This thesis examines the relationship between the distribution of structural breaks within a data sample and the estimated parameter of long memory. We use Monte Carlo simulations to generate data from processes with specific values of parameters. Subsequently we join the data with various shifts to mean and examine how the estimates of the parameters vary from their true values. We have discovered that the overestimate of the long memory parameter is higher when the breaks are clustered together. It further increases when the signs of the shifts are positively correlated within the clusters while negative correlation reduces the bias. Our findings enable the improvement of robustness of estimators against the presence structural breaks.