

Informe Automático — Modelo de Riesgo Temu

Validación temporal estricta (sin fuga).



Resumen ejecutivo

- **ROC-AUC (holdout):** 0.829
- **PR-AUC (holdout):** 0.542
- **Brier (holdout):** 0.142
- **Variante ganadora:** mantener__clip_ultimo | PR-AUC(VALID)=0.757 | ROC-AUC(VALID)=0.871
- **Cortes temporales:** train≤2023-05-13, valid≤2023-07-29, holdout>2023-07-29



Comparativa de experimentos (VALID)

```
exp,primeruso,clip_ultimo,valid_pr_auc,valid_roc_auc,valid_brier,train_pr_
mantener__clip_ultimo,mantener,True,
0.7565465557559835,0.8706122943891271,0.1171410347024606,0.745562749314248
clip_a_vinc__clip_ultimo,clip_a_vinc,True,
0.7559222826669143,0.8700658781763201,0.1173972309790414,0.747340854997949
poner_na__clip_ultimo,poner_na,True,
0.7553924245713564,0.8707294055547081,0.1170972012010996,0.744646703014944
```



Métricas en HOLDOUT (final)

```
metric,value ROC_AUC,0.8293882555463963 PR_AUC,0.5420351577338736
Brier,0.1418617828949929
```



Barrido de umbrales (clase=1)

```
thr,prec_1,rec_1,TP,FP,FN,TN 0.01,0.213,0.999,6093,22458,4,833
0.02,0.216,0.999,6089,22055,8,1236
0.03,0.231,0.994,6060,20148,37,3143
0.04,0.25,0.987,6019,18050,78,5241
0.05,0.25,0.987,6019,18049,78,5242
0.06,0.271,0.975,5946,15967,151,7324
0.07,0.272,0.974,5941,15874,156,7417
0.08,0.286,0.965,5883,14722,214,8569
0.09,0.311,0.943,5752,12761,345,10530
0.1,0.311,0.943,5752,12760,345,10531
0.11,0.311,0.943,5752,12760,345,10531
0.12,0.324,0.934,5695,11902,402,11389
0.13,0.342,0.915,5578,10741,519,12550
0.14,0.342,0.915,5578,10741,519,12550
0.15,0.342,0.914,5575,10720,522,12571
```

Ganancia/Lift por Top-k%

```
top_%,n_alertas,morosos_detectados,tasa_moros_topk,lift_vs_base
1,293,211,0.72,3.47 2,587,430,0.733,3.53 5,1469,1099,0.748,3.61
10,2938,1932,0.658,3.17 20,5877,3090,0.526,2.53
```

Valor esperado por umbral

• **Mejor EV:** thr=0.14 | EV=8976.0 | TP=5578.0 FP=10741.0 FN=519.0 TN=12550.0

```
thr, EV, TP, FP, FN, TN 0.14, 8976.0, 5578, 10741, 519, 12550
0.13, 8976.0, 5578, 10741, 519, 12550 0.16, 8970.0, 5575, 10720, 522, 12571
0.15, 8970.0, 5575, 10720, 522, 12571 0.12, 8868.0, 5695, 11902, 402, 11389
0.18, 8846.0, 5399, 9260, 698, 14031 0.17, 8844.0, 5399, 9262, 698, 14029
0.19, 8738.0, 5327, 8720, 770, 14571 0.2, 8738.0, 5327, 8720, 770, 14571
0.1, 8523.0, 5752, 12760, 345, 10531 0.11, 8523.0, 5752, 12760, 345, 10531
0.09, 8522.0, 5752, 12761, 345, 10530 0.21, 8434.0, 5261, 8430, 836, 14861
0.25, 8387.0, 5248, 8360, 849, 14931 0.23, 8386.0, 5248, 8361, 849, 14930
0.24, 8386.0, 5248, 8361, 849, 14930 0.22, 8386.0, 5248, 8361, 849, 14930
0.08, 7740.0, 5883, 14722, 214, 8569 0.07, 7110.0, 5941, 15874, 156, 7417
0.06, 7062.0, 5946, 15967, 151, 7324
```

Calibración por deciles

```
index,p_mean,y_rate,n "(-0.001, 0.0277]",
0.0183546223812048,0.0116352201257861,3180 "(0.0277, 0.0511]",
0.0434700408861482,0.0265548567435359,4293 "(0.0511, 0.0873]",
0.0836801012999584,0.0570252792475014,3402 "(0.0873, 0.118]",
0.1168212442758556,0.0614035087719298,912 "(0.118, 0.169]",
0.1471327995964302,0.1010547805375978,2939 "(0.169, 0.25]",
0.2312605057741317,0.1692876965772433,3243 "(0.25, 0.351]",
0.3027563762565058,0.2526676829268293,2624 "(0.351, 0.534]",
0.4331707053108642,0.3798013245033113,3020 "(0.534, 0.83]",
0.71272946047114,0.3929045092838196,3016 "(0.83, 1.0]",
0.9291979837814188,0.6723450525552737,2759
```

Importancias por permutación (Top-20)

```
feature,importance_mean,importance_std
NumeroCreditosGEstadoActivosPrevius,
0.1086467997046419,0.0025165047231102
NumeroCreditosLEstadoActivosPrevius,
0.0774525195169424,0.003500875852693
NumeroCreditosGEstadoPagadosPrevius,
0.0479526912734814,0.0013021179341805 creditos_activos_ratio,
0.0478951733312581,0.0020115192346208
NumeroCreditosLEstadoPagadosPrevius,
0.0370796611485256,0.001236277149681 UsabilidadCupo,
0.0297891634127919,0.0014331451883692 ScoreCrediticio,
0.0227045142362137,0.0009456729036983 DiasDesdeUltimoUso,
0.0094877854562503,0.000500758324729
```

```
TotalPagosEfectuadosGlobalmentePrevius,
0.009159974117312,0.0007187464752281
TotalPagosEfectuadosLocalmentePrevius,
0.0069754946440013,0.0004192955022438 ScoreBucket,
0.0059703537124678,0.0004475623007996 MesesDesdeVinculacion,
0.0054726457848286,0.0004887606649516 TipoMunicipioEntregaTC,
0.0039225252555643,0.0001761746423534 UsoAppWeb,
0.0035590489371068,0.000172103935594 Edad,
0.0015676123648594,0.0004606136916992 CategoriaPrincipalCredito,
0.0015108545620179,0.0004135082857396 Flag_PrimerUsoTemu,
0.0014410316990576,0.0001817775277497 Genero,
0.0007387456091527,0.000150458729708 NumeroIntentosFallidos,
0.0004008584487742,4.4826423776870096e-05
Flag_NumeroCreditosGPrevius_NaN,
0.0003276858408489,0.0001164093017197
```



Notas/lecturas rápidas



Correlaciones y hallazgos rápidos

- **DiasMora** correlación alta con *PerdidaCartera* (~0.83). Es variable de **estado actual** → no usar como feature predictiva (evitar fuga).
- **Historial de créditos previos**: activos y pagados muestran señal (p. ej., NumeroCreditosGEstadoActivosPrevius, NumeroCreditosLEstadoActivosPrevius, NumeroCreditosLPrevius...).
- **Antigüedades** (meses desde vinculación / primer uso) aportan señal más estable que las fechas crudas.
- **Demografía y cupo** (Edad, CupoAprobado, ScoreCredito): correlación negativa moderada → más edad/cupo/score, menos pérdida.
- **Canal/Tipo municipio**: patrón “Virtual > Físico” en pérdida (≈28% vs 16–20%).
- **Género**: leve diferencia; mantener como categórica.



Parámetros de costo/beneficio usados

```
json { "COST_FP": 1.0, "COST_FN": 5.0, "BENEFIT_TP": 4.0,
"COST_TN": 0.0 }
```