Treaty Models

immediate

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1 Models

1.1 Treaty Length

$$L_{treaty} \sim Poisson(\lambda)$$

$$\lambda = \alpha + \beta_1 D_{annuity} + \beta_2 X_{controls}$$

$$\alpha, \beta_1, \beta_2 \sim N(0, 25)$$

$$\sigma \sim HalfCauchy(0, 10)$$

where L_{treaty} is the length the treaty lasted (in periods) regressed on a dummy whether it was an annuity treatment. Controls could be some variables like land split intervals.

1.2 Efficiency of system

$$\pi_{system} \sim N(\mu, \sigma)$$

$$\mu = \alpha + \beta_1 D_{annuity} + \beta_2 D_{lump_sum} + \beta_3 Teaties + \beta_4 L_{match}$$

$$\alpha, \beta_1, \beta_2, \beta_3, \beta_4 \sim N(\mu, \sigma)$$

$$\sigma \sim HalfCauchy(0, 10)$$

Where L_{match} is the length that a match lasted.

1.3 Profit of players

$$\pi \sim N(\mu, \sigma)$$

$$\pi = \alpha + \beta_1 D_{annuity} + \beta_2 D_{lump_sum} + \beta_3 Role + \beta_4 Treaties + \beta L_{match}$$

$$\sigma \sim HalfCauchy(0, 10)$$

1.4 Path to Equilibrium

WIP