(a)

LGB-C SHAP Beeswarm Top-10

Age(year)
TAMT(DOT)
PMX(ATC/DDD per DOT)
UC-days
CARB(ATC/DDD per DOT)
CVC-days
OXA(ATC/DDD)
TFC-CRPA(days)
IPA–CARBSUSC_R
CARB(ATC/DDD)

SHAP value (impact on model output)

Feature value
High
Low

(b)

RF-C SHAP Beeswarm Top-10

Age(year)
PMX(ATC/DDD per DOT)
TAMT(DOT)
DAMT(DOT)
CARB(ATC/DDD per DOT)
OXA(ATC/DDD per DOT)
UC-days
OXA(ATC/DDD)
AF(ATC/DDD per DOT)
CVC-days

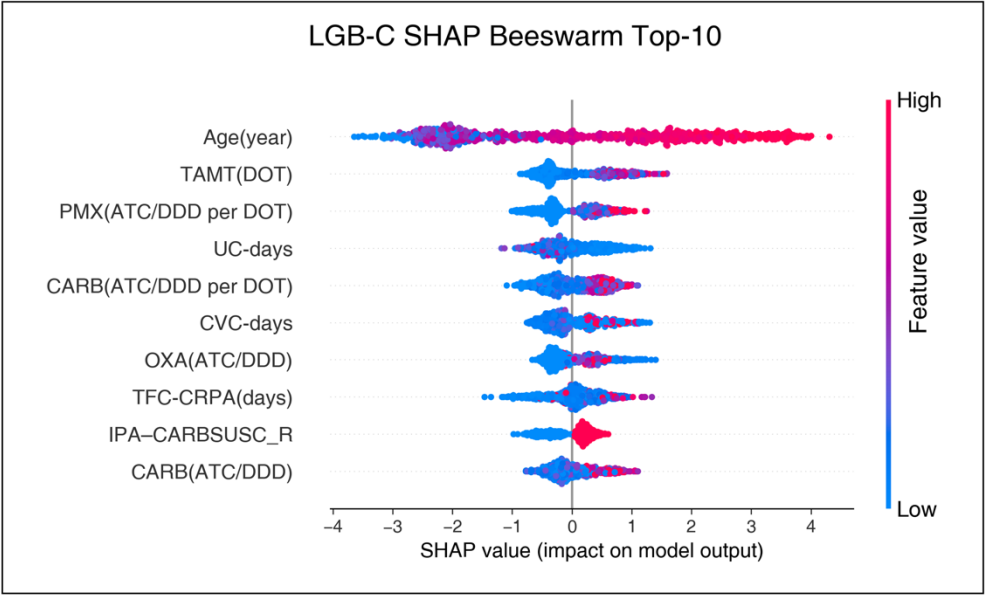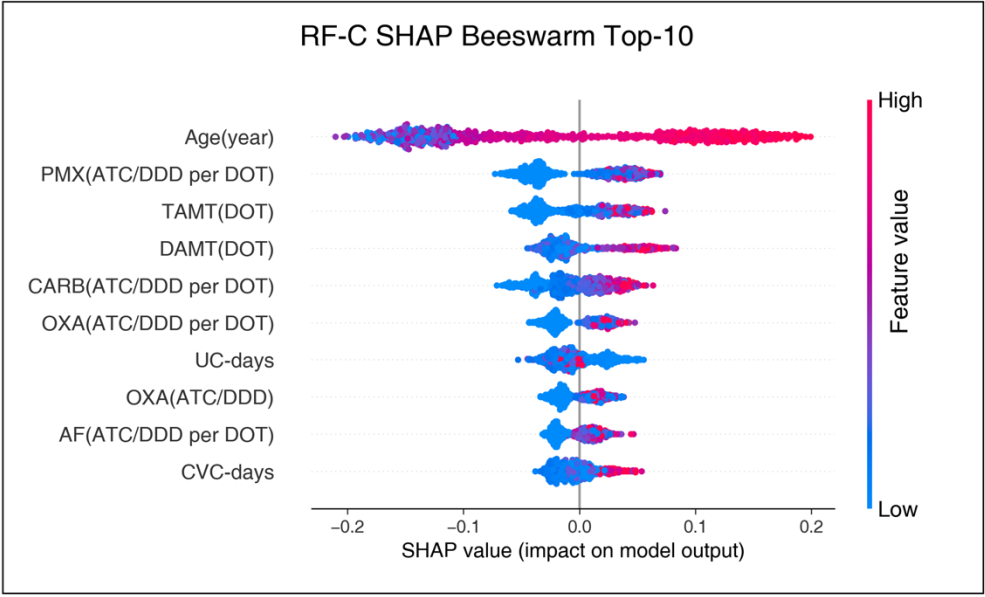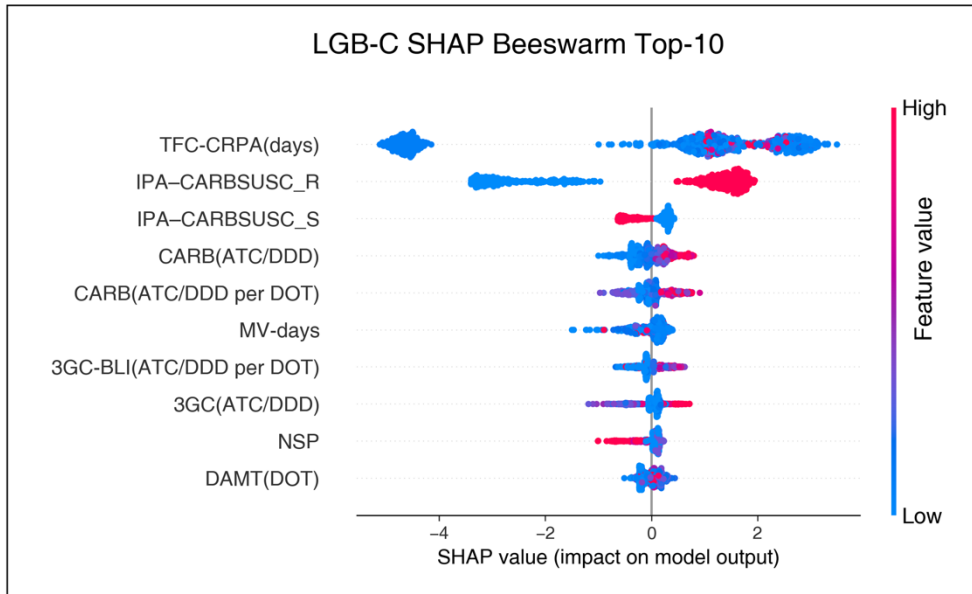SHAP value (impact on model output)
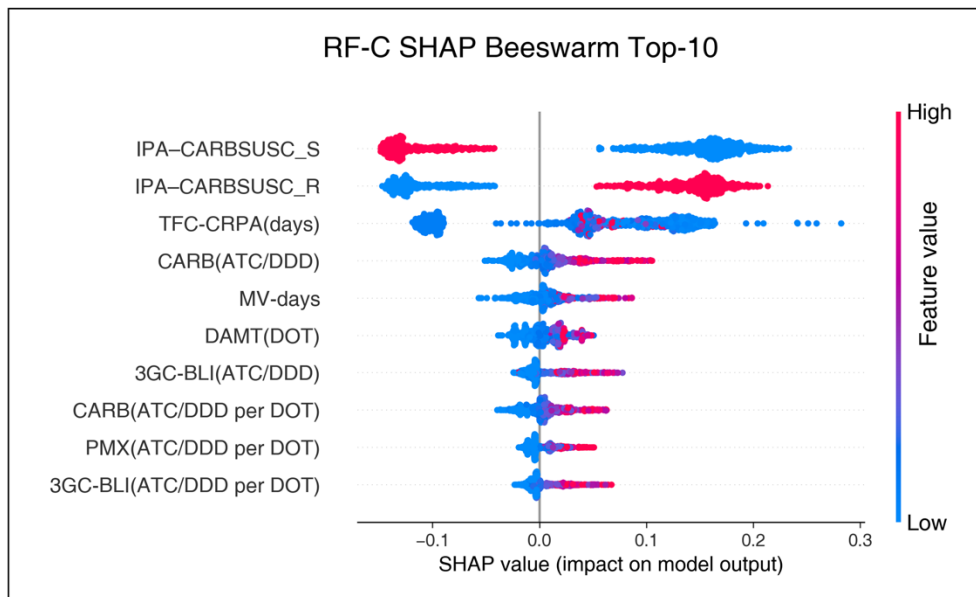
Feature value
High
Low

(c)

(d)

Fig. S5 Global SHAP beeswarm plots for two binary outcomes.
(a) LGB-C model for IHM; (b) RF-C model for IHM; (c) LGB-C model for LastPaAST; (d) RF-C model for LastPaAST. Each dot represents an individual SHAP value, with the color indicating a normalized feature value (blue = low; red = high). The features were ranked by the mean absolute SHAP value (|SHAP|), reflecting their relative contributions to the prediction. Only the top 10 features are shown; the SHAP values for all the remaining features are close to zero.