

ϵ_t is independent of ϵ_{t-1} (by definition). Y_{t-1} depends on ϵ_{t-1} , ϵ_{t-2} , and previous random variables, all of which are independent of ϵ_t . The covariance depends only on the variance of ϵ_t , which is σ_ϵ^2 .