

## Appendix Table 18-25

Estimates of other parameters when  $c_1^2 = 0$ ,  $c_2^2 = 1$  for scenario 1-8

Yi

2021-04-05

**Load data**

**Scenario 1**

**Scenario 2**

**Scenario 3**

**Scenario 4**

**Scenario 5**

**Scenario 6**

**Scenario 7**

**Scenario 8**

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

$S_P$	Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>
25	SAUC	0.620	0.559 (0.385, 0.699)	0.631 (0.510, 0.725)	0.553 (0.359, 0.691)	0.637 (0.509, 0.734)	0.630 (0.537, 0.701)
	$\mu_1$	0.000	-0.157 (-0.385, 0.048)	0.002 (-0.139, 0.171)	-0.169 (-0.372, 0.004)	-0.029 (-0.171, 0.126)	0.010 (-0.106, 0.136)
	$\mu_2$	1.735	1.766 (1.607, 1.935)	1.754 (1.589, 1.903)	1.794 (1.640, 1.940)	1.898 (1.776, 2.025)	1.729 (1.601, 1.850)
	$\tau_1^2$	0.500	0.507 (0.300, 0.734)	0.420 (0.271, 0.613)	0.474 (0.298, 0.728)	0.406 (0.258, 0.597)	0.441 (0.314, 0.588)
	$\tau_2^2$	0.500	0.409 (0.263, 0.578)	0.401 (0.257, 0.605)	0.383 (0.254, 0.537)	0.349 (0.240, 0.481)	0.433 (0.319, 0.576)
	$\tau_{12}$	-0.150	-0.074 (-0.213, 0.051)	-0.125 (-0.261, -0.008)	-0.060 (-0.185, 0.075)	-0.114 (-0.228, -0.008)	-0.143 (-0.239, -0.039)
	$c_1^2$	0.000	0.258 (0.017, 0.737)				
	$\beta$	0.500	1.629 (0.563, 2.000)	0.596 (0.255, 1.562)	0.486 (0.100, 1.366)		
	$\alpha_{0.7}$	-0.993	-0.908 (-2.449, 0.336)	-1.096 (-2.634, -0.477)	-0.198 (-0.803, 0.264)		
	CR		98.8	99.3	99.7	100	100
50	SAUC	0.620	0.547 (0.425, 0.656)	0.624 (0.543, 0.685)	0.529 (0.405, 0.640)	0.629 (0.543, 0.693)	0.622 (0.563, 0.674)
	$\mu_1$	0.000	-0.137 (-0.320, 0.024)	-0.003 (-0.109, 0.105)	-0.188 (-0.326, -0.052)	-0.037 (-0.141, 0.063)	-0.004 (-0.087, 0.080)
	$\mu_2$	1.735	1.746 (1.622, 1.854)	1.740 (1.619, 1.851)	1.785 (1.689, 1.901)	1.898 (1.813, 1.987)	1.734 (1.657, 1.811)
	$\tau_1^2$	0.500	0.529 (0.392, 0.678)	0.469 (0.360, 0.593)	0.529 (0.389, 0.687)	0.461 (0.351, 0.580)	0.474 (0.393, 0.578)
	$\tau_2^2$	0.500	0.453 (0.350, 0.593)	0.465 (0.350, 0.605)	0.415 (0.329, 0.531)	0.391 (0.309, 0.486)	0.474 (0.377, 0.576)
	$\tau_{12}$	-0.150	-0.087 (-0.189, 0.015)	-0.142 (-0.237, -0.056)	-0.065 (-0.162, 0.033)	-0.121 (-0.202, -0.045)	-0.145 (-0.221, -0.074)
	$c_1^2$	0.000	0.118 (0.002, 0.583)				
	$\beta$	0.500	0.891 (0.525, 1.619)	0.569 (0.328, 0.935)	0.454 (0.158, 0.860)		
	$\alpha_{0.7}$	-0.993	-1.021 (-1.874, -0.078)	-1.101 (-1.749, -0.615)	-0.196 (-0.524, 0.168)		
	CR		99.4	99.4	99.9	100	100
200	SAUC	0.620	0.595 (0.540, 0.635)	0.621 (0.584, 0.653)	0.550 (0.489, 0.603)	0.626 (0.587, 0.659)	0.620 (0.591, 0.646)
	$\mu_1$	0.000	-0.045 (-0.132, 0.019)	0.000 (-0.054, 0.051)	-0.171 (-0.236, -0.102)	-0.038 (-0.089, 0.010)	-0.000 (-0.045, 0.041)
	$\mu_2$	1.735	1.743 (1.686, 1.803)	1.742 (1.687, 1.796)	1.818 (1.758, 1.869)	1.908 (1.862, 1.956)	1.735 (1.694, 1.781)
	$\tau_1^2$	0.500	0.505 (0.445, 0.574)	0.491 (0.437, 0.550)	0.534 (0.473, 0.609)	0.484 (0.433, 0.544)	0.494 (0.449, 0.544)
	$\tau_2^2$	0.500	0.478 (0.422, 0.554)	0.487 (0.425, 0.559)	0.427 (0.384, 0.478)	0.412 (0.370, 0.458)	0.495 (0.448, 0.547)
	$\tau_{12}$	-0.150	-0.123 (-0.179, -0.069)	-0.148 (-0.198, -0.100)	-0.086 (-0.135, -0.037)	-0.129 (-0.170, -0.087)	-0.148 (-0.192, -0.110)
	$c_1^2$	0.000	0.014 (0.000, 0.105)				
	$\beta$	0.500	0.570 (0.454, 0.701)	0.521 (0.406, 0.653)	0.371 (0.222, 0.524)		
	$\alpha_{0.7}$	-0.993	-1.016 (-1.284, -0.748)	-1.019 (-1.272, -0.802)	-0.175 (-0.346, 0.038)		
	CR		99.6	99.8	99.5	100	100

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

$S_P$	Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>
25	SAUC	0.702	0.683 (0.567, 0.754)	0.709 (0.633, 0.762)	0.678 (0.530, 0.754)	0.715 (0.640, 0.770)	0.708 (0.651, 0.751)
	$\mu_1$	0.000	-0.161 (-0.373, 0.034)	-0.003 (-0.156, 0.165)	-0.180 (-0.349, -0.007)	-0.066 (-0.213, 0.073)	0.001 (-0.119, 0.125)
	$\mu_2$	1.735	1.802 (1.651, 1.963)	1.752 (1.584, 1.908)	1.822 (1.682, 1.969)	1.899 (1.770, 2.037)	1.736 (1.608, 1.854)
	$\tau_1^2$	0.500	0.482 (0.318, 0.692)	0.433 (0.291, 0.616)	0.452 (0.299, 0.656)	0.408 (0.274, 0.571)	0.458 (0.332, 0.596)
	$\tau_2^2$	0.500	0.396 (0.275, 0.572)	0.416 (0.270, 0.631)	0.372 (0.258, 0.514)	0.362 (0.250, 0.489)	0.448 (0.326, 0.584)
	$\tau_{12}$	-0.300	-0.231 (-0.372, -0.092)	-0.263 (-0.408, -0.136)	-0.198 (-0.328, -0.071)	-0.230 (-0.346, -0.123)	-0.277 (-0.390, -0.171)
	$c_1^2$	0.000	0.216 (0.002, 0.744)				
	$\beta$	0.500	1.448 (0.576, 2.000)	0.641 (0.244, 1.631)	0.469 (0.076, 1.199)		
	$\alpha_{0.7}$	-0.996	-1.017 (-2.507, 0.249)	-1.235 (-2.583, -0.425)	-0.274 (-0.882, 0.256)		
	CR		99.3	99.5	99.9	100	100
50	SAUC	0.702	0.682 (0.609, 0.734)	0.706 (0.656, 0.746)	0.678 (0.593, 0.733)	0.712 (0.662, 0.752)	0.703 (0.668, 0.735)
	$\mu_1$	0.000	-0.120 (-0.302, 0.032)	0.005 (-0.111, 0.119)	-0.162 (-0.296, -0.052)	-0.070 (-0.176, 0.030)	0.006 (-0.079, 0.089)
	$\mu_2$	1.735	1.775 (1.654, 1.903)	1.738 (1.614, 1.849)	1.828 (1.733, 1.932)	1.896 (1.803, 1.986)	1.731 (1.648, 1.813)
	$\tau_1^2$	0.500	0.502 (0.385, 0.648)	0.466 (0.354, 0.599)	0.471 (0.357, 0.618)	0.437 (0.338, 0.564)	0.461 (0.377, 0.566)
	$\tau_2^2$	0.500	0.440 (0.347, 0.559)	0.461 (0.358, 0.601)	0.398 (0.319, 0.498)	0.392 (0.316, 0.479)	0.477 (0.390, 0.575)
	$\tau_{12}$	-0.300	-0.254 (-0.359, -0.164)	-0.280 (-0.390, -0.197)	-0.219 (-0.308, -0.130)	-0.246 (-0.326, -0.172)	-0.291 (-0.364, -0.219)
	$c_1^2$	0.000	0.109 (0.000, 0.582)				
	$\beta$	0.500	0.800 (0.456, 1.513)	0.543 (0.291, 0.908)	0.365 (0.109, 0.694)		
	$\alpha_{0.7}$	-0.996	-0.960 (-1.807, -0.030)	-1.063 (-1.742, -0.553)	-0.205 (-0.592, 0.224)		
	CR		99.2	99.6	99.4	100	100
200	SAUC	0.702	0.695 (0.662, 0.716)	0.705 (0.682, 0.723)	0.676 (0.645, 0.706)	0.713 (0.689, 0.730)	0.703 (0.687, 0.719)
	$\mu_1$	0.000	-0.038 (-0.111, 0.033)	0.001 (-0.052, 0.060)	-0.163 (-0.229, -0.102)	-0.071 (-0.122, -0.020)	0.002 (-0.041, 0.046)
	$\mu_2$	1.735	1.753 (1.699, 1.814)	1.740 (1.688, 1.794)	1.842 (1.798, 1.889)	1.905 (1.863, 1.947)	1.739 (1.702, 1.777)
	$\tau_1^2$	0.500	0.494 (0.435, 0.558)	0.494 (0.436, 0.551)	0.500 (0.434, 0.562)	0.476 (0.417, 0.530)	0.494 (0.449, 0.545)
	$\tau_2^2$	0.500	0.472 (0.407, 0.540)	0.486 (0.419, 0.557)	0.414 (0.368, 0.465)	0.412 (0.366, 0.461)	0.489 (0.444, 0.539)
	$\tau_{12}$	-0.300	-0.272 (-0.330, -0.221)	-0.292 (-0.349, -0.243)	-0.234 (-0.276, -0.189)	-0.254 (-0.297, -0.213)	-0.298 (-0.336, -0.254)
	$c_1^2$	0.000	0.011 (0.000, 0.099)				
	$\beta$	0.500	0.562 (0.437, 0.700)	0.507 (0.385, 0.644)	0.359 (0.222, 0.507)		
	$\alpha_{0.7}$	-0.996	-1.019 (-1.301, -0.748)	-0.995 (-1.260, -0.773)	-0.199 (-0.401, 0.026)		
	CR		99.6	99.8	99.5	100	100

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

$S_P$	Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>
25	SAUC	0.564	0.481 (0.365, 0.596)	0.567 (0.467, 0.644)	0.459 (0.351, 0.572)	0.572 (0.467, 0.653)	0.567 (0.513, 0.611)
	$\mu_1$	0.000	-0.269 (-0.569, -0.009)	-0.027 (-0.237, 0.176)	-0.287 (-0.533, -0.077)	-0.114 (-0.308, 0.054)	0.003 (-0.149, 0.163)
	$\mu_2$	1.735	2.052 (1.648, 2.469)	1.904 (1.466, 2.323)	2.150 (1.770, 2.502)	2.585 (2.325, 2.850)	1.740 (1.485, 2.005)
	$\tau_1^2$	1.000	1.009 (0.712, 1.401)	0.909 (0.644, 1.234)	0.956 (0.663, 1.295)	0.849 (0.607, 1.146)	0.908 (0.702, 1.197)
	$\tau_2^2$	4.000	2.845 (1.928, 4.108)	3.275 (2.156, 4.752)	2.574 (1.797, 3.711)	2.117 (1.526, 2.707)	3.671 (2.963, 4.495)
	$\tau_{12}$	-0.600	-0.225 (-0.670, 0.196)	-0.467 (-0.951, -0.042)	-0.115 (-0.472, 0.277)	-0.336 (-0.610, -0.025)	-0.553 (-0.881, -0.251)
	$c_1^2$	0.000	0.230 (0.002, 0.729)				
	$\beta$	0.500	2.000 (0.517, 2.000)	0.674 (0.246, 2.000)	0.467 (0.100, 2.000)		
	$\alpha_{0.7}$	-0.432	-0.152 (-1.012, 0.666)	-0.404 (-1.121, 0.001)	0.161 (-0.232, 0.479)		
	CR		99.7	99.8	99.8	100	100
50	SAUC	0.564	0.499 (0.415, 0.579)	0.561 (0.497, 0.623)	0.465 (0.378, 0.555)	0.566 (0.498, 0.631)	0.564 (0.529, 0.597)
	$\mu_1$	0.000	-0.192 (-0.409, 0.009)	-0.014 (-0.164, 0.139)	-0.278 (-0.452, -0.117)	-0.123 (-0.248, 0.012)	0.005 (-0.114, 0.111)
	$\mu_2$	1.735	1.913 (1.597, 2.267)	1.800 (1.479, 2.151)	2.197 (1.860, 2.516)	2.599 (2.414, 2.789)	1.752 (1.539, 1.935)
	$\tau_1^2$	1.000	1.010 (0.770, 1.280)	0.939 (0.726, 1.174)	0.976 (0.761, 1.250)	0.903 (0.705, 1.115)	0.947 (0.776, 1.133)
	$\tau_2^2$	4.000	3.337 (2.385, 4.502)	3.704 (2.732, 4.828)	2.653 (2.110, 3.506)	2.236 (1.838, 2.659)	3.910 (3.326, 4.469)
	$\tau_{12}$	-0.600	-0.317 (-0.664, 0.062)	-0.517 (-0.899, -0.227)	-0.140 (-0.410, 0.141)	-0.332 (-0.564, -0.143)	-0.559 (-0.817, -0.346)
	$c_1^2$	0.000	0.073 (0.000, 0.528)				
	$\beta$	0.500	0.770 (0.423, 2.000)	0.596 (0.320, 1.197)	0.380 (0.074, 0.754)		
	$\alpha_{0.7}$	-0.432	-0.247 (-0.708, 0.261)	-0.397 (-0.772, -0.129)	0.128 (-0.144, 0.386)		
	CR		99.6	99.3	99.6	100	100
200	SAUC	0.564	0.548 (0.503, 0.583)	0.566 (0.533, 0.594)	0.492 (0.422, 0.552)	0.573 (0.539, 0.603)	0.563 (0.547, 0.582)
	$\mu_1$	0.000	-0.047 (-0.142, 0.043)	-0.004 (-0.078, 0.072)	-0.251 (-0.362, -0.155)	-0.118 (-0.185, -0.053)	-0.001 (-0.057, 0.053)
	$\mu_2$	1.735	1.765 (1.574, 1.957)	1.749 (1.567, 1.935)	2.246 (2.010, 2.496)	2.594 (2.496, 2.685)	1.733 (1.633, 1.837)
	$\tau_1^2$	1.000	0.992 (0.881, 1.111)	0.986 (0.880, 1.101)	1.009 (0.898, 1.130)	0.950 (0.852, 1.057)	0.986 (0.900, 1.079)
	$\tau_2^2$	4.000	3.915 (3.291, 4.507)	3.931 (3.393, 4.508)	2.616 (2.285, 3.089)	2.313 (2.099, 2.522)	3.948 (3.665, 4.249)
	$\tau_{12}$	-0.600	-0.503 (-0.719, -0.311)	-0.586 (-0.771, -0.397)	-0.218 (-0.385, -0.033)	-0.367 (-0.477, -0.256)	-0.593 (-0.717, -0.479)
	$c_1^2$	0.000	0.000 (0.000, 0.029)				
	$\beta$	0.500	0.559 (0.436, 0.726)	0.521 (0.411, 0.676)	0.286 (0.040, 0.485)		
	$\alpha_{0.7}$	-0.432	-0.414 (-0.549, -0.275)	-0.425 (-0.546, -0.307)	0.055 (-0.076, 0.367)		
	CR		99.1	99.7	99.3	100	100

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

$S_P$	Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>
25	SAUC	0.620	0.551 (0.455, 0.642)	0.619 (0.546, 0.687)	0.538 (0.440, 0.634)	0.628 (0.552, 0.698)	0.620 (0.579, 0.657)
	$\mu_1$	0.000	-0.354 (-0.637, -0.055)	-0.077 (-0.270, 0.132)	-0.339 (-0.529, -0.132)	-0.244 (-0.421, -0.070)	-0.006 (-0.151, 0.150)
	$\mu_2$	1.735	2.139 (1.720, 2.528)	1.919 (1.467, 2.321)	2.183 (1.786, 2.548)	2.594 (2.314, 2.869)	1.743 (1.451, 2.020)
	$\tau_1^2$	1.000	0.892 (0.626, 1.262)	0.849 (0.595, 1.200)	0.782 (0.552, 1.077)	0.749 (0.528, 1.002)	0.916 (0.684, 1.151)
	$\tau_2^2$	4.000	2.763 (1.945, 3.828)	3.263 (2.202, 4.785)	2.547 (1.822, 3.644)	2.082 (1.572, 2.772)	3.746 (2.982, 4.614)
	$\tau_{12}$	-1.200	-0.690 (-1.116, -0.288)	-0.935 (-1.502, -0.507)	-0.556 (-0.915, -0.202)	-0.652 (-0.976, -0.364)	-1.133 (-1.507, -0.779)
	$c_1^2$	0.000	0.370 (0.013, 0.810)				
	$\beta$	0.500	2.000 (0.611, 2.000)	0.669 (0.261, 2.000)	0.541 (0.125, 1.927)		
	$\alpha_{0.7}$	-0.438	-0.219 (-1.222, 0.661)	-0.469 (-1.232, -0.016)	-0.021 (-0.483, 0.363)		
	CR		99.7	100	99.8	99.9	100
50	SAUC	0.620	0.567 (0.474, 0.628)	0.619 (0.568, 0.666)	0.540 (0.459, 0.624)	0.630 (0.577, 0.677)	0.619 (0.589, 0.646)
	$\mu_1$	0.000	-0.237 (-0.534, -0.024)	-0.046 (-0.191, 0.105)	-0.339 (-0.477, -0.192)	-0.247 (-0.374, -0.123)	0.001 (-0.121, 0.100)
	$\mu_2$	1.735	1.970 (1.613, 2.336)	1.810 (1.508, 2.163)	2.208 (1.895, 2.486)	2.589 (2.419, 2.774)	1.732 (1.528, 1.926)
	$\tau_1^2$	1.000	0.954 (0.709, 1.206)	0.929 (0.705, 1.162)	0.838 (0.662, 1.048)	0.809 (0.640, 1.015)	0.962 (0.819, 1.124)
	$\tau_2^2$	4.000	3.192 (2.318, 4.305)	3.573 (2.667, 4.749)	2.673 (2.084, 3.338)	2.194 (1.814, 2.653)	3.890 (3.331, 4.430)
	$\tau_{12}$	-1.200	-0.796 (-1.219, -0.451)	-1.066 (-1.488, -0.716)	-0.590 (-0.829, -0.325)	-0.702 (-0.908, -0.489)	-1.159 (-1.422, -0.941)
	$c_1^2$	0.000	0.125 (0.000, 0.676)				
	$\beta$	0.500	0.949 (0.488, 2.000)	0.571 (0.311, 1.224)	0.414 (0.094, 0.897)		
	$\alpha_{0.7}$	-0.438	-0.279 (-0.831, 0.365)	-0.426 (-0.767, -0.104)	-0.019 (-0.317, 0.291)		
	CR		99.7	99.7	99.9	100	100
200	SAUC	0.620	0.603 (0.566, 0.630)	0.619 (0.595, 0.642)	0.563 (0.510, 0.609)	0.630 (0.606, 0.654)	0.618 (0.605, 0.632)
	$\mu_1$	0.000	-0.066 (-0.182, 0.031)	-0.016 (-0.096, 0.069)	-0.317 (-0.390, -0.243)	-0.243 (-0.300, -0.180)	-0.006 (-0.055, 0.047)
	$\mu_2$	1.735	1.787 (1.595, 2.025)	1.748 (1.575, 1.940)	2.268 (2.068, 2.464)	2.589 (2.495, 2.689)	1.742 (1.640, 1.837)
	$\tau_1^2$	1.000	0.962 (0.844, 1.085)	0.974 (0.866, 1.104)	0.868 (0.777, 0.967)	0.849 (0.761, 0.950)	0.976 (0.893, 1.065)
	$\tau_2^2$	4.000	3.764 (3.036, 4.462)	3.858 (3.297, 4.492)	2.573 (2.275, 2.989)	2.282 (2.067, 2.536)	3.913 (3.610, 4.240)
	$\tau_{12}$	-1.200	-1.044 (-1.293, -0.805)	-1.160 (-1.380, -0.940)	-0.642 (-0.769, -0.518)	-0.723 (-0.828, -0.607)	-1.165 (-1.304, -1.055)
	$c_1^2$	0.000	0.002 (0.000, 0.058)				
	$\beta$	0.500	0.566 (0.429, 0.734)	0.526 (0.399, 0.659)	0.329 (0.108, 0.517)		
	$\alpha_{0.7}$	-0.438	-0.430 (-0.581, -0.269)	-0.427 (-0.549, -0.314)	-0.077 (-0.216, 0.209)		
	CR		99.5	99.9	99.7	100	99.9

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

Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>	NA
25	sAUC	0.828	0.796 (0.718, 0.853)	0.825 (0.775, 0.865)	0.782 (0.695, 0.843)	0.829 (0.775, 0.870)	0.826 (0.799, 0.850)
	$\mu_1$	1.386	1.169 (0.876, 1.422)	1.352 (1.157, 1.563)	1.115 (0.888, 1.334)	1.256 (1.082, 1.436)	1.385 (1.218, 1.541)
	$\mu_2$	1.386	1.771 (1.356, 2.171)	1.555 (1.135, 1.974)	1.904 (1.527, 2.236)	2.252 (1.988, 2.523)	1.392 (1.119, 1.687)
	$\tau_1^2$	1.000	0.997 (0.663, 1.376)	0.886 (0.609, 1.242)	0.912 (0.612, 1.265)	0.818 (0.566, 1.150)	0.915 (0.670, 1.158)
	$\tau_2^2$	4.000	2.737 (1.842, 4.163)	3.293 (2.185, 4.758)	2.376 (1.665, 3.447)	2.023 (1.475, 2.627)	3.659 (2.932, 4.595)
	$\tau_{12}$	-0.600	-0.318 (-0.780, 0.108)	-0.451 (-0.936, -0.040)	-0.157 (-0.541, 0.214)	-0.313 (-0.634, -0.032)	-0.532 (-0.875, -0.255)
	$\beta$	0.000	0.163 (0.000, 0.779)				
	$\alpha_{0.7}$	0.500	2.000 (0.428, 2.000)	0.726 (0.245, 2.000)	0.346 (0.072, 1.197)		
	$c_1^2$	-0.113	-0.369 (-1.485, 0.262)	-0.040 (-0.497, 0.377)	-0.363 (-1.254, 0.180)		
	CR		99.8	99.6	99.8	100	99.8
50	sAUC	0.828	0.809 (0.753, 0.842)	0.829 (0.795, 0.854)	0.790 (0.723, 0.835)	0.832 (0.797, 0.858)	0.826 (0.808, 0.845)
	$\mu_1$	1.386	1.229 (1.014, 1.428)	1.362 (1.212, 1.526)	1.132 (0.962, 1.283)	1.260 (1.121, 1.388)	1.376 (1.262, 1.504)
	$\mu_2$	1.386	1.642 (1.256, 2.039)	1.474 (1.116, 1.827)	1.966 (1.657, 2.210)	2.269 (2.089, 2.457)	1.386 (1.182, 1.584)
	$\tau_1^2$	1.000	0.997 (0.789, 1.288)	0.943 (0.764, 1.167)	0.980 (0.767, 1.208)	0.910 (0.727, 1.105)	0.958 (0.807, 1.141)
	$\tau_2^2$	4.000	3.219 (2.241, 4.476)	3.660 (2.693, 4.745)	2.502 (1.947, 3.206)	2.129 (1.766, 2.599)	3.832 (3.310, 4.448)
	$\tau_{12}$	-0.600	-0.350 (-0.777, -0.041)	-0.516 (-0.923, -0.206)	-0.203 (-0.481, 0.103)	-0.335 (-0.568, -0.136)	-0.576 (-0.817, -0.347)
	$\beta$	0.000	0.011 (0.000, 0.504)				
	$\alpha_{0.7}$	0.500	0.715 (0.369, 2.000)	0.559 (0.305, 1.207)	0.258 (0.064, 0.642)		
	$c_1^2$	-0.113	-0.218 (-0.747, 0.154)	-0.051 (-0.284, 0.244)	-0.284 (-0.786, 0.188)		
	CR		99.8	99.8	99.4	100	100
200	sAUC	0.828	0.823 (0.803, 0.838)	0.828 (0.812, 0.842)	0.797 (0.761, 0.824)	0.832 (0.815, 0.846)	0.828 (0.819, 0.835)
	$\mu_1$	1.386	1.356 (1.259, 1.440)	1.383 (1.302, 1.459)	1.149 (1.055, 1.240)	1.263 (1.197, 1.328)	1.383 (1.332, 1.436)
	$\mu_2$	1.386	1.412 (1.237, 1.620)	1.396 (1.226, 1.575)	2.009 (1.831, 2.184)	2.278 (2.184, 2.374)	1.384 (1.296, 1.488)
	$\tau_1^2$	1.000	0.990 (0.879, 1.118)	0.987 (0.871, 1.108)	1.000 (0.873, 1.121)	0.952 (0.843, 1.054)	0.994 (0.903, 1.080)
	$\tau_2^2$	4.000	3.913 (3.295, 4.502)	3.946 (3.409, 4.499)	2.471 (2.199, 2.827)	2.243 (2.023, 2.457)	3.977 (3.668, 4.263)
	$\tau_{12}$	-0.600	-0.538 (-0.742, -0.338)	-0.579 (-0.770, -0.401)	-0.260 (-0.391, -0.119)	-0.347 (-0.464, -0.252)	-0.597 (-0.717, -0.473)
	$\beta$	0.000	0.000 (0.000, 0.004)				
	$\alpha_{0.7}$	0.500	0.554 (0.420, 0.726)	0.525 (0.411, 0.692)	0.237 (0.061, 0.391)		
	$c_1^2$	-0.113	-0.141 (-0.292, -0.005)	-0.107 (-0.210, 0.020)	-0.270 (-0.574, 0.219)		
	CR		99.3	99	99.6	99.9	99.9

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

Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>	NA
25	sAUC	0.846	0.829 (0.779, 0.862)	0.843 (0.810, 0.871)	0.816 (0.756, 0.859)	0.850 (0.815, 0.877)	0.845 (0.824, 0.864)
	$\mu_1$	1.386	1.111 (0.826, 1.366)	1.313 (1.124, 1.548)	1.055 (0.857, 1.250)	1.131 (0.961, 1.295)	1.379 (1.208, 1.539)
	$\mu_2$	1.386	1.866 (1.385, 2.260)	1.545 (1.147, 1.979)	1.963 (1.606, 2.280)	2.276 (2.018, 2.516)	1.395 (1.126, 1.668)
	$\tau_1^2$	1.000	0.892 (0.623, 1.256)	0.883 (0.589, 1.214)	0.783 (0.539, 1.101)	0.764 (0.514, 1.049)	0.924 (0.704, 1.186)
	$\tau_2^2$	4.000	2.631 (1.771, 4.057)	3.387 (2.117, 4.673)	2.257 (1.610, 3.277)	1.965 (1.470, 2.663)	3.669 (2.933, 4.505)
	$\tau_{12}$	-1.200	-0.741 (-1.226, -0.368)	-0.937 (-1.523, -0.548)	-0.582 (-0.906, -0.247)	-0.647 (-0.945, -0.360)	-1.101 (-1.493, -0.786)
	$\beta$	0.000	0.245 (0.000, 0.831)				
	$\alpha_{0.7}$	0.500	2.000 (0.480, 2.000)	0.710 (0.274, 2.000)	0.376 (0.068, 1.094)		
	$c_1^2$	-0.106	-0.619 (-1.819, 0.133)	-0.038 (-0.496, 0.359)	-0.605 (-1.522, 0.210)		
	CR		99.6	100	99.4	100	100
50	sAUC	0.846	0.837 (0.803, 0.860)	0.849 (0.828, 0.868)	0.829 (0.790, 0.858)	0.854 (0.833, 0.873)	0.847 (0.834, 0.859)
	$\mu_1$	1.386	1.226 (0.983, 1.421)	1.371 (1.207, 1.535)	1.090 (0.955, 1.237)	1.157 (1.031, 1.279)	1.402 (1.289, 1.504)
	$\mu_2$	1.386	1.663 (1.293, 2.086)	1.448 (1.128, 1.804)	1.997 (1.746, 2.238)	2.266 (2.070, 2.447)	1.372 (1.184, 1.566)
	$\tau_1^2$	1.000	0.939 (0.729, 1.183)	0.931 (0.733, 1.165)	0.827 (0.658, 1.001)	0.814 (0.648, 0.987)	0.949 (0.788, 1.115)
	$\tau_2^2$	4.000	3.193 (2.130, 4.417)	3.676 (2.632, 4.846)	2.400 (1.859, 3.062)	2.159 (1.747, 2.629)	3.868 (3.273, 4.496)
	$\tau_{12}$	-1.200	-0.896 (-1.332, -0.558)	-1.074 (-1.524, -0.726)	-0.625 (-0.871, -0.404)	-0.680 (-0.925, -0.496)	-1.156 (-1.392, -0.921)
	$\beta$	0.000	0.015 (0.000, 0.632)				
	$\alpha_{0.7}$	0.500	0.778 (0.366, 2.000)	0.575 (0.320, 1.159)	0.249 (0.043, 0.636)		
	$c_1^2$	-0.106	-0.274 (-0.929, 0.193)	-0.025 (-0.303, 0.264)	-0.337 (-1.014, 0.261)		
	CR		99.3	99.8	99.8	100	100
200	sAUC	0.846	0.843 (0.830, 0.853)	0.846 (0.836, 0.855)	0.834 (0.813, 0.849)	0.852 (0.842, 0.862)	0.846 (0.839, 0.852)
	$\mu_1$	1.386	1.347 (1.240, 1.436)	1.378 (1.300, 1.454)	1.089 (1.020, 1.161)	1.137 (1.076, 1.197)	1.384 (1.326, 1.437)
	$\mu_2$	1.386	1.431 (1.259, 1.657)	1.394 (1.236, 1.574)	2.087 (1.920, 2.234)	2.282 (2.183, 2.370)	1.390 (1.284, 1.482)
	$\tau_1^2$	1.000	0.976 (0.869, 1.104)	0.985 (0.878, 1.110)	0.863 (0.770, 0.960)	0.857 (0.764, 0.947)	0.993 (0.902, 1.076)
	$\tau_2^2$	4.000	3.877 (3.196, 4.505)	3.982 (3.414, 4.553)	2.402 (2.145, 2.696)	2.254 (2.044, 2.472)	3.991 (3.689, 4.280)
	$\tau_{12}$	-1.200	-1.111 (-1.363, -0.886)	-1.183 (-1.400, -0.974)	-0.673 (-0.794, -0.564)	-0.709 (-0.822, -0.607)	-1.197 (-1.323, -1.058)
	$\beta$	0.000	0.000 (0.000, 0.004)				
	$\alpha_{0.7}$	0.500	0.548 (0.408, 0.714)	0.529 (0.406, 0.687)	0.190 (0.045, 0.366)		
	$c_1^2$	-0.106	-0.133 (-0.286, 0.017)	-0.095 (-0.207, 0.026)	-0.166 (-0.568, 0.305)		
	CR		99.5	99.3	99.4	100	99.9

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

Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>	NA
25	sAUC	0.892	0.877 (0.849, 0.900)	0.886 (0.867, 0.906)	0.873 (0.846, 0.896)	0.887 (0.868, 0.906)	0.891 (0.873, 0.905)
	$\mu_1$	2.197	2.038 (1.776, 2.279)	2.167 (1.971, 2.390)	1.960 (1.728, 2.170)	2.072 (1.894, 2.266)	2.211 (2.048, 2.351)
	$\mu_2$	-0.405	-0.109 (-0.563, 0.400)	-0.222 (-0.668, 0.139)	0.165 (-0.298, 0.523)	0.508 (0.241, 0.817)	-0.406 (-0.681, -0.122)
	$\tau_1^2$	1.000	0.936 (0.650, 1.301)	0.884 (0.622, 1.177)	0.901 (0.614, 1.248)	0.839 (0.577, 1.132)	0.920 (0.676, 1.165)
	$\tau_2^2$	4.000	3.188 (2.069, 4.575)	3.392 (2.310, 4.751)	2.602 (1.755, 3.948)	2.110 (1.519, 2.867)	3.840 (2.979, 4.702)
	$\tau_{12}$	-0.600	-0.347 (-0.847, 0.068)	-0.470 (-0.988, -0.069)	-0.193 (-0.572, 0.203)	-0.343 (-0.671, -0.048)	-0.598 (-0.900, -0.241)
	$\beta$	0.000	0.012 (0.000, 0.729)				
	$\alpha_{0.7}$	0.500	2.000 (0.519, 2.000)	0.831 (0.320, 2.000)	0.248 (0.044, 1.036)		
	$c_1^2$	1.727	1.320 (-0.313, 5.172)	2.753 (0.954, 6.314)	0.249 (-0.099, 0.532)		
	CR		99.6	99.1	99.9	100	99.8
50	sAUC	0.892	0.884 (0.867, 0.899)	0.890 (0.876, 0.902)	0.878 (0.858, 0.894)	0.892 (0.877, 0.904)	0.891 (0.879, 0.902)
	$\mu_1$	2.197	2.114 (1.905, 2.304)	2.194 (2.041, 2.345)	1.964 (1.797, 2.115)	2.084 (1.949, 2.215)	2.197 (2.085, 2.308)
	$\mu_2$	-0.405	-0.310 (-0.663, 0.052)	-0.354 (-0.676, -0.090)	0.180 (-0.191, 0.477)	0.498 (0.308, 0.692)	-0.412 (-0.607, -0.229)
	$\tau_1^2$	1.000	1.003 (0.786, 1.275)	0.970 (0.767, 1.215)	0.977 (0.777, 1.243)	0.936 (0.741, 1.154)	0.962 (0.814, 1.157)
	$\tau_2^2$	4.000	3.689 (2.758, 4.749)	3.783 (2.925, 4.761)	2.703 (2.043, 3.679)	2.271 (1.834, 2.843)	3.861 (3.272, 4.436)
	$\tau_{12}$	-0.600	-0.433 (-0.822, -0.119)	-0.521 (-0.907, -0.211)	-0.231 (-0.509, 0.068)	-0.359 (-0.607, -0.149)	-0.561 (-0.807, -0.339)
	$\beta$	0.000	0.000 (0.000, 0.084)				
	$\alpha_{0.7}$	0.500	0.891 (0.458, 2.000)	0.662 (0.373, 2.000)	0.151 (0.043, 0.592)		
	$c_1^2$	1.727	2.017 (0.716, 5.185)	2.336 (1.231, 5.764)	0.266 (0.025, 0.466)		
	CR		99.8	99.5	99.9	100	100
200	sAUC	0.892	0.890 (0.884, 0.897)	0.891 (0.885, 0.898)	0.885 (0.874, 0.893)	0.893 (0.886, 0.899)	0.892 (0.886, 0.897)
	$\mu_1$	2.197	2.182 (2.108, 2.261)	2.191 (2.117, 2.267)	2.016 (1.926, 2.100)	2.078 (2.015, 2.147)	2.197 (2.143, 2.254)
	$\mu_2$	-0.405	-0.399 (-0.543, -0.256)	-0.386 (-0.532, -0.251)	0.338 (0.147, 0.473)	0.506 (0.405, 0.598)	-0.403 (-0.505, -0.305)
	$\tau_1^2$	1.000	0.988 (0.890, 1.098)	0.988 (0.890, 1.093)	0.979 (0.883, 1.095)	0.961 (0.867, 1.057)	0.995 (0.908, 1.077)
	$\tau_2^2$	4.000	3.989 (3.495, 4.506)	3.940 (3.466, 4.423)	2.546 (2.231, 2.961)	2.408 (2.141, 2.666)	3.956 (3.683, 4.264)
	$\tau_{12}$	-0.600	-0.572 (-0.751, -0.393)	-0.586 (-0.757, -0.404)	-0.326 (-0.463, -0.178)	-0.389 (-0.500, -0.272)	-0.578 (-0.708, -0.466)
	$\beta$	0.000	0.000 (0.000, 0.000)				
	$\alpha_{0.7}$	0.500	0.544 (0.429, 0.702)	0.522 (0.416, 0.659)	0.072 (0.037, 0.203)		
	$c_1^2$	1.727	1.797 (1.403, 2.386)	1.788 (1.402, 2.355)	0.304 (0.115, 0.418)		
	CR		99.6	99.6	99.8	100	99.8



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

Par	True	Proposed ( $\tilde{c}_1^2, \tilde{c}_2^2$ )	Proposed ( $c_1^2 = 1$ )	Proposed ( $c_1^2 = c_2^2$ )	Reitsma <sub>O</sub>	Reitsma <sub>P</sub>	NA
25	sAUC	0.877	0.866 (0.840, 0.887)	0.874 (0.854, 0.893)	0.863 (0.841, 0.884)	0.876 (0.857, 0.895)	0.876 (0.858, 0.893)
	$\mu_1$	2.197	1.987 (1.708, 2.252)	2.161 (1.950, 2.366)	1.911 (1.705, 2.109)	1.965 (1.774, 2.152)	2.205 (2.045, 2.355)
	$\mu_2$	-0.405	-0.065 (-0.541, 0.420)	-0.277 (-0.673, 0.095)	0.134 (-0.302, 0.534)	0.496 (0.224, 0.762)	-0.415 (-0.704, -0.124)
	$\tau_1^2$	1.000	0.901 (0.593, 1.285)	0.866 (0.587, 1.212)	0.790 (0.548, 1.089)	0.773 (0.531, 1.065)	0.910 (0.676, 1.139)
	$\tau_2^2$	4.000	3.174 (2.015, 4.583)	3.454 (2.319, 4.904)	2.685 (1.767, 3.981)	2.201 (1.535, 2.973)	3.708 (3.006, 4.656)
	$\tau_{12}$	-1.200	-0.860 (-1.364, -0.454)	-1.014 (-1.552, -0.600)	-0.630 (-1.037, -0.305)	-0.705 (-1.058, -0.417)	-1.132 (-1.508, -0.791)
	$\beta$	0.000	0.062 (0.000, 0.819)				
	$\alpha_{0.7}$	0.500	2.000 (0.557, 2.000)	0.995 (0.357, 2.000)	0.252 (0.035, 1.372)		
	$c_1^2$	1.732	1.030 (-0.668, 5.073)	2.975 (1.111, 6.555)	0.201 (-0.217, 0.494)		
	CR		99.9	99.7	99.8	100	100
50	sAUC	0.877	0.871 (0.854, 0.885)	0.875 (0.863, 0.888)	0.867 (0.851, 0.883)	0.878 (0.866, 0.891)	0.876 (0.865, 0.888)
	$\mu_1$	2.197	2.090 (1.878, 2.258)	2.175 (2.036, 2.327)	1.907 (1.760, 2.047)	1.957 (1.828, 2.081)	2.191 (2.072, 2.302)
	$\mu_2$	-0.405	-0.281 (-0.600, 0.120)	-0.347 (-0.617, -0.087)	0.253 (-0.125, 0.501)	0.500 (0.317, 0.694)	-0.388 (-0.585, -0.184)
	$\tau_1^2$	1.000	0.940 (0.734, 1.199)	0.922 (0.732, 1.170)	0.840 (0.668, 1.052)	0.823 (0.660, 1.020)	0.942 (0.776, 1.137)
	$\tau_2^2$	4.000	3.658 (2.693, 4.631)	3.779 (2.911, 4.651)	2.575 (1.963, 3.558)	2.316 (1.832, 2.752)	3.810 (3.322, 4.406)
	$\tau_{12}$	-1.200	-1.003 (-1.446, -0.668)	-1.111 (-1.513, -0.775)	-0.703 (-0.968, -0.439)	-0.744 (-0.995, -0.529)	-1.157 (-1.401, -0.918)
	$\beta$	0.000	0.000 (0.000, 0.359)				
	$\alpha_{0.7}$	0.500	1.010 (0.482, 2.000)	0.678 (0.384, 2.000)	0.107 (0.028, 0.714)		
	$c_1^2$	1.732	1.936 (0.476, 5.032)	2.285 (1.274, 5.629)	0.293 (-0.012, 0.492)		
	CR		99.7	99.9	99.7	100	99.9
200	sAUC	0.877	0.876 (0.869, 0.882)	0.877 (0.870, 0.882)	0.875 (0.867, 0.882)	0.879 (0.873, 0.885)	0.877 (0.871, 0.882)
	$\mu_1$	2.197	2.184 (2.101, 2.255)	2.193 (2.117, 2.262)	1.938 (1.869, 2.000)	1.958 (1.891, 2.018)	2.196 (2.135, 2.249)
	$\mu_2$	-0.405	-0.390 (-0.538, -0.247)	-0.390 (-0.529, -0.265)	0.396 (0.277, 0.524)	0.498 (0.397, 0.595)	-0.398 (-0.502, -0.301)
	$\tau_1^2$	1.000	0.985 (0.878, 1.104)	0.986 (0.880, 1.103)	0.883 (0.791, 0.983)	0.878 (0.791, 0.982)	0.995 (0.907, 1.083)
	$\tau_2^2$	4.000	3.961 (3.436, 4.492)	3.958 (3.452, 4.464)	2.485 (2.200, 2.821)	2.409 (2.151, 2.702)	3.962 (3.659, 4.259)
	$\tau_{12}$	-1.200	-1.177 (-1.394, -0.995)	-1.186 (-1.396, -1.010)	-0.776 (-0.900, -0.663)	-0.784 (-0.904, -0.678)	-1.197 (-1.338, -1.075)
	$\beta$	0.000	0.000 (0.000, 0.000)				
	$\alpha_{0.7}$	0.500	0.537 (0.429, 0.727)	0.522 (0.419, 0.689)	0.045 (0.024, 0.087)		
	$c_1^2$	1.732	1.805 (1.372, 2.490)	1.807 (1.405, 2.446)	0.380 (0.271, 0.474)		
	CR		99.3	99.7	99.8	100	99.9