

Table A. Summary of Simulation Results

Simulation Number	Obs (N)	Time (T)	Series Var	Outlier Type	No. of Outliers	s=1.5		s=1.75		s=2		s=2.5		s=3	
						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
1	10	10	1	None	0		9.1		9.5		6.3		4.3		1.4
2	10	10	1	Var	1	87.0	8.2	86.0	8.6	86.0	5.6	75.0	3.0	69.0	0.8
3	10	10	1	Var	3	70.4	4.7	68.2	3.6	69.5	2.5	63.6	1.3	59.2	0.9
4	10	10	1	Trend	1	92.3	9.2	92.5	9.2	95.3	6.2	92.5	3.7	87.9	1.5
5	10	10	1	Trend	3	72.3	6.1	68.8	5.8	69.8	3.7	65.1	2.1	64.5	1.6
6	10	10	3	None	0		9.3		10.0		6.2		4.0		1.5
7	10	10	3	Var	1	92.3	9.3	95.3	9.5	95.3	5.9	89.7	3.2	82.2	1.0
8	10	10	3	Var	3	69.2	4.6	66.9	4.0	67.0	1.9	60.1	1.4	57.3	0.7
9	10	10	3	Trend	1	29.9	6.4	32.7	8.4	25.3	5.1	28.0	3.3	21.5	1.2
10	10	10	3	Trend	3	31.7	6.8	31.2	6.8	25.5	5.2	22.7	2.9	19.0	1.4
11	10	10	10	None	0		8.4		6.3		8.4		3.8		3.8
12	10	10	10	Var	1	78.5	8.5	81.3	9.3	84.1	5.8	71.0	2.8	66.3	0.7
13	10	10	10	Var	3	57.9	4.6	51.7	2.4	54.8	2.6	44.2	1.0	40.8	0.2
14	10	10	10	Trend	1	7.5	8.5	8.4	9.2	5.6	5.9	7.5	4.7	1.9	1.5
15	10	10	10	Trend	3	10.0	9.9	12.4	12.0	6.9	7.0	4.4	6.2	3.7	2.3
16	10	25	1	None	0		6.3		7.8		4.7		3.1		1.4
17	10	25	1	Var	1	98.7	7.8	96.7	5.6	96.7	3.8	93.3	2.1	90.0	1.6
18	10	25	1	Var	3	71.1	3.7	69.3	2.6	66.4	1.7	59.6	0.8	53.1	0.1
19	10	25	1	Trend	1	100.0	7.9	99.3	6.1	100.0	3.8	98.7	2.1	99.3	1.7
20	10	25	1	Trend	3	85.7	5.4	83.6	4.5	83.1	2.3	77.8	1.2	79.3	0.9
21	10	25	3	None	0		8.2		7.3		4.4		2.1		2.5
22	10	25	3	Var	1	93.3	8.2	92.7	6.7	88.7	4.1	87.3	2.0	88.0	2.3
23	10	25	3	Var	3	70.4	4.7	65.6	2.7	61.7	1.6	56.2	0.7	54.0	0.6
24	10	25	3	Trend	1	76.0	7.3	76.0	5.7	78.0	4.2	67.0	1.7	62.0	2.1
25	10	25	3	Trend	3	58.0	5.3	56.2	4.0	54.6	2.1	47.2	1.3	45.3	0.7
26	10	25	10	None	0		9.9		5.6		5.2		1.8		1.6

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						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
27	10	25	10	Var	1	96.7	9.8	94.0	5.3	91.3	5.2	88.0	1.9	84.0	1.2
28	10	25	10	Var	3	66.0	4.5	67.1	2.6	64.2	1.1	58.8	0.4	52.4	0.4
29	10	25	10	Trend	1	15.3	9.2	6.7	5.4	6.7	4.4	6.0	1.8	8.0	1.7
30	10	25	10	Trend	3	16.4	10.7	10.0	6.8	6.4	4.8	5.1	1.9	4.2	1.6
31	10	50	1	None	0		6.9		4.4		3.9		1.9		1.1
32	10	50	1	Var	1	100.0	6.9	100.0	4.5	100.0	3.9	100.0	1.9	98.7	1.1
33	10	50	1	Var	3	73.8	3.9	71.8	2.2	69.6	1.5	70.0	1.2	70.1	0.2
34	10	50	1	Trend	1	100.0	6.9	100.0	4.4	100.0	3.9	100.0	1.9	100.0	1.1
35	10	50	1	Trend	3	98.4	6.5	96.6	4.0	94.4	3.6	94.8	1.5	94.3	0.9
36	10	50	3	None	0		7.8		5.5		4.5		3.0		1.3
37	10	50	3	Var	1	99.3	6.9	99.3	4.5	99.3	3.9	98.7	1.9	97.3	1.1
38	10	50	3	Var	3	73.1	3.0	71.6	1.5	71.3	1.9	69.3	0.5	62.2	0.1
39	10	50	3	Trend	1	98.7	7.8	99.3	5.7	97.3	4.5	94.0	2.9	95.3	1.3
40	10	50	3	Trend	3	80.9	4.0	77.6	3.1	75.3	2.7	73.1	1.5	72.9	0.4
41	10	50	10	None	0		5.3		3.7		2.9		1.4		1.5
42	10	50	10	Var	1	100.0	5.3	100.0	3.7	100.0	2.9	99.3	1.3	97.3	1.5
43	10	50	10	Var	3	72.9	3.2	72.9	2.4	71.8	1.0	69.8	0.4	61.8	0.2
44	10	50	10	Trend	1	49.3	5.0	55.3	3.7	54.0	2.6	50.0	1.1	45.3	0.9
45	10	50	10	Trend	3	36.9	4.7	33.8	3.4	35.1	3.1	26.4	0.9	22.9	0.5
46	25	10	1	None	0		23.3		19.2		15.2		8.4		3.4
47	25	10	1	Var	1	94.6	24.2	90.5	18.7	89.8	15.4	78.2	8.6	74.8	3.5
48	25	10	1	Var	3	75.3	19.6	72.7	15.0	70.7	14.3	62.3	7.3	60.9	3.3
49	25	10	1	Trend	1	96.7	25.1	96.0	22.7	95.7	12.8	94.7	7.9	86.7	3.2
50	25	10	1	Trend	3	75.8	15.6	75.6	15.3	69.3	8.3	72.0	4.7	68.2	2.6
51	25	10	3	None	0		23.8		19.3		15.4		8.7		3.8
52	25	10	3	Var	1	92.0	20.9	82.0	15.2	86.0	15.2	79.3	7.6	69.3	3.7

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Simulation Number	Obs (N)	Time (T)	Series Var	Outlier Type	No. of Outliers	s=1.5		s=1.75		s=2		s=2.5		s=3	
						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
53	25	10	3	Var	3	75.1	21.3	72.2	17.2	69.3	14.6	62.7	6.4	59.3	2.8
54	25	10	3	Trend	1	64.7	24.9	56.0	20.4	44.7	15.6	35.3	7.1	26.7	3.6
55	25	10	3	Trend	3	56.7	22.7	52.7	17.9	47.1	14.2	32.9	6.6	26.0	3.2
56	25	10	10	None	0		23.6		15.2		11.6		5.8		2.1
57	25	10	10	Var	1	84.7	22.9	82.7	15.7	86.0	11.3	84.0	5.9	74.7	1.8
58	25	10	10	Var	3	74.4	21.1	68.7	12.1	69.1	10.4	60.9	2.3	55.3	1.2
59	25	10	10	Trend	1	42.7	24.7	36.0	20.3	24.0	16.1	15.3	9.2	5.3	4.1
60	25	10	10	Trend	3	46.0	25.8	34.4	19.5	26.9	15.7	15.1	9.5	7.6	4.5
61	25	25	1	None	0		17.9		12.2		7.4		4.6		1.2
62	25	25	1	Var	1	96.7	17.6	97.3	12.3	94.7	7.3	96.0	4.6	97.3	1.2
63	25	25	1	Var	3	78.0	13.5	75.3	9.6	71.1	4.7	69.3	3.4	71.8	0.9
64	25	25	1	Trend	1	100.0	12.6	100.0	7.4	100.0	5.5	100.0	2.6	100.0	1.1
65	25	25	1	Trend	3	82.2	6.8	80.9	5.1	78.0	3.8	74.9	1.3	75.6	0.6
66	25	25	3	None	0		14.9		7.8		8.6		2.9		2.1
67	25	25	3	Var	1	96.0	17.8	96.7	12.2	96.0	7.4	95.3	4.6	94.7	1.2
68	25	25	3	Var	3	77.5	13.8	74.2	9.7	71.1	5.8	68.0	3.4	69.5	1.1
69	25	25	3	Trend	1	84.0	18.0	82.7	12.2	82.0	7.2	74.7	4.1	67.3	1.2
70	25	25	3	Trend	3	68.0	12.8	64.4	8.9	62.8	4.7	58.0	3.1	53.8	1.3
71	25	25	10	None	0		15.8		10.1		7.5		2.8		0.9
72	25	25	10	Var	1	97.7	16.1	96.6	10.8	97.3	7.2	94.7	2.8	90.7	0.9
73	25	25	10	Var	3	75.8	14.8	73.8	9.6	70.8	5.1	68.6	2.0	69.1	0.6
74	25	25	10	Trend	1	28.7	16.1	17.3	10.1	16.0	7.0	6.7	3.3	5.3	1.3
75	25	25	10	Trend	3	30.0	16.3	15.6	9.7	15.8	7.3	8.9	3.9	4.4	0.7
76	25	50	1	None	0		12.9		8.6		5.9		2.9		1.1
77	25	50	1	Var	1	100.0	12.9	100.0	8.7	100.0	5.9	100.0	2.8	100.0	1.1
78	25	50	1	Var	3	73.1	4.8	73.3	3.6	71.7	2.7	73.1	1.8	72.4	0.3

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Simulation Number	Obs (N)	Time (T)	Series Var	Outlier Type	No. of Outliers	s=1.5		s=1.75		s=2		s=2.5		s=3	
						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
79	25	50	1	Trend	1	100.0	12.9	100.0	8.7	100.0	5.9	100.0	2.9	100.0	1.1
80	25	50	1	Trend	3	96.0	10.8	94.4	7.4	94.0	5.1	91.3	2.9	92.0	1.1
81	25	50	3	None	0		12.9		8.7		5.9		2.9		1.1
82	25	50	3	Var	1	100.0	12.9	100.0	8.7	100.0	5.9	99.3	2.8	97.3	1.1
83	25	50	3	Var	3	75.3	8.7	74.4	5.2	71.5	3.5	72.7	1.9	70.9	0.7
84	25	50	3	Trend	1	99.3	13.5	98.2	9.1	97.3	5.6	98.0	2.8	96.7	1.1
85	25	50	3	Trend	3	78.4	7.8	75.3	4.8	72.0	2.7	72.2	1.8	71.3	0.8
86	25	50	10	None	0		15.8		8.6		5.5		1.2		0.7
87	25	50	10	Var	1	100.0	12.9	100.0	8.7	100.0	5.9	99.3	2.9	98.0	1.1
88	25	50	10	Var	3	76.2	11.3	73.6	5.2	73.3	3.9	73.1	0.7	71.3	0.6
89	25	50	10	Trend	1	67.3	13.9	58.0	7.7	53.3	4.9	45.3	0.7	48.0	0.5
90	25	50	10	Trend	3	57.3	10.8	48.4	7.4	45.6	5.1	37.3	0.9	39.6	0.6
91	50	10	1	None	0		41.0		30.1		26.5		14.3		7.5
92	50	10	1	Var	1	97.3	43.3	92.7	34.4	89.1	24.5	85.4	17.3	81.8	9.4
93	50	10	1	Var	3	87.9	47.8	83.9	35.2	78.2	24.6	71.2	16.9	65.7	9.5
94	50	10	1	Trend	1	99.3	44.1	97.3	35.3	94.6	24.5	94.7	15.2	92.7	8.8
95	50	10	1	Trend	3	87.7	42.7	83.1	30.6	80.4	22.7	74.0	11.6	70.7	5.8
96	50	10	3	None	0		38.2		30.4		20.6		14.6		3.9
97	50	10	3	Var	1	91.3	37.9	93.3	30.4	88.7	20.3	84.0	13.6	78.0	3.9
98	50	10	3	Var	3	83.6	36.4	82.0	30.1	75.8	21.3	70.9	14.2	60.7	4.4
99	50	10	3	Trend	1	69.3	37.7	65.3	29.1	58.0	20.0	36.0	12.3	28.0	4.7
100	50	10	3	Trend	3	71.3	37.7	68.2	30.0	58.7	20.2	39.7	11.5	26.9	5.1
101	50	10	10	None	0		41.0		30.1		26.5		14.3		7.6
102	50	10	10	Var	1	97.3	41.1	86.0	29.2	86.0	26.1	80.7	12.2	76.7	7.2
103	50	10	10	Var	3	86.9	39.9	80.0	28.9	75.1	25.0	68.9	13.1	63.1	7.1
104	50	10	10	Trend	1	68.7	39.9	50.0	30.3	40.7	26.9	26.0	14.3	16.7	7.8

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						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
105	50	10	10	Trend	3	71.6	40.9	51.6	30.1	42.0	26.6	28.7	15.1	18.2	8.7
106	50	25	1	None	0		27.3		16.5		10.4		3.9		1.1
107	50	25	1	Var	1	100.0	27.3	98.7	16.8	97.3	10.5	97.3	3.9	95.3	1.1
108	50	25	1	Var	3	83.8	26.8	79.1	17.3	75.6	10.1	72.2	4.6	71.6	1.1
109	50	25	1	Trend	1	100.0	27.2	100.0	16.5	100.0	10.5	100.0	3.9	100.0	1.1
110	50	25	1	Trend	3	80.9	20.2	77.3	10.7	73.7	5.8	73.8	2.3	72.7	0.6
111	50	25	3	None	0		25.7		20.8		10.8		4.7		0.9
112	50	25	3	Var	1	97.3	25.4	98.0	20.5	96.0	10.7	94.7	4.7	96.0	0.9
113	50	25	3	Var	3	81.8	23.1	76.9	19.4	75.3	11.7	72.2	5.3	71.3	0.9
114	50	25	3	Trend	1	86.0	25.4	85.3	21.4	80.0	11.2	72.0	5.1	70.7	0.9
115	50	25	3	Trend	3	77.1	26.2	72.5	20.9	65.6	10.8	60.2	4.9	58.7	0.9
116	50	25	10	None	0		22.1		14.9		12.4		5.2		0.6
117	50	25	10	Var	1	99.3	22.9	99.3	14.8	99.3	12.4	98.0	5.2	97.3	0.6
118	50	25	10	Var	3	80.0	21.3	79.1	14.2	77.3	11.9	73.3	5.2	68.2	0.7
119	50	25	10	Trend	1	42.0	23.1	33.3	15.4	26.7	12.2	14.0	5.6	2.7	0.7
120	50	25	10	Trend	3	45.3	23.2	39.1	15.8	26.7	11.3	14.0	4.9	4.9	1.3
121	50	50	1	None	0		21.5		11.8		7.4		1.6		0.4
122	50	50	1	Var	1	100.0	21.6	100.0	11.8	100.0	7.3	100.0	1.6	100.0	0.4
123	50	50	1	Var	3	81.1	20.1	76.2	9.9	73.1	7.3	73.5	1.3	72.4	0.3
124	50	50	1	Trend	1	100.0	21.5	100.0	11.8	100.0	7.3	100.0	1.6	100.0	0.4
125	50	50	1	Trend	3	91.8	16.8	90.1	10.1	88.9	6.4	87.6	1.4	86.2	0.3
126	50	50	3	None	0		17.1		7.8		6.3		1.8		0.3
127	50	50	3	Var	1	100.0	17.1	100.0	7.6	100.0	6.1	99.3	1.7	100.0	0.3
128	50	50	3	Var	3	76.2	16.5	72.9	7.2	73.3	5.5	71.3	1.4	69.6	0.3
129	50	50	3	Trend	1	98.7	16.9	97.3	7.8	98.7	6.2	96.7	1.7	98.0	0.3
130	50	50	3	Trend	3	76.9	12.4	74.0	4.7	74.2	3.9	70.9	1.1	72.2	0.2

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						TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR	TDR	FDR
131	50	50	10	None	0		18.5		14.5		5.7		2.9		0.7
132	50	50	10	Var	1	100.0	18.5	100.0	14.5	100.0	5.6	100.0	2.9	100.0	0.7
133	50	50	10	Var	3	81.1	17.3	77.3	12.6	74.7	5.1	74.7	3.6	72.7	1.2
134	50	50	10	Trend	1	71.3	19.4	63.3	14.3	56.0	5.8	48.7	3.1	43.3	0.6
135	50	50	10	Trend	3	66.7	20.1	57.3	17.1	49.6	6.9	41.1	2.8	38.8	0.8