Predicting the Evolution of Intrastate Conflict: Evidence from Nigeria

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Conflict Studies

Primary modes of analysis: Country-year || Dyad-year

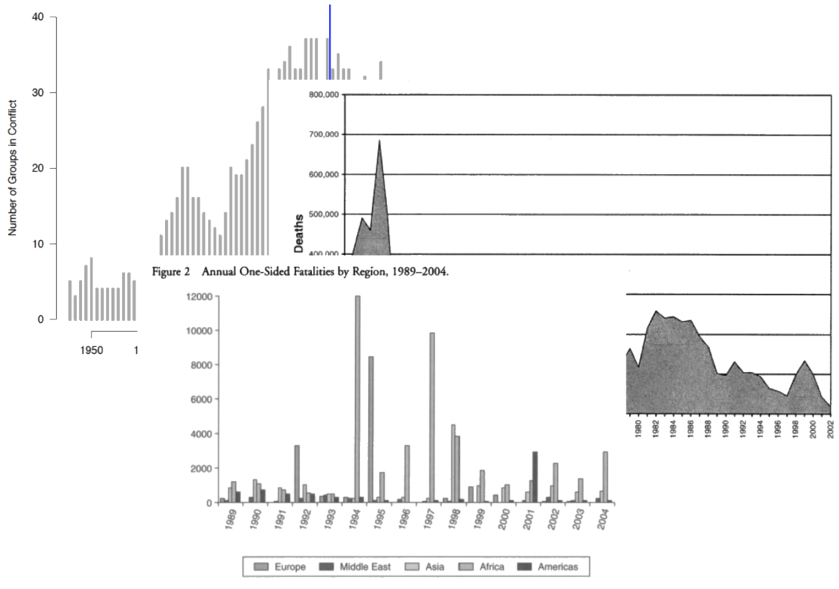
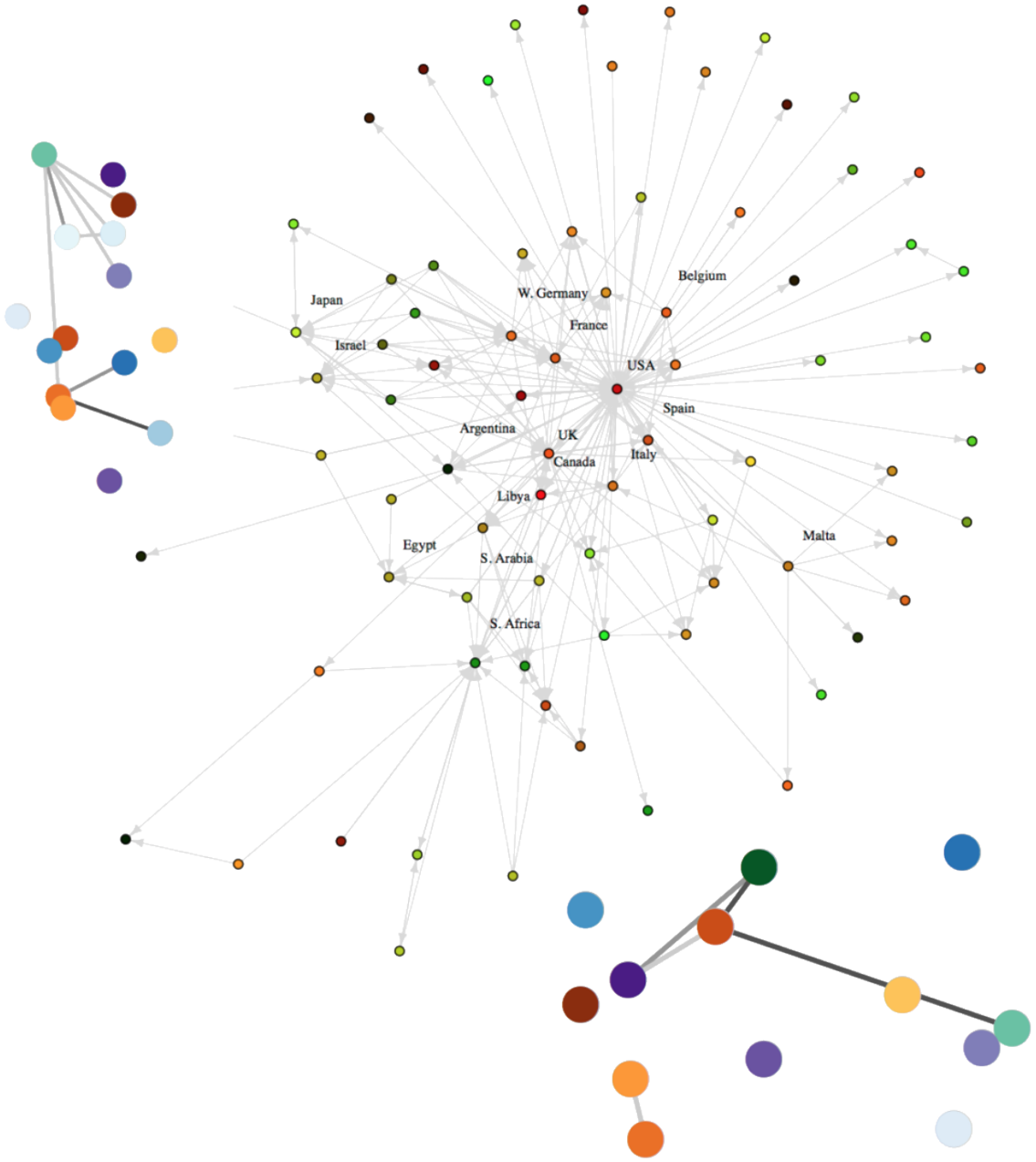


Figure 2 Annual One-Sided Fatalities by Region, 1989–2004.

Roughly a **third** of all intrastate conflict between 1989 and 2003 have been fought with multiple warring parties (UCDP/PRIO 2007).

What about the role of civilians in conflict?

Networks

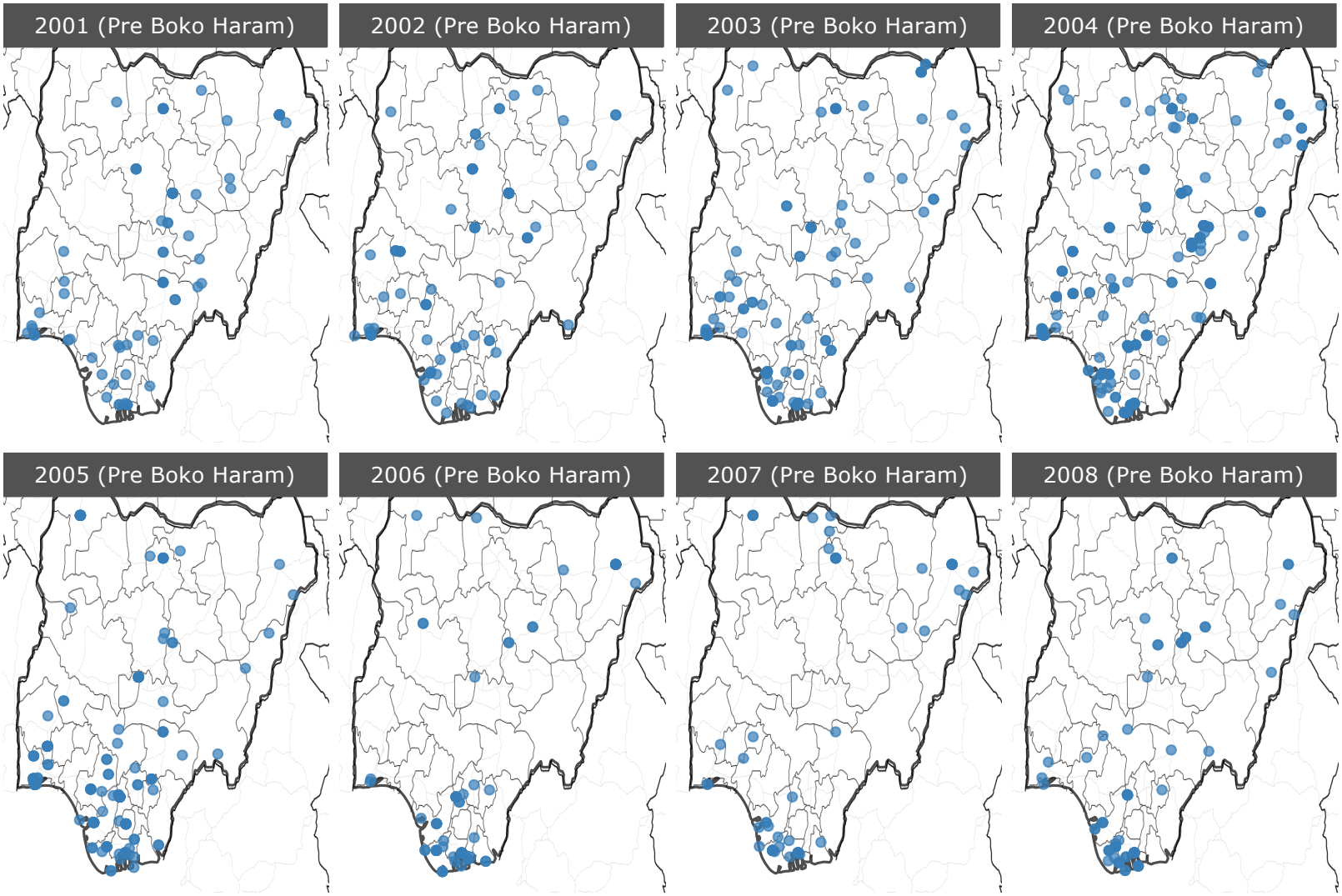

Japan
W. Germany
Belgium
France
Israel
USA
Spain
Argentina
UK
Italy
Canada
Libya
Egypt
S. Arabia
Malta
S. Africa

Why a network perspective in conflict?

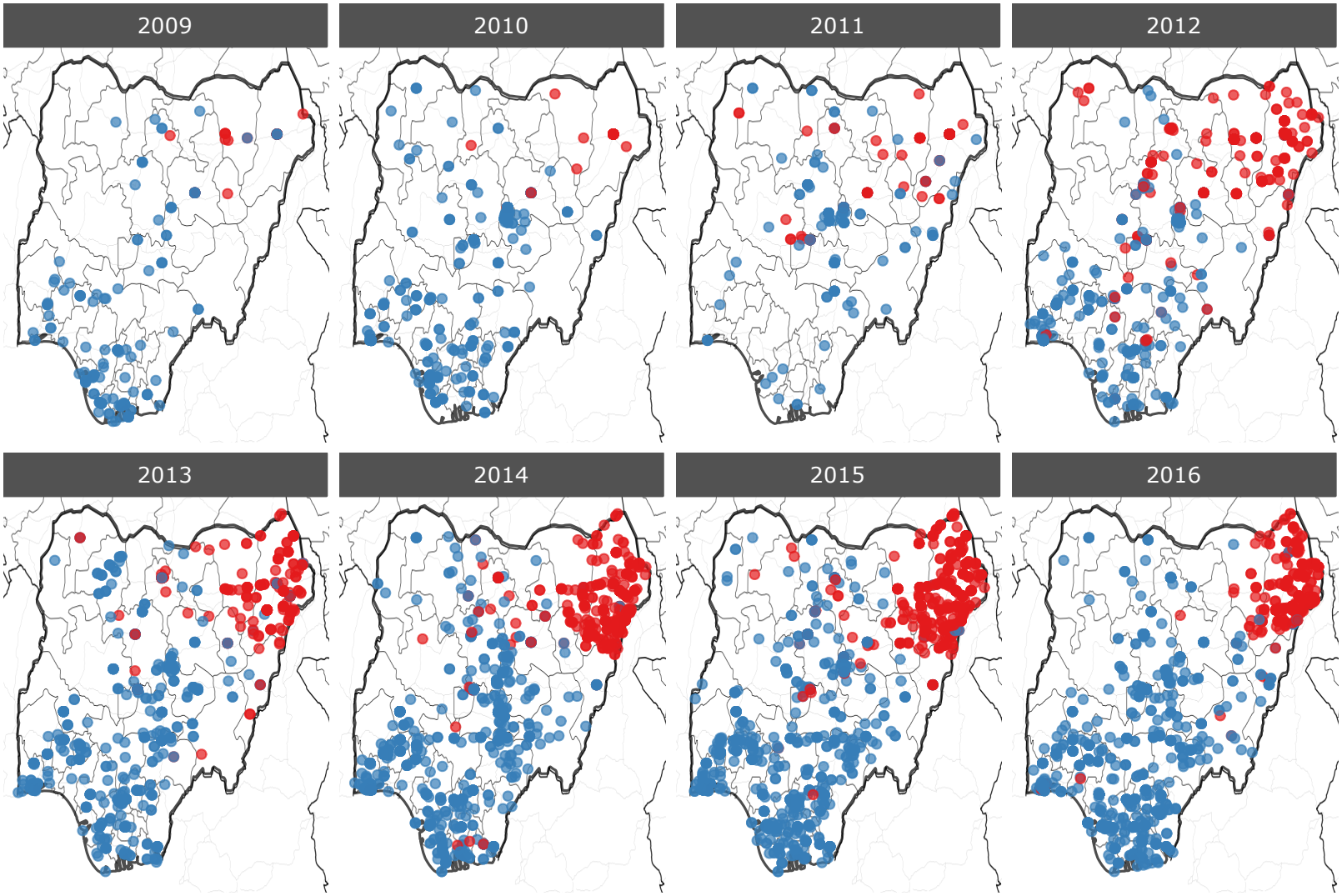
- Preferential attachment
- Reciprocity
- Homophily
- Stochastic Equivalence

Basic point here is that within systems actions between any pair of dyads can ripple through the system

Spatial Distribution of Conflict Pre Boko Haram



Spatial Distribution of Conflict Post Boko Haram



Civilian Mobilization/Victimization

Does civilian mobilization have any effect in conflict?

What about civilian victimization?

Modelling Approach

$$y_{ij,t} = g(\theta_{ij,t})$$

$$\theta_{ij,t} = \beta_d^T \mathbf{X}_{ij,t} + \beta_s^T \mathbf{X}_{i,t} + \beta_r^T \mathbf{X}_{j,t} + e_{ij,t}$$

$$e_{ij,t} = a_i + b_j + \epsilon_{ij} + \alpha(\mathbf{u}_i, \mathbf{v}_j) \text{ , where}$$

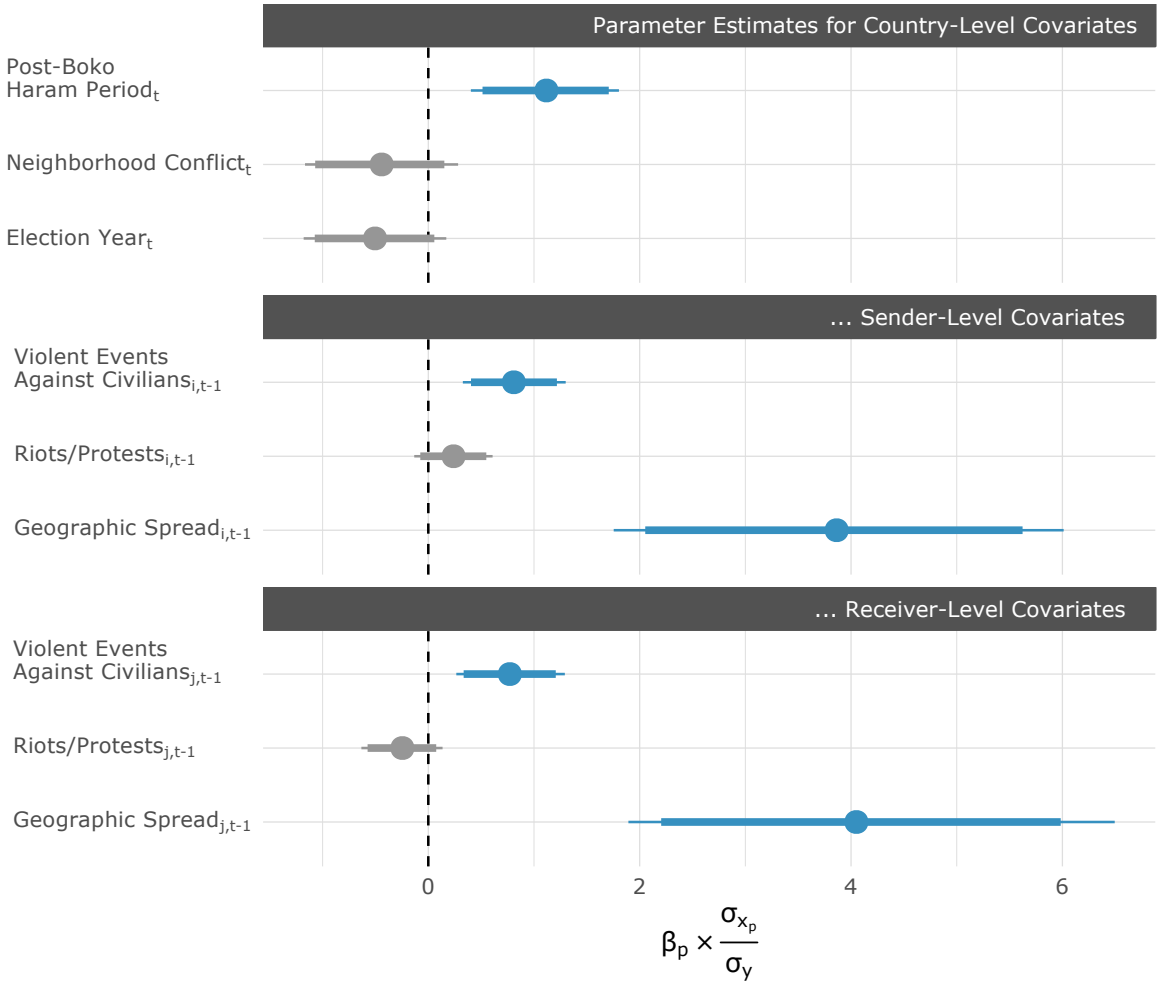
$$\alpha(\mathbf{u}_i, \mathbf{v}_j) = \mathbf{u}_i^T \mathbf{D} \mathbf{v}_j = \sum_{k \in K} d_k u_{ik} v_{jk}$$

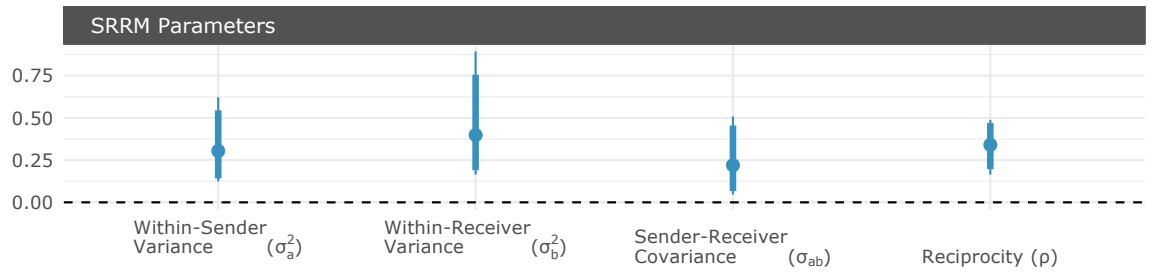
$$\{(a_1, b_1), \ldots, (a_n, b_n)\} \sim N(0, \Sigma_{ab})$$

$$\{(\epsilon_{ij}, \epsilon_{ji}) : \ i \neq j\} \sim N(0, \Sigma_\epsilon), \text{ where}$$

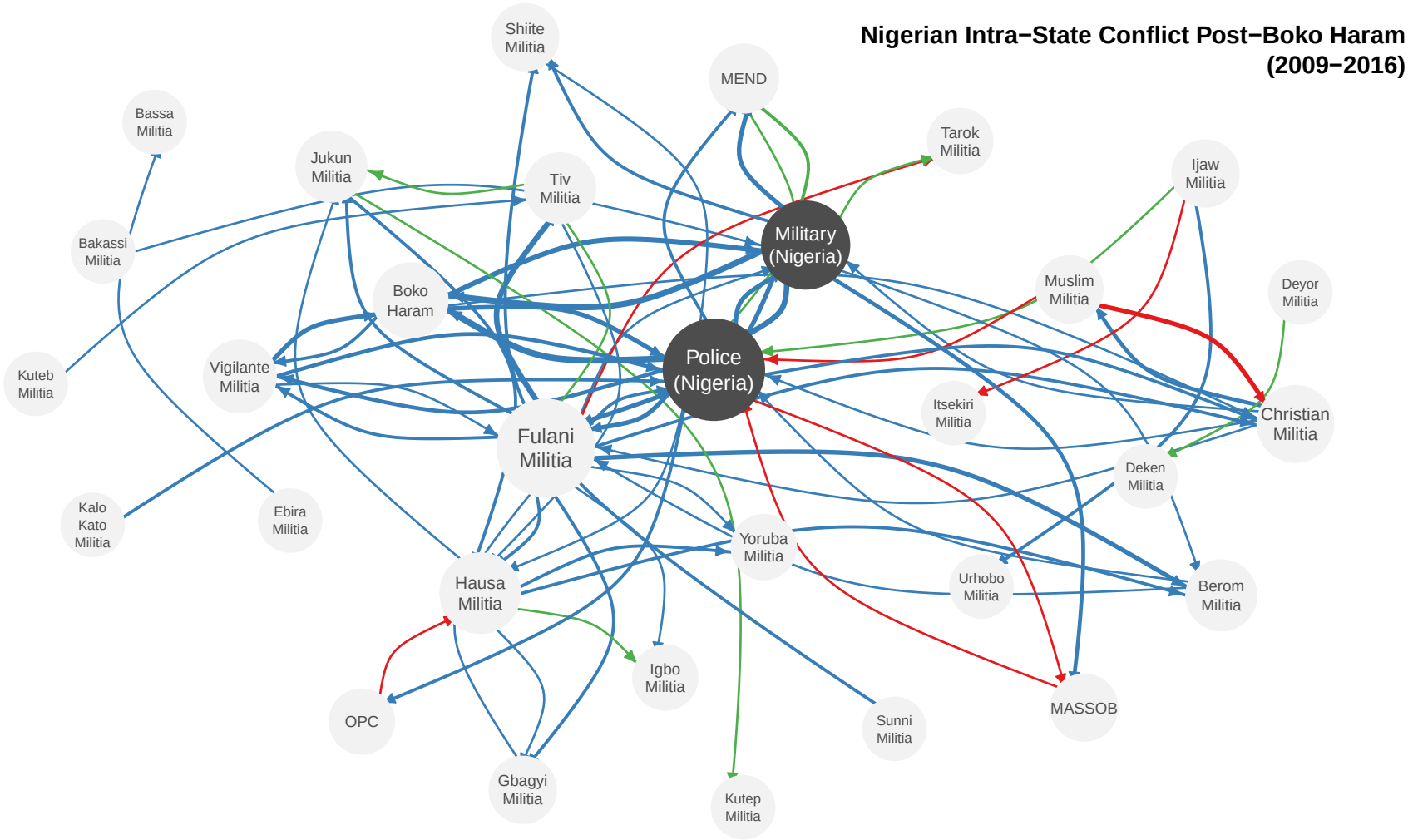
$$\Sigma_{ab} = \begin{pmatrix} \sigma_a^2 & \sigma_{ab} \\ \sigma_{ab} & \sigma_b^2 \end{pmatrix} \qquad \Sigma_\epsilon = \sigma_\epsilon^2 \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix}$$

Parameter Estimates

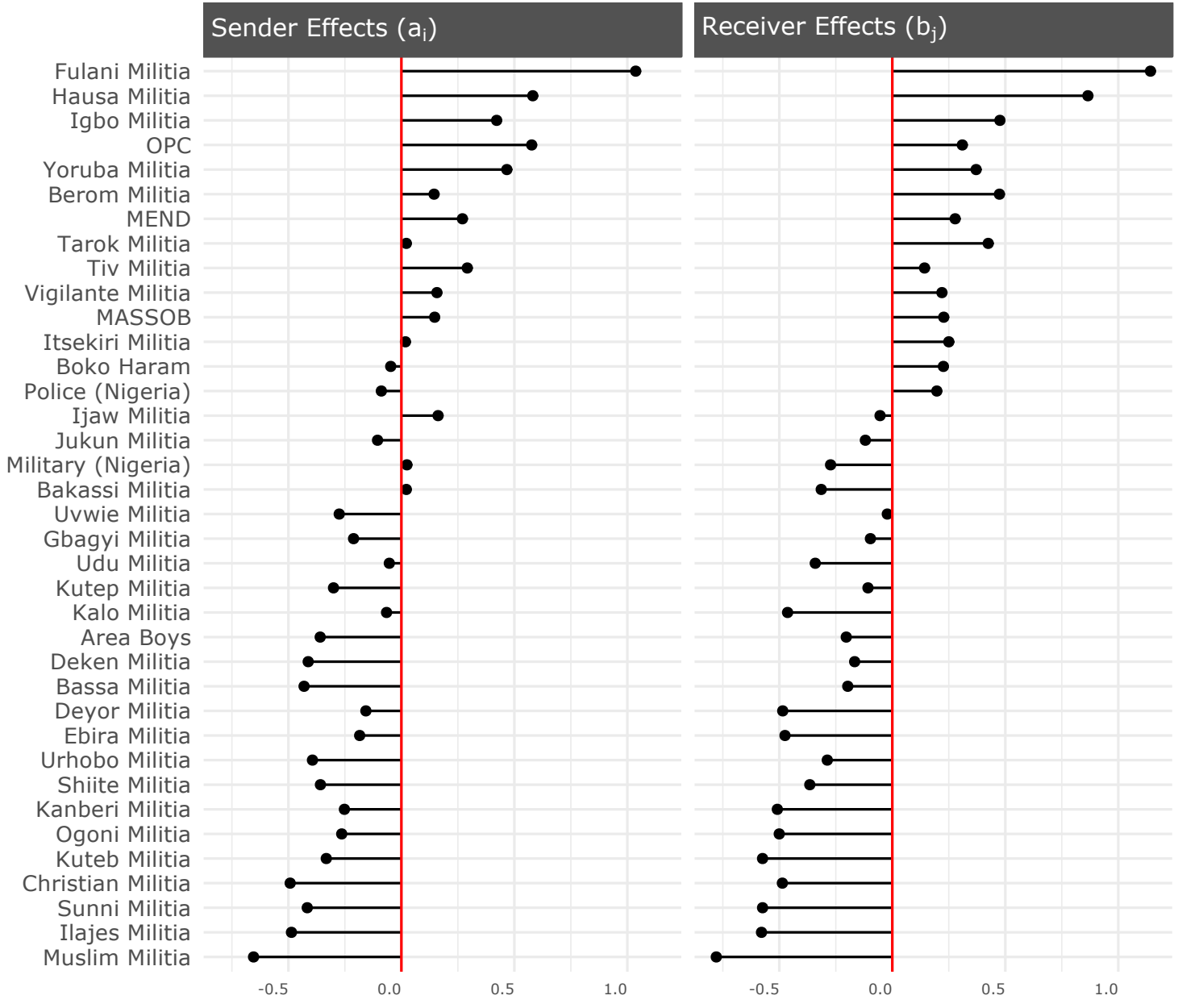




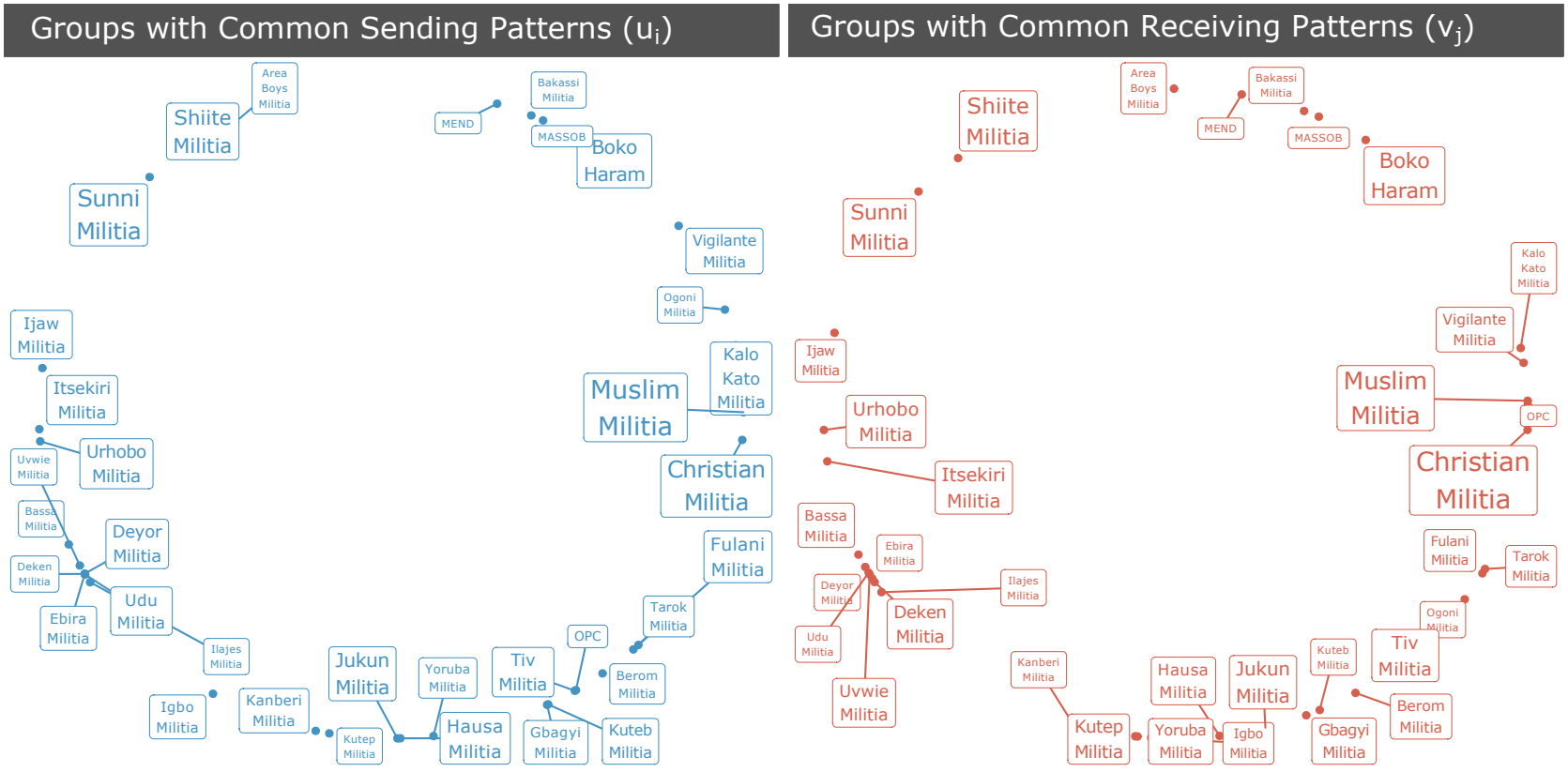
Boko Haram's Entrance in Network



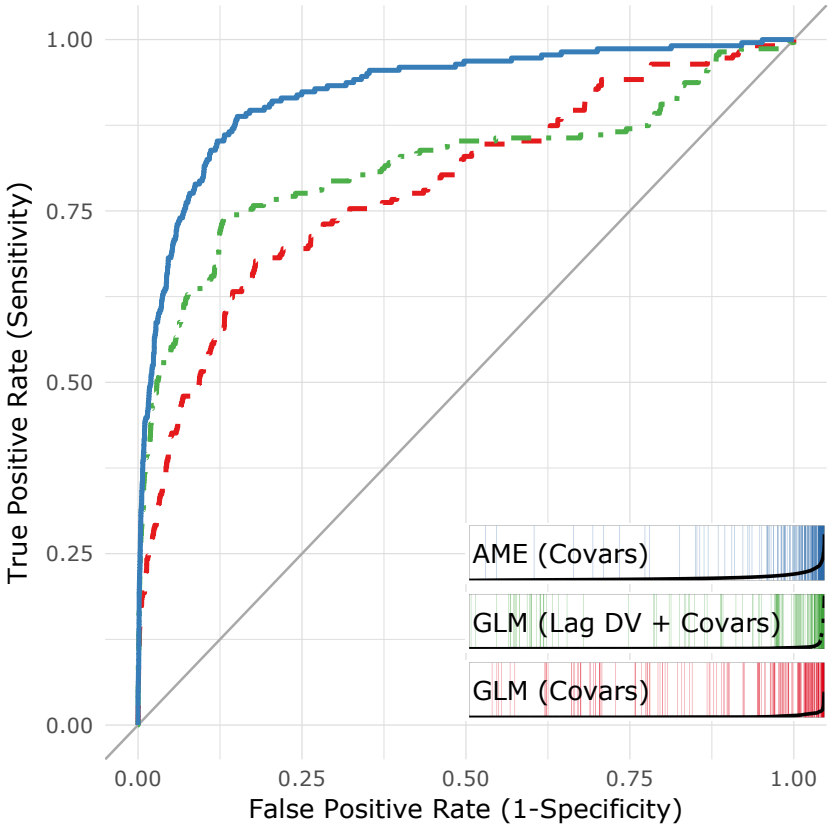
SRM Nodal Effects

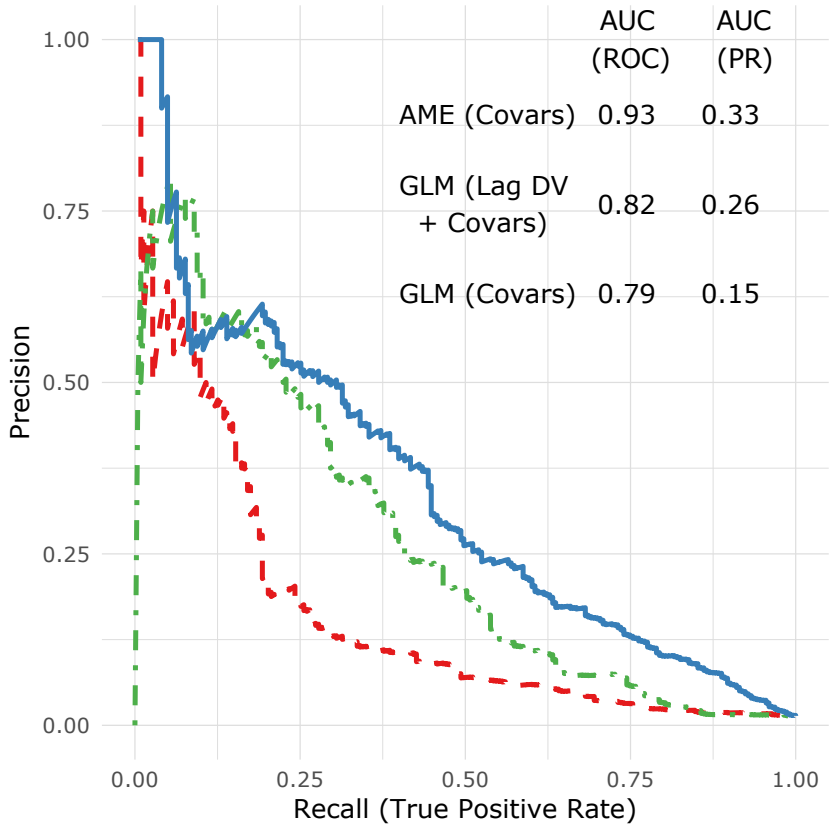


LFM Multiplicative Effects

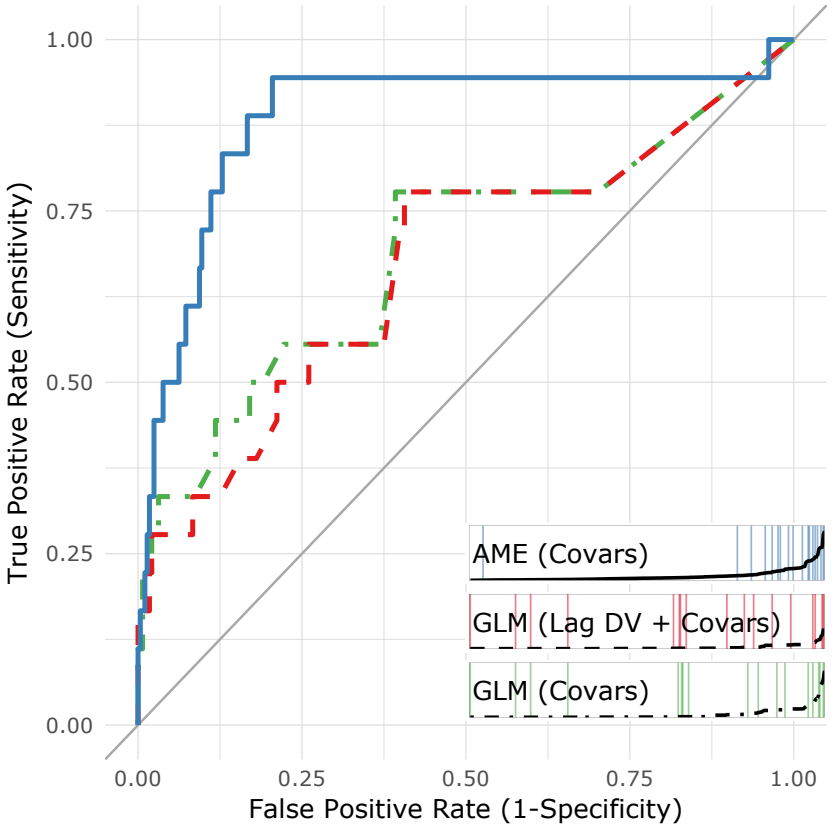


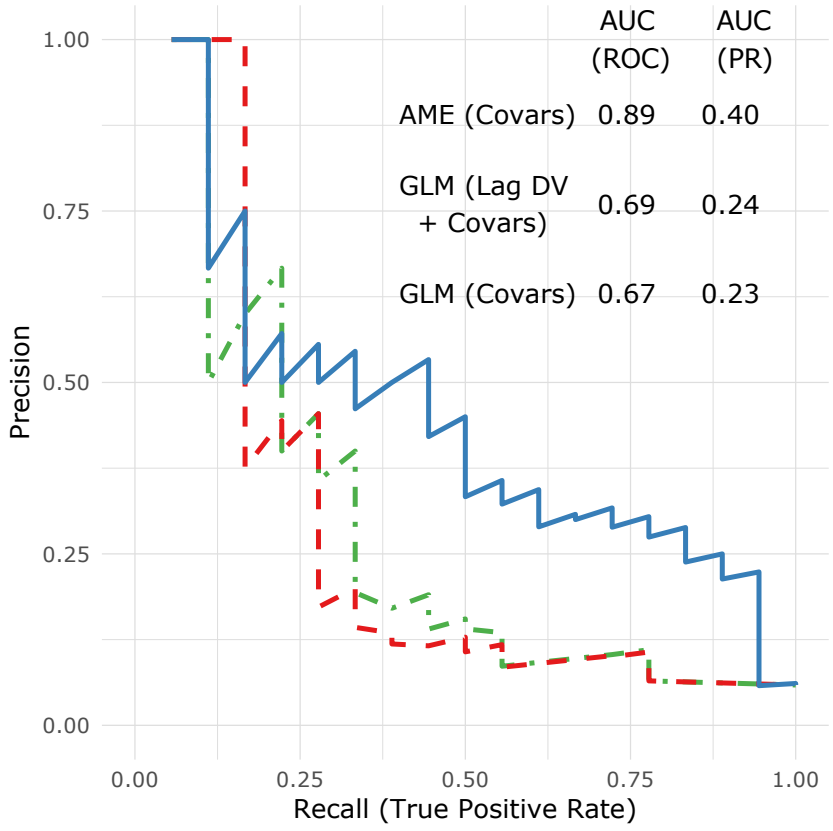
Out of Sample Cross-Validation





Out of Sample Forecast





Thanks.