

### **Equations for model 2 split by destination country**

Kenya:

$$\begin{aligned} \log(M_{i,j}) = & \beta_0 + \beta_1 K_1 + \beta_2 K_2 + \beta_3 K_3 + \beta_4 K_4 + \beta_5 \log(P_j) + \beta_6 K_1 \log(P_j) + \beta_7 K_2 \log(P_j) \\ & + \beta_8 K_3 \log(P_j) + \beta_9 K_4 \log(P_j) + \beta_{10} \log(D_{i,j}) + \beta_{11} K_1 \log(D_{i,j}) \\ & + \beta_{12} K_2 \log(D_{i,j}) + \beta_{13} K_3 \log(D_{i,j}) + \beta_{14} K_4 \log(D_{i,j}) + \varepsilon_{i,j} \end{aligned}$$

Tanzania:

$$\begin{aligned} \log(M_{i,j}) = & \beta_0 + \beta_1 T_1 + \beta_2 T_2 + \beta_3 T_3 + \beta_4 T_4 + \beta_5 T_5 + \beta_6 T_6 + \beta_7 T_7 + \beta_8 \log(P_j) \\ & + \beta_9 T_1 \log(P_j) + \beta_{10} T_2 \log(P_j) + \beta_{11} T_3 \log(P_j) + \beta_{12} T_4 \log(P_j) + \beta_{13} T_5 \log(P_j) \\ & + \beta_{14} T_6 \log(P_j) + \beta_{15} T_7 \log(P_j) + \beta_{16} \log(D_{i,j}) + \beta_{17} T_1 \log(D_{i,j}) \\ & + \beta_{18} T_2 \log(D_{i,j}) + \beta_{19} T_3 \log(D_{i,j}) + \beta_{20} T_4 \log(D_{i,j}) + \beta_{21} T_5 \log(D_{i,j}) \\ & + \beta_{22} T_6 \log(D_{i,j}) + \beta_{23} T_7 \log(D_{i,j}) + \varepsilon_{i,j} \end{aligned}$$

Uganda:

$$\begin{aligned} \log(M_{i,j}) = & \beta_0 + \beta_1 U_1 + \beta_2 U_2 + \beta_3 U_3 + \beta_4 U_4 + \beta_5 \log(P_j) + \beta_6 U_1 \log(P_j) + \beta_7 U_2 \log(P_j) \\ & + \beta_8 U_3 \log(P_j) + \beta_9 U_4 \log(P_j) + \beta_{10} \log(D_{i,j}) + \beta_{11} U_1 \log(D_{i,j}) \\ & + \beta_{12} U_2 \log(D_{i,j}) + \beta_{13} U_3 \log(D_{i,j}) + \beta_{14} U_4 \log(D_{i,j}) + \varepsilon_{i,j} \end{aligned}$$

$M_{i,j}$ : total number of migrants from origin, i, to destination, j.

$P_j$ : total population size of destination location within each destination country.

$D_{i,j}$ : Shortest distance between origin country border and destination location.

$K_1$ : Somalia,  $K_2$ : Ethiopia,  $K_3$ : Sudan,  $K_4$ : Uganda (do not need a dummy for the fifth country, Tanzania)

$T_1$ : Kenya,  $T_2$ : Uganda,  $T_3$ : Rwanda,  $T_4$ : Burundi,  $T_5$ : DRC,  $T_6$ : Zambia,  $T_7$ : Malawi (do not a dummy for the fifth country, Mozambique)

$U_1$ : Kenya,  $U_2$ : Sudan,  $U_3$ : DRC,  $U_4$ : Rwanda (do not a dummy for the fifth country, Tanzania)

$\beta_{i,j}$  are exponents, specific to each origin-destination pair or destination, estimated from the data.