.00 | 0.84 | 0.000 | 1.482 |
| CLASSO | 0 | 0 | 0.291 | 0.093 | 0.784 | 0.223 | 0.403 | 0.106 | 0.00 | 2.87 | 0.000 | 1.447 |
| CSCAD | 0 | 0 | 0.236 | 0.092 | 0.537 | 0.266 | 0.306 | 0.119 | 0.01 | 1.49 | 0.100 | 1.432 |
| $_{ m CMCP}$ | 0 | 0 | 0.233 | 0.087 | 0.515 | 0.250 | 0.303 | 0.112 | 0.02 | 0.91 | 0.141 | 1.326 |
| PLASSO | 0 | 0 | 0.476 | 0.211 | 1.207 | 0.418 | 0.634 | 0.255 | 0.00 | 3.71 | 0.000 | 1.183 |
| PSCAD1 | 0 | 0 | 0.360 | 0.214 | 0.810 | 0.544 | 0.469 | 0.282 | 0.02 | 1.02 | 0.141 | 1.239 |
| PSCAD2 | 0 | 0 | 0.376 | 0.216 | 0.847 | 0.547 | 0.491 | 0.286 | 0.02 | 0.87 | 0.141 | 1.152 |
| PSCAD3 | 0 | 0 | 0.376 | 0.217 | 0.854 | 0.550 | 0.493 | 0.286 | 0.02 | 0.89 | 0.141 | 1.127 |
| PMCP1 | 0 | 0 | 0.366 | 0.219 | 0.832 | 0.555 | 0.479 | 0.290 | 0.02 | 0.97 | 0.141 | 1.218 |
| PMCP2 | 0 | 0 | 0.374 | 0.218 | 0.852 | 0.553 | 0.491 | 0.288 | 0.02 | 0.92 | 0.141 | 1.152 |
| PMCP3 | О | 0 | 0.377 | 0.222 | 0.867 | 0.544 | 0.497 | 0.290 | 0.02 | 0.91 | 0.141 | 1.074 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_2_1.5_n_500_lambda_location_l1_30_error_independent_FALSE_x_missing_location_1.Rdata table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|--------|--------------|----------|----------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.084 | 0.034 | 0.220 | 0.116 | 0.115 | 0.048 | 0 | 1.82 | 0 | 1.500 |
| FSCAD | 0 | 0 | 0.075 | 0.038 | 0.167 | 0.122 | 0.097 | 0.053 | 0 | 0.60 | 0 | 1.271 |
| FMCP | 0 | 0 | 0.075 | 0.040 | 0.170 | 0.130 | 0.098 | 0.056 | 0 | 0.51 | 0 | 1.115 |
| CLASSO | 0 | 0 | 0.136 | 0.047 | 0.332 | 0.142 | 0.179 | 0.062 | 0 | 2.01 | 0 | 1.474 |
| CSCAD | 0 | 0 | 0.112 | 0.045 | 0.250 | 0.156 | 0.145 | 0.066 | 0 | 0.79 | 0 | 1.431 |
| $_{ m CMCP}$ | 0 | 0 | 0.1111 | 0.045 | 0.242 | 0.149 | 0.144 | 0.065 | 0 | 0.54 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.265 | 0.128 | 0.687 | 0.285 | 0.354 | 0.157 | 0 | 3.76 | 0 | 0.986 |
| PSCAD1 | 0 | 0 | 0.205 | 0.123 | 0.425 | 0.282 | 0.260 | 0.153 | 0 | 0.48 | 0 | 0.979 |
| PSCAD2 | 0 | 0 | 0.209 | 0.121 | 0.432 | 0.275 | 0.265 | 0.150 | 0 | 0.48 | 0 | 0.870 |
| PSCAD3 | 0 | 0 | 0.211 | 0.121 | 0.440 | 0.277 | 0.269 | 0.151 | 0 | 0.51 | 0 | 0.870 |
| PMCP1 | 0 | 0 | 0.204 | 0.122 | 0.426 | 0.283 | 0.259 | 0.154 | 0 | 0.49 | 0 | 0.980 |
| PMCP2 | 0 | 0 | 0.211 | 0.121 | 0.441 | 0.279 | 0.269 | 0.151 | 0 | 0.52 | 0 | 0.882 |
| PMCP3 | 0 | 0 | 0.212 | 0.120 | 0.444 | 0.277 | 0.270 | 0.150 | С | 0.55 | C | 0.880 |

 $beta: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

sample size: 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_2_1.5_n_500_lambda_location_11_30_error_independent_FALSE_x_missing_location_3.Rdata

| | $^{\mathrm{rho}}$ | r_sd | $\rm L_inf$ | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_{-}^2 | L_2_sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0 en0_sd$ |
|--------|-------------------|---------|--------------|--------------|----------|---------------------|-----------|---------------------|-------|-------|-------------|--------------|
| FLASSO | 0 | 0 | 0.084 | 0.038 | 0.214 | 0.112 | 0.113 | 0.050 | 0.00 | 2.08 | 0.0 | 1.489 |
| FSCAD | 0 | 0 | 0.078 | 0.043 | 0.175 | 0.124 | 0.101 | 0.059 | 0.00 | 0.71 | 0.0 | 1.336 |
| FMCP | 0 | 0 | 0.076 | 0.039 | 0.169 | 0.109 | 0.100 | 0.054 | 0.00 | 0.53 | 0.0 | 1.058 |
| CLASSO | 0 | 0 | 0.164 | 0.054 | 0.395 | 0.149 | 0.215 | 0.064 | 0.00 | 2.05 | 0.0 | 1.459 |
| CSCAD | 0 | 0 | 0.143 | 0.058 | 0.316 | 0.183 | 0.183 | 0.080 | 0.00 | 1.11 | 0.0 | 1.399 |
| CMCP | 0 | 0 | 0.147 | 0.054 | 0.328 | 0.186 | 0.189 | 0.077 | 0.00 | 0.98 | 0.0 | 1.477 |
| PLASSO | 0 | 0 | 0.263 | 0.121 | 0.701 | 0.249 | 0.357 | 0.145 | 0.00 | 3.73 | 0.0 | 1.221 |
| PSCAD1 | 0 | 0 | 0.238 | 0.126 | 0.541 | 0.325 | 0.311 | 0.168 | 0.00 | 0.83 | 0.0 | 1.264 |
| PSCAD2 | 0 | 0 | 0.239 | 0.130 | 0.551 | 0.339 | 0.317 | 0.176 | 0.00 | 0.83 | 0.0 | 1.138 |
| PSCAD3 | 0 | 0 | 0.242 | 0.130 | 0.557 | 0.342 | 0.320 | 0.177 | 0.00 | 0.82 | 0.0 | 1.104 |
| PMCP1 | 0 | 0 | 0.238 | 0.129 | 0.548 | 0.335 | 0.314 | 0.174 | 0.01 | 0.84 | 0.1 | 1.220 |
| PMCP2 | 0 | 0 | 0.241 | 0.130 | 0.559 | 0.338 | 0.319 | 0.176 | 0.00 | 0.84 | 0.0 | 1.135 |
| PMCP3 | 0 | 0 | 0.242 | 0.129 | 0.564 | 0.340 | 0.322 | 0.175 | 0.00 | 0.86 | 0.0 | 1.128 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $file_name: \ ./data/beta_2_1.5_n_500_lambda_location_11_30_error_independent_FALSE_x_missing_location_8.Rdata_ror_independent_FALSE_x_missing_location_8.Rdata_ror_independent - ror_independent -$

table_original

| | rho | r_sd | L_inf | L_sd | $L_{-}1$ | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.089 | 0.032 | 0.222 | 0.100 | 0.120 | 0.043 | 0 | 1.82 | 0 | 1.513 |
| FSCAD | 0 | 0 | 0.082 | 0.038 | 0.180 | 0.105 | 0.108 | 0.053 | 0 | 0.50 | 0 | 0.990 |
| $_{ m FMCP}$ | 0 | 0 | 0.081 | 0.038 | 0.174 | 0.106 | 0.105 | 0.053 | 0 | 0.36 | 0 | 0.927 |
| CLASSO | 0 | 0 | 0.188 | 0.053 | 0.467 | 0.149 | 0.251 | 0.060 | 0 | 2.22 | 0 | 1.488 |
| CSCAD | 0 | 0 | 0.161 | 0.055 | 0.359 | 0.191 | 0.207 | 0.074 | 0 | 1.00 | 0 | 1.435 |
| CMCP | 0 | 0 | 0.158 | 0.056 | 0.342 | 0.188 | 0.202 | 0.077 | 0 | 0.67 | 0 | 1.272 |
| PLASSO | 0 | 0 | 0.303 | 0.132 | 0.799 | 0.259 | 0.411 | 0.156 | 0 | 3.75 | 0 | 1.104 |
| PSCAD1 | 0 | 0 | 0.229 | 0.135 | 0.532 | 0.331 | 0.305 | 0.169 | 0 | 0.92 | 0 | 1.212 |
| PSCAD2 | 0 | 0 | 0.225 | 0.139 | 0.533 | 0.343 | 0.302 | 0.175 | 0 | 0.88 | 0 | 1.094 |
| PSCAD3 | 0 | 0 | 0.231 | 0.136 | 0.539 | 0.340 | 0.308 | 0.172 | 0 | 0.86 | 0 | 1.035 |
| PMCP1 | 0 | 0 | 0.229 | 0.134 | 0.532 | 0.328 | 0.305 | 0.167 | 0 | 0.90 | 0 | 1.202 |
| PMCP2 | 0 | 0 | 0.226 | 0.138 | 0.538 | 0.342 | 0.304 | 0.174 | 0 | 0.91 | 0 | 1.093 |
| PMCP3 | 0 | 0 | 0.231 | 0.136 | 0.557 | 0.338 | 0.313 | 0.171 | 0 | 0.94 | С | 1.043 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $file_name: \ ./data/beta_2_1.5_n_500_lambda_location_11_30_error_independent_TRUE_x_missing_location_1.Rdata_ramerantered and the state of the sta$ table_original

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------|-----|------|-------|-------|----------|-------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.077 | 0.029 | 0.211 | 0.089 | 0.108 | 0.037 | 0 | 2.49 | 0 | 1.527 |
| FSCAD | 0 | 0 | 0.066 | 0.031 | 0.138 | 0.082 | 0.083 | 0.039 | 0 | 0.65 | 0 | 1.274 |
| FMCP | 0 | 0 | 0.065 | 0.031 | 0.138 | 0.085 | 0.083 | 0.040 | 0 | 0.59 | 0 | 1.138 |
| CLASSO | 0 | 0 | 0.170 | 0.059 | 0.443 | 0.135 | 0.231 | 0.068 | 0 | 2.68 | 0 | 1.23(|
| CSCAD | 0 | 0 | 0.128 | 0.049 | 0.267 | 0.108 | 0.163 | 0.059 | 0 | 0.68 | 0 | 1.05 |
| CMCP | 0 | 0 | 0.131 | 0.049 | 0.285 | 0.118 | 0.170 | 0.059 | 0 | 0.62 | 0 | 1.237 |
| PLASSO | 0 | 0 | 0.295 | 0.145 | 0.748 | 0.281 | 0.392 | 0.172 | 0 | 3.82 | 0 | 1.125 |
| PSCAD1 | 0 | 0 | 0.200 | 0.115 | 0.445 | 0.258 | 0.263 | 0.142 | 0 | 0.59 | 0 | 1.102 |
| PSCAD2 | 0 | 0 | 0.201 | 0.107 | 0.446 | 0.244 | 0.263 | 0.132 | 0 | 0.62 | 0 | 0.99 |
| PSCAD3 | 0 | 0 | 0.199 | 0.112 | 0.445 | 0.253 | 0.262 | 0.139 | 0 | 0.59 | 0 | 0.96 |
| PMCP1 | 0 | 0 | 0.196 | 0.111 | 0.440 | 0.249 | 0.258 | 0.138 | 0 | 0.62 | 0 | 1.02 |
| PMCP2 | 0 | 0 | 0.198 | 0.110 | 0.441 | 0.249 | 0.260 | 0.136 | 0 | 0.61 | 0 | 0.945 |
| PMCP3 | 0 | 0 | 0.199 | 0.107 | 0.449 | 0.242 | 0.263 | 0.131 | 0 | 0.67 | 0 | 0.900 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

error_independent: TRUE $loss_rate:\ 0.625$

missing_method: xy missing_location: 3 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $file_name: ./data/beta_2_1.5_n_500_lambda_location_11_30_error_independent_TRUE_x_missing_location_3.Rdata$

table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_2 | $L_2 L_2 sd$ | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|------------------------|-----|------|-------|--------------|----------|----------|-------|--------------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.074 | 0.028 | 0.192 | 0.078 | 0.100 | 0.034 | 0 | 2.36 | 0 | 1.425 |
| FSCAD | 0 | 0 | 0.058 | 0.026 | 0.117 | 0.071 | 0.072 | 0.034 | 0 | 0.45 | 0 | 1.038 |
| $_{ m FMCP}$ | 0 | 0 | 0.058 | 0.026 | 0.111 | 0.065 | 0.070 | 0.033 | 0 | 0.30 | 0 | 0.893 |
| CLASSO | 0 | 0 | 0.219 | 0.050 | 0.560 | 0.133 | 0.296 | 0.061 | 0 | 2.72 | 0 | 1.551 |
| CSCAD | 0 | 0 | 0.176 | 0.045 | 0.382 | 0.145 | 0.226 | 0.062 | 0 | 1.12 | 0 | 1.380 |
| $_{ m CMCP}$ | 0 | 0 | 0.181 | 0.052 | 0.375 | 0.139 | 0.231 | 0.066 | 0 | 0.51 | 0 | 1.068 |
| PLASSO | 0 | 0 | 0.260 | 0.131 | 0.695 | 0.275 | 0.353 | 0.159 | 0 | 3.93 | 0 | 1.057 |
| PSCAD1 | 0 | 0 | 0.196 | 0.098 | 0.433 | 0.226 | 0.256 | 0.126 | 0 | 0.68 | 0 | 1.062 |
| PSCAD2 | 0 | 0 | 0.199 | 0.100 | 0.445 | 0.242 | 0.262 | 0.131 | 0 | 0.06 | 0 | 1.085 |
| PSCAD3 | 0 | 0 | 0.199 | 0.102 | 0.450 | 0.242 | 0.264 | 0.132 | 0 | 0.65 | 0 | 0.999 |
| PMCP1 | 0 | 0 | 0.196 | 0.099 | 0.434 | 0.228 | 0.256 | 0.127 | 0 | 0.06 | 0 | 1.017 |
| PMCP2 | 0 | 0 | 0.198 | 0.101 | 0.446 | 0.240 | 0.262 | 0.131 | 0 | 0.64 | 0 | 0.980 |
| PMCP3 | 0 | 0 | 0.198 | 0.101 | 0.457 | 0.242 | 0.265 | 0.131 | 0 | 0.73 | 0 | 1.053 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy missing_location: 8 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $file_name: ./data/beta_2_1.5_n_500_lambda_location_11_30_error_independent_TRUE_x_missing_location_8.Rdata$ table_original

| | $^{\mathrm{rho}}$ | r_{sd} | $L_{-} inf$ | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | L_2 | L_2_sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|---------------|-------------------|-----------|-------------|--------------|---------------|----------|-------|---------------------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.082 | 0.027 | 0.213 | 0.084 | 0.111 | 0.035 | 0 | 2.37 | 0 | 1.397 |
| FSCAD | 0 | 0 | 0.067 | 0.029 | 0.143 | 0.086 | 0.085 | 0.039 | 0 | 0.62 | 0 | 1.332 |
| FMCP | 0 | 0 | 0.067 | 0.029 | 0.140 | 0.085 | 0.085 | 0.039 | 0 | 0.49 | 0 | 1.141 |
| CLASSO | 0 | 0 | 0.236 | 0.065 | 0.611 | 0.145 | 0.322 | 0.076 | 0 | 2.91 | 0 | 1.512 |
| CSCAD | 0 | 0 | 0.193 | 0.057 | 0.411 | 0.143 | 0.248 | 0.072 | 0 | 0.75 | 0 | 1.258 |
| $_{\rm CMCP}$ | 0 | 0 | 0.192 | 0.059 | 0.399 | 0.147 | 0.245 | 0.076 | 0 | 0.44 | 0 | 1.038 |
| PLASSO | 0 | 0 | 0.259 | 0.136 | 0.698 | 0.301 | 0.353 | 0.173 | 0 | 3.94 | 0 | 1.033 |
| PSCAD1 | 0 | 0 | 0.209 | 0.134 | 0.471 | 0.351 | 0.275 | 0.181 | 0 | 0.69 | 0 | 1.220 |
| PSCAD2 | 0 | 0 | 0.216 | 0.137 | 0.490 | 0.361 | 0.286 | 0.185 | 0 | 0.69 | 0 | 1.134 |
| PSCAD3 | 0 | 0 | 0.216 | 0.137 | 0.489 | 0.363 | 0.285 | 0.186 | 0 | 0.68 | 0 | 1.091 |
| PMCP1 | 0 | 0 | 0.213 | 0.136 | 0.476 | 0.351 | 0.279 | 0.183 | 0 | 0.70 | 0 | 1.202 |
| PMCP2 | 0 | 0 | 0.216 | 0.137 | 0.492 | 0.356 | 0.286 | 0.185 | 0 | 0.65 | 0 | 1.038 |
| PMCP3 | 0 | 0 | 0.215 | 0.140 | 0.493 | 0.365 | 0.286 | 0.189 | 0 | 0.69 | 0 | 1.042 |

intercept: 0

sample size : 500

simulation time: 100

illialation time.

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_FALSE_x_missing_location_1.Rdata

| | $^{\mathrm{rho}}$ | $\mathbf{r}_{-}\mathbf{sd}$ | $\rm L_inf$ | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | ${\rm L}_{-}2$ | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-------------------|-----------------------------|--------------|--------------|---------------|----------|----------------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.084 | 0.034 | 0.220 | 0.116 | 0.115 | 0.048 | 0 | 1.82 | 0 | 1.500 |
| FSCAD | 0 | 0 | 0.075 | 0.038 | 0.167 | 0.122 | 0.097 | 0.053 | 0 | 0.60 | 0 | 1.271 |
| $_{ m FMCP}$ | 0 | 0 | 0.075 | 0.040 | 0.170 | 0.130 | 0.098 | 0.056 | 0 | 0.51 | 0 | 1.115 |
| CLASSO | 0 | 0 | 0.136 | 0.047 | 0.332 | 0.142 | 0.179 | 0.062 | 0 | 2.01 | 0 | 1.474 |
| CSCAD | 0 | 0 | 0.112 | 0.045 | 0.250 | 0.156 | 0.145 | 0.066 | 0 | 0.79 | 0 | 1.431 |
| $_{ m CMCP}$ | 0 | 0 | 0.1111 | 0.045 | 0.242 | 0.149 | 0.144 | 0.065 | 0 | 0.54 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.265 | 0.128 | 0.687 | 0.285 | 0.354 | 0.157 | 0 | 3.76 | 0 | 0.986 |
| PSCAD1 | 0 | 0 | 0.205 | 0.123 | 0.425 | 0.282 | 0.260 | 0.153 | 0 | 0.48 | 0 | 0.979 |
| PSCAD2 | 0 | 0 | 0.209 | 0.121 | 0.432 | 0.275 | 0.265 | 0.150 | 0 | 0.48 | 0 | 0.870 |
| PSCAD3 | 0 | 0 | 0.211 | 0.121 | 0.440 | 0.277 | 0.269 | 0.151 | 0 | 0.51 | 0 | 0.870 |
| PMCP1 | 0 | 0 | 0.204 | 0.122 | 0.426 | 0.283 | 0.259 | 0.154 | 0 | 0.49 | 0 | 0.980 |
| PMCP2 | 0 | 0 | 0.211 | 0.121 | 0.441 | 0.279 | 0.269 | 0.151 | 0 | 0.52 | 0 | 0.882 |
| PMCP3 | 0 | 0 | 0.212 | 0.120 | 0.444 | 0.277 | 0.270 | 0.150 | 0 | 0.55 | 0 | 0.880 |

 $\mathrm{beta}: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_FALSE_x_missing_location_3.Rdata

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | $L_1_{\rm sd}$ | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|----------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.084 | 0.038 | 0.214 | 0.112 | 0.113 | 0.050 | 0.00 | 2.08 | 0.0 | 1.489 |
| FSCAD | 0 | 0 | 0.078 | 0.043 | 0.175 | 0.124 | 0.101 | 0.059 | 0.00 | 0.71 | 0.0 | 1.336 |
| $_{ m FMCP}$ | 0 | 0 | 0.076 | 0.039 | 0.169 | 0.109 | 0.100 | 0.054 | 0.00 | 0.53 | 0.0 | 1.058 |
| CLASSO | 0 | 0 | 0.164 | 0.054 | 0.395 | 0.149 | 0.215 | 0.064 | 0.00 | 2.05 | 0.0 | 1.459 |
| CSCAD | 0 | 0 | 0.143 | 0.058 | 0.316 | 0.183 | 0.183 | 0.080 | 0.00 | 1.11 | 0.0 | 1.399 |
| $_{ m CMCP}$ | 0 | 0 | 0.147 | 0.054 | 0.328 | 0.186 | 0.189 | 0.077 | 0.00 | 0.98 | 0.0 | 1.477 |
| PLASSO | 0 | 0 | 0.263 | 0.121 | 0.701 | 0.249 | 0.357 | 0.145 | 0.00 | 3.73 | 0.0 | 1.221 |
| PSCAD1 | 0 | 0 | 0.238 | 0.126 | 0.541 | 0.325 | 0.311 | 0.168 | 0.00 | 0.83 | 0.0 | 1.264 |
| PSCAD2 | 0 | 0 | 0.239 | 0.130 | 0.551 | 0.339 | 0.317 | 0.176 | 0.00 | 0.83 | 0.0 | 1.138 |
| PSCAD3 | 0 | 0 | 0.242 | 0.130 | 0.557 | 0.342 | 0.320 | 0.177 | 0.00 | 0.82 | 0.0 | 1.104 |
| PMCP1 | 0 | 0 | 0.238 | 0.129 | 0.548 | 0.335 | 0.314 | 0.174 | 0.01 | 0.84 | 0.1 | 1.220 |
| PMCP2 | 0 | 0 | 0.241 | 0.130 | 0.559 | 0.338 | 0.319 | 0.176 | 0.00 | 0.84 | 0.0 | 1.135 |
| PMCP3 | 0 | 0 | 0.242 | 0.129 | 0.564 | 0.340 | 0.322 | 0.175 | 0.00 | 0.86 | 0.0 | 1.128 |

 $\mathrm{beta}: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_FALSE_x_missing_location_8.Rdata

table_original

| | rho | $r_{\rm sd}$ | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_{-1} L_{-1} sd | L_2 | L_2 L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_s |
|--------------|-----|--------------|-------|--------------|---------------|----------------------|-------|----------------|-------|-------|------------|----------------|
| FLASSO | 0 | 0 | 0.089 | 0.032 | 0.222 | 0.100 | 0.120 | 0.043 | 0 | 1.82 | 0 | 1.51 |
| FSCAD | 0 | 0 | 0.082 | 0.038 | 0.180 | 0.105 | 0.108 | 0.053 | 0 | 0.50 | 0 | 0.99 |
| $_{ m FMCP}$ | 0 | 0 | 0.081 | 0.038 | 0.174 | 0.106 | 0.105 | 0.053 | 0 | 0.36 | 0 | 0.92' |
| CLASSO | 0 | 0 | 0.188 | 0.053 | 0.467 | 0.149 | 0.251 | 0.060 | 0 | 2.22 | 0 | 1.48 |
| CSCAD | 0 | 0 | 0.161 | 0.055 | 0.359 | 0.191 | 0.207 | 0.074 | 0 | 1.00 | 0 | 1.43 |
| CMCP | 0 | 0 | 0.158 | 0.056 | 0.342 | 0.188 | 0.202 | 0.077 | 0 | 0.67 | 0 | 1.27 |
| PLASSO | 0 | 0 | 0.303 | 0.132 | 0.799 | 0.259 | 0.411 | 0.156 | 0 | 3.75 | 0 | 1.10° |
| PSCAD1 | 0 | 0 | 0.229 | 0.135 | 0.532 | 0.331 | 0.305 | 0.169 | 0 | 0.92 | 0 | 1.21 |
| PSCAD2 | 0 | 0 | 0.225 | 0.139 | 0.533 | 0.343 | 0.302 | 0.175 | 0 | 0.88 | 0 | 1.09 |
| PSCAD3 | 0 | 0 | 0.231 | 0.136 | 0.539 | 0.340 | 0.308 | 0.172 | 0 | 0.86 | 0 | 1.03 |
| PMCP1 | 0 | 0 | 0.229 | 0.134 | 0.532 | 0.328 | 0.305 | 0.167 | 0 | 0.90 | 0 | 1.20 |
| PMCP2 | 0 | 0 | 0.226 | 0.138 | 0.538 | 0.342 | 0.304 | 0.174 | 0 | 0.91 | 0 | 1.09 |
| PMCP3 | 0 | 0 | 0.231 | 0.136 | 0.557 | 0.338 | 0.313 | 0.171 | 0 | 0.94 | 0 | 1.04 |

intercept: 0

sample size : 500

simulation time: 100

0

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_TRUE_x_missing_location_1.Rdata_location_2_1.0_n_1.Rdata_location$

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|------------|----------|
| FLASSO | 0 | 0 | 0.077 | 0.029 | 0.211 | 0.089 | 0.108 | 0.037 | 0 | 2.49 | 0 | 1.527 |
| FSCAD | 0 | 0 | 0.066 | 0.031 | 0.138 | 0.082 | 0.083 | 0.039 | 0 | 0.65 | 0 | 1.274 |
| FMCP | 0 | 0 | 0.065 | 0.031 | 0.138 | 0.085 | 0.083 | 0.040 | 0 | 0.59 | 0 | 1.138 |
| CLASSO | 0 | 0 | 0.170 | 0.059 | 0.443 | 0.135 | 0.231 | 0.068 | 0 | 2.68 | 0 | 1.230 |
| CSCAD | 0 | 0 | 0.128 | 0.049 | 0.267 | 0.108 | 0.163 | 0.059 | 0 | 0.68 | 0 | 1.053 |
| $_{ m CMCP}$ | 0 | 0 | 0.131 | 0.049 | 0.285 | 0.118 | 0.170 | 0.059 | 0 | 0.62 | 0 | 1.237 |
| PLASSO | 0 | 0 | 0.295 | 0.145 | 0.748 | 0.281 | 0.392 | 0.172 | 0 | 3.82 | 0 | 1.123 |
| PSCAD1 | 0 | 0 | 0.200 | 0.115 | 0.445 | 0.258 | 0.263 | 0.142 | 0 | 0.59 | 0 | 1.102 |
| PSCAD2 | 0 | 0 | 0.201 | 0.107 | 0.446 | 0.244 | 0.263 | 0.132 | 0 | 0.62 | 0 | 0.993 |
| PSCAD3 | 0 | 0 | 0.199 | 0.112 | 0.445 | 0.253 | 0.262 | 0.139 | 0 | 0.59 | 0 | 0.965 |
| PMCP1 | 0 | 0 | 0.196 | 0.111 | 0.440 | 0.249 | 0.258 | 0.138 | 0 | 0.62 | 0 | 1.023 |
| PMCP2 | 0 | 0 | 0.198 | 0.110 | 0.441 | 0.249 | 0.260 | 0.136 | 0 | 0.61 | 0 | 0.942 |
| PMCP3 | 0 | 0 | 0.199 | 0.107 | 0.449 | 0.242 | 0.263 | 0.131 | 0 | 0.67 | 0 | 0.900 |

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_TRUE_x_missing_location_3.Rdata_location_2.Rdata_location_3.Rdata$

| | rho | r_sd | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|---------------|-----|------|-------|--------------|---------------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.074 | 0.028 | 0.192 | 0.078 | 0.100 | 0.034 | 0 | 2.36 | 0 | 1.425 |
| FSCAD | 0 | 0 | 0.058 | 0.026 | 0.117 | 0.071 | 0.072 | 0.034 | 0 | 0.45 | 0 | 1.038 |
| FMCP | 0 | 0 | 0.058 | 0.026 | 0.111 | 0.065 | 0.070 | 0.033 | 0 | 0.30 | 0 | 0.893 |
| CLASSO | 0 | 0 | 0.219 | 0.050 | 0.560 | 0.133 | 0.296 | 0.061 | 0 | 2.72 | 0 | 1.551 |
| CSCAD | 0 | 0 | 0.176 | 0.045 | 0.382 | 0.145 | 0.226 | 0.062 | 0 | 1.12 | 0 | 1.380 |
| $_{\rm CMCP}$ | 0 | 0 | 0.181 | 0.052 | 0.375 | 0.139 | 0.231 | 0.066 | 0 | 0.51 | 0 | 1.068 |
| PLASSO | 0 | 0 | 0.260 | 0.131 | 0.695 | 0.275 | 0.353 | 0.159 | 0 | 3.93 | 0 | 1.057 |
| PSCAD1 | 0 | 0 | 0.196 | 0.098 | 0.433 | 0.226 | 0.256 | 0.126 | 0 | 0.68 | 0 | 1.062 |
| PSCAD2 | 0 | 0 | 0.199 | 0.100 | 0.445 | 0.242 | 0.262 | 0.131 | 0 | 0.66 | 0 | 1.085 |
| PSCAD3 | 0 | 0 | 0.199 | 0.102 | 0.450 | 0.242 | 0.264 | 0.132 | 0 | 0.65 | 0 | 0.999 |
| PMCP1 | 0 | 0 | 0.196 | 0.099 | 0.434 | 0.228 | 0.256 | 0.127 | 0 | 0.66 | 0 | 1.017 |
| PMCP2 | 0 | 0 | 0.198 | 0.101 | 0.446 | 0.240 | 0.262 | 0.131 | 0 | 0.64 | 0 | 0.980 |
| PMCP3 | 0 | 0 | 0.198 | 0.101 | 0.457 | 0.242 | 0.265 | 0.131 | 0 | 0.73 | 0 | 1.053 |

 $\mathrm{beta}: 2\ 1.5\ 0.5\ 0\ 0\ 0\ 0\ 0$

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $file_name: ./data/beta_2_1.5_n_500_lambda_location_11_60_error_independent_TRUE_x_missing_location_8.Rdata$

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|-------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.082 | 0.027 | 0.213 | 0.084 | 0.111 | 0.035 | 0 | 2.37 | 0 | 1.397 |
| FSCAD | 0 | 0 | 0.067 | 0.029 | 0.143 | 0.086 | 0.085 | 0.039 | 0 | 0.62 | 0 | 1.332 |
| $_{ m FMCP}$ | 0 | 0 | 0.067 | 0.029 | 0.140 | 0.085 | 0.085 | 0.039 | 0 | 0.49 | 0 | 1.141 |
| CLASSO | 0 | 0 | 0.236 | 0.065 | 0.611 | 0.145 | 0.322 | 0.076 | 0 | 2.91 | 0 | 1.512 |
| CSCAD | 0 | 0 | 0.193 | 0.057 | 0.411 | 0.143 | 0.248 | 0.072 | 0 | 0.75 | 0 | 1.258 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.059 | 0.399 | 0.147 | 0.245 | 0.076 | 0 | 0.44 | 0 | 1.038 |
| PLASSO | 0 | 0 | 0.259 | 0.136 | 0.698 | 0.301 | 0.353 | 0.173 | 0 | 3.94 | 0 | 1.033 |
| PSCAD1 | 0 | 0 | 0.209 | 0.134 | 0.471 | 0.351 | 0.275 | 0.181 | 0 | 0.69 | 0 | 1.220 |
| PSCAD2 | 0 | 0 | 0.216 | 0.137 | 0.490 | 0.361 | 0.286 | 0.185 | 0 | 0.69 | 0 | 1.134 |
| PSCAD3 | 0 | 0 | 0.216 | 0.137 | 0.489 | 0.363 | 0.285 | 0.186 | 0 | 0.68 | 0 | 1.091 |
| PMCP1 | 0 | 0 | 0.213 | 0.136 | 0.476 | 0.351 | 0.279 | 0.183 | 0 | 0.70 | 0 | 1.202 |
| PMCP2 | 0 | 0 | 0.216 | 0.137 | 0.492 | 0.356 | 0.286 | 0.185 | 0 | 0.65 | 0 | 1.038 |
| PMCP3 | 0 | 0 | 0.215 | 0.140 | 0.493 | 0.365 | 0.286 | 0.189 | 0 | 0.69 | 0 | 1.042 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_FALSE_x_missing_location_1.Rdata table_original

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.084 | 0.034 | 0.220 | 0.116 | 0.115 | 0.048 | 0 | 1.82 | 0 | 1.500 |
| FSCAD | 0 | 0 | 0.075 | 0.038 | 0.167 | 0.122 | 0.097 | 0.053 | 0 | 0.60 | 0 | 1.271 |
| FMCP | 0 | 0 | 0.075 | 0.040 | 0.170 | 0.130 | 0.098 | 0.056 | 0 | 0.51 | 0 | 1.115 |
| CLASSO | 0 | 0 | 0.136 | 0.047 | 0.332 | 0.142 | 0.179 | 0.062 | 0 | 2.01 | 0 | 1.474 |
| CSCAD | 0 | 0 | 0.112 | 0.045 | 0.250 | 0.156 | 0.145 | 0.066 | 0 | 0.79 | 0 | 1.431 |
| CMCP | 0 | 0 | 0.111 | 0.045 | 0.242 | 0.149 | 0.144 | 0.065 | 0 | 0.54 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.265 | 0.128 | 0.687 | 0.285 | 0.354 | 0.157 | 0 | 3.76 | 0 | 0.986 |
| PSCAD1 | 0 | 0 | 0.205 | 0.123 | 0.425 | 0.282 | 0.260 | 0.153 | 0 | 0.48 | 0 | 0.979 |
| PSCAD2 | 0 | 0 | 0.209 | 0.121 | 0.432 | 0.275 | 0.265 | 0.150 | 0 | 0.48 | 0 | 0.870 |
| PSCAD3 | 0 | 0 | 0.211 | 0.121 | 0.440 | 0.277 | 0.269 | 0.151 | 0 | 0.51 | 0 | 0.870 |
| PMCP1 | 0 | 0 | 0.204 | 0.122 | 0.426 | 0.283 | 0.259 | 0.154 | 0 | 0.49 | 0 | 0.980 |
| PMCP2 | 0 | 0 | 0.211 | 0.121 | 0.441 | 0.279 | 0.269 | 0.151 | 0 | 0.52 | 0 | 0.882 |
| PMCP3 | 0 | 0 | 0.212 | 0.120 | 0.444 | 0.277 | 0.270 | 0.150 | 0 | 0.55 | С | 0.880 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_inethod: xy missing_location: 3 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 49\ 50$

file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_FALSE_x_missing_location_3.Rdata table_original

| | $^{\mathrm{rho}}$ | r_sd | $L_{-} inf$ | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | L_{-}^{2} | L_2 sd | tn0e0 | t0en0 | $\rm tn0e0_sd$ | $t0en0_sd$ |
|--------|-------------------|---------|-------------|--------------|---------------|---------------------|-------------|----------|-------|-------|-----------------|-------------|
| FLASSO | 0 | 0 | 0.084 | 0.038 | 0.214 | 0.112 | 0.113 | 0.050 | 0.00 | 2.08 | 0.0 | 1.489 |
| FSCAD | 0 | 0 | 0.078 | 0.043 | 0.175 | 0.124 | 0.101 | 0.059 | 0.00 | 0.71 | 0.0 | 1.336 |
| FMCP | 0 | 0 | 0.076 | 0.039 | 0.169 | 0.109 | 0.100 | 0.054 | 0.00 | 0.53 | 0.0 | 1.058 |
| CLASSO | 0 | 0 | 0.164 | 0.054 | 0.395 | 0.149 | 0.215 | 0.064 | 0.00 | 2.05 | 0.0 | 1.459 |
| CSCAD | 0 | 0 | 0.143 | 0.058 | 0.316 | 0.183 | 0.183 | 0.080 | 0.00 | 1.11 | 0.0 | 1.39 |
| CMCP | 0 | 0 | 0.147 | 0.054 | 0.328 | 0.186 | 0.189 | 0.077 | 0.00 | 0.98 | 0.0 | 1.477 |
| PLASSO | 0 | 0 | 0.263 | 0.121 | 0.701 | 0.249 | 0.357 | 0.145 | 0.00 | 3.73 | 0.0 | 1.221 |
| PSCAD1 | 0 | 0 | 0.238 | 0.126 | 0.541 | 0.325 | 0.311 | 0.168 | 0.00 | 0.83 | 0.0 | 1.264 |
| PSCAD2 | 0 | 0 | 0.239 | 0.130 | 0.551 | 0.339 | 0.317 | 0.176 | 0.00 | 0.83 | 0.0 | 1.138 |
| PSCAD3 | 0 | 0 | 0.242 | 0.130 | 0.557 | 0.342 | 0.320 | 0.177 | 0.00 | 0.82 | 0.0 | 1.104 |
| PMCP1 | 0 | 0 | 0.238 | 0.129 | 0.548 | 0.335 | 0.314 | 0.174 | 0.01 | 0.84 | 0.1 | 1.22(|
| PMCP2 | 0 | 0 | 0.241 | 0.130 | 0.559 | 0.338 | 0.319 | 0.176 | 0.00 | 0.84 | 0.0 | 1.135 |
| PMCP3 | 0 | 0 | 0.242 | 0.129 | 0.564 | 0.340 | 0.322 | 0.175 | 0.00 | 0.86 | 0.0 | 1.128 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time : 100

simulation time: 1 loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_FALSE_x_missing_location_8.Rdata table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------|--------------|---------------|----------|-------|----------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.089 | 0.032 | 0.222 | 0.100 | 0.120 | 0.043 | 0 | 1.82 | 0 | 1.513 |
| FSCAD | 0 | 0 | 0.082 | 0.038 | 0.180 | 0.105 | 0.108 | 0.053 | 0 | 0.50 | 0 | 0.990 |
| $_{ m FMCP}$ | 0 | 0 | 0.081 | 0.038 | 0.174 | 0.106 | 0.105 | 0.053 | 0 | 0.36 | 0 | 0.927 |
| CLASSO | 0 | 0 | 0.188 | 0.053 | 0.467 | 0.149 | 0.251 | 0.060 | 0 | 2.22 | 0 | 1.488 |
| CSCAD | 0 | 0 | 0.161 | 0.055 | 0.359 | 0.191 | 0.207 | 0.074 | 0 | 1.00 | 0 | 1.435 |
| CMCP | 0 | 0 | 0.158 | 0.056 | 0.342 | 0.188 | 0.202 | 0.077 | 0 | 0.67 | 0 | 1.272 |
| PLASSO | 0 | 0 | 0.303 | 0.132 | 0.799 | 0.259 | 0.411 | 0.156 | 0 | 3.75 | 0 | 1.104 |
| PSCAD1 | 0 | 0 | 0.229 | 0.135 | 0.532 | 0.331 | 0.305 | 0.169 | 0 | 0.92 | 0 | 1.212 |
| PSCAD2 | 0 | 0 | 0.225 | 0.139 | 0.533 | 0.343 | 0.302 | 0.175 | 0 | 0.88 | 0 | 1.094 |
| PSCAD3 | 0 | 0 | 0.231 | 0.136 | 0.539 | 0.340 | 0.308 | 0.172 | 0 | 0.86 | 0 | 1.035 |
| PMCP1 | 0 | 0 | 0.229 | 0.134 | 0.532 | 0.328 | 0.305 | 0.167 | 0 | 0.90 | 0 | 1.202 |
| PMCP2 | 0 | 0 | 0.226 | 0.138 | 0.538 | 0.342 | 0.304 | 0.174 | 0 | 0.91 | 0 | 1.093 |
| PMCP3 | 0 | 0 | 0.231 | 0.136 | 0.557 | 0.338 | 0.313 | 0.171 | 0 | 0.94 | 0 | 1.043 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_1.Rdata table_original

| rho | r_sd | L_\inf | $L_{\rm sd}$ | $\overset{L}{-1}$ | L_1_sd | L_2 | $L_2_{\rm sd}$ | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|---------|--------|-----------|--------------|-------------------|---------------------|-------|------------------|-------|-------|-------------|-------------|
| 0 0 | 0 | 0.077 | 0.029 | 0.211 | 0.089 | 0.108 | 0.037 | 0 | 2.49 | 0 | 1.527 |
| 0 | 0 | 0.066 | 0.031 | 0.138 | 0.082 | 0.083 | 0.039 | 0 | 0.65 | 0 | 1.274 |
| 0 | 0 | 0.065 | 0.031 | 0.138 | 0.085 | 0.083 | 0.040 | 0 | 0.59 | 0 | 1.138 |
| 30 0 | 0 | 0.170 | 0.059 | 0.443 | 0.135 | 0.231 | 0.068 | 0 | 2.68 | 0 | 1.230 |
| 0 O | 0 | 0.128 | 0.049 | 0.267 | 0.108 | 0.163 | 0.059 | 0 | 0.68 | 0 | 1.053 |
| 0 | 0 | 0.131 | 0.049 | 0.285 | 0.118 | 0.170 | 0.059 | 0 | 0.62 | 0 | 1.237 |
| 0 08 | 0 | 0.295 | 0.145 | 0.748 | 0.281 | 0.392 | 0.172 | 0 | 3.82 | 0 | 1.123 |
| 01 0 | 0 | 0.200 | 0.115 | 0.445 | 0.258 | 0.263 | 0.142 | 0 | 0.59 | 0 | 1.102 |
| 02 0 | 0 | 0.201 | 0.107 | 0.446 | 0.244 | 0.263 | 0.132 | 0 | 0.62 | 0 | 0.993 |
| D3 0 | 0 | 0.199 | 0.112 | 0.445 | 0.253 | 0.262 | 0.139 | 0 | 0.59 | 0 | 0.965 |
| PMCP1 0 | 0 | 0.196 | 0.111 | 0.440 | 0.249 | 0.258 | 0.138 | 0 | 0.62 | 0 | 1.023 |
| 2 0 | 0 | 0.198 | 0.110 | 0.441 | 0.249 | 0.260 | 0.136 | 0 | 0.61 | 0 | 0.942 |
| 3 0 | 0 | 0.199 | 0.107 | 0.449 | 0.242 | 0.263 | 0.131 | 0 | 0.67 | 0 | 0.900 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy missing_location: 3 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_3.Rdata table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_{-1} sd | L_2 | $L_2 L_2 sd$ | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------------|-----|------|-------|--------------|---------------|-------------|-------|--------------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.074 | 0.028 | 0.192 | 0.078 | 0.100 | 0.034 | 0 | 2.36 | 0 | 1.425 |
| FSCAD | 0 | 0 | 0.058 | 0.026 | 0.117 | 0.071 | 0.072 | 0.034 | 0 | 0.45 | 0 | 1.038 |
| $_{ m FMCP}$ | 0 | 0 | 0.058 | 0.026 | 0.111 | 0.065 | 0.070 | 0.033 | 0 | 0.30 | 0 | 0.893 |
| CLASSO | 0 | 0 | 0.219 | 0.050 | 0.560 | 0.133 | 0.296 | 0.061 | 0 | 2.72 | 0 | 1.551 |
| CSCAD | 0 | 0 | 0.176 | 0.045 | 0.382 | 0.145 | 0.226 | 0.062 | 0 | 1.12 | 0 | 1.380 |
| CMCP | 0 | 0 | 0.181 | 0.052 | 0.375 | 0.139 | 0.231 | 0.066 | 0 | 0.51 | 0 | 1.068 |
| PLASSO | 0 | 0 | 0.260 | 0.131 | 0.695 | 0.275 | 0.353 | 0.159 | 0 | 3.93 | 0 | 1.057 |
| PSCAD1 | 0 | 0 | 0.196 | 0.098 | 0.433 | 0.226 | 0.256 | 0.126 | 0 | 0.68 | 0 | 1.062 |
| PSCAD2 | 0 | 0 | 0.199 | 0.100 | 0.445 | 0.242 | 0.262 | 0.131 | 0 | 0.66 | 0 | 1.085 |
| PSCAD3 | 0 | 0 | 0.199 | 0.102 | 0.450 | 0.242 | 0.264 | 0.132 | 0 | 0.65 | 0 | 0.999 |
| PMCP1 | 0 | 0 | 0.196 | 0.099 | 0.434 | 0.228 | 0.256 | 0.127 | 0 | 0.66 | 0 | 1.017 |
| PMCP2 | 0 | 0 | 0.198 | 0.101 | 0.446 | 0.240 | 0.262 | 0.131 | 0 | 0.64 | 0 | 0.980 |
| PMCP3 | 0 | 0 | 0.198 | 0.101 | 0.457 | 0.242 | 0.265 | 0.131 | 0 | 0.73 | 0 | 1.053 |

 $\mathrm{beta}:\,2\;1.5\;0.5\;0\;0\;0\;0\;0$

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy missing_location: 8 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_2_1.5_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_8.Rdata table_original

| | rho | r_sd | L_inf | L_sd | $L_{-}1$ | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.082 | 0.027 | 0.213 | 0.084 | 0.111 | 0.035 | 0 | 2.37 | 0 | 1.397 |
| FSCAD | 0 | 0 | 0.067 | 0.029 | 0.143 | 0.086 | 0.085 | 0.039 | 0 | 0.62 | 0 | 1.332 |
| $_{ m FMCP}$ | 0 | 0 | 0.067 | 0.029 | 0.140 | 0.085 | 0.085 | 0.039 | 0 | 0.49 | 0 | 1.141 |
| CLASSO | 0 | 0 | 0.236 | 0.065 | 0.611 | 0.145 | 0.322 | 0.076 | 0 | 2.91 | 0 | 1.512 |
| CSCAD | 0 | 0 | 0.193 | 0.057 | 0.411 | 0.143 | 0.248 | 0.072 | 0 | 0.75 | 0 | 1.258 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.059 | 0.399 | 0.147 | 0.245 | 0.076 | 0 | 0.44 | 0 | 1.038 |
| PLASSO | 0 | 0 | 0.259 | 0.136 | 0.698 | 0.301 | 0.353 | 0.173 | 0 | 3.94 | 0 | 1.033 |
| PSCAD1 | 0 | 0 | 0.209 | 0.134 | 0.471 | 0.351 | 0.275 | 0.181 | 0 | 0.69 | 0 | 1.220 |
| PSCAD2 | 0 | 0 | 0.216 | 0.137 | 0.490 | 0.361 | 0.286 | 0.185 | 0 | 0.69 | 0 | 1.134 |
| PSCAD3 | 0 | 0 | 0.216 | 0.137 | 0.489 | 0.363 | 0.285 | 0.186 | 0 | 0.68 | 0 | 1.091 |
| PMCP1 | 0 | 0 | 0.213 | 0.136 | 0.476 | 0.351 | 0.279 | 0.183 | 0 | 0.70 | 0 | 1.202 |
| PMCP2 | 0 | 0 | 0.216 | 0.137 | 0.492 | 0.356 | 0.286 | 0.185 | 0 | 0.65 | 0 | 1.038 |
| PMCP3 | 0 | 0 | 0.215 | 0.140 | 0.493 | 0.365 | 0.286 | 0.189 | 0 | 0.69 | 0 | 1.042 |

intercept: 0

sample size: 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

| | rho | r_sd | L_{-} inf | $L_{\rm sd}$ | Γ_{-1} | L_1 sd | L_2 | L_2 L_2_sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------------|--------------|---------------|----------|-------|------------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.138 | 0.051 | 0.346 | 0.172 | 0.185 | 0.073 | 0 | 1.99 | 0 | 1.630 |
| FSCAD | 0 | 0 | 0.123 | 0.055 | 0.258 | 0.157 | 0.157 | 0.078 | 0 | 0.51 | 0 | 1.124 |
| FMCP | 0 | 0 | 0.127 | 0.056 | 0.272 | 0.176 | 0.164 | 0.083 | 0 | 0.46 | 0 | 1.049 |
| CLASSO | 0 | 0 | 0.215 | 0.087 | 0.530 | 0.240 | 0.286 | 0.106 | 0 | 1.99 | 0 | 1.624 |
| CSCAD | 0 | 0 | 0.182 | 0.090 | 0.391 | 0.270 | 0.234 | 0.125 | 0 | 0.53 | 0 | 1.185 |
| $_{ m CMCP}$ | 0 | 0 | 0.183 | 0.088 | 0.385 | 0.240 | 0.234 | 0.118 | 0 | 0.41 | 0 | 0.922 |
| PLASSO | 0 | 0 | 0.663 | 0.366 | 1.679 | 0.744 | 0.880 | 0.442 | 0 | 3.89 | 0 | 1.118 |
| PSCAD1 | 0 | 0 | 0.559 | 0.345 | 1.296 | 0.862 | 0.737 | 0.447 | 0 | 0.81 | 0 | 1.308 |
| PSCAD2 | 0 | 0 | 0.530 | 0.351 | 1.228 | 0.879 | 0.699 | 0.457 | 0 | 0.81 | 0 | 1.220 |
| PSCAD3 | 0 | 0 | 0.541 | 0.345 | 1.258 | 0.877 | 0.712 | 0.450 | 0 | 0.82 | 0 | 1.140 |
| PMCP1 | 0 | 0 | 0.526 | 0.334 | 1.211 | 0.855 | 0.693 | 0.438 | 0 | 0.76 | 0 | 1.224 |
| PMCP2 | 0 | 0 | 0.542 | 0.353 | 1.259 | 0.872 | 0.714 | 0.456 | 0 | 0.87 | 0 | 1.169 |
| PMCP3 | 0 | 0 | 0.539 | 0.364 | 1.261 | 0.903 | 0.713 | 0.475 | 0 | 0.84 | 0 | 1.108 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

| | $^{\mathrm{rho}}$ | r_sd | $_{ m L_inf}$ | $L_{\rm sd}$ | L_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-------------------|---------|----------------|--------------|----------|-------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.136 | 0.054 | 0.358 | 0.201 | 0.189 | 0.082 | 0 | 1.89 | 0 | 1.582 |
| FSCAD | 0 | 0 | 0.124 | 0.056 | 0.279 | 0.204 | 0.164 | 0.089 | 0 | 0.46 | 0 | 1.210 |
| FMCP | 0 | 0 | 0.123 | 0.056 | 0.267 | 0.175 | 0.160 | 0.082 | 0 | 0.41 | 0 | 1.065 |
| CLASSO | 0 | 0 | 0.228 | 0.086 | 0.558 | 0.234 | 0.303 | 0.104 | 0 | 1.99 | 0 | 1.480 |
| CSCAD | 0 | 0 | 0.185 | 0.089 | 0.371 | 0.212 | 0.232 | 0.113 | 0 | 0.32 | 0 | 0.898 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.087 | 0.400 | 0.247 | 0.244 | 0.118 | 0 | 0.45 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.627 | 0.321 | 1.629 | 0.715 | 0.851 | 0.420 | 0 | 3.88 | 0 | 1.018 |
| PSCAD1 | 0 | 0 | 0.498 | 0.285 | 1.105 | 0.711 | 0.658 | 0.391 | 0 | 0.53 | 0 | 1.058 |
| PSCAD2 | 0 | 0 | 0.491 | 0.302 | 1.104 | 0.761 | 0.651 | 0.413 | 0 | 0.62 | 0 | 1.003 |
| PSCAD3 | 0 | 0 | 0.486 | 0.298 | 1.098 | 0.756 | 0.645 | 0.408 | 0 | 0.62 | 0 | 0.972 |
| PMCP1 | 0 | 0 | 0.476 | 0.283 | 1.056 | 0.700 | 0.628 | 0.383 | 0 | 0.55 | 0 | 1.048 |
| PMCP2 | 0 | 0 | 0.494 | 0.304 | 1.115 | 0.765 | 0.654 | 0.415 | 0 | 0.65 | 0 | 0.957 |
| PMCP3 | 0 | О | 0.486 | 0.301 | 1.090 | 0.759 | 0.641 | 0.410 | 0 | 0.63 | 0 | 0.928 |

intercept: 0

sample size: 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $file_name: \ ./data/beta_3_2_n_200_lambda_location_11_30_error_independent_FALSE_x_missing_location_8.Rdata_ramples and the state of the state of$

| original |
|--------------|
| $_{ m able}$ |

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------|--------------|----------|----------|-------|----------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.137 | 0.055 | 0.349 | 0.183 | 0.184 | 0.077 | 0 | 1.91 | 0 | 1.512 |
| FSCAD | 0 | 0 | 0.120 | 0.057 | 0.260 | 0.161 | 0.156 | 0.079 | 0 | 0.42 | 0 | 1.046 |
| $_{ m FMCP}$ | 0 | 0 | 0.125 | 0.059 | 0.264 | 0.166 | 0.160 | 0.080 | 0 | 0.35 | 0 | 0.947 |
| CLASSO | 0 | 0 | 0.238 | 0.081 | 0.628 | 0.264 | 0.325 | 0.106 | 0 | 2.29 | 0 | 1.559 |
| CSCAD | 0 | 0 | 0.188 | 0.086 | 0.411 | 0.282 | 0.240 | 0.119 | 0 | 0.59 | 0 | 1.272 |
| CMCP | 0 | 0 | 0.192 | 0.093 | 0.424 | 0.296 | 0.249 | 0.133 | 0 | 0.49 | 0 | 1.105 |
| PLASSO | 0 | 0 | 0.661 | 0.330 | 1.731 | 0.753 | 0.898 | 0.422 | 0 | 3.65 | 0 | 1.104 |
| PSCAD1 | 0 | 0 | 0.569 | 0.388 | 1.247 | 0.865 | 0.741 | 0.493 | 0 | 0.45 | 0 | 0.978 |
| PSCAD2 | 0 | 0 | 0.584 | 0.441 | 1.308 | 1.036 | 0.760 | 0.562 | 0 | 0.64 | 0 | 1.133 |
| PSCAD3 | 0 | 0 | 0.573 | 0.450 | 1.276 | 1.049 | 0.741 | 0.571 | 0 | 0.66 | 0 | 1.066 |
| PMCP1 | 0 | 0 | 0.558 | 0.395 | 1.233 | 0.928 | 0.725 | 0.504 | 0 | 0.58 | 0 | 1.174 |
| PMCP2 | 0 | 0 | 0.572 | 0.435 | 1.284 | 1.026 | 0.745 | 0.554 | 0 | 0.64 | 0 | 1.142 |
| PMCP3 | 0 | 0 | 0.604 | 0.438 | 1.347 | 1.003 | 0.784 | 0.555 | 0 | 0.65 | 0 | 1.038 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy missing_location: 1 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $file_name: \ ./data/beta_3_2_n_200_lambda_location_11_30_error_independent_TRUE_x_missing_location_1.Rdata_ror_name = ... \$

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|-------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.126 | 0.046 | 0.349 | 0.146 | 0.175 | 0.059 | 0 | 2.69 | 0 | 1.535 |
| FSCAD | 0 | 0 | 0.107 | 0.048 | 0.238 | 0.155 | 0.137 | 0.066 | 0 | 0.75 | 0 | 1.466 |
| $_{ m FMCP}$ | 0 | 0 | 0.108 | 0.050 | 0.254 | 0.175 | 0.143 | 0.071 | 0 | 0.80 | 0 | 1.511 |
| CLASSO | 0 | 0 | 0.206 | 0.065 | 0.560 | 0.192 | 0.284 | 0.082 | 0 | 2.76 | 0 | 1.532 |
| CSCAD | 0 | 0 | 0.154 | 0.059 | 0.347 | 0.208 | 0.202 | 0.083 | 0 | 0.68 | 0 | 1.449 |
| CMCP | 0 | 0 | 0.152 | 0.059 | 0.332 | 0.198 | 0.197 | 0.082 | 0 | 0.53 | 0 | 1.267 |
| PLASSO | 0 | 0 | 0.543 | 0.324 | 1.422 | 0.669 | 0.731 | 0.403 | 0 | 4.24 | 0 | 0.922 |
| PSCAD1 | 0 | 0 | 0.439 | 0.269 | 1.008 | 0.666 | 0.579 | 0.359 | 0 | 0.06 | 0 | 1.191 |
| PSCAD2 | 0 | 0 | 0.449 | 0.275 | 1.045 | 0.695 | 0.593 | 0.369 | 0 | 0.81 | 0 | 1.195 |
| PSCAD3 | 0 | 0 | 0.444 | 0.282 | 1.055 | 0.707 | 0.594 | 0.379 | 0 | 0.84 | 0 | 1.143 |
| PMCP1 | 0 | 0 | 0.417 | 0.270 | 0.964 | 0.677 | 0.552 | 0.364 | 0 | 0.68 | 0 | 1.154 |
| PMCP2 | 0 | 0 | 0.437 | 0.280 | 1.019 | 0.705 | 0.578 | 0.377 | 0 | 0.77 | 0 | 1.081 |
| PMCP3 | С | 0 | 0.444 | 0.288 | 1.058 | 0.721 | 0.593 | 0.387 | 0 | 0.83 | 0 | 1.045 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $file_name: \ ./data/beta_3_2_n_200_lambda_location_11_30_error_independent_TRUE_x_missing_location_3.Rdata_ror_name = ... \$ table_original

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_{-}^{2} | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|----------|----------|-------------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.130 | 0.047 | 0.351 | 0.132 | 0.178 | 0.057 | 0 | 2.72 | 0 | 1.558 |
| FSCAD | 0 | 0 | 0.108 | 0.047 | 0.234 | 0.149 | 0.138 | 0.064 | 0 | 0.72 | 0 | 1.471 |
| $_{ m FMCP}$ | 0 | 0 | 0.106 | 0.046 | 0.216 | 0.135 | 0.132 | 0.061 | 0 | 0.43 | 0 | 1.094 |
| CLASSO | 0 | 0 | 0.244 | 0.095 | 0.633 | 0.210 | 0.329 | 0.112 | 0 | 2.82 | 0 | 1.520 |
| CSCAD | 0 | 0 | 0.181 | 0.086 | 0.342 | 0.196 | 0.218 | 0.105 | 0 | 0.32 | 0 | 0.827 |
| CMCP | 0 | 0 | 0.184 | 0.086 | 0.357 | 0.205 | 0.223 | 0.106 | 0 | 0.37 | 0 | 0.884 |
| PLASSO | 0 | 0 | 0.615 | 0.314 | 1.599 | 0.722 | 0.835 | 0.414 | 0 | 4.34 | 0 | 0.742 |
| PSCAD1 | 0 | 0 | 0.554 | 0.402 | 1.263 | 0.951 | 0.730 | 0.538 | 0 | 0.76 | 0 | 1.147 |
| PSCAD2 | 0 | 0 | 0.549 | 0.411 | 1.267 | 0.964 | 0.727 | 0.547 | 0 | 0.86 | 0 | 1.025 |
| PSCAD3 | 0 | 0 | 0.539 | 0.416 | 1.243 | 0.976 | 0.713 | 0.552 | 0 | 0.85 | 0 | 0.978 |
| PMCP1 | 0 | 0 | 0.548 | 0.399 | 1.259 | 0.937 | 0.726 | 0.530 | 0 | 0.77 | 0 | 1.145 |
| PMCP2 | 0 | 0 | 0.546 | 0.407 | 1.244 | 0.961 | 0.718 | 0.544 | 0 | 0.78 | 0 | 0.938 |
| PMCP3 | 0 | 0 | 0.523 | 0.408 | 1.203 | 0.978 | 0.689 | 0.545 | 0 | 0.82 | 0 | 0.957 |
| | | | | | | | | | | | | |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

| FLASSO 0 0.123 0.041 0.327 0.122 0.168 0.052 0 2.49 FSCAD 0 0.100 0.042 0.206 0.126 0.126 0.058 0 0.42 FMCP 0 0.096 0.042 0.194 0.107 0.121 0.055 0 0.28 CLASSO 0 0.096 0.085 0.716 0.224 0.364 0.107 0 0.28 CSCAD 0 0.181 0.085 0.367 0.193 0.229 0.104 0 0.40 CMCP 0 0.181 0.085 0.381 0.229 0.104 0 0.40 PLASSO 0 0.181 0.082 0.381 0.229 0.104 0 0.51 PLASSO 0 0.626 0.331 1.124 0.786 0.640 0.413 0 0.71 PSCADD 0 0.483 0.31 1.154 0.787 0.655 | | $^{\mathrm{rho}}$ | $\mathbf{r}_{-}\mathrm{sd}$ | $\rm L_inf$ | L_sd | Γ_{-1} | L_1_sd | L_2 | L_2_sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0 \mathrm{en}0_\mathrm{sd}$ |
|--|---------------|-------------------|-----------------------------|--------------|--------|---------------|---------------------|-------|---------------------|-------|-------|-------------|--------------------------------|
| 0 0.100 0.042 0.206 0.126 0.126 0.058 0 0 0.096 0.042 0.194 0.107 0.121 0.055 0 0 0.262 0.085 0.716 0.224 0.364 0.107 0 0 0.184 0.085 0.367 0.193 0.229 0.104 0 0 0.181 0.082 0.381 0.222 0.231 0.107 0 0 0.626 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.478 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.489 0.317 1.163 0.784 0.655 0.426 0 0 0.489 0.317 1.163 <td>FLASSO</td> <td>0</td> <td>0</td> <td>0.123</td> <td>0.041</td> <td>0.327</td> <td>0.122</td> <td>0.168</td> <td>0.052</td> <td>0</td> <td>2.49</td> <td>0</td> <td>1.389</td> | FLASSO | 0 | 0 | 0.123 | 0.041 | 0.327 | 0.122 | 0.168 | 0.052 | 0 | 2.49 | 0 | 1.389 |
| 0 0.096 0.042 0.194 0.107 0.121 0.055 0 0 0.262 0.085 0.716 0.224 0.364 0.107 0 0 0.184 0.085 0.367 0.193 0.229 0.104 0 0 0.181 0.082 0.381 0.222 0.231 0.107 0 0 0.626 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.478 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 <td>FSCAD</td> <td>0</td> <td>0</td> <td>0.100</td> <td>0.042</td> <td>0.206</td> <td>0.126</td> <td>0.126</td> <td>0.058</td> <td>0</td> <td>0.42</td> <td>0</td> <td>1.056</td> | FSCAD | 0 | 0 | 0.100 | 0.042 | 0.206 | 0.126 | 0.126 | 0.058 | 0 | 0.42 | 0 | 1.056 |
| 0 0.262 0.085 0.716 0.224 0.364 0.107 0 0 0.184 0.085 0.367 0.193 0.229 0.104 0 0 0.181 0.082 0.381 0.222 0.231 0.107 0 0 0.026 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.483 0.313 1.164 0.784 0.655 0.406 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | FMCP | 0 | 0 | 0.096 | 0.042 | 0.194 | 0.107 | 0.121 | 0.055 | 0 | 0.28 | 0 | 0.712 |
| 0 0.184 0.085 0.367 0.193 0.229 0.104 0 0 0.181 0.082 0.381 0.222 0.231 0.107 0 0 0.626 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | CLASSO | 0 | 0 | 0.262 | 0.085 | 0.716 | 0.224 | 0.364 | 0.107 | 0 | 2.81 | 0 | 1.405 |
| 0 0.181 0.082 0.381 0.222 0.231 0.107 0 0 0.626 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.483 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | CSCAD | 0 | 0 | 0.184 | 0.085 | 0.367 | 0.193 | 0.229 | 0.104 | 0 | 0.40 | 0 | 0.899 |
| 0 0.626 0.331 1.648 0.719 0.850 0.419 0 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.651 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | $_{\rm CMCP}$ | 0 | 0 | 0.181 | 0.082 | 0.381 | 0.222 | 0.231 | 0.107 | 0 | 0.51 | 0 | 1.068 |
| 0 0.478 0.319 1.120 0.786 0.640 0.431 0 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | PLASSO | 0 | 0 | 0.626 | 0.331 | 1.648 | 0.719 | 0.850 | 0.419 | 0 | 4.03 | 0 | 1.077 |
| 0 0.491 0.321 1.154 0.800 0.657 0.432 0 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | PSCAD1 | 0 | 0 | 0.478 | 0.319 | 1.120 | 0.786 | 0.640 | 0.431 | 0 | 0.71 | 0 | 1.225 |
| 0 0.483 0.313 1.164 0.787 0.655 0.423 0 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | PSCAD2 | 0 | 0 | 0.491 | 0.321 | 1.154 | 0.800 | 0.657 | 0.432 | 0 | 0.71 | 0 | 1.131 |
| 0 0.502 0.301 1.195 0.744 0.681 0.406 0 0 0.512 0.323 1.212 0.803 0.688 0.435 0 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | PSCAD3 | 0 | 0 | 0.483 | 0.313 | 1.164 | 0.787 | 0.655 | 0.423 | 0 | 0.84 | 0 | 1.170 |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | PMCP1 | 0 | 0 | 0.502 | 0.301 | 1.195 | 0.744 | 0.681 | 0.406 | 0 | 0.72 | 0 | 1.198 |
| 0 0.489 0.317 1.163 0.789 0.657 0.426 0 | PMCP2 | 0 | 0 | 0.512 | 0.323 | 1.212 | 0.803 | 0.688 | 0.435 | 0 | 0.72 | 0 | 1.074 |
| | PMCP3 | 0 | 0 | 0.489 | 0.317 | 1.163 | 0.789 | 0.657 | 0.426 | 0 | 0.79 | 0 | 1.076 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_3_2_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_1.Rdata

| | rho | r_sd | L_imf | $L_{\rm sd}$ | Γ_{-1} | $L_1_{ m sd}$ | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------|--------------|---------------|---------------|-------|----------|-------|-------|------------|----------|
| FLASSO | 0 | 0 | 0.138 | 0.051 | 0.346 | 0.172 | 0.185 | 0.073 | 0 | 1.99 | 0 | 1.630 |
| FSCAD | 0 | 0 | 0.123 | 0.055 | 0.258 | 0.157 | 0.157 | 0.078 | 0 | 0.51 | 0 | 1.124 |
| $_{ m FMCP}$ | 0 | 0 | 0.127 | 0.056 | 0.272 | 0.176 | 0.164 | 0.083 | 0 | 0.46 | 0 | 1.049 |
| CLASSO | 0 | 0 | 0.215 | 0.087 | 0.530 | 0.240 | 0.286 | 0.106 | 0 | 1.99 | 0 | 1.624 |
| CSCAD | 0 | 0 | 0.182 | 0.090 | 0.391 | 0.270 | 0.234 | 0.125 | 0 | 0.53 | 0 | 1.185 |
| CMCP | 0 | 0 | 0.183 | 0.088 | 0.385 | 0.240 | 0.234 | 0.118 | 0 | 0.41 | 0 | 0.922 |
| PLASSO | 0 | 0 | 0.663 | 0.366 | 1.679 | 0.744 | 0.880 | 0.442 | 0 | 3.89 | 0 | 1.118 |
| PSCAD1 | 0 | 0 | 0.559 | 0.345 | 1.296 | 0.862 | 0.737 | 0.447 | 0 | 0.81 | 0 | 1.308 |
| PSCAD2 | 0 | 0 | 0.530 | 0.351 | 1.228 | 0.879 | 0.699 | 0.457 | 0 | 0.81 | 0 | 1.220 |
| PSCAD3 | 0 | 0 | 0.541 | 0.345 | 1.258 | 0.877 | 0.712 | 0.450 | 0 | 0.82 | 0 | 1.140 |
| PMCP1 | 0 | 0 | 0.526 | 0.334 | 1.211 | 0.855 | 0.693 | 0.438 | 0 | 0.76 | 0 | 1.224 |
| PMCP2 | 0 | 0 | 0.542 | 0.353 | 1.259 | 0.872 | 0.714 | 0.456 | 0 | 0.87 | 0 | 1.169 |
| PMCP3 | 0 | 0 | 0.539 | 0.364 | 1.261 | 0.903 | 0.713 | 0.475 | 0 | 0.84 | 0 | 1.108 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_3_2_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_3.Rdata

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|-------------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.136 | 0.054 | 0.358 | 0.201 | 0.189 | 0.082 | 0 | 1.89 | 0 | 1.582 |
| FSCAD | 0 | 0 | 0.124 | 0.056 | 0.279 | 0.204 | 0.164 | 0.089 | 0 | 0.46 | 0 | 1.210 |
| $_{ m FMCP}$ | 0 | 0 | 0.123 | 0.056 | 0.267 | 0.175 | 0.160 | 0.082 | 0 | 0.41 | 0 | 1.065 |
| CLASSO | 0 | 0 | 0.228 | 0.086 | 0.558 | 0.234 | 0.303 | 0.104 | 0 | 1.99 | 0 | 1.480 |
| CSCAD | 0 | 0 | 0.185 | 0.089 | 0.371 | 0.212 | 0.232 | 0.113 | 0 | 0.32 | 0 | 0.898 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.087 | 0.400 | 0.247 | 0.244 | 0.118 | 0 | 0.45 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.627 | 0.321 | 1.629 | 0.715 | 0.851 | 0.420 | 0 | 3.88 | 0 | 1.018 |
| PSCAD1 | 0 | 0 | 0.498 | 0.285 | 1.105 | 0.711 | 0.658 | 0.391 | 0 | 0.53 | 0 | 1.058 |
| PSCAD2 | 0 | 0 | 0.491 | 0.302 | 1.104 | 0.761 | 0.651 | 0.413 | 0 | 0.62 | 0 | 1.003 |
| PSCAD3 | 0 | 0 | 0.486 | 0.298 | 1.098 | 0.756 | 0.645 | 0.408 | 0 | 0.62 | 0 | 0.972 |
| PMCP1 | 0 | 0 | 0.476 | 0.283 | 1.056 | 0.700 | 0.628 | 0.383 | 0 | 0.55 | 0 | 1.048 |
| PMCP2 | 0 | 0 | 0.494 | 0.304 | 1.115 | 0.765 | 0.654 | 0.415 | 0 | 0.65 | 0 | 0.957 |
| PMCP3 | 0 | 0 | 0.486 | 0.301 | 1.090 | 0.759 | 0.641 | 0.410 | 0 | 0.63 | 0 | 0.928 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_3_2_n_200_lambda_location_11_60_error_independent_FALSE_x_missing_location_8.Rdata

| | rho | r_sd | L_{-} inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------------|-------|---------------|-------------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.137 | 0.055 | 0.349 | 0.183 | 0.184 | 0.077 | 0 | 1.91 | 0 | 1.512 |
| FSCAD | 0 | 0 | 0.120 | 0.057 | 0.260 | 0.161 | 0.156 | 0.079 | 0 | 0.42 | 0 | 1.046 |
| $_{ m FMCP}$ | 0 | 0 | 0.125 | 0.059 | 0.264 | 0.166 | 0.160 | 0.080 | 0 | 0.35 | 0 | 0.947 |
| CLASSO | 0 | 0 | 0.238 | 0.081 | 0.628 | 0.264 | 0.325 | 0.106 | 0 | 2.29 | 0 | 1.559 |
| CSCAD | 0 | 0 | 0.188 | 0.086 | 0.411 | 0.282 | 0.240 | 0.119 | 0 | 0.59 | 0 | 1.272 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.093 | 0.424 | 0.296 | 0.249 | 0.133 | 0 | 0.49 | 0 | 1.105 |
| PLASSO | 0 | 0 | 0.661 | 0.330 | 1.731 | 0.753 | 0.898 | 0.422 | 0 | 3.65 | 0 | 1.104 |
| PSCAD1 | 0 | 0 | 0.569 | 0.388 | 1.247 | 0.865 | 0.741 | 0.493 | 0 | 0.45 | 0 | 0.978 |
| PSCAD2 | 0 | 0 | 0.584 | 0.441 | 1.308 | 1.036 | 0.760 | 0.562 | 0 | 0.64 | 0 | 1.133 |
| PSCAD3 | 0 | 0 | 0.573 | 0.450 | 1.276 | 1.049 | 0.741 | 0.571 | 0 | 0.66 | 0 | 1.066 |
| PMCP1 | 0 | 0 | 0.558 | 0.395 | 1.233 | 0.928 | 0.725 | 0.504 | 0 | 0.58 | 0 | 1.174 |
| PMCP2 | 0 | 0 | 0.572 | 0.435 | 1.284 | 1.026 | 0.745 | 0.554 | 0 | 0.64 | 0 | 1.142 |
| PMCP3 | 0 | 0 | 0.604 | 0.438 | 1.347 | 1.003 | 0.784 | 0.555 | 0 | 0.65 | 0 | 1.038 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 55\ 56\ 57\ 58\ 59\ 60$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_3_2_n_200_lambda_location_l1_60_error_independent_TRUE_x_missing_location_1.Rdata

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|---------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.126 | 0.046 | 0.349 | 0.146 | 0.175 | 0.059 | 0 | 2.69 | 0 | 1.535 |
| FSCAD | 0 | 0 | 0.107 | 0.048 | 0.238 | 0.155 | 0.137 | 0.066 | 0 | 0.75 | 0 | 1.466 |
| $_{ m FMCP}$ | 0 | 0 | 0.108 | 0.050 | 0.254 | 0.175 | 0.143 | 0.071 | 0 | 0.80 | 0 | 1.511 |
| CLASSO | 0 | 0 | 0.206 | 0.065 | 0.560 | 0.192 | 0.284 | 0.082 | 0 | 2.76 | 0 | 1.532 |
| CSCAD | 0 | 0 | 0.154 | 0.059 | 0.347 | 0.208 | 0.202 | 0.083 | 0 | 0.68 | 0 | 1.449 |
| $_{\rm CMCP}$ | 0 | 0 | 0.152 | 0.059 | 0.332 | 0.198 | 0.197 | 0.082 | 0 | 0.53 | 0 | 1.267 |
| PLASSO | 0 | 0 | 0.543 | 0.324 | 1.422 | 0.669 | 0.731 | 0.403 | 0 | 4.24 | 0 | 0.922 |
| PSCAD1 | 0 | 0 | 0.439 | 0.269 | 1.008 | 0.666 | 0.579 | 0.359 | 0 | 0.66 | 0 | 1.191 |
| PSCAD2 | 0 | 0 | 0.449 | 0.275 | 1.045 | 0.695 | 0.593 | 0.369 | 0 | 0.81 | 0 | 1.195 |
| PSCAD3 | 0 | 0 | 0.444 | 0.282 | 1.055 | 0.707 | 0.594 | 0.379 | 0 | 0.84 | 0 | 1.143 |
| PMCP1 | 0 | 0 | 0.417 | 0.270 | 0.964 | 0.677 | 0.552 | 0.364 | 0 | 0.68 | 0 | 1.154 |
| PMCP2 | 0 | 0 | 0.437 | 0.280 | 1.019 | 0.705 | 0.578 | 0.377 | 0 | 0.77 | 0 | 1.081 |
| PMCP3 | 0 | 0 | 0.444 | 0.288 | 1.058 | 0.721 | 0.593 | 0.387 | 0 | 0.83 | 0 | 1.045 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

file_name: ./data/beta_3_2_n_200_lambda_location_11_60_error_independent_TRUE_x_missing_location_3.Rdata

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|-------------|-------|----------|-------|-------|------------|-------------|
| FLASSO | 0 | 0 | 0.130 | 0.047 | 0.351 | 0.132 | 0.178 | 0.057 | 0 | 2.72 | 0 | 1.558 |
| FSCAD | 0 | 0 | 0.108 | 0.047 | 0.234 | 0.149 | 0.138 | 0.064 | 0 | 0.72 | 0 | 1.471 |
| $_{ m FMCP}$ | 0 | 0 | 0.106 | 0.046 | 0.216 | 0.135 | 0.132 | 0.061 | 0 | 0.43 | 0 | 1.094 |
| CLASSO | 0 | 0 | 0.244 | 0.095 | 0.633 | 0.210 | 0.329 | 0.112 | 0 | 2.82 | 0 | 1.520 |
| CSCAD | 0 | 0 | 0.181 | 0.086 | 0.342 | 0.196 | 0.218 | 0.105 | 0 | 0.32 | 0 | 0.827 |
| $_{ m CMCP}$ | 0 | 0 | 0.184 | 0.086 | 0.357 | 0.205 | 0.223 | 0.106 | 0 | 0.37 | 0 | 0.884 |
| PLASSO | 0 | 0 | 0.615 | 0.314 | 1.599 | 0.722 | 0.835 | 0.414 | 0 | 4.34 | 0 | 0.742 |
| PSCAD1 | 0 | 0 | 0.554 | 0.402 | 1.263 | 0.951 | 0.730 | 0.538 | 0 | 0.76 | 0 | 1.147 |
| PSCAD2 | 0 | 0 | 0.549 | 0.411 | 1.267 | 0.964 | 0.727 | 0.547 | 0 | 0.86 | 0 | 1.025 |
| PSCAD3 | 0 | 0 | 0.539 | 0.416 | 1.243 | 0.976 | 0.713 | 0.552 | 0 | 0.85 | 0 | 0.978 |
| PMCP1 | 0 | 0 | 0.548 | 0.399 | 1.259 | 0.937 | 0.726 | 0.530 | 0 | 0.77 | 0 | 1.145 |
| PMCP2 | 0 | 0 | 0.546 | 0.407 | 1.244 | 0.961 | 0.718 | 0.544 | 0 | 0.78 | 0 | 0.938 |
| PMCP3 | 0 | 0 | 0.523 | 0.408 | 1.203 | 0.978 | 0.689 | 0.545 | 0 | 0.82 | 0 | 0.957 |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42$

 $lambda_location_for_cv(MCP): 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 44\ 45\ 46\ 47\ 48\ 49\ 50\ 51\ 52\ 53\ 54\ 55\ 56\ 57\ 58\ 59\ 60$

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|---------------|-----|------|-------|-------|---------------|-------------|-------|----------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.123 | 0.041 | 0.327 | 0.122 | 0.168 | 0.052 | 0 | 2.49 | 0 | 1.389 |
| FSCAD | 0 | 0 | 0.100 | 0.042 | 0.206 | 0.126 | 0.126 | 0.058 | 0 | 0.42 | 0 | 1.056 |
| $_{ m FMCP}$ | 0 | 0 | 0.096 | 0.042 | 0.194 | 0.107 | 0.121 | 0.055 | 0 | 0.28 | 0 | 0.712 |
| CLASSO | 0 | 0 | 0.262 | 0.085 | 0.716 | 0.224 | 0.364 | 0.107 | 0 | 2.81 | 0 | 1.405 |
| CSCAD | 0 | 0 | 0.184 | 0.085 | 0.367 | 0.193 | 0.229 | 0.104 | 0 | 0.40 | 0 | 0.899 |
| $_{\rm CMCP}$ | 0 | 0 | 0.181 | 0.082 | 0.381 | 0.222 | 0.231 | 0.107 | 0 | 0.51 | 0 | 1.068 |
| PLASSO | 0 | 0 | 0.626 | 0.331 | 1.648 | 0.719 | 0.850 | 0.419 | 0 | 4.03 | 0 | 1.077 |
| PSCAD1 | 0 | 0 | 0.478 | 0.319 | 1.120 | 0.786 | 0.640 | 0.431 | 0 | 0.71 | 0 | 1.225 |
| PSCAD2 | 0 | 0 | 0.491 | 0.321 | 1.154 | 0.800 | 0.657 | 0.432 | 0 | 0.71 | 0 | 1.131 |
| PSCAD3 | 0 | 0 | 0.483 | 0.313 | 1.164 | 0.787 | 0.655 | 0.423 | 0 | 0.84 | 0 | 1.170 |
| PMCP1 | 0 | 0 | 0.502 | 0.301 | 1.195 | 0.744 | 0.681 | 0.406 | 0 | 0.72 | 0 | 1.198 |
| PMCP2 | 0 | 0 | 0.512 | 0.323 | 1.212 | 0.803 | 0.688 | 0.435 | 0 | 0.72 | 0 | 1.074 |
| PMCP3 | 0 | 0 | 0.489 | 0.317 | 1.163 | 0.789 | 0.657 | 0.426 | 0 | 0.79 | 0 | 1.076 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $file_name: ./data/beta_3_2_n_200_lambda_location_120_50_error_independent_FALSE_x_missing_location_1.Rdata_ror_independent_FALSE_x_missing_location_1.Rdata_ror_independent_$

| | rho | r_sd | L_inf | $L_{\rm sd}$ | Γ_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|---------------|-----|------|-------|--------------|---------------|----------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.138 | 0.051 | 0.346 | 0.172 | 0.185 | 0.073 | 0 | 1.99 | 0 | 1.630 |
| FSCAD | 0 | 0 | 0.123 | 0.055 | 0.258 | 0.157 | 0.157 | 0.078 | 0 | 0.51 | 0 | 1.124 |
| FMCP | 0 | 0 | 0.127 | 0.056 | 0.272 | 0.176 | 0.164 | 0.083 | 0 | 0.46 | 0 | 1.049 |
| CLASSO | 0 | 0 | 0.215 | 0.087 | 0.530 | 0.240 | 0.286 | 0.106 | 0 | 1.99 | 0 | 1.624 |
| CSCAD | 0 | 0 | 0.182 | 0.090 | 0.391 | 0.270 | 0.234 | 0.125 | 0 | 0.53 | 0 | 1.185 |
| $_{\rm CMCP}$ | 0 | 0 | 0.183 | 0.088 | 0.385 | 0.240 | 0.234 | 0.118 | 0 | 0.41 | 0 | 0.922 |
| PLASSO | 0 | 0 | 0.663 | 0.366 | 1.679 | 0.744 | 0.880 | 0.442 | 0 | 3.89 | 0 | 1.118 |
| PSCAD1 | 0 | 0 | 0.559 | 0.345 | 1.296 | 0.862 | 0.737 | 0.447 | 0 | 0.81 | 0 | 1.308 |
| PSCAD2 | 0 | 0 | 0.530 | 0.351 | 1.228 | 0.879 | 0.699 | 0.457 | 0 | 0.81 | 0 | 1.220 |
| PSCAD3 | 0 | 0 | 0.541 | 0.345 | 1.258 | 0.877 | 0.712 | 0.450 | 0 | 0.82 | 0 | 1.140 |
| PMCP1 | 0 | 0 | 0.526 | 0.334 | 1.211 | 0.855 | 0.693 | 0.438 | 0 | 0.76 | 0 | 1.224 |
| PMCP2 | 0 | 0 | 0.542 | 0.353 | 1.259 | 0.872 | 0.714 | 0.456 | 0 | 0.87 | 0 | 1.169 |
| PMCP3 | С | 0 | 0.539 | 0.364 | 1.261 | 0.903 | 0.713 | 0.475 | 0 | 0.84 | 0 | 1.108 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $file_name: ./data/beta_3_2_n_200_lambda_location_120_50_error_independent_FALSE_x_missing_location_3.Rdata_ror_independent_FALSE_x_missing_location_3.Rdata_ror_independent_$ table_original

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_{-1} L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------------|-----|------|-------|--------------|----------|----------------------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.136 | 0.054 | 0.358 | 0.201 | 0.189 | 0.082 | 0 | 1.89 | 0 | 1.582 |
| FSCAD | 0 | 0 | 0.124 | 0.056 | 0.279 | 0.204 | 0.164 | 0.089 | 0 | 0.46 | 0 | 1.210 |
| $_{ m FMCP}$ | 0 | 0 | 0.123 | 0.056 | 0.267 | 0.175 | 0.160 | 0.082 | 0 | 0.41 | 0 | 1.065 |
| CLASSO | 0 | 0 | 0.228 | 0.086 | 0.558 | 0.234 | 0.303 | 0.104 | 0 | 1.99 | 0 | 1.480 |
| CSCAD | 0 | 0 | 0.185 | 0.089 | 0.371 | 0.212 | 0.232 | 0.113 | 0 | 0.32 | 0 | 0.898 |
| $_{ m CMCP}$ | 0 | 0 | 0.192 | 0.087 | 0.400 | 0.247 | 0.244 | 0.118 | 0 | 0.45 | 0 | 1.123 |
| PLASSO | 0 | 0 | 0.627 | 0.321 | 1.629 | 0.715 | 0.851 | 0.420 | 0 | 3.88 | 0 | 1.018 |
| PSCAD1 | 0 | 0 | 0.498 | 0.285 | 1.105 | 0.711 | 0.658 | 0.391 | 0 | 0.53 | 0 | 1.058 |
| PSCAD2 | 0 | 0 | 0.491 | 0.302 | 1.104 | 0.761 | 0.651 | 0.413 | 0 | 0.62 | 0 | 1.003 |
| PSCAD3 | 0 | 0 | 0.486 | 0.298 | 1.098 | 0.756 | 0.645 | 0.408 | 0 | 0.62 | 0 | 0.972 |
| PMCP1 | 0 | 0 | 0.476 | 0.283 | 1.056 | 0.700 | 0.628 | 0.383 | 0 | 0.55 | 0 | 1.048 |
| PMCP2 | 0 | 0 | 0.494 | 0.304 | 1.115 | 0.765 | 0.654 | 0.415 | 0 | 0.65 | 0 | 0.957 |
| PMCP3 | 0 | 0 | 0.486 | 0.301 | 1.090 | 0.759 | 0.641 | 0.410 | 0 | 0.63 | 0 | 0.928 |

intercept: 0

sample size: 200

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $file_name: ./data/beta_3_2_n_200_lambda_location_120_50_error_independent_FALSE_x_missing_location_8.Rdata_ror_independent_FALSE_x_missing_location_8.Rdata_ror_independent_$ table_original

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | t0en0_sd |
|--------------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|-------------|----------|
| FLASSO | 0 | 0 | 0.137 | 0.055 | 0.349 | 0.183 | 0.184 | 0.077 | 0 | 1.91 | 0 | 1.512 |
| FSCAD | 0 | 0 | 0.120 | 0.057 | 0.260 | 0.161 | 0.156 | 0.079 | 0 | 0.42 | 0 | 1.046 |
| $_{ m FMCP}$ | 0 | 0 | 0.125 | 0.059 | 0.264 | 0.166 | 0.160 | 0.080 | 0 | 0.35 | 0 | 0.947 |
| CLASSO | 0 | 0 | 0.238 | 0.081 | 0.628 | 0.264 | 0.325 | 0.106 | 0 | 2.29 | 0 | 1.559 |
| CSCAD | 0 | 0 | 0.188 | 0.086 | 0.411 | 0.282 | 0.240 | 0.119 | 0 | 0.59 | 0 | 1.272 |
| CMCP | 0 | 0 | 0.192 | 0.093 | 0.424 | 0.296 | 0.249 | 0.133 | 0 | 0.49 | 0 | 1.105 |
| PLASSO | 0 | 0 | 0.661 | 0.330 | 1.731 | 0.753 | 0.898 | 0.422 | 0 | 3.65 | 0 | 1.104 |
| PSCAD1 | 0 | 0 | 0.569 | 0.388 | 1.247 | 0.865 | 0.741 | 0.493 | 0 | 0.45 | 0 | 0.978 |
| PSCAD2 | 0 | 0 | 0.584 | 0.441 | 1.308 | 1.036 | 0.760 | 0.562 | 0 | 0.64 | 0 | 1.133 |
| PSCAD3 | 0 | 0 | 0.573 | 0.450 | 1.276 | 1.049 | 0.741 | 0.571 | 0 | 0.06 | 0 | 1.066 |
| PMCP1 | 0 | 0 | 0.558 | 0.395 | 1.233 | 0.928 | 0.725 | 0.504 | 0 | 0.58 | 0 | 1.174 |
| PMCP2 | 0 | 0 | 0.572 | 0.435 | 1.284 | 1.026 | 0.745 | 0.554 | 0 | 0.64 | 0 | 1.142 |
| PMCP3 | 0 | 0 | 0.604 | 0.438 | 1.347 | 1.003 | 0.784 | 0.555 | 0 | 0.65 | 0 | 1.038 |

intercept: 0

sample size: 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $file_name: ./data/beta_3_2_n_200_lambda_location_120_50_error_independent_TRUE_x_missing_location_1.Rdata_rate file_name fil$

| | rho | r_sd | L_inf | $L_{\rm sd}$ | L_{-1} | L_1 sd | L_{-}^{2} | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | $t0en0_sd$ |
|--------------|-----|------|-------|--------------|----------|----------|-------------|----------|-------|-------|----------|-------------|
| FLASSO | 0 | 0 | 0.126 | 0.046 | 0.349 | 0.146 | 0.175 | 0.059 | 0 | 2.69 | 0 | 1.535 |
| FSCAD | 0 | 0 | 0.107 | 0.048 | 0.238 | 0.155 | 0.137 | 0.066 | 0 | 0.75 | 0 | 1.466 |
| $_{ m FMCP}$ | 0 | 0 | 0.108 | 0.050 | 0.254 | 0.175 | 0.143 | 0.071 | 0 | 0.80 | 0 | 1.511 |
| CLASSO | 0 | 0 | 0.206 | 0.065 | 0.560 | 0.192 | 0.284 | 0.082 | 0 | 2.76 | 0 | 1.532 |
| CSCAD | 0 | 0 | 0.154 | 0.059 | 0.347 | 0.208 | 0.202 | 0.083 | 0 | 0.68 | 0 | 1.449 |
| CMCP | 0 | 0 | 0.152 | 0.059 | 0.332 | 0.198 | 0.197 | 0.082 | 0 | 0.53 | 0 | 1.267 |
| PLASSO | 0 | 0 | 0.543 | 0.324 | 1.422 | 0.669 | 0.731 | 0.403 | 0 | 4.24 | 0 | 0.922 |
| PSCAD1 | 0 | 0 | 0.439 | 0.269 | 1.008 | 0.666 | 0.579 | 0.359 | 0 | 0.06 | 0 | 1.191 |
| PSCAD2 | 0 | 0 | 0.449 | 0.275 | 1.045 | 0.695 | 0.593 | 0.369 | 0 | 0.81 | 0 | 1.195 |
| PSCAD3 | 0 | 0 | 0.444 | 0.282 | 1.055 | 0.707 | 0.594 | 0.379 | 0 | 0.84 | 0 | 1.143 |
| PMCP1 | 0 | 0 | 0.417 | 0.270 | 0.964 | 0.677 | 0.552 | 0.364 | 0 | 0.68 | 0 | 1.154 |
| PMCP2 | 0 | 0 | 0.437 | 0.280 | 1.019 | 0.705 | 0.578 | 0.377 | 0 | 0.77 | 0 | 1.081 |
| PMCP3 | 0 | 0 | 0.444 | 0.288 | 1.058 | 0.721 | 0.593 | 0.387 | 0 | 0.83 | 0 | 1.045 |
| | | | | | | | | | | | | |

intercept: 0

sample size : 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

,

missing_method: xy missing_location: 3

 $lambda_location_for_cv(SCAD) : 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_3_2_n_200_lambda_location_120_50_error_independent_TRUE_x_missing_location_3.Rdata

| FLASSO 0 FSCAD 0 FMCP 0 CLASSO 0 CSCAD 0 CMCP 0 | 00000 | 0.130 | | | | | | | | | |
|---|---------|--------|-------|-------|-------|-------|-------|---|------|---|-------|
| FSCAD 0 FMCP 0 CLASSO 0 CSCAD 0 CMCP 0 | 0 0 0 0 | 0 1 08 | 0.047 | 0.351 | 0.132 | 0.178 | 0.057 | 0 | 2.72 | 0 | 1.558 |
| FMCP 0 CLASSO 0 CSCAD 0 CMCP 0 PLASSO 0 | 0 0 0 | O.T.O. | 0.047 | 0.234 | 0.149 | 0.138 | 0.064 | 0 | 0.72 | 0 | 1.471 |
| CLASSO 0 CSCAD 0 CMCP 0 PLASSO 0 | 0 | 0.106 | 0.046 | 0.216 | 0.135 | 0.132 | 0.061 | 0 | 0.43 | 0 | 1.094 |
| CSCAD 0 CMCP 0 PLASSO 0 | 0 | 0.244 | 0.095 | 0.633 | 0.210 | 0.329 | 0.112 | 0 | 2.82 | 0 | 1.520 |
| $ \begin{array}{ccc} \text{CMCP} & 0 \\ \text{PLASSO} & 0 \end{array} $ | | 0.181 | 0.086 | 0.342 | 0.196 | 0.218 | 0.105 | 0 | 0.32 | 0 | 0.827 |
| PLASSO 0 | 0 | 0.184 | 0.086 | 0.357 | 0.205 | 0.223 | 0.106 | 0 | 0.37 | 0 | 0.884 |
| | 0 | 0.615 | 0.314 | 1.599 | 0.722 | 0.835 | 0.414 | 0 | 4.34 | 0 | 0.742 |
| PSCAD1 0 | 0 | 0.554 | 0.402 | 1.263 | 0.951 | 0.730 | 0.538 | 0 | 0.76 | 0 | 1.147 |
| PSCAD2 0 | 0 | 0.549 | 0.411 | 1.267 | 0.964 | 0.727 | 0.547 | 0 | 0.86 | 0 | 1.025 |
| PSCAD3 0 | 0 | 0.539 | 0.416 | 1.243 | 0.976 | 0.713 | 0.552 | 0 | 0.85 | 0 | 0.978 |
| PMCP1 0 | 0 | 0.548 | 0.399 | 1.259 | 0.937 | 0.726 | 0.530 | 0 | 0.77 | 0 | 1.145 |
| PMCP2 0 | 0 | 0.546 | 0.407 | 1.244 | 0.961 | 0.718 | 0.544 | 0 | 0.78 | 0 | 0.938 |
| PMCP3 0 | 0 | 0.523 | 0.408 | 1.203 | 0.978 | 0.689 | 0.545 | 0 | 0.82 | 0 | 0.957 |

intercept: 0

sample size: 200

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ table_original

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------------|-----|------|-------|-------|----------|-------------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.123 | 0.041 | 0.327 | 0.122 | 0.168 | 0.052 | 0 | 2.49 | 0 | 1.389 |
| FSCAD | 0 | 0 | 0.100 | 0.042 | 0.206 | 0.126 | 0.126 | 0.058 | 0 | 0.42 | 0 | 1.056 |
| $_{ m FMCP}$ | 0 | 0 | 0.096 | 0.042 | 0.194 | 0.107 | 0.121 | 0.055 | 0 | 0.28 | 0 | 0.712 |
| CLASSO | 0 | 0 | 0.262 | 0.085 | 0.716 | 0.224 | 0.364 | 0.107 | 0 | 2.81 | 0 | 1.405 |
| CSCAD | 0 | 0 | 0.184 | 0.085 | 0.367 | 0.193 | 0.229 | 0.104 | 0 | 0.40 | 0 | 0.899 |
| $_{ m CMCP}$ | 0 | 0 | 0.181 | 0.082 | 0.381 | 0.222 | 0.231 | 0.107 | 0 | 0.51 | 0 | 1.068 |
| PLASSO | 0 | 0 | 0.626 | 0.331 | 1.648 | 0.719 | 0.850 | 0.419 | 0 | 4.03 | 0 | 1.077 |
| PSCAD1 | 0 | 0 | 0.478 | 0.319 | 1.120 | 0.786 | 0.640 | 0.431 | 0 | 0.71 | 0 | 1.225 |
| PSCAD2 | 0 | 0 | 0.491 | 0.321 | 1.154 | 0.800 | 0.657 | 0.432 | 0 | 0.71 | 0 | 1.131 |
| PSCAD3 | 0 | 0 | 0.483 | 0.313 | 1.164 | 0.787 | 0.655 | 0.423 | 0 | 0.84 | 0 | 1.170 |
| PMCP1 | 0 | 0 | 0.502 | 0.301 | 1.195 | 0.744 | 0.681 | 0.406 | 0 | 0.72 | 0 | 1.198 |
| PMCP2 | 0 | 0 | 0.512 | 0.323 | 1.212 | 0.803 | 0.688 | 0.435 | 0 | 0.72 | 0 | 1.074 |
| PMCP3 | 0 | 0 | 0.489 | 0.317 | 1.163 | 0.789 | 0.657 | 0.426 | 0 | 0.79 | 0 | 1.076 |

intercept: 0

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: FALSE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_3_2_n_500_lambda_location_11_30_error_independent_FALSE_x_missing_location_1.Rdata table_original

| | $^{\mathrm{rho}}$ | $r_{-}sd$ | L_{-} inf | $L_{-}sd$ | ${ m L}_{-}1$ | $L_{-}1_{-}\mathrm{sd}$ | L_{-}^{2} | $L_2_{ m sd}$ | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-------------------|-----------|-------------|-----------|---------------|-------------------------|-------------|---------------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.079 | 0.032 | 0.204 | 0.097 | 0.107 | 0.043 | 0 | 1.95 | 0 | 1.513 |
| FSCAD | 0 | 0 | 0.072 | 0.037 | 0.158 | 0.122 | 0.093 | 0.053 | 0 | 0.60 | 0 | 1.421 |
| FMCP | 0 | 0 | 0.072 | 0.040 | 0.153 | 0.120 | 0.092 | 0.056 | 0 | 0.35 | 0 | 1.048 |
| CLASSO | 0 | 0 | 0.131 | 0.044 | 0.311 | 0.135 | 0.171 | 0.058 | 0 | 1.94 | 0 | 1.427 |
| CSCAD | 0 | 0 | 0.107 | 0.046 | 0.229 | 0.148 | 0.138 | 0.066 | 0 | 0.50 | 0 | 1.078 |
| $_{ m CMCP}$ | 0 | 0 | 0.108 | 0.045 | 0.227 | 0.136 | 0.138 | 0.064 | 0 | 0.46 | 0 | 0.989 |
| PLASSO | 0 | 0 | 0.337 | 0.193 | 0.915 | 0.424 | 0.457 | 0.238 | 0 | 4.33 | 0 | 0.805 |
| PSCAD1 | 0 | 0 | 0.277 | 0.193 | 0.620 | 0.509 | 0.358 | 0.259 | 0 | 0.79 | 0 | 1.217 |
| PSCAD2 | 0 | 0 | 0.268 | 0.181 | 0.609 | 0.465 | 0.350 | 0.242 | 0 | 0.78 | 0 | 1.069 |
| PSCAD3 | 0 | 0 | 0.267 | 0.184 | 0.608 | 0.472 | 0.349 | 0.246 | 0 | 0.78 | 0 | 1.069 |
| PMCP1 | 0 | 0 | 0.266 | 0.181 | 0.599 | 0.461 | 0.347 | 0.242 | 0 | 0.81 | 0 | 1.195 |
| PMCP2 | 0 | 0 | 0.270 | 0.185 | 0.616 | 0.473 | 0.352 | 0.247 | 0 | 0.84 | 0 | 1.108 |
| PMCP3 | 0 | 0 | 0.271 | 0.190 | 0.617 | 0.480 | 0.354 | 0.253 | 0 | 0.80 | 0 | 1.064 |

intercept: 0

sample size : 500

simulation time: 100

simulation time: 1 loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ file_name: ./data/beta_3_2_n_500_lambda_location_11_30_error_independent_FALSE_x_missing_location_3.Rdata

| $^{\mathrm{rh}}$ | o r_sd | þ | L_inf | L_sd | L_{-1} | $L_1_{ m sd}$ | L_2 | L_2 L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|------------------|--------|---|-------|--------|----------|-----------------|-------|----------------|-------|-------|-------------|-------------|
| OSS | 0 | 0 | 0.091 | 0.033 | 0.236 | 0.107 | 0.124 | 0.046 | 0 | 2.04 | 0 | 1.556 |
| AD | 0 | 0 | 0.083 | 0.036 | 0.183 | 0.103 | 0.108 | 0.051 | 0 | 0.64 | 0 | 1.259 |
| βP | 0 | 0 | 0.083 | 0.038 | 0.182 | 0.108 | 0.109 | 0.053 | 0 | 0.48 | 0 | 1.030 |
| VSSO | 0 | 0 | 0.150 | 0.048 | 0.361 | 0.151 | 0.197 | 0.064 | 0 | 2.00 | 0 | 1.443 |
| CSCAD | 0 | 0 | 0.121 | 0.054 | 0.258 | 0.152 | 0.157 | 0.075 | 0 | 0.48 | 0 | 0.979 |
| CP | 0 | 0 | 0.121 | 0.053 | 0.259 | 0.156 | 0.156 | 0.074 | 0 | 0.45 | 0 | 1.009 |
| OSSV | 0 | 0 | 0.350 | 0.179 | 0.963 | 0.412 | 0.484 | 0.232 | 0 | 4.17 | 0 | 0.922 |
| AD1 | 0 | 0 | 0.270 | 0.158 | 0.645 | 0.431 | 0.363 | 0.215 | 0 | 0.86 | 0 | 1.333 |
| AD2 | 0 | 0 | 0.280 | 0.161 | 0.679 | 0.447 | 0.379 | 0.218 | 0 | 0.87 | 0 | 1.203 |
| (AD3 | 0 | 0 | 0.274 | 0.161 | 0.664 | 0.443 | 0.369 | 0.218 | 0 | 0.87 | 0 | 1.125 |
| CP1 | 0 | 0 | 0.270 | 0.166 | 0.641 | 0.447 | 0.361 | 0.225 | 0 | 0.88 | 0 | 1.313 |
| CP2 | 0 | 0 | 0.276 | 0.165 | 0.671 | 0.450 | 0.373 | 0.225 | 0 | 0.92 | 0 | 1.195 |
| CP3 | 0 | 0 | 0.277 | 0.165 | 0.674 | 0.451 | 0.374 | 0.224 | 0 | 0.89 | 0 | 1.118 |

intercept: 0

sample size: 500

simulation time: 100

simulation time: 1 loss_rate: 0.625

error_independent: FALSE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_3_2_n_500_lambda_location_11_30_error_independent_FALSE_x_missing_location_8.Rdata table_original

| | $^{\mathrm{rho}}$ | $\mathbf{r}_{-}\mathbf{sd}$ | L_{-} inf | $L_{\rm sd}$ | L_{-1} | L_1_sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|----------|-------------------|-----------------------------|-------------|--------------|----------|----------|-------|----------|-------|-------|-------------|-------------|
| FLASSO 0 | 0 | 0 | 0.084 | 0.032 | 0.218 | 0.112 | 0.114 | 0.046 | 0 | 1.80 | 0 | 1.407 |
| FSCAD | 0 | 0 | 0.069 | 0.034 | 0.158 | 0.130 | 0.091 | 0.053 | 0 | 0.49 | 0 | 1.124 |
| FMCP | 0 | 0 | 0.074 | 0.037 | 0.172 | 0.132 | 0.098 | 0.055 | 0 | 0.52 | 0 | 1.159 |
| CLASSO | 0 | 0 | 0.175 | 0.051 | 0.440 | 0.165 | 0.234 | 0.067 | 0 | 2.16 | 0 | 1.600 |
| CSCAD | 0 | 0 | 0.133 | 0.048 | 0.290 | 0.164 | 0.172 | 0.071 | 0 | 0.65 | 0 | 1.285 |
| CMCP | 0 | 0 | 0.142 | 0.051 | 0.307 | 0.177 | 0.183 | 0.077 | 0 | 0.55 | 0 | 1.167 |
| PLASSO | 0 | 0 | 0.396 | 0.212 | 1.066 | 0.459 | 0.537 | 0.264 | 0 | 3.95 | 0 | 0.99 |
| PSCAD1 | 0 | 0 | 0.292 | 0.165 | 0.708 | 0.445 | 0.398 | 0.227 | 0 | 0.83 | 0 | 1.18 |
| PSCAD2 | 0 | 0 | 0.288 | 0.153 | 0.708 | 0.442 | 0.393 | 0.217 | 0 | 0.87 | 0 | 1.079 |
| PSCAD3 | 0 | 0 | 0.293 | 0.157 | 0.727 | 0.445 | 0.404 | 0.224 | 0 | 0.86 | 0 | 1.054 |
| PMCP1 | 0 | 0 | 0.290 | 0.158 | 0.711 | 0.447 | 0.396 | 0.223 | 0 | 0.89 | 0 | 1.18(|
| PMCP2 | 0 | 0 | 0.285 | 0.151 | 0.703 | 0.431 | 0.389 | 0.212 | 0 | 0.89 | 0 | 1.053 |
| PMCP3 | 0 | 0 | 0.287 | 0.148 | 0.707 | 0.425 | 0.393 | 0.209 | С | 0.84 | C | 0.995 |

intercept: 0

sample size: 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ file_name: ./data/beta_3_2_n_500_lambda_location_11_30_error_independent_TRUE_x_missing_location_1.Rdata table_original

| | $^{\mathrm{rho}}$ | r_sd | $\mathrm{L}_{-}\mathrm{inf}$ | $L_{\rm sd}$ | Γ_{-1} | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $\rm tn0e0_sd$ | $t0en0_sd$ |
|--------|-------------------|--------|------------------------------|--------------|---------------|-------------|--------|----------|-------|-------|-----------------|-------------|
| FLASSO | 0 | 0 | 0.077 | 0.031 | 0.204 | 0.088 | 0.105 | 0.039 | 0 | 2.45 | 0 | 1.452 |
| FSCAD | 0 | 0 | 0.062 | 0.029 | 0.126 | 0.074 | 0.078 | 0.037 | 0 | 0.39 | 0 | 0.952 |
| FMCP | 0 | 0 | 0.065 | 0.029 | 0.136 | 0.082 | 0.083 | 0.039 | 0 | 0.49 | 0 | 1.21(|
| CLASSO | 0 | 0 | 0.145 | 0.048 | 0.397 | 0.126 | 0.200 | 0.057 | 0 | 2.87 | 0 | 1.618 |
| CSCAD | 0 | 0 | 0.107 | 0.045 | 0.214 | 0.108 | 0.133 | 0.057 | 0 | 0.44 | 0 | 1.09 |
| CMCP | 0 | 0 | 0.107 | 0.044 | 0.214 | 0.113 | 0.133 | 0.058 | 0 | 0.32 | 0 | 0.85 |
| PLASSO | 0 | 0 | 0.359 | 0.214 | 0.955 | 0.463 | 0.485 | 0.268 | 0 | 4.37 | 0 | 0.77 |
| PSCAD1 | 0 | 0 | 0.272 | 0.182 | 0.619 | 0.421 | 0.359 | 0.237 | 0 | 0.71 | 0 | 1.33(|
| PSCAD2 | 0 | 0 | 0.275 | 0.188 | 0.637 | 0.433 | 0.365 | 0.243 | 0 | 0.75 | 0 | 1.178 |
| PSCAD3 | 0 | 0 | 0.277 | 0.188 | 0.649 | 0.435 | 0.369 | 0.242 | 0 | 0.81 | 0 | 1.14 |
| PMCP1 | 0 | 0 | 0.289 | 0.194 | 0.665 | 0.437 | 0.383 | 0.250 | 0 | 0.77 | 0 | 1.36 |
| PMCP2 | 0 | 0 | 0.275 | 0.186 | 0.645 | 0.430 | 0.366 | 0.239 | 0 | 0.80 | 0 | 1.10 |
| PMCP3 | 0 | С | 0.275 | 0.187 | 0.654 | 0.434 | 0.366 | 0.240 | 0 | 0.89 | 0 | 1.100 |

intercept: 0

sample size : 500

simulation time: 100

error_independent: TRUE $loss_rate:\ 0.625$

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$ $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

| | rho | r_sd | L_inf | L_sd | L_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | tn0e0_sd | t0en0_sd |
|--------|-----|------|-------|-------|----------|----------|-------|----------|-------|-------|----------|----------|
| FLASSO | 0 | 0 | 0.080 | 0.023 | 0.221 | 0.077 | 0.111 | 0.030 | 0 | 2.70 | 0 | 1.487 |
| FSCAD | 0 | 0 | 0.064 | 0.026 | 0.130 | 0.074 | 0.080 | 0.034 | 0 | 0.53 | 0 | 1.049 |
| FMCP | 0 | 0 | 0.064 | 0.026 | 0.138 | 0.094 | 0.081 | 0.039 | 0 | 0.62 | 0 | 1.293 |
| CLASSO | 0 | 0 | 0.173 | 0.052 | 0.477 | 0.126 | 0.244 | 0.063 | 0 | 2.72 | 0 | 1.511 |
| CSCAD | 0 | 0 | 0.132 | 0.048 | 0.278 | 0.125 | 0.168 | 0.060 | 0 | 0.49 | 0 | 1.150 |
| CMCP | 0 | 0 | 0.130 | 0.049 | 0.280 | 0.128 | 0.168 | 0.062 | 0 | 0.52 | 0 | 1.105 |
| PLASSO | 0 | 0 | 0.348 | 0.204 | 0.948 | 0.455 | 0.479 | 0.261 | 0 | 4.46 | 0 | 0.758 |
| PSCAD1 | 0 | 0 | 0.302 | 0.184 | 0.691 | 0.454 | 0.402 | 0.248 | 0 | 0.61 | 0 | 1.043 |
| PSCAD2 | 0 | 0 | 0.303 | 0.209 | 0.695 | 0.521 | 0.402 | 0.283 | 0 | 0.64 | 0 | 1.000 |
| PSCAD3 | 0 | 0 | 0.294 | 0.206 | 0.683 | 0.517 | 0.392 | 0.279 | 0 | 0.74 | 0 | 1.031 |
| PMCP1 | 0 | 0 | 0.307 | 0.194 | 0.701 | 0.478 | 0.408 | 0.262 | 0 | 0.62 | 0 | 1.042 |
| PMCP2 | 0 | 0 | 0.305 | 0.209 | 0.716 | 0.524 | 0.408 | 0.283 | 0 | 0.76 | 0 | 1.026 |
| PMCP3 | 0 | 0 | 0.298 | 0.210 | 0.699 | 0.524 | 0.399 | 0.284 | 0 | 0.75 | 0 | 0.903 |

intercept: 0

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 8

 $lambda_location_for_cv(SCAD) : 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

 $lambda_location_for_cv(MCP); 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12\ 13\ 14\ 15\ 16\ 17\ 18\ 19\ 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30$

file_name: ./data/beta_3_2_n_500_lambda_location_11_30_error_independent_TRUE_x_missing_location_8.Rdata

| | $^{\mathrm{rho}}$ | $\mathbf{r}_{-}\mathbf{sd}$ | $\mathcal{L}_{-}\mathrm{inf}$ | $L_{\rm sd}$ | Γ_{-1} | L_1_sd | L_2 | $L_2_{ m sd}$ | tn0e0 | t0en0 | $\rm tn0e0_sd$ | $t0en0_sd$ |
|----------|-------------------|-----------------------------|-------------------------------|--------------|---------------|----------|-------|---------------|-------|-------|-----------------|-------------|
| FLASSO | 0 | 0 | 0.078 | 0.025 | 0.205 | 0.078 | 0.107 | 0.032 | 0 | 2.29 | 0 | 1.499 |
| SCAD | 0 | 0 | 0.061 | 0.023 | 0.125 | 0.077 | 0.076 | 0.034 | 0 | 0.39 | 0 | 0.994 |
| MCP | 0 | 0 | 0.062 | 0.024 | 0.129 | 0.073 | 0.078 | 0.034 | 0 | 0.41 | 0 | 0.877 |
| TASSO | 0 | 0 | 0.198 | 0.062 | 0.549 | 0.151 | 0.279 | 0.078 | 0 | 2.72 | 0 | 1.349 |
| SCAD | 0 | 0 | 0.150 | 0.059 | 0.331 | 0.148 | 0.196 | 0.075 | 0 | 0.56 | 0 | 1.157 |
| MCP | 0 | 0 | 0.151 | 0.060 | 0.328 | 0.149 | 0.196 | 0.076 | 0 | 0.40 | 0 | 0.974 |
| Γ | 0 | 0 | 0.398 | 0.207 | 1.064 | 0.464 | 0.544 | 0.266 | 0 | 4.14 | 0 | 0.910 |
| SCAD1 | 0 | 0 | 0.290 | 0.197 | 0.674 | 0.463 | 0.389 | 0.259 | 0 | 0.68 | 0 | 1.238 |
| SCAD2 | 0 | 0 | 0.281 | 0.195 | 0.656 | 0.474 | 0.375 | 0.255 | 0 | 0.70 | 0 | 1.176 |
| SCAD3 | 0 | 0 | 0.275 | 0.191 | 0.640 | 0.454 | 0.367 | 0.248 | 0 | 0.67 | 0 | 1.08 |
| MCP1 | 0 | 0 | 0.287 | 0.197 | 0.663 | 0.460 | 0.383 | 0.258 | 0 | 0.61 | 0 | 1.148 |
| MCP2 | 0 | 0 | 0.283 | 0.193 | 0.658 | 0.455 | 0.378 | 0.250 | 0 | 0.67 | 0 | 1.095 |
| MCP3 | 0 | 0 | 0.280 | 0.198 | 0.654 | 0.472 | 0.374 | 0.258 | 0 | 0.67 | 0 | 1.064 |

intercept: 0

sample size : 500

simulation time: 100

 $loss_rate:\ 0.625$

error_independent: TRUE

missing_method: xy

missing_location: 1

 $lambda_location_for_cv(SCAD) : 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ file_name: ./data/beta_3_2_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_1.Rdata

| | rho | r_sd | L_inf | $L_{\rm sd}$ | $L_{-}1$ | L_{-1} sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------|-----|------|-------|--------------|----------|-------------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.077 | 0.031 | 0.204 | 0.088 | 0.105 | 0.039 | 0 | 2.45 | 0 | 1.452 |
| FSCAD | 0 | 0 | 0.062 | 0.029 | 0.126 | 0.074 | 0.078 | 0.037 | 0 | 0.39 | 0 | 0.952 |
| FMCP | 0 | 0 | 0.065 | 0.029 | 0.136 | 0.082 | 0.083 | 0.039 | 0 | 0.49 | 0 | 1.210 |
| CLASSO | 0 | 0 | 0.145 | 0.048 | 0.397 | 0.126 | 0.200 | 0.057 | 0 | 2.87 | 0 | 1.618 |
| CSCAD | 0 | 0 | 0.107 | 0.045 | 0.214 | 0.108 | 0.133 | 0.057 | 0 | 0.44 | 0 | 1.095 |
| CMCP | 0 | 0 | 0.107 | 0.044 | 0.214 | 0.113 | 0.133 | 0.058 | 0 | 0.32 | 0 | 0.851 |
| PLASSO | 0 | 0 | 0.359 | 0.214 | 0.955 | 0.463 | 0.485 | 0.268 | 0 | 4.37 | 0 | 0.774 |
| PSCAD1 | 0 | 0 | 0.272 | 0.182 | 0.619 | 0.421 | 0.359 | 0.237 | 0 | 0.71 | 0 | 1.336 |
| PSCAD2 | 0 | 0 | 0.275 | 0.188 | 0.637 | 0.433 | 0.365 | 0.243 | 0 | 0.75 | 0 | 1.175 |
| PSCAD3 | 0 | 0 | 0.277 | 0.188 | 0.649 | 0.435 | 0.369 | 0.242 | 0 | 0.81 | 0 | 1.143 |
| PMCP1 | 0 | 0 | 0.289 | 0.194 | 0.665 | 0.437 | 0.383 | 0.250 | 0 | 0.77 | 0 | 1.362 |
| PMCP2 | 0 | 0 | 0.275 | 0.186 | 0.645 | 0.430 | 0.366 | 0.239 | 0 | 0.80 | 0 | 1.101 |
| PMCP3 | 0 | С | 0.275 | 0.187 | 0.654 | 0.434 | 0.366 | 0.240 | 0 | 0.89 | 0 | 1.100 |

intercept: 0

sample size : 500

simulation time: 100

loss_rate: 0.625

error_independent: TRUE

missing_method: xy

missing_location: 3

 $lambda_location_for_cv(SCAD): 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $lambda_location_for_cv(MCP); 20\ 21\ 22\ 23\ 24\ 25\ 26\ 27\ 28\ 29\ 30\ 31\ 32\ 33\ 34\ 35\ 36\ 37\ 38\ 39\ 40\ 41\ 42\ 43\ 44\ 45\ 46\ 47\ 48\ 49\ 50$ $file_name: ./data/beta_3_2_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_3.Rdata_rate file_name: ./data/beta_3_2_n_500_lambda_location_120_50_error_independent_TRUE_x_missing_location_3.Rdata_rate file_name fi$

| | rho | r_sd | L_inf | L_sd | Γ_{-1} | L_1 sd | L_2 | L_2 sd | tn0e0 | t0en0 | $tn0e0_sd$ | $t0en0_sd$ |
|--------------|-----|------|-------|-------|---------------|----------|-------|----------|-------|-------|-------------|-------------|
| FLASSO | 0 | 0 | 0.080 | 0.023 | 0.221 | 0.077 | 0.111 | 0.030 | 0 | 2.70 | 0 | 1.487 |
| FSCAD | 0 | 0 | 0.064 | 0.026 | 0.130 | 0.074 | 0.080 | 0.034 | 0 | 0.53 | 0 | 1.049 |
| $_{ m FMCP}$ | 0 | 0 | 0.064 | 0.026 | 0.138 | 0.094 | 0.081 | 0.039 | 0 | 0.62 | 0 | 1.293 |
| CLASSO | 0 | 0 | 0.173 | 0.052 | 0.477 | 0.126 | 0.244 | 0.063 | 0 | 2.72 | 0 | 1.511 |
| CSCAD | 0 | 0 | 0.132 | 0.048 | 0.278 | 0.125 | 0.168 | 0.060 | 0 | 0.49 | 0 | 1.150 |
| CMCP | 0 | 0 | 0.130 | 0.049 | 0.280 | 0.128 | 0.168 | 0.062 | 0 | 0.52 | 0 | 1.105 |
| PLASSO | 0 | 0 | 0.348 | 0.204 | 0.948 | 0.455 | 0.479 | 0.261 | 0 | 4.46 | 0 | 0.758 |
| PSCAD1 | 0 | 0 | 0.302 | 0.184 | 0.691 | 0.454 | 0.402 | 0.248 | 0 | 0.61 | 0 | 1.043 |
| PSCAD2 | 0 | 0 | 0.303 | 0.209 | 0.695 | 0.521 | 0.402 | 0.283 | 0 | 0.64 | 0 | 1.000 |
| PSCAD3 | 0 | 0 | 0.294 | 0.206 | 0.683 | 0.517 | 0.392 | 0.279 | 0 | 0.74 | 0 | 1.031 |
| PMCP1 | 0 | 0 | 0.307 | 0.194 | 0.701 | 0.478 | 0.408 | 0.262 | 0 | 0.62 | 0 | 1.042 |
| PMCP2 | 0 | 0 | 0.305 | 0.209 | 0.716 | 0.524 | 0.408 | 0.283 | 0 | 0.76 | 0 | 1.026 |
| PMCP3 | 0 | 0 | 0.298 | 0.210 | 0.699 | 0.524 | 0.399 | 0.284 | 0 | 0.75 | 0 | 0.903 |
| | | | | | | | | | | | | |