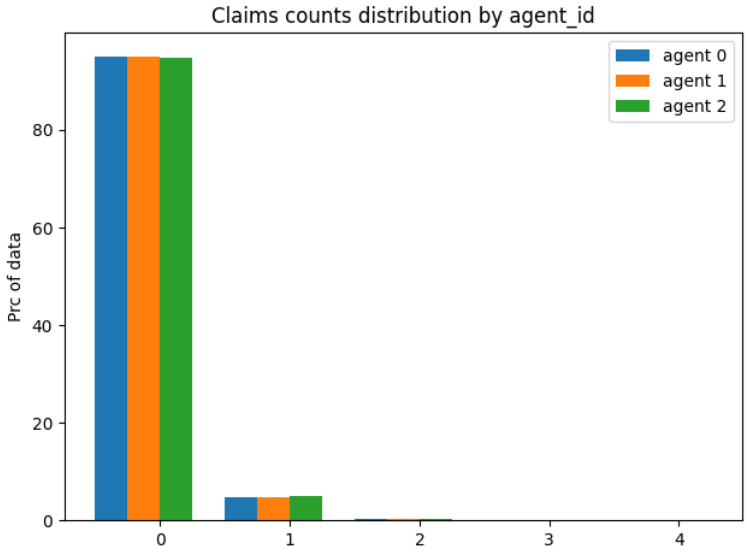
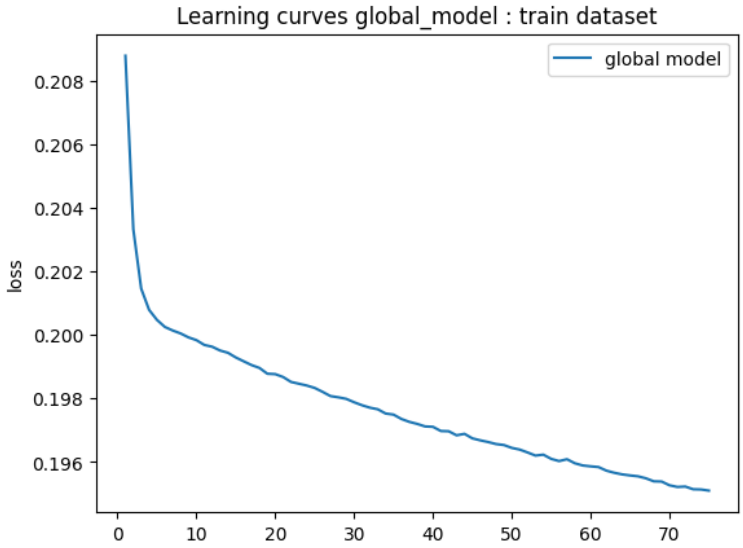
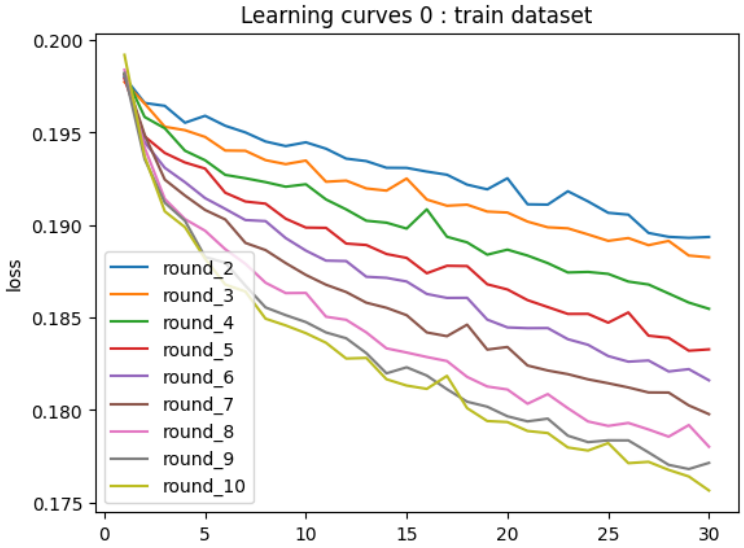
Run Results: num_agents: 10; num_rounds: 10; epochs: 30; epochs local and global: 75

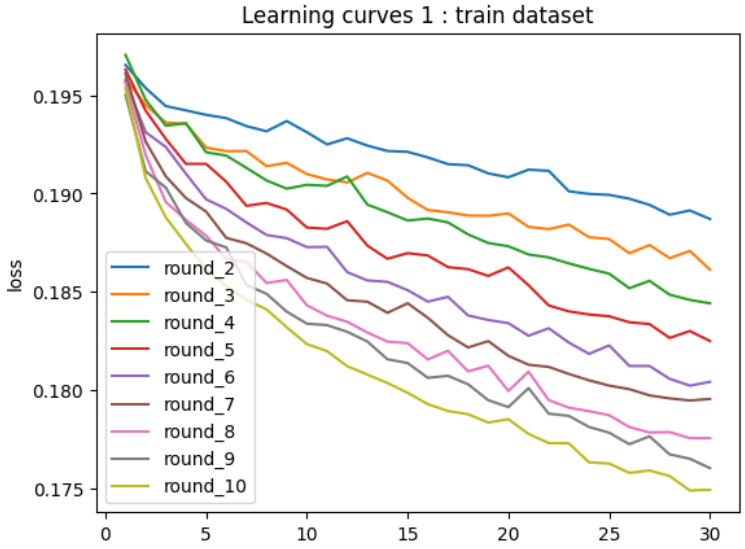
Input Data: Distribution of numbers of observed claims by FL participating parties.

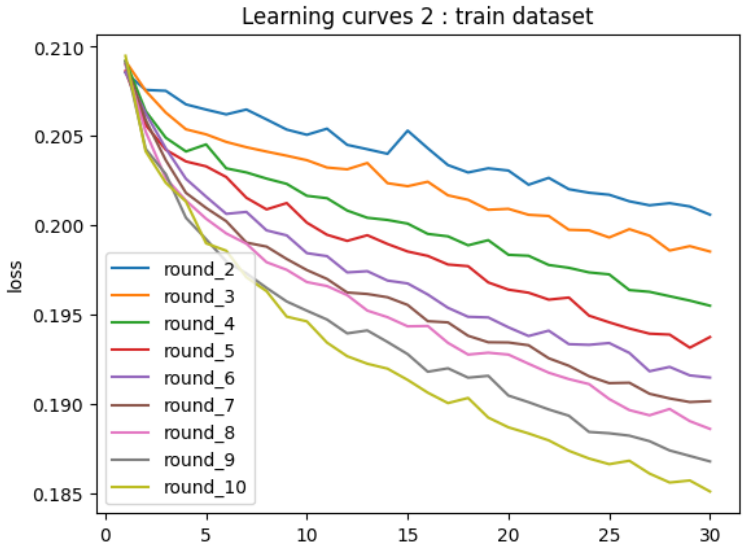


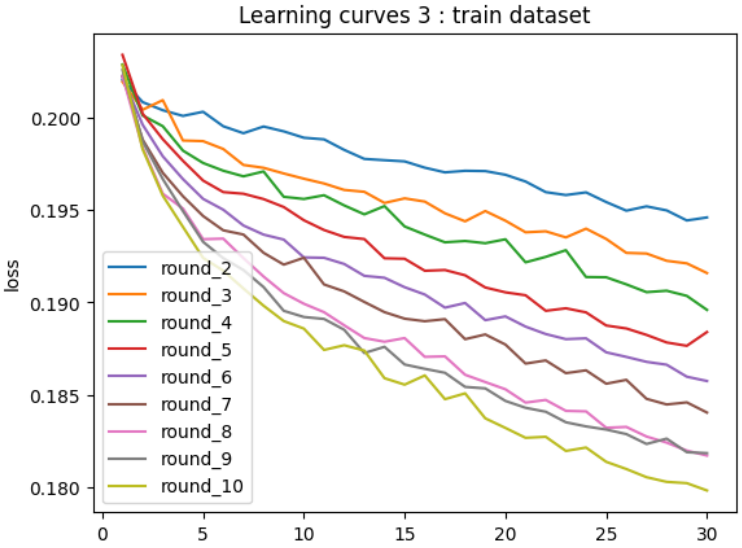

Model Training: Learning curves; Train dataset

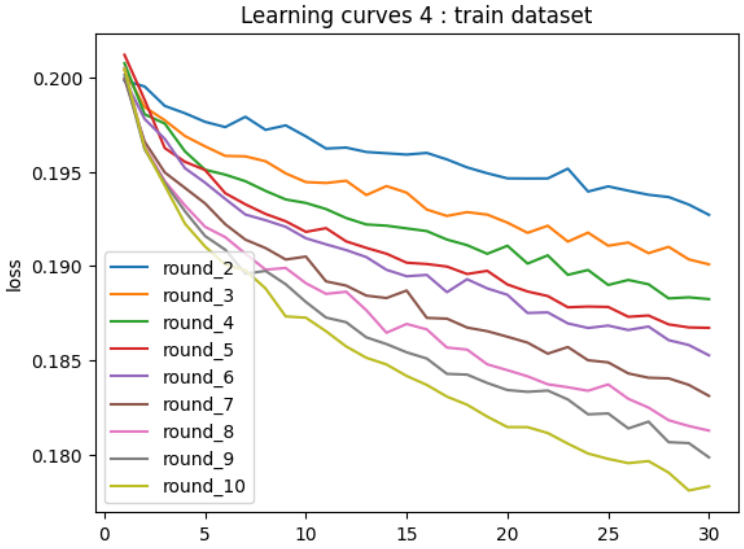


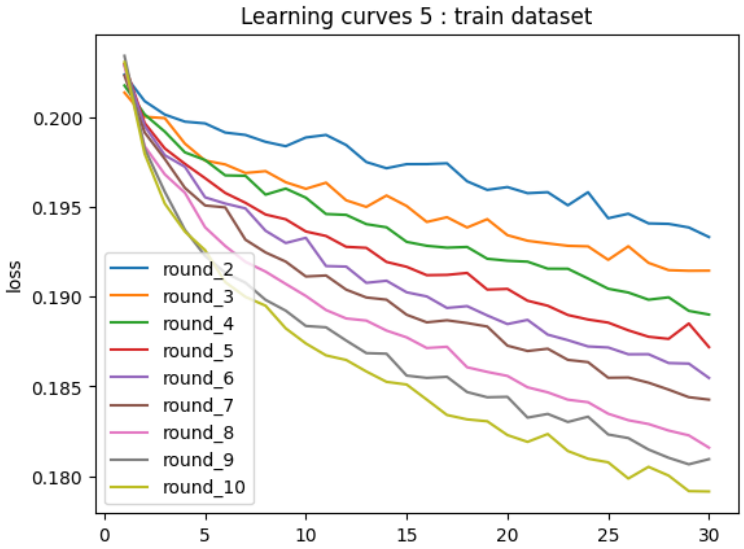

Learning curves 0 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

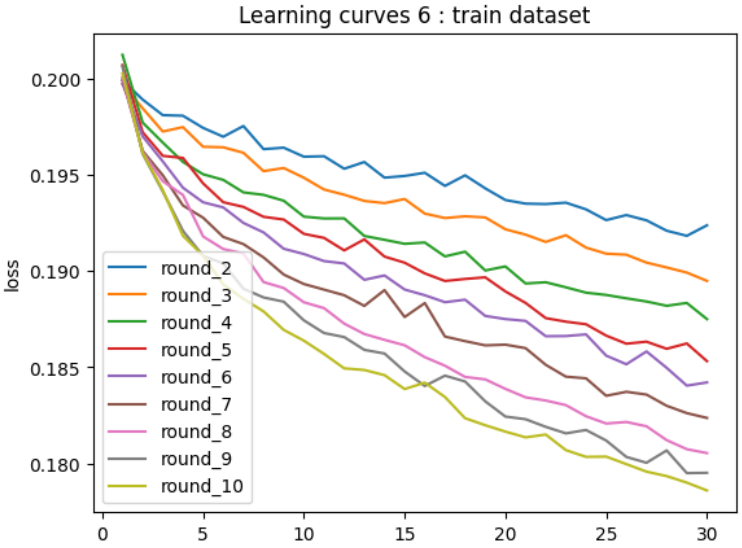

Learning curves 1 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

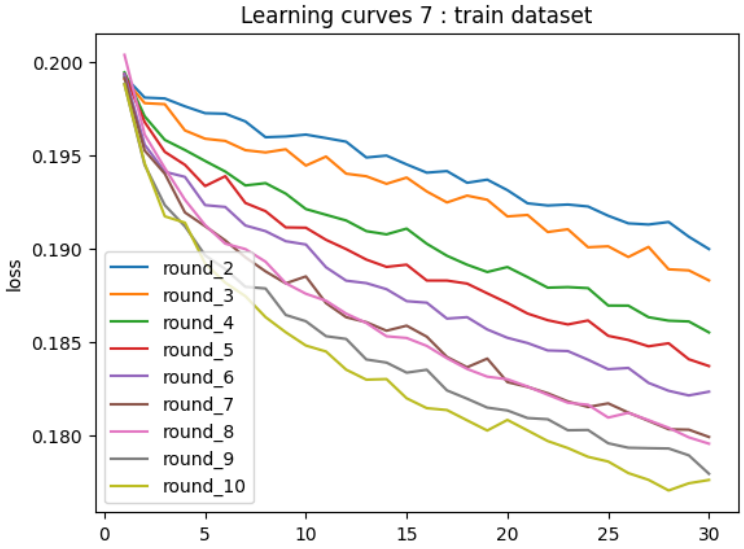

Learning curves 2 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

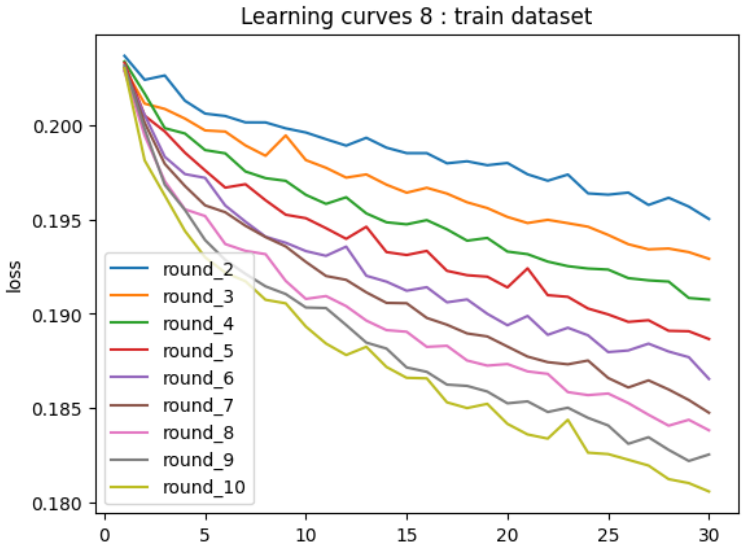

Learning curves 3 : train dataset
loss
0.200
0.195
0.190
0.185
0.180
0
5
10
15
20
25
30
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

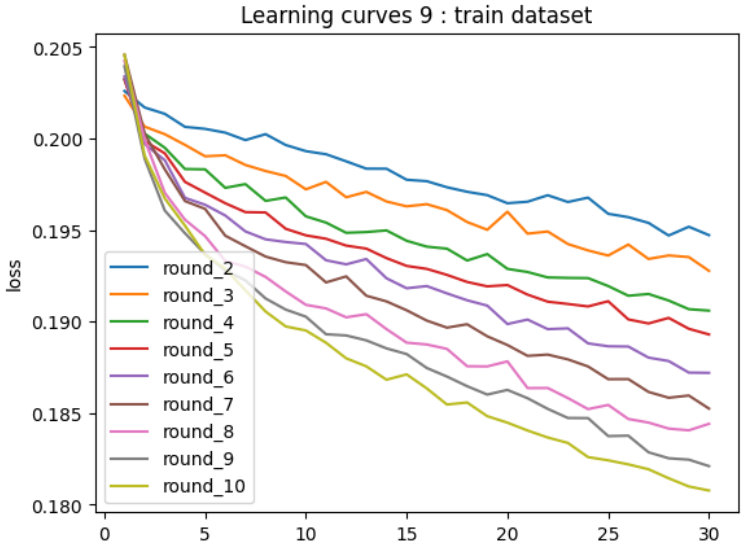

Learning curves 4 : train dataset
loss
0.200
0.195
0.190
0.185
0.180
0
5
10
15
20
25
30
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10


Learning curves 5 : train dataset
loss
0.200
0.195
0.190
0.185
0.180
0
5
10
15
20
25
30
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

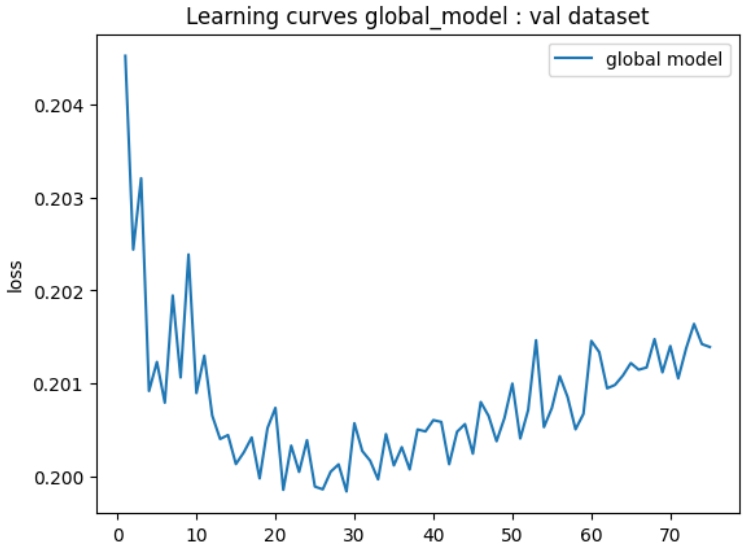

Learning curves 6 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

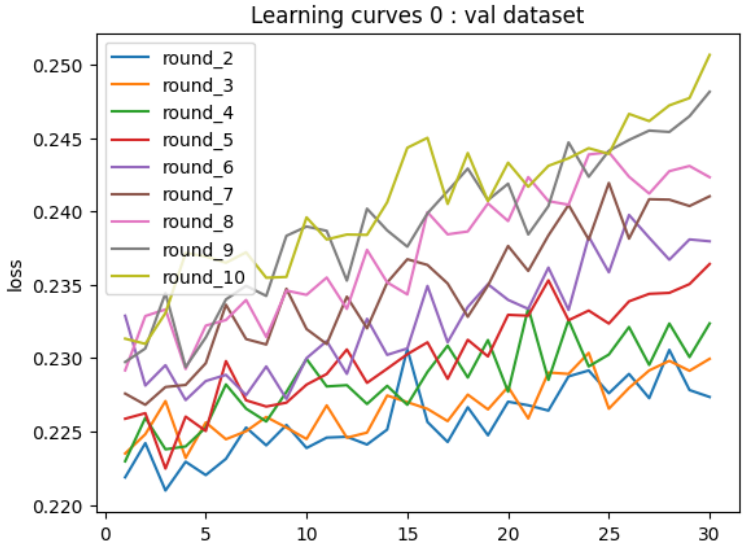

Learning curves 7 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

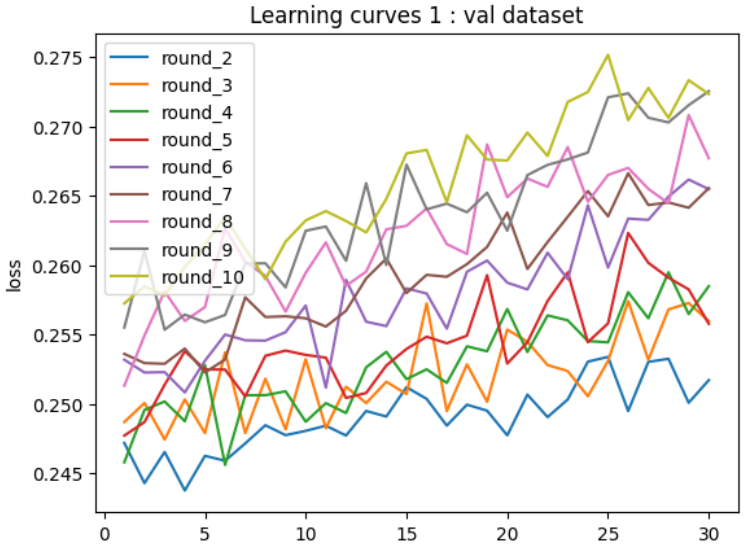

Learning curves 8 : train dataset
loss
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10

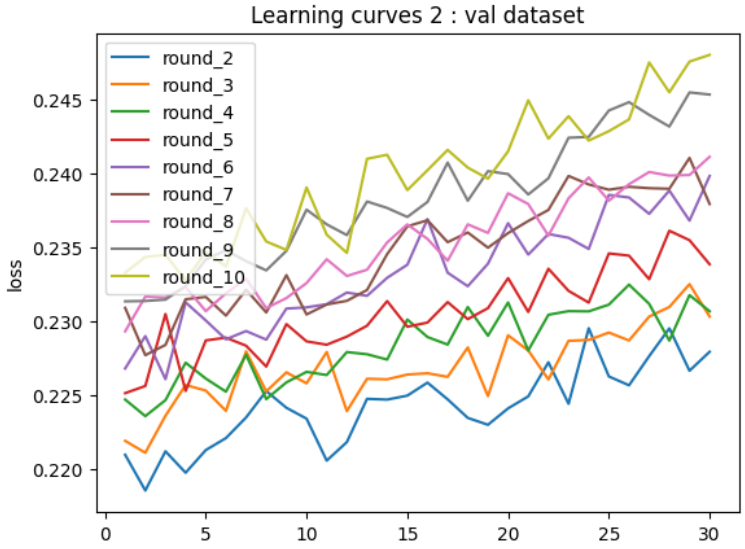


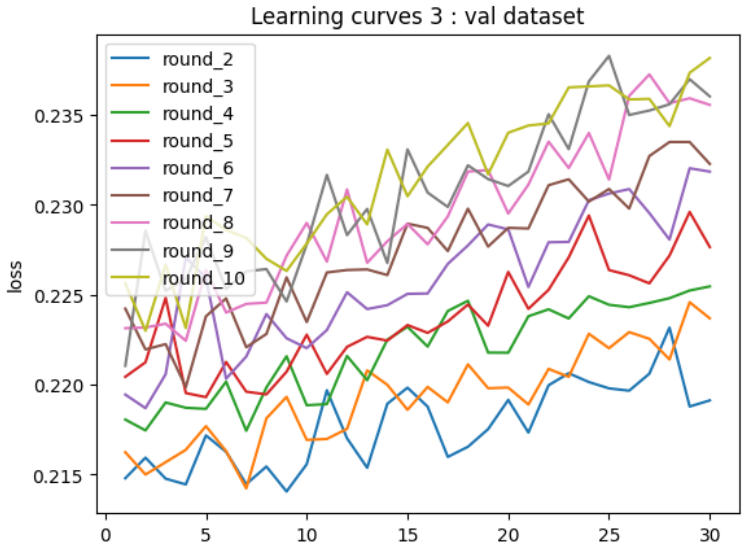

Model Training: Learning curves; Validation dataset

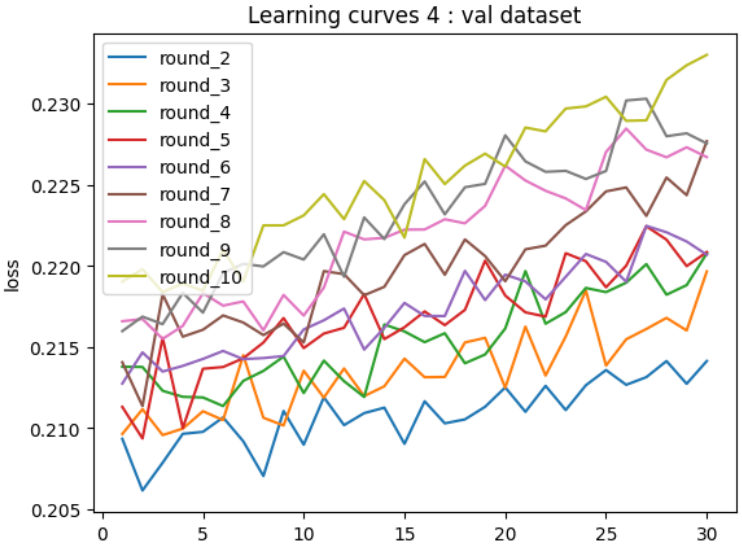


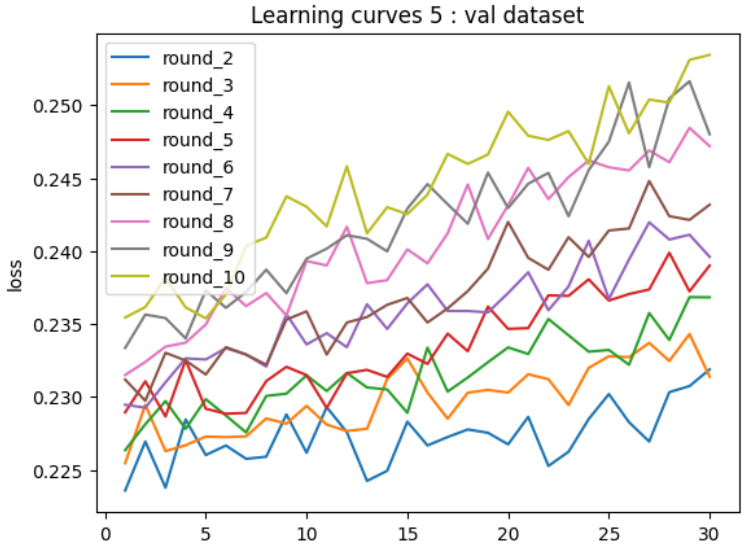



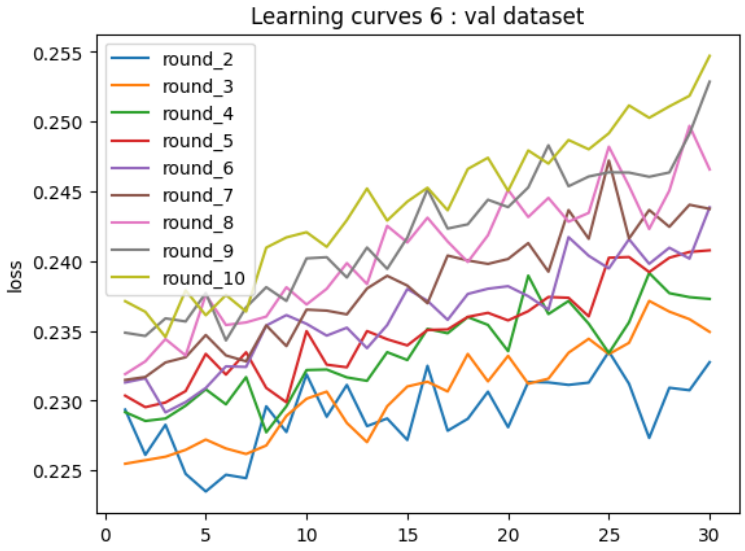

Learning curves 1 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.275
0.270
0.265
0.260
0.255
0.250
0.245
0
5
10
15
20
25
30

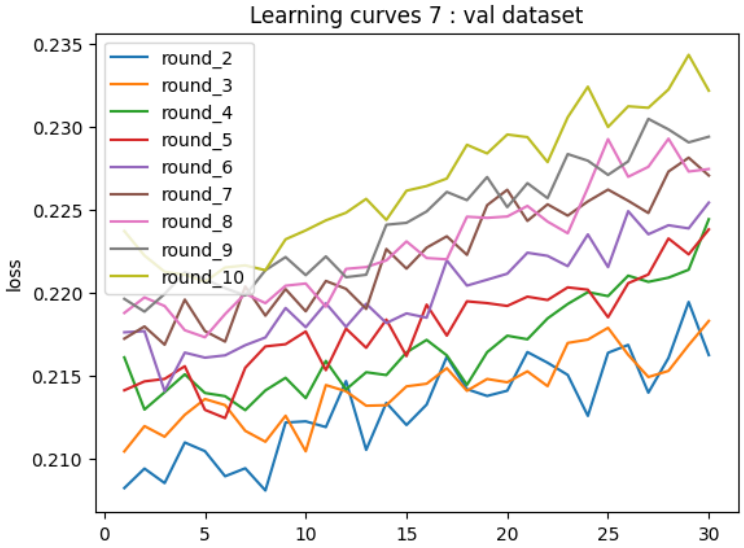

Learning curves 2 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.245
0.240
0.235
0.230
0.225
0.220
0
5
10
15
20
25
30

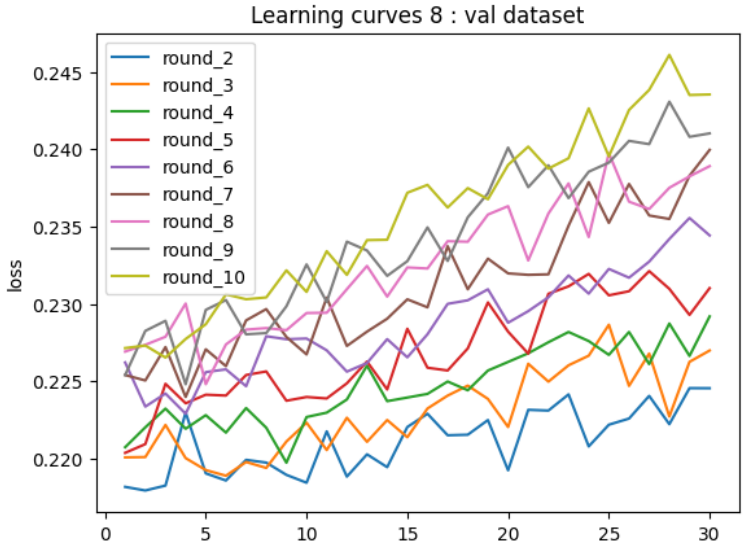

Learning curves 3 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.235
0.230
0.225
0.220
0.215
0
5
10
15
20
25
30

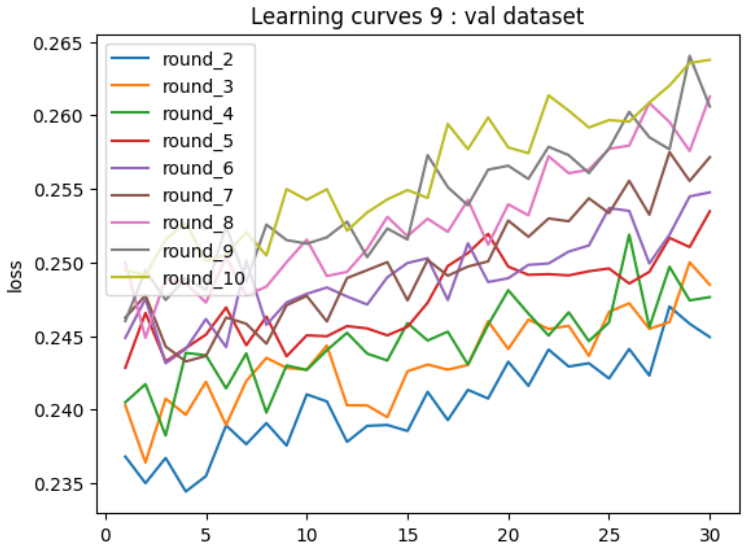

Learning curves 4 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.230
0.225
0.220
0.215
0.210
0.205
0
5
10
15
20
25
30


Learning curves 5 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.250
0.245
0.240
0.235
0.230
0.225
0
5
10
15
20
25
30


Learning curves 6 : val dataset
round_2
round_3
round_4
round_5
round_6
round_7
round_8
round_9
round_10
loss
0.255
0.250
0.245
0.240
0.235
0.230
0.225
0
5
10
15
20
25
30




| Test statistics for FL model |
|---|

Mean Poisson Deviance : 0.318

Prc Poisson Deviance Explained : -0.009

Mean Squared Error : 0.057

R^2 : -0.013

EV  : -0.013

## 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 : 0.318

Prc Poisson Deviance Explained : -0.012

Mean Squared Error : 0.057

R^2 : -0.013

EV  : -0.013

## Test statistics for agent_no 1

Mean Poisson Deviance : 0.318

Prc Poisson Deviance Explained : -0.011

Mean Squared Error : 0.058

R^2 : -0.021

EV  : -0.021

## Test statistics for agent_no 2

Mean Poisson Deviance : 0.319

Prc Poisson Deviance Explained : -0.010

Mean Squared Error : 0.058

R^2 : -0.017

EV : -0.017

## Test statistics for agent_no 3

Mean Poisson Deviance : 0.320

Prc Poisson Deviance Explained : -0.020

Mean Squared Error : 0.058

R^2 : -0.017

EV : -0.017

## Test statistics for agent_no 4

Mean Poisson Deviance : 0.318

Prc Poisson Deviance Explained : -0.017

Mean Squared Error : 0.057

R^2 : -0.013

EV : -0.012

## Test statistics for agent_no 5

Mean Poisson Deviance : 0.320

Prc Poisson Deviance Explained : -0.020

Mean Squared Error : 0.058

R^2 : -0.028

EV : -0.027

## Test statistics for agent_no 6

Mean Poisson Deviance : 0.314

Prc Poisson Deviance Explained : 0.005

Mean Squared Error : 0.057

R^2 : -0.008

EV : -0.008

## Test statistics for agent_no 7

Mean Poisson Deviance : 0.315

Prc Poisson Deviance Explained : -0.005

Mean Squared Error : 0.057

R^2 : -0.010

EV  : -0.010

## Test statistics for agent_no 8

Mean Poisson Deviance : 0.322

Prc Poisson Deviance Explained : -0.022

Mean Squared Error : 0.058

R^2 : -0.029

EV  : -0.028

## Test statistics for agent_no 9

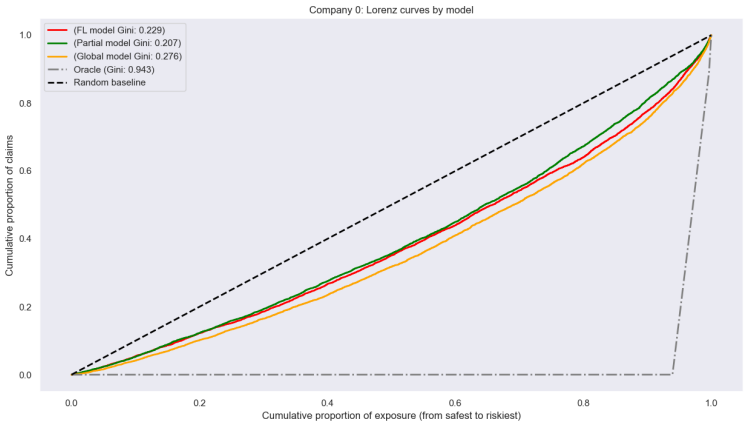
Mean Poisson Deviance : 0.318

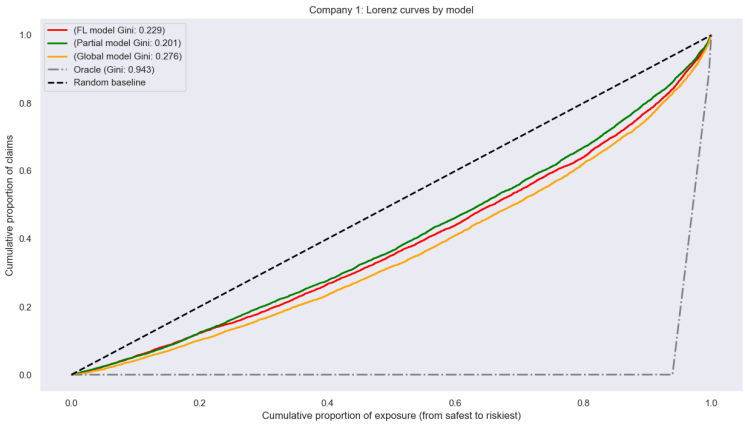
Prc Poisson Deviance Explained : -0.011

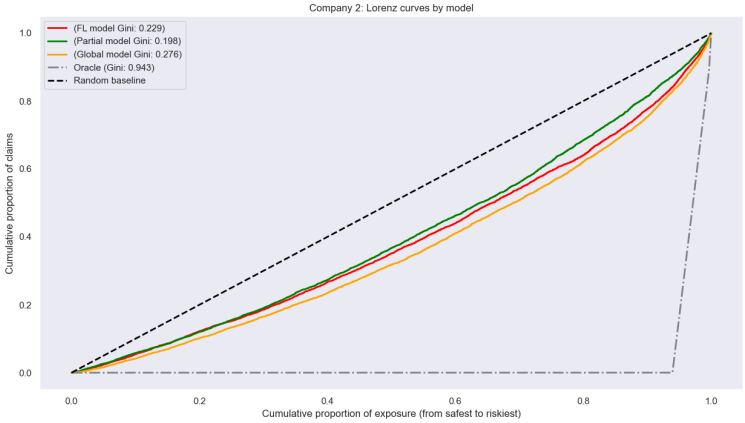
Mean Squared Error : 0.059

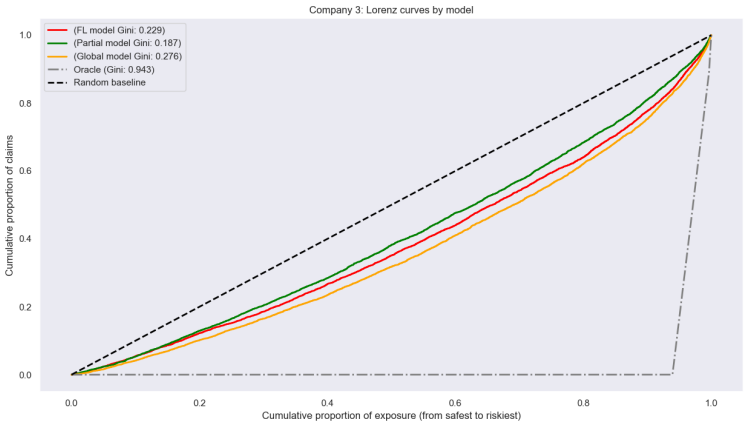
R^2 : -0.037

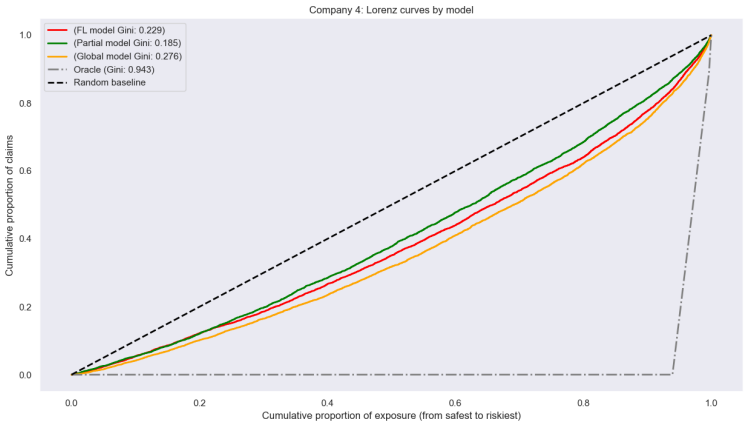
EV  : -0.035

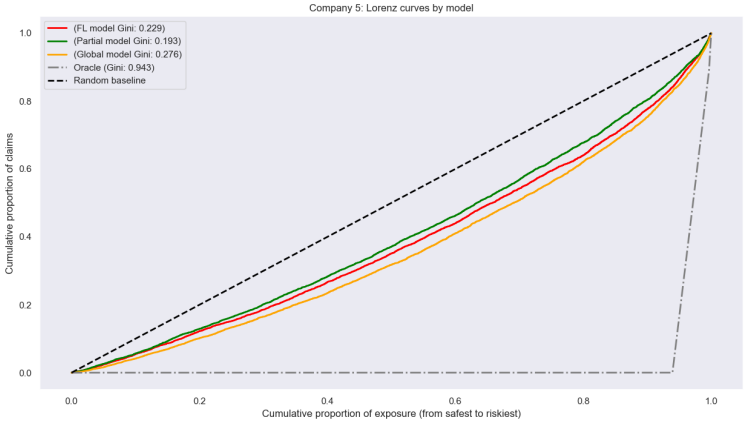

Company 0: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.207)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

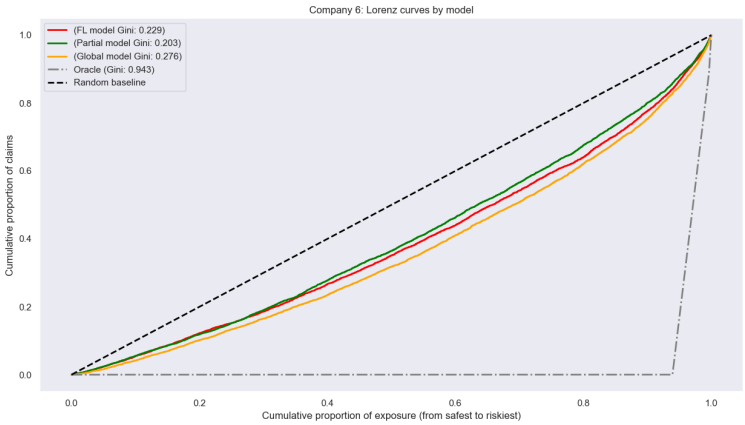

Company 1: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.201)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

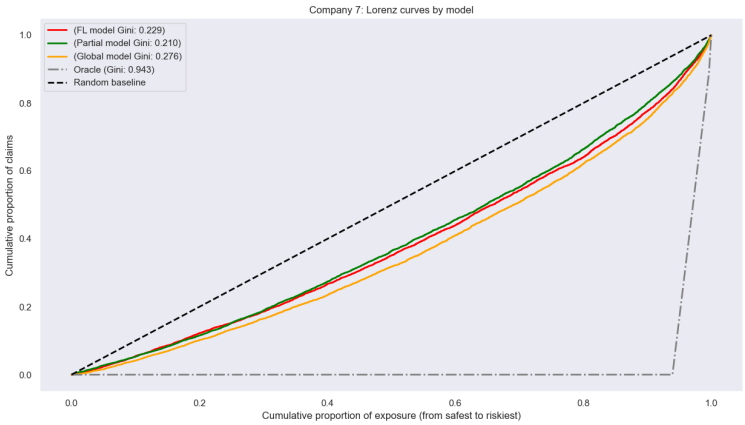

Company 2: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.198)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

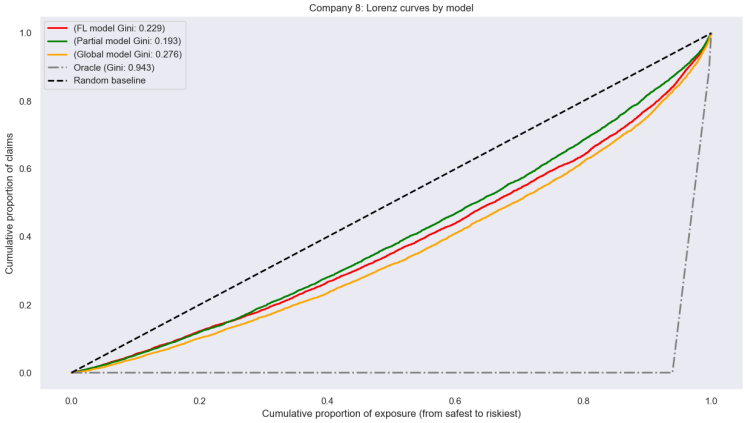

Company 3: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.187)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

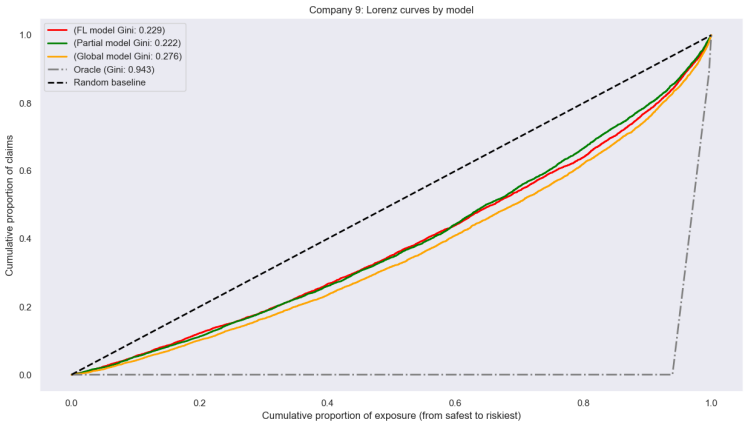

Company 4: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.185)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0


Company 5: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.193)
(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

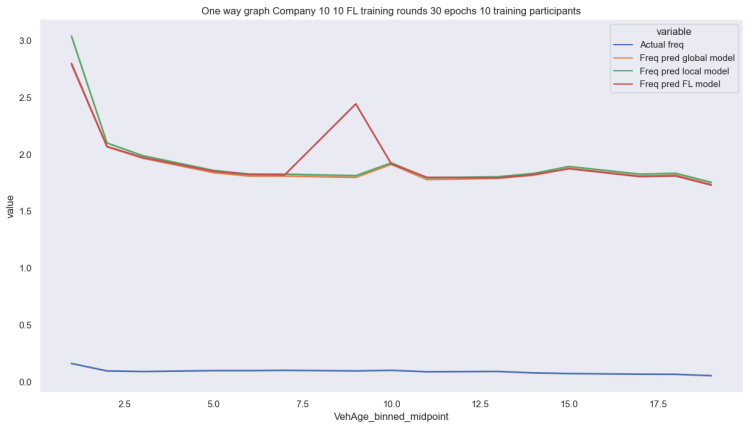

Company 6: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.203)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

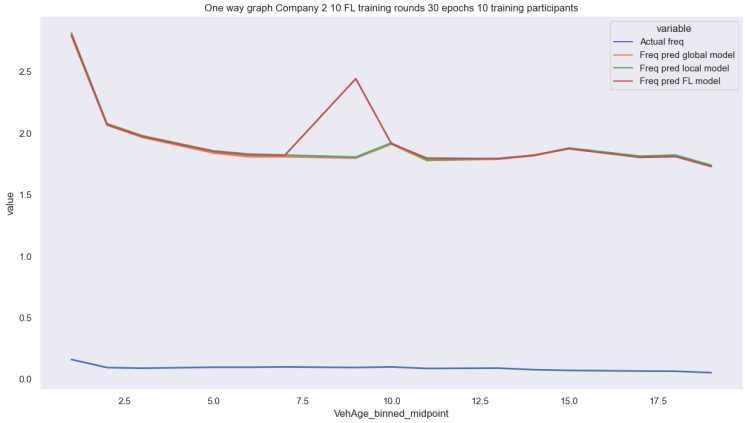

Company 7: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.210)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

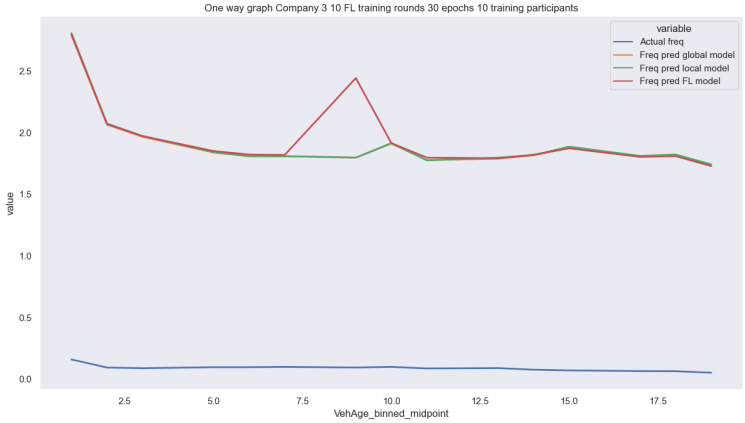

Company 8: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.193)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)
0.0
0.2
0.4
0.6
0.8
1.0

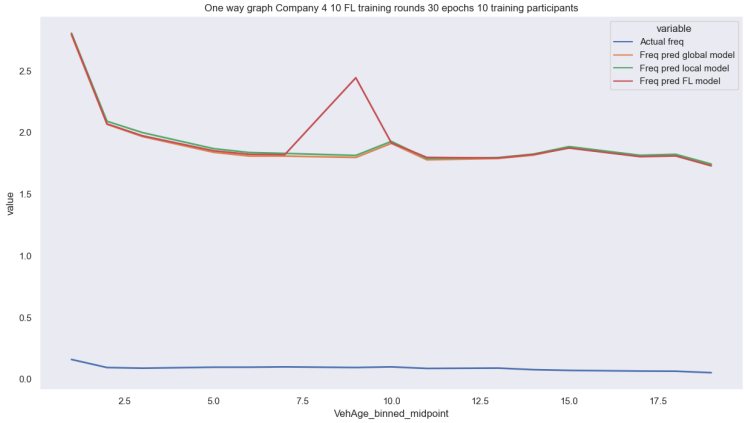

Company 9: Lorenz curves by model
(FL model Gini: 0.229)
(Partial model Gini: 0.222)
(Global model Gini: 0.276)
Oracle (Gini: 0.943)
Random baseline
Cumulative proportion of claims
Cumulative proportion of exposure (from safest to riskiest)


One way graph Company 1 10 FL training rounds 30 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 10 FL training rounds 30 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 10 FL training rounds 30 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 10 FL training rounds 30 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 10 FL training rounds 30 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
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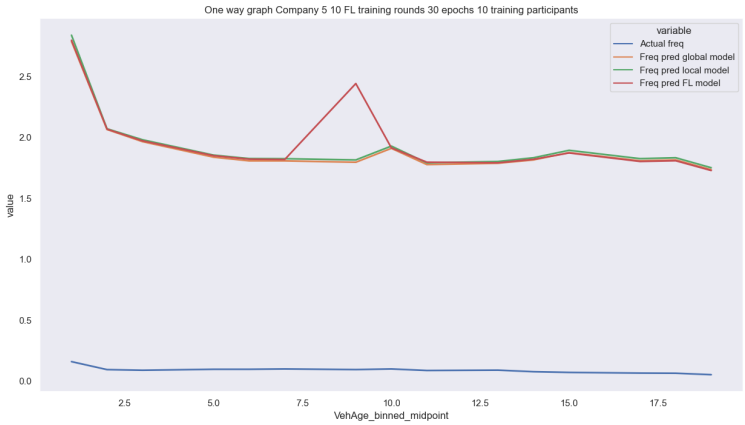
0.5
1.0
1.5
2.0
2.5
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint


One way graph Company 5 10 FL training rounds 30 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
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0.5
1.0
1.5
2.0
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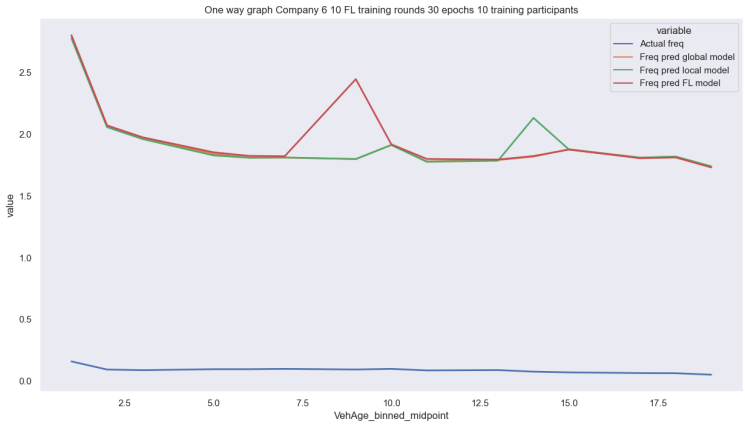
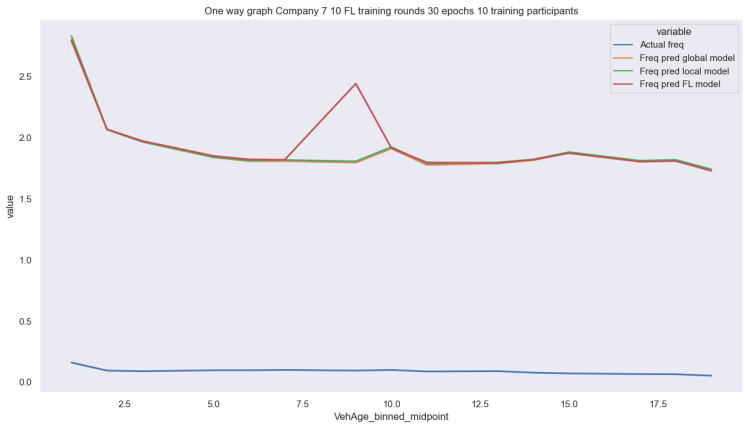
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint


One way graph Company 6 10 FL training rounds 30 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 7 10 FL training rounds 30 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
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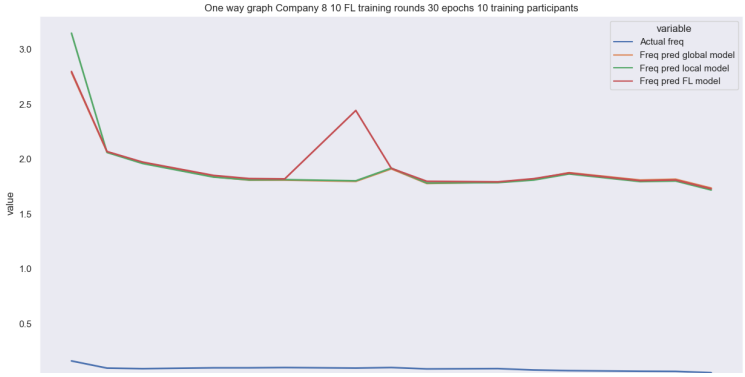
0.5
1.0
1.5
2.0
2.5
2.5
5.0
7.5
10.0
12.5
15.0
17.5
VehAge_binned_midpoint


One way graph Company 8 10 FL training rounds 30 epochs 10 training participants
variable
Actual freq
Freq pred global model
Freq pred local model
Freq pred FL model
value
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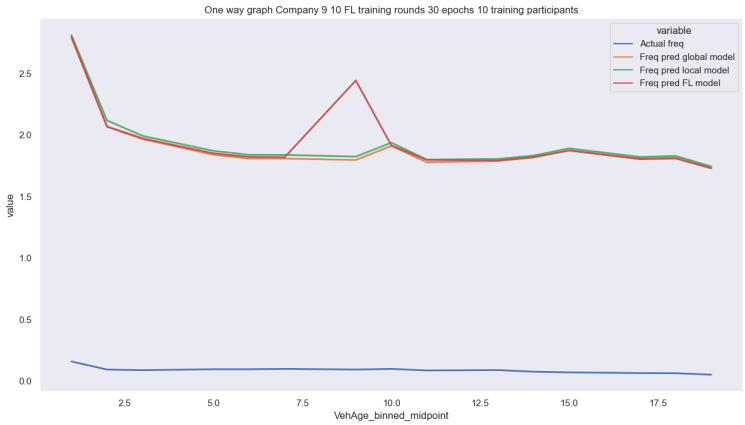
2.5
2.0
1.5
1.0
0.5


One way graph Company 9 10 FL training rounds 30 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