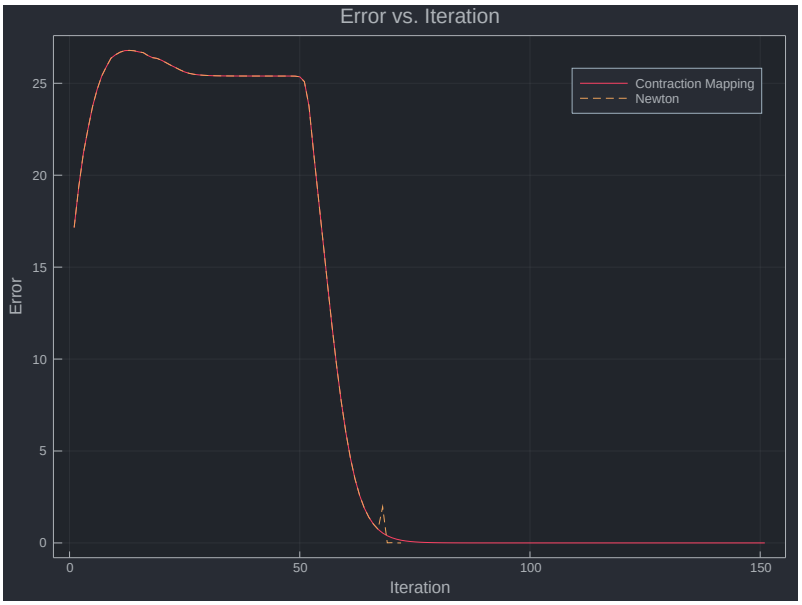
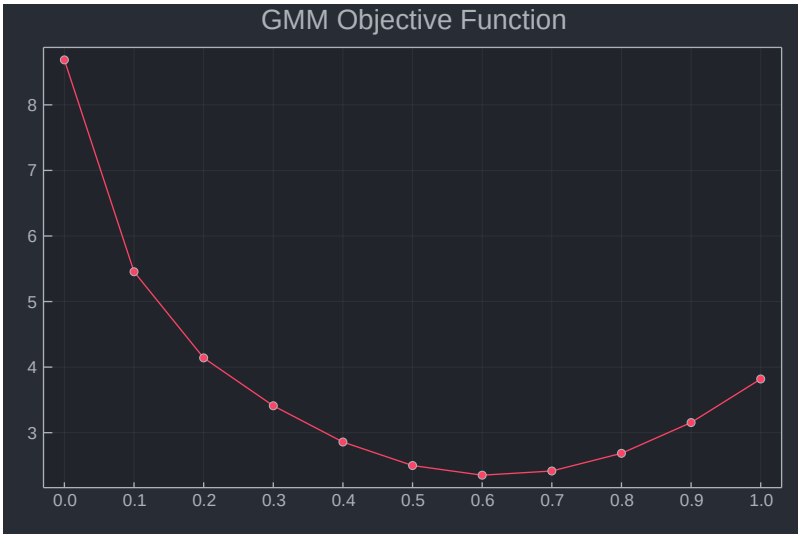
The code used to complete this problem set is attached in the appendix below.[1]

1. Problem 1: See inverse_demand() in functions.jl. The function converges in 73 iterations, and the errors are plotted below.



2. Problem 2: The GMM objective function using the 2SLS weighting matrix is plotted below for $\lambda_p \in [0, 1]$. As you can see, the function is smooth, continuous, and concave with a unique minimum in this range.

[1]We gratefully acknowledge a conversation with Michael Nattinger that helped us to find an error in applying the Newton method.



3. Problem 3: Minimizing the GMM objective function to estimate λ with 2-step GMM yields an estimate of $\lambda_p = 0.564$.

Appendix

The first codefile named “runfile.jl" runs the code.

The second codefile named “functions.jl" contains the relevant functions.