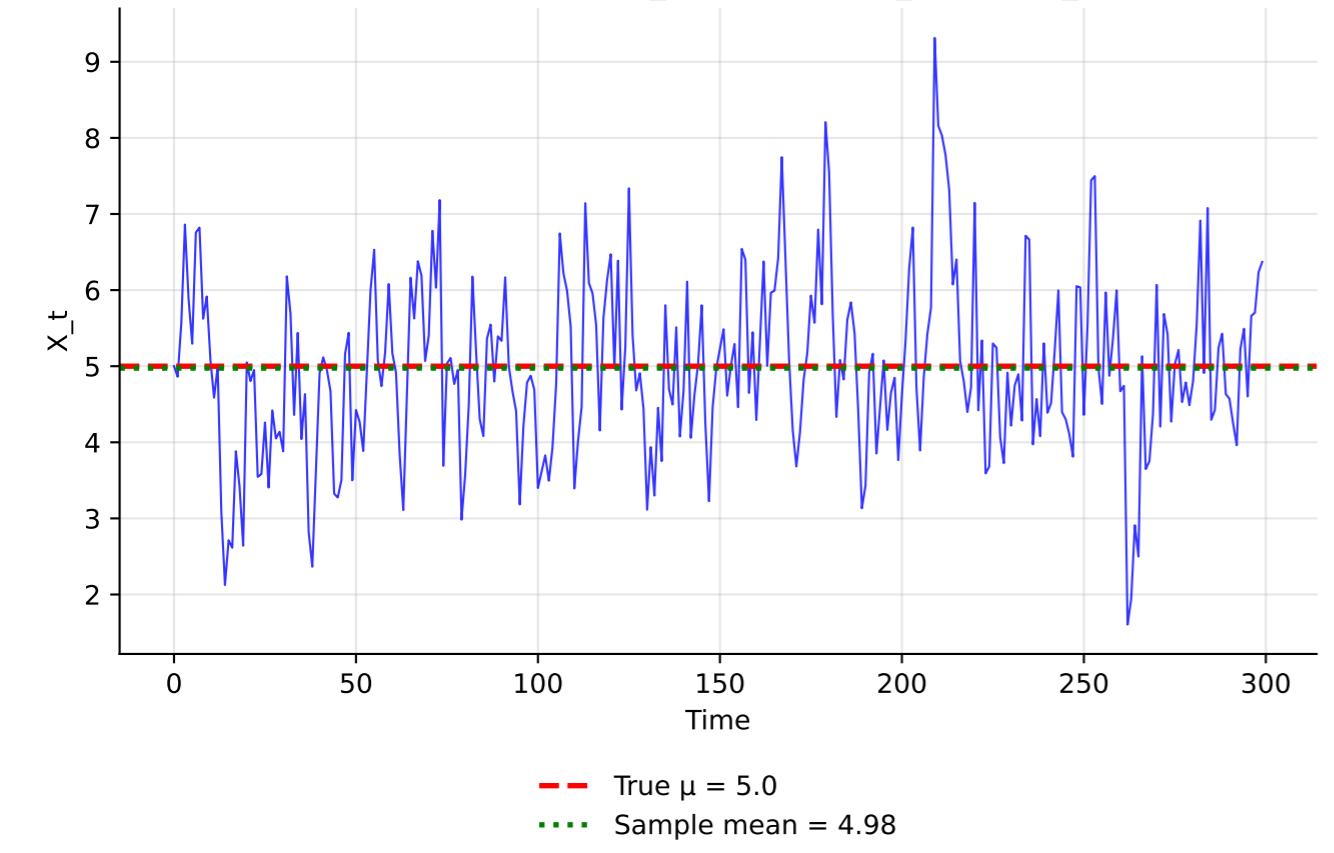
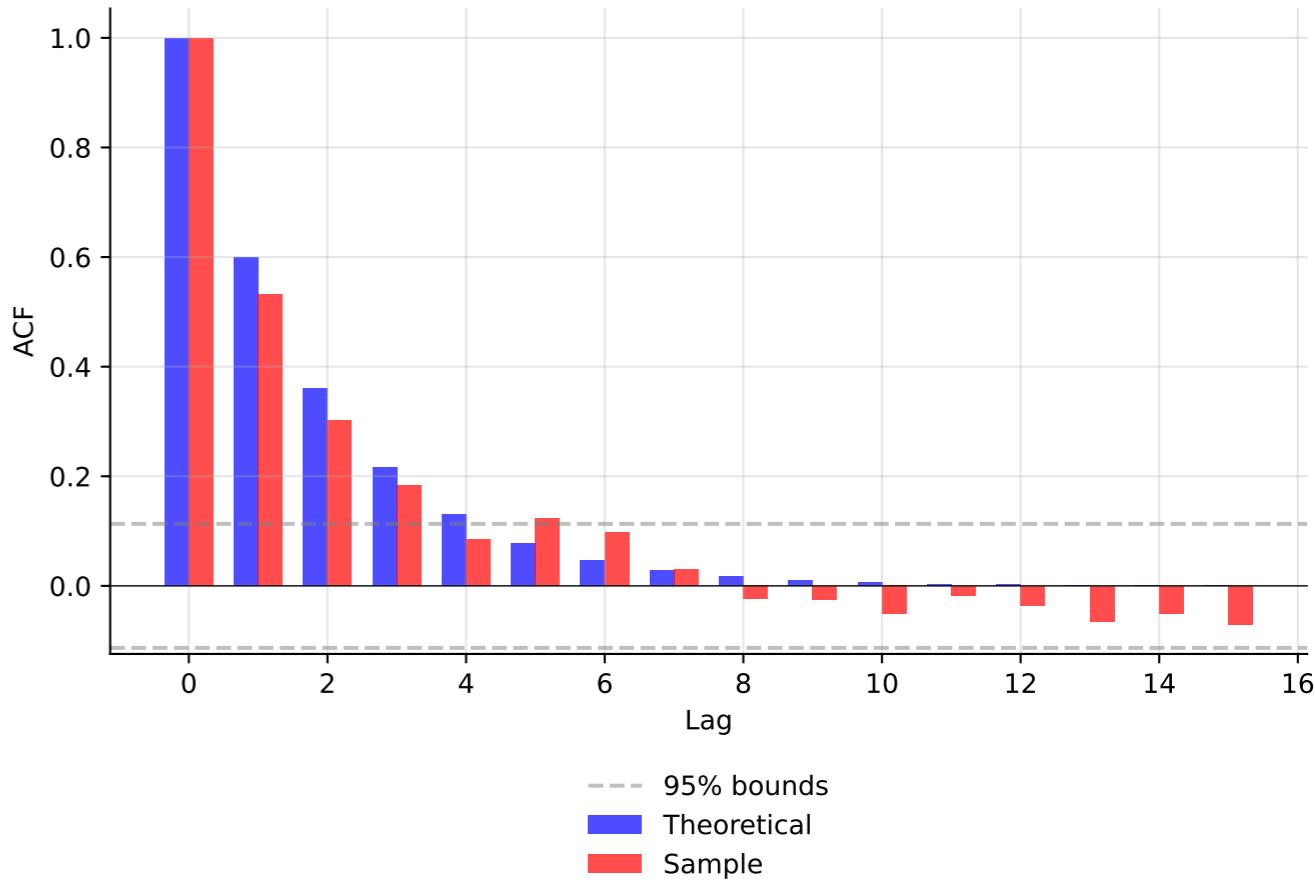


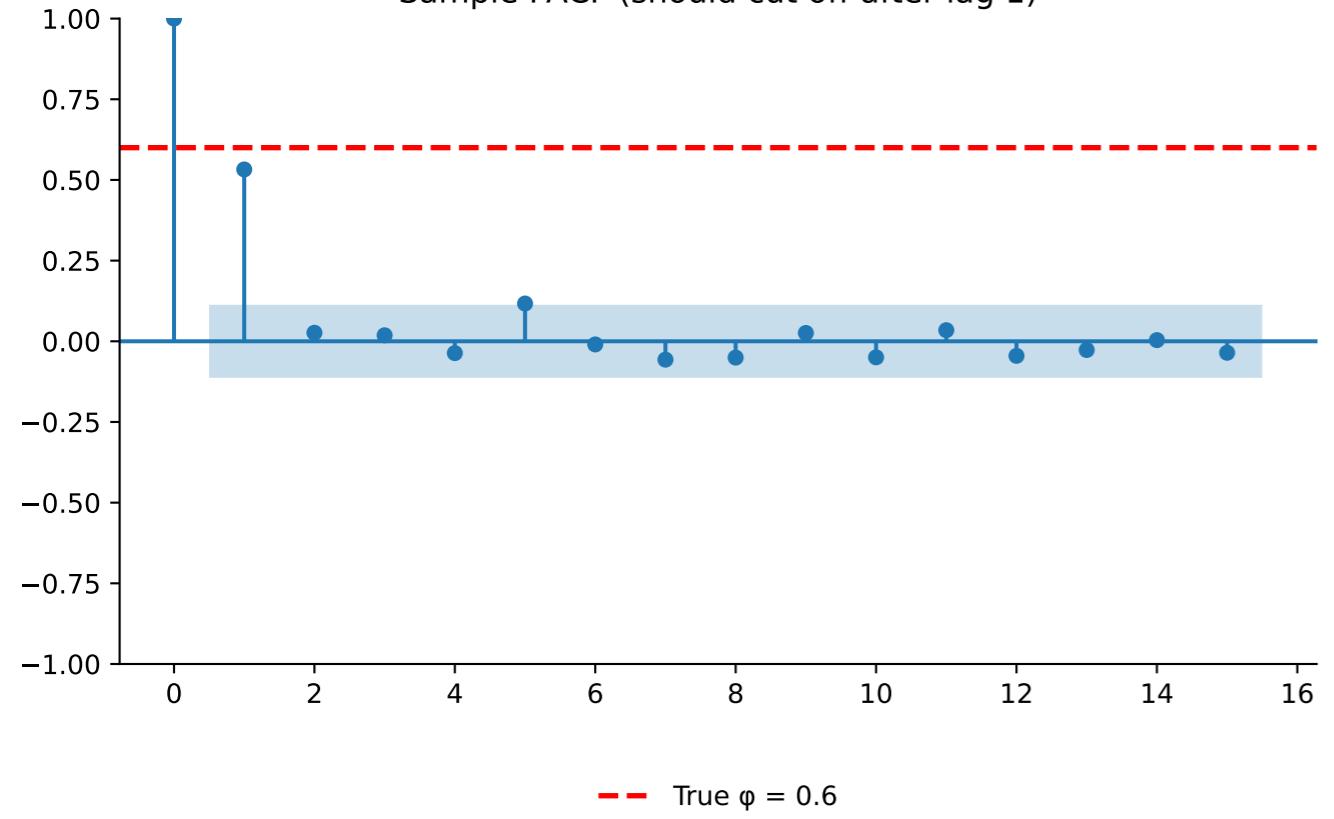
Simulated AR(1):  $X_t = 2.0 + 0.6X_{t-1} + \varepsilon_t$



ACF: Theoretical vs Sample



Sample PACF (should cut off after lag 1)



#### Parameter Estimation Summary

True Model:  $X_t = 2.0 + 0.6X_{t-1} + \varepsilon_t$   
Sample size:  $n = 300$

#### Parameter Comparison:

Parameter	True	Estimated	Diff
$\phi$	0.6000	0.5333	-0.0667
$c$	2.0000	4.9805	+2.9805
$\sigma$	1.0000	0.9793	-0.0207
$\mu$	5.0000	10.6712	+5.6712

#### Model Fit:

AIC: 845.12  
BIC: 856.23  
Log-likelihood: -419.56

#### Conclusion:

Estimates are close to true values.  
Larger  $n \rightarrow$  more precise estimates.