

SUPPLEMENT TO “NONPARAMETRIC ANALYSIS OF RANDOM UTILITY
MODELS: COMPUTATIONAL TOOLS FOR STATISTICAL TESTING”
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APPENDIX D: ALL COMPUTATIONAL RESULTS

TABLE D.I
COMPUTATIONAL RESULTS FOR 7 OBSERVATIONS, 3 GOODS

Period	Jstat	Pval	Exact—No Bounds	Heur.—No Bounds	Heur.—Upper Bounds	
			Time	Time	Time	
75	81	3.86	0.35	21.8	17.9	8.1
76	82	11.77	0.13	15.9	14.2	5.2
77	83	9.96	0.18	18.4	14.8	5.8
78	84	7.49	0.22	14.9	11.8	5.1
79	85	0.11	0.966	14.6	12.0	12.1
80	86	0.01	1.00	15.7	11.0	10.8
81	87	0.00	1.00	9.5	9.9	10.1
82	88	0.00	1.00	3.8	4.3	4.6
83	89	0.00	1.00	3.3	3.9	4.1
84	90	0.00	1.00	3.8	4.6	4.7
85	91	0.04	0.80	3.3	3.8	3.5
86	92	2.24	0.63	8.2	8.3	6.6
87	93	1.55	0.74	21.3	16.8	13.9
88	94	1.68	0.67	16.6	14.4	11.0
89	95	0.04	0.97	10.2	9.1	9.2
90	96	0.04	0.94	5.6	5.7	5.7
91	97	0.04	0.94	4.8	5.3	5.1
92	98	0.04	0.97	3.3	3.7	3.6
93	99	0.04	0.66	3.0	3.3	2.9

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TABLE D.II
 COMPUTATIONAL RESULTS FOR 10 OBSERVATIONS, 3 GOODS

Period	Jstat	Pval	Exact—No Bounds	Heur.—No Bounds	Heur.—Upper Bounds	
			Time	Time	Time	
75	84	10.08	0.226	173.3	65.3	31.2
76	85	9.94	0.217	174.6	66.7	35.2
77	86	10.08	0.319	331.5	106.5	56.8
78	87	11.14	0.487	120.1	46.2	29.2
79	88	2.93	0.882	55.4	29.2	23.7
80	89	4.02	0.666	23.7	13.9	10.9
81	90	0.00	1	11.3	10.2	10.6
82	91	0.06	0.956	6.1	6.1	6.0
83	92	3.40	0.789	14.9	13.7	12.1
84	93	7.03	0.82	40.0	30.5	25.3
85	94	4.22	0.795	56.0	31.5	26.5
86	95	3.26	0.814	42.4	30.8	25.2
87	96	3.43	0.742	36.6	28.4	22.9
88	97	2.98	0.8	34.6	23.2	19.1
89	98	1.99	0.823	30.1	19.9	15.1
90	99	1.90	0.767	14.9	9.7	8.8

TABLE D.III
 COMPUTATIONAL RESULTS FOR 15 OBSERVATIONS, 3 GOODS

Period	Jstat	Pval	Exact—No Bounds	Heur.—No Bounds	Heur.—Upper Bounds	
			Time	Time	Time	
75	89	27.95	0.243	10,482	1600	660
76	90	15.42	0.618	6180	1358	998
77	91	17.11	0.709	2632	718	566
78	92	18.37	0.637	1102	353	293
79	93	23.87	0.902	724	188	185
80	94	19.96	0.594	420	132	100
81	95	12.87	0.771	454	115	102
82	96	12.92	0.854	240	94	95
83	97	13.66	0.846	297	123	108
84	98	15.26	0.827	647	238	195
85	99	29.45	0.895	384	149	123

TABLE D.IV
 COMPUTATIONAL RESULTS FOR 3 AND 4 GOODS, HEURISTIC PRICING AND UPPER BOUNDS

# Goods	# Observations	Period		JStat	Pval	Time
3	20	75	94	39.85	0.354	10,688
3	20	76	95	26.99	0.732	13,544
3	20	77	96	35.43	0.660	5698
3	20	78	97	35.18	0.738	3443
3	20	79	98	30.39	0.744	1721
3	20	80	99	26.13	0.771	1425
3	25	75	99	55.33	0.492	58,225
4	7	75	81	5.43	0.266	8
4	7	76	82	5.74	0.368	13
4	7	77	83	6.07	0.381	14
4	7	78	84	2.14	0.682	16
4	7	79	85	0.33	0.942	23
4	7	80	86	1.70	0.812	13
4	7	81	87	0.64	0.88	11
4	7	82	88	0.30	0.65	5
4	7	83	89	0.26	0.516	3
4	7	84	90	0.25	0.717	3
4	7	85	91	3.59	0.461	4
4	7	86	92	7.27	0.313	6
4	7	87	93	6.60	0.432	11
4	7	88	94	6.95	0.389	15
4	7	89	95	4.89	0.329	12
4	7	90	96	4.42	0.2	8
4	7	91	97	3.32	0.259	6
4	7	92	98	0.06	0.885	8
4	7	93	99	0.00	1	4
4	10	75	84	5.73	0.404	303
4	10	76	85	4.60	0.577	606
4	10	77	86	6.11	0.613	443
4	10	78	87	4.27	0.725	145
4	10	79	88	1.99	0.919	52
4	10	80	89	2.90	0.856	20
4	10	81	90	0.88	0.955	15
4	10	82	91	5.86	0.619	11
4	10	83	92	11.35	0.496	10
4	10	84	93	10.36	0.599	22
4	10	85	94	13.42	0.473	25
4	10	86	95	11.15	0.598	69
4	10	87	96	5.83	0.667	232
4	10	88	97	7.99	0.469	177
4	10	89	98	13.79	0.506	86
4	10	90	99	4.91	0.416	18
4	15	75	89	29.23	0.167	3188
4	15	76	90	11.32	0.76	8582
4	15	77	91	14.85	0.67	1376
4	15	78	92	17.90	0.623	852
4	15	79	93	17.91	0.59	619
4	15	80	94	25.92	0.46	443
4	15	81	95	22.70	0.553	508
4	15	82	96	21.31	0.578	880
4	15	83	97	25.45	0.455	676
4	15	84	98	25.79	0.424	776
4	15	85	99	16.37	0.657	923

TABLE D.V
 COMPUTATIONAL RESULTS FOR 5 GOODS, HEURISTIC PRICING AND UPPER BOUNDS

# Goods	# Observations	Period		JStat	Pval	Time
5	7	75	81	4.75	0.193	8
5	7	76	82	5.34	0.258	12
5	7	77	83	4.66	0.367	15
5	7	78	84	1.45	0.748	20
5	7	79	85	0.22	0.96	28
5	7	80	86	7.91	0.239	9
5	7	81	87	6.33	0.314	8
5	7	82	88	9.39	0.185	4
5	7	83	89	9.73	0.136	2
5	7	84	90	10.26	0.246	3
5	7	85	91	3.59	0.435	4
5	7	86	92	9.46	0.239	6
5	7	87	93	6.32	0.416	16
5	7	88	94	6.91	0.377	19
5	7	89	95	5.84	0.295	17
5	7	90	96	3.55	0.256	14
5	7	91	97	3.27	0.234	7
5	7	92	98	0.01	0.992	7
5	7	93	99	0.00	1	4
5	10	75	84	4.92	0.359	333
5	10	76	85	4.03	0.486	663
5	10	77	86	9.20	0.314	463
5	10	78	87	7.67	0.389	174
5	10	79	88	25.85	0.299	50
5	10	80	89	10.90	0.238	18
5	10	81	90	10.55	0.412	16
5	10	82	91	17.34	0.347	9
5	10	83	92	24.67	0.185	9
5	10	84	93	17.67	0.296	29
5	10	85	94	9.44	0.578	47
5	10	86	95	7.75	0.677	113
5	10	87	96	5.44	0.689	402
5	10	88	97	7.00	0.561	328
5	10	89	98	5.90	0.408	121
5	10	90	99	5.71	0.394	29
5	15	75	89	23.48	0.148	8950
5	15	76	90	15.76	0.428	16,807
5	15	77	91	16.29	0.463	4767
5	15	78	92	22.79	0.335	2038
5	15	79	93	20.57	0.365	1585
5	15	80	94	24.41	0.363	1211
5	15	81	95	19.24	0.517	2040
5	15	82	96	19.04	0.513	2943
5	15	83	97	20.86	0.501	1669
5	15	84	98	18.82	0.521	2379
5	15	85	99	10.43	0.787	2246

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