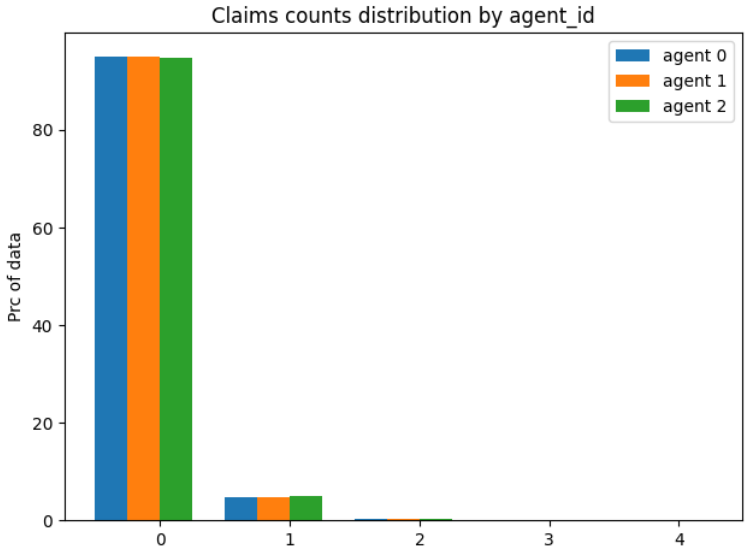
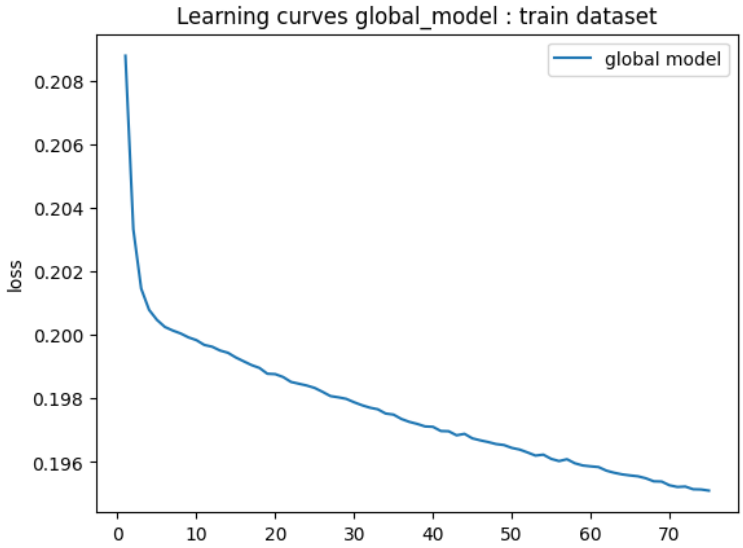
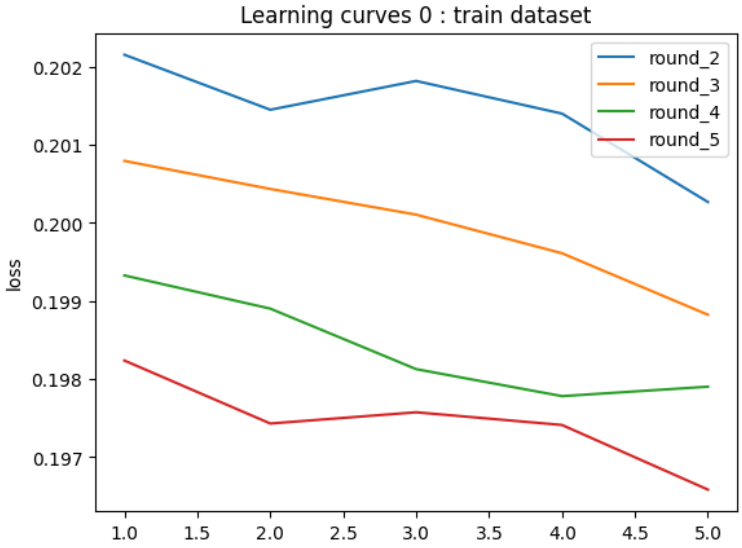
Run Results: num_agents: 10; num_rounds: 5; epochs: 5; epochs local and global: 75

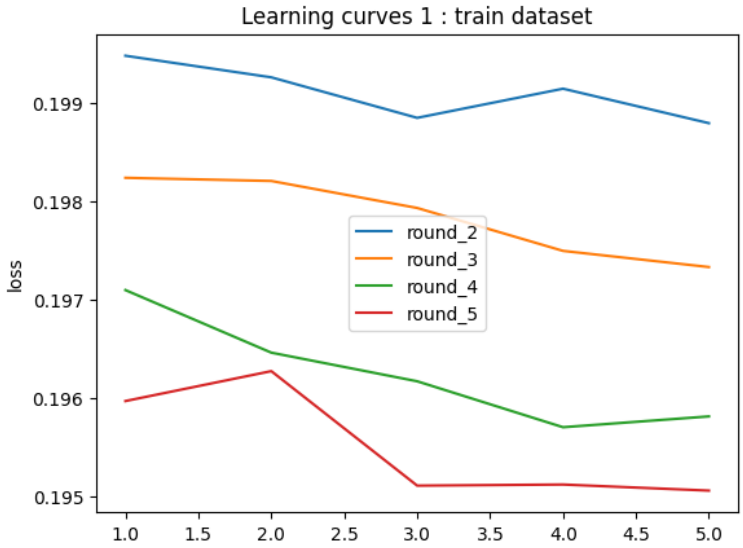
Input Data: Distribution of numbers of observed claims by FL participating parties.

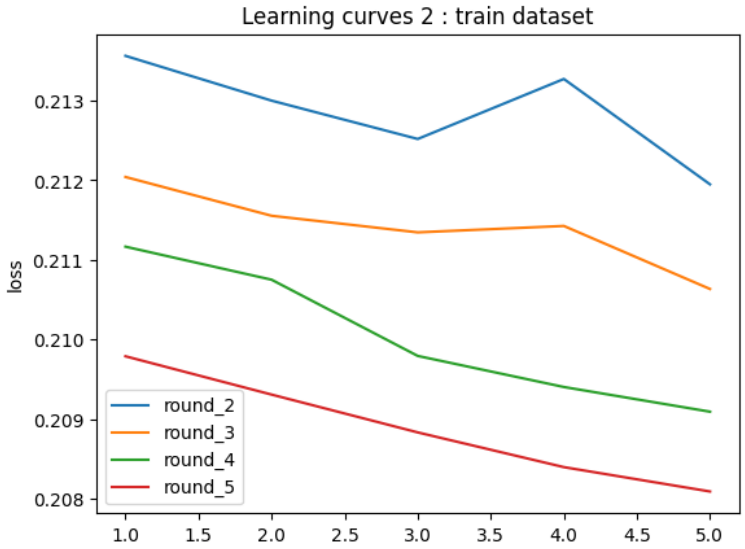


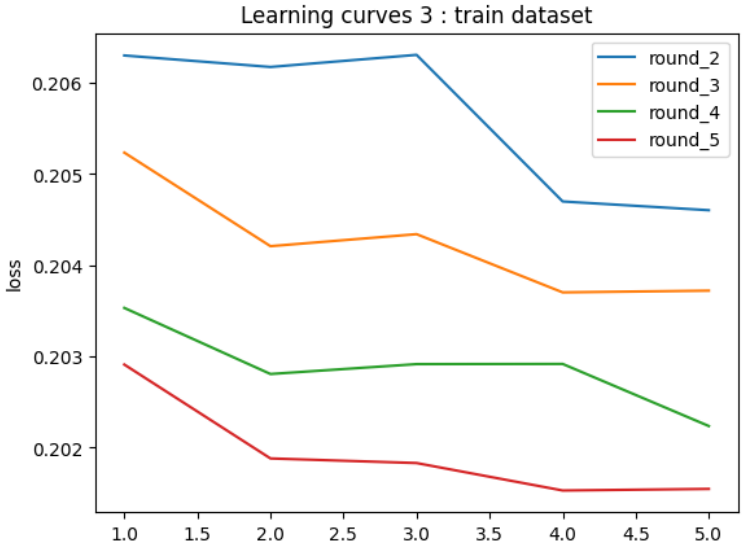
Model Training: Learning curves; Train dataset

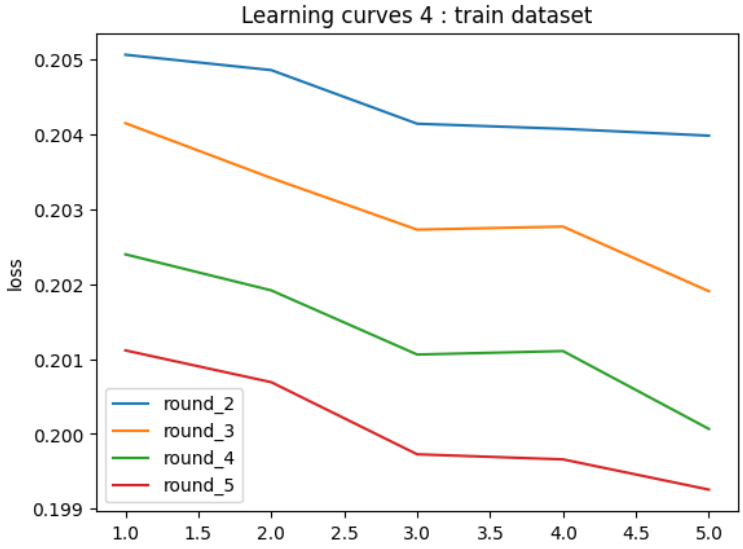


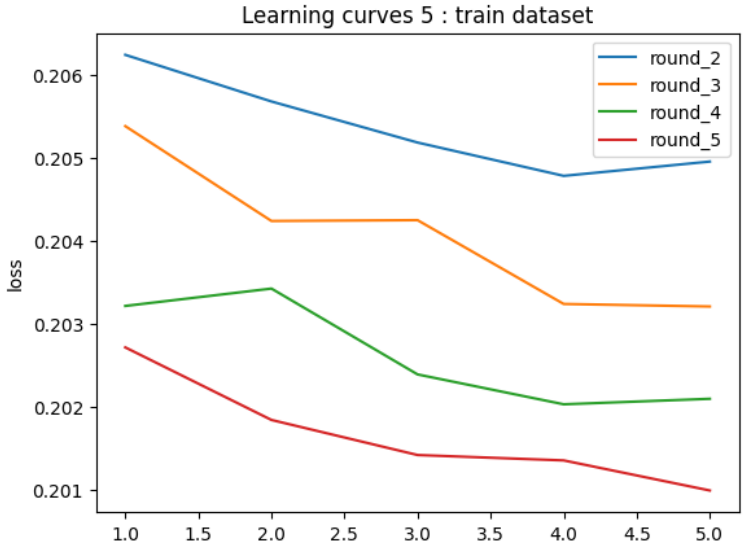

Learning curves 0 : train dataset
loss
round_2
round_3
round_4
round_5
0.202
0.201
0.200
0.199
0.198
0.197
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

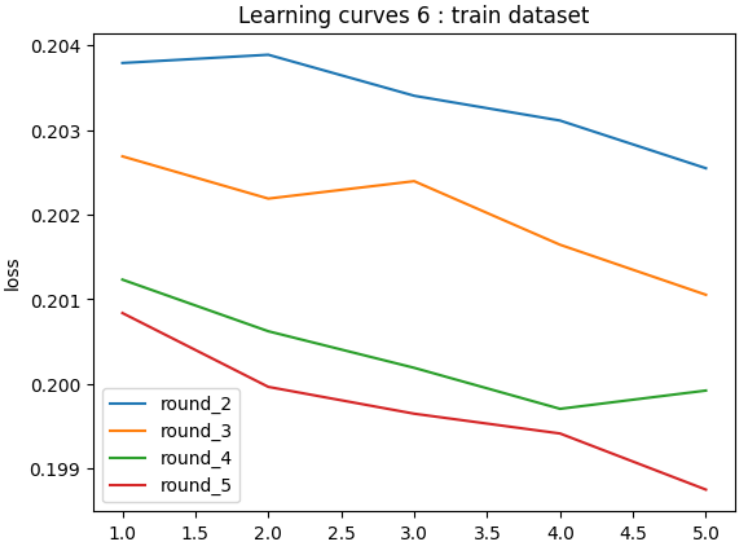

Learning curves 1 : train dataset
loss
round_2
round_3
round_4
round_5
0.199
0.198
0.197
0.196
0.195
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

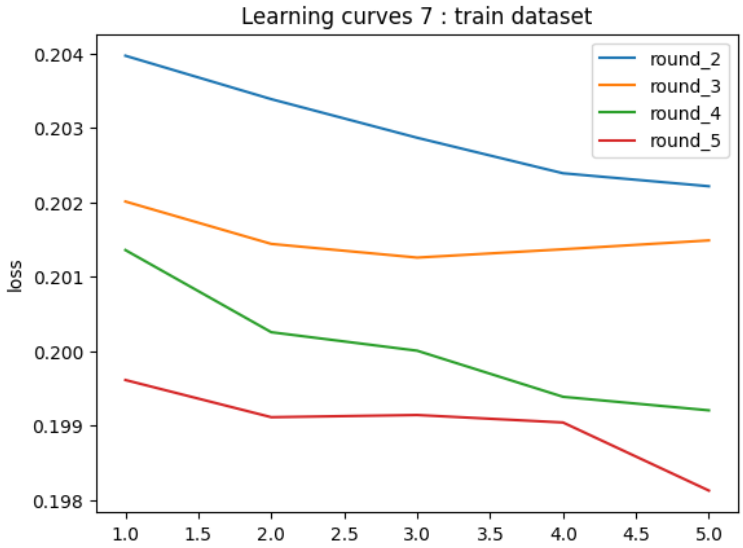

Learning curves 2 : train dataset
loss
round_2
round_3
round_4
round_5
0.213
0.212
0.211
0.210
0.209
0.208
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

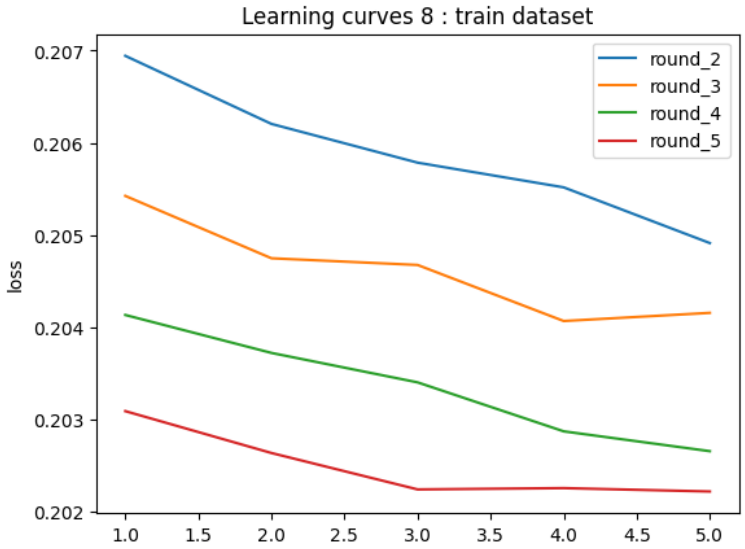

Learning curves 3 : train dataset
round_2
round_3
round_4
round_5
loss
0.206
0.205
0.204
0.203
0.202
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

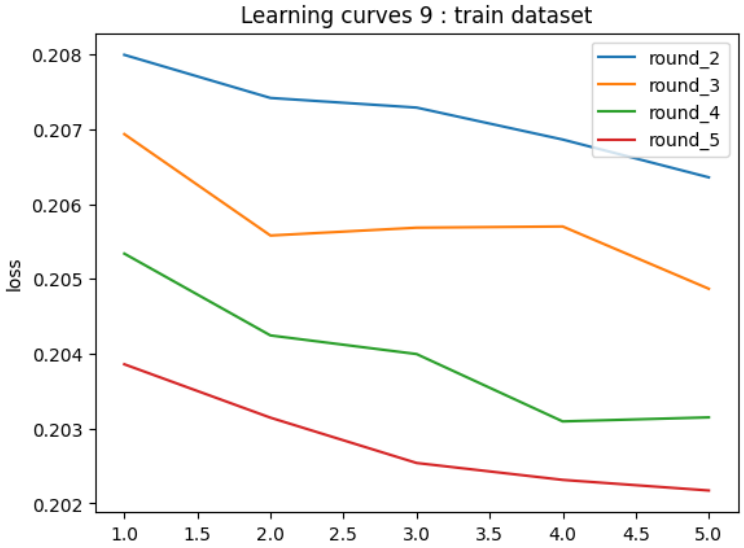

Learning curves 4 : train dataset
loss
0.205
0.204
0.203
0.202
0.201
0.200
0.199
round_2
round_3
round_4
round_5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0


Learning curves 5 : train dataset
loss
0.206
0.205
0.204
0.203
0.202
0.201
round_2
round_3
round_4
round_5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

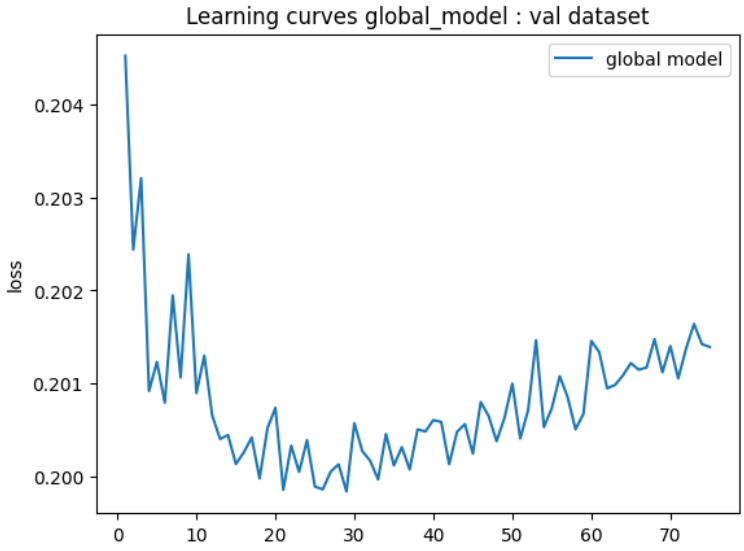

Learning curves 6 : train dataset
loss
round_2
round_3
round_4
round_5

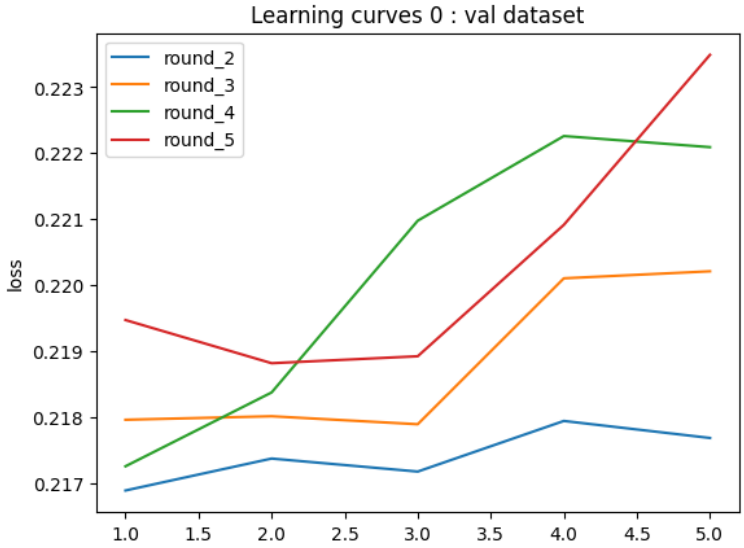

Learning curves 7 : train dataset
loss
round_2
round_3
round_4
round_5

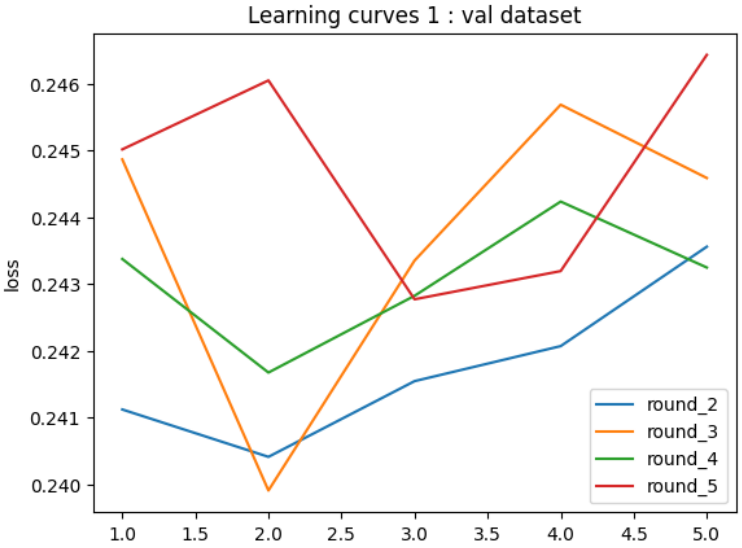

Learning curves 8 : train dataset
loss
round_2
round_3
round_4
round_5

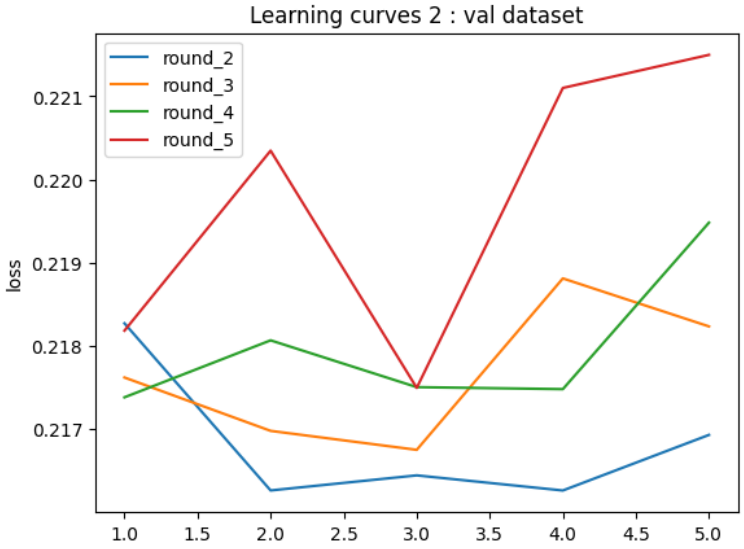


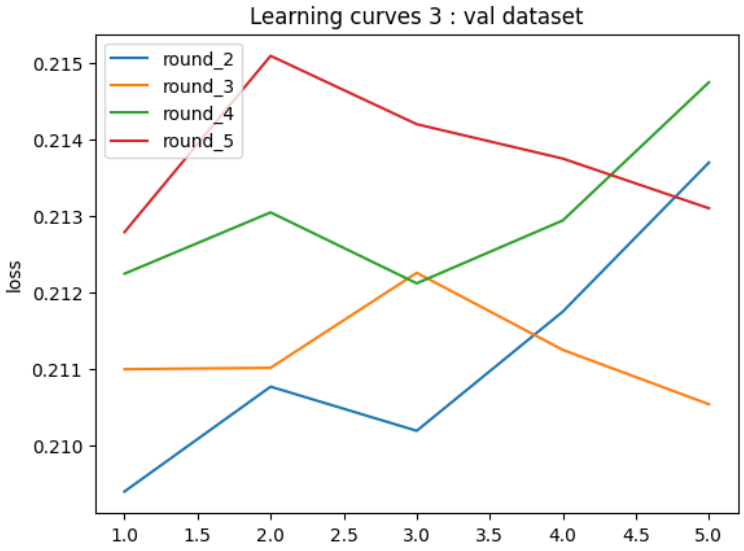
Model Training: Learning curves; Validation dataset

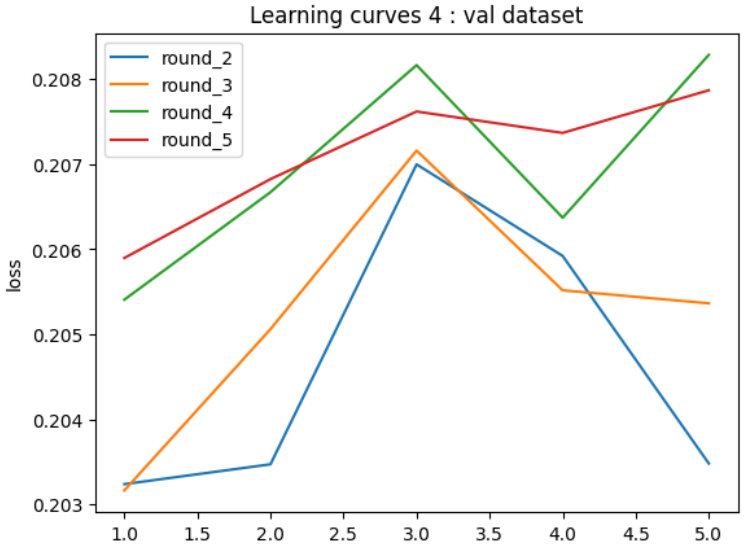


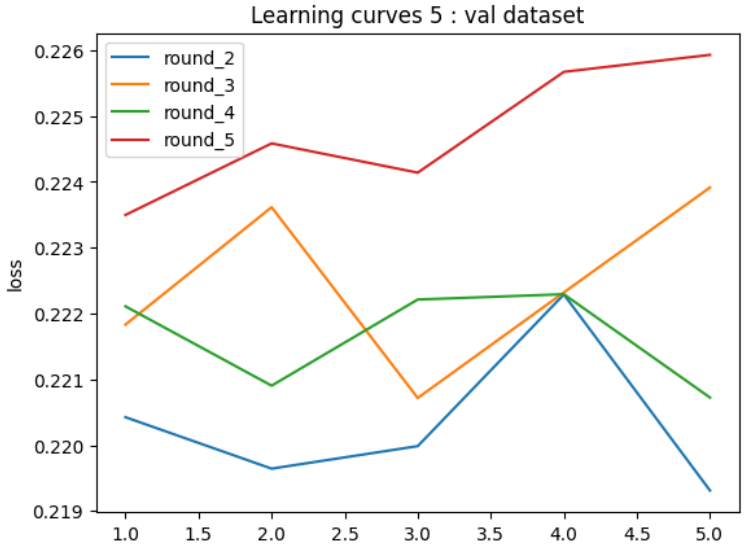


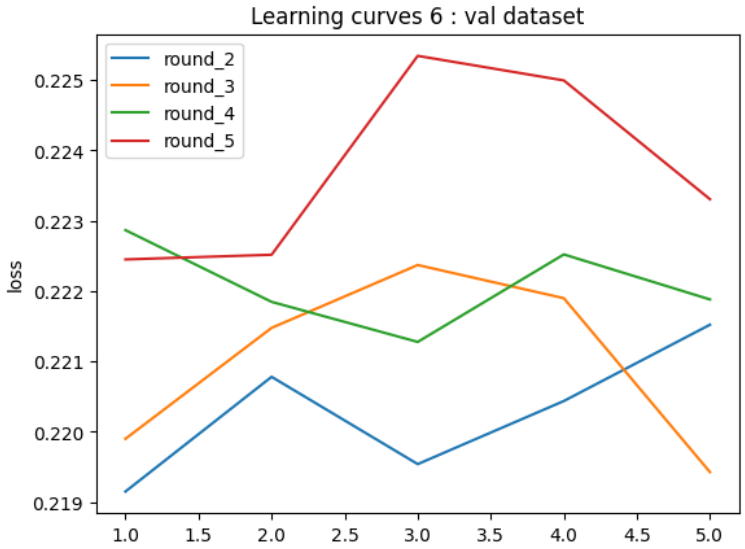

Learning curves 1 : val dataset
loss
0.246
0.245
0.244
0.243
0.242
0.241
0.240
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
round_2
round_3
round_4
round_5

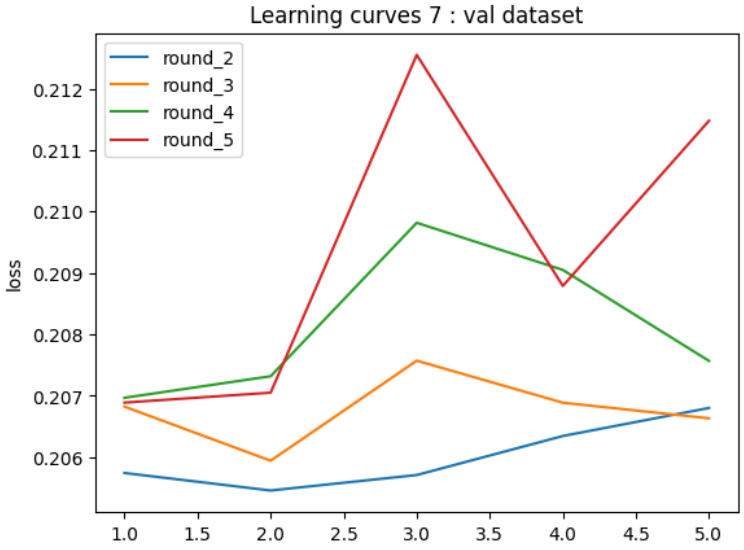

Learning curves 2 : val dataset
loss
0.221
0.220
0.219
0.218
0.217
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
round_2
round_3
round_4
round_5

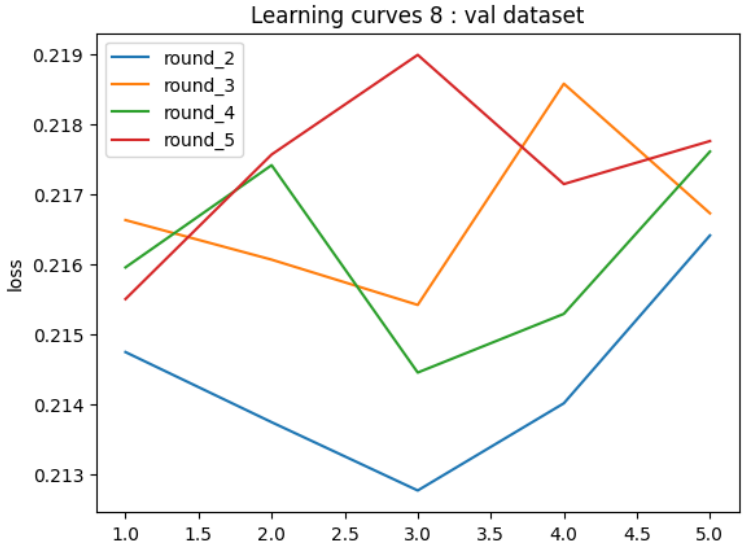

Learning curves 3 : val dataset
loss
0.215
0.214
0.213
0.212
0.211
0.210
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
round_2
round_3
round_4
round_5

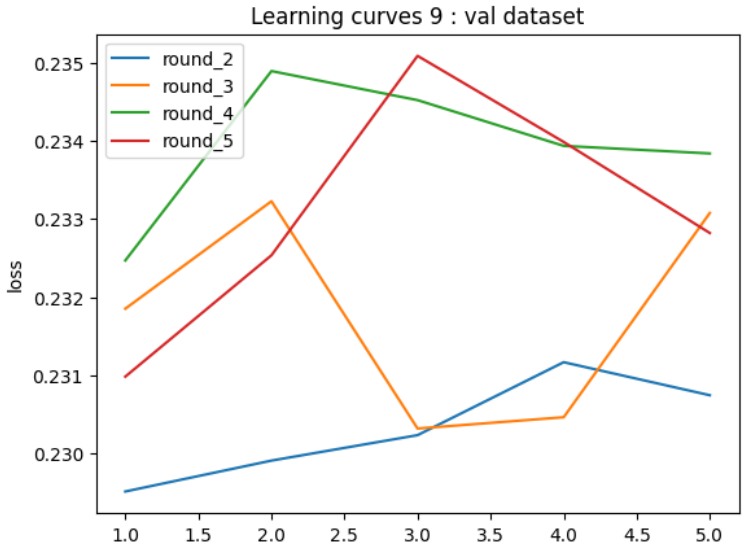

Learning curves 4 : val dataset
round_2
round_3
round_4
round_5
loss
0.208
0.207
0.206
0.205
0.204
0.203
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0


Learning curves 5 : val dataset
round_2
round_3
round_4
round_5
loss
0.226
0.225
0.224
0.223
0.222
0.221
0.220
0.219
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0


Learning curves 6 : val dataset
round_2
round_3
round_4
round_5
loss
0.225
0.224
0.223
0.222
0.221
0.220
0.219
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0







Test statistics for FL model

Mean Poisson Deviance : 0.299

Prc Poisson Deviance Explained : 0.044

Mean Squared Error : 0.055

R^2 : 0.025

EV : 0.025

Test statistics for global model

Mean Poisson Deviance : 0.299

Prc Poisson Deviance Explained : 0.046

Mean Squared Error : 0.055

R^2 : 0.025

EV : 0.025

Test statistics for agent_no 0

Mean Poisson Deviance : 0.309

Prc Poisson Deviance Explained : 0.018

Mean Squared Error : 0.056

R^2 : 0.006

EV : 0.006

Test statistics for agent_no 1

Mean Poisson Deviance : 0.308

Prc Poisson Deviance Explained : 0.018

Mean Squared Error : 0.056

R^2 : 0.004

EV : 0.004

Test statistics for agent_no 2

Mean Poisson Deviance : 0.309

Prc Poisson Deviance Explained : 0.016

Mean Squared Error : 0.056

R^2 : 0.006

EV : 0.006

Test statistics for agent_no 3

Mean Poisson Deviance : 0.309

Prc Poisson Deviance Explained : 0.010

Mean Squared Error : 0.056

R^2 : 0.004

EV : 0.004

Test statistics for agent_no 4

Mean Poisson Deviance : 0.308

Prc Poisson Deviance Explained : 0.013

Mean Squared Error : 0.056

R^2 : 0.008

EV : 0.008

Test statistics for agent_no 5

Mean Poisson Deviance : 0.308

Prc Poisson Deviance Explained : 0.016

Mean Squared Error : 0.056

R^2 : 0.006

EV : 0.006

Test statistics for agent_no 6

Mean Poisson Deviance : 0.307

Prc Poisson Deviance Explained : 0.024

Mean Squared Error : 0.056

R^2 : 0.010

EV : 0.010

Test statistics for agent_no 7

Mean Poisson Deviance : 0.307

Prc Poisson Deviance Explained : 0.017

Mean Squared Error : 0.056

R^2 : 0.008

EV : 0.008

Test statistics for agent_no 8

Mean Poisson Deviance : 0.310

Prc Poisson Deviance Explained : 0.013

Mean Squared Error : 0.056

R^2 : 0.003

EV : 0.003

Test statistics for agent_no 9

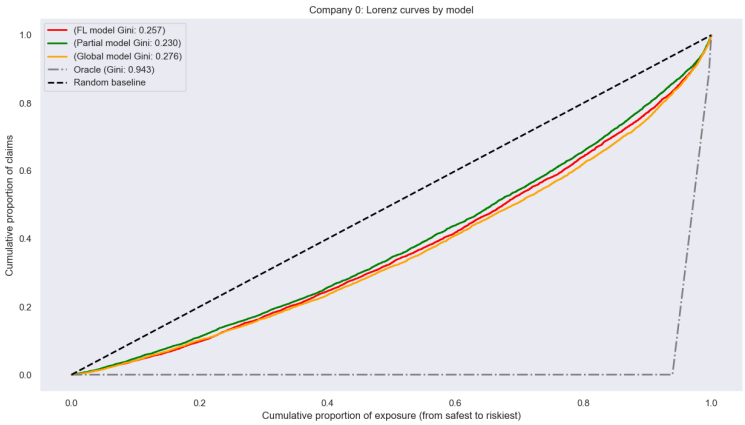
Mean Poisson Deviance : 0.307

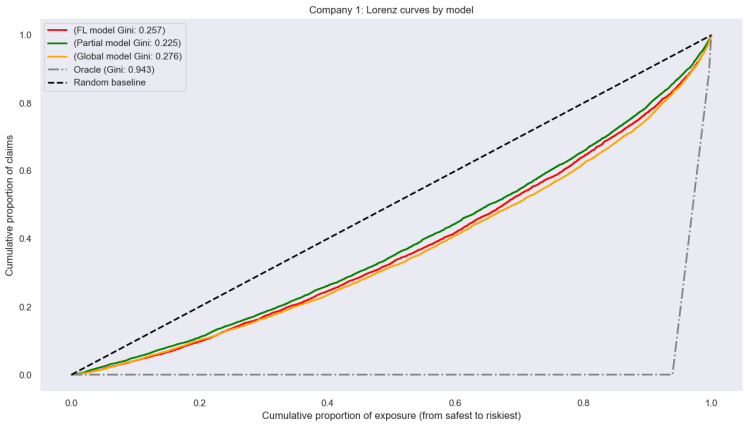
Prc Poisson Deviance Explained : 0.022

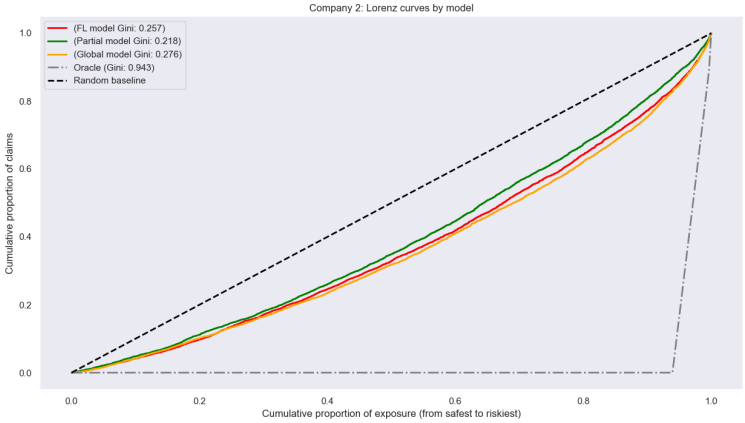
Mean Squared Error : 0.056

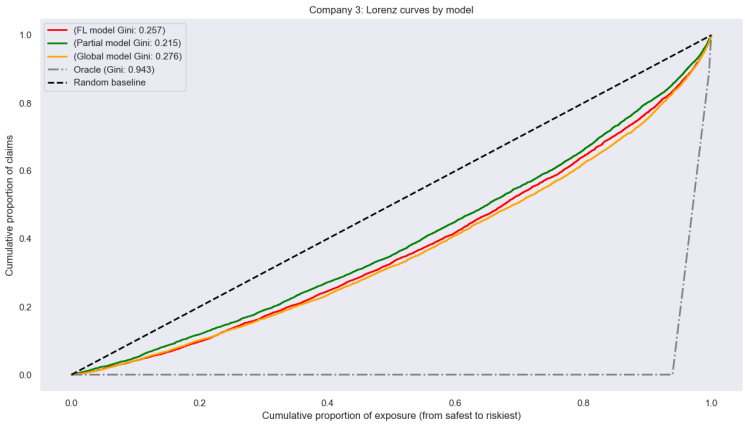
R^2 : 0.005

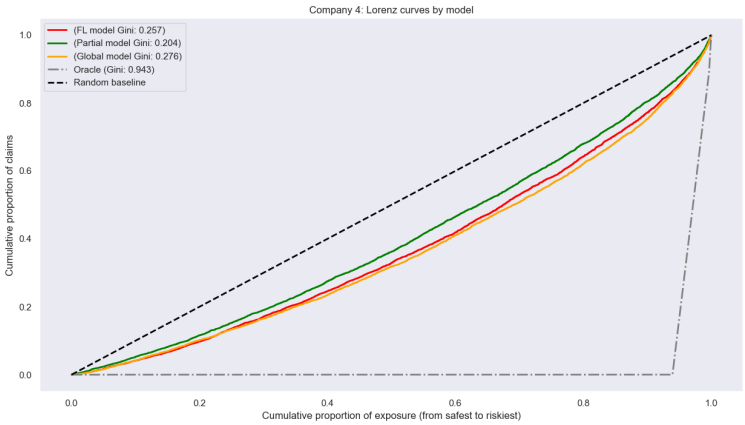
EV : 0.005

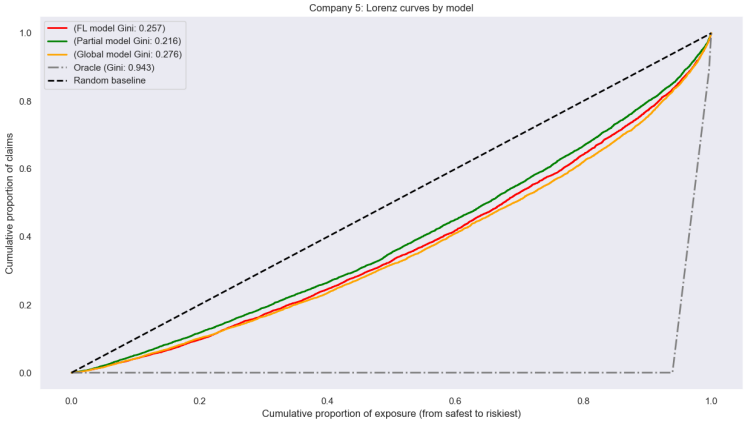

Company 0: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.230)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

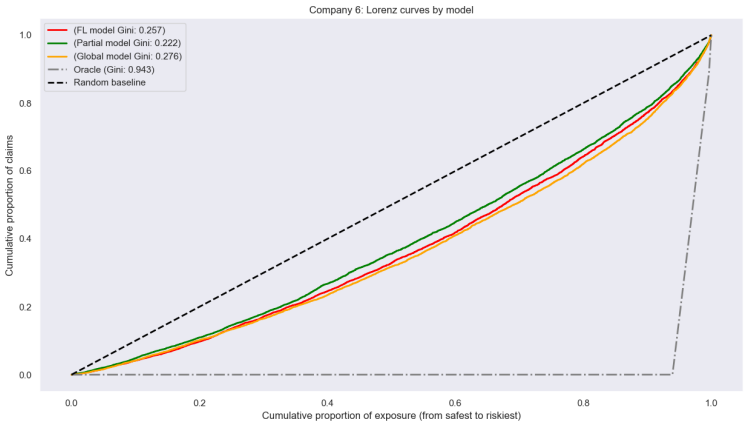

Company 1: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.225)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

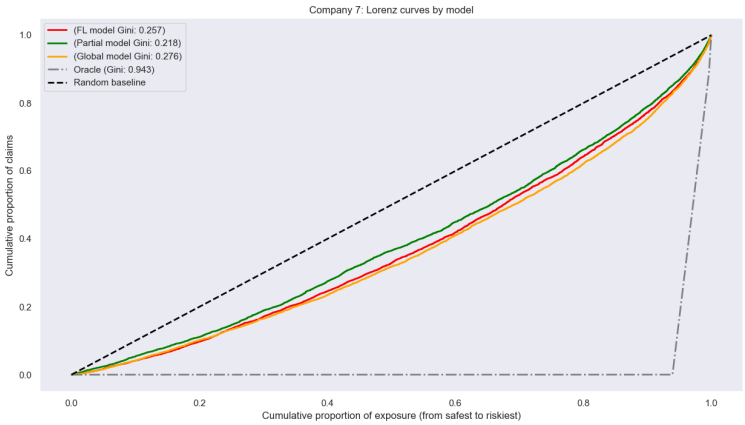

Company 2: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.218)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

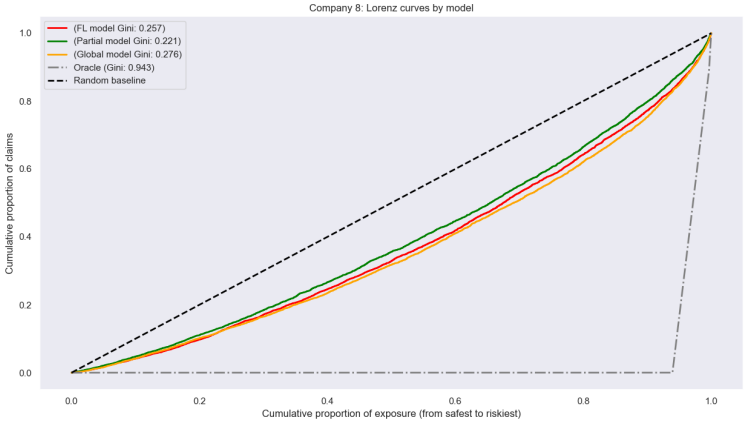

Company 3: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.215)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

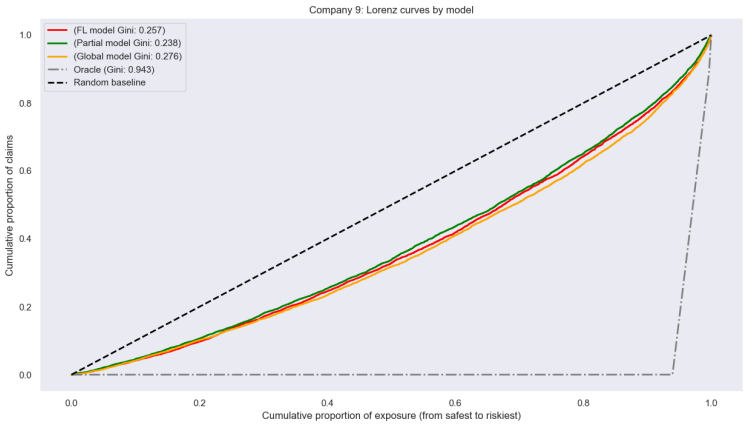

Company 4: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.204)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

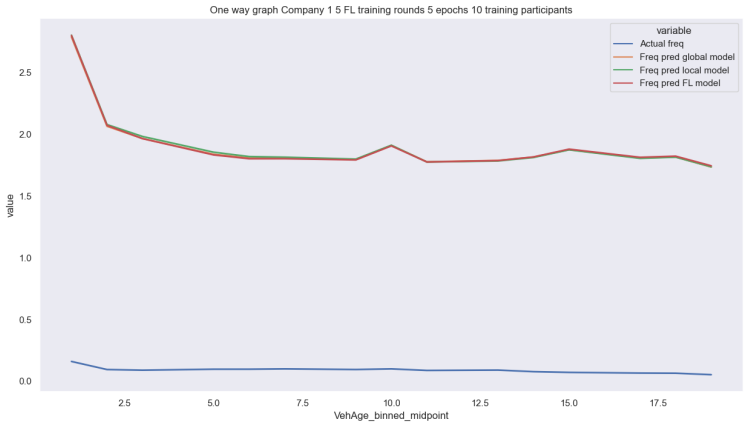

Company 5: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.216)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

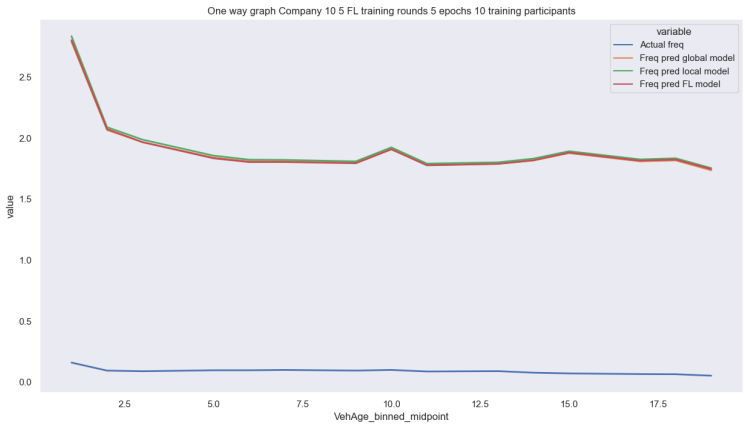

Company 6: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.222)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

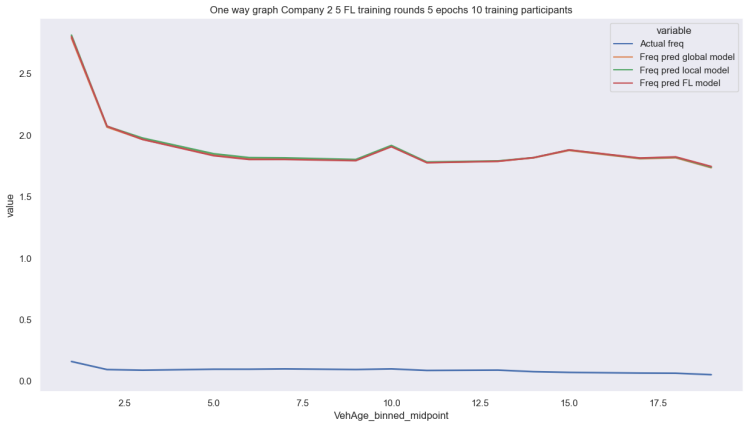

Company 7: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.218)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

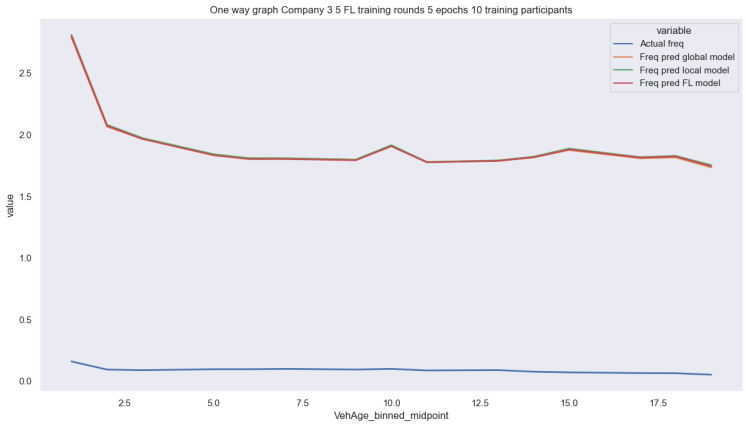

Company 8: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.221)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0


Company 9: Lorenz curves by model
(FL model Gini: 0.257)
(Partial model Gini: 0.238)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)

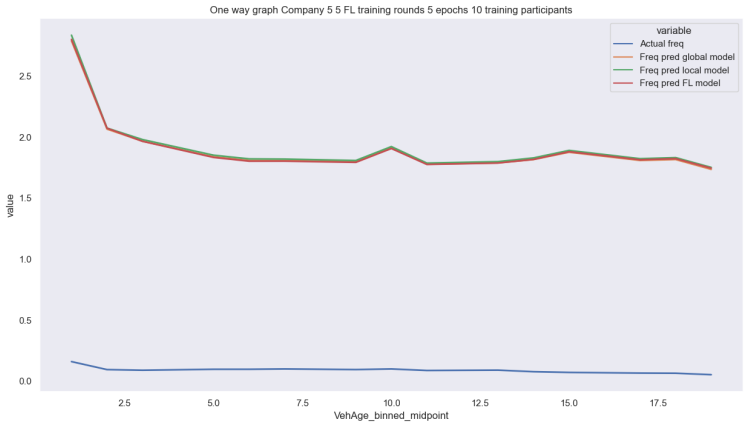

One way graph Company 1 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
VehAge_binned_midpoint

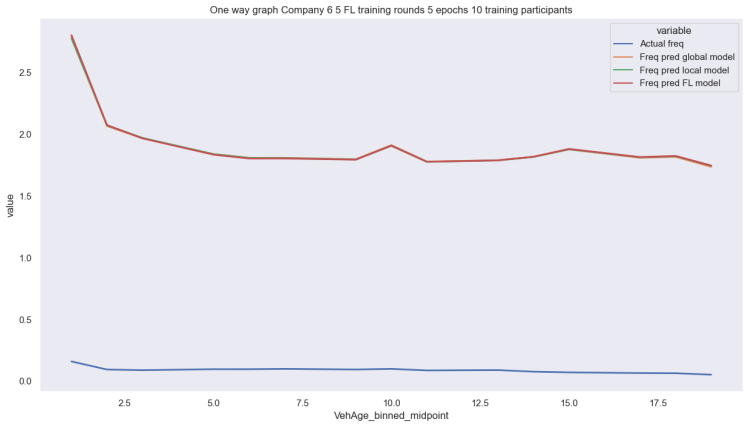

One way graph Company 10 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
VehAge_binned_midpoint

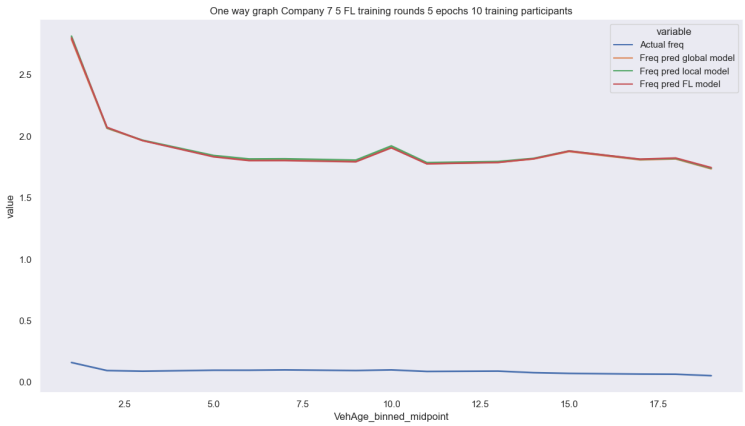

One way graph Company 2 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
0.0
0.5
1.0
1.5
2.0
2.5
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint

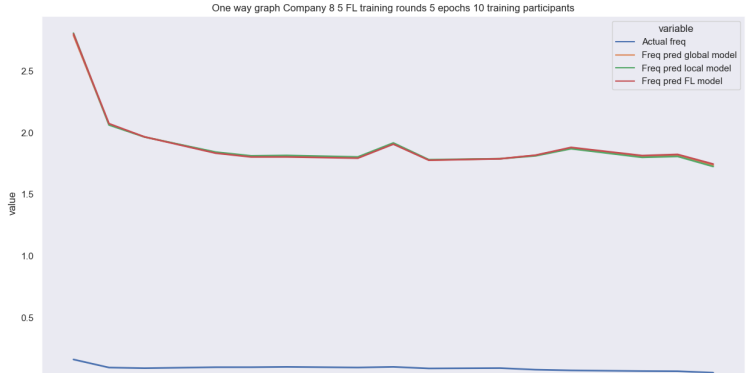

One way graph Company 3 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
0.0
0.5
1.0
1.5
2.0
2.5
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint

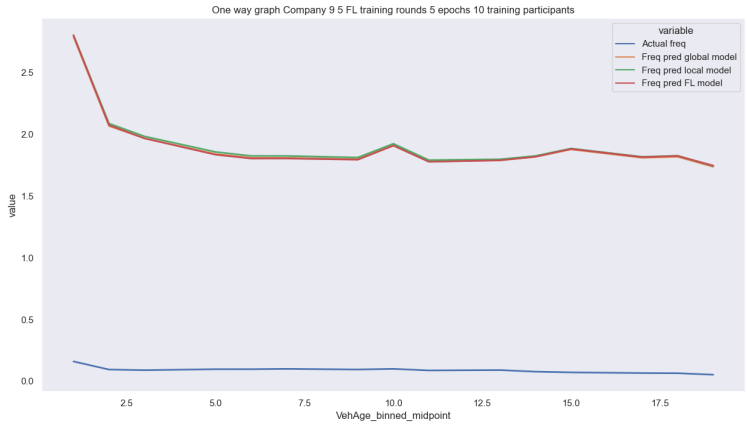

One way graph Company 4 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
0.0
0.5
1.0
1.5
2.0
2.5
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint


One way graph Company 5 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
VehAge_binned_midpoint


One way graph Company 6 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
VehAge_binned_midpoint


One way graph Company 7 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
VehAge_binned_midpoint


One way graph Company 8 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
2.5
2.0
1.5
1.0
0.5


One way graph Company 9 5 FL training rounds 5 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
2.5
2.0
1.5
1.0
0.5
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint