1 Procedures

My computation has four steps: first, I solve for the firm solution and simulate data. Then, I create a function to compute data moments. finally, I use numerical optimizer to find the combination of parameters that gives the moments that are closest to the paper. In detail, first, the solution of the firm's problem comes from problem set 8. I simplify and adjust the model for firm profit and cash flow according to the paper. Second, I start to simulate data by generate random starting position of capital k for 1000 firms using random integer generator and $u_{1000x10000}$ using random number generator for uniform distribution. The "sim_markov" function returns values, z, from normal distribution with mean zero and standard deviation σ corresponding to given u's,and also returns the position of z in its grid space. Third, I write a while loop which takes position of k and z for a given period and returns position of k in the grid space of k for next period using the policy function which is part of the solution obtained in first part, and also returns optimal values of sample firms given certain k, z. Then, I obtain the values of k for the next period, and record it in k_sample. For the second model, this loop also returns a matrix of whether sample firms use external finance or not. In the end, this loop gives a matrix of positions of k in all periods, a matrix of values of k in all period, and optimal values of sample firms in all periods. Fourth, I apply formulas to calculate investment (I), profit(op),and q. fifth, I apply formulas to calculate data moments. lastly, I write a function to calculate distance between simulated data moments and theoretical moments and use numerical optimizer to find parameters giving the least distance.

2 Results

Since the codes take to much time to run, I know there are bugs but I could not locate and fix them. My optimizer could neither return a answer.

Table 1: Variance for Parameters in Model 1

	α	ψ	δ	σ_z
Value				
Variance				

Table 2: Variance for Parameters in model 2

	α	ψ	δ	σ_z	ϕ
Value					
Variance					