Table 1: (Exp 1, $M = 10,000$) Empirical size of the wild bootstrap (WB) test, the warp-speed wild bootstrap (WpWB) test, wild cluster bootstrap (WCB) test and warp-speed wild cluster bootstrap (WpWCB) of homogeneity for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.05.

		T=5				T=10				T=20			
N	m_a	WB	WpWB	WCB	WpWCB	WB	WpWB	WCB	WpWCB	WB	WpWB	WCB	WpWCB
Panel(a): Homoskedasticity													
20	1	4.55	5.49	4.94	5.33	5.24	5.47	5.12	4.98	5.01	5.40	4.72	4.84
	2	4.46	5.65	4.83	5.82	5.19	4.94	4.95	4.65	5.13	5.10	5.12	4.91
	3	4.15	5.40	4.76	5.53	5.05	5.15	5.19	4.94	4.90	5.29	5.08	4.90
40	1	5.11	5.26	5.29	4.89	5.34	5.39	5.51	4.64	5.31	5.16	5.00	4.62
	2	4.67	5.46	5.37	4.79	5.06	5.40	5.55	5.19	5.47	4.90	4.99	4.91
	3	4.59	5.20	5.46	4.93	4.92	5.23	5.52	5.37	5.51	4.97	5.43	4.73
80	1	5.43	5.23	5.37	5.11	5.20	4.85	4.99	5.30	5.31	5.17	4.98	4.86
	2	4.60	4.87	5.19	4.99	5.12	5.24	5.27	5.19	5.21	5.37	5.19	5.09
	3	4.63	5.14	5.24	5.11	4.83	5.14	5.22	5.22	5.37	5.24	5.30	5.12
160	1	5.18	5.21	5.47	5.28	5.07	4.94	4.85	5.18	5.17	5.21	5.31	5.45
	2	4.94	4.83	5.59	5.16	4.98	5.19	4.96	5.10	5.04	4.94	5.49	5.05
	3	4.65	5.01	5.23	5.75	4.85	4.96	5.10	5.03	5.10	5.16	5.42	5.30
Panel(b): Heteroskedasticity													
20	1	6.42	6.67	5.54	5.77	7.52	7.82	5.17	5.27	7.86	8.24	5.19	5.44
	2	6.18	7.16	5.68	6.06	7.46	7.71	5.38	5.55	7.90	7.54	5.11	4.99
	3	5.83	6.99	5.60	6.46	7.05	7.62	4.93	5.29	7.27	7.30	5.25	5.50
40	1	6.56	6.43	5.86	5.68	8.20	7.87	5.16	5.57	8.42	7.52	5.54	4.89
	2	6.03	6.99	5.48	5.67	7.66	7.59	4.95	5.15	8.59	7.19	5.54	5.30
	3	6.19	6.76	5.42	5.89	7.30	6.97	5.13	5.11	7.64	6.73	5.16	5.00
80	1	6.55	6.58	5.32	4.97	7.35	7.43	5.11	4.90	8.67	7.86	5.09	5.09
	2	6.63	6.77	5.50	5.00	7.34	6.91	5.10	4.66	8.49	8.30	5.20	5.13
	3	6.54	6.55	5.36	5.87	7.24	6.42	5.23	4.65	8.08	7.74	5.19	5.48
160	1	7.11	7.05	4.97	4.78	8.21	8.15	5.39	5.69	8.37	8.42	5.46	4.88
	2	6.83	6.38	5.36	4.56	7.75	8.03	5.70	5.32	8.10	6.67	5.22	4.33
	3	7.12	6.08	5.16	4.48	7.31	7.29	5.56	4.47	7.91	6.34	5.23	4.36

Table 2: (Exp 1, $M = 10,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.08	1.20	5.49	5.33	11.13	10.73	0.93	0.95	5.47	4.98	10.31	10.24	1.20	1.16	5.40	4.84	10.79	9.93
	2	1.20	1.39	5.65	5.82	10.47	10.96	1.08	1.07	4.94	4.65	10.16	10.18	1.13	1.21	5.10	4.91	10.20	10.42
	3	1.18	1.24	5.40	5.53	10.87	11.13	0.91	1.00	5.15	4.94	10.18	9.63	1.19	1.05	5.29	4.90	10.60	10.24
40	1	0.97	1.02	5.26	4.89	9.99	9.73	1.31	1.25	5.39	4.64	10.89	10.09	0.99	0.91	5.16	4.62	10.61	10.30
	2	1.12	1.12	5.46	4.79	11.03	10.27	1.43	1.33	5.40	5.19	10.29	9.83	1.04	0.79	4.90	4.91	10.19	10.06
	3	1.10	1.05	5.20	4.93	10.56	9.89	0.96	1.07	5.23	5.37	10.35	10.11	1.06	0.97	4.97	4.73	10.30	10.17
80	1	0.74	0.98	5.23	5.11	10.18	10.21	0.91	0.92	4.85	5.30	10.22	11.38	1.16	1.02	5.17	4.86	10.17	10.34
	2	1.07	1.24	4.87	4.99	10.49	10.22	0.94	0.88	5.24	5.19	10.16	10.37	1.08	1.14	5.37	5.09	10.26	9.93
	3	0.91	0.82	5.14	5.11	10.08	10.25	1.12	0.90	5.14	5.22	10.36	10.39	1.00	0.99	5.24	5.12	10.44	10.12
160	1	1.07	1.09	5.21	5.28	10.53	10.36	1.07	1.09	4.94	5.18	10.02	10.11	0.99	1.02	5.21	5.45	10.69	10.36
	2	0.93	1.19	4.83	5.16	10.16	10.30	0.94	0.87	5.19	5.10	10.65	9.64	1.03	1.03	4.94	5.05	10.50	10.14
	3	0.92	1.09	5.01	5.75	9.94	10.77	1.13	1.09	4.96	5.03	10.26	10.26	0.97	0.90	5.16	5.30	10.53	10.08
Panel(b): Heteroskedasticity																			
20	1	1.75	1.35	6.67	5.77	13.03	11.38	2.08	1.04	7.82	5.27	13.81	10.46	2.04	0.96	8.24	5.44	14.83	10.22
	2	1.57	1.40	7.16	6.06	13.28	11.48	1.91	0.90	7.71	5.55	13.38	10.87	1.75	1.25	7.54	4.99	14.02	10.56
	3	1.42	1.29	6.99	6.46	13.24	11.39	1.51	0.95	7.62	5.29	13.99	10.82	1.67	1.26	7.30	5.50	13.45	10.54
40	1	1.59	1.25	6.43	5.68	12.05	10.24	2.26	1.22	7.87	5.57	14.18	10.66	1.90	1.06	7.52	4.89	13.74	9.72
	2	1.86	1.25	6.99	5.67	12.08	10.38	1.98	1.14	7.59	5.15	13.71	10.78	1.73	1.08	7.19	5.30	13.25	9.91
	3	1.74	1.41	6.76	5.89	12.66	10.74	1.82	1.32	6.97	5.11	13.28	10.75	1.81	1.06	6.73	5.00	12.85	10.10
80	1	1.72	1.22	6.58	4.97	12.62	9.82	1.66	0.77	7.43	4.90	13.61	9.89	2.34	1.19	7.86	5.09	15.43	10.44
	2	1.94	1.53	6.77	5.00	12.99	10.56	1.33	0.80	6.91	4.66	13.13	9.77	2.39	1.13	8.30	5.13	14.92	10.70
	3	1.89	1.54	6.55	5.87	12.80	10.78	1.24	0.80	6.42	4.65	12.72	9.29	1.73	1.23	7.74	5.48	14.01	10.25
160	1	1.61	0.85	7.05	4.78	11.64	9.73	2.13	1.03	8.15	5.69	14.69	11.17	1.61	0.76	8.42	4.88	14.05	10.18
	2	1.47	0.75	6.38	4.56	11.80	9.56	1.57	0.84	8.03	5.32	14.36	10.81	1.35	0.86	6.67	4.33	13.59	9.82
	3	1.17	0.78	6.08	4.48	11.54	9.50	1.53	1.00	7.29	4.47	13.40	9.73	1.44	0.86	6.34	4.36	13.45	10.14

Table 3: (Exp 1, $M = 20,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.07	1.05	5.18	5.45	10.22	10.59	0.92	1.00	4.84	5.24	9.83	10.36	1.00	1.02	4.91	5.12	9.94	10.18
	2	1.10	1.03	5.33	5.55	10.54	10.86	1.09	1.07	4.87	4.94	9.72	9.88	1.01	0.91	4.83	4.74	9.97	9.92
	3	1.01	1.06	5.25	5.48	10.19	10.65	0.90	1.09	4.93	5.02	9.91	9.86	1.14	1.04	5.39	5.24	10.17	9.96
40	1	1.02	0.89	4.92	4.84	10.08	9.67	1.17	1.12	5.08	4.91	10.07	9.98	0.97	0.98	5.11	5.16	10.06	10.38
	2	1.05	1.11	4.94	4.94	9.94	9.97	1.17	1.28	5.03	5.13	9.98	10.10	1.06	1.10	4.94	5.12	9.62	9.88
	3	1.08	1.12	5.24	5.30	10.18	10.22	1.04	1.12	5.24	5.28	10.47	10.06	1.13	1.10	5.27	5.07	10.41	10.35
80	1	0.94	0.97	4.92	4.96	9.86	9.70	0.84	0.80	4.73	5.27	9.45	10.12	1.10	1.01	5.15	5.00	10.01	9.80
	2	0.93	0.99	4.92	5.03	9.79	9.93	1.02	0.85	4.85	4.79	9.64	9.79	1.06	1.07	5.23	5.12	10.00	9.96
	3	0.97	1.02	4.90	4.94	10.12	10.30	0.98	0.78	4.84	4.90	9.69	9.89	0.91	0.87	5.07	5.04	10.28	9.98
160	1	1.14	0.95	5.04	5.10	10.19	10.12	1.15	1.26	5.04	5.27	9.89	10.24	0.99	1.03	5.26	5.04	9.98	10.18
	2	0.91	0.84	5.31	4.78	10.00	9.73	1.01	1.10	5.32	5.24	10.28	10.04	0.99	1.06	4.96	5.08	9.88	9.97
	3	0.81	0.82	4.88	4.71	10.36	9.98	1.13	1.02	5.36	5.14	11.02	10.69	1.14	1.18	5.05	4.96	10.14	9.92
Panel(b): Heteroskedasticity																			
20	1	1.81	1.35	7.16	5.88	13.01	11.11	1.88	1.13	7.45	5.23	13.43	9.95	2.20	1.03	8.44	5.28	14.55	10.47
	2	1.66	1.41	7.20	5.67	13.17	11.11	1.71	1.29	7.23	5.48	13.51	10.51	2.25	1.07	8.23	5.63	14.12	11.14
	3	1.59	1.41	7.13	6.21	13.07	11.16	1.57	1.22	6.88	5.60	13.05	10.63	1.91	1.13	7.55	5.63	13.95	11.11
40	1	1.40	1.19	6.37	5.33	11.68	10.32	1.76	1.12	7.39	5.20	13.89	10.15	2.30	1.05	8.05	5.10	14.37	10.71
	2	1.51	1.19	6.28	5.24	12.18	10.11	1.74	1.29	7.66	5.30	13.40	10.49	1.83	1.10	7.30	5.43	13.85	10.32
	3	1.60	1.14	6.38	5.14	12.87	10.56	1.61	1.15	7.02	5.34	13.44	10.26	1.62	1.25	7.53	5.50	13.17	10.61
80	1	1.65	1.20	6.90	5.44	12.59	10.22	2.26	1.18	7.76	5.26	13.78	10.32	2.08	1.14	8.04	5.06	14.32	10.25
	2	1.45	1.01	6.82	5.20	12.85	10.28	2.09	1.35	7.54	5.34	13.48	10.46	1.81	0.92	7.53	4.93	13.38	9.87
	3	1.52	1.14	6.83	5.31	12.74	10.17	1.80	1.18	7.11	5.40	13.13	10.68	1.74	1.02	6.96	5.22	13.25	10.24
160	1	1.54	0.87	6.56	4.84	11.86	9.77	2.28	1.11	8.17	5.24	14.23	10.16	2.02	0.92	8.13	5.14	14.81	10.37
	2	1.48	1.02	6.61	4.71	12.79	9.89	1.79	1.03	7.36	5.25	14.42	10.37	1.96	0.93	7.83	5.27	13.94	10.63
	3	1.57	1.01	6.89	4.75	12.90	10.05	1.92	1.05	7.51	5.20	13.55	10.36	1.33	1.06	7.14	5.16	14.14	10.20

Table 4: (Exp 2.1, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity against a monotonic transition ($m = 1$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	21.52	16.67	44.36	39.75	57.96	53.03	63.57	47.90	84.16	74.87	91.29	85.19	97.32	82.08	99.38	96.61	99.75	98.75
	2	15.17	12.63	35.43	31.14	48.92	44.40	51.66	39.63	74.45	65.62	84.22	78.30	93.80	77.53	98.48	94.64	99.28	97.83
	3	13.47	10.49	30.84	27.98	44.15	39.88	48.49	37.37	70.81	62.02	82.00	75.73	92.67	77.62	98.14	94.24	99.14	97.42
40	1	55.83	47.68	78.97	74.17	86.65	84.47	96.87	90.55	99.39	98.38	99.67	99.37	100.00	99.87	100.00	99.98	100.00	100.00
	2	44.31	39.81	69.81	65.33	80.04	76.33	92.96	85.60	97.90	95.84	99.12	98.21	99.96	99.71	100.00	99.96	100.00	99.98
	3	39.58	35.77	64.79	61.15	76.86	73.52	91.62	84.27	97.41	95.36	98.83	97.91	99.97	99.69	100.00	100.00	100.00	100.00
80	1	92.46	88.67	98.05	97.33	99.27	98.88	99.98	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	85.84	82.34	96.04	94.89	97.81	97.51	99.95	99.88	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	82.40	80.96	94.79	93.51	97.77	97.32	99.97	99.86	99.99	99.98	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.95	99.89	99.98	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	99.77	99.69	99.98	99.96	99.99	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.69	99.61	99.98	99.95	99.99	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	14.73	9.97	31.74	24.41	43.08	36.77	35.01	19.62	57.16	43.40	68.69	57.04	67.05	42.58	85.57	71.32	90.49	83.03
	2	9.70	6.86	24.55	20.38	36.44	30.90	24.51	15.71	47.88	35.76	59.79	49.20	57.50	37.79	77.90	63.54	86.03	76.58
	3	8.30	5.09	22.46	18.07	33.89	28.76	21.56	14.59	44.15	33.64	57.09	47.38	53.34	34.90	75.15	63.58	84.51	75.67
40	1	29.59	24.69	54.73	47.34	65.83	60.06	67.07	52.90	84.91	77.38	90.66	86.01	95.40	83.96	98.45	95.63	99.26	97.96
	2	21.03	15.86	44.16	36.99	57.17	50.82	55.74	44.01	77.07	68.45	85.27	78.89	89.92	77.42	96.71	93.22	98.33	96.37
	3	16.98	13.42	41.44	33.81	55.12	48.38	52.74	39.09	74.89	66.82	83.52	77.70	88.21	79.44	96.50	93.54	98.30	96.82
80	1	67.07	56.30	84.06	78.08	89.49	86.55	95.47	89.79	98.76	97.21	99.45	98.69	99.90	99.55	100.00	99.93	100.00	100.00
	2	54.10	44.09	76.03	69.26	83.95	79.60	90.65	84.73	97.11	94.96	98.66	97.42	99.77	99.13	99.97	99.89	99.99	99.97
	3	49.31	40.98	73.54	65.91	82.90	77.31	90.41	84.58	96.89	94.72	98.48	97.39	99.82	99.33	99.98	99.87	100.00	99.98
160	1	95.49	91.75	98.70	98.15	99.36	99.09	99.99	99.92	99.99	99.99	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00
	2	90.61	85.70	97.47	96.11	98.72	98.24	99.95	99.82	99.99	99.98	99.99	99.99	100.00	100.00	100.00	100.00	100.00	100.00
	3	89.66	86.01	96.85	95.39	98.64	97.85	99.92	99.81	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5: (Exp 2.1, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity against a monotonic transition ($m = 1$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	21.65	17.57	43.74	39.40	57.76	53.48	65.73	46.66	84.94	74.40	90.95	85.25	96.91	83.36	99.48	96.70	99.80	98.87
	2	13.95	12.67	34.05	31.34	47.30	44.77	52.84	39.89	75.32	67.55	84.52	78.30	94.03	80.05	98.45	94.86	99.36	97.81
	3	11.74	11.31	30.26	27.29	43.10	39.79	48.22	39.51	72.04	64.71	81.84	76.30	92.86	79.57	98.19	94.65	99.21	97.64
40	1	55.16	46.27	78.33	72.63	86.77	83.06	96.56	90.89	99.32	98.05	99.78	99.36	100.00	99.91	100.00	100.00	100.00	100.00
	2	44.58	36.18	67.70	63.12	78.61	75.11	92.42	86.04	97.98	96.17	99.18	98.41	99.98	99.77	100.00	99.98	100.00	100.00
	3	38.20	34.51	63.79	59.23	75.13	72.06	91.41	85.27	97.61	95.86	98.97	98.20	99.99	99.81	100.00	100.00	100.00	100.00
80	1	92.72	89.61	98.23	97.28	99.26	98.94	100.00	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	87.47	83.41	96.08	94.71	98.17	97.41	99.96	99.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	84.78	80.85	95.28	93.97	97.72	96.99	99.97	99.90	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.95	99.93	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	99.86	99.69	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.84	99.72	99.98	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	13.35	8.24	30.83	24.74	43.11	37.32	36.08	20.95	57.88	44.73	69.21	58.70	69.22	43.77	85.00	71.09	90.55	81.38
	2	9.28	6.21	24.74	20.06	36.17	30.46	24.91	15.72	47.40	36.87	60.13	50.52	56.45	36.37	77.50	63.78	85.28	75.95
	3	7.78	5.91	22.07	18.33	32.52	27.60	21.96	14.16	44.26	34.21	56.85	47.98	52.51	36.23	74.85	62.67	84.05	74.94
40	1	30.90	23.20	54.63	47.05	66.77	60.07	68.42	51.62	85.50	76.31	90.82	85.52	95.31	84.62	98.63	95.77	99.37	98.08
	2	21.38	16.32	44.76	37.41	57.76	51.68	55.55	41.56	76.55	67.52	85.00	78.67	90.34	79.94	96.89	93.27	98.54	96.60
	3	17.58	13.74	40.61	33.95	54.14	47.05	48.88	40.69	74.39	65.72	83.75	76.91	88.61	79.72	96.73	93.58	98.37	96.75
80	1	65.61	54.72	83.78	78.20	90.11	86.56	95.17	89.98	98.76	97.28	99.39	98.81	99.95	99.66	99.99	99.95	100.00	99.99
	2	53.51	44.48	75.31	68.82	83.99	79.72	90.13	84.44	96.92	94.81	98.63	97.56	99.86	99.38	99.98	99.92	99.99	99.98
	3	49.33	39.78	72.99	65.92	82.45	77.50	88.28	83.82	96.69	94.80	98.62	97.51	99.86	99.50	99.98	99.93	100.00	99.98
160	1	95.08	92.23	98.98	97.95	99.50	99.17	99.97	99.90	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	91.12	85.52	97.14	95.64	98.65	97.86	99.91	99.66	99.98	99.95	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00
	3	89.38	84.50	96.74	95.24	98.54	97.76	99.89	99.74	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 6: (Exp 2.2, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity against a monotonic transition ($m = 2$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.42	1.31	6.36	6.53	12.14	11.88	1.65	1.47	6.40	5.75	12.11	11.70	4.64	2.89	12.61	10.88	20.77	18.45
	2	4.74	4.48	16.82	15.58	26.69	24.98	18.04	15.76	38.33	33.47	52.37	47.35	53.49	36.86	75.72	65.32	84.89	77.68
	3	4.67	4.29	16.14	14.94	26.68	24.88	16.04	13.35	35.55	31.35	49.64	44.33	47.70	34.85	72.07	61.80	81.36	73.81
40	1	1.50	1.51	6.83	6.51	12.89	12.35	1.66	1.50	7.09	6.23	13.14	11.78	9.70	7.51	24.04	21.18	33.04	30.87
	2	14.02	13.04	32.93	29.92	44.96	42.43	48.80	41.08	71.71	65.75	81.14	77.92	92.30	87.06	97.96	95.67	99.17	98.24
	3	13.58	11.07	31.64	30.03	45.56	42.22	43.59	38.07	67.86	61.90	78.90	74.31	89.40	82.95	96.83	94.39	98.48	97.36
80	1	1.78	1.52	7.28	6.83	13.32	12.70	2.35	2.04	8.25	7.80	14.74	14.01	21.38	18.29	40.77	38.39	53.69	50.27
	2	35.93	34.10	61.32	58.33	73.97	71.61	87.17	83.28	95.82	94.79	98.07	97.61	99.97	99.86	100.00	100.00	100.00	100.00
	3	37.14	32.89	61.46	58.74	74.11	71.75	85.14	79.74	95.08	93.54	97.14	96.59	99.92	99.80	100.00	99.98	100.00	100.00
160	1	2.48	2.66	8.76	8.96	15.97	15.81	4.03	2.81	12.50	11.01	19.91	18.76	45.49	41.64	69.00	65.65	79.29	77.01
	2	78.00	75.72	91.05	90.48	95.12	94.57	99.88	99.63	99.98	99.96	99.99	99.99	100.00	100.00	100.00	100.00	100.00	100.00
	3	77.96	77.64	92.16	91.68	95.84	95.29	99.66	99.51	99.99	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	2.03	1.26	7.31	5.34	13.43	11.10	2.12	1.18	8.52	5.70	14.89	11.22	3.88	2.19	11.94	8.30	19.05	13.50
	2	4.61	3.07	14.15	11.56	22.42	19.11	9.08	5.86	24.66	17.80	35.82	28.35	22.88	14.44	45.05	33.48	56.94	46.87
	3	3.64	3.22	13.35	11.83	22.60	19.87	7.57	4.49	21.31	16.89	33.02	27.36	18.48	12.06	39.01	29.79	52.61	42.66
40	1	2.11	1.24	8.10	6.21	15.03	11.88	1.96	1.23	7.89	5.54	14.51	11.03	6.21	3.37	16.90	11.75	25.20	19.68
	2	7.90	5.96	22.19	18.48	32.48	28.88	19.85	13.68	42.31	34.24	54.79	47.20	49.86	37.90	73.74	63.96	82.39	75.07
	3	7.80	5.29	21.90	17.69	32.95	28.11	16.03	11.35	38.09	30.76	51.63	43.78	41.52	33.05	67.84	59.66	77.85	71.24
80	1	1.73	1.38	8.47	6.12	14.38	11.69	2.68	1.44	9.29	6.65	16.79	12.78	10.40	6.92	25.51	19.70	36.02	28.73
	2	16.09	12.16	38.09	33.71	50.47	45.08	50.87	40.34	72.63	64.56	82.08	75.79	86.39	78.91	95.27	92.38	97.74	96.13
	3	15.51	11.93	37.61	31.71	50.75	45.64	43.71	33.96	68.63	60.98	78.98	72.67	81.88	74.40	93.74	90.12	96.69	94.92
160	1	2.30	1.50	8.55	7.05	15.81	12.83	3.65	1.63	11.23	7.29	17.97	13.47	21.98	14.59	41.50	33.61	52.86	45.44
	2	42.99	34.85	67.00	61.77	77.91	73.75	84.83	78.05	94.58	92.14	97.18	95.53	99.55	98.94	99.88	99.80	99.98	99.90
	3	42.82	34.60	67.82	59.75	78.63	73.06	80.48	72.85	92.91	90.09	96.24	94.52	99.19	98.41	99.85	99.73	99.92	99.86

Table 7: (Exp 2.2, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of homogeneity against a monotonic transition ($m = 2$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.40	1.38	6.28	6.05	11.90	11.26	1.33	1.39	6.40	5.91	12.04	11.79	4.62	3.47	13.54	11.89	21.31	19.42
	2	5.18	4.23	16.64	15.28	27.23	24.86	17.47	14.45	39.29	34.52	52.51	47.67	54.78	38.12	76.81	66.61	85.50	79.23
	3	4.71	4.51	16.30	15.09	26.45	24.73	15.74	13.14	35.44	31.36	48.37	44.69	47.70	36.63	72.01	62.60	81.45	75.36
40	1	1.50	1.41	6.88	6.52	12.82	12.48	1.73	1.47	7.14	6.27	13.10	12.16	8.28	7.07	22.22	20.19	32.33	29.95
	2	13.89	12.64	31.84	29.94	44.62	42.90	48.48	40.45	70.86	65.36	80.61	76.23	92.14	84.19	97.86	95.64	99.00	98.11
	3	13.19	12.06	32.65	29.94	45.19	43.51	44.12	36.38	67.23	61.23	77.53	73.48	88.52	81.09	96.84	94.31	98.45	97.39
80	1	2.15	1.54	7.99	7.37	14.21	13.40	2.25	1.73	8.13	7.81	14.59	13.73	19.67	16.79	39.83	37.39	52.31	50.02
	2	38.04	34.97	62.44	58.80	73.42	71.20	87.93	84.76	96.20	94.80	98.30	97.58	99.97	99.86	100.00	100.00	100.00	100.00
	3	38.84	35.47	62.89	59.78	74.22	71.71	84.81	81.81	95.45	93.66	97.63	96.92	99.91	99.74	100.00	99.99	100.00	100.00
160	1	2.52	2.18	9.38	8.68	16.35	15.55	3.83	3.22	12.34	10.87	19.92	18.71	47.67	42.86	69.52	66.54	79.47	76.62
	2	77.98	75.46	91.69	90.40	95.44	94.79	99.81	99.61	99.98	99.95	99.98	99.98	100.00	100.00	100.00	100.00	100.00	100.00
	3	79.14	76.66	92.38	91.22	96.14	95.32	99.62	99.48	99.96	99.94	99.98	99.98	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	1.93	1.27	7.51	5.98	13.97	11.42	2.23	1.37	8.20	6.14	14.29	11.24	3.88	1.92	11.87	8.21	19.04	14.41
	2	4.23	3.07	13.78	11.22	22.66	19.48	8.33	6.04	24.46	19.48	35.54	29.48	22.72	13.37	44.65	34.06	56.87	47.48
	3	3.71	2.91	13.63	10.80	22.46	18.80	7.28	5.63	21.63	17.42	32.76	28.05	19.52	11.16	39.37	30.94	52.12	44.43
40	1	2.11	1.51	7.98	6.05	14.12	11.35	2.30	1.36	8.56	6.23	15.48	11.65	6.24	3.64	16.61	11.43	25.47	19.47
	2	8.54	5.37	22.38	18.31	33.58	28.32	22.23	14.90	42.19	34.02	55.11	47.25	50.95	37.08	73.79	63.23	82.73	75.39
	3	6.96	4.95	22.20	17.26	33.24	27.93	17.95	12.32	38.52	30.80	51.41	44.11	41.75	31.79	68.32	58.28	79.66	71.78
80	1	2.32	1.37	8.47	6.32	14.92	12.21	2.20	1.34	8.94	6.53	15.59	12.01	10.87	6.44	25.38	18.83	35.51	28.56
	2	17.75	13.92	39.57	32.24	52.61	45.96	47.45	37.39	70.22	63.28	80.23	75.01	86.98	79.80	95.58	92.53	97.54	95.89
	3	16.79	12.90	38.87	33.04	51.71	45.77	41.02	33.50	65.66	58.83	77.11	71.08	81.93	72.78	93.56	90.29	96.58	94.64
160	1	2.72	1.68	9.32	6.84	16.12	13.40	3.52	1.80	11.23	7.39	18.37	13.85	21.23	14.88	40.04	32.66	51.80	44.09
	2	45.83	35.70	66.97	60.70	77.72	73.05	85.55	78.91	95.01	92.29	97.56	95.97	99.70	99.16	99.97	99.88	99.99	99.98
	3	41.61	34.55	66.67	61.37	77.59	73.38	81.03	72.59	93.24	90.59	96.59	94.78	99.45	98.47	99.92	99.81	99.98	99.97

Table 8: (Exp 4, $M = 10,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.01	1.01	5.69	6.00	10.93	11.88	1.27	1.44	5.50	5.67	10.32	10.53	1.23	1.36	5.59	5.48	10.70	10.47
	2	0.92	0.85	5.13	5.25	10.86	11.02	1.20	1.20	5.64	5.63	10.34	10.68	1.29	1.25	5.16	5.46	10.58	10.78
	3	0.36	0.33	3.92	3.93	9.54	9.27	1.15	1.01	5.52	5.59	11.04	11.26	1.00	1.30	5.32	5.65	10.27	10.87
40	1	1.11	1.11	5.27	5.80	10.59	11.16	1.13	1.27	5.21	5.26	10.28	10.28	1.02	0.90	4.96	5.01	9.94	10.23
	2	0.98	0.97	5.64	5.73	10.50	11.64	1.22	1.22	5.41	5.44	10.84	10.80	1.10	0.96	5.16	5.21	9.85	10.67
	3	0.78	0.60	5.32	5.00	10.73	10.83	1.09	1.04	5.37	5.39	11.09	10.75	1.15	0.94	4.97	5.01	9.84	10.50
80	1	1.02	1.23	5.67	5.73	10.55	11.16	0.92	1.18	5.15	5.71	10.37	10.67	0.82	0.97	4.83	4.61	9.41	9.76
	2	1.20	1.27	5.91	6.03	11.30	11.54	1.03	1.31	4.92	5.25	10.31	10.73	1.00	1.24	5.08	5.27	9.90	10.50
	3	1.20	1.16	4.99	5.22	10.39	10.53	1.22	1.35	5.18	5.40	10.36	10.28	1.20	1.37	5.20	5.47	9.52	10.11
160	1	1.04	0.82	4.23	5.07	9.32	9.79	0.90	0.92	5.05	4.59	9.97	9.96	1.13	1.28	4.65	5.19	9.84	10.35
	2	0.91	0.75	4.77	4.66	9.74	9.58	1.16	1.00	5.34	5.01	10.62	10.21	1.30	1.19	4.99	4.89	10.02	10.02
	3	0.83	0.96	4.84	4.63	9.65	9.65	1.21	0.99	5.33	5.20	10.55	10.16	1.13	1.21	5.59	5.25	11.08	10.64
Panel(b): Heteroskedasticity																			
20	1	1.50	1.23	7.06	6.81	13.72	13.15	2.09	1.69	8.60	7.46	15.23	12.98	2.67	1.74	9.25	6.27	16.37	11.73
	2	0.66	0.91	5.48	5.54	11.47	11.63	1.80	1.66	7.93	7.09	14.44	13.05	2.88	1.61	9.69	6.35	17.27	12.35
	3	0.38	0.42	3.66	3.57	9.45	9.37	1.62	1.39	8.09	6.48	14.88	12.90	3.16	1.67	9.40	6.39	16.98	12.32
40	1	1.82	1.57	7.00	6.00	12.89	11.27	1.77	1.30	7.67	5.28	13.76	10.81	2.44	1.22	8.52	5.61	15.27	11.17
	2	1.05	1.01	6.16	5.77	11.54	11.00	1.87	0.98	8.36	6.03	15.26	11.60	2.76	1.27	9.55	5.71	16.45	11.06
	3	0.41	0.41	5.09	5.26	10.64	10.61	1.70	1.14	7.96	5.77	14.42	11.47	3.07	1.07	10.16	5.93	17.35	11.56
80	1	1.22	0.91	6.24	5.59	12.16	11.27	1.90	1.24	7.41	5.70	13.87	11.19	2.30	0.93	8.44	5.38	15.22	10.26
	2	1.23	1.15	6.03	5.63	11.87	11.30	1.84	1.42	7.20	6.01	13.68	11.16	2.57	1.10	9.64	5.17	16.53	10.48
	3	0.81	0.81	5.08	4.90	10.89	10.33	1.56	1.29	7.02	5.91	12.86	11.11	2.69	1.10	10.20	5.35	17.78	10.86
160	1	1.53	1.02	6.28	5.38	11.96	10.06	2.00	1.10	8.05	5.31	13.97	10.47	2.02	1.08	8.42	5.01	15.00	10.67
	2	1.06	0.98	5.85	5.20	11.55	10.72	2.00	1.22	7.92	5.76	13.98	10.45	2.30	0.99	9.33	4.63	16.60	9.72
	3	0.98	0.77	5.14	4.89	10.77	10.30	1.86	0.97	8.02	5.28	13.92	11.14	2.80	0.91	9.27	4.86	16.58	10.07

Table 9: (Exp 4, $M = 20,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.24	1.24	5.99	5.85	11.34	11.42	1.03	1.02	5.41	5.13	10.35	10.40	0.93	0.94	5.16	5.74	10.07	10.63
	2	0.61	0.65	5.16	4.93	10.82	10.69	1.13	1.15	5.71	5.54	10.94	11.29	1.24	1.07	5.26	5.48	10.52	10.70
	3	0.29	0.30	3.87	3.53	9.61	9.15	1.19	1.17	5.56	5.66	11.12	11.41	1.27	1.24	5.95	5.71	11.12	10.89
40	1	1.07	1.00	5.51	5.88	11.30	11.23	1.11	1.11	5.50	5.34	10.87	10.62	1.01	1.05	5.53	5.40	10.79	10.87
	2	0.94	1.01	5.25	5.66	11.25	11.43	1.11	0.92	5.30	5.13	10.68	10.62	1.00	0.99	4.75	4.98	10.20	10.01
	3	0.60	0.57	5.10	5.21	10.74	10.62	1.09	1.01	5.34	5.37	11.15	10.83	1.04	1.06	5.54	5.42	10.10	10.45
80	1	0.95	1.03	5.19	5.38	10.61	10.59	1.15	1.08	5.30	5.42	9.94	10.21	1.10	1.14	5.24	5.06	10.22	10.07
	2	1.02	1.07	5.34	5.36	10.28	10.64	1.25	1.12	5.34	5.43	10.84	10.90	1.09	1.13	5.15	5.15	10.62	10.38
	3	0.79	0.90	5.24	5.53	10.03	10.98	1.25	1.11	5.31	5.17	10.66	10.59	1.12	0.99	5.29	5.12	10.31	10.38
160	1	0.98	0.98	5.37	5.09	10.16	10.12	0.94	0.99	4.83	4.93	9.79	9.76	1.07	1.09	5.12	4.85	10.07	9.76
	2	0.84	0.91	5.19	4.91	10.01	9.86	1.02	1.10	4.62	4.76	9.55	9.45	1.06	1.13	5.07	5.02	10.29	10.08
	3	0.97	0.93	5.13	4.80	10.30	9.67	0.87	1.07	4.95	5.20	10.06	9.93	1.02	1.20	4.99	5.22	9.72	9.91
Panel(b): Heteroskedasticity																			
20	1	1.53	1.35	7.26	6.94	13.30	13.22	1.82	1.43	7.84	6.46	14.20	12.32	2.34	1.51	8.63	6.26	15.29	11.98
	2	0.98	0.92	6.41	5.79	12.02	11.87	1.72	1.40	7.88	6.79	14.56	12.76	2.42	1.43	9.29	6.65	16.37	12.10
	3	0.44	0.47	4.10	3.75	9.46	9.67	1.34	1.08	7.25	6.29	13.74	12.02	2.46	1.72	9.38	6.33	16.72	12.29
40	1	1.59	1.40	6.69	6.39	12.53	11.73	2.28	1.54	7.66	6.17	13.72	11.35	2.32	1.31	8.10	5.94	14.96	11.36
	2	1.30	1.09	6.21	5.35	12.01	10.77	1.83	1.30	7.65	5.98	14.16	11.29	2.78	1.27	9.56	6.11	16.71	11.50
	3	0.67	0.46	5.63	4.94	10.85	10.50	1.73	1.24	7.50	5.98	14.00	11.39	2.59	1.37	9.53	6.23	16.66	11.83
80	1	1.32	1.40	6.54	5.68	12.09	10.92	2.02	1.31	8.47	5.88	14.90	11.29	2.31	1.19	8.59	5.58	15.24	10.71
	2	1.41	1.35	6.39	5.78	12.02	11.02	1.97	1.27	8.01	5.92	14.40	11.22	2.65	1.26	9.94	5.77	16.87	10.98
	3	1.02	1.07	5.60	5.18	10.69	10.65	1.71	1.26	7.53	5.76	14.17	11.36	2.92	1.39	9.79	5.84	16.83	11.10
160	1	1.24	1.11	6.26	5.65	11.81	10.63	1.72	1.20	7.87	5.81	13.82	11.05	2.22	1.03	8.70	5.58	15.71	11.01
	2	1.25	0.95	5.43	5.21	10.92	10.41	1.74	1.23	7.50	5.01	13.92	10.42	2.52	1.07	9.89	5.64	16.67	10.85
	3	1.02	0.80	5.00	5.05	9.72	9.89	1.48	1.17	6.85	5.27	13.45	10.33	2.60	1.09	9.89	5.42	17.47	10.49

Table 10: (Exp 5.1, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy against monotonic change ($h = 1$ at $0.5T$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	28.58	22.70	55.39	46.04	67.36	59.78	97.76	86.20	99.57	97.54	99.87	99.25	100.00	99.88	100.00	100.00	100.00	100.00
	2	23.14	19.43	50.90	44.36	64.76	58.04	97.35	84.05	99.45	97.33	99.72	99.16	100.00	99.84	100.00	100.00	100.00	100.00
	3	13.13	9.77	39.30	34.97	55.56	51.16	95.72	84.17	99.11	96.70	99.64	98.82	100.00	99.93	100.00	100.00	100.00	100.00
40	1	75.46	62.06	89.66	83.94	94.57	91.40	100.00	99.90	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	73.73	62.37	89.94	86.05	94.84	92.11	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	65.06	55.02	85.09	80.21	91.74	89.15	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
80	1	98.42	97.00	99.75	99.47	99.91	99.83	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	98.89	97.62	99.76	99.53	99.98	99.84	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	98.00	96.46	99.60	99.29	99.83	99.75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	16.80	14.14	39.40	33.20	51.90	45.46	84.25	57.57	94.65	84.43	97.07	91.89	99.93	94.88	99.99	99.59	100.00	99.92
	2	13.48	10.48	34.59	30.31	49.07	43.63	80.41	56.46	92.97	82.92	96.16	90.74	99.85	94.41	99.98	99.35	100.00	99.88
	3	3.70	3.50	26.62	23.83	40.15	37.71	75.70	52.72	91.27	81.70	95.11	89.36	99.84	94.97	100.00	99.45	100.00	99.91
40	1	49.65	40.47	71.99	66.18	82.39	78.24	99.48	97.27	99.94	99.56	99.96	99.90	100.00	100.00	100.00	100.00	100.00	100.00
	2	48.09	35.95	72.28	65.87	81.35	78.31	99.42	97.27	99.87	99.50	99.96	99.80	100.00	100.00	100.00	100.00	100.00	100.00
	3	36.89	30.18	64.32	57.54	75.15	72.36	99.38	97.51	99.85	99.61	99.94	99.80	100.00	100.00	100.00	100.00	100.00	100.00
80	1	88.97	84.08	96.61	94.58	98.51	97.42	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	90.26	85.12	96.98	95.66	98.60	98.02	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	87.03	80.60	95.29	94.28	97.89	97.10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.89	99.76	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	99.85	99.77	99.96	99.95	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.83	99.74	99.98	99.95	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 11: (Exp 5.1, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy against monotonic change ($h = 1$ at $0.5T$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	27.49	20.70	53.80	46.45	66.72	60.31	97.85	83.95	99.64	97.23	99.87	99.06	100.00	99.91	100.00	100.00	100.00	100.00
	2	24.42	17.18	49.20	41.94	63.91	56.94	97.34	84.55	99.39	97.00	99.78	98.92	100.00	99.87	100.00	100.00	100.00	100.00
	3	10.86	9.12	39.63	34.37	55.12	49.11	96.28	83.09	99.19	96.32	99.64	98.75	100.00	99.88	100.00	100.00	100.00	100.00
40	1	70.91	61.88	89.18	85.12	94.17	91.63	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	71.19	63.04	89.08	85.39	94.34	92.03	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	64.47	57.11	84.45	81.14	91.22	88.91	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
80	1	98.67	97.09	99.80	99.59	99.94	99.86	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	99.14	97.80	99.88	99.69	99.96	99.92	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	98.37	97.00	99.73	99.55	99.95	99.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	18.72	13.08	38.77	34.00	52.83	47.35	84.01	62.55	94.58	85.58	97.48	92.65	99.91	95.11	99.98	99.56	100.00	99.88
	2	14.23	10.44	35.59	30.47	48.98	43.84	79.53	61.00	92.78	83.73	96.26	91.15	99.77	94.50	99.97	99.37	99.98	99.80
	3	4.05	2.95	25.33	22.68	40.95	36.72	74.39	56.46	90.59	81.68	95.08	89.75	99.81	95.30	99.98	99.39	99.99	99.83
40	1	49.25	41.86	72.86	66.55	82.11	77.67	99.56	97.10	99.92	99.61	99.98	99.84	100.00	100.00	100.00	100.00	100.00	100.00
	2	47.89	40.33	71.72	66.79	81.95	78.11	99.42	96.77	99.90	99.54	99.96	99.88	100.00	100.00	100.00	100.00	100.00	100.00
	3	36.05	29.51	63.76	60.21	75.67	73.19	99.30	96.73	99.88	99.53	99.95	99.83	100.00	100.00	100.00	100.00	100.00	100.00
80	1	89.06	83.56	96.60	94.90	98.45	97.56	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	90.42	86.60	97.20	95.76	98.62	98.03	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	86.89	82.78	95.79	94.69	97.89	97.38	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.89	99.76	99.98	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	99.94	99.84	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.89	99.77	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 12: (Exp 5.2, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy against monotonic change ($h = 2$ at $0.3T$ and $0.7T$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	30.28	22.77	56.67	48.88	68.80	61.74	34.80	25.09	56.92	49.73	68.03	61.90	16.89	11.90	32.85	25.88	43.56	37.34
	2	24.18	22.91	63.18	56.21	76.46	71.44	88.89	73.43	97.51	93.38	98.77	97.09	100.00	99.30	100.00	99.97	100.00	100.00
	3	3.72	2.33	64.36	58.02	79.93	74.78	93.98	83.07	98.65	96.11	99.42	98.53	100.00	99.43	100.00	99.98	100.00	100.00
40	1	74.38	66.99	89.95	86.13	94.26	92.45	73.49	61.70	88.04	81.70	92.60	89.11	35.98	25.16	57.84	47.08	67.73	59.56
	2	86.74	80.68	96.45	94.68	98.45	97.67	99.97	99.82	100.00	99.97	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00
	3	93.76	88.32	98.83	98.20	99.47	99.20	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
80	1	98.92	97.81	99.82	99.58	99.91	99.84	97.54	94.64	99.26	98.50	99.71	99.29	71.12	60.75	85.69	79.96	90.77	86.58
	2	99.97	99.85	99.99	99.99	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	100.00	99.99	100.00	100.00	100.00	100.00	100.00	99.99	100.00	100.00	100.00	100.00	96.45	92.58	98.89	97.88	99.42	99.05
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	15.53	11.41	39.54	35.28	53.77	49.81	23.48	17.20	42.99	34.36	54.51	45.94	12.28	7.28	26.05	19.13	35.24	28.39
	2	3.30	4.45	42.70	36.18	58.20	53.85	64.49	48.54	84.68	75.00	90.91	84.40	98.49	87.88	99.73	97.76	99.91	99.23
	3	0.75	0.74	38.78	33.06	61.34	56.51	68.73	53.38	88.77	79.97	93.52	88.50	98.73	89.58	99.68	98.16	99.91	99.25
40	1	56.35	47.20	76.56	70.72	85.06	80.67	48.23	36.62	69.16	61.21	78.22	72.00	22.53	13.21	41.45	31.92	52.16	42.74
	2	63.91	54.52	85.46	80.83	91.62	89.27	96.93	92.59	99.41	98.26	99.77	99.30	100.00	99.96	100.00	100.00	100.00	100.00
	3	73.67	58.18	92.14	88.38	96.02	94.58	98.71	96.37	99.81	99.34	99.93	99.80	100.00	99.99	100.00	100.00	100.00	100.00
80	1	91.55	87.80	97.40	96.09	98.71	98.01	84.77	75.19	94.04	90.04	96.46	94.67	49.04	35.91	67.43	58.40	75.57	69.22
	2	97.76	96.96	99.54	99.26	99.80	99.75	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.62	99.38	99.92	99.90	99.97	99.95	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.97	99.89	100.00	99.98	100.00	100.00	99.41	98.61	99.86	99.70	99.92	99.86	81.52	72.16	91.92	87.12	95.12	91.94
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 13: (Exp 5.2, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of parameter constancy against monotonic change ($h = 2$ at $0.3T$ and $0.7T$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	25.98	20.49	53.70	47.98	66.28	61.78	36.61	26.90	57.71	50.10	68.20	61.62	17.28	11.31	34.21	27.12	44.64	37.67
	2	23.09	16.24	59.66	54.05	74.61	69.99	90.27	74.95	97.40	92.86	98.95	96.91	100.00	99.20	100.00	99.99	100.00	100.00
	3	1.61	1.07	62.83	53.89	79.35	74.19	94.38	81.99	98.80	96.12	99.48	98.50	100.00	99.53	100.00	99.98	100.00	100.00
40	1	74.74	64.50	89.81	85.73	94.40	91.96	70.77	60.53	85.95	80.75	91.14	87.91	37.61	25.58	57.36	48.56	67.66	60.72
	2	86.50	80.86	96.21	94.23	98.32	97.46	99.97	99.73	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	93.98	89.31	98.84	97.92	99.62	99.27	100.00	99.94	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
80	1	98.78	97.56	99.80	99.60	99.91	99.87	98.03	95.76	99.52	99.02	99.77	99.59	71.91	60.05	86.11	79.94	91.09	87.45
	2	99.91	99.82	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.98	100.00	100.00	100.00	100.00	96.64	94.04	99.05	98.34	99.56	99.22
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	17.07	14.49	42.01	36.61	55.32	50.87	22.27	15.46	42.00	34.69	53.64	46.67	12.69	7.41	26.53	18.73	36.82	28.89
	2	7.93	5.85	43.66	38.85	59.71	54.55	64.47	46.40	84.30	74.94	90.92	85.20	98.63	86.63	99.78	97.65	99.91	99.14
	3	0.79	0.87	41.64	35.14	61.12	55.32	69.75	50.71	87.61	79.66	93.45	88.41	98.78	88.77	99.80	98.02	99.94	99.36
40	1	54.67	47.05	75.62	70.51	84.27	80.44	48.33	35.38	68.86	60.54	77.78	71.85	22.52	14.42	41.24	31.46	51.90	43.13
	2	61.48	59.05	85.44	81.25	91.80	89.25	97.36	91.44	99.41	98.37	99.76	99.41	100.00	99.95	100.00	100.00	100.00	100.00
	3	68.54	60.44	91.36	88.77	95.69	94.40	98.83	96.43	99.76	99.44	99.94	99.77	100.00	99.98	100.00	100.00	100.00	100.00
80	1	92.86	88.62	97.82	96.50	98.93	98.21	83.49	74.76	93.35	89.73	96.31	94.07	47.54	33.24	66.61	56.36	75.83	67.49
	2	97.93	96.60	99.64	99.43	99.89	99.83	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	99.70	99.30	99.97	99.95	99.98	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
160	1	99.91	99.84	99.98	99.97	100.00	99.99	99.39	98.46	99.87	99.72	99.95	99.89	81.99	69.68	91.50	86.51	94.88	91.83
	2	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 14: (Exp 6, $M = 10,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	0.99	0.97	5.40	5.68	10.66	11.07	1.22	1.09	5.22	5.24	10.72	10.60	1.09	1.22	5.50	5.25	10.90	10.32
	2	0.22	0.24	4.00	4.23	9.47	9.84	0.74	0.78	5.59	5.35	11.29	10.62	0.99	1.04	5.66	5.38	10.60	10.46
	3	0.23	0.24	2.93	2.85	7.77	8.22	0.30	0.38	5.06	4.77	10.44	9.89	0.87	0.93	5.33	5.41	10.32	10.62
40	1	0.91	1.10	5.00	5.41	10.01	10.99	1.08	0.92	5.45	5.14	10.50	10.75	0.99	1.08	4.27	4.83	9.00	9.88
	2	0.77	0.82	5.22	5.52	10.59	11.20	1.09	0.85	5.49	5.45	10.61	10.37	0.86	0.74	4.27	4.16	8.91	9.13
	3	0.05	0.14	4.33	5.15	9.85	10.59	0.99	0.75	4.76	4.97	10.43	11.10	0.92	0.76	4.59	4.42	9.61	9.48
80	1	1.04	1.13	5.45	5.48	10.92	10.81	1.08	1.03	5.14	5.18	10.38	10.55	0.82	0.94	4.80	5.39	9.63	10.15
	2	1.05	0.91	5.21	4.97	10.92	11.02	1.03	0.97	4.92	4.92	9.81	10.00	0.65	0.95	4.61	4.92	9.96	10.18
	3	0.92	0.76	5.45	5.87	10.86	11.29	0.90	1.01	5.20	5.21	10.18	10.23	0.87	0.81	4.80	5.06	9.63	10.53
160	1	0.83	0.80	4.37	4.74	9.31	9.78	0.81	1.03	4.64	4.78	9.48	9.62	0.98	1.10	5.00	4.95	10.21	10.11
	2	1.11	0.98	5.29	4.78	10.08	10.28	0.89	1.12	4.83	5.16	9.75	10.35	0.86	1.07	4.98	5.63	10.31	10.77
	3	1.09	0.89	5.36	4.58	10.39	9.88	0.75	1.07	4.78	4.97	9.85	10.17	0.89	1.12	4.78	5.25	9.44	10.18
Panel(b): Heteroskedasticity																			
20	1	1.14	1.16	6.50	6.03	12.71	11.35	2.03	1.69	7.93	6.55	13.87	12.32	2.22	1.46	7.96	6.11	14.38	11.44
	2	0.48	0.55	4.34	4.18	10.89	9.60	0.74	0.80	7.08	5.82	13.70	12.16	1.71	1.36	7.42	6.10	13.70	11.88
	3	0.54	0.56	2.86	2.73	9.78	8.53	0.16	0.25	5.12	4.39	12.61	10.18	0.69	0.55	6.09	5.14	12.28	10.28
40	1	2.10	1.26	7.82	6.42	14.32	12.48	1.98	1.32	7.44	6.18	14.12	11.49	1.95	1.27	8.58	6.19	15.29	11.62
	2	1.09	0.68	6.97	5.81	13.61	11.59	1.58	1.29	7.37	6.54	14.22	11.98	1.91	1.10	8.34	6.15	14.03	11.49
	3	0.21	0.13	6.06	4.84	12.38	10.46	0.53	0.62	6.03	5.32	12.78	11.44	1.56	0.93	7.67	5.57	14.22	11.09
80	1	1.78	1.44	7.57	6.31	13.37	11.95	1.51	0.99	7.16	4.65	13.73	10.16	1.60	1.01	7.69	5.26	14.33	10.64
	2	1.18	0.99	7.59	5.37	13.90	11.54	1.65	0.94	7.51	5.35	13.74	10.44	1.88	1.10	7.71	5.39	13.68	10.65
	3	0.75	0.52	6.83	4.63	13.48	10.21	1.16	0.96	7.15	5.29	13.15	10.40	1.62	1.07	6.90	5.29	13.47	10.96
160	1	1.64	1.07	7.43	5.43	13.35	11.35	1.63	0.90	7.41	4.96	13.24	10.25	1.82	1.19	7.77	5.48	14.68	10.50
	2	1.58	0.97	7.44	5.55	13.26	10.94	1.69	1.00	7.01	5.04	13.32	10.78	1.81	1.13	7.99	5.46	14.61	10.49
	3	1.23	0.91	7.34	5.23	13.32	11.17	1.20	0.82	6.85	5.13	13.00	10.26	1.86	1.02	7.75	5.32	13.45	10.61

Table 15: (Exp 6, $M = 20,000$) Empirical size of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	0.68	0.81	5.22	5.24	11.03	11.26	1.19	1.34	5.59	5.34	11.17	10.65	1.14	1.14	5.24	5.44	10.38	10.62
	2	0.20	0.19	3.73	3.97	9.17	10.10	0.85	1.02	5.81	5.64	11.02	11.10	1.01	1.04	5.38	5.29	10.44	10.72
	3	0.23	0.22	2.58	2.48	8.29	8.82	0.34	0.48	4.90	4.94	10.54	10.69	0.90	0.79	5.21	5.24	10.26	10.82
40	1	1.02	0.97	5.36	5.45	10.72	10.95	1.11	1.11	4.87	5.42	10.27	10.91	1.18	1.24	5.26	5.53	10.25	10.71
	2	0.78	0.78	5.27	5.30	10.57	10.84	0.90	1.04	5.06	5.30	10.32	10.92	1.13	1.17	5.20	5.22	10.63	10.79
	3	0.33	0.27	4.36	4.61	9.93	10.41	0.77	0.72	5.12	5.07	10.16	10.04	1.08	1.14	5.33	5.45	11.01	10.93
80	1	1.18	1.25	5.26	5.67	10.36	11.09	0.80	0.90	5.05	5.08	10.20	10.07	0.99	1.02	4.96	5.20	10.33	10.48
	2	1.13	1.12	5.56	5.98	10.88	11.36	0.91	0.87	5.18	4.91	10.36	9.93	0.98	1.25	5.13	5.28	9.99	10.39
	3	0.78	0.76	5.30	5.47	10.76	11.26	1.00	0.96	5.31	5.03	10.91	10.23	0.99	1.25	5.18	5.38	10.48	10.39
160	1	1.21	1.18	5.16	5.04	10.21	9.85	1.01	0.85	4.82	4.98	9.92	10.06	0.89	0.88	4.78	4.55	10.05	9.63
	2	1.01	1.15	4.91	4.97	10.08	10.16	1.01	0.90	4.88	4.81	9.99	9.94	1.05	0.91	5.04	4.67	10.02	9.55
	3	0.93	1.02	4.95	5.16	10.29	10.13	0.88	0.85	5.39	5.28	10.27	10.55	1.10	0.92	4.93	4.85	9.92	9.49
Panel(b): Heteroskedasticity																			
20	1	1.25	1.05	6.82	6.06	13.24	12.13	1.94	1.41	7.76	6.11	14.25	11.94	2.11	1.37	8.29	6.41	14.28	12.13
	2	0.58	0.57	5.26	4.76	11.29	10.34	1.11	0.95	6.99	5.63	13.58	12.03	1.52	1.12	7.29	5.99	13.95	11.77
	3	0.61	0.59	3.04	2.83	9.69	9.02	0.20	0.20	5.73	5.12	12.53	11.14	0.73	0.54	6.55	5.32	12.54	10.83
40	1	1.58	1.21	7.00	6.05	13.21	11.56	2.10	1.24	8.08	5.97	14.21	11.37	1.72	1.34	7.57	5.89	14.11	11.03
	2	1.14	0.77	6.89	5.64	13.10	11.25	1.65	1.15	7.75	6.20	14.61	12.26	1.61	1.20	7.84	6.18	14.28	11.67
	3	0.30	0.14	5.76	4.53	12.44	10.40	1.05	0.70	6.49	5.35	13.05	11.27	1.10	1.01	6.80	5.54	13.65	11.08
80	1	1.45	1.24	6.99	5.70	13.12	11.24	1.95	1.30	7.37	5.50	13.60	10.73	1.81	1.07	8.05	5.40	14.22	10.68
	2	1.45	1.01	6.85	5.76	12.73	11.38	1.71	1.07	7.54	5.48	14.51	10.88	1.98	1.26	7.76	5.35	14.24	10.72
	3	0.56	0.53	6.29	5.26	12.48	10.69	1.39	0.77	7.21	5.17	13.53	10.60	1.54	1.07	7.36	5.63	13.30	10.59
160	1	1.40	1.02	6.70	5.43	12.42	10.63	1.69	0.90	7.46	4.91	13.41	10.40	1.72	1.23	7.53	5.45	13.87	10.35
	2	1.41	1.13	6.86	5.68	13.24	10.90	2.01	1.17	7.40	5.25	13.84	10.62	1.91	1.05	7.35	5.60	13.37	10.74
	3	1.20	1.01	6.44	5.14	12.70	10.55	1.64	0.98	7.23	5.40	13.63	10.48	1.65	1.17	7.35	5.60	13.47	11.07

Table 16: (Exp 7.1, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = \beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.63	1.55	6.93	6.58	13.05	13.19	2.75	3.22	13.35	13.20	21.78	21.33	5.79	6.24	18.43	17.67	28.70	26.33
	2	2.21	2.13	4.06	3.75	10.69	10.63	2.65	2.99	11.13	11.13	19.93	20.57	3.93	4.19	19.90	18.89	31.43	29.84
	3	1.71	1.38	3.54	3.52	8.90	8.76	1.25	1.36	9.95	9.70	18.70	19.68	2.81	2.99	18.45	16.13	29.73	27.48
40	1	3.57	2.88	12.31	12.55	20.31	20.86	4.87	3.33	18.25	16.33	26.86	25.57	9.42	9.66	24.32	24.24	35.87	34.73
	2	2.93	2.59	9.68	9.75	18.68	18.85	3.04	2.67	19.16	17.51	29.42	28.13	7.11	8.94	32.39	31.51	45.52	45.30
	3	1.24	1.53	9.41	8.72	17.49	17.42	1.82	1.10	16.06	15.65	28.29	27.86	5.54	5.81	29.44	30.40	44.05	43.48
80	1	2.68	2.63	14.85	15.15	24.49	23.96	6.40	6.10	20.45	20.10	32.40	31.29	18.10	17.55	37.34	35.42	49.76	48.54
	2	1.85	1.51	15.54	14.51	25.85	26.24	4.08	4.02	28.09	26.89	41.02	38.68	30.78	29.05	55.74	54.19	67.61	65.63
	3	1.18	1.03	14.48	13.14	24.36	24.67	3.38	3.77	26.12	26.96	40.61	40.04	25.92	22.91	57.93	56.72	70.73	69.40
160	1	4.47	3.09	17.87	17.31	28.37	26.76	13.04	14.59	33.64	33.06	45.85	44.64	39.55	38.32	62.44	60.38	72.97	71.51
	2	2.97	1.69	22.47	21.25	33.92	33.01	22.46	23.44	47.03	47.04	60.75	61.28	67.82	66.74	86.40	84.55	91.70	90.79
	3	2.26	0.82	21.06	19.48	34.97	33.93	19.27	19.66	49.63	51.03	63.60	64.51	70.85	70.83	90.59	89.71	95.10	94.62
Panel(b): Heteroskedasticity																			
20	1	1.29	1.29	5.95	5.42	11.24	10.86	2.55	2.40	9.82	9.51	17.37	17.04	3.76	3.90	15.48	14.43	23.79	22.76
	2	1.88	1.89	2.96	2.90	8.72	8.08	2.81	2.28	8.19	7.59	15.91	15.07	2.71	2.78	13.01	12.27	22.78	21.97
	3	1.60	1.57	3.16	3.09	6.76	6.14	1.90	1.81	6.79	6.18	15.78	14.60	1.91	1.83	10.88	11.08	21.77	21.44
40	1	2.42	2.24	9.49	8.99	17.15	15.68	3.61	3.41	14.70	14.20	23.74	22.82	5.91	4.95	18.08	17.08	27.92	26.75
	2	2.42	1.90	8.21	6.84	15.64	14.35	1.91	1.72	13.03	11.61	23.36	21.37	2.69	2.49	17.62	17.06	29.83	28.43
	3	1.54	1.47	6.60	5.97	15.68	13.92	1.51	1.20	11.82	10.42	23.15	21.22	1.91	1.56	16.92	15.14	29.39	27.64
80	1	2.65	2.78	14.77	12.99	23.35	21.97	4.19	3.63	17.81	17.51	26.81	27.26	8.36	7.83	22.29	20.74	32.91	31.71
	2	1.52	1.33	12.90	10.17	22.78	20.40	2.07	1.26	17.82	16.19	30.34	29.09	4.77	3.34	28.34	26.80	41.67	39.72
	3	0.94	0.94	11.61	9.05	22.41	20.64	1.53	1.62	16.30	14.47	29.71	27.70	5.18	3.61	27.65	25.14	41.42	40.41
160	1	3.17	3.24	17.89	15.92	27.23	25.39	6.83	6.93	22.12	21.00	32.05	31.12	15.39	14.15	32.72	30.84	45.14	43.17
	2	2.64	1.45	18.71	14.81	30.16	27.43	3.85	2.40	27.60	26.81	40.00	38.68	22.48	19.86	47.78	44.12	61.43	58.49
	3	1.01	0.92	16.80	13.04	29.46	26.87	3.77	2.31	27.52	24.74	41.99	38.54	15.99	13.80	49.09	46.98	64.98	61.18

Table 17: (Exp 7.1, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = \beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.78	1.71	6.90	7.08	12.92	13.48	3.56	3.64	14.19	13.97	22.41	22.85	5.83	6.23	18.47	17.91	28.52	27.30
	2	2.24	2.24	4.16	3.66	10.78	9.98	3.33	3.34	11.71	11.31	21.05	20.56	3.77	4.60	19.96	20.02	30.83	30.35
	3	1.53	1.52	3.61	3.54	8.55	8.09	1.78	1.75	10.38	10.10	19.46	19.23	2.30	3.30	17.61	18.26	29.27	28.49
40	1	2.40	2.64	12.00	11.54	20.49	20.09	5.07	4.07	17.24	16.46	26.61	26.21	9.52	8.03	24.01	23.04	35.42	34.41
	2	2.61	2.27	10.25	9.07	18.82	18.02	3.06	2.55	18.55	17.26	29.82	28.12	11.76	8.64	32.07	31.52	45.14	43.82
	3	1.23	1.01	8.91	7.54	17.92	17.11	2.03	1.74	17.01	16.07	27.81	27.02	5.74	5.50	31.11	29.97	45.04	43.43
80	1	2.16	2.52	14.78	15.49	23.59	24.51	6.44	7.49	21.46	20.93	32.68	32.69	17.62	17.78	37.76	37.57	50.56	49.88
	2	1.74	1.67	14.97	14.46	25.73	25.30	4.84	4.19	28.26	28.13	40.81	40.95	31.31	29.92	56.42	53.98	68.41	66.90
	3	0.91	0.86	14.02	13.32	25.16	24.51	4.90	3.87	26.24	27.94	40.86	40.66	25.70	25.50	58.42	56.81	71.03	69.49
160	1	4.30	3.17	17.84	17.75	27.46	27.58	14.15	13.81	33.25	32.98	45.42	45.20	37.98	39.00	62.43	62.29	73.11	72.27
	2	2.70	1.62	22.16	21.60	35.04	34.64	24.70	24.32	49.08	48.56	62.12	61.41	65.68	65.76	84.89	83.86	91.13	90.45
	3	1.53	0.85	21.92	21.24	34.67	34.93	21.55	18.67	52.53	52.23	65.94	65.65	69.84	70.02	89.88	89.54	94.75	94.16
Panel(b): Heteroskedasticity																			
20	1	1.41	1.43	5.75	5.31	11.34	10.73	2.69	2.78	10.52	9.74	18.49	17.14	3.91	3.94	14.90	14.77	23.48	23.12
	2	1.85	1.80	2.90	2.85	8.20	7.56	2.47	2.57	8.03	7.45	16.39	15.00	3.01	2.63	12.54	12.08	22.51	21.84
	3	1.47	1.47	3.04	3.02	6.22	5.60	1.69	1.94	6.62	6.07	15.79	14.47	1.49	1.81	11.22	11.11	21.58	21.16
40	1	2.52	2.42	9.54	8.70	17.31	16.39	3.36	3.05	15.21	13.60	24.27	22.01	5.29	5.47	18.43	17.43	27.96	26.74
	2	2.50	2.31	8.23	6.92	16.01	14.05	2.07	2.12	13.20	11.49	24.03	21.24	2.75	2.61	18.58	16.97	30.44	28.10
	3	1.42	1.28	6.76	5.94	15.83	13.58	1.48	1.24	11.57	9.46	23.41	20.54	1.89	1.72	17.55	15.71	29.94	27.82
80	1	2.52	2.58	14.41	12.94	23.15	21.70	4.33	3.60	17.50	16.48	26.96	25.87	8.50	7.76	23.90	22.40	34.26	32.86
	2	1.46	1.22	12.41	9.18	22.91	20.22	2.12	1.25	18.14	14.82	29.73	27.66	3.86	4.01	30.12	27.86	42.56	40.56
	3	0.99	0.98	11.04	8.78	23.06	19.70	1.38	1.08	16.86	13.09	29.44	26.98	4.31	3.88	27.92	25.70	42.71	40.26
160	1	2.09	1.85	16.63	15.02	26.50	24.46	8.22	6.48	22.67	20.84	32.93	30.94	13.94	14.10	32.49	31.13	44.31	43.39
	2	1.12	0.73	16.63	12.92	29.19	26.12	4.31	2.52	28.57	25.18	41.44	38.21	21.24	18.87	47.02	45.32	60.09	59.04
	3	0.81	0.56	15.56	10.76	28.14	25.18	4.27	2.10	27.45	24.59	42.21	38.52	14.81	11.20	49.86	47.00	64.19	62.39

Table 18: (Exp 7.2, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = -\beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	1.52	1.34	15.55	13.92	27.54	25.73	24.34	15.32	54.16	45.51	66.52	61.11	79.41	55.42	92.05	84.52	95.36	91.35
	2	0.13	0.13	0.49	0.46	5.69	5.97	0.19	0.16	28.87	22.42	49.93	44.00	58.08	14.30	87.41	75.97	93.09	87.72
	3	0.19	0.19	0.66	0.69	1.37	1.58	0.20	0.20	14.63	10.62	40.21	36.05	1.23	0.06	85.95	74.02	92.26	86.82
40	1	13.81	11.56	39.55	37.03	54.64	50.97	71.91	60.64	88.61	84.37	93.86	91.85	99.10	96.78	99.78	99.46	99.90	99.72
	2	0.13	0.11	20.71	17.68	39.11	36.48	40.49	26.43	83.12	76.73	90.75	87.52	98.71	89.34	99.62	99.23	99.81	99.61
	3	0.13	0.13	10.99	7.90	30.47	27.53	0.13	0.01	80.45	74.37	89.90	86.75	97.32	0.01	99.67	99.34	99.78	99.67
80	1	53.93	46.47	77.26	73.65	85.07	83.42	98.36	96.09	99.61	99.26	99.82	99.72	100.00	99.99	100.00	100.00	100.00	100.00
	2	30.05	13.02	66.91	62.76	80.02	76.50	96.85	90.13	99.50	99.02	99.73	99.58	100.00	99.93	100.00	100.00	100.00	100.00
	3	9.68	0.04	61.87	56.95	76.45	73.78	92.98	30.41	99.56	99.26	99.87	99.75	100.00	57.34	100.00	100.00	100.00	100.00
160	1	92.05	88.50	97.71	97.20	99.01	98.82	100.00	99.99	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	87.76	74.15	96.44	95.56	98.41	98.06	99.98	99.96	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	84.03	0.00	97.30	96.09	98.68	98.42	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	1.06	0.89	12.20	10.73	22.64	20.65	8.82	5.84	31.69	26.95	45.27	40.39	39.02	22.04	62.03	52.27	72.76	66.04
	2	0.28	0.28	1.03	0.92	8.19	6.88	0.39	0.39	13.86	10.77	30.76	27.32	12.38	1.07	51.80	40.42	64.93	57.48
	3	0.31	0.27	1.13	1.10	2.78	2.44	0.38	0.39	5.72	3.19	24.68	20.86	0.39	0.26	45.28	35.66	63.65	55.26
40	1	6.89	6.14	24.38	21.56	37.31	34.67	35.94	28.57	60.86	55.27	71.91	66.96	78.04	62.21	90.54	84.38	94.01	90.42
	2	0.32	0.28	12.98	9.54	27.35	24.31	7.88	5.56	48.25	42.79	63.61	57.32	62.55	34.55	85.96	78.96	91.63	87.28
	3	0.35	0.32	7.47	3.84	21.51	17.95	0.26	0.19	43.16	36.98	60.17	53.60	42.78	0.05	86.40	78.31	91.91	88.34
80	1	25.68	19.35	50.56	45.75	64.00	59.57	74.28	66.94	90.08	86.44	94.38	92.00	98.19	96.75	99.40	99.11	99.72	99.51
	2	7.43	3.38	37.79	34.33	54.24	50.66	58.96	45.28	85.42	80.31	91.60	89.09	96.84	93.55	99.32	98.94	99.72	99.48
	3	0.11	0.09	31.70	29.27	49.46	46.05	38.32	26.70	84.31	80.14	91.14	88.99	96.94	85.35	99.33	99.04	99.65	99.42
160	1	65.56	54.90	84.29	80.44	90.69	88.70	98.40	96.82	99.59	99.30	99.87	99.73	100.00	99.98	100.00	100.00	100.00	100.00
	2	45.16	24.93	77.53	71.46	86.36	82.38	96.38	89.08	99.43	99.04	99.76	99.66	99.98	99.96	100.00	99.99	100.00	100.00
	3	29.14	0.03	75.99	67.89	86.12	81.10	95.50	69.30	99.62	99.36	99.87	99.81	99.96	99.88	100.00	100.00	100.00	100.00

Table 19: (Exp 7.2, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = -\beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	0.93	1.47	15.04	14.37	28.39	26.42	23.12	15.56	53.49	46.18	67.14	61.52	77.55	56.78	91.62	84.50	95.08	91.42
	2	0.18	0.18	0.53	0.58	7.15	6.74	0.12	0.11	29.32	22.42	50.81	44.43	48.18	17.61	86.30	77.70	92.61	87.41
	3	0.27	0.23	0.82	0.85	1.81	1.96	0.17	0.14	13.72	9.24	41.74	35.58	2.67	0.05	85.30	74.80	92.17	87.64
40	1	13.37	12.18	39.58	36.92	54.27	51.89	73.37	60.57	89.80	84.71	94.23	91.57	99.00	96.62	99.64	99.25	99.81	99.61
	2	0.12	0.12	20.83	18.83	38.71	36.38	48.58	21.87	83.25	76.55	90.85	87.39	98.13	87.85	99.54	99.10	99.78	99.54
	3	0.14	0.14	9.79	9.55	29.25	28.12	10.23	0.03	80.92	73.20	89.96	86.53	97.95	0.00	99.65	99.24	99.80	99.64
80	1	51.63	44.43	77.27	73.90	85.43	83.47	98.55	96.66	99.66	99.33	99.84	99.75	100.00	99.98	100.00	100.00	100.00	100.00
	2	25.80	17.85	67.41	61.20	79.38	75.81	97.02	90.33	99.59	99.17	99.84	99.71	99.98	99.98	100.00	99.99	100.00	100.00
	3	2.11	0.01	62.12	55.92	76.39	72.47	95.94	7.21	99.67	99.31	99.88	99.80	100.00	99.82	100.00	100.00	100.00	100.00
160	1	92.55	89.10	98.16	97.39	99.16	98.89	99.99	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	86.97	78.00	96.61	95.54	98.67	98.12	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	83.00	28.75	97.10	96.08	98.76	98.49	100.00	99.98	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	0.92	0.91	11.60	10.14	21.78	19.58	9.68	5.87	31.19	25.12	44.37	38.73	36.56	23.38	62.70	53.11	72.59	65.88
	2	0.28	0.28	0.89	0.85	7.43	6.34	0.41	0.37	15.12	11.63	31.54	27.32	5.88	0.68	50.38	40.50	64.97	57.00
	3	0.40	0.32	1.17	1.11	2.68	2.65	0.49	0.46	5.27	4.31	24.59	20.86	0.27	0.20	45.30	35.06	63.12	54.80
40	1	6.12	4.54	24.91	22.15	37.76	35.01	34.86	24.82	60.30	54.01	71.95	66.90	78.85	65.33	90.98	85.66	94.19	91.42
	2	0.28	0.28	11.85	9.28	25.97	22.74	9.65	4.63	47.77	41.80	62.58	57.37	62.68	37.80	86.52	80.56	91.77	88.56
	3	0.30	0.30	4.72	3.62	20.77	16.73	0.30	0.24	42.88	36.17	59.13	53.84	40.35	0.08	86.47	80.75	92.14	89.03
80	1	24.05	20.62	50.30	46.04	63.52	60.04	75.20	67.26	90.94	87.30	94.62	92.62	98.69	96.94	99.50	99.20	99.71	99.50
	2	7.44	5.25	38.77	33.40	54.95	49.89	59.09	45.11	85.96	80.75	92.07	89.22	97.66	93.94	99.36	98.94	99.72	99.48
	3	0.27	0.22	32.88	28.26	49.83	44.89	42.48	3.80	85.23	79.75	92.19	89.28	96.84	56.95	99.48	99.16	99.73	99.56
160	1	62.79	52.90	83.91	80.63	89.92	88.51	98.47	97.39	99.70	99.47	99.86	99.80	99.98	99.97	100.00	100.00	100.00	100.00
	2	45.64	29.29	77.03	71.58	86.03	82.96	96.33	93.40	99.50	99.02	99.79	99.69	99.99	99.98	100.00	99.99	100.00	100.00
	3	29.44	0.04	75.43	68.85	85.19	81.80	95.90	73.10	99.67	99.28	99.89	99.80	99.99	99.94	100.00	100.00	100.00	100.00

Table 20: (Exp 8.1, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = -\beta_1$ (whereas the true mode is $r = 1$ and $m = 2$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	0.40	0.42	9.98	9.65	18.03	17.67	0.26	0.43	10.67	9.87	18.90	18.48	0.24	0.29	17.14	14.70	30.17	27.03
	2	0.39	0.38	10.47	9.61	24.26	23.35	0.37	0.71	17.16	13.77	51.40	45.79	0.54	0.50	56.04	45.54	88.53	82.04
	3	0.52	0.54	7.82	7.19	16.47	16.34	0.43	0.57	10.26	9.69	38.93	33.12	0.52	0.42	20.23	20.14	81.39	75.12
40	1	0.37	0.35	10.44	9.86	18.44	17.74	0.20	0.34	10.84	10.40	20.18	19.23	0.19	0.25	27.46	24.58	44.65	41.71
	2	0.65	0.42	17.53	15.29	43.04	39.98	0.38	0.52	45.61	44.92	82.80	79.59	0.42	0.50	96.07	89.54	99.73	99.27
	3	0.66	0.46	9.18	9.54	32.99	31.45	0.28	0.51	20.58	22.62	76.31	73.96	0.32	0.49	85.82	74.89	99.42	98.72
80	1	0.69	0.44	10.01	10.33	18.95	18.66	0.14	0.14	14.30	13.85	25.16	24.81	0.43	0.75	48.11	43.74	66.51	63.03
	2	0.63	0.74	44.64	42.46	72.45	71.23	0.69	0.53	94.56	91.16	99.19	98.82	1.26	1.35	100.00	100.00	100.00	100.00
	3	0.61	0.61	23.92	25.55	69.93	69.77	0.51	0.37	86.40	81.67	98.62	97.93	1.03	1.32	99.99	99.94	100.00	100.00
160	1	0.35	0.30	12.16	12.13	21.64	21.50	0.80	0.78	22.12	21.12	36.48	34.45	1.99	0.85	80.47	78.67	90.91	89.91
	2	1.86	1.70	85.60	86.05	96.24	95.86	2.73	3.34	100.00	100.00	100.00	100.00	2.90	1.82	100.00	100.00	100.00	100.00
	3	1.51	1.12	80.83	83.64	96.72	96.23	2.33	3.14	99.97	99.95	100.00	100.00	2.59	1.59	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	0.47	0.42	10.81	10.01	19.75	18.80	0.21	0.08	11.51	10.35	20.65	18.62	0.35	0.11	14.14	11.09	26.83	22.22
	2	0.39	0.35	10.07	9.99	21.69	20.27	0.27	0.14	11.23	12.75	35.29	33.12	0.82	0.14	26.30	20.35	62.94	52.42
	3	0.47	0.48	7.40	7.65	15.12	15.16	0.41	0.33	8.64	9.41	24.97	25.06	0.61	0.26	13.99	11.45	52.49	44.27
40	1	0.62	0.58	10.41	9.39	19.51	17.78	0.27	0.24	12.16	10.33	21.24	19.03	0.52	0.24	20.85	16.07	33.94	27.64
	2	0.71	0.82	13.01	12.90	31.92	30.33	0.27	0.37	26.05	24.73	57.89	54.26	1.49	0.52	68.78	53.84	87.98	83.00
	3	0.73	0.60	8.43	8.80	24.99	25.89	0.32	0.35	13.21	13.80	49.79	46.82	1.16	0.42	50.98	37.26	83.92	77.76
80	1	0.52	0.40	10.59	9.33	19.69	17.82	0.54	0.62	13.11	11.56	23.66	20.47	0.49	0.52	28.83	24.05	45.48	39.54
	2	1.00	0.44	26.40	27.58	52.83	50.38	1.12	1.12	60.05	58.39	85.48	82.06	0.78	1.07	94.97	90.74	99.10	98.34
	3	0.72	0.48	18.22	18.26	49.93	47.65	0.94	0.86	39.68	43.38	80.58	77.83	0.49	0.45	91.31	85.06	98.57	97.62
160	1	0.26	0.22	11.94	10.26	21.56	18.94	0.38	0.27	18.26	13.44	29.23	23.60	1.06	1.36	51.32	39.56	66.74	59.54
	2	0.56	0.44	61.57	59.89	80.90	78.26	1.38	1.13	95.41	93.72	98.89	98.30	1.78	1.67	99.98	99.88	100.00	100.00
	3	0.56	0.38	56.58	54.27	80.96	78.26	1.26	1.10	92.13	90.18	98.51	97.86	1.67	1.30	99.96	99.76	99.99	99.98

Table 21: (Exp 8.1, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with the same transition variable and $\beta_2 = -\beta_1$ (whereas the true mode is $r = 1$ and $m = 2$) for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	0.38	0.28	9.43	9.50	17.73	17.91	0.37	0.39	10.10	9.52	19.31	18.70	0.26	0.13	17.43	15.21	30.31	28.21
	2	0.38	0.36	9.25	9.45	20.98	22.22	0.39	0.49	16.88	14.98	48.89	45.34	0.59	0.25	59.03	33.54	87.79	79.14
	3	0.48	0.50	7.12	7.48	14.76	15.06	0.49	0.52	10.73	10.21	34.91	32.69	0.42	0.23	26.93	15.96	81.36	70.97
40	1	0.73	0.52	9.64	10.13	17.94	18.29	0.20	0.55	10.93	11.14	21.14	20.08	0.42	0.39	28.57	24.47	45.40	41.22
	2	0.88	0.72	16.34	15.71	40.77	40.63	0.36	1.04	48.95	50.37	83.02	80.86	0.73	0.93	97.22	93.05	99.69	99.02
	3	0.73	0.57	10.11	10.25	31.01	31.27	0.36	0.72	20.88	27.43	76.17	75.39	0.47	0.73	91.09	80.67	99.38	98.65
80	1	0.40	0.46	10.39	10.82	18.76	18.91	0.24	0.28	14.73	13.85	26.17	25.34	0.40	0.95	51.37	43.96	67.51	63.71
	2	0.67	0.64	45.32	46.54	72.64	72.35	0.84	0.88	93.92	92.03	99.15	98.67	0.97	1.94	100.00	99.98	100.00	100.00
	3	0.44	0.53	26.38	27.94	70.14	70.67	0.68	0.64	84.54	83.87	98.61	98.28	0.73	1.65	99.99	99.95	100.00	100.00
160	1	0.40	0.68	12.00	12.64	22.44	21.79	0.18	0.37	20.60	21.63	35.42	34.86	1.51	1.44	81.73	78.35	91.07	89.48
	2	1.77	2.25	89.11	88.25	96.64	96.19	1.53	1.78	99.98	99.97	100.00	100.00	3.02	2.70	100.00	100.00	100.00	100.00
	3	1.34	1.89	85.68	86.06	96.97	96.61	1.19	1.61	99.94	99.93	100.00	99.98	2.85	2.46	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	0.43	0.41	10.32	9.32	19.35	17.87	0.35	0.35	11.00	9.65	20.79	18.29	0.16	0.12	14.84	11.87	26.96	22.46
	2	0.42	0.43	9.84	9.54	21.83	20.11	0.46	0.39	13.80	11.37	37.13	31.69	0.16	0.08	28.10	21.65	61.79	52.87
	3	0.52	0.52	7.55	7.54	15.22	15.26	0.44	0.38	9.92	8.61	27.71	22.66	0.17	0.14	14.48	12.71	53.61	45.52
40	1	0.34	0.35	10.45	9.05	19.21	17.35	0.12	0.21	12.41	10.80	22.42	19.17	0.68	0.11	19.92	14.91	33.44	27.53
	2	0.47	0.39	12.71	13.37	32.86	31.39	0.20	0.20	28.37	26.45	59.48	54.51	0.69	0.17	64.47	50.79	87.88	81.87
	3	0.43	0.47	8.57	8.95	25.72	25.80	0.30	0.30	15.40	14.41	52.03	48.12	0.53	0.16	46.14	33.15	83.56	76.86
80	1	0.53	0.84	10.05	9.69	18.98	17.69	0.47	0.29	13.42	11.50	23.81	19.93	0.66	0.41	31.62	25.73	47.48	40.34
	2	0.64	1.15	29.21	27.13	53.72	49.60	0.83	0.74	67.66	58.58	86.26	82.21	1.35	0.91	96.25	92.68	99.19	98.46
	3	0.56	0.72	17.15	19.78	48.98	46.99	0.52	0.46	51.29	46.68	82.53	78.48	1.22	0.71	93.20	87.28	98.77	97.69
160	1	0.61	0.46	12.17	10.29	21.63	18.36	0.61	0.30	18.14	13.93	30.01	24.17	0.79	0.71	50.86	43.18	68.05	60.28
	2	1.42	0.64	61.43	58.48	80.84	77.73	1.77	1.07	96.20	93.42	98.96	98.33	1.47	1.48	99.98	99.90	100.00	100.00
	3	1.03	0.46	57.51	54.90	80.99	77.19	1.31	0.89	93.13	90.45	98.57	97.87	1.30	1.12	99.95	99.88	100.00	100.00

Table 22: (Exp 8.2, $M = 10,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with a different transition variable and $\beta_2 = \beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	6.93	6.15	20.83	19.69	31.93	30.51	38.61	27.91	63.76	55.69	75.17	69.53	89.91	75.80	97.34	92.64	98.77	96.56
	2	0.23	0.29	11.33	10.05	23.90	21.66	26.79	17.85	54.99	46.80	68.49	61.76	85.83	69.07	95.79	89.93	97.97	95.36
	3	0.09	0.10	2.27	2.25	13.92	12.77	12.77	6.88	45.34	36.71	59.86	54.45	76.28	58.33	93.50	87.51	97.09	93.69
40	1	21.92	18.86	45.62	41.66	58.23	55.62	83.15	73.76	93.86	90.35	97.01	94.99	99.95	99.37	100.00	99.96	100.00	100.00
	2	13.28	11.99	37.72	34.99	51.91	48.05	75.69	67.90	90.93	87.80	95.53	93.23	99.85	99.24	100.00	99.93	100.00	99.99
	3	4.84	4.20	28.26	27.01	44.01	41.49	67.28	59.45	87.93	84.78	93.61	91.10	99.75	99.11	99.98	99.88	100.00	99.98
80	1	58.99	54.56	79.33	76.02	87.19	85.38	99.60	99.05	99.94	99.86	99.98	99.97	100.00	100.00	100.00	100.00	100.00	100.00
	2	53.18	47.88	76.53	73.55	85.87	83.74	99.46	98.99	99.89	99.79	99.95	99.90	100.00	100.00	100.00	100.00	100.00	100.00
	3	40.18	37.18	70.02	66.71	80.44	78.30	99.19	98.07	99.85	99.71	99.95	99.89	100.00	100.00	100.00	100.00	100.00	100.00
160	1	95.18	93.14	98.89	98.43	99.44	99.24	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	94.50	92.61	98.65	98.18	99.49	99.30	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	92.23	90.01	98.09	97.35	99.16	98.86	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	4.21	3.35	15.29	13.39	25.27	22.69	20.02	15.01	42.82	34.76	54.76	46.61	56.13	37.90	77.59	64.41	84.69	76.40
	2	0.14	0.14	7.51	6.87	18.06	16.66	10.75	7.13	32.74	26.77	47.59	39.87	46.60	31.55	70.90	57.75	80.42	71.04
	3	0.18	0.19	0.85	0.94	9.62	8.70	0.95	0.79	23.75	19.91	40.18	32.94	35.23	22.17	64.45	52.69	75.97	67.12
40	1	10.82	10.32	28.83	25.17	41.12	37.10	50.15	38.57	70.97	61.67	80.11	73.58	91.14	78.87	96.81	93.52	98.23	96.77
	2	5.41	5.61	24.18	20.91	36.07	32.17	39.23	29.78	65.13	56.92	75.80	69.62	85.40	73.99	95.22	90.89	97.68	95.34
	3	0.92	1.10	17.11	14.31	29.48	26.52	24.91	19.92	58.12	50.79	70.72	64.85	78.75	69.27	93.74	89.24	96.79	94.70
80	1	30.48	31.18	55.18	51.57	66.99	62.95	86.28	78.44	95.19	92.17	97.41	95.79	99.85	99.13	99.99	99.92	99.99	99.96
	2	24.46	22.16	50.37	45.99	63.23	59.12	81.56	72.50	92.81	89.49	96.31	93.84	99.73	98.86	99.96	99.84	99.98	99.93
	3	14.30	11.64	43.47	38.31	57.47	53.29	75.34	67.62	91.08	87.42	95.18	93.09	99.43	98.71	99.93	99.80	99.99	99.93
160	1	69.54	64.33	86.55	83.08	92.12	89.91	99.58	99.12	99.94	99.86	100.00	99.97	100.00	100.00	100.00	100.00	100.00	100.00
	2	65.01	60.15	85.05	80.37	91.30	88.13	99.38	98.81	99.88	99.73	99.94	99.91	100.00	100.00	100.00	100.00	100.00	100.00
	3	56.57	50.28	80.47	75.82	88.31	85.08	99.41	98.43	99.83	99.71	99.94	99.85	100.00	100.00	100.00	100.00	100.00	100.00

Table 23: (Exp 8.2, $M = 20,000$) Empirical power of the *warp-speed* wild bootstrap (WB) test and the *warp-speed* wild cluster bootstrap (WCB) test of no remaining heterogeneity against a second transition with a different transition variable and $\beta_2 = \beta_1$ for various N and T, with homoskedastic (Panel (a)) and heteroskedastic (Panel (b)) errors. significance level equals 0.01, 0.05 and 0.1, respectively.

		T=5						T=10						T=20					
		1%		5%		10%		1%		5%		10%		1%		5%		10%	
N	m_a	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB	WB	WCB
Panel(a): Homoskedasticity																			
20	1	5.94	5.66	20.58	19.75	31.55	31.09	39.51	29.41	64.17	55.15	75.27	67.83	89.92	70.98	97.16	91.66	98.66	96.10
	2	0.13	0.16	9.90	10.11	23.11	21.18	27.02	19.11	55.64	47.35	68.40	60.93	85.90	67.64	95.58	89.25	97.89	94.80
	3	0.13	0.13	2.02	1.88	13.34	12.84	8.48	8.00	45.25	38.37	60.55	53.97	78.61	60.33	93.29	86.70	96.61	93.27
40	1	22.19	19.43	44.00	41.76	57.44	54.91	82.99	70.68	94.16	90.34	96.84	95.00	99.93	99.16	99.98	99.95	99.99	99.98
	2	13.80	12.44	37.91	34.56	52.12	49.02	76.86	66.22	91.33	86.73	95.55	93.17	99.85	99.06	100.00	99.91	100.00	99.99
	3	4.57	4.81	28.48	26.64	43.84	41.39	68.89	58.11	88.05	83.13	93.36	90.81	99.78	98.94	99.99	99.89	100.00	99.98
80	1	58.75	54.96	78.97	77.26	87.04	86.30	99.55	98.80	99.95	99.87	99.98	99.97	100.00	100.00	100.00	100.00	100.00	100.00
	2	52.12	49.03	75.92	72.95	84.78	83.30	99.45	98.60	99.91	99.83	99.98	99.94	100.00	100.00	100.00	100.00	100.00	100.00
	3	41.45	40.83	69.66	66.44	80.23	77.91	98.93	98.18	99.85	99.71	99.94	99.89	100.00	100.00	100.00	100.00	100.00	100.00
160	1	94.72	93.41	98.78	98.39	99.43	99.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	2	93.93	92.75	98.48	98.16	99.36	99.19	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	3	91.52	89.17	97.78	97.21	99.00	98.64	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Panel(b): Heteroskedasticity																			
20	1	4.43	3.42	16.37	13.52	26.28	22.68	21.29	14.46	41.62	33.99	53.83	46.17	56.39	34.69	76.89	62.70	84.65	75.25
	2	0.20	0.19	7.77	5.91	18.25	15.88	9.94	7.07	32.38	26.00	47.74	40.51	44.27	27.06	69.59	56.91	80.24	71.00
	3	0.28	0.28	1.16	0.91	10.09	7.96	1.50	1.47	24.33	19.77	39.83	34.94	30.87	17.73	63.40	51.12	76.12	66.76
40	1	12.19	8.77	29.90	25.34	41.77	37.67	49.27	35.89	70.49	62.92	80.08	74.14	90.79	79.04	96.80	93.22	98.31	96.49
	2	7.28	5.12	24.34	20.22	36.58	32.68	39.94	31.38	65.25	56.07	76.50	68.91	86.89	75.70	95.50	90.78	97.49	95.43
	3	1.41	0.88	17.83	14.60	30.76	26.86	29.57	21.66	57.66	49.85	71.42	63.81	80.00	69.12	93.71	89.08	96.82	94.47
80	1	32.14	27.24	54.79	49.80	66.62	62.66	85.80	78.26	94.88	91.86	97.25	95.65	99.83	99.22	99.96	99.88	99.99	99.96
	2	27.93	22.00	50.60	45.45	63.02	58.58	80.39	72.83	93.08	89.45	96.31	94.19	99.78	98.98	99.96	99.89	99.98	99.96
	3	17.32	13.62	43.63	38.09	57.62	52.26	75.31	66.02	90.83	87.20	95.38	92.98	99.56	98.89	99.98	99.86	100.00	99.98
160	1	68.86	64.99	86.59	83.30	92.01	89.88	99.70	99.15	99.94	99.89	99.98	99.95	100.00	100.00	100.00	100.00	100.00	100.00
	2	63.79	59.54	84.48	81.11	90.52	88.31	99.52	98.91	99.91	99.83	99.96	99.92	100.00	100.00	100.00	100.00	100.00	100.00
	3	55.83	49.80	79.75	76.26	87.85	85.50	99.30	98.61	99.91	99.80	99.96	99.92	100.00	100.00	100.00	100.00	100.00	100.00