Appendix Table: estimates of other parameters when c11 = 0

Scenario 1, 2, 3, 4, 9, 10, 15, 16

Yi

2021-03-29

Load data

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Table 1: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = 1)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.62	0.56 [0.38, 0.70]	0.63 [0.50, 0.72]	0.55 [0.36, 0.69]	0.64 [0.50, 0.73]	0.63 [0.54, 0.70]
	μ_1	0.00	-0.17 [-0.39, 0.05]	0.00 [-0.14, 0.17]	-0.17 [-0.37, 0.01]	-0.03 [-0.18, 0.12]	0.01 [-0.11, 0.14]
	μ_2	1.74	1.77 [1.61, 1.94]	1.75 [1.59, 1.90]	1.79 [1.64, 1.94]	1.90 [1.78, 2.03]	1.73 [1.60, 1.85]
	τ_1^2	0.50	0.51 [0.30, 0.74]	0.42 [0.27, 0.62]	0.48 [0.29, 0.73]	0.41 [0.26, 0.59]	0.44 [0.31, 0.59]
	τ_2^2	0.50	0.40 [0.26, 0.56]	0.40 [0.26, 0.61]	0.38 [0.25, 0.53]	0.35 [0.24, 0.48]	0.43 [0.32, 0.58]
	τ_{12}	-0.15	-0.07 [-0.21, 0.05]	-0.12 [-0.26, -0.01]	-0.05 [-0.19, 0.08]	-0.11 [-0.23, -0.00]	-0.14 [-0.24, -0.04]
	β	0.50	1.61 [0.56, 2.00]	0.60 [0.25, 1.49]	0.48 [0.10, 1.35]		
	$\alpha_{0.7}$	-1.02	-0.91 [-2.51, 0.33]	-1.17 [-2.72, -0.49]	-0.21 [-0.81, 0.25]		
	c_1^2	0.00	0.25 [0.02, 0.75]				
	CR		99.4	99	99.6	100	100
50	sAUC	0.62	0.55 [0.42, 0.66]	0.62 [0.54, 0.68]	0.53 [0.40, 0.64]	0.63 [0.54, 0.69]	0.62 [0.56, 0.67]
	μ_1	0.00	-0.13 [-0.32, 0.02]	-0.00 [-0.11, 0.11]	-0.19 [-0.33, -0.06]	-0.04 [-0.14, 0.06]	-0.00 [-0.09, 0.08]
	μ_2	1.74	1.75 [1.63, 1.85]	1.74 [1.62, 1.85]	1.79 [1.69, 1.90]	1.90 [1.82, 1.99]	1.73 [1.66, 1.81]
	τ_1^2	0.50	0.53 [0.39, 0.69]	0.47 [0.36, 0.59]	0.53 [0.39, 0.68]	0.46 [0.35, 0.58]	0.47 [0.39, 0.58]
	τ_2^2	0.50	0.45 [0.35, 0.60]	0.46 [0.35, 0.61]	0.42 [0.33, 0.53]	0.39 [0.31, 0.49]	0.47 [0.38, 0.58]
	τ_{12}	-0.15	-0.09 [-0.19, 0.02]	-0.14 [-0.24, -0.05]	-0.06 [-0.16, 0.04]	-0.12 [-0.20, -0.04]	-0.14 [-0.22, -0.07]
	β	0.50	0.88 [0.52, 1.60]	0.58 [0.33, 0.93]	0.45 [0.16, 0.85]		
	$\alpha_{0.7}$	-1.02	-1.05 [-1.94, -0.13]	-1.13 [-1.81, -0.64]	-0.21 [-0.54, 0.15]		
	c_1^2	0.00	0.12 [0.00, 0.58]				
	CR		99.7	99.8	99.7	100	100
200	sAUC	0.62	0.59 [0.54, 0.63]	0.62 [0.58, 0.65]	0.55 [0.49, 0.60]	0.63 [0.59, 0.66]	0.62 [0.59, 0.65]
	μ_1	0.00	-0.05 [-0.13, 0.02]	-0.00 [-0.05, 0.05]	-0.17 [-0.24, -0.11]	-0.04 [-0.09, 0.01]	-0.00 [-0.05, 0.04]
	μ_2	1.74	1.74 [1.69, 1.80]	1.74 [1.69, 1.80]	1.82 [1.76, 1.87]	1.91 [1.87, 1.96]	1.73 [1.69, 1.78]
	τ_1^2	0.50	0.50 [0.44, 0.57]	0.49 [0.44, 0.55]	0.53 [0.47, 0.62]	0.48 [0.44, 0.54]	0.49 [0.45, 0.54]
	τ_2^2	0.50	0.48 [0.42, 0.55]	0.49 [0.43, 0.56]	0.43 [0.38, 0.48]	0.41 [0.37, 0.46]	0.50 [0.45, 0.55]
	τ_{12}	-0.15	-0.12 [-0.18, -0.07]	-0.15 [-0.20, -0.10]	-0.09 [-0.13, -0.04]	-0.13 [-0.17, -0.09]	-0.15 [-0.19, -0.11]
	β	0.50	0.56 [0.45, 0.71]	0.52 [0.41, 0.65]	0.37 [0.22, 0.52]		
	$\alpha_{0.7}$	-1.02	-1.04 [-1.31, -0.76]	-1.05 [-1.29, -0.82]	-0.19 [-0.36, 0.02]		
	c_1^2	0.00	0.01 [0.00, 0.10]				
	CR		99.8	99.4	99.9	100	100

Table 2: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2 = 1$)	Proposed ($c_1^2 = c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.70	0.68 [0.57, 0.75]	0.71 [0.63, 0.76]	0.68 [0.53, 0.75]	0.72 [0.64, 0.77]	0.71 [0.65, 0.75]
	μ_1	0.00	-0.16 [-0.38, 0.03]	-0.00 [-0.16, 0.17]	-0.18 [-0.35, -0.01]	-0.07 [-0.21, 0.08]	0.00 [-0.12, 0.13]
	μ_2	1.74	1.80 [1.65, 1.97]	1.75 [1.59, 1.91]	1.82 [1.68, 1.97]	1.90 [1.77, 2.04]	1.74 [1.61, 1.85]
	τ_1^2	0.50	0.48 [0.32, 0.70]	0.43 [0.29, 0.62]	0.45 [0.30, 0.66]	0.40 [0.27, 0.58]	0.46 [0.33, 0.60]
	τ_2^2	0.50	0.40 [0.27, 0.56]	0.42 [0.27, 0.63]	0.37 [0.26, 0.52]	0.36 [0.25, 0.49]	0.45 [0.33, 0.58]
	τ_{12}	-0.30	-0.23 [-0.37, -0.09]	-0.26 [-0.41, -0.14]	-0.20 [-0.33, -0.07]	-0.23 [-0.35, -0.12]	-0.28 [-0.39, -0.17]
	β	0.50	1.45 [0.57, 2.00]	0.63 [0.24, 1.57]	0.47 [0.08, 1.19]		
	$\alpha_{0.7}$	-1.00	-1.00 [-2.52, 0.29]	-1.24 [-2.64, -0.43]	-0.29 [-0.88, 0.25]		
	c_1^2	0.00	0.22 [0.00, 0.76]				
	CR		98.9	99.4	99.7	100	100
50	sAUC	0.70	0.68 [0.61, 0.73]	0.71 [0.66, 0.75]	0.68 [0.59, 0.73]	0.71 [0.66, 0.75]	0.70 [0.67, 0.73]
	μ_1	0.00	-0.12 [-0.30, 0.04]	0.00 [-0.11, 0.12]	-0.16 [-0.30, -0.05]	-0.07 [-0.18, 0.03]	0.01 [-0.08, 0.09]
	μ_2	1.74	1.77 [1.66, 1.90]	1.74 [1.61, 1.85]	1.83 [1.73, 1.94]	1.90 [1.81, 1.99]	1.73 [1.65, 1.81]
	τ_1^2	0.50	0.50 [0.39, 0.64]	0.47 [0.35, 0.60]	0.47 [0.35, 0.62]	0.44 [0.34, 0.56]	0.46 [0.38, 0.57]
	τ_2^2	0.50	0.44 [0.34, 0.56]	0.46 [0.36, 0.60]	0.40 [0.32, 0.50]	0.39 [0.32, 0.48]	0.48 [0.39, 0.58]
	τ_{12}	-0.30	-0.26 [-0.36, -0.16]	-0.28 [-0.39, -0.20]	-0.22 [-0.31, -0.13]	-0.25 [-0.33, -0.17]	-0.29 [-0.36, -0.22]
	β	0.50	0.80 [0.46, 1.50]	0.54 [0.29, 0.90]	0.36 [0.11, 0.70]		
	$\alpha_{0.7}$	-1.00	-0.99 [-1.85, -0.06]	-1.08 [-1.75, -0.56]	-0.21 [-0.60, 0.22]		
	c_1^2	0.00	0.11 [0.00, 0.59]				
	CR		99.6	99.3	99.7	100	100
200	sAUC	0.70	0.69 [0.66, 0.72]	0.70 [0.68, 0.72]	0.68 [0.64, 0.71]	0.71 [0.69, 0.73]	0.70 [0.69, 0.72]
	μ_1	0.00	-0.04 [-0.11, 0.03]	0.00 [-0.05, 0.06]	-0.16 [-0.23, -0.10]	-0.07 [-0.12, -0.02]	0.00 [-0.04, 0.05]
	μ_2	1.74	1.75 [1.70, 1.81]	1.74 [1.69, 1.80]	1.84 [1.80, 1.89]	1.91 [1.86, 1.95]	1.74 [1.70, 1.78]
	τ_1^2	0.50	0.49 [0.43, 0.56]	0.49 [0.44, 0.55]	0.50 [0.43, 0.56]	0.48 [0.42, 0.53]	0.49 [0.45, 0.55]
	τ_2^2	0.50	0.47 [0.41, 0.54]	0.48 [0.42, 0.56]	0.41 [0.37, 0.47]	0.41 [0.37, 0.46]	0.49 [0.44, 0.54]
	τ_{12}	-0.30	-0.27 [-0.33, -0.22]	-0.29 [-0.35, -0.24]	-0.23 [-0.28, -0.19]	-0.25 [-0.30, -0.21]	-0.30 [-0.34, -0.25]
	β	0.50	0.56 [0.44, 0.70]	0.51 [0.39, 0.64]	0.36 [0.22, 0.50]		
	$\alpha_{0.7}$	-1.00	-1.02 [-1.31, -0.75]	-1.00 [-1.26, -0.78]	-0.20 [-0.41, 0.02]		
	c_1^2	0.00	0.01 [0.00, 0.09]				
	CR		99.6	99.8	99.4	100	100

Table 3: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2 = 1$)	Proposed ($c_1^2 = c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.56	0.48 [0.36, 0.59]	0.57 [0.47, 0.65]	0.46 [0.35, 0.57]	0.58 [0.47, 0.66]	0.57 [0.51, 0.61]
	μ_1	0.00	-0.27 [-0.58, -0.02]	-0.03 [-0.24, 0.18]	-0.28 [-0.53, -0.08]	-0.11 [-0.31, 0.06]	0.00 [-0.15, 0.16]
	μ_2	1.74	2.06 [1.65, 2.48]	1.92 [1.46, 2.33]	2.16 [1.77, 2.51]	2.60 [2.33, 2.86]	1.74 [1.49, 2.01]
	τ_1^2	1.00	1.02 [0.71, 1.43]	0.91 [0.65, 1.22]	0.95 [0.67, 1.30]	0.85 [0.61, 1.15]	0.91 [0.70, 1.20]
	τ_2^2	4.00	2.79 [1.92, 4.08]	3.30 [2.12, 4.79]	2.56 [1.79, 3.71]	2.11 [1.52, 2.71]	3.67 [2.96, 4.49]
	τ_{12}	-0.60	-0.23 [-0.68, 0.20]	-0.46 [-0.96, -0.04]	-0.12 [-0.47, 0.27]	-0.33 [-0.61, -0.02]	-0.55 [-0.88, -0.25]
	β	0.50	2.00 [0.53, 2.00]	0.67 [0.25, 2.00]	0.46 [0.11, 1.96]		
	$\alpha_{0.7}$	-0.46	-0.17 [-1.15, 0.70]	-0.43 [-1.19, -0.02]	0.14 [-0.28, 0.45]		
	c_1^2	0.00	0.24 [0.00, 0.75]				
	CR		99.8	99.7	99.9	100	100
50	sAUC	0.56	0.50 [0.41, 0.58]	0.56 [0.50, 0.63]	0.46 [0.38, 0.55]	0.57 [0.50, 0.63]	0.56 [0.53, 0.60]
	μ_1	0.00	-0.19 [-0.42, 0.01]	-0.01 [-0.17, 0.14]	-0.28 [-0.46, -0.12]	-0.12 [-0.25, 0.01]	0.00 [-0.11, 0.11]
	μ_2	1.74	1.92 [1.60, 2.28]	1.82 [1.50, 2.15]	2.20 [1.86, 2.52]	2.61 [2.43, 2.80]	1.75 [1.54, 1.94]
	τ_1^2	1.00	1.01 [0.77, 1.28]	0.94 [0.72, 1.17]	0.98 [0.76, 1.25]	0.90 [0.70, 1.12]	0.95 [0.78, 1.13]
	τ_2^2	4.00	3.32 [2.38, 4.44]	3.68 [2.69, 4.80]	2.66 [2.09, 3.51]	2.23 [1.83, 2.65]	3.91 [3.33, 4.47]
	τ_{12}	-0.60	-0.32 [-0.66, 0.06]	-0.53 [-0.91, -0.22]	-0.13 [-0.41, 0.14]	-0.33 [-0.57, -0.14]	-0.56 [-0.82, -0.35]
	β	0.50	0.74 [0.41, 2.00]	0.58 [0.31, 1.16]	0.38 [0.07, 0.75]		
	$\alpha_{0.7}$	-0.46	-0.30 [-0.75, 0.21]	-0.43 [-0.81, -0.16]	0.10 [-0.17, 0.37]		
	c_1^2	0.00	0.07 [0.00, 0.55]				
	CR		99.5	99.7	99.7	100	100
200	sAUC	0.56	0.55 [0.50, 0.58]	0.57 [0.53, 0.60]	0.49 [0.42, 0.55]	0.57 [0.54, 0.61]	0.56 [0.55, 0.58]
	μ_1	0.00	-0.04 [-0.14, 0.04]	-0.00 [-0.07, 0.08]	-0.25 [-0.36, -0.15]	-0.12 [-0.19, -0.05]	-0.00 [-0.06, 0.05]
	μ_2	1.74	1.76 [1.57, 1.96]	1.75 [1.57, 1.93]	2.25 [2.01, 2.50]	2.60 [2.50, 2.69]	1.73 [1.63, 1.84]
	τ_1^2	1.00	0.99 [0.88, 1.11]	0.99 [0.88, 1.10]	1.01 [0.90, 1.13]	0.95 [0.85, 1.06]	0.99 [0.90, 1.08]
	τ_2^2	4.00	3.93 [3.28, 4.55]	3.94 [3.41, 4.54]	2.61 [2.28, 3.09]	2.30 [2.09, 2.52]	3.95 [3.67, 4.25]
	τ_{12}	-0.60	-0.51 [-0.73, -0.31]	-0.58 [-0.78, -0.40]	-0.22 [-0.38, -0.03]	-0.37 [-0.48, -0.26]	-0.59 [-0.72, -0.48]
	β	0.50	0.56 [0.43, 0.73]	0.52 [0.41, 0.67]	0.28 [0.04, 0.48]		
	$\alpha_{0.7}$	-0.46	-0.44 [-0.58, -0.30]	-0.45 [-0.57, -0.33]	0.04 [-0.09, 0.36]		
	c_1^2	0.00	0.00 [0.00, 0.03]				
	CR		99.1	99.7	99	100	100

Table 4: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = 1)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.62	0.55 [0.46, 0.64]	0.62 [0.55, 0.69]	0.54 [0.44, 0.63]	0.63 [0.55, 0.70]	0.62 [0.58, 0.66]
	μ_1	0.00	-0.35 [-0.65, -0.06]	-0.08 [-0.27, 0.14]	-0.34 [-0.53, -0.13]	-0.25 [-0.42, -0.06]	-0.01 [-0.15, 0.15]
	μ_2	1.74	2.14 [1.70, 2.53]	1.92 [1.46, 2.32]	2.19 [1.79, 2.55]	2.60 [2.31, 2.87]	1.74 [1.45, 2.02]
	τ_1^2	1.00	0.90 [0.63, 1.26]	0.85 [0.60, 1.21]	0.79 [0.55, 1.08]	0.75 [0.53, 1.00]	0.92 [0.68, 1.15]
	τ_2^2	4.00	2.76 [1.95, 3.85]	3.28 [2.21, 4.80]	2.54 [1.82, 3.64]	2.08 [1.57, 2.77]	3.75 [2.98, 4.61]
	τ_{12}	-1.20	-0.69 [-1.12, -0.30]	-0.94 [-1.52, -0.51]	-0.56 [-0.92, -0.20]	-0.65 [-0.98, -0.37]	-1.13 [-1.51, -0.78]
	β	0.50	2.00 [0.61, 2.00]	0.69 [0.27, 2.00]	0.54 [0.13, 1.86]		
	$\alpha_{0.7}$	-0.44	-0.23 [-1.26, 0.67]	-0.48 [-1.24, -0.02]	-0.03 [-0.50, 0.36]		
	c_1^2	0.00	0.37 [0.01, 0.81]				
	CR		99.8	99.9	99.7	99.9	100
50	sAUC	0.62	0.57 [0.47, 0.63]	0.62 [0.57, 0.66]	0.54 [0.46, 0.62]	0.63 [0.58, 0.68]	0.62 [0.59, 0.65]
	μ_1	0.00	-0.23 [-0.54, -0.02]	-0.05 [-0.19, 0.10]	-0.34 [-0.48, -0.19]	-0.25 [-0.37, -0.12]	0.00 [-0.12, 0.10]
	μ_2	1.74	1.97 [1.60, 2.34]	1.81 [1.52, 2.17]	2.21 [1.89, 2.49]	2.59 [2.42, 2.77]	1.73 [1.53, 1.93]
	τ_1^2	1.00	0.95 [0.71, 1.20]	0.93 [0.71, 1.16]	0.84 [0.66, 1.04]	0.81 [0.64, 1.01]	0.96 [0.82, 1.12]
	τ_2^2	4.00	3.20 [2.33, 4.35]	3.56 [2.65, 4.73]	2.67 [2.08, 3.34]	2.19 [1.81, 2.65]	3.89 [3.33, 4.43]
	τ_{12}	-1.20	-0.80 [-1.21, -0.45]	-1.05 [-1.49, -0.71]	-0.59 [-0.83, -0.32]	-0.70 [-0.91, -0.49]	-1.16 [-1.42, -0.94]
	β	0.50	0.94 [0.49, 2.00]	0.57 [0.31, 1.22]	0.42 [0.10, 0.89]		
	$\alpha_{0.7}$	-0.44	-0.29 [-0.85, 0.36]	-0.43 [-0.77, -0.11]	-0.02 [-0.32, 0.29]		
	c_1^2	0.00	0.11 [0.00, 0.67]				
	CR		99.6	99.7	99.5	100	100
200	sAUC	0.62	0.60 [0.57, 0.63]	0.62 [0.59, 0.64]	0.56 [0.51, 0.61]	0.63 [0.61, 0.65]	0.62 [0.60, 0.63]
	μ_1	0.00	-0.07 [-0.18, 0.03]	-0.02 [-0.10, 0.07]	-0.32 [-0.39, -0.24]	-0.24 [-0.30, -0.18]	-0.01 [-0.05, 0.05]
	μ_2	1.74	1.79 [1.60, 2.02]	1.75 [1.58, 1.94]	2.27 [2.07, 2.47]	2.59 [2.50, 2.69]	1.74 [1.64, 1.84]
	τ_1^2	1.00	0.96 [0.84, 1.09]	0.97 [0.86, 1.10]	0.87 [0.78, 0.97]	0.85 [0.76, 0.95]	0.98 [0.89, 1.06]
	τ_2^2	4.00	3.76 [3.03, 4.44]	3.85 [3.30, 4.48]	2.57 [2.28, 3.00]	2.28 [2.07, 2.54]	3.91 [3.61, 4.24]
	τ_{12}	-1.20	-1.05 [-1.30, -0.80]	-1.16 [-1.38, -0.94]	-0.64 [-0.77, -0.52]	-0.72 [-0.83, -0.61]	-1.16 [-1.30, -1.06]
	β	0.50	0.57 [0.43, 0.74]	0.52 [0.40, 0.66]	0.33 [0.11, 0.52]		
	$\alpha_{0.7}$	-0.44	-0.44 [-0.59, -0.28]	-0.44 [-0.56, -0.32]	-0.08 [-0.23, 0.20]		
	c_1^2	0.00	0.00 [0.00, 0.06]				
	CR		99.1	99.3	99.6	100	99.9

Table 5: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2 = 1$)	Proposed ($c_1^2 = c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.83	0.79 [0.72, 0.85]	0.83 [0.77, 0.86]	0.78 [0.70, 0.84]	0.83 [0.77, 0.87]	0.83 [0.80, 0.85]
	μ_1	1.39	1.16 [0.88, 1.41]	1.35 [1.15, 1.56]	1.11 [0.89, 1.33]	1.26 [1.08, 1.44]	1.39 [1.22, 1.54]
	μ_2	1.39	1.77 [1.36, 2.18]	1.55 [1.14, 1.97]	1.90 [1.53, 2.24]	2.25 [1.99, 2.53]	1.39 [1.12, 1.69]
	τ_1^2	1.00	1.01 [0.66, 1.36]	0.88 [0.61, 1.24]	0.91 [0.61, 1.26]	0.82 [0.56, 1.15]	0.91 [0.67, 1.16]
	τ_2^2	4.00	2.70 [1.85, 4.12]	3.29 [2.19, 4.75]	2.37 [1.69, 3.44]	2.02 [1.49, 2.61]	3.66 [2.93, 4.60]
	τ_{12}	-0.60	-0.31 [-0.78, 0.11]	-0.45 [-0.93, -0.02]	-0.16 [-0.54, 0.21]	-0.31 [-0.63, -0.02]	-0.53 [-0.87, -0.25]
	β	0.50	2.00 [0.41, 2.00]	0.71 [0.24, 2.00]	0.35 [0.07, 1.19]		
	$\alpha_{0.7}$	-0.13	-0.40 [-1.54, 0.19]	-0.05 [-0.52, 0.36]	-0.39 [-1.26, 0.17]		
	c_1^2	0.00	0.19 [0.00, 0.79]				
	CR		99.8	99.6	99.4	100	99.8
50	sAUC	0.83	0.81 [0.75, 0.84]	0.83 [0.79, 0.85]	0.79 [0.72, 0.83]	0.83 [0.80, 0.86]	0.83 [0.81, 0.84]
	μ_1	1.39	1.22 [1.00, 1.42]	1.36 [1.21, 1.53]	1.13 [0.96, 1.28]	1.26 [1.12, 1.39]	1.38 [1.26, 1.50]
	μ_2	1.39	1.65 [1.26, 2.05]	1.47 [1.11, 1.84]	1.98 [1.66, 2.22]	2.27 [2.10, 2.47]	1.39 [1.18, 1.58]
	τ_1^2	1.00	1.00 [0.78, 1.29]	0.94 [0.76, 1.17]	0.97 [0.76, 1.20]	0.91 [0.73, 1.11]	0.96 [0.81, 1.14]
	τ_2^2	4.00	3.20 [2.24, 4.51]	3.63 [2.70, 4.76]	2.49 [1.93, 3.17]	2.13 [1.76, 2.59]	3.83 [3.31, 4.45]
	τ_{12}	-0.60	-0.36 [-0.76, -0.05]	-0.52 [-0.94, -0.21]	-0.21 [-0.47, 0.10]	-0.34 [-0.57, -0.13]	-0.58 [-0.82, -0.35]
	β	0.50	0.72 [0.37, 2.00]	0.56 [0.31, 1.25]	0.26 [0.07, 0.62]		
	$\alpha_{0.7}$	-0.13	-0.24 [-0.77, 0.13]	-0.06 [-0.31, 0.23]	-0.29 [-0.81, 0.18]		
	c_1^2	0.00	0.02 [0.00, 0.53]				
	CR		99.6	99.5	99.6	100	100
200	sAUC	0.83	0.82 [0.80, 0.84]	0.83 [0.81, 0.84]	0.80 [0.76, 0.82]	0.83 [0.81, 0.85]	0.83 [0.82, 0.84]
	μ_1	1.39	1.36 [1.26, 1.44]	1.38 [1.30, 1.45]	1.15 [1.06, 1.24]	1.26 [1.19, 1.33]	1.38 [1.33, 1.44]
	μ_2	1.39	1.42 [1.23, 1.62]	1.40 [1.22, 1.58]	2.01 [1.83, 2.19]	2.28 [2.19, 2.38]	1.38 [1.30, 1.49]
	τ_1^2	1.00	0.99 [0.88, 1.12]	0.98 [0.87, 1.11]	1.00 [0.87, 1.12]	0.95 [0.84, 1.06]	0.99 [0.90, 1.08]
	τ_2^2	4.00	3.91 [3.30, 4.52]	3.94 [3.40, 4.52]	2.47 [2.19, 2.81]	2.24 [2.02, 2.46]	3.98 [3.67, 4.26]
	τ_{12}	-0.60	-0.54 [-0.74, -0.33]	-0.58 [-0.77, -0.40]	-0.26 [-0.40, -0.12]	-0.35 [-0.46, -0.25]	-0.60 [-0.72, -0.47]
	β	0.50	0.56 [0.42, 0.72]	0.52 [0.41, 0.69]	0.24 [0.06, 0.39]		
	$\alpha_{0.7}$	-0.13	-0.16 [-0.31, -0.02]	-0.12 [-0.22, 0.01]	-0.26 [-0.57, 0.22]		
	c_1^2	0.00	0.00 [0.00, 0.00]				
	CR		99.1	99.2	99.6	99.9	99.9

Table 6: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2 = 1$)	Proposed ($c_1^2 = c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.85	0.83 [0.78, 0.86]	0.84 [0.81, 0.87]	0.82 [0.76, 0.86]	0.85 [0.82, 0.88]	0.85 [0.82, 0.86]
	μ_1	1.39	1.11 [0.80, 1.36]	1.31 [1.12, 1.54]	1.05 [0.85, 1.25]	1.13 [0.96, 1.29]	1.38 [1.21, 1.54]
	μ_2	1.39	1.87 [1.40, 2.28]	1.55 [1.15, 1.99]	1.97 [1.60, 2.29]	2.28 [2.02, 2.53]	1.39 [1.13, 1.67]
	τ_1^2	1.00	0.89 [0.62, 1.27]	0.88 [0.59, 1.19]	0.78 [0.54, 1.10]	0.77 [0.52, 1.04]	0.92 [0.70, 1.19]
	τ_2^2	4.00	2.64 [1.76, 4.03]	3.27 [2.08, 4.70]	2.25 [1.61, 3.28]	1.97 [1.46, 2.66]	3.67 [2.93, 4.50]
	τ_{12}	-1.20	-0.74 [-1.22, -0.37]	-0.93 [-1.50, -0.53]	-0.57 [-0.90, -0.25]	-0.64 [-0.94, -0.36]	-1.10 [-1.49, -0.79]
	β	0.50	2.00 [0.47, 2.00]	0.70 [0.26, 2.00]	0.38 [0.07, 1.08]		
	$\alpha_{0.7}$	-0.13	-0.64 [-1.89, 0.10]	-0.06 [-0.50, 0.33]	-0.62 [-1.52, 0.18]		
	c_1^2	0.00	0.27 [0.00, 0.85]				
	CR		99.6	99.8	99.8	100	100
50	sAUC	0.85	0.84 [0.80, 0.86]	0.85 [0.83, 0.87]	0.83 [0.79, 0.86]	0.85 [0.83, 0.87]	0.85 [0.83, 0.86]
	μ_1	1.39	1.22 [0.98, 1.42]	1.37 [1.20, 1.54]	1.08 [0.95, 1.23]	1.15 [1.03, 1.28]	1.40 [1.29, 1.50]
	μ_2	1.39	1.70 [1.30, 2.11]	1.44 [1.10, 1.82]	2.02 [1.75, 2.24]	2.27 [2.08, 2.46]	1.37 [1.18, 1.57]
	τ_1^2	1.00	0.95 [0.73, 1.21]	0.94 [0.73, 1.17]	0.83 [0.66, 1.01]	0.82 [0.64, 0.99]	0.95 [0.79, 1.12]
	τ_2^2	4.00	3.17 [2.12, 4.37]	3.65 [2.64, 4.80]	2.40 [1.85, 3.06]	2.14 [1.73, 2.63]	3.87 [3.27, 4.50]
	τ_{12}	-1.20	-0.90 [-1.34, -0.57]	-1.07 [-1.52, -0.73]	-0.62 [-0.87, -0.40]	-0.68 [-0.92, -0.50]	-1.16 [-1.39, -0.92]
	β	0.50	0.79 [0.37, 2.00]	0.58 [0.31, 1.19]	0.25 [0.04, 0.62]		
	$\alpha_{0.7}$	-0.13	-0.29 [-0.94, 0.15]	-0.06 [-0.31, 0.25]	-0.36 [-1.04, 0.24]		
	c_1^2	0.00	0.02 [0.00, 0.64]				
	CR		99.3	99.4	99.7	100	100
200	sAUC	0.85	0.84 [0.83, 0.85]	0.85 [0.84, 0.86]	0.83 [0.81, 0.85]	0.85 [0.84, 0.86]	0.85 [0.84, 0.85]
	μ_1	1.39	1.34 [1.24, 1.44]	1.38 [1.30, 1.46]	1.09 [1.02, 1.16]	1.14 [1.07, 1.20]	1.38 [1.33, 1.44]
	μ_2	1.39	1.44 [1.25, 1.66]	1.40 [1.23, 1.57]	2.09 [1.93, 2.23]	2.29 [2.19, 2.37]	1.39 [1.28, 1.48]
	τ_1^2	1.00	0.97 [0.87, 1.10]	0.98 [0.88, 1.11]	0.86 [0.77, 0.96]	0.86 [0.76, 0.95]	0.99 [0.90, 1.08]
	τ_2^2	4.00	3.86 [3.19, 4.49]	3.95 [3.41, 4.52]	2.39 [2.15, 2.69]	2.24 [2.04, 2.46]	3.99 [3.69, 4.28]
	τ_{12}	-1.20	-1.11 [-1.35, -0.89]	-1.19 [-1.40, -0.98]	-0.68 [-0.79, -0.56]	-0.71 [-0.82, -0.61]	-1.20 [-1.32, -1.06]
	β	0.50	0.54 [0.40, 0.72]	0.53 [0.41, 0.69]	0.19 [0.05, 0.36]		
	$\alpha_{0.7}$	-0.13	-0.15 [-0.32, -0.01]	-0.11 [-0.23, 0.00]	-0.18 [-0.58, 0.28]		
	c_1^2	0.00	0.00 [0.00, 0.00]				
	CR		99.6	99.4	99.8	100	99.9

Table 7: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2=1$)	Proposed ($c_1^2=c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.89	0.88 [0.85, 0.90]	0.89 [0.87, 0.91]	0.87 [0.85, 0.90]	0.89 [0.87, 0.91]	0.89 [0.87, 0.90]
	μ_1	2.20	2.03 [1.78, 2.27]	2.17 [1.97, 2.39]	1.96 [1.73, 2.18]	2.07 [1.90, 2.27]	2.21 [2.05, 2.35]
	μ_2	-0.41	-0.11 [-0.55, 0.38]	-0.22 [-0.66, 0.13]	0.16 [-0.32, 0.51]	0.51 [0.23, 0.79]	-0.41 [-0.68, -0.12]
	τ_1^2	1.00	0.93 [0.66, 1.30]	0.88 [0.63, 1.18]	0.90 [0.63, 1.25]	0.84 [0.58, 1.13]	0.92 [0.68, 1.16]
	τ_2^2	4.00	3.22 [2.10, 4.54]	3.38 [2.32, 4.76]	2.63 [1.75, 3.95]	2.13 [1.55, 2.86]	3.84 [2.98, 4.70]
	τ_{12}	-0.60	-0.36 [-0.84, 0.05]	-0.47 [-0.99, -0.08]	-0.20 [-0.57, 0.20]	-0.35 [-0.68, -0.06]	-0.60 [-0.90, -0.24]
	β	0.50	2.00 [0.54, 2.00]	0.88 [0.33, 2.00]	0.26 [0.05, 1.10]		
	$\alpha_{0.7}$	1.77	1.35 [-0.34, 5.21]	2.91 [0.99, 6.53]	0.28 [-0.08, 0.56]		
	c_1^2	0.00	0.02 [0.00, 0.75]				
	CR		99.6	99.5	99.9	100	99.9
50	sAUC	0.89	0.88 [0.87, 0.90]	0.89 [0.88, 0.90]	0.88 [0.86, 0.89]	0.89 [0.88, 0.90]	0.89 [0.88, 0.90]
	μ_1	2.20	2.11 [1.92, 2.29]	2.19 [2.04, 2.34]	1.97 [1.80, 2.12]	2.08 [1.95, 2.22]	2.20 [2.08, 2.31]
	μ_2	-0.41	-0.31 [-0.65, 0.03]	-0.35 [-0.67, -0.10]	0.18 [-0.20, 0.48]	0.49 [0.30, 0.67]	-0.41 [-0.61, -0.23]
	τ_1^2	1.00	1.01 [0.79, 1.27]	0.97 [0.77, 1.22]	0.98 [0.78, 1.24]	0.94 [0.74, 1.15]	0.96 [0.81, 1.16]
	τ_2^2	4.00	3.72 [2.75, 4.76]	3.83 [2.96, 4.77]	2.70 [2.06, 3.69]	2.32 [1.84, 2.86]	3.86 [3.27, 4.44]
	τ_{12}	-0.60	-0.43 [-0.83, -0.11]	-0.51 [-0.91, -0.22]	-0.24 [-0.51, 0.06]	-0.36 [-0.61, -0.15]	-0.56 [-0.81, -0.34]
	β	0.50	0.92 [0.46, 2.00]	0.69 [0.38, 2.00]	0.15 [0.05, 0.58]		
	$\alpha_{0.7}$	1.77	2.09 [0.75, 5.32]	2.44 [1.28, 6.00]	0.29 [0.04, 0.48]		
	c_1^2	0.00	0.00 [0.00, 0.08]				
	CR		99.6	99.7	99.8	100	100
200	sAUC	0.89	0.89 [0.88, 0.90]	0.89 [0.88, 0.90]	0.88 [0.87, 0.89]	0.89 [0.89, 0.90]	0.89 [0.89, 0.90]
	μ_1	2.20	2.18 [2.11, 2.26]	2.19 [2.12, 2.27]	2.02 [1.93, 2.10]	2.08 [2.02, 2.15]	2.20 [2.14, 2.25]
	μ_2	-0.41	-0.40 [-0.55, -0.26]	-0.39 [-0.53, -0.25]	0.32 [0.14, 0.46]	0.49 [0.38, 0.58]	-0.40 [-0.50, -0.31]
	τ_1^2	1.00	0.99 [0.89, 1.10]	0.99 [0.89, 1.09]	0.98 [0.88, 1.09]	0.97 [0.87, 1.06]	1.00 [0.91, 1.08]
	τ_2^2	4.00	3.98 [3.51, 4.49]	3.93 [3.48, 4.43]	2.57 [2.27, 2.98]	2.42 [2.17, 2.67]	3.96 [3.68, 4.26]
	τ_{12}	-0.60	-0.57 [-0.76, -0.39]	-0.59 [-0.77, -0.41]	-0.33 [-0.47, -0.18]	-0.39 [-0.51, -0.27]	-0.58 [-0.71, -0.47]
	β	0.50	0.54 [0.43, 0.71]	0.52 [0.41, 0.66]	0.07 [0.04, 0.20]		
	$\alpha_{0.7}$	1.77	1.84 [1.44, 2.49]	1.81 [1.43, 2.42]	0.32 [0.14, 0.43]		
	c_1^2	0.00	0.00 [0.00, 0.00]				
	CR		99.4	99.5	99.5	100	99.8

Table 8: Estimates of the parameters when $c_1^2 = 0, c_2^2 = 1$

S	Par	True	Proposed ($\tilde{c}_1^2, \tilde{c}_2^2$)	Proposed ($c_1^2 = 1$)	Proposed ($c_1^2 = c_2^2$)	Reitsma$_O$	Reitsma$_P$
25	sAUC	0.88	0.87 [0.84, 0.89]	0.87 [0.85, 0.89]	0.86 [0.84, 0.88]	0.88 [0.86, 0.89]	0.88 [0.86, 0.89]
	μ_1	2.20	1.99 [1.72, 2.25]	2.16 [1.97, 2.36]	1.91 [1.72, 2.11]	1.97 [1.78, 2.15]	2.21 [2.04, 2.35]
	μ_2	-0.41	-0.06 [-0.55, 0.42]	-0.28 [-0.67, 0.09]	0.13 [-0.33, 0.51]	0.48 [0.20, 0.76]	-0.41 [-0.70, -0.12]
	τ_1^2	1.00	0.89 [0.60, 1.25]	0.86 [0.59, 1.20]	0.80 [0.55, 1.10]	0.77 [0.53, 1.06]	0.91 [0.68, 1.14]
	τ_2^2	4.00	3.16 [2.05, 4.51]	3.46 [2.35, 4.84]	2.70 [1.78, 3.92]	2.21 [1.55, 2.97]	3.71 [3.01, 4.66]
	τ_{12}	-1.20	-0.87 [-1.37, -0.47]	-1.00 [-1.52, -0.60]	-0.63 [-1.03, -0.30]	-0.70 [-1.06, -0.42]	-1.13 [-1.51, -0.79]
	β	0.50	2.00 [0.58, 2.00]	1.17 [0.38, 2.00]	0.28 [0.04, 1.53]		
	$\alpha_{0.7}$	1.79	1.16 [-0.65, 5.20]	3.40 [1.21, 6.72]	0.22 [-0.20, 0.53]		
	c_1^2	0.00	0.05 [0.00, 0.81]				
	CR		99.7	99.8	99.9	100	100
50	sAUC	0.88	0.87 [0.86, 0.89]	0.88 [0.86, 0.89]	0.87 [0.85, 0.88]	0.88 [0.87, 0.89]	0.88 [0.86, 0.89]
	μ_1	2.20	2.09 [1.90, 2.27]	2.17 [2.04, 2.32]	1.91 [1.77, 2.06]	1.96 [1.84, 2.09]	2.19 [2.07, 2.30]
	μ_2	-0.41	-0.29 [-0.60, 0.09]	-0.35 [-0.62, -0.09]	0.23 [-0.14, 0.48]	0.48 [0.29, 0.67]	-0.39 [-0.58, -0.18]
	τ_1^2	1.00	0.94 [0.74, 1.21]	0.93 [0.74, 1.16]	0.85 [0.67, 1.05]	0.83 [0.67, 1.03]	0.94 [0.78, 1.14]
	τ_2^2	4.00	3.67 [2.74, 4.60]	3.76 [2.93, 4.63]	2.62 [2.03, 3.56]	2.33 [1.86, 2.79]	3.81 [3.32, 4.41]
	τ_{12}	-1.20	-1.03 [-1.44, -0.69]	-1.12 [-1.53, -0.78]	-0.71 [-0.98, -0.44]	-0.75 [-1.02, -0.54]	-1.16 [-1.40, -0.92]
	β	0.50	1.03 [0.48, 2.00]	0.69 [0.39, 2.00]	0.11 [0.03, 0.71]		
	$\alpha_{0.7}$	1.79	2.09 [0.57, 5.63]	2.38 [1.33, 6.05]	0.31 [0.01, 0.51]		
	c_1^2	0.00	0.00 [0.00, 0.27]				
	CR		99.5	99.6	99.6	100	99.9
200	sAUC	0.88	0.88 [0.87, 0.88]	0.88 [0.87, 0.88]	0.88 [0.87, 0.88]	0.88 [0.87, 0.88]	0.88 [0.87, 0.88]
	μ_1	2.20	2.18 [2.10, 2.26]	2.19 [2.12, 2.26]	1.94 [1.87, 2.01]	1.96 [1.90, 2.02]	2.20 [2.13, 2.25]
	μ_2	-0.41	-0.39 [-0.53, -0.25]	-0.39 [-0.52, -0.26]	0.38 [0.25, 0.50]	0.47 [0.37, 0.57]	-0.40 [-0.50, -0.30]
	τ_1^2	1.00	0.99 [0.88, 1.10]	0.99 [0.88, 1.10]	0.89 [0.79, 0.98]	0.89 [0.79, 0.98]	1.00 [0.91, 1.08]
	τ_2^2	4.00	3.98 [3.47, 4.48]	3.96 [3.47, 4.46]	2.53 [2.23, 2.86]	2.44 [2.18, 2.72]	3.96 [3.66, 4.26]
	τ_{12}	-1.20	-1.18 [-1.39, -1.00]	-1.19 [-1.40, -1.01]	-0.79 [-0.91, -0.67]	-0.79 [-0.92, -0.68]	-1.20 [-1.34, -1.08]
	β	0.50	0.54 [0.44, 0.72]	0.53 [0.42, 0.68]	0.05 [0.02, 0.09]		
	$\alpha_{0.7}$	1.79	1.89 [1.44, 2.58]	1.89 [1.47, 2.50]	0.40 [0.29, 0.50]		
	c_1^2	0.00	0.00 [0.00, 0.00]				
	CR		99.6	99.5	99.9	100	99.9