

BTC / 10Y YIELD BENCHMARK

PUBLIC METHODOLOGY

A **weekly macro-rate benchmark** that measures Bitcoin against the U.S. 10-year Treasury yield environment. The headline is a rebased ratio of a Bitcoin price index over a 10-year nominal yield-level index, anchored to a fixed base date. It shows whether Bitcoin is gaining or losing strength relative to one of the world's most important reference points for the cost of capital, discount rates and risk-asset pressure.

Benchmark family	BBN Benchmarks · Bitcoin Macro Benchmarks
Benchmark name	BBN BTC / 10Y Yield Benchmark
Primary objective	Measure Bitcoin's relative position versus the U.S. 10-year Treasury yield environment
Update frequency	Weekly — one end-of-week observation
Headline unit	Base-100 BTC-to-yield rebased ratio
Headline bounds	Unbounded above; floored through the low-yield handling rule
Base date / value	Tuesday, 2 January 2018 — first Treasury session of 2018 · headline = 100.00
Yield base value	2.46% (H.15 10-Year Constant Maturity on the base date)
Material revision threshold	0.5 index points (headline)
Methodology version	Version 1 — inaugural public release
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HOW TO READ IT — AND WHAT 100 MEANS

A headline above 100 means Bitcoin has outperformed the 10-year yield environment since the base date; below 100 means the rates environment has tightened faster than Bitcoin has appreciated, or Bitcoin has weakened. Unlike a BBN Index, which is scored around a 50 mid-point, the 100 here is not a neutral or trailing-norm point — it is a fixed anchor. A headline of exactly 100 would mean Bitcoin and the 10-year yield have moved by identical proportional amounts since 2 January 2018.

POSITIONING

This is a proprietary, directional benchmark for editorial, research and commercial data use. It is not an IOSCO-aligned regulated financial benchmark, not a tradable instrument or spread, not a bond total-return index, and not an investment recommendation.

01 WHAT THE BENCHMARK MEASURES

The benchmark answers one macro question: is Bitcoin gaining or losing relative strength against the U.S. long-rate regime, measured from a fixed historical anchor? The 10-year yield is treated as a macro-rate variable, not as a competing asset price — a higher yield signals a higher discount-rate environment, tighter conditions or stronger nominal-growth and inflation expectations, while a lower yield signals easing rate pressure or defensive demand for duration. The benchmark measures Bitcoin against the rate level itself, not against a Treasury bond total-return index.

ELEMENT	WHAT IS MEASURED
BTC leg	U.S. dollar price of Bitcoin from the CME CF Bitcoin Reference Rate (BRR) — an institutional-quality reference price.
10Y yield leg	U.S. Treasury 10-year nominal Constant Maturity yield from H.15, expressed in percent.
Headline benchmark	BTC price index ÷ yield-level index, both rebased to 100 on 2 January 2018, then multiplied by 100.
Weekly yield change	Week-on-week change in the 10-year yield in basis points — a diagnostic that separates BTC-led from yield-led moves.
BTC per yield point	BTC price ÷ yield (percent), published for scale reference only — a constant multiple of the headline that cannot disagree with it directionally.

02 DATA SOURCES

Source choices are fixed; any substitution is a documented methodology change. For the BTC leg, the primary source is the CME CF Bitcoin Reference Rate at the 16:00 London fix — which aggregates eligible constituent exchanges with venue, liquidity and outlier controls administered by CF Benchmarks — falling back first to the New York BRR variant (BRRNY) and then to a Bloomberg end-of-day Bitcoin index, with any switch logged in the release note. For the yield leg, the primary source is the U.S. Treasury H.15 Daily Treasury Par Yield Curve 10-Year Constant Maturity rate, falling back to FRED series DGS10 and then to the Bloomberg generic 10-year U.S. Treasury yield. Single-exchange last-trade prices, unverified composites, futures-implied yields, swap rates and single-dealer indications are never eligible for the headline.

The headline uses the *nominal* 10-year yield because it is the most widely cited global rate reference and the variable allocators and macro commentators actually watch when judging the rates backdrop. A real-yield variant (10Y TIPS, FRED DFII10) may be maintained separately as a technical companion but is never substituted into the headline, since mixing nominal and real yields across dates would break series continuity.

03 OBSERVATION RULE AND CALENDAR

Bitcoin trades continuously while official Treasury yields follow the U.S. government bond-market calendar, so the benchmark fixes a common weekly observation with explicit timestamps for each leg.

ELEMENT	SPECIFICATION
Observation day	Friday — the standard weekly close referenced in macro and allocator commentary.
BTC timestamp	CME CF BRR fix, 16:00 London time — the most widely cited institutional Bitcoin reference window and the CME Bitcoin futures settlement reference.
Yield timestamp	H.15 close, 15:00 Eastern Time (typically published the same business day at 16:15 ET).
Alignment	Both legs are taken on the same calendar Friday; same-day H.15 publication means both reflect one business day despite sequential fix windows.
Yield unit	Percent to two decimals (e.g. 4.25, not 0.0425); the unit cancels in the ratio.

If the yield is unavailable on Friday, the nearest prior valid H.15 publication is used and the BTC observation is moved to match, so both legs share a date. If Bitcoin is unavailable, BRRNY is used for the same Friday; if both BRR and BRRNY fail, the observation moves to the nearest prior Friday with a valid BRR and the yield is aligned to it. If both legs are unavailable, the observation is deferred and no headline is published. A forward-fill of either leg beyond five calendar days is not permitted; past that point the week is treated as missing.

04 BASE DATE AND REBASING

The headline uses a single fixed base date — Tuesday, 2 January 2018, the first U.S. Treasury session of 2018 — with the BTC base set to the BRR that day, the yield base to the H.15 10-Year Constant Maturity of **2.46%**, and the headline to 100.00. Alternative rebases

(year-to-date, twelve-month, quarterly) are supported for display only and never alter the headline; a change to the primary base date is a material methodology change.

The 2 January 2018 base satisfies four criteria at once: it sits outside the post-2008 zero-rate regime (where the 2016 yield trough of 1.36% and the 2020 trough near 0.51% would have made an unstable denominator); it follows the December 2017 launch of regulated Bitcoin futures, the first point at which institutional reference rates achieved continuous quality; it is the first Treasury session of a calendar year, so display rebases align cleanly; and at 2.46% it sits in an unremarkable middle of the post-2000 yield distribution, comfortably above the low-yield floor.

BASE-DATE SENSITIVITY – DISCLOSED

A base-100 ratio is mechanically sensitive to the chosen base yield. With the base of 2.46%, a current yield of 4.25% gives a yield index of 173; against a 2020 base of 0.51%, the same current yield gives a yield index of 833 — a 4.8× difference. Readers comparing this benchmark against alternative-base constructions should always check the base date first.

05 CALCULATION METHODOLOGY

The headline is built in deterministic steps from the weekly observation pair. Values are held to four decimals internally and reported to two.

STEP 1 – BTC PRICE INDEX

$$\text{BTCIndex}(t) = 100 \times \text{BRR}(t) \div \text{BRR}(\text{base})$$

STEP 2 – YIELD-LEVEL INDEX

$$\text{YieldIndex}(t) = 100 \times \text{Yield}(t) \div \text{Yield}(\text{base}), \quad \text{Yield}(\text{base}) = 2.46\%$$

$$\text{Headline BBN BTC/10Y}(t) = 100 \times \text{BTCIndex}(t) \div \text{YieldIndex}(t)$$

closed form: $100 \times [\text{BRR}(t) / \text{BRR}(0)] \div [\text{Yield}(t) / \text{Yield}(0)]$ · equals 100 on the base date; floored below via the low-yield rule, unbounded above

WEEKLY HEADLINE CHANGE

$$\text{WeeklyChange}(t) = [\text{BBN BTC/10Y}(t) \div \text{BBN BTC/10Y}(t-1 \text{ week}) - 1] \times 100\%$$

WEEKLY YIELD CHANGE (DIAGNOSTIC)

$$\text{YieldChange}_{\text{bps}}(t) = [\text{Yield}(t) - \text{Yield}(t-1 \text{ week})] \times 100$$

AUXILIARY DIAGNOSTIC – BTC PER YIELD POINT

$$\text{BTCperYieldPoint}(t) = \text{BRR}(t) \div \text{Yield}(t)$$

LOGARITHMIC COMPANION

A log-form variant is published alongside the headline. It is more robust near a zero denominator, is additive across periods and gives symmetric percent-style readings; it is the recommended specification for low-yield regimes and for any statistical use of the series, and shares the same source, observation and revision rules.

LOG COMPANION

$$\text{BBN BTC/10Y}_{\text{Log}}(t) = 100 + 100 \times [\ln(\text{BRR}(t)/\text{BRR}(0)) - \ln(\text{Yield}(t)/\text{Yield}(0))]$$

Equals 100 on the base date. A reading of 250 indicates BTC has outperformed the yield environment by roughly 150 log-percentage-points since the base.

06 WORKED EXAMPLE

A hypothetical Friday observation illustrates the full chain.

INPUT	VALUE	SOURCE
Observation date	Friday, 14 June 2024 (illustrative)	Standard weekly Friday
BRR(t)	\$66,250.00	CME CF BRR, 16:00 London
BRR(base)	\$13,412.44	2 January 2018 anchor
Yield(t)	4.22%	H.15 10Y CMT, 14 June 2024
Yield(base)	2.46%	2 January 2018 H.15 10Y CMT

STEP 1 – BTC INDEX

$$100 \times 66,250.00 \div 13,412.44 = 493.94$$

STEP 2 – YIELD INDEX

$$100 \times 4.22 \div 2.46 = 171.54$$

$$\text{Headline} = 100 \times 493.94 \div 171.54 = 287.94$$

LOG COMPANION

$$100 + 100 \times [\ln(4.9394) - \ln(1.7154)] = 100 + 100 \times [1.5973 - 0.5397] = 205.76$$

A reading of 287.94 means that since the anchor Bitcoin has appreciated by about 4.94× while the 10-year yield environment has tightened by about 1.72×; the ratio of the two, times 100, is the headline, which places the benchmark in the “Strong BTC outperformance versus rates backdrop” band. The log companion of 205.76 conveys the same direction additively — Bitcoin has outstrengthened the rates environment by roughly 106 log-points since the base.

07 INTERPRETATION FRAMEWORK

The benchmark does not claim Bitcoin is outperforming a tradable Treasury bond; it says Bitcoin is gaining or losing strength relative to the 10-year yield environment since the base date. A rising headline means BTC is absorbing or outpacing the rates backdrop; a falling headline means the backdrop is becoming more difficult for BTC, or BTC is underperforming it. The four price/rate combinations — BTC and yield both up, both down, or moving oppositely — distinguish whether risk appetite is offsetting tighter rates, whether higher yields coincide with risk-asset stress, whether easing rates are supporting BTC, or whether crypto-specific weakness is dominating a macro relief signal.

ON REGIME NON-STATIONARITY

The empirical relationship between Bitcoin and 10-year yields is not constant — near zero or weakly negative across 2018–2021, strongly negative across 2022–2023 as Bitcoin traded as a long-duration risk asset, and mixed from 2024 onward. The benchmark measures the rebased ratio at every point; the bands describe what it is showing, not a fixed causal claim about why.

HEADLINE BANDS

The bands partition the full positive range of possible readings with no gaps or overlaps. Boundaries are thresholds — a band runs from its lower figure up to (but not including) the next — so every reading falls in exactly one band. They are deliberately asymmetric around 100: BTC price is unbounded above while the yield index stays within realistic yield ranges, so over multi-year horizons the headline drifts up whenever BTC appreciates, and the upper bands widen geometrically.

HEADLINE	BAND	MEANING
≥ 400	Severe BTC outperformance	BTC has appreciated dramatically more than the yield environment tightened.
200 – <400	Strong BTC outperformance	Pronounced BTC strength relative to the rates environment.
125 – <200	Moderate BTC outperformance	BTC has clearly outpaced the yield environment.
>100 – <125	Slight BTC outperformance	BTC has marginally outperformed the yield environment.
100	On the base-date anchor	Identical proportional moves since the base.
80 – <100	Slight BTC underperformance	The yield environment has tightened slightly faster than BTC has risen.
50 – <80	Moderate BTC underperformance	The rates backdrop has materially outpaced BTC.
25 – <50	Strong BTC underperformance	Pronounced relative weakness of BTC versus the rates environment.
< 25	Severe BTC underperformance	BTC has lost dramatically relative to the rates environment.

08 EDGE CASES, PUBLICATION AND GOVERNANCE

LOW-YIELD FLOOR AND REGIME GUARDS

A base-100 ratio is unstable as the yield denominator approaches zero, so an explicit floor applies.

CONDITION	TREATMENT
$\text{Yield} \geq 0.50\%$	Headline published normally.
$0 < \text{Yield} < 0.50\%$	Headline flagged “out-of-regime — low yield”; the arithmetic value is published with the flag, and the log companion is the recommended reading for that week.
$\text{Yield} \leq 0$	Arithmetic headline suspended; only the log companion is published, with a note in the release.

For extreme moves: a weekly headline change above 15% forces re-verification of both legs against the fallback sources before publication, and if a fallback diverges by more than 1.0% on either leg, publication is delayed until reconciliation; a weekly change beyond three standard deviations of the trailing 24-month distribution is flagged but not suppressed; and a yield move above 30 basis points in a week is flagged as rates-led so the headline change can be read in context. If either leg cannot be obtained within five calendar days, the week is suspended and not back-filled.

PUBLICATION LAYERS

Every weekly release falls into exactly one layer. **Full** publication requires both legs from tier-1 sources at the standard timestamps with the yield at or above 0.50% and no fallback used; it carries the headline, weekly change, yield change in basis points, the BTC-per-yield-point diagnostic, the log companion and a release note. **Provisional** applies when either leg uses a tier-2 fallback, a leg is forward-filled up to five days, or the yield is in the 0–0.50% low-yield regime; the same outputs are published with a “Provisional” label and a deviation note, and may be revised when the primary source returns. **No publication** applies when both legs are unavailable beyond the five-day limit, the yield is at or below zero, or a verified source error is unreconciled; a short coverage note is issued and the next valid Friday resumes the series.

QUALITY CONTROLS

On every publication, yield data are validated as percent (not decimal or basis-point) format; both legs are confirmed to share a calendar Friday with the sequential fix windows logged; the series is checked for missing weeks, duplicates and consistent base-date application; any forward-fill is logged with its exact day count against the automatic five-day limit; the log companion's direction is confirmed to agree with the headline, with any disagreement triggering a calculation review; and each release is appended to an immutable archive with source values, computed values, the publication layer and any notes.

REVISIONS AND VERSIONING

A material revision is a change of 0.5 index points or more to a published headline, or any methodology change that would have produced such a difference; smaller corrections are archived without public notice. Revisions are triggered by republished source data, a unit-conversion error (percent vs decimal vs basis points), a calendar-alignment error, a stale-data violation, or an undisclosed source-tier fallback. This is the inaugural publication, Version 1. Any change to the base date, the primary BTC or yield source, the observation-timestamp convention or the headline formula is a material methodology change, carrying at least 30 calendar days' public notice, a parallel-published transition of at least four weeks, a versioned changelog entry and a new version number. Non-substantive editorial edits are made without notice but recorded in the archive.

SCOPE, LIMITATIONS AND LEGAL NOTE

The benchmark is a directional indicator, not a tradable spread and not a bond total-return index — it cannot be replicated by holding Bitcoin against a Treasury position, and coupon, roll-down and convexity effects are not represented. It uses one national long-rate curve, so it does not capture ex-U.S. rate dynamics (Bunds, JGBs, Gilts); it uses nominal yields, so inflation expectations are not stripped out; its level is mechanically dependent on the fixed, disclosed base date; the BTC leg is spot Bitcoin without adjustment for derivative or jurisdictional deviations; and the weekly cadence captures intraweek events such as mid-week FOMC decisions only at the next Friday. Within the BBN macro-pair family this is the only benchmark that compares Bitcoin to a rate level rather than another asset price, with siblings spanning gold, copper, the S&P 500 and emerging markets. It is informed by the CF Benchmarks BRR and U.S. Treasury H.15 conventions for source quality and timestamp discipline but is a proprietary indicator — not an official statistic, a regulated benchmark, an investable index or a price-formation reference, and not IOSCO-aligned. Its methodology, tables and historical series are proprietary to BitBullMedia Pte. Ltd.; full-series redistribution, replication, cloning, resale or commercial republication requires prior written permission. Nothing here is investment, legal, accounting or tax advice, and users are responsible for complying with the source providers' terms.