

FTF Ablation Report

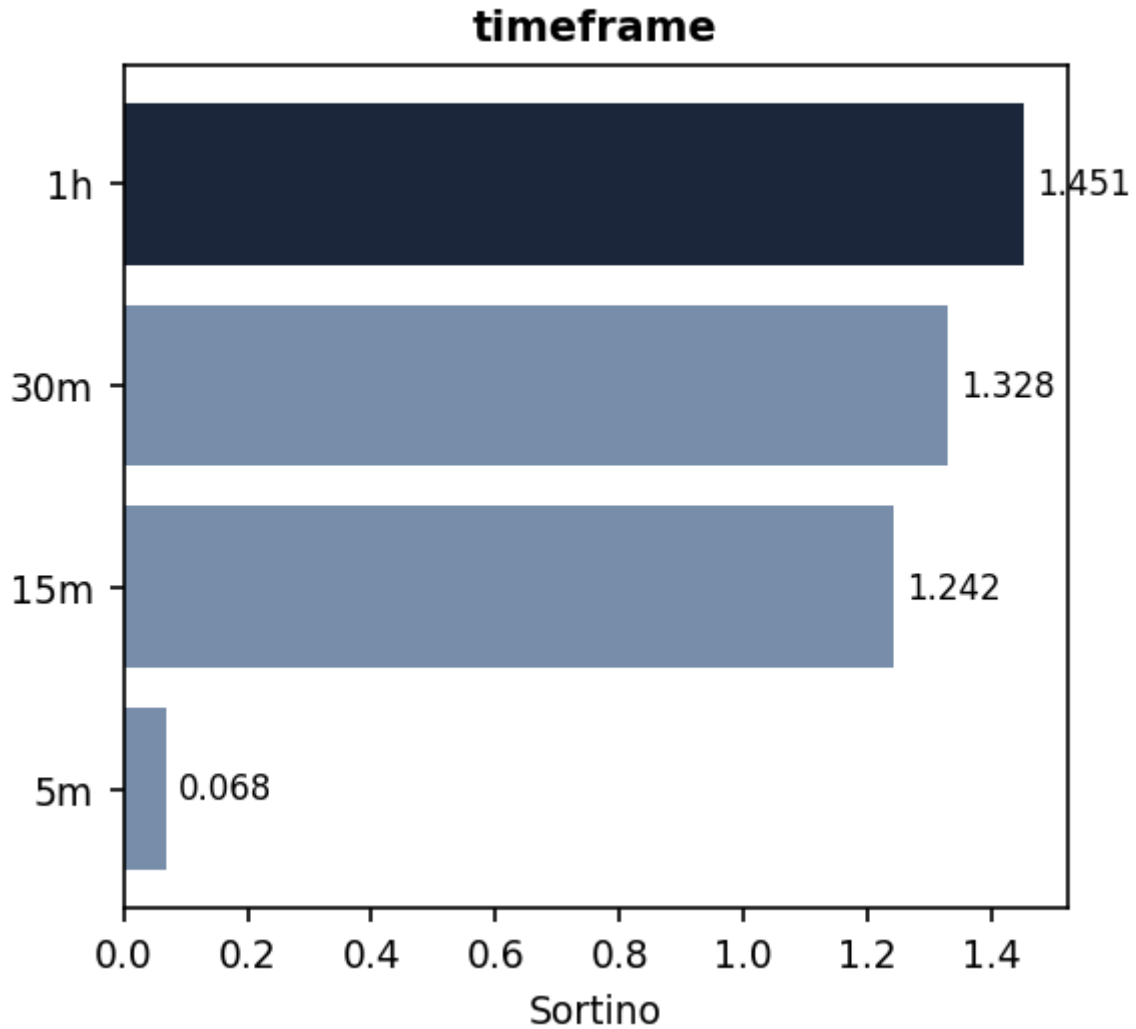
ATR0.5_1.5_H4 — timeframe

1 FACTORS	100 RESULTS	1 ERRORS	2h46m DURATION
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Run ID	ftf_20260502_145754_54d6d1_ATR0.5_1.5_H4
Git SHA	4a39e665
Started	2026-05-02 14:58:24.514589+00:00
Cryptos	UNIUSDC, OPUSDC, ARBUSDC, AAVEUSDC, LDOUSDC
Folds / Trials	5 folds × 50 HPO trials
Cost	15 bps

Executive Summary — Factor Winners

Sortino by Variant (winner = dark)



Factor	Winner	Primary (Sortino)	95% CI	Verdict	Metrics agreeing
timeframe	1h	1.639	[0.6424, 2.9913]	PARTIAL	win_rate (1/4)

Lock rule: a factor is **LOCKED** only when at least 2 metrics (sortino / expectancy / total_return / win_rate) show BH-adjusted $p < 0.05$ AND $|\text{Cohen's } d| \geq 0.3$ in the winner direction. Paired t-test on matched (crypto, fold) cells (Issue #595 Phase A).

Pairwise Comparisons — Primary metric (Sortino, paired BH-corrected)

Factor	Winner	vs	Mean A	Mean B	p-adj (BH)	Cohen's d	Sig.
timeframe	1h	15m	1.451	1.199	0.7949	0.09	NO
timeframe	1h	30m	1.639	1.446	0.7949	0.07	NO
timeframe	1h	5m	1.467	0.107	0.1236	0.47	NO

Multi-metric Significance Matrix

Per-metric verdict of winner vs each alternative. ✓ = BH $p < 0.05$ AND $|d| \geq 0.3$ in winner direction. ~ = significant but small effect. ✗ = not significant.

Factor	Pair	Sortino	Expectancy	Total Return	Win Rate
timeframe	1h vs 15m	✗ $p=0.795$ $d=+0.09$	✓ $p=0.026$ $d=+0.59$	✗ $p=0.405$ $d=-0.23$	✓ $p=0.001$ $d=+0.97$
	1h vs 30m	✗ $p=0.795$ $d=+0.07$	✗ $p=0.456$ $d=+0.19$	✗ $p=0.180$ $d=-0.41$	✓ $p=0.032$ $d=+0.59$
	1h vs 5m	✗ $p=0.124$ $d=+0.47$	✓ $p=0.000$ $d=+1.27$	✓ $p=0.017$ $d=+0.70$	✓ $p=0.000$ $d=+1.74$

Performance Summary — Couche C (économique)

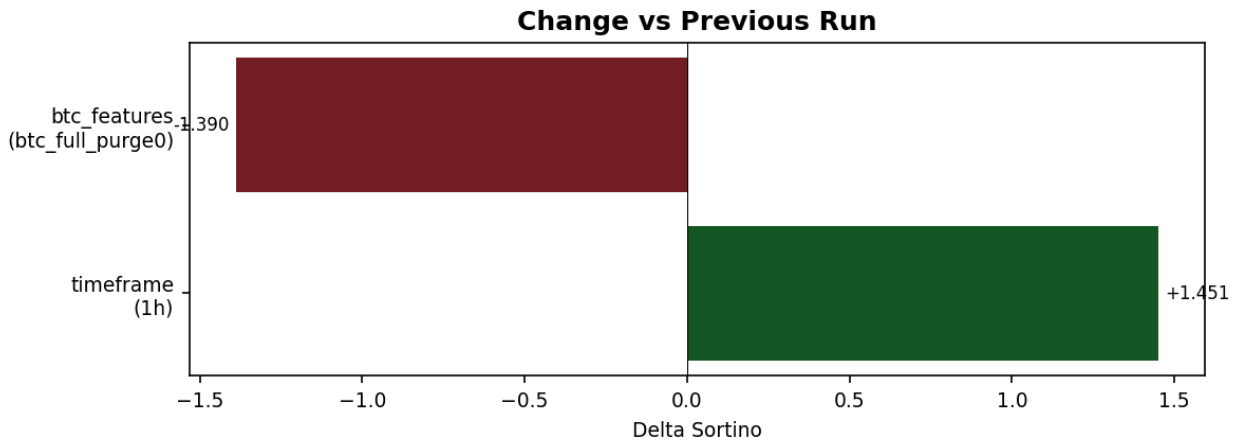
Factor	Winner	Sortino	Std	IQR	Sharpe	Calmar	Trades	Trades/ mo	Win Rate	Max DD	Return %	PF
timeframe	1h	1.451	2.362	1.653	4.822	44.673	330	8.51	76.7%	-3.5%	17.8%	10.30

All Variants

Factor	Variant	Sortino	Std	Trades	Win Rate	Max DD	Return %
timeframe	1h	1.451	2.362	330	76.7%	-3.5%	17.8%
timeframe	30m	1.328	1.101	529	67.3%	-6.4%	23.9%
timeframe	15m	1.242	1.411	926	59.2%	-10.5%	22.4%
timeframe	5m	0.068	0.678	661	41.0%	-16.0%	0.9%

Comparison vs Previous Run

Previous: ftf_20260501_230526_2483f9_ATR0.5_1.5_H4



Factor	Variant	Prev	Curr	Delta	Trades Prev	Trades Curr
btc_features	btc_full_purge0	1.390	None	-1.390 ↓	818	None
btc_features	btc_min	1.417	None	-1.417 ↓	823	None
btc_features	btc_full_purge10	1.425	None	-1.425 ↓	1072	None
btc_features	none	1.547	None	-1.547 ↓	1032	None
btc_features	btc_vol_only	1.606	None	-1.606 ↓	876	None
btc_features	btc_full	1.710	None	-1.710 ↓	847	None
timeframe	1h	None	1.451	1.451 ↑	None	330
timeframe	30m	None	1.328	1.328 ↑	None	529
timeframe	15m	None	1.242	1.242 ↑	None	926
timeframe	5m	None	0.068	0.068 ↑	None	661

Red Flags

- btc_features/btc_full_purge0: Sortino dropped -1.390 (from 1.390 to None)
- btc_features/btc_min: Sortino dropped -1.417 (from 1.417 to None)
- btc_features/btc_full_purge10: Sortino dropped -1.425 (from 1.425 to None)
- btc_features/none: Sortino dropped -1.547 (from 1.547 to None)
- btc_features/btc_vol_only: Sortino dropped -1.606 (from 1.606 to None)
- btc_features/btc_full: Sortino dropped -1.710 (from 1.710 to None)

ML Metrics – Couche A (signal modèle)

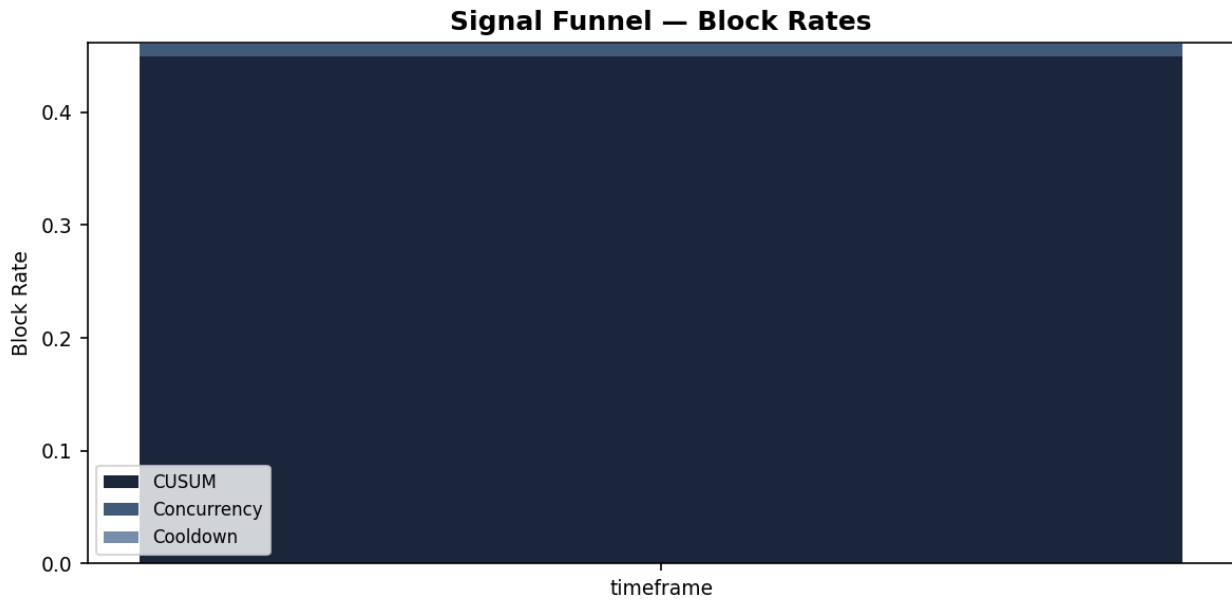
Qualité discriminante du modèle par factor x variant. Un levier classé "signal-restoring" doit bouger ces métriques, pas seulement le débit (Couche B) ou la qualité économique (Couche C).

Factor	Variant	f1_buy	precision	recall	AUC	f1_macro	Brier	ECE	Δ f1	overfit gap	action rate
timeframe	5m	0.493	0.424	0.618	0.715	0.629	0.1623	0.0000	0.296	0.044	0.378
timeframe	30m	0.437	0.497	0.413	0.782	0.684	0.0826	0.0000	0.351	0.063	0.102
timeframe	15m	0.433	0.422	0.459	0.730	0.650	0.1260	0.0000	0.317	0.053	0.198
timeframe	1h	0.415	0.568	0.367	0.821	0.691	0.0476	0.0000	0.358	0.072	0.049

Brier = écart quadratique moyen entre $p(\text{BUY})$ et y_{true} (plus bas = mieux). **ECE** (Expected Calibration Error) = écart moyen $|\text{confiance} - \text{accuracy}|$ par bin de 10% (plus bas = mieux calibré). Perfect classifier : Brier = 0, ECE = 0.

Signal Funnel – Couche B (débit)

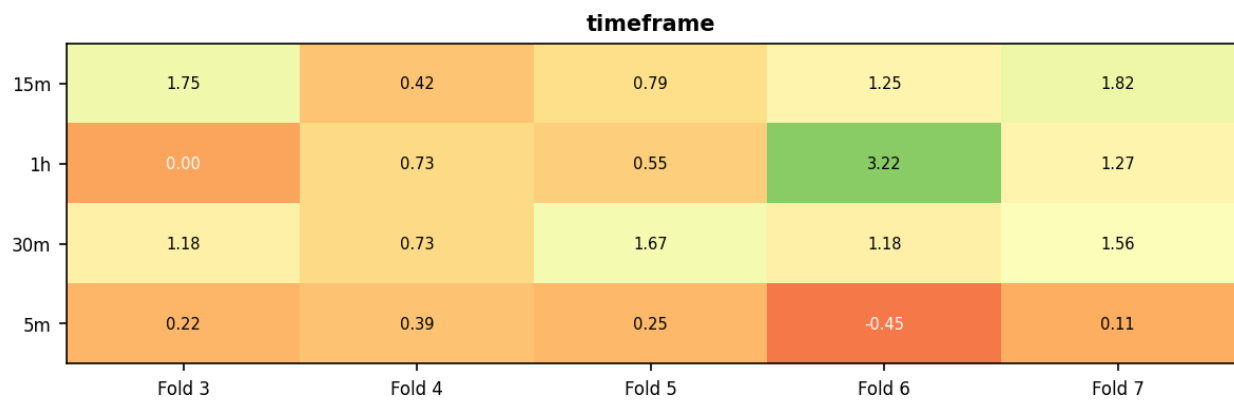
Survival par étage de filtre. `survival` = BUYs survivant / raw_buy. Un levier qui fait grimper `survival` sans bouger la Couche A (ML) augmente le débit d'opportunités mais pas la qualité du signal.



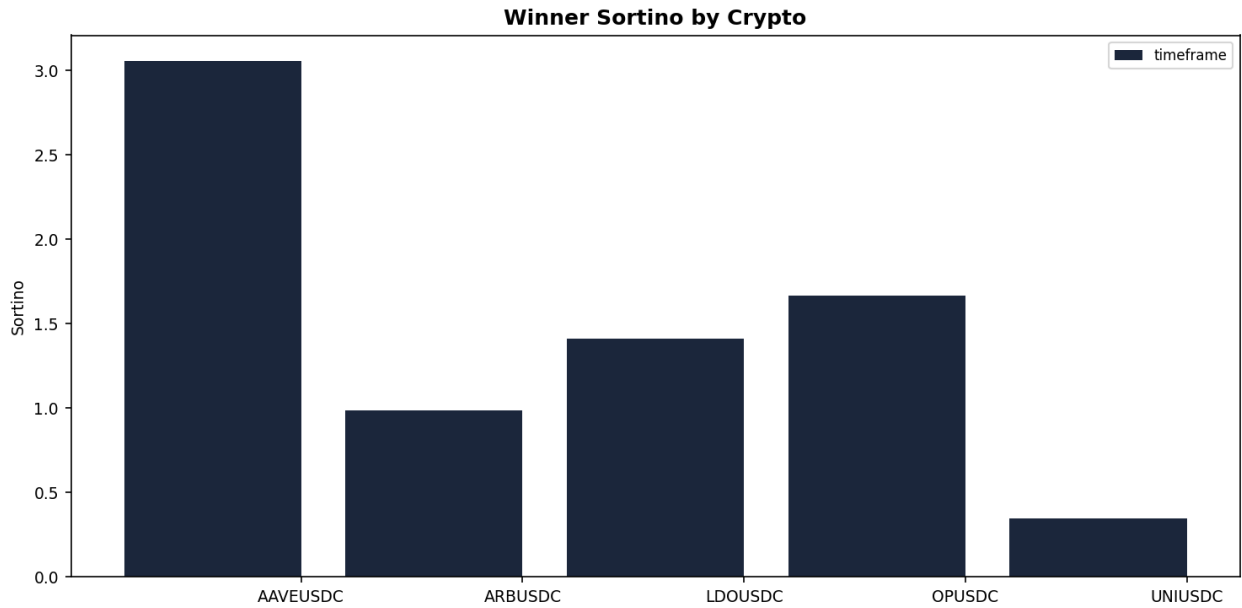
Factor	Variant	raw_buy	CUSUM block	CUSUM survival	Conc. block	Conc. survival	Cooldown	Total survival	Train Samples
timeframe	1h	340	0.449	0.551	0.012	0.988	0.000	0.988	25573
timeframe	30m	586	0.707	0.293	0.072	0.928	0.000	0.928	25595
timeframe	15m	1487	0.877	0.123	0.262	0.738	0.000	0.738	25705
timeframe	5m	1791	0.979	0.021	0.467	0.533	0.000	0.533	25629

Stability by Fold

Sortino Stability by Fold



Performance by Crypto



Factor	Variant	Crypto	Sortino	Trades	Win Rate	Max DD	Return %
timeframe	15m	AAVEUSDC	-0.384	175	51.5%	-16.5%	-6.7%
timeframe	15m	ARBUSDC	2.375	239	64.0%	-10.2%	42.8%
timeframe	15m	LDOUSDC	1.361	183	57.2%	-10.4%	27.1%
timeframe	15m	OPUSDC	1.970	182	63.6%	-8.7%	28.9%
timeframe	15m	UNIUSDC	1.113	147	60.5%	-6.6%	24.0%
timeframe	1h	AAVEUSDC	3.057	124	74.7%	-7.5%	14.6%
timeframe	1h	ARBUSDC	0.987	37	83.2%	-1.4%	27.2%
timeframe	1h	LDOUSDC	1.413	71	60.9%	-4.2%	15.5%
timeframe	1h	OPUSDC	1.665	52	69.2%	-3.1%	18.1%
timeframe	1h	UNIUSDC	0.347	46	91.6%	-1.3%	16.3%
timeframe	30m	AAVEUSDC	0.258	109	54.7%	-12.4%	4.9%
timeframe	30m	ARBUSDC	2.052	125	80.3%	-3.8%	40.1%
timeframe	30m	LDOUSDC	1.623	165	60.8%	-6.3%	26.4%
timeframe	30m	OPUSDC	1.053	41	77.7%	-3.5%	18.0%
timeframe	30m	UNIUSDC	1.509	89	67.2%	-5.1%	28.1%
timeframe	5m	AAVEUSDC	-0.522	103	32.0%	-23.6%	-16.0%
timeframe	5m	ARBUSDC	0.369	145	45.5%	-10.9%	7.0%
timeframe	5m	LDOUSDC	0.136	163	41.4%	-16.5%	7.2%
timeframe	5m	OPUSDC	0.223	84	41.0%	-11.3%	3.6%
timeframe	5m	UNIUSDC	0.298	166	46.9%	-14.6%	7.0%

Configuration Snapshot

BASE_ENV at run start (immutable)

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{
  "CVN_ADAPTIVE_EVENT_ENGINE": "0",
  "CVN_ATR_PERIOD": "14",
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  "CVN_CLASS_BALANCING": "1",
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  "CVN_CLEANLAB_FOLD_BUDGET_S": "60",
  "CVN_CLEANLAB_MAX_DROP_PCT": "5.0",
  "CVN_CLEANLAB_MODE": "off",
  "CVN_CLEANLAB_REWEIGHT_FLOOR": "0.5",
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  "CVN_SAMPLE_WEIGHTING": "uniform",
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  "CVN_SLIPPAGE_BASE_BPS": "5",
  "CVN_SLIPPAGE_IMPACT_FACTOR": "0.001",
  "CVN_SL_MULT": "0.5",
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  "CVN_USE_KELLY": "0",
  "CVN_USE_LDP_PIPELINE": "1",
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"CVN_USE_META_LABEL": "0",  
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