

The empirical power of the test statistics $n(\hat{\rho}_\mu - 1)$ and \hat{t}_μ using the response surface regression (RSR) was compared with that of re-sampling methods, Bootstrap and Monte Carlo Test (MCT). Fifteen thousand samples of size $n = 25, 50, 100$ and 250 were generated for $\rho = .80, .90, .95, .99$ and 1 from the model AR(1) for testing a random walk with drift versus a stationary AR(1) with unknown mean. For the comparison purpose, the sizes of bootstrapping sample and Monte Carlo sample to obtain the null distribution were set up to be same, $B = M = 1000$. As expected the statistics yielded similar power values confirming the correctness of our implementation. The 95% MOE is ± 0.008 .

Table II. Monte Carlo Powers of One-Sided Size 5% Tests of Random Walk Versus Stationary Process with the Pivotal Statistic $\hat{\tau}_\mu$.

n/ρ		.80	.90	.95	.99	1
25	Bootstrap	0.1971	0.0938	0.0644	0.0529	0.0491
	MCT	0.1969	0.0933	0.0646	0.0524	0.0492
	RSR	0.1968	0.0937	0.0646	0.0532	0.0495
50	Bootstrap	0.5231	0.1892	0.0945	0.0573	0.0503
	MCT	0.5249	0.1913	0.0949	0.0575	0.0498
	RSR	0.525	0.1922	0.0945	0.0571	0.0504
100	Bootstrap	0.9691	0.5189	0.193	0.0653	0.05
	MCT	0.9699	0.5191	0.1953	0.0644	0.0501
	RSR	0.9707	0.5221	0.1947	0.0657	0.0509
250	Bootstrap	1	0.9961	0.6885	0.0943	0.0521
	MCT	1	0.9958	0.6883	0.0955	0.0524
	RSR	1	0.9961	0.6931	0.0956	0.0526