Appendix Table: estimates of other parameters when c11 = c22

Scenario 9, 10, 15, 16

Yi

2021-03-29

Load data

```
s.rdt <- "scenario/18rows/set-0.5b-all.RData"
dt <- "res/DT-pkg-0.5b-all/"
```

Scenario 9

Scenario 10

Scenario 15

Scenario 16

Table 1: Estimates of the parameters when $c_1^2 = c_2^2$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.83	0.84 [0.79, 0.87]	0.83 [0.78, 0.87]	0.87 [0.84, 0.89]	0.83 [0.80, 0.85]
	μ_1	1.39	1.40 [1.10, 1.65]	1.39 [1.18, 1.60]	1.49 [1.30, 1.68]	1.39 [1.22, 1.54]
	μ_2	1.39	1.50 [1.00, 1.97]	1.49 [1.01, 1.88]	2.02 [1.70, 2.32]	1.39 [1.12, 1.69]
	τ_1^2	1.00	0.98 [0.66, 1.37]	0.90 [0.61, 1.22]	0.85 [0.58, 1.16]	0.91 [0.67, 1.16]
	τ_2^2	4.00	3.63 [2.59, 5.10]	3.51 [2.49, 4.99]	2.74 [2.08, 3.55]	3.66 [2.93, 4.60]
	τ_{12}	-0.60	-0.66 [-1.19, -0.22]	-0.53 [-0.97, -0.12]	-0.65 [-1.03, -0.34]	-0.53 [-0.87, -0.25]
	β	0.50	2.00 [0.57, 2.00]	0.65 [0.25, 2.00]		
	$\alpha_{0.7}$	-0.77	-0.99 [-2.47, -0.10]	-0.89 [-2.05, -0.29]		
	c_1^2	0.50	0.47 [0.14, 0.80]			
	CR		99.5	99.5	99.9	99.8
50	sAUC	0.83	0.83 [0.80, 0.86]	0.83 [0.80, 0.86]	0.87 [0.85, 0.89]	0.83 [0.81, 0.84]
	μ_1	1.39	1.40 [1.16, 1.58]	1.39 [1.24, 1.55]	1.49 [1.35, 1.62]	1.38 [1.26, 1.50]
	μ_2	1.39	1.36 [0.96, 1.81]	1.44 [1.10, 1.77]	1.99 [1.79, 2.20]	1.39 [1.18, 1.58]
	τ_1^2	1.00	1.04 [0.81, 1.29]	0.96 [0.76, 1.16]	0.92 [0.74, 1.12]	0.96 [0.81, 1.14]
	τ_2^2	4.00	3.98 [3.06, 5.26]	3.74 [2.93, 4.80]	2.93 [2.43, 3.51]	3.83 [3.31, 4.45]
	τ_{12}	-0.60	-0.68 [-1.07, -0.32]	-0.59 [-0.90, -0.28]	-0.72 [-1.00, -0.49]	-0.58 [-0.82, -0.35]
	β	0.50	0.83 [0.47, 2.00]	0.53 [0.28, 0.94]		
	$\alpha_{0.7}$	-0.77	-0.79 [-1.67, -0.23]	-0.77 [-1.29, -0.37]		
	c_1^2	0.50	0.48 [0.23, 0.75]			
	CR		99.8	99.5	99.8	100
200	sAUC	0.83	0.83 [0.81, 0.85]	0.83 [0.81, 0.84]	0.87 [0.86, 0.88]	0.83 [0.82, 0.84]
	μ_1	1.39	1.40 [1.29, 1.51]	1.39 [1.31, 1.46]	1.49 [1.43, 1.56]	1.38 [1.33, 1.44]
	μ_2	1.39	1.37 [1.15, 1.58]	1.40 [1.23, 1.57]	2.00 [1.90, 2.13]	1.38 [1.30, 1.49]
	τ_1^2	1.00	1.01 [0.90, 1.14]	0.99 [0.89, 1.10]	0.97 [0.88, 1.07]	0.99 [0.90, 1.08]
	τ_2^2	4.00	4.04 [3.48, 4.73]	3.91 [3.47, 4.45]	3.05 [2.80, 3.33]	3.98 [3.67, 4.26]
	τ_{12}	-0.60	-0.64 [-0.82, -0.46]	-0.59 [-0.75, -0.43]	-0.75 [-0.88, -0.64]	-0.60 [-0.72, -0.47]
	β	0.50	0.56 [0.44, 0.71]	0.53 [0.40, 0.65]		
	$\alpha_{0.7}$	-0.77	-0.77 [-0.99, -0.53]	-0.78 [-0.97, -0.60]		
	c_1^2	0.50	0.48 [0.34, 0.60]			
	CR		99.7	99.8	100	99.9

Table 2: Estimates of the parameters when $c_1^2 = c_2^2$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.85	0.85 [0.82, 0.88]	0.85 [0.82, 0.87]	0.87 [0.85, 0.89]	0.85 [0.82, 0.86]
	μ_1	1.39	1.37 [1.09, 1.64]	1.39 [1.19, 1.59]	1.40 [1.21, 1.58]	1.38 [1.21, 1.54]
	μ_2	1.39	1.43 [0.89, 1.92]	1.43 [0.97, 1.86]	1.93 [1.63, 2.23]	1.39 [1.13, 1.67]
	τ_1^2	1.00	1.04 [0.71, 1.43]	0.90 [0.64, 1.23]	0.88 [0.62, 1.19]	0.92 [0.70, 1.19]
	τ_2^2	4.00	3.84 [2.63, 5.33]	3.53 [2.48, 4.99]	2.92 [2.19, 3.73]	3.67 [2.93, 4.50]
	τ_{12}	-1.20	-1.22 [-1.84, -0.74]	-1.07 [-1.57, -0.66]	-1.06 [-1.51, -0.73]	-1.10 [-1.49, -0.79]
	β	0.50	2.00 [0.69, 2.00]	0.68 [0.25, 2.00]		
	$\alpha_{0.7}$	-0.86	-1.44 [-3.08, -0.23]	-1.04 [-2.40, -0.33]		
	c_1^2	0.50	0.51 [0.20, 0.79]			
	CR		99.5	99.9	99.6	100
50	sAUC	0.85	0.85 [0.83, 0.87]	0.85 [0.83, 0.87]	0.88 [0.86, 0.89]	0.85 [0.83, 0.86]
	μ_1	1.39	1.40 [1.16, 1.61]	1.41 [1.27, 1.55]	1.41 [1.28, 1.54]	1.40 [1.29, 1.50]
	μ_2	1.39	1.36 [0.92, 1.80]	1.41 [1.04, 1.71]	1.92 [1.70, 2.12]	1.37 [1.18, 1.57]
	τ_1^2	1.00	1.03 [0.82, 1.32]	0.94 [0.75, 1.13]	0.94 [0.74, 1.13]	0.95 [0.79, 1.12]
	τ_2^2	4.00	4.03 [3.12, 5.42]	3.84 [2.95, 4.87]	3.12 [2.52, 3.71]	3.87 [3.27, 4.50]
	τ_{12}	-1.20	-1.27 [-1.72, -0.91]	-1.16 [-1.47, -0.85]	-1.16 [-1.42, -0.88]	-1.16 [-1.39, -0.92]
	β	0.50	0.92 [0.50, 2.00]	0.58 [0.31, 0.99]		
	$\alpha_{0.7}$	-0.86	-1.03 [-1.99, -0.40]	-0.94 [-1.57, -0.49]		
	c_1^2	0.50	0.52 [0.26, 0.74]			
	CR		99.9	99.9	99.8	100
200	sAUC	0.85	0.85 [0.84, 0.86]	0.85 [0.84, 0.86]	0.87 [0.87, 0.88]	0.85 [0.84, 0.85]
	μ_1	1.39	1.39 [1.28, 1.48]	1.38 [1.31, 1.45]	1.39 [1.32, 1.45]	1.38 [1.33, 1.44]
	μ_2	1.39	1.38 [1.15, 1.62]	1.40 [1.24, 1.57]	1.94 [1.84, 2.04]	1.39 [1.28, 1.48]
	τ_1^2	1.00	1.02 [0.92, 1.15]	0.99 [0.89, 1.09]	1.00 [0.90, 1.10]	0.99 [0.90, 1.08]
	τ_2^2	4.00	4.01 [3.49, 4.66]	3.93 [3.50, 4.39]	3.21 [2.96, 3.51]	3.99 [3.69, 4.28]
	τ_{12}	-1.20	-1.24 [-1.44, -1.06]	-1.19 [-1.34, -1.03]	-1.19 [-1.33, -1.07]	-1.20 [-1.32, -1.06]
	β	0.50	0.57 [0.42, 0.72]	0.51 [0.39, 0.65]		
	$\alpha_{0.7}$	-0.86	-0.88 [-1.13, -0.60]	-0.87 [-1.08, -0.66]		
	c_1^2	0.50	0.49 [0.37, 0.62]			
	CR		99.8	100	99.8	99.9

Table 3: Estimates of the parameters when $c_1^2 = c_2^2$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.89	0.89 [0.87, 0.91]	0.89 [0.87, 0.91]	0.91 [0.89, 0.92]	0.89 [0.87, 0.90]
	μ_1	2.20	2.23 [1.99, 2.45]	2.22 [2.01, 2.43]	2.32 [2.14, 2.51]	2.21 [2.05, 2.35]
	μ_2	-0.41	-0.37 [-0.85, 0.12]	-0.35 [-0.82, 0.12]	0.25 [-0.05, 0.56]	-0.41 [-0.68, -0.12]
	τ_1^2	1.00	0.93 [0.66, 1.27]	0.88 [0.62, 1.21]	0.84 [0.60, 1.14]	0.92 [0.68, 1.16]
	τ_2^2	4.00	3.72 [2.57, 5.23]	3.62 [2.46, 5.11]	2.70 [2.00, 3.53]	3.84 [2.98, 4.70]
	τ_{12}	-0.60	-0.64 [-1.11, -0.20]	-0.56 [-0.97, -0.13]	-0.71 [-1.07, -0.38]	-0.60 [-0.90, -0.24]
	β	0.50	2.00 [0.58, 2.00]	0.71 [0.25, 2.00]		
	$\alpha_{0.7}$	-0.21	-0.13 [-1.38, 1.04]	-0.09 [-0.50, 0.26]		
	c_1^2	0.50	0.49 [0.24, 0.74]			
	CR		99.7	99.6	99.8	99.9
50	sAUC	0.89	0.89 [0.88, 0.91]	0.89 [0.88, 0.91]	0.91 [0.90, 0.92]	0.89 [0.88, 0.90]
	μ_1	2.20	2.22 [2.04, 2.39]	2.20 [2.06, 2.36]	2.32 [2.19, 2.45]	2.20 [2.08, 2.31]
	μ_2	-0.41	-0.43 [-0.79, -0.09]	-0.37 [-0.71, -0.02]	0.26 [0.05, 0.45]	-0.41 [-0.61, -0.23]
	τ_1^2	1.00	1.00 [0.77, 1.25]	0.97 [0.76, 1.21]	0.93 [0.74, 1.15]	0.96 [0.81, 1.16]
	τ_2^2	4.00	4.07 [3.05, 5.20]	3.81 [2.85, 4.93]	2.85 [2.36, 3.46]	3.86 [3.27, 4.44]
	τ_{12}	-0.60	-0.64 [-0.99, -0.30]	-0.58 [-0.89, -0.26]	-0.76 [-1.01, -0.52]	-0.56 [-0.81, -0.34]
	β	0.50	0.82 [0.45, 2.00]	0.58 [0.29, 1.05]		
	$\alpha_{0.7}$	-0.21	0.06 [-0.68, 0.71]	-0.10 [-0.35, 0.18]		
	c_1^2	0.50	0.45 [0.28, 0.64]			
	CR		99.6	99.5	99.9	100
200	sAUC	0.89	0.89 [0.89, 0.90]	0.89 [0.89, 0.90]	0.91 [0.90, 0.91]	0.89 [0.89, 0.90]
	μ_1	2.20	2.21 [2.12, 2.30]	2.21 [2.13, 2.28]	2.33 [2.26, 2.39]	2.20 [2.14, 2.25]
	μ_2	-0.41	-0.43 [-0.61, -0.23]	-0.38 [-0.57, -0.21]	0.25 [0.15, 0.36]	-0.40 [-0.50, -0.31]
	τ_1^2	1.00	0.99 [0.89, 1.11]	0.98 [0.88, 1.09]	0.96 [0.87, 1.06]	1.00 [0.91, 1.08]
	τ_2^2	4.00	4.05 [3.42, 4.68]	3.95 [3.40, 4.52]	3.00 [2.71, 3.27]	3.96 [3.68, 4.26]
	τ_{12}	-0.60	-0.62 [-0.80, -0.42]	-0.60 [-0.76, -0.43]	-0.78 [-0.91, -0.66]	-0.58 [-0.71, -0.47]
	β	0.50	0.55 [0.42, 0.71]	0.51 [0.38, 0.67]		
	$\alpha_{0.7}$	-0.21	-0.13 [-0.39, 0.12]	-0.18 [-0.27, -0.08]		
	c_1^2	0.50	0.48 [0.39, 0.57]			
	CR		99.5	99.6	99.9	99.8

Table 4: Estimates of the parameters when $c_1^2 = c_2^2$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.88	0.88 [0.85, 0.90]	0.88 [0.86, 0.90]	0.89 [0.87, 0.90]	0.88 [0.86, 0.89]
	μ_1	2.20	2.20 [1.95, 2.45]	2.21 [1.99, 2.42]	2.21 [2.02, 2.41]	2.21 [2.04, 2.35]
	μ_2	-0.41	-0.40 [-0.93, 0.11]	-0.35 [-0.90, 0.09]	0.17 [-0.14, 0.51]	-0.41 [-0.70, -0.12]
	τ_1^2	1.00	0.97 [0.66, 1.33]	0.90 [0.63, 1.20]	0.87 [0.61, 1.16]	0.91 [0.68, 1.14]
	τ_2^2	4.00	3.84 [2.73, 5.47]	3.63 [2.56, 5.25]	2.82 [2.15, 3.64]	3.71 [3.01, 4.66]
	τ_{12}	-1.20	-1.20 [-1.78, -0.73]	-1.05 [-1.56, -0.62]	-1.08 [-1.51, -0.73]	-1.13 [-1.51, -0.79]
	β	0.50	2.00 [0.67, 2.00]	0.75 [0.28, 2.00]		
	$\alpha_{0.7}$	-0.29	-0.34 [-1.69, 0.83]	-0.21 [-0.76, 0.19]		
	c_1^2	0.50	0.49 [0.28, 0.71]			
	CR		100	99.9	100	100
50	sAUC	0.88	0.88 [0.86, 0.89]	0.88 [0.87, 0.89]	0.89 [0.88, 0.90]	0.88 [0.86, 0.89]
	μ_1	2.20	2.20 [2.01, 2.38]	2.19 [2.06, 2.33]	2.20 [2.07, 2.33]	2.19 [2.07, 2.30]
	μ_2	-0.41	-0.44 [-0.83, -0.05]	-0.34 [-0.72, -0.01]	0.20 [-0.01, 0.42]	-0.39 [-0.58, -0.18]
	τ_1^2	1.00	0.99 [0.80, 1.25]	0.94 [0.75, 1.15]	0.94 [0.76, 1.14]	0.94 [0.78, 1.14]
	τ_2^2	4.00	4.00 [3.14, 5.19]	3.78 [2.95, 4.79]	2.96 [2.50, 3.54]	3.81 [3.32, 4.41]
	τ_{12}	-1.20	-1.23 [-1.64, -0.90]	-1.14 [-1.49, -0.85]	-1.16 [-1.45, -0.91]	-1.16 [-1.40, -0.92]
	β	0.50	0.87 [0.45, 2.00]	0.58 [0.29, 1.10]		
	$\alpha_{0.7}$	-0.29	-0.17 [-0.85, 0.54]	-0.22 [-0.49, 0.04]		
	c_1^2	0.50	0.47 [0.31, 0.65]			
	CR		99.7	99.8	99.8	99.9
200	sAUC	0.88	0.88 [0.87, 0.88]	0.88 [0.87, 0.88]	0.89 [0.88, 0.90]	0.88 [0.87, 0.88]
	μ_1	2.20	2.20 [2.10, 2.28]	2.19 [2.13, 2.26]	2.20 [2.14, 2.26]	2.20 [2.13, 2.25]
	μ_2	-0.41	-0.42 [-0.63, -0.17]	-0.37 [-0.58, -0.20]	0.20 [0.10, 0.30]	-0.40 [-0.50, -0.30]
	τ_1^2	1.00	1.01 [0.90, 1.13]	0.99 [0.89, 1.10]	1.00 [0.90, 1.11]	1.00 [0.91, 1.08]
	τ_2^2	4.00	4.02 [3.44, 4.58]	3.90 [3.41, 4.46]	3.11 [2.84, 3.41]	3.96 [3.66, 4.26]
	τ_{12}	-1.20	-1.24 [-1.44, -1.05]	-1.19 [-1.37, -1.02]	-1.21 [-1.37, -1.08]	-1.20 [-1.34, -1.08]
	β	0.50	0.55 [0.40, 0.71]	0.51 [0.37, 0.66]		
	$\alpha_{0.7}$	-0.29	-0.22 [-0.48, 0.04]	-0.26 [-0.37, -0.16]		
	c_1^2	0.50	0.48 [0.40, 0.57]			
	CR		99.8	99.8	99.9	99.9