

Uncapped & Unrepresentative: A Structural Critique of the Nifty 50 Index Construction & Composition

Author Details

Name: Sam S

Affiliation: Independent Researcher

ORCID: [0009-0007-6419-5969](https://orcid.org/0009-0007-6419-5969)

Email Address: samalex2338@gmail.com

Abstract:

The Nifty 50 has evolved from an index covering roughly a third of NSE's listed market capitalisation at its 1996 launch into the primary benchmark index for Indian equity markets. The index anchors approximately ₹4.89 trillion in domestic passive assets and has become one of the world's most heavily traded index-derivatives franchises. This paper examines the nature and relevance of the index's construction rules. The paper critiques four structural limitations present in the index: uncapped single-stock and sector concentration, the divergence of the index's sectoral weights from India's gross value-added composition, liquidity- and size-based rebalancing rules, and mandatory derivatives-eligibility gating. Drawing primarily on NSE's disclosures, regulatory filings, and the academic literature on index effects, this paper contrasts these findings against comparable global benchmarks and argues that the Nifty 50 functions less as a representative economic proxy and more as a liquidity-weighted portfolio of India's largest formal-sector firms. The observations and findings of the paper call for further enquiry and regular examination of the relevance, soundness, and alignment of the underlying index construction rules with the index's true objectives.

Keywords: Nifty 50, Stock Index, NSE, Index Construction, Passive Investing, SEBI Regulation, Indian Equity Market

JEL Codes:

G10 – General Financial Markets

G14 – Information and Market Efficiency; Event Studies; Insider Trading

G18 – Government Policy and Regulation

G23 – Non-bank Financial Institutions; Financial Instruments; Institutional Investors

1. Introduction

India's capital markets went through a rapid structural transformation in the early 1990s. The establishment of the National Stock Exchange (NSE) in 1992 introduced standardised market practices and nationwide access to equities. Subsequently, the Nifty 50 Index was launched in 1996. It was designed to track 50 large, liquid companies across the principal sectors of the economy. Over the course of its tenure, the Nifty 50 has become the most-tracked Indian market equity index, which is used by a whole array of market participants for numerous reasons ranging from benchmarking by active fund managers to deriving risk premiums for equity research analysts. Over time, NSE became one of the world's largest derivatives exchanges, with Nifty 50 options becoming the most traded equity index contract globally by 2019 (NSE Indices, 2026). The Nifty 50 is also the go-to index for any standard Indian passive index fund that has a mandate to track the broader market performance and needs exposure to capture the market beta. India's first equity ETF was launched on the Nifty 50 in 2001. As of January 30, 2026, 45 Indian passive funds (20 ETFs and 25 index funds) tracked the Nifty 50, managing combined assets under management of approximately ₹4.89 trillion. These Nifty 50-linked ETFs represented 49.6% of total domestic equity ETF AUM, and Nifty 50-linked index funds represented 42.6% of total domestic equity index-fund AUM (NSE Indices, 2026). The Nifty 50 functions as the default entry point and reference benchmark for these asset management entities and mutual funds. Thus, it has become of utmost importance to analyse the underlying construction rules that outline the Nifty-50 to ensure that the index reflects a realistic, representative and true economic picture of the broader Indian equity markets, the investment landscape and associated performance. The methodological feature of the index today is therefore not a narrow technical matter; it shapes how capital worth trillions of rupees is allocated across the Indian economy.

2. Study Gap

The legacy of the Nifty 50 and its global significance is of paramount importance to any market participant since it serves as the major proxy for Indian equity performance and trends. The magnitude of the applicability of the index invariably requires constant attention and inquiry with respect to the credibility, relevance, and rationale of the underlying principles and rules based on which the index value is derived. Existing accounts of the Nifty 50, including the NSE's own thirty-year white paper, are almost entirely descriptive, stating what is factual without any analytical angles to it. It documents what the index has done (its growth, its returns,

its coverage of the listed market) without ever interrogating what its construction rules imply about what it can and cannot represent. This is a natural gap for an index provider's own materials to leave open, but it is one the academic and policy literature has not completely filled either. Das (2024) showed empirically that the Nifty 50's market-capitalisation-weighted construction produces volatility and extreme-risk measures uniformly higher than both a Markowitz-optimised portfolio and a simple equal-weighted portfolio of the same fifty constituents. This study adds to evidence that the index's weighting scheme is not risk-efficient relative to plausible alternatives. Beyond the Indian-market-specific literature, the broader academic literature on the economic functions of index investing (Coles, Heath, & Ringgenberg, 2022; Fisch, Hamdani, & Solomon, 2020) has focused overwhelmingly on developed-market, capped, or fundamentally-screened benchmarks. No prior study, to the authors' knowledge, has examined the specific combination of features this paper documents in the Nifty 50, including uncapped concentration, F&O-gated eligibility, and a free-float rebalancing rule considered jointly. This paper presents a structural criticism of some of the factors that underpin the methodological construction of the Nifty 50, analyses its current composition and invites scepticism of its efficacy. The paper argues that a few characteristics of the Nifty 50, have transfigured the index to be less of a representative proxy for the Indian economy and more of a liquidity-weighted portfolio of the country's largest, most established firms, with unjustified weightage given to a few sectors.

3. Institutional Background

The Nifty 50 is constructed from a clearly defined, rules-based framework. The eligible universe is drawn from the Nifty 100. To qualify,

- The stock must trade on NSE's Futures & Options (F&O) segment
- Exhibit a trading frequency of 100%
- Maintain an average impact cost of 0.50% or less for 90% of the observations on a ₹10 crore portfolio
- Needs a minimum listing history of one month

From this eligible universe, the top 50 companies by 6 month average free-float market capitalisation are selected and are weighted on a free-float basis. The index is reviewed semi-annually using 6-month-ended data, where it is evaluated in March and September. For the constituent replacement mechanism, an eligible stock replaces an existing constituent only if

its free-float market capitalisation is at least 1.5 times that of the smallest existing stock, with a maximum of 5 replacements per year. The core selection philosophy underlying these rules, including quantitative, liquidity-based, and rule-driven rather than discretionary nature of things, has remained consistent since inception, although the mechanics have been subject to two material revisions. Back in 1996, the constituents were weighted by their full market capitalisations rather than the current free-float driven approach. This was shifted to free-float weighting in June 2009, reducing the influence of promoter holdings and government stakes on index movements. Separately, in 2018 SEBI mandated that mutual funds benchmark their performance disclosures against the index's Total Return (TR) version, which reinvests dividends, rather than its Price Return (PR) version, which does not. Beyond these two changes, the index's semi-annual review cycle and quantitative eligibility criteria have remained broadly unchanged for a greater part of the last two decades.

4. Analysis & Structural Critique

The economic functions of security market indices have been well explored in academic finance and literature, particularly as passive assets benchmarked against them continue to grow into trillions of dollars globally. Indices are not merely descriptive summaries of price movements; they actively shape information production, price efficiency, and capital allocation in the markets they track (Coles, Heath, & Ringgenberg, 2022). The growth of passive vehicles built on index replication has been argued to carry theoretical implications for corporate governance and ownership structure that extend well beyond index tracking itself (Fisch, Hamdani, & Solomon, 2020). Thus, one can attribute multiple roles that an index plays in an economy. For the scope of this paper, it is useful to organise the functions of an index into four roles as described below.

Firstly, an index serves as a performance benchmark, providing fund managers, regulators, and investors with a comparative benchmark against which actively managed portfolios and investment performance can be measured. Secondly, it functions as an economic proxy for the underlying economy's sectoral composition and output that it intends to represent. The achievement of this objective is a function of how fluidly its construction rules translate underlying economic reality into a tradable basket of securities. Third, it acts as the underlying asset for a derivatives ecosystem: futures, options, and related instruments referencing the index allow market participants to hedge, speculate, and discover prices at a scale and cost that trading the underlying constituents individually would not support (Stoll & Whaley, 1990).

Fourth and finally, an index serves as the foundation for passive replication: index funds and exchange-traded funds that track its composition channel their capital allocation decisions directly through the index's own construction rules implicitly by buying the constituents of the index. This four-part grouping is the analytical framing adopted for this paper instead of any pre-established or exhaustive taxonomy of index functions.

A. Index Concentration & Uncapped Weighting

To begin with, the Nifty 50 index is a pure free-float index with no single-stock, top-x% constituent rules or any sectoral weight cap. The NSE maintains explicit constituent-capping rules for many of the sectoral and thematic indices that it maintains, but not the Nifty 50. For instance, the Nifty Financial Services and Nifty Healthcare indices cap any single stock at 33% and the top three constituents cumulatively at 62%; thematic indices such as Nifty Infrastructure, Nifty India Digital, and Nifty India Manufacturing apply their own sector- and stock-level ceilings ranging from 5% to 20% (NSE Indices Limited, 2022). Globally tracked other popular equity market indices also apply a hard cap to high concentrations within the index. For instance, the Nasdaq-100 applies an internal 24% single-issuer cap (The Motley Fool, 2026a). The Nifty 50 applies no comparable ceiling or hard cap on any weight. Although the largest single constituent's weight stood at only 11.83% as of February 2026, this figure reflects the current outcome of an unconstrained process and not a structural limit that should exist. Nothing in the index's rules prevents this weight, or the concentration below, from rising further as individual stocks appreciate. The risk lies in the absence of rules that arrest such a trajectory and the implications that follow.

Table 1: Top 10 constituents of Nifty 50 by weight as of February 2026

Sr. No.	Company Name	Sector	Weight (%)
1	HDFC Bank Ltd.	Financial Services	11.83%
2	ICICI Bank Ltd.	Financial Services	8.58%
3	Reliance Industries Ltd.	Oil, Gas & Consumable Fuels	8.20%
4	Bharti Airtel Ltd.	Telecommunication	4.56%
5	Larsen & Toubro Ltd.	Construction	4.38%
6	State Bank of India	Financial Services	4.34%
7	Infosys Ltd.	Information Technology	3.97%
8	Axis Bank Ltd.	Financial Services	3.46%
9	Kotak Mahindra Bank Ltd.	Financial Services	2.66%
10	Mahindra & Mahindra Ltd.	Automobile and Auto Components	2.64%

Source: Author's compilation based on data from NSE Indices Limited (2026)

The top 5 constituents of the index, consisting of HDFC Bank, Reliance Industries, ICICI Bank, Bharti Airtel, and Larsen & Toubro, together accounted for over 37% of the index weight (NSE Indices, 2026). The top 10 accounted for ~55% of the total index weight – driving the top-5 and top-10 concentration higher. This allows for structural inefficiencies which could invite unethical and illegal trading practices to the market. Since the index level in itself is a direct, mechanical function of a handful of large and liquid constituents, a participant with sufficient capital and futures market exposure has a capital incentive to move the cash/futures price of those heavyweight names in order to profit from a derivatives position on the underlying index. The more concentrated the index, the fewer stocks such a strategy needs to influence the index movement. The practical significance of this risk was demonstrated in 2025. On July 3, 2025, SEBI issued a 105-page interim order against four entities of Jane Street Group, alleging that the firm manipulated the Bank Nifty and Nifty indices on derivative-expiry days between January 2023 and May 2025 through what the order termed “intraday index manipulation” and “extended marking-the-close” (SEBI, 2025; Legal500, 2025). Jane Street purchased large volumes of index-constituent stocks and futures in the cash and futures markets during the morning session in heavyweight stocks, pushing the underlying index up while simultaneously building large offsetting short positions in index options. The position was then reversed intraday, with the earlier cash/futures buying unwound into the market close, resulting in a net profit (FTI Consulting, 2026; IndiaCorpLaw, 2025). SEBI reported an approximate ₹4,800 crore in alleged unlawful gains, the largest such impounding in the regulator's history (Business Standard, 2025a). This illustrates the grave seriousness of the issue and the vulnerability that concentrated index construction can create. In late 2025, SEBI's May 2025 circular on 'non-benchmark' derivatives indices directed NSE Indices to cap single-stock weight at 20% (down from a prior effective ceiling of roughly 33%) and top-three cumulative weight at 45% (down from roughly 62%) in the Nifty Bank and Nifty Financial Services indices, citing concentration risk. BSE's Bankex was brought under the same rule (Business Standard, 2025b; Invest Desk, 2025). SEBI's intervention, however, was confined to these sectoral derivatives indices. The Nifty 50, which anchors nearly 14 times the ETF assets under management of Nifty Bank (₹34,251 crore) and over 900 times that of Nifty Financial Services (₹511 crore) (Business Standard, 2025c), still remains subject to no equivalent single-stock or top-three or any such similar top concentration limits.

B. Sectoral Composition Skew

One of the fundamental functions of any broad equity index is to serve as a representative proxy for the country's broader economy, reflecting the general proportions and industry mix that prevail owing to factors such as the country's comparative advantages and areas of specialisation. Viewed through this lens, the Nifty 50 substantially overrepresents certain sectors while severely underrepresenting several others. At inception, Financial Services accounted for approximately 19.9% of the index while Information Technology carried negligible weight. By the December 2025 review, Financial Services' weight had risen to 36.5%, Information Technology stood at 10.4%, and Oil, Gas & Consumable Fuels at 10.4%. As of February 27, 2026, Financial Services contributed 37.6% of total index weight; Oil, Gas & Consumable Fuels contributed 10.0%; and Information Technology contributed 8.84% - together adding up to approximately 56.5% of total index weight (NSE Indices, 2026). Relative to the broader universe of all listed and permitted-to-trade equity stocks on the NSE, based on this current composition, the Nifty 50 carries a materially higher weightage on the Financial Services sector.

Table 2: Top 15 Sectors in the Nifty 50 by weight as of February 2026

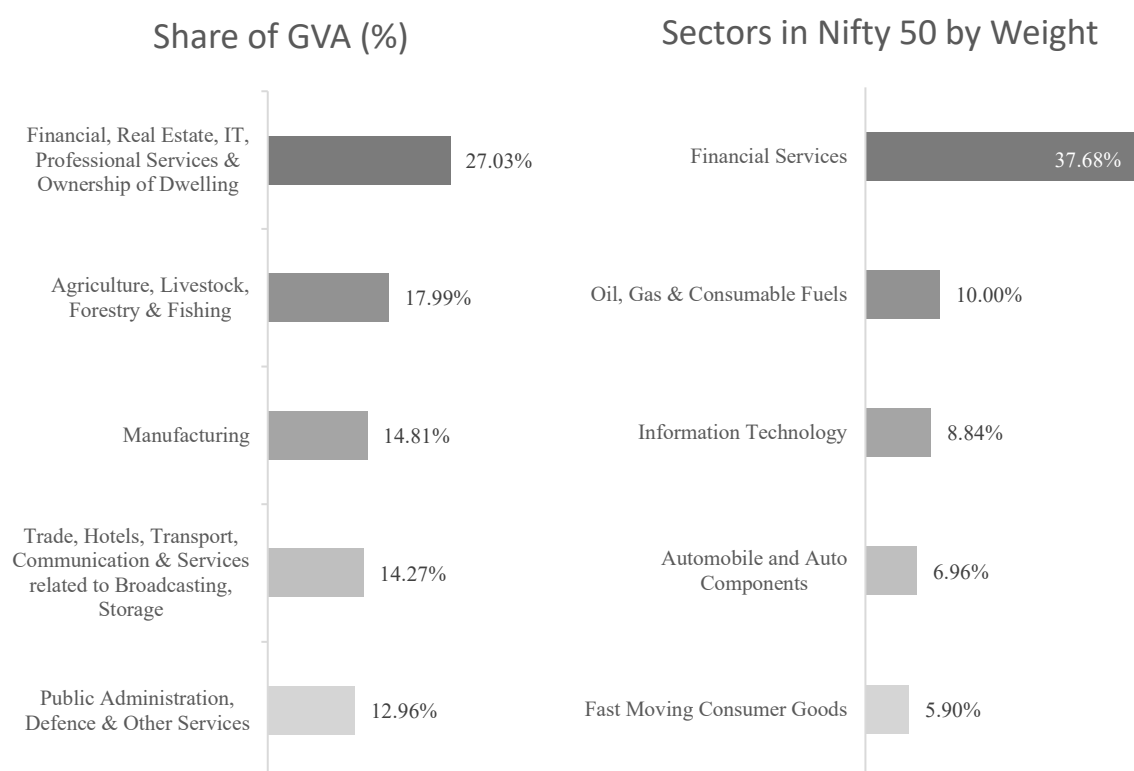
Sr. No	Sector	No. of Stocks	Total Weight (%)
1	Financial Services	11	37.68%
2	Oil, Gas & Consumable Fuels	3	10.00%
3	Information Technology	5	8.84%
4	Automobile and Auto Components	5	6.96%
5	Fast Moving Consumer Goods	4	5.90%
6	Telecommunication	1	4.56%
7	Construction	1	4.38%
8	Healthcare	5	4.36%
9	Metals & Mining	4	4.22%
10	Power	2	2.76%
11	Consumer Durables	2	2.49%
12	Consumer Services	2	2.30%
13	Construction Materials	2	2.24%
14	Services	2	1.93%
15	Capital Goods	1	1.39%

Source: Author's compilation based on data from NSE Indices Limited (2026)

In its provisional estimates for FY2025-26, released 5 June 2026, India's Ministry of Statistics and Programme Implementation (MOSPI) placed total gross value added at current prices at ₹314.87 lakh crore, with the primary sector (agriculture, livestock, forestry, fishing, and

mining) contributing 19.89%, the secondary sector (manufacturing, utilities, and construction) 25.85%, and the tertiary (services) sector 54.26% (MOSPI, 2026). Agriculture and allied activities alone accounted for 17.99% of GVA while employing 43% of India's workforce as of 2023-24 serving as the single largest source of employment in the economy (MOSPI, 2026; SBI Research, 2026) and yet the sector does not have any direct constituent in the Nifty 50, except through the modest agricultural-input exposure embedded in a handful of FMCG constituents. The same structural exclusion applies to India's vast unorganised retail and MSME manufacturing base, which accounts for a substantial share of manufacturing GVA (PIB, 2023). Yet by construction, only companies large and liquid enough to clear the F&O-eligibility and free-float thresholds can ever be considered for inclusion. Within services, the broad "Financial, Real Estate & Professional Services" category, which bundles banking, insurance, real estate, and professional/business services together, has historically only contributed on the order of ~20–27% of the total GVA. The Nifty 50's Financial Services weight of 37.68% runs well ahead of this considerably broader category's 27.03% share of national GVA. This gap of more than ten percentage points significantly overrepresents the financial basket, which already has its own separate index through Bank Nifty. The Financial Services' sectoral index weight has nearly doubled (19.95% to 37.68%) over three decades, a far steeper trajectory than the underlying "Financial, Real Estate, IT, Professional Services" category's movement within GVA over any comparable period. The index's concentration in this sector has outpaced the real economy's own structural shift toward services. This divergence from GVA is not a unique phenomenon to the Nifty 50 among large-cap benchmarks, since no 50-stock, free-float, exchange-listed index can capture an economy's informal or unlisted segments. However, the gap is arguably wider since India is an economy where a substantial share of GVA and the large majority of employment sit outside the formal listed corporate sector. A structural mismatch between index composition and economic composition can be a modest distortion in a developed, highly formalised economy; however, it becomes a considerably larger one in an economy where the majority of economic activity and employment occur outside the listed corporate sector altogether. An index constructed this way will by essence privilege the sectors in which formal capital concentrates, such as finance over those where economic activity is dispersed across millions of small, informal, or unlisted units, regardless of the latter's contribution to output or employment.

Figure 1: Top 5 GVA by weightage vs Top 5 Sectors by weightage in the Nifty 50



Source: Author's compilation based on data from MOSPI and NSE India

C. Skew Toward Incumbent, Long-Established Firms

A related but distinct limitation is the index's skew toward companies that are, on average, considerably older and more established than the constituents that regularly rotate into comparable developed-market benchmarks. Many of the top Nifty 50 constituents were founded well before India's post-1991 liberalisation. Reliance Industries (1966), ITC (1910), Hindustan Unilever (1933), and Larsen & Toubro (1938) are a few examples of this, and are also among the index's largest weights. By contrast, the well-renowned S&P 500's quarterly rebalancing has, in the past three years alone, added CrowdStrike (founded 2011, added June 2024), Palantir Technologies (founded 2003, added September 2024), Workday (founded 2005, added December 2024), and DoorDash (founded 2013, added March 2025) allowing companies between roughly ten and twenty years old at the time of index entry (CNBC, 2024; S&P Dow Jones Indices, 2025). The S&P 500's screening criterion is explicitly fundamentals-based (four consecutive quarters of cumulative positive GAAP earnings) rather than vintage-based, so a company can enter within a decade or two of founding once it is profitable and adequately large. The Nifty 50's screening criteria, by contrast, select on liquidity, free-float

size, and F&O eligibility, none of which is inherently friendlier to newly listed firms. Thus, this empirical concoction over three decades results in a constituent base which is overwhelmingly composed of firms founded in the mid-twentieth century or earlier. The Nifty 50, therefore, does not include the whole spectrum of companies across the corporate lifecycle and is heavily skewed towards mature, stable and well-established firms, without leaving enough breathing room for new-age companies.

D. Rebalancing Mechanics and the Momentum-Admission Bias

Another primary concern is around the rule regarding the addition of a new stock into the index, which uses the stock's liquidity and implicitly its price momentum as a deciding factor for the stock to qualify. Because entry to the index typically follows a sustained period of price appreciation (which is what drives a stock's free-float market capitalisation above the 1.5x threshold relative to the smallest incumbent), new constituents are structurally more likely to be added after a period of strong relative performance, and dropped after a period of underperformance has already reduced their relative market capitalisation. A rule that admits constituents only after their free-float market capitalisation has already risen relative to the smallest incumbent means that passive capital tracking the index is structurally more likely to purchase a stock near a recent high than at a neutral entry point, and sell a dropped constituent near a recent low. This is arguably a counterproductive phenomenon given that passive equity funds by nature and definition are meant to replicate the profile of the broader market risk and not of momentum stocks. This exposes passive funds that track the index to potential price-action and momentum-driven volatility. Moreover, this dynamic is not disclosed to investors as an active factor exposure. An index fund is typically marketed and understood as neutral, rules-based market exposure, yet a selection rule based purely on liquidity and size without any fundamental screen embeds an implicit momentum tilt into every product that tracks it.

E. The Derivative-Dependency Factor

The fourth structural feature concerns not just what the index includes, but the sequence in which it can include them. The Nifty 50's eligibility rules make derivatives-market presence a precondition for entry, creating a restraining dependency. Mandatory eligibility for trading on NSE's Futures & Options segment is a hard gate for index inclusion. While it is well suited to ensure that every constituent can be efficiently hedged, it also creates a derivative-dependency paradox: a company cannot enter India's primary large-cap benchmark until it has first achieved sufficient listed liquidity and derivatives-market presence to satisfy the F&O gate. For high-

growth, digitally native firms that build liquidity gradually after listing, this sequencing can delay index inclusion. The impact-cost threshold itself ($\leq 0.50\%$ for 90% of observations on a ₹10 crore basket) was calibrated to institutional trade sizes typical of earlier periods in the index's history; whether it remains a meaningful proxy for market depth given the scale of today's institutional and algorithmic order flow is an open question the index methodology does not directly address.

5. Conclusion

The Nifty 50 has become the epitome of Indian equity market indices and continues to gain relevance as India positions itself as one of the top emerging markets for investors to bet on. Over thirty years, the Nifty 50 has grown from an index covering roughly a third of NSE's listed market capitalisation into a benchmark underpinning ₹4.89 trillion of domestic passive assets. On the descriptive record alone, this is a substantial institutional achievement, and the index's rules-based, semi-annually reviewed methodology has provided the transparency and replicability that passive investors and derivatives market-makers require. However, as laid out in the analysis section, the paper has argued that an index optimised for liquidity and derivatives-hedging efficiency does not automatically produce an index that is a faithful economic proxy, nor one immune to the concentration risks that liquidity-based construction can create. These findings point to a broader need. The rules underlying India's most consequential equity benchmark warrant more frequent and more rigorous scrutiny than they currently receive, owing to the scale at which they operate. For the regulator, this implies treating index-construction methodology as a matter of systemic importance in its own right, not merely as a private product design choice left to the index provider. SEBI's own 2025 intervention on Nifty Bank and Nifty Financial Services demonstrates that such scrutiny is feasible and that change can be brought about. For the index provider, this means revisiting and constantly assessing whether the rules that were framed and calibrated to the market conditions of an earlier decade, such as the impact-cost threshold, continue to serve their original purpose as intended. For asset managers, index-fund investors, and other market participants, this means recognising that a passive product's neutrality is only as sound as the construction rules of the index it replicates. As passive assets benchmarked against an index grow larger, and as its derivatives market deepens, the gap between what the index is designed to perform and what it actually does often becomes a matter of consequence for how capital is priced and allocated across the entire market.

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