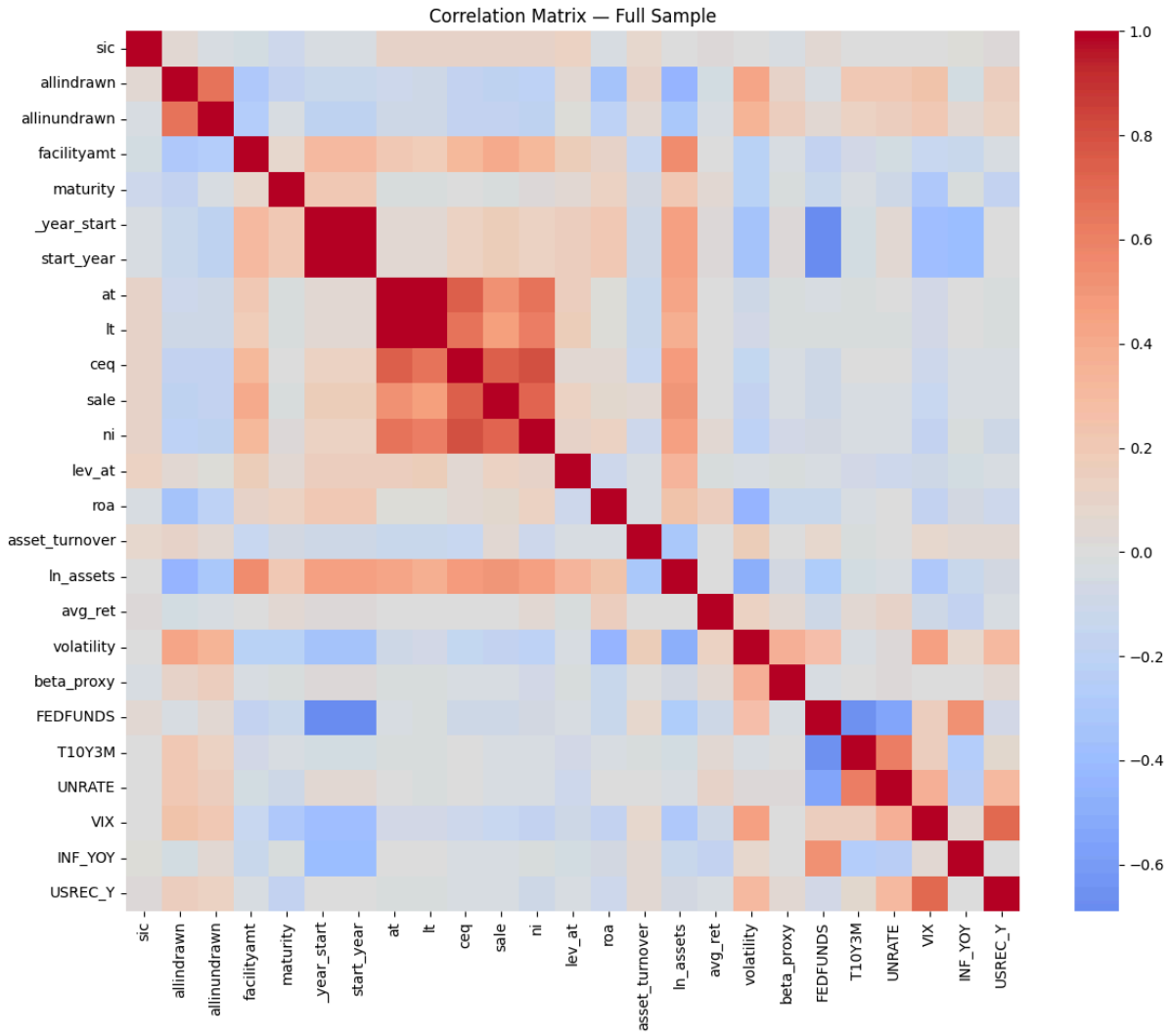
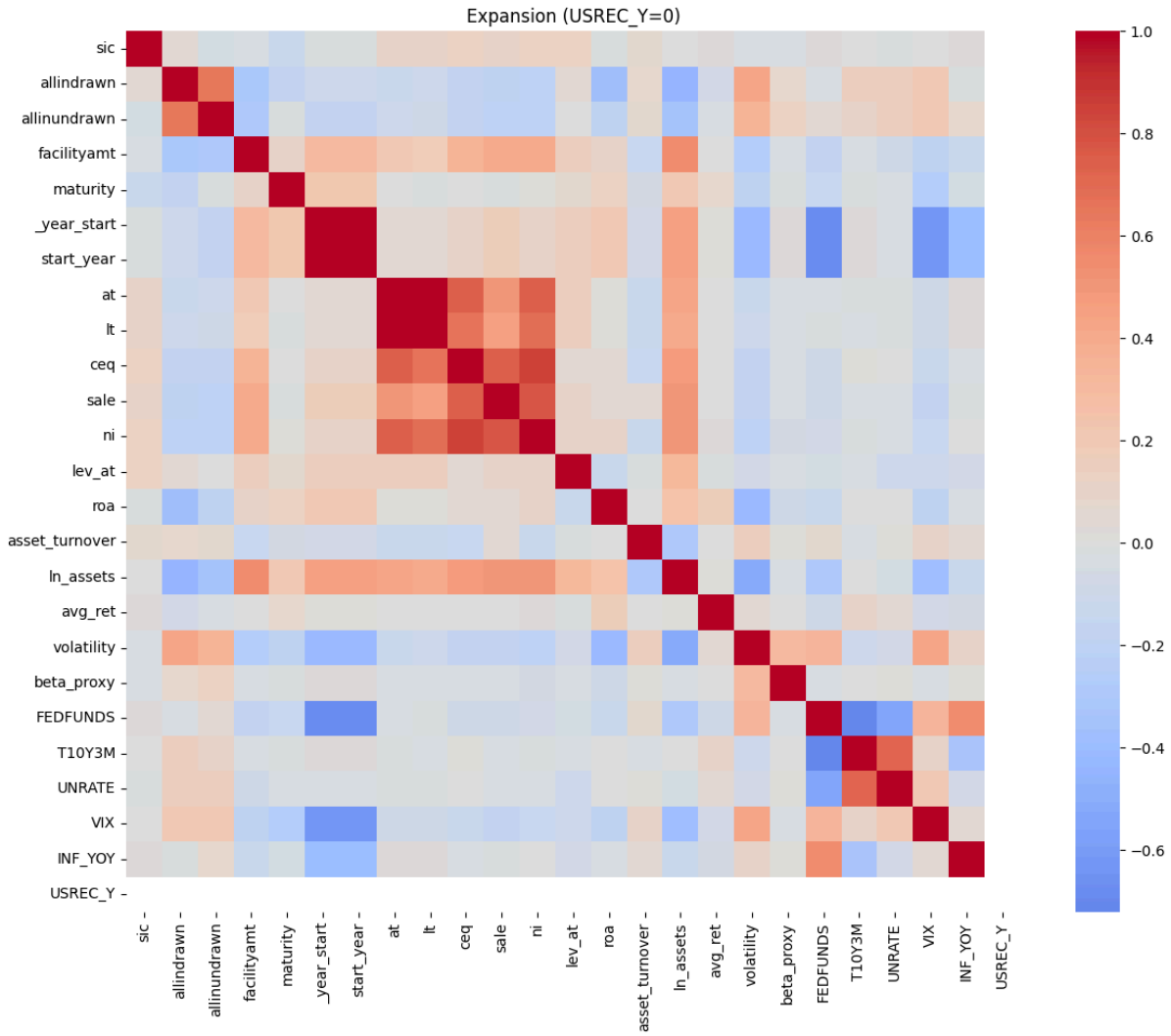
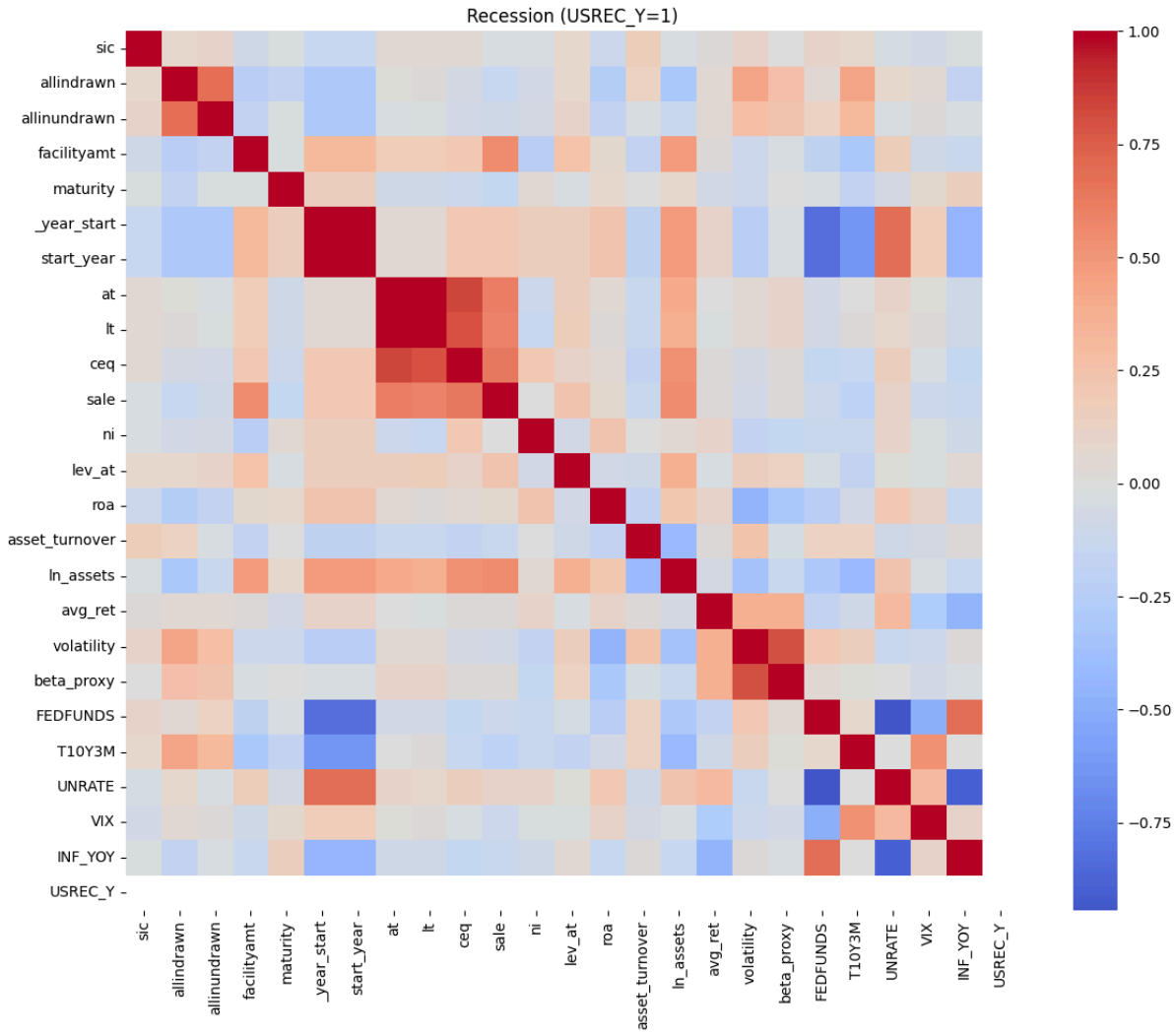
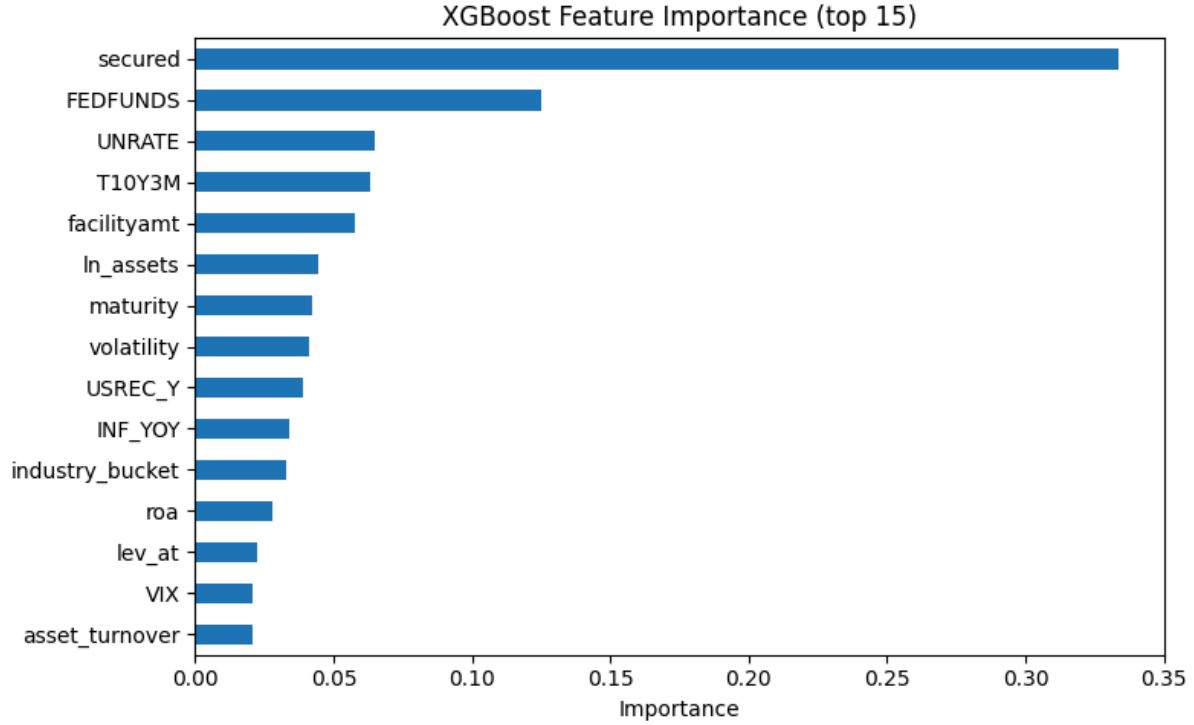
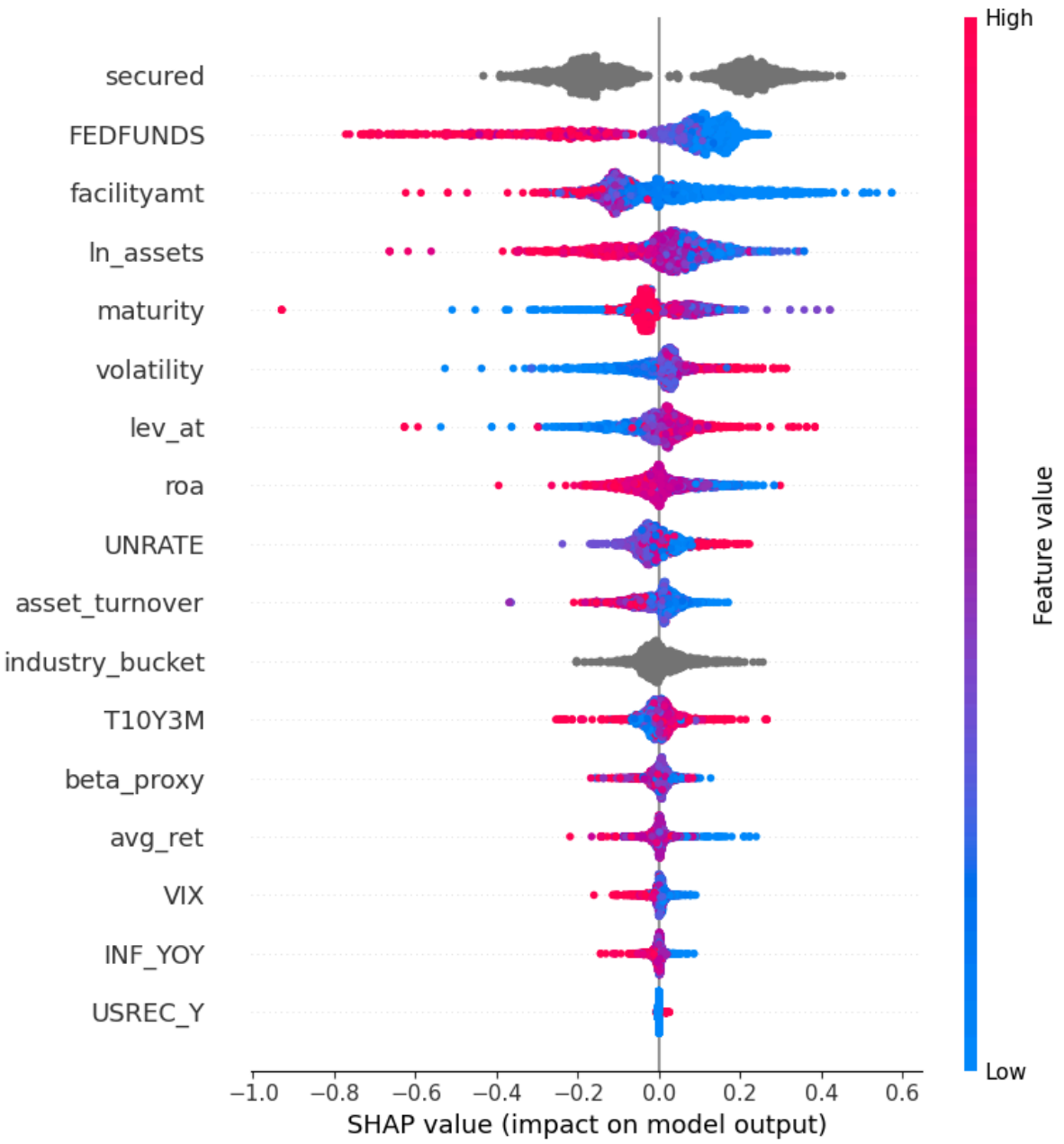
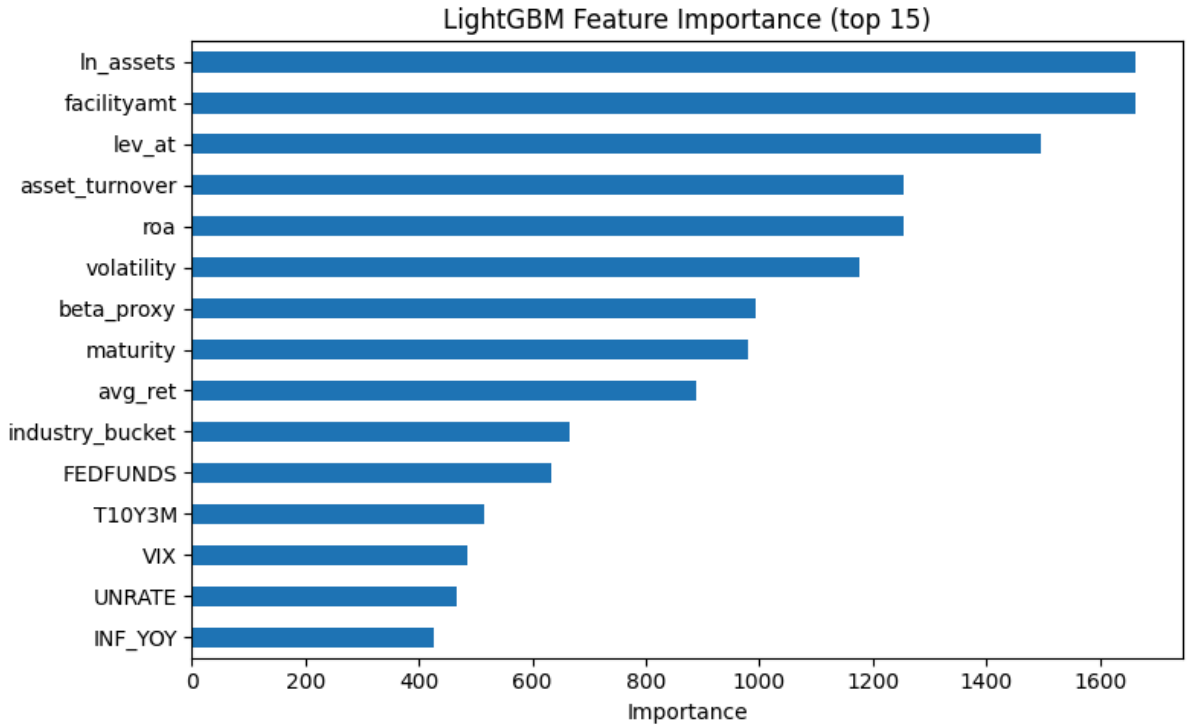

Correlation Matrix — Full Sample
sic
allindrawn
allinundrawn
facilityamt
maturity
_year_start
start_year
at
lt
ceq
sale
ni
lev_at
roa
asset_turnover
ln_assets
avg_ret
volatility
beta_proxy
FEDFUNDS
T10Y3M
UNRATE
VIX
INF_YOY
USREC_Y
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6

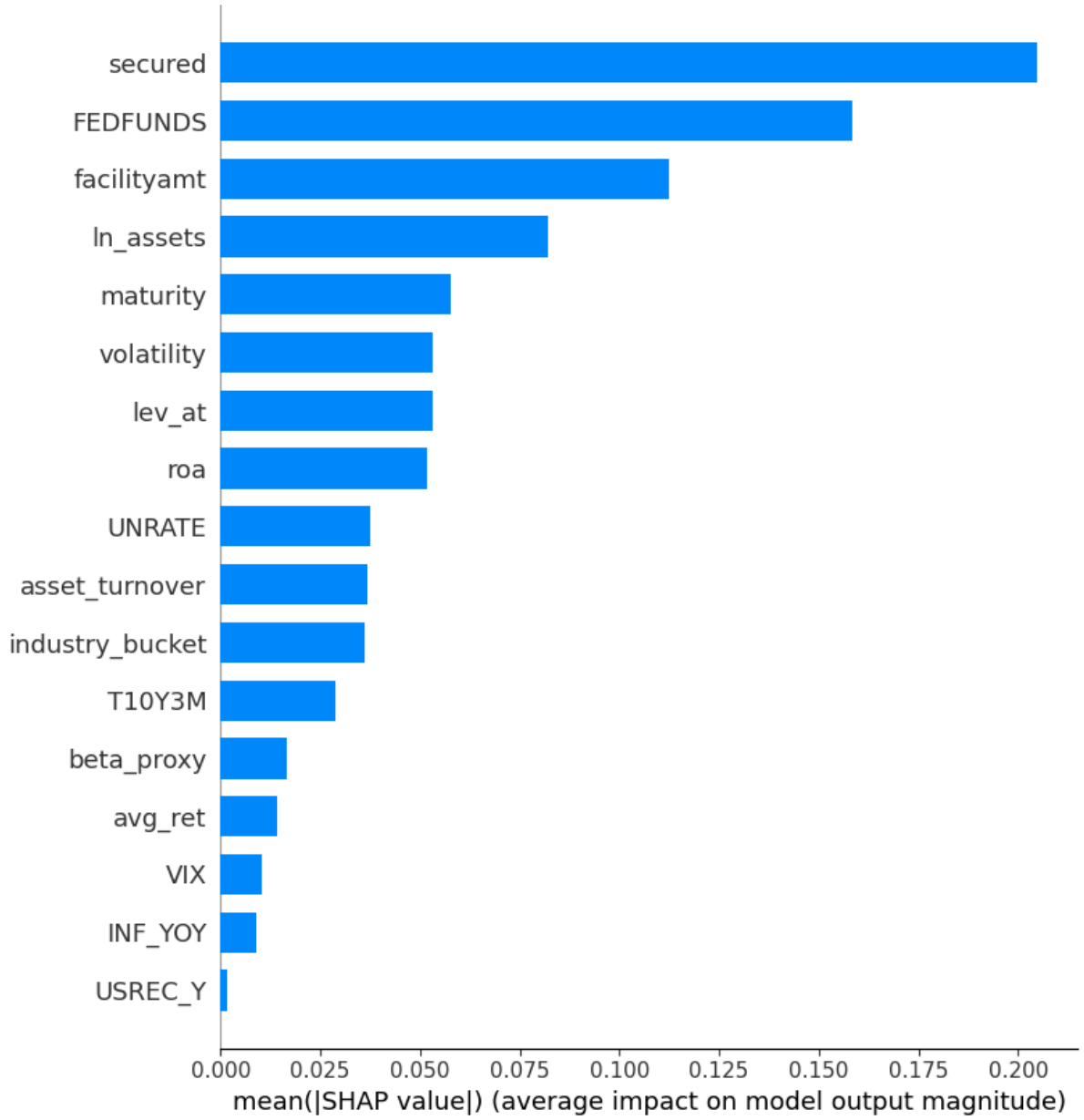

Expansion (USREC_Y=0)
sic
allindrawn
allinundrawn
facilityamt
maturity
_year_start
start_year
at
lt
ceq
sale
ni
lev_at
roa
asset_turnover
ln_assets
avg_ret
volatility
beta_proxy
FEDFUNDS
T10Y3M
UNRATE
VIX
INF_YOY
USREC_Y
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6


Recession (USREC_Y=1)
sic
allindrawn
allinundrawn
facilityamt
maturity
_year_start
start_year
at
lt
ceq
sale
ni
lev_at
roa
asset_turnover
ln_assets
avg_ret
volatility
beta_proxy
FEDFUNDS
T10Y3M
UNRATE
VIX
INF_YOY
USREC_Y
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75


XGBoost Feature Importance (top 15)
secured
FEDFUNDS
UNRATE
T10Y3M
facilityamt
ln_assets
maturity
volatility
USREC_Y
INF_YOY
industry_bucket
roa
lev_at
VIX
asset_turnover
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
Importance


secured
FEDFUNDS
facilityamt
ln_assets
maturity
volatility
lev_at
roa
UNRATE
asset_turnover
industry_bucket
T10Y3M
beta_proxy
avg_ret
VIX
INF_YOY
USREC_Y
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
SHAP value (impact on model output)
High
Feature value
Low


LightGBM Feature Importance (top 15)
ln_assets
facilityamt
lev_at
asset_turnover
roa
volatility
beta_proxy
maturity
avg_ret
industry_bucket
FEDFUNDS
T10Y3M
VIX
UNRATE
INF_YOY
0
200
400
600
800
1000
1200
1400
1600
Importance


secured
FEDFUNDS
facilityamt
ln_assets
maturity
volatility
lev_at
roa
UNRATE
asset_turnover
industry_bucket
T10Y3M
beta_proxy
avg_ret
VIX
INF_YOY
USREC_Y
0.000
0.025
0.050
0.075
0.100
0.125
0.150
0.175
0.200
mean(|SHAP value|) (average impact on model output magnitude)