Online Supplementary Material for:

Cointegrating Polynomial Regressions: Fully Modified OLS Estimation and Inference

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Online Appendix B: Modified Bonferroni Bound Tests, the Minimum Volatility Rule and Critical Values for the CS Test

By construction tests based on the Bonferroni bound are conservative and are known to be particularly conservative when the individual test statistics that are combined are highly correlated (see Hommel, 1986). In the literature several less conservative modified Bonferroni bound type test procedures have been presented, e.g., in Hommel (1988), Simes (1986) or Rom (1990). Denote the test statistics ordered in magnitude by $CT_b^{(1)} \geq \cdots \geq CT_b^{(M)}$. The modification of Hommel (1988) amounts to rejecting the null hypothesis if at least one of the test statistics $CT_b^{(j)} \geq c_{\alpha^H(j)}$, with $\alpha^H(j) = \frac{j}{C_M}\frac{\alpha}{M}$ and $C_M = 1 + 1/2 + \cdots + 1/M$. The modification of Simes (1986) is very similar and almost coincides with the procedure of Hommel (1988) with the only difference being that the additional adjustment factor C_M is not included, i.e., $\alpha^S(j) = j\frac{\alpha}{M}$. A further modification of the computation of the levels used in the sequential test procedure has been proposed in Rom (1990). For this modification the levels $\alpha^R(j)$ are computed recursively via $\alpha^R(M) = \alpha$, $\alpha^R(M-1) = \frac{\alpha}{2}$ and for $k = 3, \ldots, M$ they are computed as

$$\alpha^R(M-k+1) = \frac{1}{k}\left[\sum_{j=1}^{k-1}\alpha^j - \sum_{j=1}^{k-1}\binom{k}{j}(\alpha^R(M-j))^{k-j}\right].$$

The null hypothesis is rejected if all test statistics $CT_b^{(j)} \geq c_{\alpha^R(j)}$.

The block length selection for the sub-sampling is based on the *minimum volatility* rule proposed by Romano and Wolf (2001, p. 1297). To be precise, we choose $b_{\min} = 0.5T^{1/2}$ and $b_{\max} = 2.5T^{1/2}$. For all $b \in [b_{\min}+2, b_{\max}-2]$ we compute the mean m and standard deviation sd of the test statistics over the five neighboring block sizes, i.e., for a block size b^*, we use the test statistics CT_b for $b = b^*-2, b^*-1, b^*, b^*+1, b^*+2$ to compute the mean and standard deviation of CT_b as a function of b. The optimal block length is then given by the value $b_{opt} \in [b_{\min}+2, b_{\max}-2]$ that minimizes, again over five five neighboring values of b, the change of the empirical distribution in terms of the first two moments. Hence we choose the block length to minimize $mv_{b_i} = std(m_{b_i-2}, m_{b_i-1}, m_{b_i}, m_{b_i+1}, m_{b_i+2}) + std(sd_{b_i-2}, sd_{b_i-1}, sd_{b_i}, sd_{b_i+1}, sd_{b_i+2})$, with $std(\cdot)$ denoting the standard deviation. The $M_{opt} = \lfloor T/b_{opt} \rfloor$ sub-sample test statistics can then be used in conjunction with any of the Bonferroni type procedures.

`MATLAB` code that implements the described test procedures is available from the authors upon request.

Table B1: Critical values $c_{\frac{\alpha}{M}}$ from

$$\mathbb{P}\left[\int_0^1 W(r)^2 dr \geq c_{\frac{\alpha}{M}}\right] = \frac{\alpha}{M} \text{ for } \alpha = 5\% \text{ and } 10\%$$

M	5%	10%	M	5%	10%	M	5%	10%
Sum in (27) truncated at 30								
2	2.135	1.656	15	3.588	3.076	28	4.034	3.538
3	2.421	1.934	16	3.635	3.121	29	4.058	3.563
4	2.627	2.135	17	3.680	3.164	30	4.081	3.588
5	2.787	2.292	18	3.721	3.203	31	4.103	3.612
6	2.917	2.421	19	3.760	3.241	32	4.124	3.635
7	3.027	2.531	20	3.797	3.276	33	4.145	3.658
8	3.121	2.627	21	3.832	3.309	34	4.165	3.680
9	3.203	2.711	22	3.865	3.340	35	4.184	3.700
10	3.276	2.787	23	3.897	3.370	36	4.202	3.721
11	3.340	2.855	24	3.927	3.398	37	4.220	3.741
12	3.398	2.917	25	3.955	3.424	38	4.237	3.760
13	3.484	2.974	26	3.983	3.484	39	4.253	3.779
14	3.538	3.027	27	4.009	3.511	40	4.269	3.797
Sum in (27) truncated at 10								
2	2.135	1.656	15	3.582	3.081	28	3.997	3.533
3	2.421	1.934	16	3.627	3.128	29	4.018	3.558
4	2.626	2.135	17	3.669	3.172	30	4.038	3.582
5	2.785	2.292	18	3.709	3.214	31	4.058	3.605
6	2.912	2.421	19	3.746	3.253	32	4.076	3.627
7	3.031	2.531	20	3.781	3.291	33	4.094	3.649
8	3.128	2.626	21	3.813	3.326	34	4.111	3.669
9	3.214	2.710	22	3.844	3.360	35	4.127	3.689
10	3.291	2.785	23	3.873	3.392	36	4.143	3.709
11	3.360	2.852	24	3.900	3.422	37	4.158	3.728
12	3.422	2.912	25	3.926	3.452	38	4.172	3.746
13	3.480	2.977	26	3.951	3.480	39	4.186	3.763
14	3.533	3.031	27	3.974	3.507	40	4.199	3.781

Note: Number (27) refers to equation (27) in the underlying article.

Online Appendix C: Additional Simulation Results

As mentioned in the main text, in addition to the bandwidth rules of Andrews (1991) and the simplified version of Newey and West (1994) we also use the bandwidths $T^{1/5}, T^{1/4}, T^{1/3}$. These are considered because of the results of Hong and Phillips (2010, Theorems 4 and 5) that show – for the special case of the RESET test considered in that paper – that the convergence behavior under the null and the divergence behavior under the alternative depend upon the ratio of the bandwidth to the sample size. In particular they show that in their setup smaller bandwidths lead to slower convergence of their test statistic under the null but to faster divergence (i.e., higher rejection probabilities) under their alternative. In their simulations, they, however, find only small effects of the bandwidth to sample size ratio. To assess whether the situation is similar in our setting, we include these bandwidths also in our simulations. The main findings in relation to the additional bandwidths $T^{1/5}, T^{1/4}, T^{1/3}$ are:

- The additional bandwidth choices do not have large or systematic effects on the coefficient estimators (see Tables C1 to C3).
- The null rejection probabilities are to a certain extent influenced by bandwidth choice (see Table C4). But also here the effects are small and can go either way, depending upon sample size, kernel and ρ_1, ρ_2 as well as null hypothesis considered.
- With the minimal effects on null rejection probabilities, it is clear that size-corrected power is not strongly affected by the bandwidth choice from the considered set. Figures C4 to C6 show that there is hardly any effect at all.

Compared to the main text we include here in addition the t-test results for $H_0 : \beta_2 = -0.3$, i.e., we also consider the coefficient to the square of the integrated variable x_t^2. Here the findings are as expected, given the faster convergence rate of $\hat{\beta}_2^+$ than of $\hat{\beta}_1^+$. First, over-rejections under the null are smaller than for the other hypotheses considered. Second, power increases faster in the difference between null and alternative coefficient value than for the other hypotheses.

Table C1: Bias for coefficients β_1 and β_2

Panel A: Bias for coefficient β_1

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	-.0013	-.0019	-.0019	-.0018	-.0019	-.0018	-.0019	-.0018	-.0018	-.0019	-.0018
0.3	.0167	-.0034	-.0039	-.0049	-.0050	-.0044	-.0042	-.0047	-.0060	-.0057	-.0054
0.6	.0743	.0399	.0409	.0419	.0404	.0418	.0410	.0425	.0433	.0411	.0433
0.8	.1952	.1567	.1597	.1655	.1657	.1633	.1595	.1639	.1710	.1655	.1685

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	-.0003	-.0005	-.0005	-.0006	-.0005	-.0005	-.0005	-.0005	-.0006	-.0006	-.0005
0.3	.0087	-.0012	-.0014	-.0018	-.0019	-.0014	-.0015	-.0016	-.0022	-.0020	-.0017
0.6	.0396	.0228	.0239	.0252	.0250	.0241	.0240	.0253	.0265	.0261	.0256
0.8	.1117	.0933	.0967	.1027	.1070	.0974	.0963	.1006	.1078	.1100	.1017

Panel B: Bias ($\times$1000) for coefficient β_2

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0841	.0895	.0877	.0841	.0852	.0860	.0878	.0842	.0810	.0825	.0832
0.3	.0868	.1162	.1132	.1057	.1067	.1096	.1140	.1086	.0996	.1049	.1046
0.6	.0970	.1611	.1604	.1545	.1425	.1583	.1616	.1600	.1505	.1311	.1571
0.8	.1576	.2340	.2371	.2399	.2197	.2400	.2369	.2421	.2433	.2031	.2459

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	-.0021	-.0017	-.0018	-.0007	-.0005	-.0018	-.0023	-.0023	.0005	-.0015	-.0023
0.3	.0042	-.0000	-.0003	.0008	.0014	-.0003	-.0009	-.0013	.0023	-.0002	-.0015
0.6	.0354	.0245	.0229	.0220	.0271	.0226	.0224	.0202	.0219	.0255	.0197
0.8	.1356	.1213	.1173	.1112	.1150	.1165	.1176	.1122	.1066	.1164	.1108

Table C2: RMSE for coefficients β_1 and β_2

Panel A: RMSE for coefficient β_1

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0670	.0717	.0721	.0728	.0727	.0725	.0723	.0729	.0738	.0736	.0735
0.3	.0938	.0962	.0967	.0977	.0977	.0973	.0967	.0975	.0991	.0987	.0985
0.6	.1725	.1570	.1572	.1580	.1589	.1577	.1572	.1579	.1593	.1606	.1588
0.8	.3285	.3008	.3016	.3038	.3063	.3029	.3015	.3032	.3067	.3093	.3054

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0325	.0336	.0337	.0339	.0339	.0337	.0337	.0339	.0341	.0341	.0339
0.3	.0470	.0464	.0465	.0468	.0468	.0465	.0465	.0467	.0471	.0469	.0468
0.6	.0915	.0812	.0816	.0821	.0823	.0817	.0816	.0822	.0829	.0830	.0823
0.8	.1919	.1752	.1770	.1806	.1846	.1775	.1769	.1794	.1842	.1879	.1801

Panel B: RMSE for coefficient β_2

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0056	.0058	.0058	.0058	.0058	.0058	.0058	.0058	.0059	.0059	.0059
0.3	.0075	.0077	.0077	.0077	.0077	.0077	.0077	.0077	.0078	.0078	.0078
0.6	.0119	.0117	.0117	.0118	.0119	.0118	.0117	.0118	.0119	.0120	.0119
0.8	.0192	.0188	.0188	.0189	.0193	.0189	.0188	.0189	.0190	.0197	.0190

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0019	.0019	.0019	.0019	.0019	.0019	.0019	.0019	.0019	.0019	.0019
0.3	.0027	.0027	.0027	.0027	.0027	.0027	.0027	.0027	.0027	.0027	.0027
0.6	.0045	.0043	.0043	.0043	.0043	.0043	.0043	.0043	.0043	.0044	.0043
0.8	.0080	.0077	.0077	.0078	.0079	.0077	.0077	.0078	.0078	.0080	.0078

Table C3: Bias and RMSE for coefficient δ

Panel A: Bias ($\times 1000$) for coefficient δ

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	-0.0220	-0.0305	-0.0337	-0.0422	-0.0443	-0.0373	-0.0303	-0.0390	-0.0365	-0.0398	-0.0411
0.3	-0.1559	-0.0782	-0.0818	-0.0928	-0.0942	-0.0872	-0.0763	-0.0878	-0.0851	-0.0878	-0.0913
0.6	-0.5040	-0.3545	-0.3636	-0.3858	-0.3984	-0.3766	-0.3579	-0.3797	-0.3859	-0.4121	-0.3905
0.8	-1.1533	-0.9913	-1.0030	-1.0309	-1.0289	-1.0198	-0.9971	-1.0246	-1.0354	-0.9970	-1.0396

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	-0.0344	-0.0233	-0.0220	-0.0204	-0.0187	-0.0217	-0.0214	-0.0208	-0.0186	-0.0176	-0.0207
0.3	-0.0635	-0.0417	-0.0393	-0.0359	-0.0335	-0.0389	-0.0389	-0.0373	-0.0327	-0.0318	-0.0369
0.6	-0.1542	-0.1266	-0.1249	-0.1205	-0.1130	-0.1246	-0.1255	-0.1246	-0.1169	-0.1153	-0.1238
0.8	-0.3683	-0.3363	-0.3352	-0.3330	-0.2998	-0.3350	-0.3354	-0.3355	-0.3306	-0.2866	-0.3349

Panel B: RMSE for coefficient δ

$T = 100$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	0.0065	0.0067	0.0068	0.0069	0.0069	0.0069	0.0068	0.0069	0.0071	0.0071	0.0070
0.3	0.0097	0.0092	0.0093	0.0094	0.0095	0.0094	0.0093	0.0094	0.0097	0.0097	0.0096
0.6	0.0206	0.0167	0.0167	0.0167	0.0169	0.0167	0.0167	0.0167	0.0169	0.0171	0.0168
0.8	0.0438	0.0380	0.0381	0.0385	0.0389	0.0384	0.0381	0.0384	0.0390	0.0394	0.0387

$T = 200$

		Bartlett Kernel					QS Kernel				
ρ_1, ρ_2	OLS	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	0.0022	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023	0.0023
0.3	0.0034	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0032	0.0033	0.0032	0.0032
0.6	0.0077	0.0062	0.0062	0.0063	0.0063	0.0062	0.0062	0.0063	0.0064	0.0064	0.0063
0.8	0.0179	0.0157	0.0159	0.0164	0.0168	0.0160	0.0159	0.0162	0.0169	0.0172	0.0163

Table C4: Empirical Null Rejection Probabilities, 0.05 Level

Panel A: t-tests for $H_0 : \beta_1 = 5$

$T = 100$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0594	.1060	.0754	.0826	.1020	.1058	.0932	.1222	.0842	.0972	.1246	.1234	.1136
0.3	.1542	.1424	.1128	.1092	.1138	.1162	.1092	.1462	.1034	.1038	.1168	.1164	.1118
0.6	.3706	.2678	.2146	.1896	.1662	.1604	.1716	.2498	.1788	.1604	.1474	.1488	.1514
0.8	.5876	.4612	.4270	.3998	.3622	.3108	.3774	.4286	.3940	.3680	.3282	.2984	.3408

$T = 200$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0478	.0784	.0588	.0634	.0722	.0738	.0650	.0890	.0658	.0714	.0862	.0784	.0726
0.3	.1472	.1100	.0932	.0874	.0872	.0878	.0866	.1058	.0818	.0796	.0844	.0802	.0790
0.6	.3736	.2306	.1930	.1710	.1458	.1350	.1660	.2010	.1638	.1446	.1278	.1242	.1406
0.8	.6154	.4410	.4228	.3906	.3412	.2930	.3820	.3968	.3880	.3538	.3150	.2846	.3446

Panel B: t-tests for $H_0 : \beta_2 = -0.3$

$T = 100$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0570	.1030	.0686	.0736	.0874	.0926	.0822	.1188	.0764	.0848	.1060	.1056	.0964
0.3	.1424	.1360	.1102	.1052	.1070	.1088	.1048	.1352	.1006	.0988	.1056	.1064	.1036
0.6	.2776	.1956	.1772	.1590	.1384	.1340	.1466	.1800	.1498	.1314	.1182	.1216	.1210
0.8	.4202	.2784	.2696	.2378	.1970	.1626	.2116	.2462	.2306	.2022	.1640	.1552	.1770

$T = 200$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0528	.0748	.0616	.0674	.0758	.0764	.0684	.0846	.0668	.0712	.0846	.0810	.0728
0.3	.1368	.1000	.0916	.0882	.0870	.0872	.0876	.0962	.0822	.0798	.0808	.0798	.0796
0.6	.2678	.1466	.1558	.1364	.1118	.1042	.1326	.1242	.1296	.1112	.0952	.0938	.1082
0.8	.4368	.2438	.2596	.2196	.1726	.1320	.2128	.2056	.2170	.1844	.1460	.1264	.1790

Panel C: Wald tests for $H_0 : \beta_1 = 5, \beta_2 = -0.3$

$T = 100$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0568	.1348	.0832	.0946	.1184	.1238	.1092	.1706	.0972	.1146	.1478	.1466	.1352
0.3	.2002	.1958	.1410	.1382	.1442	.1470	.1402	.2032	.1260	.1294	.1476	.1470	.1372
0.6	.5258	.3878	.3018	.2714	.2364	.2226	.2472	.3550	.2556	.2266	.2038	.2070	.2120
0.8	.8124	.6652	.6356	.5982	.5462	.4800	.5650	.6250	.5894	.5486	.4978	.4654	.5188

$T = 200$

		Bartlett Kernel						QS Kernel					
ρ_1, ρ_2	OLS	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW	HAC	$T^{1/5}$	$T^{1/4}$	$T^{1/3}$	AND	NW
0.0	.0532	.0910	.0652	.0726	.0866	.0880	.0740	.1118	.0746	.0802	.1044	.0960	.0830
0.3	.1924	.1426	.1104	.1040	.1020	.1034	.1038	.1384	.0968	.0932	.1022	.0956	.0922
0.6	.5290	.3140	.2668	.2318	.1990	.1870	.2258	.2720	.2216	.1952	.1718	.1698	.1898
0.8	.8254	.6228	.6228	.5826	.5316	.4602	.5758	.5638	.5782	.5392	.4996	.4514	.5348

Table C5: Raw Power of Specification Tests, 0.05 Level, Bartlett Kernel, Newey-West

		Wald				LM				CT	CS
	ρ_1, ρ_2	I	II	III	IV	I	II	III	IV		
Panel A: T = 100											
(A)	0.0	0.5048	0.9704	0.9704	0.3600	0.3456	0.9590	0.9526	0.2658	0.4114	0.0296
	0.3	0.4938	0.9522	0.9502	0.3574	0.3380	0.9366	0.9240	0.2608	0.4044	0.0322
	0.6	0.5258	0.9206	0.9286	0.3844	0.3460	0.8860	0.8696	0.2634	0.4616	0.0380
	0.8	0.6428	0.8856	0.9268	0.4424	0.4282	0.8124	0.8236	0.3034	0.6262	0.0638
(B)	–	0.8128	0.4844	0.8446	0.5498	0.7122	0.3536	0.6580	0.4412	0.8424	0.1958
(C)	–	0.8024	0.4622	0.8232	0.5524	0.7012	0.3306	0.6314	0.4374	0.8422	0.2000
Panel B: T = 200											
(A)	0.0	0.6314	1.0000	1.0000	0.4880	0.5418	1.0000	0.9996	0.4200	0.7170	0.2326
	0.3	0.6258	0.9996	0.9992	0.4886	0.5364	0.9992	0.9992	0.4178	0.7110	0.2334
	0.6	0.6408	0.9988	0.9980	0.4918	0.5370	0.9968	0.9970	0.4182	0.7240	0.2334
	0.8	0.6936	0.9940	0.9952	0.5316	0.5838	0.9882	0.9890	0.4384	0.8056	0.2738
(B)	–	0.8728	0.6398	0.9076	0.6998	0.8456	0.5782	0.8640	0.6542	0.9706	0.7008
(C)	–	0.8766	0.6342	0.9086	0.7052	0.8472	0.5610	0.8608	0.6526	0.9760	0.6860

Table C6: Empirical Null Rejection Probabilities of Specification Tests, 0.05 Level,
Bartlett Kernel, Andrews

		Wald				LM				CT	CS
	ρ_1, ρ_2	I	II	III	IV	I	II	III	IV		
Panel A: T = 100											
(28)	0.0	0.1492	0.2188	0.2340	0.2150	0.0430	0.1296	0.0650	0.1400	0.0658	0.0002
	0.3	0.1880	0.2356	0.2624	0.2306	0.0580	0.1364	0.0600	0.1488	0.0906	0.0024
	0.6	0.2940	0.2716	0.3478	0.2836	0.0786	0.1540	0.0446	0.1860	0.1462	0.0032
	0.8	0.4984	0.3464	0.5520	0.3796	0.0958	0.2202	0.0418	0.2640	0.2608	0.0042
Panel B: T = 200											
(28)	0.0	0.1054	0.1470	0.1500	0.1434	0.0440	0.0934	0.0570	0.0990	0.0594	0.0012
	0.3	0.1320	0.1634	0.1718	0.1568	0.0600	0.0992	0.0640	0.1108	0.0790	0.0050
	0.6	0.2216	0.2024	0.2748	0.2112	0.0660	0.1160	0.0544	0.1346	0.1282	0.0074
	0.8	0.4270	0.2784	0.4678	0.2966	0.0638	0.1506	0.0370	0.1940	0.2578	0.0072

Note: Number (28) refers to equation (28) in the underlying article.

Table C7: Size Corrected Power of Specification Tests, 0.05 Level, Bartlett Kernel, Andrews

		Wald				LM				CT	CS
	ρ_1, ρ_2	I	II	III	IV	I	II	III	IV		
						Panel A: T = 100					
(A)	0.0	0.3234	0.9364	0.9372	0.1548	0.2530	0.9288	0.9326	0.1592	0.1898	0.1338
	0.3	0.2792	0.8972	0.8904	0.1422	0.2018	0.8842	0.9018	0.1610	0.1128	0.0840
	0.6	0.1940	0.8120	0.7880	0.1064	0.1508	0.7398	0.8238	0.1350	0.0722	0.0576
	0.8	0.1032	0.6642	0.5914	0.0668	0.1236	0.4016	0.6782	0.0878	0.0580	0.0548
(B)	–	0.6486	0.2030	0.6272	0.2832	0.3040	0.2528	0.1132	0.3004	0.4402	0.2288
(C)	–	0.6344	0.1764	0.5986	0.2694	0.2856	0.2370	0.1014	0.2784	0.4260	0.2236
						Panel B: T = 200					
(A)	0.0	0.4344	0.9998	0.9996	0.2332	0.2570	0.9962	0.9902	0.2262	0.2260	0.1266
	0.3	0.3952	0.9982	0.9982	0.2188	0.2180	0.9944	0.9872	0.2248	0.1666	0.1042
	0.6	0.3056	0.9892	0.9876	0.1718	0.1950	0.9806	0.9822	0.1834	0.0938	0.0772
	0.8	0.1748	0.9492	0.9262	0.1102	0.1884	0.8930	0.9584	0.1338	0.0636	0.0700
(B)	–	0.6990	0.2350	0.6846	0.3252	0.2982	0.2748	0.1158	0.3468	0.4580	0.2056
(C)	–	0.6890	0.2242	0.6678	0.3066	0.2828	0.2634	0.1022	0.3358	0.4336	0.1786

Table C8: Raw Power of Specification Tests, 0.05 Level, Bartlett Kernel, Andrews

		Wald				LM				CT	CS
	ρ_1, ρ_2	I	II	III	IV	I	II	III	IV		
						Panel A: T = 100					
(A)	0.0	0.4866	0.9722	0.9706	0.3464	0.2362	0.9586	0.9434	0.2748	0.2362	0.0112
	0.3	0.4764	0.9518	0.9502	0.3516	0.2208	0.9362	0.9114	0.2812	0.2214	0.0102
	0.6	0.5058	0.9166	0.9230	0.3780	0.1878	0.8718	0.8156	0.2928	0.2504	0.0104
	0.8	0.5960	0.8676	0.9042	0.4218	0.1766	0.7744	0.6584	0.3330	0.3214	0.0130
(B)	–	0.7718	0.4202	0.7998	0.4838	0.2790	0.3486	0.1502	0.4240	0.5066	0.0242
(C)	–	0.7592	0.3876	0.7760	0.4696	0.2540	0.3318	0.1318	0.4026	0.4870	0.0186
						Panel B: T = 200					
(A)	0.0	0.5368	1.0000	1.0000	0.3574	0.2452	0.9996	0.9918	0.2948	0.2790	0.0256
	0.3	0.5286	0.9996	0.9992	0.3626	0.2384	0.9990	0.9900	0.2942	0.2702	0.0256
	0.6	0.5418	0.9976	0.9974	0.3682	0.2200	0.9946	0.9830	0.3032	0.2814	0.0264
	0.8	0.5812	0.9878	0.9892	0.3844	0.2082	0.9714	0.9502	0.3154	0.3232	0.0280
(B)	–	0.7668	0.3720	0.7878	0.4614	0.2802	0.3402	0.1320	0.4292	0.5158	0.0378
(C)	–	0.7542	0.3594	0.7720	0.4414	0.2634	0.3272	0.1162	0.4122	0.4978	0.0334

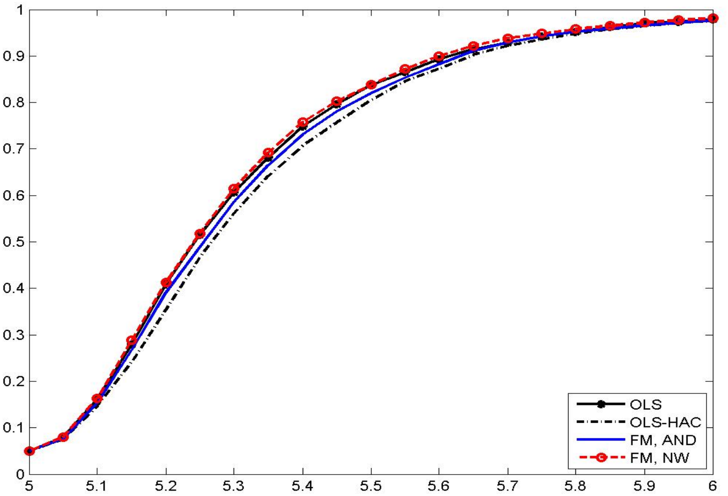

Figure C1: Size Corrected Power, t-test for β_1, $T = 100$, $\rho_1 = \rho_2 = 0.6$, Bartlett Kernel

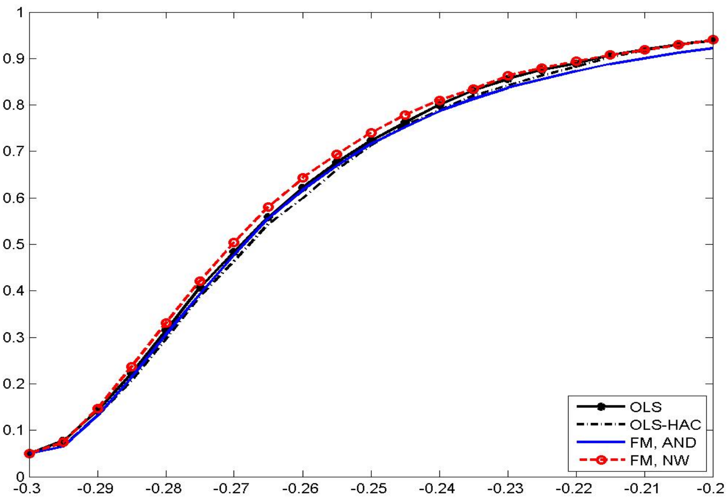

Figure C2: Size Corrected Power, t-test for β_2, $T = 100$, $\rho_1 = \rho_2 = 0.8$, Bartlett Kernel

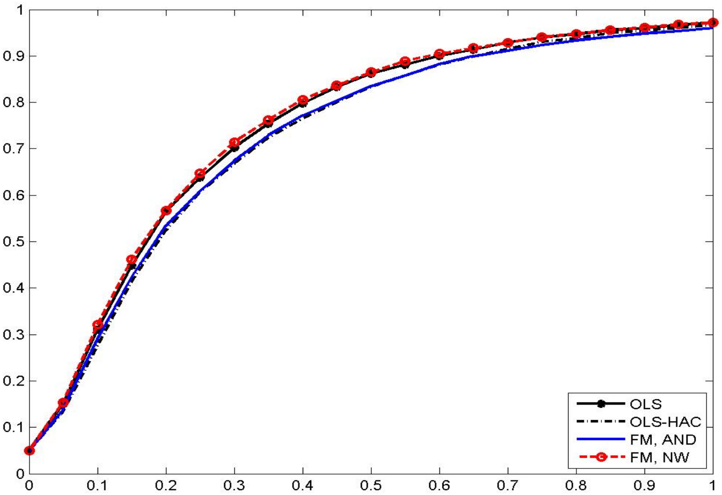

Figure C3: Size Corrected Power, Wald test, $T = 100$, $\rho_1 = \rho_2 = 0.8$, Bartlett Kernel

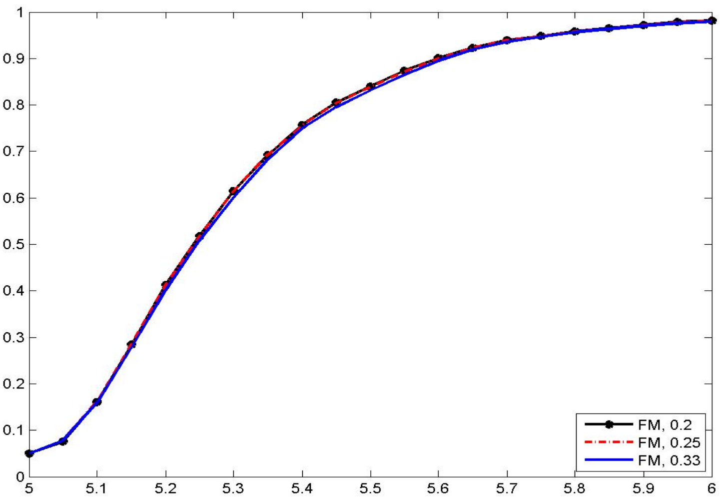

Figure C4: Size Corrected Power, t-test for β_1, $T = 100$, $\rho_1 = \rho_2 = 0.6$, Bartlett Kernel

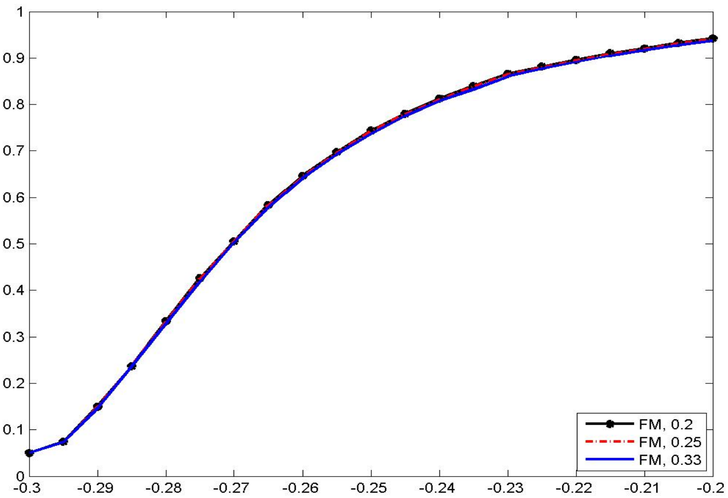

Figure C5: Size Corrected Power, t-test for β_2, $T = 100$, $\rho_1 = \rho_2 = 0.8$, Bartlett Kernel

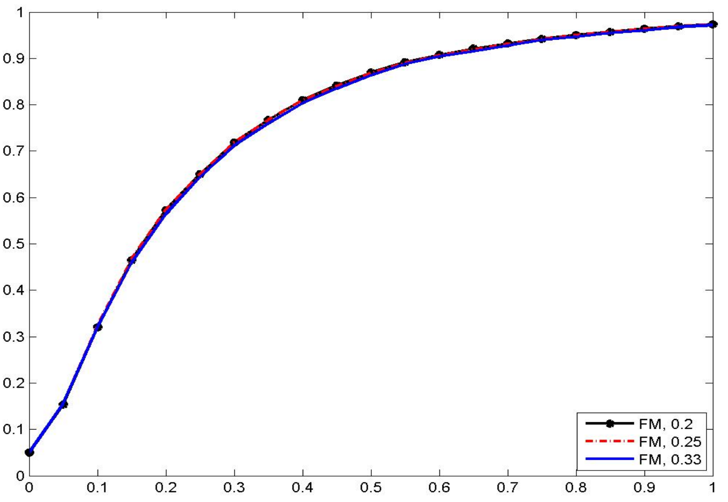

Figure C6: Size Corrected Power, Wald test, $T = 100$, $\rho_1 = \rho_2 = 0.8$, Bartlett Kernel

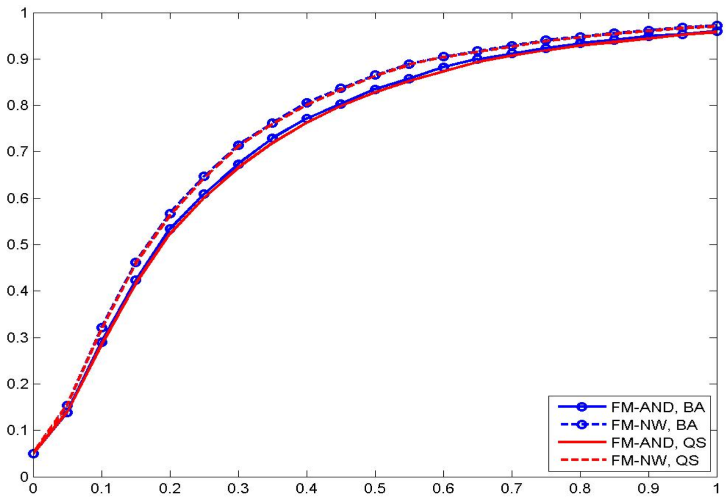

Figure C7: Size Corrected Power, Wald test, $T = 100$, $\rho_1 = \rho_2 = 0.8$, Comparison of Bartlett and Quadratic Spectral Kernels

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