Appendix Table 2-5

Estimates of other parameters when $c_1^2 = c_2^2$ for scenario 1-4

Yi

2021-04-05

Load data

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

Scenario 1

Scenario 2

Scenario 3

Scenario 4

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	μ_1	0.000	-0.041 (-0.242, 0.167)	0.022 (-0.152, 0.204)	0.139 (-0.008, 0.298)	0.010 (-0.106, 0.136)
	μ_2	1.735	1.758 (1.572, 1.918)	1.738 (1.564, 1.889)	1.848 (1.712, 1.982)	1.729 (1.601, 1.850)
	τ_1^2	0.500	0.503 (0.326, 0.716)	0.423 (0.280, 0.622)	0.388 (0.262, 0.554)	0.441 (0.314, 0.588)
	τ_2^2	0.500	0.438 (0.282, 0.634)	0.433 (0.279, 0.621)	0.396 (0.261, 0.540)	0.433 (0.319, 0.576)
	τ_{12}	-0.150	-0.151 (-0.297, -0.005)	-0.131 (-0.261, 0.002)	-0.175 (-0.283, -0.065)	-0.143 (-0.239, -0.039)
	c_1^2	0.500	0.592 (0.205, 0.861)			
	β	0.500	1.704 (0.593, 2.000)	0.667 (0.182, 1.812)		
	$\alpha_{0.7}$	-0.423	-0.507 (-1.694, 0.412)	-0.514 (-1.219, 0.071)		
50	μ_1	0.000	-0.045 (-0.217, 0.102)	-0.014 (-0.133, 0.117)	0.119 (0.021, 0.219)	-0.004 (-0.087, 0.080)
	μ_2	1.735	1.735 (1.587, 1.864)	1.738 (1.606, 1.856)	1.861 (1.766, 1.954)	1.734 (1.657, 1.811)
	τ_1^2	0.500	0.527 (0.405, 0.692)	0.481 (0.365, 0.613)	0.443 (0.341, 0.539)	0.474 (0.393, 0.578)
	τ_2^2	0.500	0.482 (0.362, 0.656)	0.470 (0.357, 0.616)	0.434 (0.333, 0.543)	0.474 (0.377, 0.576)
	τ_{12}	-0.150	-0.143 (-0.252, -0.038)	-0.127 (-0.226, -0.029)	-0.183 (-0.271, -0.104)	-0.145 (-0.221, -0.074)
	c_1^2	0.500	0.520 (0.217, 0.786)			
	β	0.500	0.900 (0.510, 1.684)	0.577 (0.271, 0.964)		
	$\alpha_{0.7}$	-0.423	-0.483 (-1.077, 0.125)	-0.465 (-0.827, -0.087)		
200	μ_1	0.000	-0.024 (-0.124, 0.067)	0.001 (-0.060, 0.062)	0.127 (0.076, 0.174)	-0.000 (-0.045, 0.041)
	μ_2	1.735	1.742 (1.666, 1.811)	1.739 (1.677, 1.799)	1.864 (1.814, 1.911)	1.735 (1.694, 1.781)
	τ_1^2	0.500	0.521 (0.445, 0.609)	0.491 (0.435, 0.557)	0.458 (0.410, 0.512)	0.494 (0.449, 0.544)
	τ_2^2	0.500	0.497 (0.432, 0.562)	0.494 (0.431, 0.559)	0.460 (0.404, 0.515)	0.495 (0.448, 0.547)
	τ_{12}	-0.150	-0.151 (-0.201, -0.094)	-0.147 (-0.197, -0.095)	-0.193 (-0.236, -0.151)	-0.148 (-0.192, -0.110)
	c_1^2	0.500	0.543 (0.327, 0.716)			
	β	0.500	0.592 (0.441, 0.771)	0.517 (0.367, 0.686)		
	$\alpha_{0.7}$	-0.423	-0.407 (-0.662, -0.114)	-0.431 (-0.614, -0.249)		

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	μ_1	0.000	-0.037 (-0.262, 0.167)	0.016 (-0.145, 0.165)	0.098 (-0.038, 0.237)	0.001 (-0.119, 0.125)
	μ_2	1.735	1.747 (1.568, 1.923)	1.732 (1.588, 1.881)	1.814 (1.682, 1.959)	1.736 (1.608, 1.854)
	τ_1^2	0.500	0.523 (0.332, 0.738)	0.433 (0.288, 0.611)	0.420 (0.280, 0.581)	0.458 (0.332, 0.596)
	τ_2^2	0.500	0.469 (0.314, 0.676)	0.437 (0.299, 0.619)	0.419 (0.292, 0.579)	0.448 (0.326, 0.584)
	τ_{12}	-0.300	-0.300 (-0.452, -0.160)	-0.266 (-0.398, -0.139)	-0.291 (-0.411, -0.174)	-0.277 (-0.390, -0.171)
	c_1^2	0.500	0.551 (0.188, 0.859)			
	β	0.500	1.547 (0.626, 2.000)	0.613 (0.160, 1.346)		
	$\alpha_{0.7}$	-0.461	-0.601 (-1.702, 0.367)	-0.528 (-1.299, 0.066)		
50	μ_1	0.000	-0.047 (-0.222, 0.117)	0.021 (-0.109, 0.121)	0.098 (-0.005, 0.187)	0.006 (-0.079, 0.089)
	μ_2	1.735	1.751 (1.612, 1.882)	1.743 (1.621, 1.848)	1.821 (1.721, 1.918)	1.731 (1.648, 1.813)
	τ_1^2	0.500	0.532 (0.403, 0.692)	0.465 (0.357, 0.581)	0.446 (0.349, 0.552)	0.461 (0.377, 0.566)
	τ_2^2	0.500	0.481 (0.371, 0.636)	0.460 (0.359, 0.589)	0.442 (0.353, 0.558)	0.477 (0.390, 0.575)
	τ_{12}	-0.300	-0.311 (-0.427, -0.204)	-0.282 (-0.377, -0.192)	-0.304 (-0.397, -0.224)	-0.291 (-0.364, -0.219)
	c_1^2	0.500	0.584 (0.195, 0.820)			
	β	0.500	0.903 (0.507, 1.750)	0.528 (0.220, 0.927)		
	$\alpha_{0.7}$	-0.461	-0.456 (-1.226, 0.157)	-0.467 (-0.965, -0.016)		
200	μ_1	0.000	-0.018 (-0.132, 0.067)	0.003 (-0.051, 0.058)	0.094 (0.043, 0.143)	0.002 (-0.041, 0.046)
	μ_2	1.735	1.738 (1.671, 1.818)	1.739 (1.689, 1.793)	1.825 (1.782, 1.875)	1.739 (1.702, 1.777)
	τ_1^2	0.500	0.526 (0.458, 0.614)	0.494 (0.439, 0.555)	0.478 (0.429, 0.535)	0.494 (0.449, 0.545)
	τ_2^2	0.500	0.499 (0.438, 0.562)	0.491 (0.435, 0.549)	0.478 (0.425, 0.529)	0.489 (0.444, 0.539)
	τ_{12}	-0.300	-0.306 (-0.366, -0.255)	-0.294 (-0.341, -0.247)	-0.315 (-0.363, -0.273)	-0.298 (-0.336, -0.254)
	c_1^2	0.500	0.531 (0.313, 0.736)			
	β	0.500	0.610 (0.464, 0.767)	0.517 (0.379, 0.660)		
	$\alpha_{0.7}$	-0.461	-0.465 (-0.733, -0.160)	-0.484 (-0.662, -0.286)		

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	μ_1	0.000	-0.069 (-0.356, 0.198)	0.015 (-0.195, 0.221)	0.122 (-0.055, 0.323)	0.003 (-0.149, 0.163)
	μ_2	1.735	1.861 (1.390, 2.345)	1.801 (1.329, 2.251)	2.403 (2.089, 2.693)	1.740 (1.485, 2.005)
	τ_1^2	1.000	1.051 (0.727, 1.481)	0.903 (0.649, 1.257)	0.870 (0.614, 1.185)	0.908 (0.702, 1.197)
	τ_2^2	4.000	3.606 (2.546, 4.935)	3.645 (2.529, 5.029)	2.712 (2.048, 3.488)	3.671 (2.963, 4.495)
	τ_{12}	-0.600	-0.624 (-1.110, -0.167)	-0.541 (-0.985, -0.114)	-0.700 (-1.086, -0.393)	-0.553 (-0.881, -0.251)
	c_1^2	0.500	0.619 (0.243, 0.837)			
	β	0.500	2.000 (0.660, 2.000)	0.728 (0.274, 2.000)		
	$\alpha_{0.7}$	-0.172	0.189 (-0.481, 0.991)	-0.023 (-0.453, 0.356)		
50	μ_1	0.000	-0.051 (-0.281, 0.177)	0.010 (-0.128, 0.160)	0.120 (-0.005, 0.257)	0.005 (-0.114, 0.111)
	μ_2	1.735	1.800 (1.381, 2.177)	1.787 (1.420, 2.158)	2.415 (2.190, 2.627)	1.752 (1.539, 1.935)
	τ_1^2	1.000	1.068 (0.813, 1.393)	0.951 (0.746, 1.179)	0.917 (0.721, 1.131)	0.947 (0.776, 1.133)
	τ_2^2	4.000	3.856 (2.929, 5.021)	3.738 (2.911, 4.898)	2.863 (2.374, 3.411)	3.910 (3.326, 4.469)
	τ_{12}	-0.600	-0.588 (-1.007, -0.226)	-0.570 (-0.908, -0.265)	-0.743 (-0.999, -0.521)	-0.559 (-0.817, -0.346)
	c_1^2	0.500	0.560 (0.267, 0.773)			
	β	0.500	0.967 (0.473, 2.000)	0.583 (0.280, 1.112)		
	$\alpha_{0.7}$	-0.172	0.082 (-0.234, 0.598)	-0.046 (-0.294, 0.213)		
200	μ_1	0.000	0.002 (-0.142, 0.128)	0.008 (-0.075, 0.090)	0.125 (0.057, 0.187)	-0.001 (-0.057, 0.053)
	μ_2	1.735	1.736 (1.519, 1.970)	1.762 (1.572, 1.963)	2.398 (2.291, 2.506)	1.733 (1.633, 1.837)
	τ_1^2	1.000	1.026 (0.903, 1.166)	0.985 (0.874, 1.105)	0.964 (0.856, 1.076)	0.986 (0.900, 1.079)
	τ_2^2	4.000	3.955 (3.373, 4.657)	3.895 (3.370, 4.437)	2.971 (2.712, 3.255)	3.948 (3.665, 4.249)
	τ_{12}	-0.600	-0.634 (-0.862, -0.441)	-0.613 (-0.776, -0.444)	-0.785 (-0.917, -0.662)	-0.593 (-0.717, -0.479)
	c_1^2	0.500	0.498 (0.310, 0.641)			
	β	0.500	0.558 (0.411, 0.732)	0.516 (0.371, 0.659)		
	$\alpha_{0.7}$	-0.172	-0.086 (-0.196, 0.057)	-0.132 (-0.218, -0.038)		

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	μ_1	0.000	-0.117 (-0.413, 0.184)	-0.000 (-0.214, 0.190)	0.021 (-0.167, 0.186)	-0.006 (-0.151, 0.150)
	μ_2	1.735	1.902 (1.405, 2.411)	1.786 (1.324, 2.226)	2.347 (2.054, 2.654)	1.743 (1.451, 2.020)
	τ_1^2	1.000	1.058 (0.725, 1.493)	0.923 (0.654, 1.230)	0.901 (0.625, 1.195)	0.916 (0.684, 1.151)
	τ_2^2	4.000	3.688 (2.554, 5.114)	3.763 (2.518, 5.217)	2.843 (2.129, 3.718)	3.746 (2.982, 4.614)
	τ_{12}	-1.200	-1.168 (-1.796, -0.697)	-1.106 (-1.613, -0.632)	-1.114 (-1.543, -0.740)	-1.133 (-1.507, -0.779)
	c_1^2	0.500	0.621 (0.270, 0.835)			
	β	0.500	2.000 (0.671, 2.000)	0.701 (0.240, 2.000)		
	$\alpha_{0.7}$	-0.255	-0.011 (-0.646, 0.706)	-0.113 (-0.593, 0.217)		
50	μ_1	0.000	-0.070 (-0.337, 0.165)	-0.010 (-0.147, 0.144)	0.009 (-0.121, 0.140)	0.001 (-0.121, 0.100)
	μ_2	1.735	1.743 (1.370, 2.172)	1.755 (1.394, 2.067)	2.328 (2.125, 2.543)	1.732 (1.528, 1.926)
	τ_1^2	1.000	1.083 (0.857, 1.366)	0.966 (0.772, 1.159)	0.963 (0.767, 1.151)	0.962 (0.819, 1.124)
	τ_2^2	4.000	3.919 (3.032, 5.127)	3.847 (2.995, 4.958)	3.013 (2.519, 3.606)	3.890 (3.331, 4.430)
	τ_{12}	-1.200	-1.234 (-1.664, -0.840)	-1.154 (-1.503, -0.816)	-1.181 (-1.470, -0.908)	-1.159 (-1.422, -0.941)
	c_1^2	0.500	0.576 (0.304, 0.770)			
	β	0.500	0.962 (0.506, 2.000)	0.599 (0.266, 1.162)		
	$\alpha_{0.7}$	-0.255	-0.020 (-0.351, 0.434)	-0.148 (-0.416, 0.095)		
200	μ_1	0.000	-0.037 (-0.170, 0.096)	-0.005 (-0.075, 0.067)	0.014 (-0.057, 0.070)	-0.006 (-0.055, 0.047)
	μ_2	1.735	1.759 (1.522, 2.003)	1.759 (1.562, 1.949)	2.338 (2.227, 2.443)	1.742 (1.640, 1.837)
	τ_1^2	1.000	1.029 (0.926, 1.152)	0.976 (0.877, 1.080)	0.991 (0.889, 1.091)	0.976 (0.893, 1.065)
	τ_2^2	4.000	3.901 (3.330, 4.534)	3.858 (3.380, 4.438)	3.093 (2.800, 3.415)	3.913 (3.610, 4.240)
	τ_{12}	-1.200	-1.181 (-1.387, -0.986)	-1.174 (-1.340, -1.012)	-1.201 (-1.345, -1.064)	-1.165 (-1.304, -1.055)
	c_1^2	0.500	0.525 (0.381, 0.682)			
	β	0.500	0.578 (0.419, 0.780)	0.513 (0.366, 0.672)		
	$\alpha_{0.7}$	-0.255	-0.153 (-0.275, -0.015)	-0.216 (-0.327, -0.123)		