

Table S8. Empirical false positive rate. Population expansion with varying onset τ of the expansion. Expansion rate is fixed at 10.

t	$\alpha = 0.01$			$\alpha = 0.05$			SKD*
	$T_2^{(\text{sum})}$	$T_2^{(\text{product})}$	$T_0^{(\text{dist})}$	$T_2^{(\text{sum})}$	$T_2^{(\text{product})}$	$T_0^{(\text{dist})}$	
$1 \cdot 10^{-4}$	0.00593	0.00464	0.00495	0.04994	0.04341	0.01912	0.0540
$2 \cdot 10^{-4}$	0.00538	0.00439	0.00462	0.0498	0.04366	0.01785	0.0571
$5 \cdot 10^{-4}$	0.00553	0.0043	0.00474	0.04914	0.04511	0.01705	0.0538
0.0010	0.00546	0.0046	0.00487	0.05308	0.04848	0.01625	0.0609
0.0020	0.00526	0.00382	0.0052	0.05226	0.04673	0.01545	0.0510
0.0050	0.00483	0.00366	0.00595	0.05112	0.04475	0.01429	0.0454
0.01	0.00401	0.003	0.00624	0.04519	0.03834	0.01406	0.0393
0.02	0.00202	0.00182	0.00738	0.03759	0.02988	0.0156	0.0265
0.05	0.00101	0.00106	0.00781	0.02135	0.01816	0.01853	0.0179
0.1	0.00041	0.00049	0.00731	0.01294	0.01043	0.01987	0.0134
0.2	0.00028	0.0003	0.00639	0.00779	0.00697	0.02055	0.0156
0.5	0.00021	0.00024	0.00524	0.00716	0.00576	0.02081	0.0152
1.0	0.0003	0.00039	0.00611	0.00805	0.00593	0.02392	0.0159
100.0	0.00025	0.00024	0.00618	0.00884	0.00675	0.02563	0.0230

* SKD-test from [37]