

# Problem Set 8

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**Question 1:** Solve the model and report the equilibrium wage rate

The equilibrium wage rate is 0.90077649.

**Question 2:** Plot the stationary distribution and describe it.

The stationary distribution graph shows how does the change in productivity shocks effect market density and capital stock. As the capital stock for firms are increases, the market is more dense, which means there are more firms in the market. When there is almost no shock, we still observe a small amount of firms. When the capital stock is close to zero or density is zero, there are almost no firms in the market. This can be seen from Figure 2 as well.

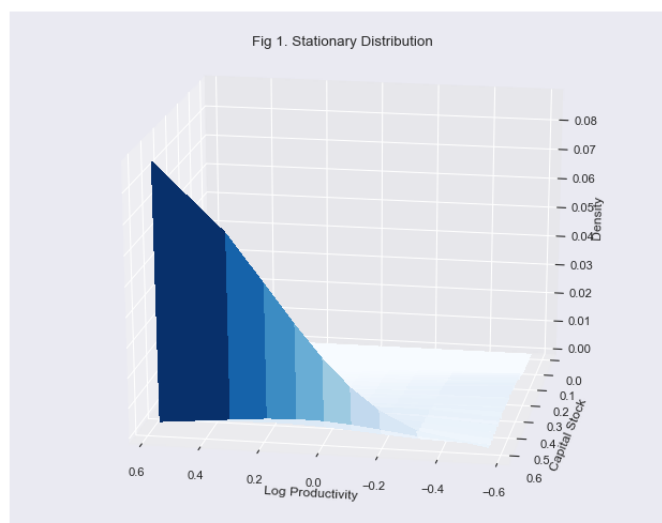


Figure 1: Stationary Distribution

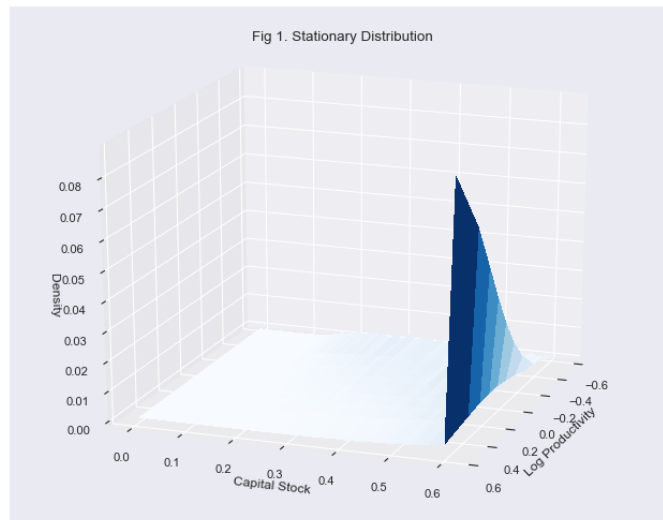


Figure 2: Stationary Distribution with Different Angle

**Question 3:** Plot the policy function for  $k'$ . How does it vary with productivity?

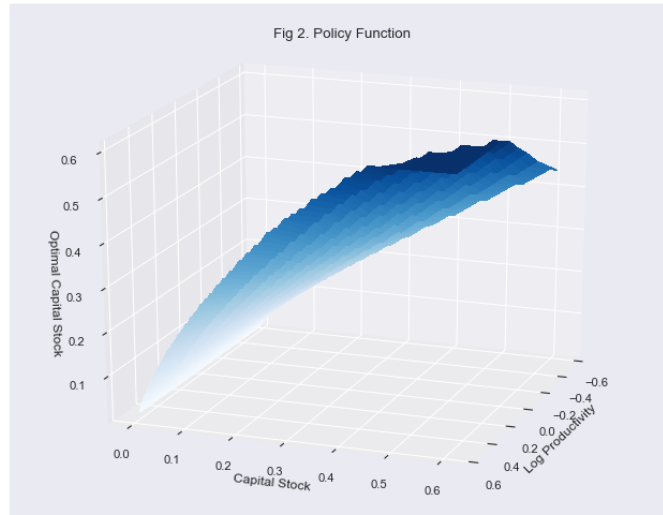


Figure 3: Policy Function

When the capital stock increases, the optimal capital level increases. When the

productivity shock increases, the optimal capital level increases; but we see this until some point (i.e. after optimal stock reaches around 0.5 it becomes more stable). This can be explained with Decreasing Returns to Scale. We can also observe this result when we look the same graph from different angle in Figure 4.

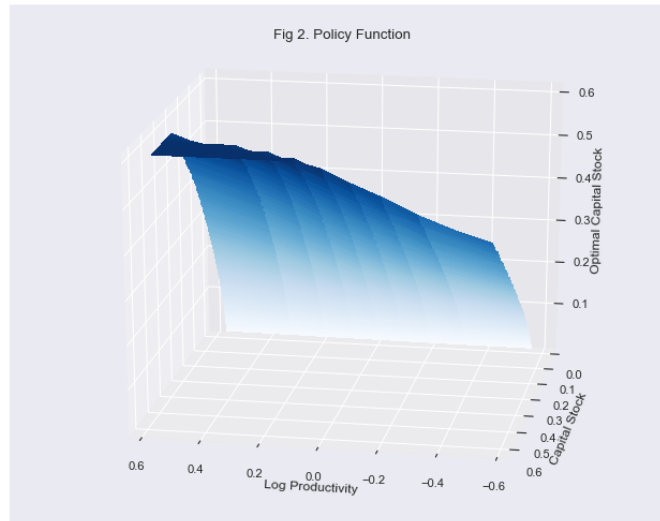


Figure 4: Policy Function - different angle