VERSION 1

BTC / GOLD BENCHMARK

PUBLIC METHODOLOGY

A weekly relative-performance series that measures Bitcoin against gold, the oldest and most established monetary hard asset. The headline is a rebased ratio of a Bitcoin price index over the LBMA Gold Price PM auction reference, anchored to a fixed base date. It shows whether Bitcoin is gaining or losing strength against the global benchmark for physical gold — the reference used by central banks, bullion markets and gold-backed funds — rather than only against another financial or digital asset.

Benchmark family	BBN Benchmarks · Bitcoin Macro Benchmarks
Benchmark name	BBN BTC / Gold Benchmark
Primary objective	Measure Bitcoin's relative performance versus gold as a traditional hard-money reference asset
Update frequency	Weekly — one end-of-week observation
Headline unit	Base-100 BTC-to-gold rebased ratio
Headline bounds	Unbounded above; bounded below by zero (gold is structurally positive)
Base date / value	Tuesday, 2 January 2018 · headline = 100.00
Gold reference	LBMA Gold Price PM (15:00 London auction), USD/troy ounce
Bloomberg ticker	GOLDLNPM
Administrator	ICE Benchmark Administration (IBA)
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 gold since the base date; below 100 means gold has outpaced Bitcoin. 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 gold have moved by identical proportional amounts since 2 January 2018.

POSITIONING

This is the defensive monetary-asset signal in the BBN Bitcoin Macro Benchmarks family — a proprietary, directional benchmark for editorial, research and commercial data use, complementing the cyclical commodity benchmarks such as BTC / Copper. It is not an IOSCO-aligned regulated financial benchmark, not a tradable instrument, not a commodity total-return index, and not an investment recommendation.

01 WHAT THE BENCHMARK MEASURES

The benchmark answers one cross-asset question: is Bitcoin gaining or losing strength against gold, the traditional hard-money reference asset, measured from a fixed historical anchor? Where copper compares Bitcoin with cyclical industrial demand, gold compares it with the oldest and most widely understood monetary metal — digital scarcity set against physical money. The framing is descriptive, not advocative: the benchmark takes no side in the long-running debate over Bitcoin and gold as stores of value.

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.
Gold leg	LBMA Gold Price PM auction reference, in U.S. dollars per troy ounce — the global institutional benchmark used by central banks, gold ETFs and the bullion market.
Headline benchmark	BTC price index ÷ gold price index, both rebased to 100 on 2 January 2018, then multiplied by 100.
Weekly change	Week-on-week percentage change in the headline — a momentum and outlier-review diagnostic.
Gold ounces per BTC	BTC price ÷ gold price, published for scale reference only — a constant multiple of the headline that cannot disagree with it directionally.

02 GOLD LEG SPECIFICATION

The headline uses one named reference and one named fallback chain, to preserve comparability across time.

ELEMENT	SPECIFICATION
Reference	LBMA Gold Price PM auction.
Administrator	ICE Benchmark Administration (IBA), since 20 March 2015.
Bloomberg ticker	GOLDLNPM.
Quoted unit	U.S. dollars per troy ounce.
Auction time	15:00 London time.
Price discovery	Electronic, tradable, auction-based; participants submit buy and sell orders and the algorithm converges on the price where buying and selling volumes match within a small tolerance.
Roll requirement	None — a cash-market auction reference, not a futures contract. No back-adjustment, roll cycle or splicing is required.

Unlike the industrial macro pairs — copper uses COMEX High-Grade futures, the agriculture and energy baskets use CBOT and NYMEX/ICE futures — the gold benchmark uses a cash-market reference rather than a futures contract. This is intentional and reflects gold-specific convention: the LBMA Gold Price is the global standard for gold valuation, used by central banks, gold-backed ETFs, structured-product providers and the bullion market, while COMEX Gold (GC) is the leading U.S. price-discovery vehicle but not the global pricing reference. A cash auction also removes the roll-cycle artifacts that would otherwise distort a long-run series. The same pattern applies to BTC / Emerging Markets, which uses MSCI cash equity data rather than equity futures.

DATA SOURCES

Source choices are fixed; any substitution is a documented methodology change. The BTC leg uses the CME CF BRR at the 16:00 London fix — the same source as the other Bitcoin Macro Benchmarks — with the New York variant (BRRNY) and then a Bloomberg Bitcoin index as fallbacks. The gold leg uses the LBMA Gold Price PM auction, with the LBMA AM auction, then COMEX Gold (GC) front-month settlement, then a Bloomberg or Refinitiv continuous series reproducing the PM price as successive fallbacks. The Shanghai Gold Benchmark (CNY-denominated), OTC spot (XAU) quotes, gold-ETF NAVs or closes (GLD, IAU) and gold-mining equities are never eligible for the headline — ETF NAVs are themselves derived from the LBMA Gold Price, so using them would be circular.

03 OBSERVATION RULE AND CALENDAR

Bitcoin trades continuously while the LBMA Gold Price is set by auction twice daily, so the benchmark fixes a common weekly observation with explicit timestamps for each leg.

ELEMENT	SPECIFICATION
Observation day	Friday.
BTC timestamp	CME CF BRR fix, 16:00 London time.
Gold timestamp	LBMA Gold Price PM auction, 15:00 London time.
Alignment	Both legs are taken on the same calendar Friday; the 15:00 gold auction precedes the 16:00 BRR fix by one hour, and both reflect the same London business day.
Currency	USD-denominated for both legs; no FX conversion. Gold is stored in USD per troy ounce to four decimal places.

If gold is unavailable on Friday — the PM auction is not held or is delayed — the LBMA AM auction for the same Friday is used; if both LBMA auctions are unavailable, COMEX Gold (GC) front-month settlement for the same Friday is used; if that too is unavailable, the observation moves to the nearest prior Friday with a valid PM auction and the BTC leg is aligned to it. If Bitcoin is unavailable, BRRNY is used; if both BTC sources fail, the observation moves to the nearest prior Friday with a valid BRR and the gold leg is aligned to it. If both legs are unavailable, the week is deferred and no headline is published; the next valid Friday resumes the series, and missed weeks are not back-filled. A forward-fill of either leg beyond five calendar days is not permitted — past that point the week is treated as missing.

04 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 — GOLD PRICE INDEX

$$\text{GoldIndex}(t) = 100 \times \text{Au}(t) \div \text{Au}(\text{base})$$

Headline $\text{BBN BTC/Au}(t) = 100 \times \text{BTCIndex}(t) \div \text{GoldIndex}(t)$

closed form: $100 \times [\,\text{BRR}(t) / \text{BRR}(0)\,] \div [\,\text{Au}(t) / \text{Au}(0)\,]$ · equals 100 on the base date; bounded below by zero, unbounded above

WEEKLY HEADLINE CHANGE

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

AUXILIARY DIAGNOSTIC — GOLD OUNCES PER BTC

$$\text{GoldOzPerBTC}(t) = \text{BRR}(t) \div \text{Au}(t)$$

PUBLICATION LAYERS

Every weekly release falls into exactly one layer. Full publication requires the BTC leg from tier-1 BRR and the gold leg from the primary LBMA Gold Price PM auction, with no fallback and a forward-fill of at most one day; it carries the headline, weekly change, the gold-ounces-per-BTC diagnostic and a release note. Provisional applies when either leg uses a tier-2 fallback (BRRNY or Bloomberg for BTC; the LBMA AM auction, COMEX GC or a Bloomberg/Refinitiv reproduction for gold) or is forward-filled by two to five days; 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 either leg is unavailable beyond the five-day limit or a verified source error is unreconciled; a short coverage note is issued and the next valid Friday resumes the series, with no back-fill.

05 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
Au(t)	$2,330.00/oz	LBMA Gold Price PM, 14 June 2024
Au(base)	$1,312.80/oz	2 January 2018 LBMA Gold Price PM

STEP 1 — BTC INDEX

100 × 66,250.00 ÷ 13,412.44 = **493.94**

STEP 2 — GOLD INDEX

100 × 2,330.00 ÷ 1,312.80 = **177.48**

Headline = 100 × 493.94 ÷ 177.48 = 278.30

DIAGNOSTIC — GOLD OUNCES PER BTC

66,250.00 ÷ 2,330.00 = **28.43** troy ounces

A reading of 278.30 means that since the 2 January 2018 anchor Bitcoin has appreciated by about 4.94× while gold has appreciated by about 1.77× — a gain of roughly 77 percent over six and a half years — so Bitcoin has outperformed gold by about 2.78× over the period, which is the headline divided by 100. This places the benchmark in the "Strong BTC outperformance versus gold" band, and the diagnostic shows that one Bitcoin currently represents about 28.43 troy ounces of LBMA-benchmark gold.

06 INTERPRETATION FRAMEWORK

The benchmark does not claim Bitcoin and gold are substitutes, nor does it endorse either side of the long-running store-of-value debate; it says Bitcoin is gaining or losing strength relative to gold since the base date. A rising headline means BTC is gaining against traditional hard money; a falling headline means the market is favouring gold over digital scarcity. The four price combinations distinguish whether store-of-value flows are lifting both assets, whether capital is rotating from Bitcoin into a classic safe-haven bid, whether digital-asset strength is outpacing a softening gold complex, or whether a broad risk-off is dragging both lower.

BTC-DOMINANT VOLATILITY

Bitcoin runs at roughly 60–80% annualized volatility against gold's 12–18% — the most extreme volatility asymmetry in the BBN Macro Benchmarks family, with BTC volatility about four to five times gold's. Almost all weekly headline variance is driven by the BTC leg: a 5% weekly move is far more likely to be a Bitcoin move than a gold move. The underlying BTC and gold levels published with each release show which leg drove a given week.

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. They are deliberately asymmetric around 100 because Bitcoin's volatility is several times gold's, so over multi-year horizons the headline drifts up whenever BTC appreciates and the upper bands widen geometrically.

HEADLINE	BAND	MEANING
≥ 500	**Severe BTC outperformance**	BTC has appreciated dramatically more than gold since the base.
250 – <500	**Strong BTC outperformance**	Pronounced BTC strength relative to gold.
150 – <250	**Moderate BTC outperformance**	BTC has clearly outpaced gold.
>100 – <150	**Slight BTC outperformance**	BTC has marginally outperformed gold.
100	**On the base-date anchor**	Identical proportional moves since the base.
75 – <100	**Slight BTC underperformance**	Gold has appreciated slightly faster than BTC.
40 – <75	**Moderate BTC underperformance**	Gold has materially outpaced BTC.
20 – <40	**Strong BTC underperformance**	Pronounced relative weakness of BTC versus gold.
< 20	**Severe BTC underperformance**	BTC has lost dramatically relative to gold.

07 READING GUIDANCE, QUALITY CONTROL AND GOVERNANCE

STRUCTURAL FEATURES THE HEADLINE REFLECTS

Gold carries structural features that the headline mechanically reflects but that readers should not read as a Bitcoin signal; the benchmark discloses rather than adjusts for them. Gold has a long-standing negative correlation with U.S. real yields, so headline moves driven by real-rate regime changes reflect rates dynamics rather than Bitcoin-versus-gold fundamentals. Since 2022, sustained central-bank gold accumulation — particularly by emerging-market central banks — has provided a persistent official-sector bid that has no analogue on the Bitcoin side. Flows into and out of physical-gold ETFs can move gold prices over weekly and monthly horizons, especially during macro stress or dollar weakness, and the benchmark reflects these as part of the gold signal. Gold also trades across London, New York and Shanghai venues that can diverge in stressed periods; the headline anchors to the LBMA PM auction as the global reference. Finally, gold has served as a monetary asset for roughly five thousand years while Bitcoin has existed only since 2009, so a multi-year headline reading cannot speak to multi-decade store-of-value questions. The framing stays neutral: the benchmark neither endorses Bitcoin as a gold replacement nor claims gold is obsolete.

QUALITY CONTROLS AND OUTLIER HANDLING

On every publication the LBMA Gold Price PM is cross-checked between Bloomberg (GOLDLNPM) and Refinitiv, with any discrepancy beyond 0.10% triggering manual review; the PM auction is confirmed to have been held for the observation date; gold is validated as USD per troy ounce to prevent USD/gram or USD/kilogram errors; the single Friday alignment and USD denomination of both legs are confirmed; and the series is checked for missing weeks, duplicates and consistent base-date application, with each release appended to an immutable archive. A weekly headline change of 12% or more, or a single-leg daily change of 8% or more, forces re-verification against tier-2 sources before publication. For stale prices, two consecutive unchanged PM auction values are flagged, three trigger manual review against the LBMA publication and COMEX settlement, and five exclude the gold leg for that week, after which the substitution chain applies.

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 or corrected LBMA or BRR data, a unit error (troy ounce versus gram or kilogram), an AM-versus-PM auction confusion, 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 source, the gold reference 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 uses a single named gold reference, so it carries single-source resilience risk, mitigated by the LBMA AM, COMEX and Bloomberg/Refinitiv fallback chain. It is a directional indicator, not a tradable spread — it cannot be replicated by holding Bitcoin against physical gold, since the LBMA Gold Price is a reference rather than a tradable instrument — and it is not a precious-metals total-return index: the headline reflects price change only, with no storage, insurance, leasing or fund-fee effects. Most weekly variance reflects Bitcoin rather than gold; the gold leg inherits real-yields sensitivity, post-2022 central-bank reserve dynamics and ETF-flow effects; the level is mechanically dependent on the fixed, disclosed base date; and the weekly cadence captures intraweek events only at the next Friday. Within the BBN macro-pair family this is the only benchmark comparing Bitcoin to the traditional defensive monetary metal. It draws on the LBMA Gold Price and COMEX Gold conventions and the CF Benchmarks BRR for reference selection 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. The LBMA Gold Price PM is administered by ICE Benchmark Administration on behalf of the LBMA; IBA and the LBMA do not endorse this benchmark and have no responsibility for it. 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.