Appendix Table 6-9

Estimates of other parameters when $c_1^2 = c_2^2$ for scenario 5-8

Yi

2021-04-05

Load data

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

Scenario 5

Scenario 6

Scenario 7

Scenario 8

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

S_P	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	SAUC	0.828	0.840 (0.788, 0.872)	0.833 (0.784, 0.868)	0.868 (0.839, 0.892)	0.826 (0.799, 0.850)
	μ_1	1.386	1.396 (1.113, 1.649)	1.391 (1.183, 1.602)	1.487 (1.303, 1.677)	1.385 (1.218, 1.541)
	μ_2	1.386	1.501 (0.971, 1.966)	1.473 (1.002, 1.873)	2.019 (1.693, 2.314)	1.392 (1.119, 1.687)
	τ_1^2	1.000	0.982 (0.662, 1.366)	0.896 (0.619, 1.216)	0.847 (0.584, 1.163)	0.915 (0.670, 1.158)
	τ_2^2	4.000	3.628 (2.615, 5.124)	3.506 (2.487, 5.028)	2.742 (2.075, 3.570)	3.659 (2.932, 4.595)
	τ_{12}	-0.600	-0.668 (-1.192, -0.213)	-0.517 (-0.975, -0.118)	-0.648 (-1.031, -0.341)	-0.532 (-0.875, -0.255)
	c_1^2	0.500	0.464 (0.129, 0.798)			
	β	0.500	2.000 (0.568, 2.000)	0.664 (0.252, 2.000)		
	$\alpha_{0.7}$	-0.761	-0.967 (-2.421, -0.067)	-0.881 (-2.028, -0.271)		
	CR		99.5	99.6	99.9	99.8
50	SAUC	0.828	0.834 (0.801, 0.861)	0.834 (0.801, 0.859)	0.871 (0.852, 0.887)	0.826 (0.808, 0.845)
	μ_1	1.386	1.396 (1.163, 1.588)	1.387 (1.239, 1.543)	1.494 (1.355, 1.627)	1.376 (1.262, 1.504)
	μ_2	1.386	1.357 (0.965, 1.801)	1.435 (1.096, 1.774)	1.989 (1.792, 2.203)	1.386 (1.182, 1.584)
	τ_1^2	1.000	1.042 (0.814, 1.278)	0.957 (0.764, 1.155)	0.923 (0.751, 1.115)	0.958 (0.807, 1.141)
	τ_2^2	4.000	3.983 (3.067, 5.249)	3.744 (2.926, 4.781)	2.926 (2.438, 3.529)	3.832 (3.310, 4.448)
	τ_{12}	-0.600	-0.667 (-1.057, -0.318)	-0.585 (-0.895, -0.282)	-0.714 (-0.997, -0.485)	-0.576 (-0.817, -0.347)
	c_1^2	0.500	0.489 (0.227, 0.748)			
	β	0.500	0.832 (0.459, 2.000)	0.528 (0.280, 0.952)		
	$\alpha_{0.7}$	-0.761	-0.776 (-1.646, -0.230)	-0.738 (-1.285, -0.360)		
	CR		99.8	100	99.8	100
200	SAUC	0.828	0.831 (0.813, 0.846)	0.828 (0.813, 0.844)	0.872 (0.863, 0.880)	0.828 (0.819, 0.835)
	μ_1	1.386	1.399 (1.283, 1.500)	1.388 (1.313, 1.460)	1.491 (1.432, 1.559)	1.383 (1.332, 1.436)
	μ_2	1.386	1.362 (1.147, 1.588)	1.402 (1.224, 1.574)	2.002 (1.898, 2.124)	1.384 (1.296, 1.488)
	τ_1^2	1.000	1.015 (0.898, 1.138)	0.989 (0.885, 1.099)	0.971 (0.875, 1.073)	0.994 (0.903, 1.080)
	τ_2^2	4.000	4.064 (3.477, 4.725)	3.933 (3.459, 4.461)	3.053 (2.810, 3.340)	3.977 (3.668, 4.263)
	τ_{12}	-0.600	-0.631 (-0.819, -0.462)	-0.592 (-0.742, -0.438)	-0.754 (-0.876, -0.637)	-0.597 (-0.717, -0.473)
	c_1^2	0.500	0.481 (0.339, 0.609)			
	β	0.500	0.566 (0.446, 0.716)	0.523 (0.404, 0.652)		
	$\alpha_{0.7}$	-0.761	-0.757 (-0.979, -0.532)	-0.778 (-0.954, -0.599)		
	CR		99.3	99.8	100	99.9

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

S_P	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	SAUC	0.846	0.851 (0.823, 0.876)	0.849 (0.819, 0.874)	0.874 (0.854, 0.891)	0.845 (0.824, 0.864)
	μ_1	1.386	1.375 (1.103, 1.625)	1.395 (1.195, 1.585)	1.400 (1.214, 1.579)	1.379 (1.208, 1.539)
	μ_2	1.386	1.424 (0.901, 1.928)	1.418 (0.947, 1.844)	1.925 (1.627, 2.222)	1.395 (1.126, 1.668)
	τ_1^2	1.000	1.026 (0.702, 1.424)	0.914 (0.639, 1.228)	0.888 (0.623, 1.206)	0.924 (0.704, 1.186)
	τ_2^2	4.000	3.829 (2.667, 5.376)	3.563 (2.509, 4.993)	2.934 (2.204, 3.739)	3.669 (2.933, 4.505)
	τ_{12}	-1.200	-1.219 (-1.817, -0.749)	-1.073 (-1.574, -0.659)	-1.067 (-1.517, -0.731)	-1.101 (-1.493, -0.786)
	c_1^2	0.500	0.521 (0.211, 0.798)			
	β	0.500	2.000 (0.680, 2.000)	0.688 (0.277, 2.000)		
	$\alpha_{0.7}$	-0.843	-1.445 (-3.058, -0.243)	-1.044 (-2.393, -0.350)		
	CR		100	99.6	99.6	100
50	SAUC	0.846	0.851 (0.825, 0.868)	0.851 (0.828, 0.869)	0.876 (0.863, 0.887)	0.847 (0.834, 0.859)
	μ_1	1.386	1.392 (1.172, 1.597)	1.418 (1.271, 1.549)	1.412 (1.279, 1.539)	1.402 (1.289, 1.504)
	μ_2	1.386	1.364 (0.921, 1.794)	1.406 (1.035, 1.706)	1.912 (1.700, 2.115)	1.372 (1.184, 1.566)
	τ_1^2	1.000	1.029 (0.812, 1.302)	0.940 (0.751, 1.140)	0.941 (0.748, 1.143)	0.949 (0.788, 1.115)
	τ_2^2	4.000	4.041 (3.106, 5.404)	3.839 (2.978, 4.891)	3.116 (2.551, 3.706)	3.868 (3.273, 4.496)
	τ_{12}	-1.200	-1.260 (-1.717, -0.911)	-1.156 (-1.471, -0.847)	-1.164 (-1.424, -0.888)	-1.156 (-1.392, -0.921)
	c_1^2	0.500	0.521 (0.269, 0.747)			
	β	0.500	0.921 (0.499, 2.000)	0.582 (0.303, 1.015)		
	$\alpha_{0.7}$	-0.843	-1.040 (-1.924, -0.381)	-0.932 (-1.567, -0.456)		
	CR		99.7	99.9	99.8	100
200	SAUC	0.846	0.847 (0.835, 0.858)	0.847 (0.836, 0.858)	0.875 (0.869, 0.881)	0.846 (0.839, 0.852)
	μ_1	1.386	1.387 (1.275, 1.486)	1.382 (1.311, 1.451)	1.387 (1.320, 1.453)	1.384 (1.326, 1.437)
	μ_2	1.386	1.381 (1.157, 1.608)	1.403 (1.236, 1.572)	1.940 (1.831, 2.037)	1.390 (1.284, 1.482)
	τ_1^2	1.000	1.020 (0.921, 1.141)	0.988 (0.893, 1.089)	0.997 (0.903, 1.098)	0.993 (0.902, 1.076)
	τ_2^2	4.000	4.017 (3.508, 4.623)	3.927 (3.504, 4.393)	3.220 (2.961, 3.508)	3.991 (3.689, 4.280)
	τ_{12}	-1.200	-1.231 (-1.435, -1.059)	-1.183 (-1.346, -1.039)	-1.197 (-1.333, -1.073)	-1.197 (-1.323, -1.058)
	c_1^2	0.500	0.488 (0.368, 0.613)			
	β	0.500	0.560 (0.419, 0.721)	0.507 (0.388, 0.646)		
	$\alpha_{0.7}$	-0.843	-0.851 (-1.120, -0.589)	-0.856 (-1.062, -0.643)		
	CR		99.7	99.8	99.9	99.9

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

S_P	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	SAUC	0.892	0.892 (0.868, 0.911)	0.892 (0.871, 0.910)	0.906 (0.888, 0.921)	0.891 (0.873, 0.905)
	μ_1	2.197	2.226 (1.987, 2.448)	2.219 (2.016, 2.422)	2.320 (2.143, 2.497)	2.211 (2.048, 2.351)
	μ_2	-0.405	-0.373 (-0.846, 0.125)	-0.359 (-0.819, 0.117)	0.247 (-0.045, 0.561)	-0.406 (-0.681, -0.122)
	τ_1^2	1.000	0.939 (0.659, 1.267)	0.881 (0.622, 1.209)	0.845 (0.599, 1.141)	0.920 (0.676, 1.165)
	τ_2^2	4.000	3.767 (2.585, 5.225)	3.612 (2.465, 5.075)	2.713 (2.000, 3.536)	3.840 (2.979, 4.702)
	τ_{12}	-0.600	-0.653 (-1.092, -0.206)	-0.563 (-0.961, -0.132)	-0.716 (-1.063, -0.379)	-0.598 (-0.900, -0.241)
	c_1^2	0.500	0.479 (0.238, 0.733)			
	β	0.500	2.000 (0.580, 2.000)	0.696 (0.251, 2.000)		
	$\alpha_{0.7}$	-0.199	-0.122 (-1.376, 1.044)	-0.076 (-0.486, 0.282)		
	CR		99.6	99.8	99.8	99.8
50	SAUC	0.892	0.892 (0.875, 0.907)	0.893 (0.878, 0.907)	0.908 (0.896, 0.917)	0.891 (0.879, 0.902)
	μ_1	2.197	2.225 (2.043, 2.393)	2.205 (2.054, 2.360)	2.325 (2.192, 2.449)	2.197 (2.085, 2.308)
	μ_2	-0.405	-0.439 (-0.818, -0.083)	-0.381 (-0.723, -0.018)	0.250 (0.043, 0.447)	-0.412 (-0.607, -0.229)
	τ_1^2	1.000	1.006 (0.769, 1.248)	0.971 (0.755, 1.205)	0.928 (0.740, 1.145)	0.962 (0.814, 1.157)
	τ_2^2	4.000	4.062 (3.075, 5.215)	3.791 (2.888, 4.949)	2.871 (2.368, 3.467)	3.861 (3.272, 4.436)
	τ_{12}	-0.600	-0.634 (-0.987, -0.314)	-0.567 (-0.886, -0.258)	-0.754 (-1.008, -0.517)	-0.561 (-0.807, -0.339)
	c_1^2	0.500	0.459 (0.282, 0.645)			
	β	0.500	0.839 (0.455, 2.000)	0.586 (0.298, 1.050)		
	$\alpha_{0.7}$	-0.199	0.074 (-0.717, 0.726)	-0.094 (-0.335, 0.189)		
	CR		99.6	99.9	99.9	100
200	SAUC	0.892	0.893 (0.885, 0.899)	0.893 (0.886, 0.899)	0.909 (0.904, 0.913)	0.892 (0.886, 0.897)
	μ_1	2.197	2.209 (2.120, 2.297)	2.207 (2.134, 2.280)	2.325 (2.262, 2.386)	2.197 (2.143, 2.254)
	μ_2	-0.405	-0.425 (-0.620, -0.218)	-0.387 (-0.574, -0.214)	0.245 (0.145, 0.355)	-0.403 (-0.505, -0.305)
	τ_1^2	1.000	0.994 (0.890, 1.108)	0.982 (0.880, 1.089)	0.963 (0.870, 1.062)	0.995 (0.908, 1.077)
	τ_2^2	4.000	4.037 (3.423, 4.655)	3.951 (3.411, 4.520)	2.999 (2.721, 3.263)	3.956 (3.683, 4.264)
	τ_{12}	-0.600	-0.623 (-0.801, -0.427)	-0.602 (-0.754, -0.439)	-0.780 (-0.903, -0.653)	-0.578 (-0.708, -0.466)
	c_1^2	0.500	0.481 (0.391, 0.570)			
	β	0.500	0.552 (0.417, 0.715)	0.514 (0.387, 0.668)		
	$\alpha_{0.7}$	-0.199	-0.115 (-0.383, 0.132)	-0.164 (-0.253, -0.074)		
	CR		99.6	99.4	99.9	99.8

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

S_P	Par	True	Proposed $(\tilde{c}_1^2, \tilde{c}_2^2)$	Proposed $(c_1^2 = c_2^2)$	Reitsma$_O$	Reitsma$_P$
25	SAUC	0.877	0.877 (0.854, 0.896)	0.878 (0.859, 0.896)	0.888 (0.870, 0.904)	0.876 (0.858, 0.893)
	μ_1	2.197	2.209 (1.958, 2.451)	2.205 (1.991, 2.413)	2.216 (2.017, 2.409)	2.205 (2.045, 2.355)
	μ_2	-0.405	-0.417 (-0.959, 0.096)	-0.358 (-0.890, 0.061)	0.167 (-0.146, 0.505)	-0.415 (-0.704, -0.124)
	τ_1^2	1.000	0.971 (0.661, 1.331)	0.904 (0.629, 1.200)	0.879 (0.611, 1.170)	0.910 (0.676, 1.139)
	τ_2^2	4.000	3.866 (2.757, 5.541)	3.674 (2.573, 5.343)	2.834 (2.164, 3.637)	3.708 (3.006, 4.656)
	τ_{12}	-1.200	-1.192 (-1.785, -0.733)	-1.057 (-1.557, -0.617)	-1.084 (-1.513, -0.730)	-1.132 (-1.508, -0.791)
	c_1^2	0.500	0.477 (0.272, 0.706)			
	β	0.500	2.000 (0.707, 2.000)	0.762 (0.294, 2.000)		
	$\alpha_{0.7}$	-0.282	-0.304 (-1.677, 0.921)	-0.199 (-0.747, 0.194)		
	CR		99.5	100	100	100
50	SAUC	0.877	0.877 (0.862, 0.891)	0.878 (0.865, 0.892)	0.890 (0.878, 0.900)	0.876 (0.865, 0.888)
	μ_1	2.197	2.206 (2.022, 2.392)	2.192 (2.053, 2.338)	2.201 (2.070, 2.330)	2.191 (2.072, 2.302)
	μ_2	-0.405	-0.443 (-0.843, -0.058)	-0.351 (-0.725, -0.022)	0.199 (-0.018, 0.417)	-0.388 (-0.585, -0.184)
	τ_1^2	1.000	0.996 (0.793, 1.249)	0.939 (0.759, 1.153)	0.935 (0.760, 1.142)	0.942 (0.776, 1.137)
	τ_2^2	4.000	4.002 (3.145, 5.224)	3.793 (2.983, 4.780)	2.966 (2.510, 3.541)	3.810 (3.322, 4.406)
	τ_{12}	-1.200	-1.233 (-1.644, -0.898)	-1.140 (-1.492, -0.839)	-1.165 (-1.450, -0.903)	-1.157 (-1.401, -0.918)
	c_1^2	0.500	0.467 (0.305, 0.648)			
	β	0.500	0.874 (0.448, 2.000)	0.575 (0.296, 1.116)		
	$\alpha_{0.7}$	-0.282	-0.123 (-0.823, 0.555)	-0.208 (-0.482, 0.059)		
	CR		99.7	99.9	99.8	99.9
200	SAUC	0.877	0.877 (0.870, 0.884)	0.878 (0.871, 0.884)	0.890 (0.885, 0.896)	0.877 (0.871, 0.882)
	μ_1	2.197	2.196 (2.099, 2.283)	2.189 (2.128, 2.256)	2.203 (2.137, 2.265)	2.196 (2.135, 2.249)
	μ_2	-0.405	-0.418 (-0.631, -0.154)	-0.371 (-0.573, -0.196)	0.196 (0.100, 0.300)	-0.398 (-0.502, -0.301)
	τ_1^2	1.000	1.011 (0.903, 1.132)	0.993 (0.889, 1.096)	1.004 (0.898, 1.108)	0.995 (0.907, 1.083)
	τ_2^2	4.000	4.013 (3.446, 4.583)	3.906 (3.423, 4.455)	3.112 (2.839, 3.410)	3.962 (3.659, 4.259)
	τ_{12}	-1.200	-1.238 (-1.438, -1.049)	-1.192 (-1.373, -1.025)	-1.206 (-1.368, -1.079)	-1.197 (-1.338, -1.075)
	c_1^2	0.500	0.484 (0.398, 0.576)			
	β	0.500	0.548 (0.403, 0.706)	0.513 (0.371, 0.661)		
	$\alpha_{0.7}$	-0.282	-0.208 (-0.469, 0.057)	-0.254 (-0.357, -0.145)		
	CR		99.7	99.9	99.9	99.9