$$p_i = \frac{J}{\Delta X_{\bar{i}} Z_C^\star - \Delta X_{\bar{i}} Z_{\bar{i}}^\star}$$

$$U_i(C) - U_i(NC) = p_{\bar{i}} \left(\Delta X_i Z_C^\star - \Delta X_i Z_i^\star\right) - J$$

$$p_i = \frac{1}{1 + \exp\left(-\beta_{DC} \cdot \left(\frac{\Delta X_i Z_C^\star - \Delta X_i Z_i^\star}{1+\exp\left(-\beta_{DC}(p_i \cdot (\Delta X_{\bar{i}} Z_C^\star - \Delta X_{\bar{i}} Z_{\bar{i}}^\star) - J)\right)} - J\right)\right)}$$