

Table S.1: Type I errors ($\delta = 0$) and power ($\delta \neq 0$) given by the investigated test statistics based on bootstrap approach in detecting location shift between two samples generated from the four pairs of $F(x)$ and $G(x)$ with variance-covariance matrix $I_{4 \times 4}$ and sample sizes $n = m = 10$.

Type I errors ($\delta = 0$) and power ($\delta \neq 0$)																	
$G(x)$	δ	value	T^2	$\hat{\Delta}_1^{\max}$	$\hat{\Delta}_2^{\max}$	$\hat{\Delta}_3^{\max}$	T_1	T_2	T_3	T_4	T_5	T_1^*	T_2^*	T_3^*	T_4^*	T_5^*	U
(i)	0	0	0.040	0.013	0.028	0.038	0.018	0.034	0.044	0.030	0.044	0.007	0.029	0.043	0.022	0.027	0.064
	0.50	0	0.411	0.167	0.373	0.372	0.188	0.394	0.420	0.389	0.420	0.080	0.284	0.354	0.260	0.337	0.499
	1.00	0	0.970	0.752	0.943	0.953	0.753	0.957	0.961	0.961	0.970	0.462	0.900	0.924	0.878	0.928	0.996
	1.50	0	1.000	0.995	1.000	1.000	0.989	1.000	1.000	1.000	1.000	0.857	1.000	1.000	1.000	1.000	1.000
	2.00	0	1.000	0.995	1.000	1.000	0.994	1.000	1.000	1.000	1.000	0.986	1.000	1.000	1.000	1.000	1.000
(ii)	0	0	0.018	0.003	0.009	0.001	0.019	0.033	0.043	0.001	0.001	0.006	0.026	0.028	0.001	0.001	0.061
	0.50	0	0.044	0.008	0.033	0.002	0.072	0.079	0.081	0.003	0.005	0.038	0.088	0.137	0.002	0.003	0.056
	1.00	0	0.115	0.048	0.106	0.009	0.284	0.243	0.262	0.021	0.025	0.203	0.305	0.410	0.021	0.037	0.066
	1.50	0	0.233	0.195	0.321	0.019	0.631	0.561	0.571	0.090	0.109	0.505	0.656	0.741	0.107	0.141	0.112
	2.00	0	0.398	0.381	0.545	0.068	0.858	0.799	0.807	0.207	0.234	0.748	0.891	0.936	0.231	0.314	0.214
(iii)	0	0	0.026	0.005	0.021	0.008	0.012	0.032	0.035	0.015	0.019	0.002	0.016	0.030	0.008	0.013	0.070
	0.50	0	0.174	0.064	0.162	0.094	0.124	0.215	0.245	0.124	0.150	0.066	0.201	0.235	0.103	0.154	0.064
	1.00	0	0.720	0.445	0.700	0.537	0.604	0.788	0.792	0.677	0.691	0.382	0.728	0.814	0.596	0.697	0.327
	1.50	0	0.945	0.835	0.971	0.900	0.914	0.982	0.985	0.965	0.966	0.736	0.964	0.981	0.925	0.957	0.770
	2.00	0	0.993	0.970	1.000	0.983	0.989	1.000	1.000	0.996	0.998	0.928	0.998	1.000	0.992	0.994	0.958
(iv)	0	0	0.023	0.010	0.031	0.015	0.019	0.044	0.044	0.026	0.025	0.010	0.027	0.034	0.010	0.015	0.060
	0.50	0	0.084	0.025	0.069	0.045	0.055	0.085	0.104	0.054	0.070	0.028	0.078	0.095	0.032	0.065	0.099
	1.00	0	0.306	0.116	0.264	0.179	0.166	0.330	0.366	0.243	0.284	0.084	0.261	0.350	0.165	0.256	0.313
	1.50	0	0.652	0.321	0.634	0.476	0.436	0.715	0.758	0.588	0.630	0.248	0.626	0.740	0.463	0.586	0.579
	2.00	0	0.898	0.651	0.905	0.795	0.744	0.953	0.960	0.898	0.914	0.497	0.907	0.939	0.780	0.878	0.839