

Answer key to problem set # 6
ECON 342
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Spring, 2009

The following table reports the results assuming $\rho = 0.75$ and testing with a 5% confidence,

	RMSE	% of Rejections $H_0 : \rho = 1$
T=100	0.0693	100 %
T=200	0.0468	100 %
T=400	0.0336	100 %

The following table reports the results assuming $\rho = 1$ and testing with a 5% confidence using a usual t-test and critical values from a standard normal distribution,

	RMSE	% of Rejections $H_0 : \rho = 1$
T=100	0.0348	9.5 %
T=200	0.0178	9.8 %
T=400	0.0078	8.6 %

Two important results come up from the simulations. First, the MSE when $\rho = 1$ decreases more than the increase in data, since it is super consistent. Similarly, the standard normal tables are no longer valid, since we tend to over-reject. For instance, Hamilton's Time Series book contains critical values that are appropriate in the case when the true process is a unit root.