

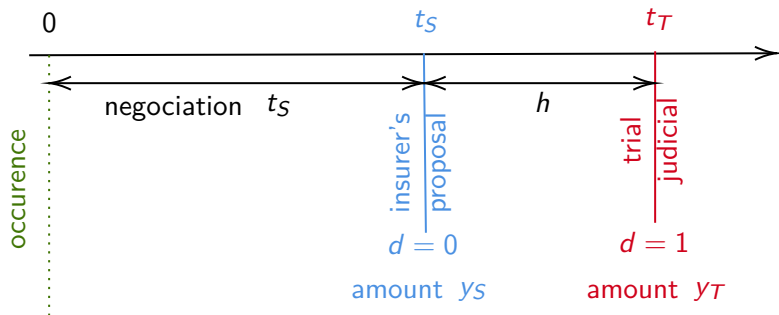
# To sue or not to sue #2

Arthur Charpentier <sup>1</sup>, Pierre-Yves Geoffard <sup>2</sup>

Commission Corporels, Mars 2023

<sup>1</sup> UQAM, Canada, <sup>2</sup> Paris School of Economics, France

# Econometric Model

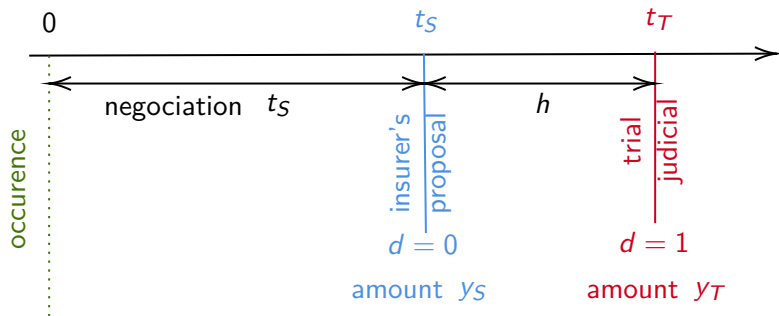


- amount models (limited dependent)

$$\begin{cases} \text{negotiated settlement} & : \log(y_S) = \lambda_{S0} + \boldsymbol{\lambda}_{S1}^\top \mathbf{x} + \omega_S + \varepsilon_S \\ \text{trial} & : \log(y_T) = \lambda_{T0} + \boldsymbol{\lambda}_{T1}^\top \mathbf{x} + \omega_T + \varepsilon_T \end{cases}$$

$y = y_S$  if  $d = 0$ , or  $y = y_T$  ( limited dependent variables, as in Madalla (1983))

# Econometric Model



- procedure length models (limited dependent)

$$\begin{cases} \text{negotiated settlement} & : \log(t_S) = \beta_{S0} + \beta_{S1}^\top \mathbf{x} + \delta_S + \nu_S \\ \text{trial} & : h = \log(t_S) - \log(t_T) = \beta_{T0} + \beta_{T1}^\top \mathbf{x} + \delta_T + \nu_T \end{cases}$$

$t = t_S$  if  $d = 0$ , or  $t = t_T$  ( **limited dependent variables**, as in **Madalla (1983)**)

# Econometric Model

## ► decision model

Agents have CARA (exponential) utility,  $v(y) = -\exp(-\rho y)$ , with  $\rho > 0$ , thus, if  $Y$  is Gaussian,

$$\mathbb{E}[v(Y)] = v\left(\mathbb{E}[Y] - \frac{\rho}{2}\text{Var}[Y]\right)$$

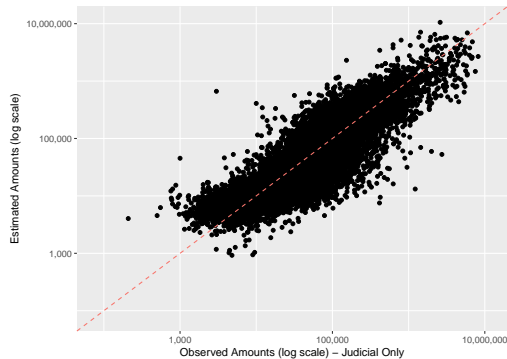
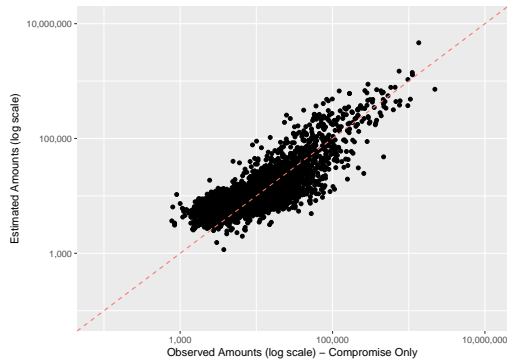
With intertemporally separable preferences and a rate  $\delta$  for time preference, victims go to court (time  $t$ ) if

$$\exp(-\delta(T - S)) \left[ \mathbb{E}[Y_T] - \frac{\rho}{2}\text{Var}[Y_T] \right] > Y_S$$

Arrondel & Masson (2005) defined four individuals types :

- *Hotheads* (low  $\rho$ , high  $\delta$ ),
- *Short-sighted prudent* (high  $\rho$ , high  $\delta$ ),
- *Entreprising* (low  $\rho$ , low  $\delta$ ),
- *Armchairs investor* (high  $\rho$ , low  $\delta$ ),

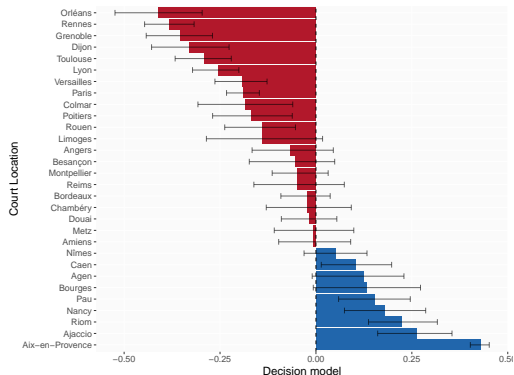
# Econometric Model



Scatterplot of  $(y_S, \hat{y}_S)$  and  $(y_T, \hat{y}_T)$ .

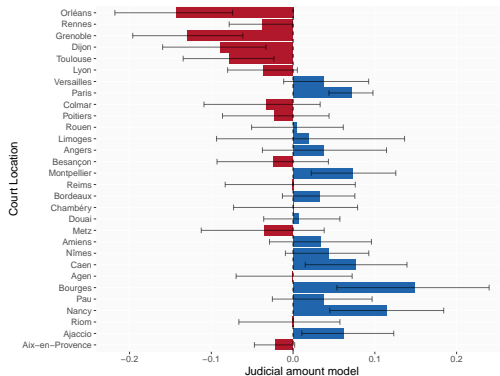
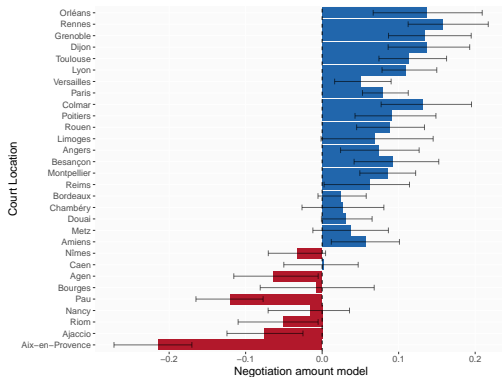
# Econometric Model

decision to go to court, location parameter,



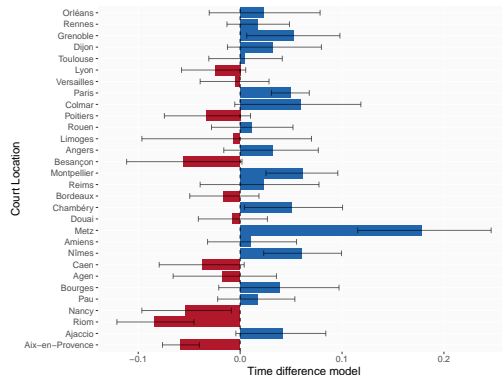
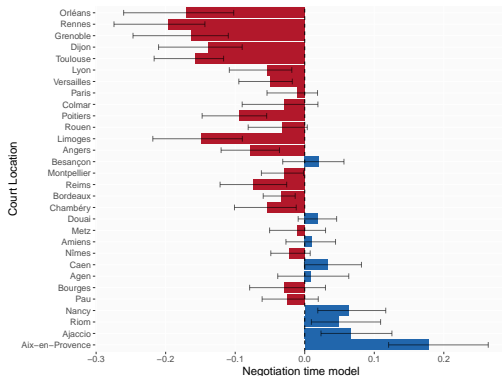
# Econometric Model

amount models, negotiation  $y_S$  & trial  $y_T$ , location parameter,



# Econometric Model

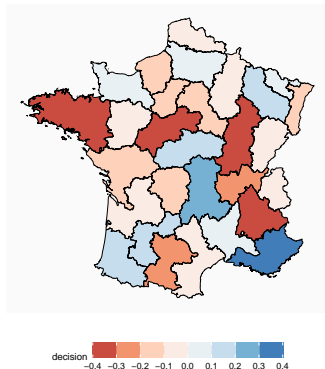
amount models, negotiation  $t_5$  & trial  $h$ , location parameter,





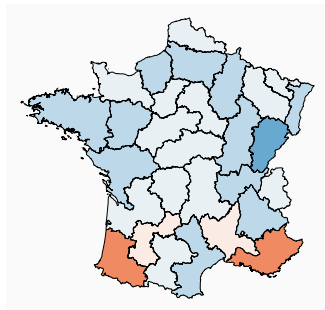
# Econometric Model

decision to go to court, location parameter,

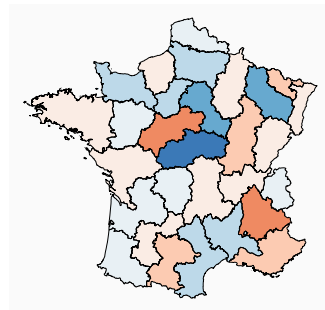


# Econometric Model

amount models, negotiation  $y_S$  & trial  $y_T$ , location parameter,



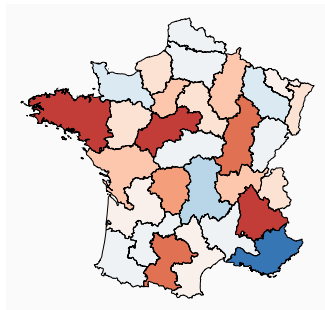
negotiation  
amount  
-0.12 -0.08 -0.04 0.00 0.04 0.08 0.12



judiciary  
amount  
-0.12 -0.08 -0.04 0.00 0.04 0.08 0.12

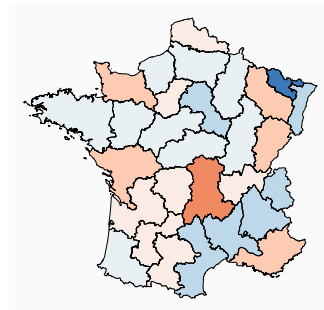
# Econometric Model

amount models, negotiation  $t_5$  & trial  $h$ , location parameter,



negotiation  
time

-0.25 -0.20 -0.15 -0.10 -0.05 0.00 0.05 0.10 0.15 0.20 0.25



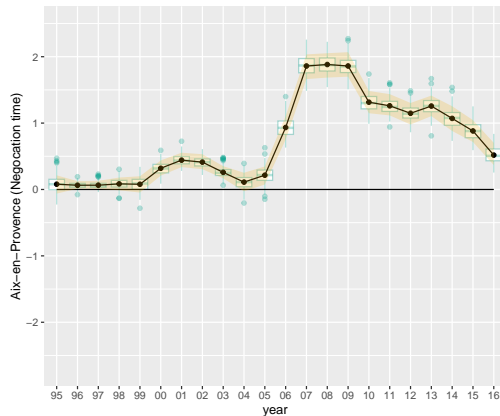
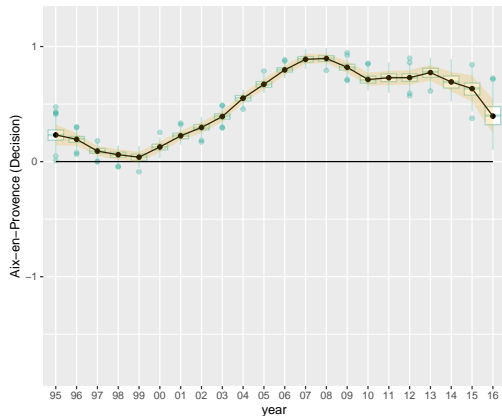
time  
difference

-0.12 -0.08 -0.04 0.00 0.04 0.08 0.12

# Econometric Model

Temporal Evolution, Aix-en-Provence

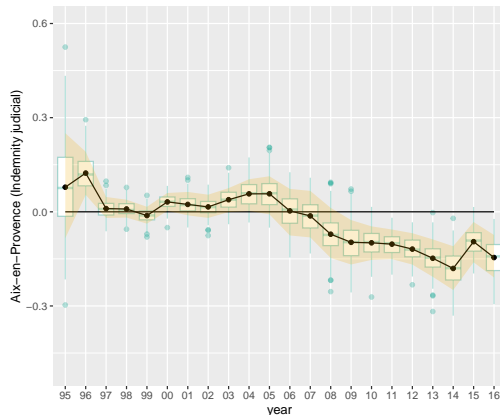
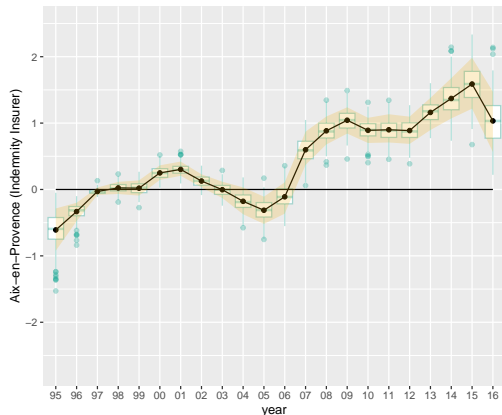
Decision to go to court & negotiation time  $t_5$



# Econometric Model

Temporal Evolution, Aix-en-Provence

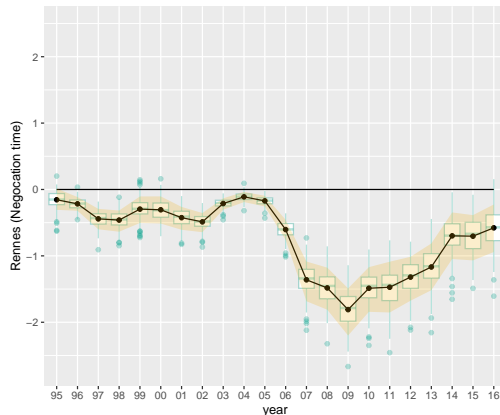
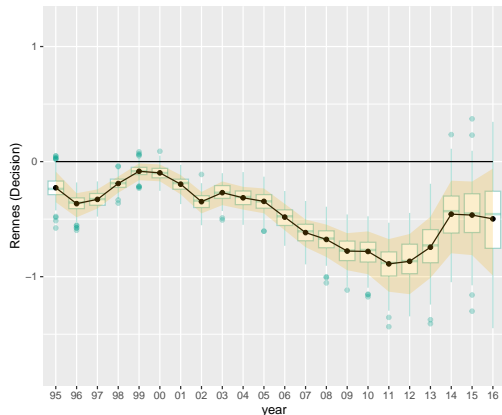
Amount models, negotiation  $y_S$  & trial  $y_T$ ,



# Econometric Model

Temporal Evolution, **Rennes**

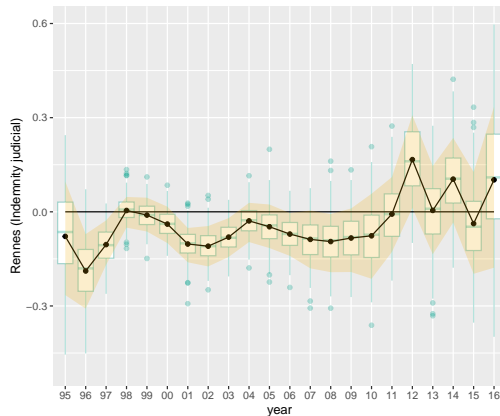
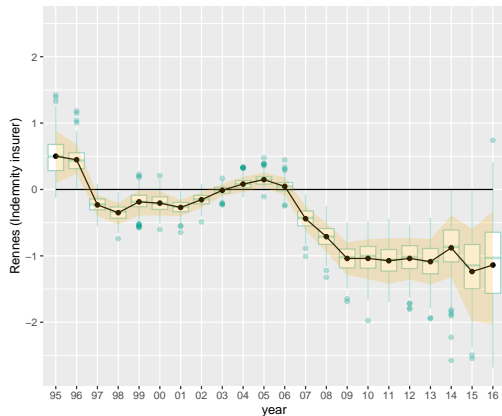
Decision to go to court & negotiation time  $t_5$



# Econometric Model

Temporal Evolution, **Rennes**

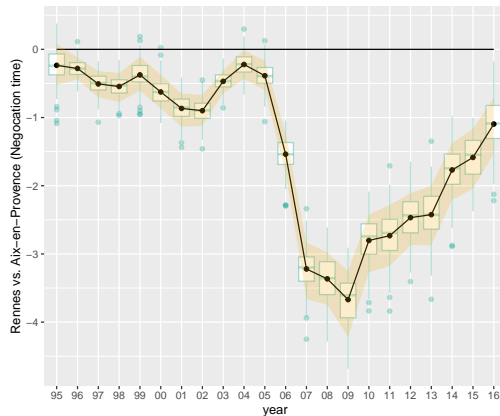
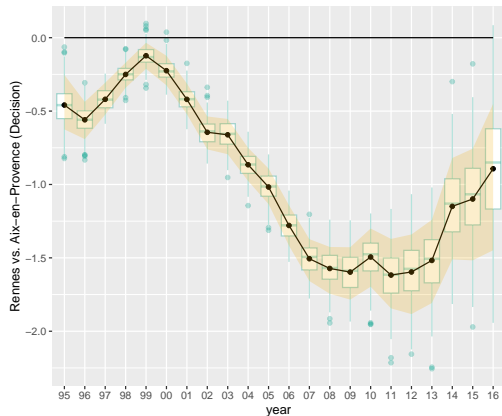
Amount models, negotiation  $y_S$  & trial  $y_T$ ,



# Econometric Model

Temporal Evolution, Rennes vs Aix

Decision to go to court & negotiation time  $t_5$

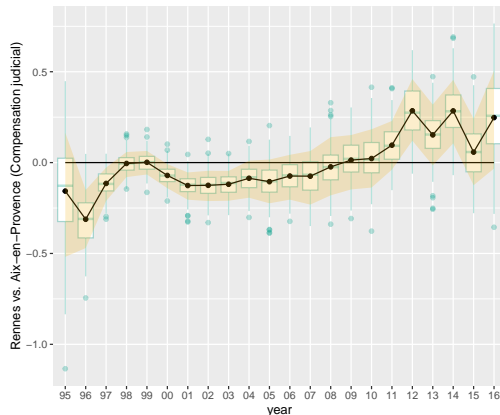
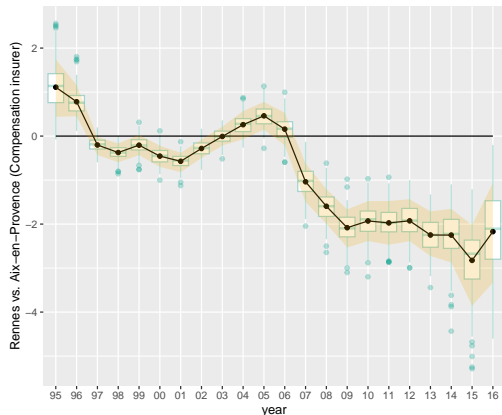




# Econometric Model

Temporal Evolution, **Rennes vs Aix**

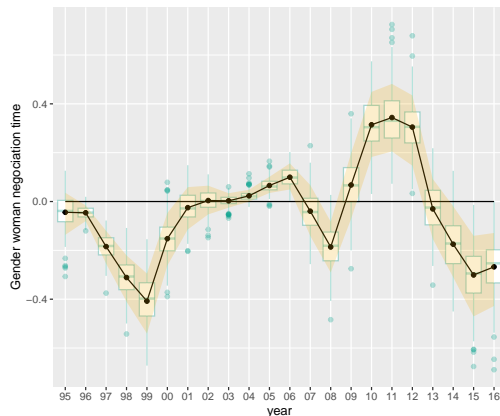
Amount models, negotiation  $y_S$  & trial  $y_T$ ,



# Econometric Model

Temporal Evolution, **women** indicator

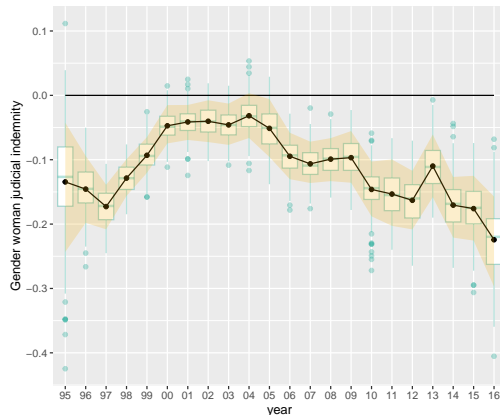
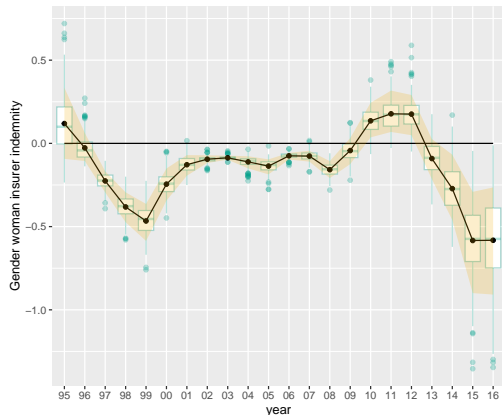
Decision to go to court & negotiation time  $t_5$



# Econometric Model

Temporal Evolution, **women** indicator

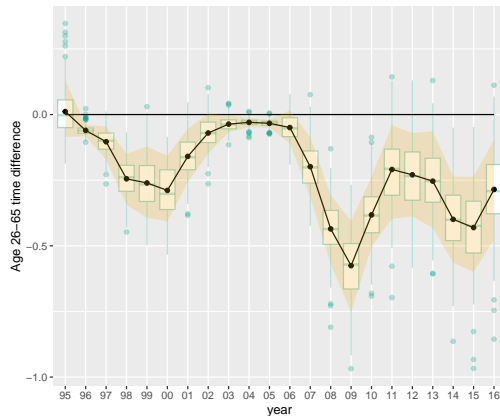
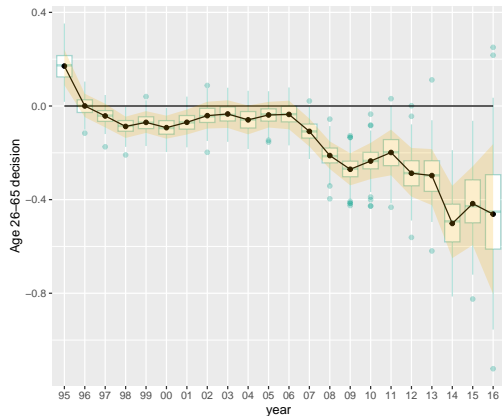
Amount models, negotiation  $y_S$  & trial  $y_T$ ,



# Econometric Model

Temporal Evolution, age 26-65 indicator

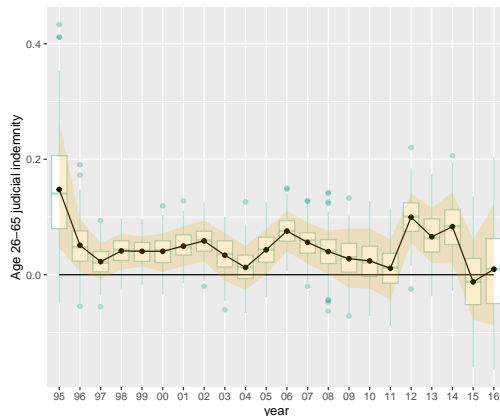
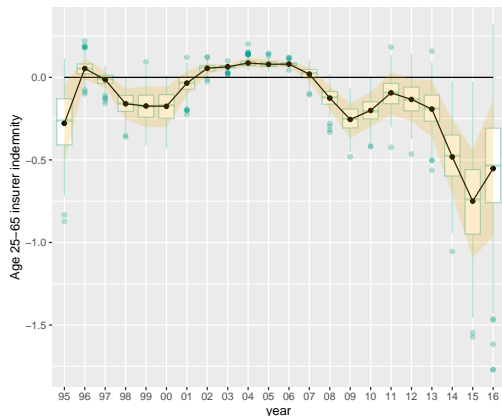
Decision to go to court & negotiation time  $t_5$



# Econometric Model

Temporal Evolution, age 26-65 indicator

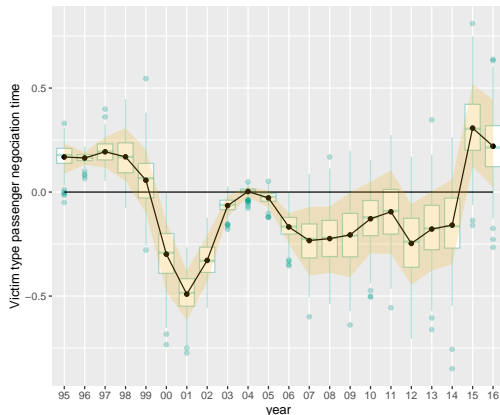
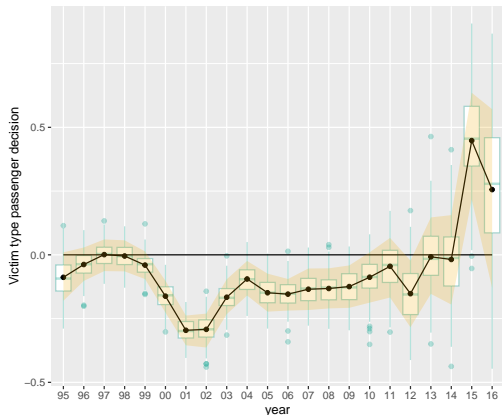
Amount models, negotiation  $y_S$  & trial  $y_T$ ,



# Econometric Model

Temporal Evolution, **passenger** (reference being driver)

Decision to go to court & negotiation time  $t_5$



# Econometric Model

Temporal Evolution, **passenger** (reference being driver)

Amount models, negotiation  $y_S$  & trial  $y_T$ ,

