

Economics 690  
Gibbs Sampling Solutions

MATLAB code for fitting this model is provided on the website. I ran the Gibbs sampler for 1,500 iterations and discarded the first 100 as the burn-in period. A table of posterior means and standard deviations is given below.

Parameter	$E(\cdot y)$	Std( $\cdot y$ )
$\beta_0$	1.51	.105
$\beta_1$	.066	.008
$\beta_2$	.095	.018
$\sigma_1^2$	.248	.013
$\sigma_2^2$	.279	.016

In addition, the posterior probability that the low ability variance parameter exceeds the high ability variance parameter is (approximately) .93. Thus the data provide reasonably strong evidence that wage variability for high ability individuals is smaller than that for lower ability individuals. (The MATLAB program also produces the requested histogram).