Problem Set 4

Leili Pour Rostami

Part One

for my initial guesses of α and β I chose 0.5 and -0.5.

The results indicate that the estimated model is the following:

$$f_m(b,t) = 1x_{1bm}y_{1tm} + 0.3625\ x_{2bm}y_{1tm} - 0.775\ distance_{btm} + \varepsilon_{btm}$$

The estimated parameters of the payoff functions indicates that corporate ownership increases the probability of a match relative to non-corporate ownership. there is a negative relationship between distance and probability of such a match means an increase in distance between target and the buyer will reduce probability of the merger. In other words, I expect an average of 0.36 increasing for the payoff of the matches by every additional increase in corporate and an average of 0.77 decreasing for the payoff of the matches by every additional distance in miles.

The optimization finds the maximum score of -2284.0.

Part Two

For my initial guesses of δ, α, γ, and β I use the values: (0.5, 1, 1, -0.5).

The results indicate that the estimated model is the following:

$$f_m(b,t) = 0.5039\ x_{1bm}y_{1tm} + 1.0078\ x_{2bm}y_{1tm} + 1.0078\ HHI_{tm} - 0.4968\ distance_{btm} + \varepsilon_{btm}$$

The payoff is predicted to increase by average of 0.50 when the size of the stations goes up by one unit.

The payoff is predicted to increase by average of *1.00* when the size of the corporate ownership goes up by one unit.

The payoff is predicted to increase by average of *1.00* when the market concentration increases by one unit,

As before, an increase in distance negatively impacts the probability of the merger occurring. The payoff is predicted to decrease by *0.49* when the distance increase.

The HHI measure which measures market concentration positively impacts the probability of the merger.

The optimization finds the maximum score of -1144.0.