

Asia Pac Derivatives

Asia equity futures roll preview: Mar 2024

Roll longs in HSTECH and FTSE Taiwan early

As of 15 Mar close, the HSTECH (HCT) and FTSE Taiwan (TWT) rolls traded 43bps rich and 116bps cheap (based on forecasted gross dividends of 8.9 and 3.1 index points), respectively. These roll costs correspond to the 21st and 31st 2-year percentiles, respectively. Investors that are long these futures might consider rolling early to lock in these relatively cheap levels.

Roll longs In Nifty, MSCI Singapore and GIFT Nifty late

The Nifty (NZ), MSCI Singapore (QZ) and GIFT Nifty (JGS) rolls look particularly rich, trading 285bps, 50bps and 268 rich (based on forecasted gross dividends of 2.7, 2.7 and 2.7 index points), respectively. These roll costs correspond to the 99th, 92nd and 90th 2-year percentiles, respectively. As such, investors may make use of this statistical richness and roll long futures positions later.

15 March 2024

Equity Derivatives
Asia Pacific

Lars Naeckter >>
Equity-Linked Analyst
Merrill Lynch (DIFC)
+852 3508 7669
lars.naekter@bofa.com

Zhenhua Xue >>
Equity-Linked Analyst
Merrill Lynch (Hong Kong)
+852 3508 8495
zhenhua.xue@bofa.com

Exhibit 1: The next upcoming equity futures rolls for contracts across Asia Pacific

Current roll richness/cheapness compared to historical rolls. Contracts are sorted by relevant expiry (rolls furthest in the futures at the bottom, except for CSI300 and CSI500 (these are greyed out as the Mar contract expired on 15-Mar and with no May contract listed there is not much value either in focusing on the Apr roll instead of Mar). The roll strategy is from the perspective of a long futures holder.

Description			Roll changes				Roll cost and Strategy			
Index name	Contract code	Relevant expiry	Change of positioning**	Roll pace	Pre/disc	Current vs last	Current	1yr avg	Main day	Cheap/rich
FTSE C* A50	XU	28-Mar	Shorts unwound	0.7%	-14.11	1.41%	-1.40%	-0.72%	26-Mar	Cheap
FTSE TW*	TWT	28-Mar	New longs	2.4%	-1.63	-3.77%	-1.16%	0.12%	26-Mar	Cheap
Hang Seng	HI	27-Mar	Shorts unwound	5.4%	3.50	-0.47%	0.25%	0.20%	25-Mar	Rich
NSE Nifty	NZ	28-Mar	New longs	16.1%	52.26	1.56%	2.85%	1.05%	27-Mar	Rich
GIFT Nifty*	JGS	28-Mar	New longs	2.7%	49.30	0.15%	2.68%	1.66%	26-Mar	Rich
HSCEI	HC	27-Mar	Shorts unwound	14.0%	1.42	-0.20%	0.29%	0.53%	25-Mar	Cheap
MSCI SG*	QZ	27-Mar	New longs	0.1%	0.12	0.37%	0.50%	-0.28%	25-Mar	Rich
HSTECH	HCT	27-Mar	New longs	7.7%	1.26	-0.12%	0.43%	1.01%	25-Mar	Cheap
MSCI TW*	HJA	28-Mar	New longs	0.2%	-0.01	1.19%	-0.02%	-0.13%	26-Mar	Rich
TWSE	FT	17-Apr	New longs	--	-2.59	1.84%	-0.16%	-0.91%	15-Apr	Rich
CSI300	IFB	15-Mar	Shorts unwound	--	5.66	6.48%	1.90%	-2.00%	14-Mar	Rich
CSI500	FFD	15-Mar	Shorts unwound	--	6.87	8.52%	1.51%	-5.73%	14-Mar	Rich

Source: BofA Global Research. Roll costs are calculated using forecasted net dividends except for FTSE Taiwan, which use realized dividends. * SGX Nifty contract is used for historical data (GIFT is the new contract). Note that we are still far from the roll period in TWSE, CSI300 and CSI500 futures. C*: China, TW*: Taiwan, SG*: Singapore.** Change of positioning are based on changes in OI vs change in price and have into 5 kinds: New shorts, New longs, Shorts unwound, Longs unwound, and Unchanged (e.g. a decrease in price followed by a decrease in OI would likely suggest longs having been unwound).

BofA GLOBAL RESEARCH

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 14 to 15.

12671036

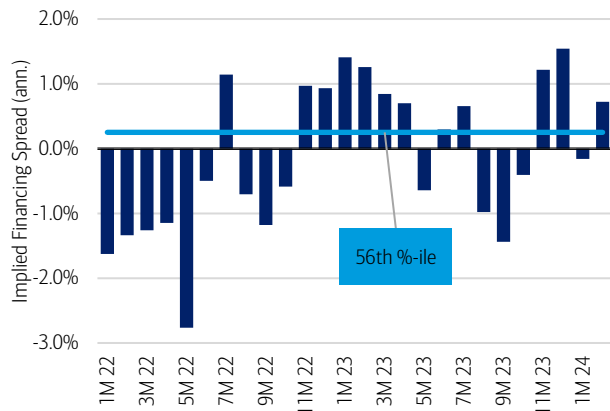
Timestamp: 15 March 2024 10:48AM EDT

HSI – Hang Seng futures

HSI Mar/Apr futures roll (ticker: HI)

Exhibit 2: Hang Seng – Current roll is neutral versus recent history

The current roll is trading at +25bps. This is cheaper than last month (+72bps) but richer than the 1-year average (+20bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

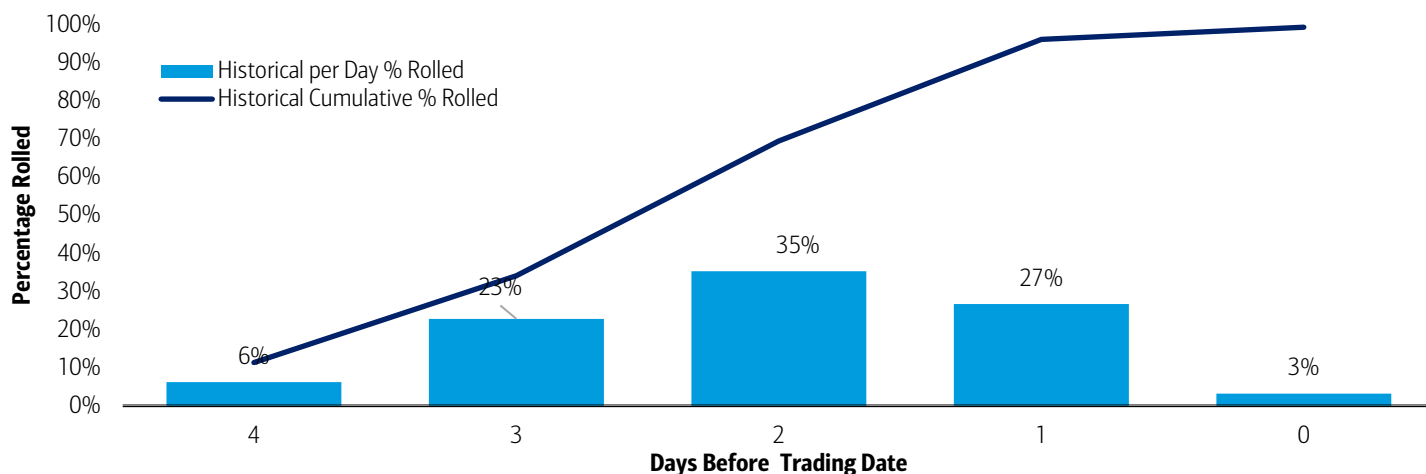
The Mar-24/Apr-24 Hang Seng (HI) futures roll is currently trading 25bps rich to 1M Hibor** rates (based on forecasted gross dividends of 11.2 index points).

This is neutral versus recent years (56th 2-year percentile; Exhibit 2). Roll strategy, from the perspective of long futures holders, is close to neutral.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 3).

Exhibit 3: HSI futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

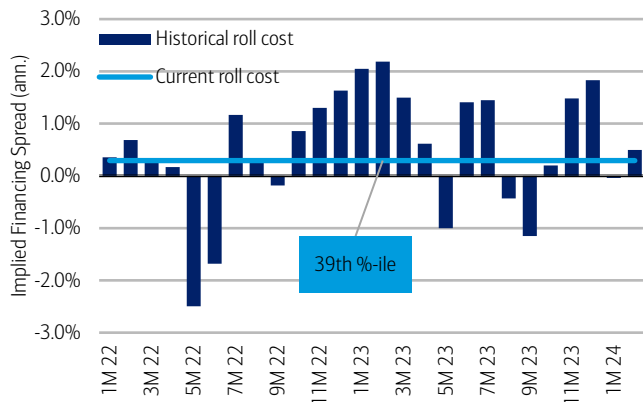
BofA GLOBAL RESEARCH

HSCEI – Hang Seng China Enterprises futures

HSCEI Mar/Apr futures roll (ticker: HC)

Exhibit 4: Hang Seng China Enterprises – Current roll is cheap versus recent history

The current roll is trading at +29bps. This is cheaper than last month (+49bps) but cheaper than the 1-year average (+53bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

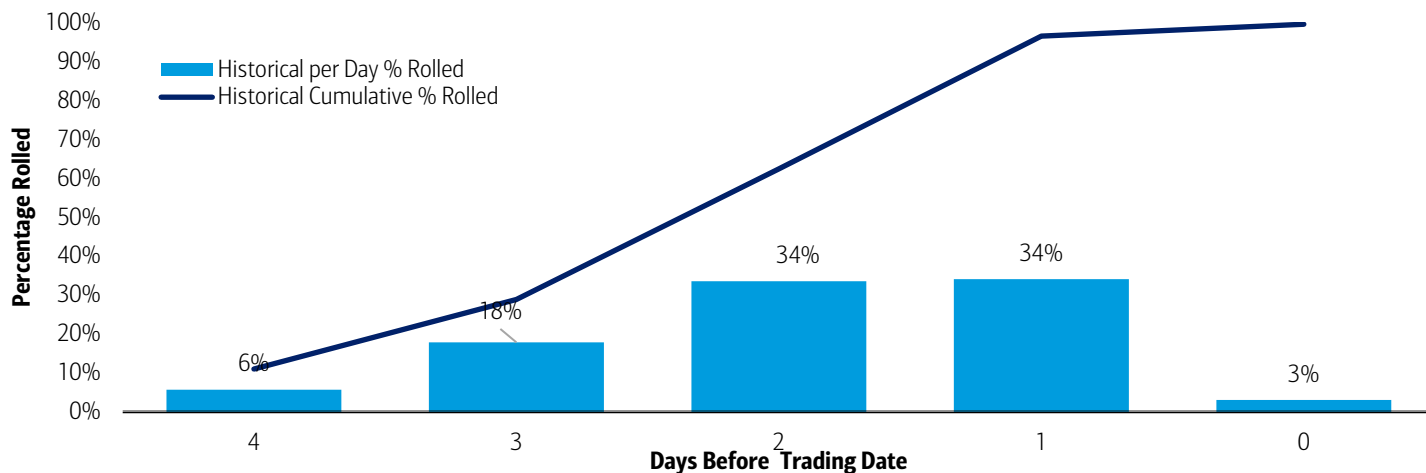
The Mar-24/Apr-24 Hang Seng China Enterprises (HC) futures roll is currently trading 29bps rich to 1M Hibor** rates (based on forecasted gross dividends of 4.4 index points).

This is cheap versus recent years (39th 2-year percentile; Exhibit 4), and investors might want to make use of this statistical cheapness and roll long futures positions early.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 5).

Exhibit 5: HSCEI futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

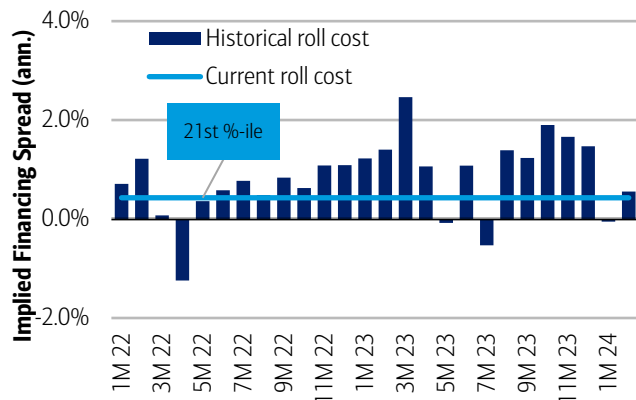
BofA GLOBAL RESEARCH

HSTECH – Hang Seng TECH futures

HSTECH Mar/Apr futures roll (ticker: HCT)

Exhibit 6: Hang Seng TECH – Current roll is cheap versus recent history

The current roll is trading at +43bps. This is cheaper than last month (+55bps) but cheaper than 1-year average (+101bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

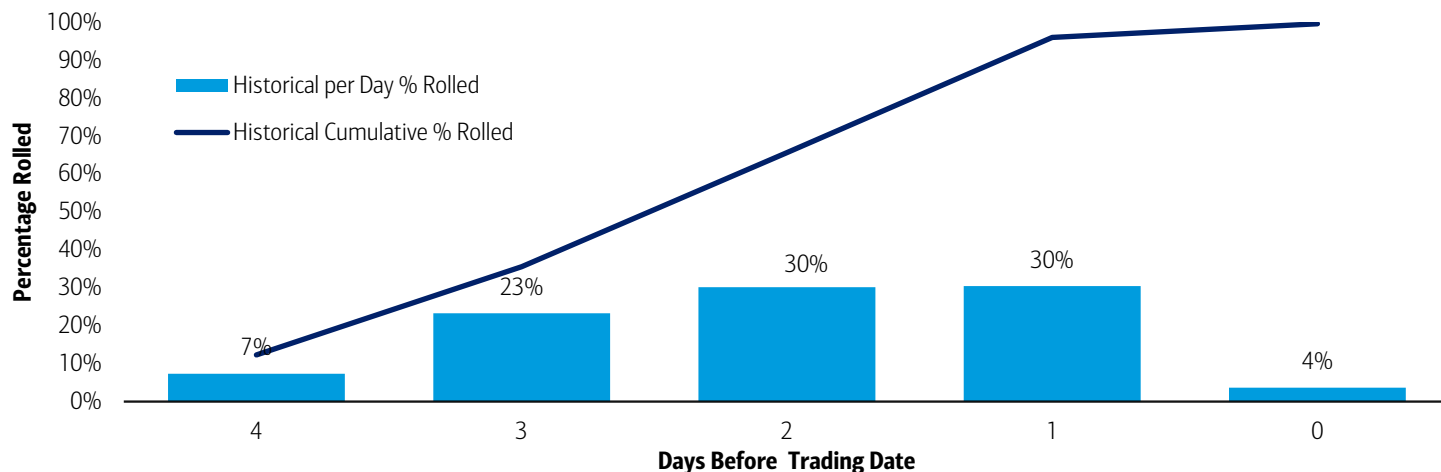
The Mar-24/Apr-24 Hang Seng TECH (HCT) futures roll is currently trading 43bps rich to 1M Hibor** rates (based on forecasted gross dividends of 1.12 index points).

This is cheap versus recent years (21st 2-year percentile; Exhibit 6), and investors might want to make use of this statistical cheapness and roll long futures positions early.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 7).

Exhibit 7: HSTECH futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

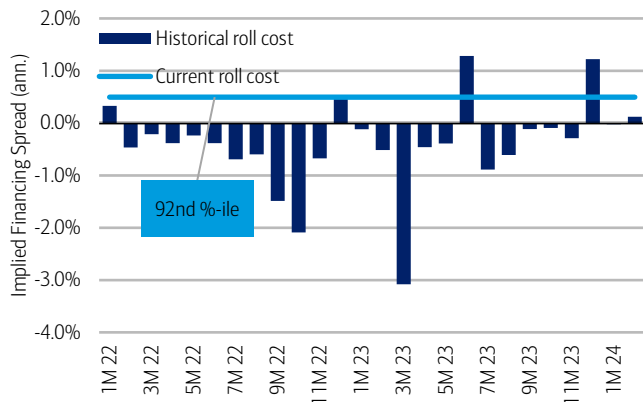
BofA GLOBAL RESEARCH

MSCI Singapore futures

SIMSCI Mar/Apr futures roll (ticker: QZ)

Exhibit 8: MSCI Singapore – Current roll is rich versus recent history

The current roll is trading at +50bps. This is richer than last month (+12bps) and the 1-year average (-28bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

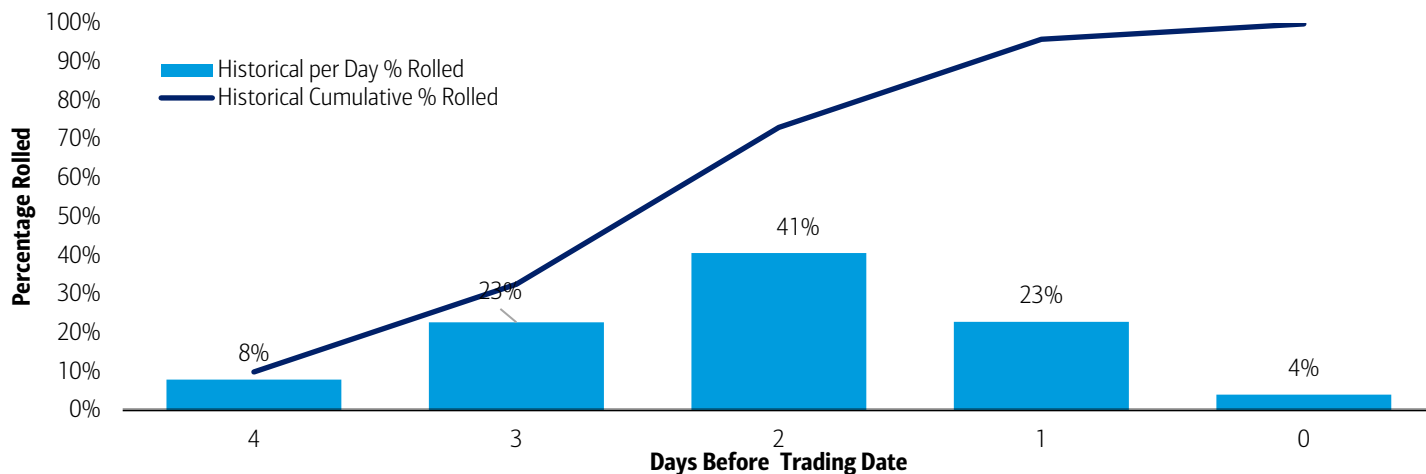
The Mar-24/Apr-24 MSCI Singapore (QZ) futures roll is currently trading 50bps rich to SGD 1m Deposit (based on forecasted gross dividends of 2.7 index points).

This is rich versus recent years (92nd 2-year percentile; Exhibit 8), and investors might want to make use of this statistical cheapness and roll long futures positions later.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 9).

Exhibit 9: MSCI Singapore futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

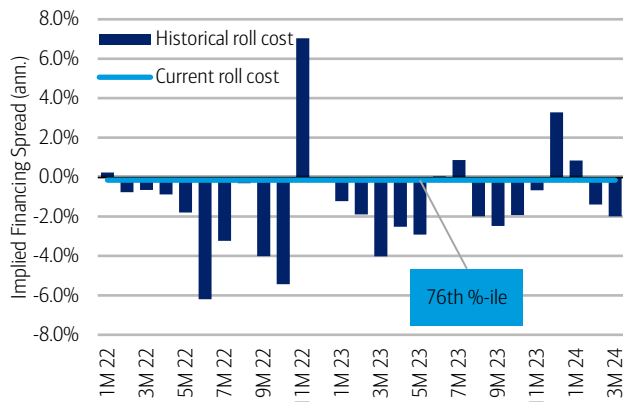
BofA GLOBAL RESEARCH

Taiex futures

TWSE Apr/May futures roll (ticker: FT)

Exhibit 10: TWSE – Current roll is rich versus recent history

The current roll is trading at -16bps. This is richer than last month (-199bps) and the 1-year average (-108bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Mar-24.

BofA GLOBAL RESEARCH

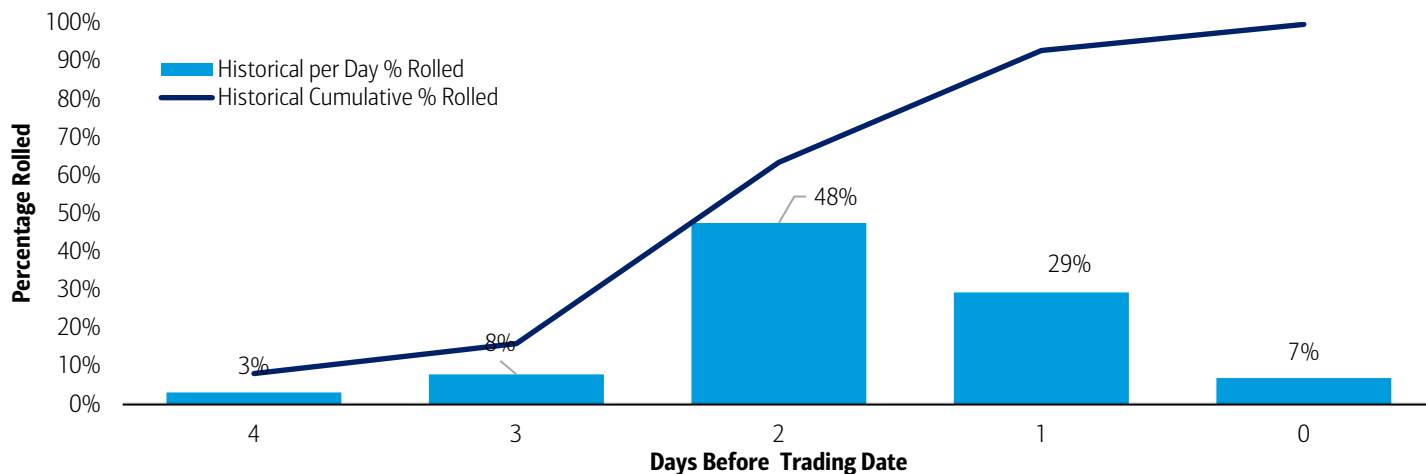
The Apr-24/May-24 TWSE (FT) futures roll is currently trading 16bps cheap to USD SOFR (based on forecasted gross dividends of 46.8 index points).

This is rich versus recent years (76th 2-year percentile; Exhibit 10), and investors might want to make use of this statistical cheapness and roll long futures positions later.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 11).

Exhibit 11: TWSE futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Mar-24.

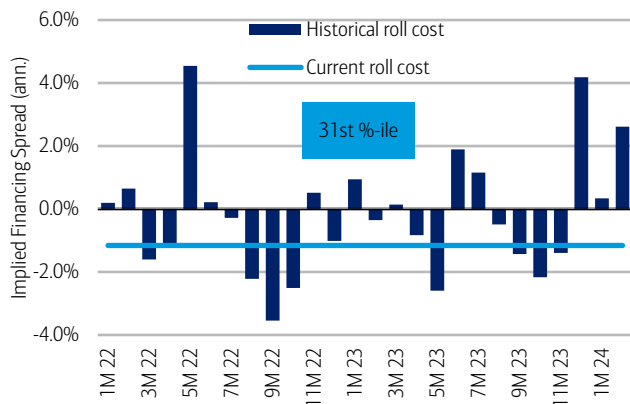
BofA GLOBAL RESEARCH

FTSE Taiwan futures

FTSE Taiwan Mar/Apr futures roll (ticker: TWT)

Exhibit 12: FTSE Taiwan – Current roll is cheap versus recent history

The current roll is trading at -116bps. This is cheaper than last month (+300bps) and the 1-year average (+12bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

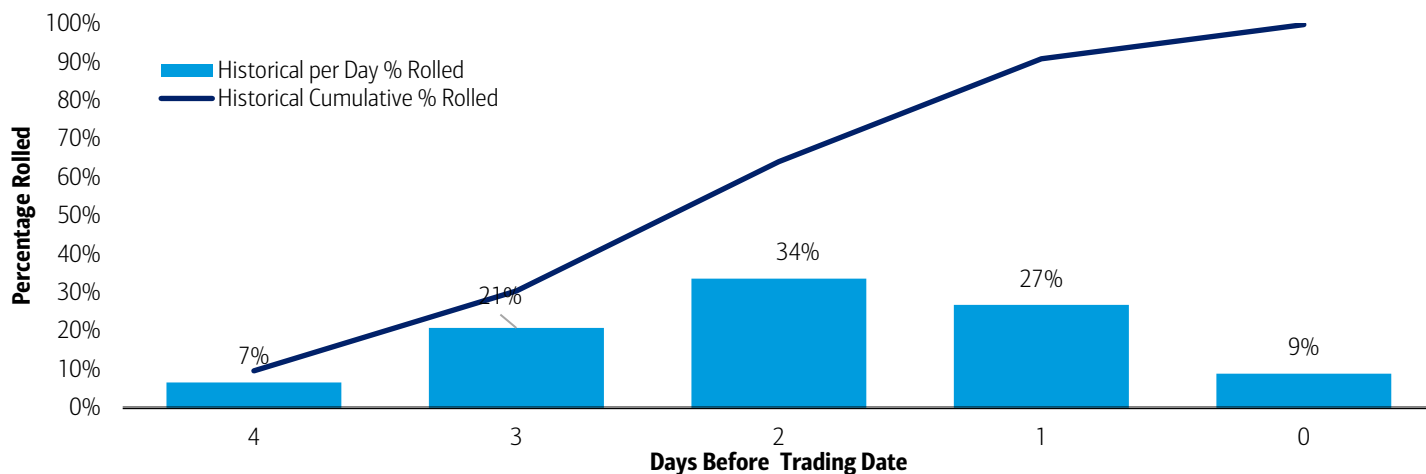
The Mar-24/Apr-24 FTSE Taiwan (TWT) futures roll is currently trading 116bps cheap to USD SOFR (based on 3.1 forecasted dividends).

This is cheap versus recent years (31st 2-year percentile; Exhibit 12), and investors might want to make use of this statistical cheapness and roll long futures positions early.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 13).

Exhibit 13: FTSE Taiwan futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

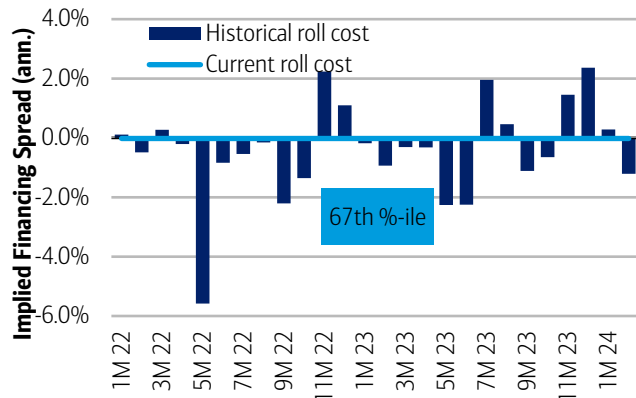
BofA GLOBAL RESEARCH

MSCI Taiwan futures

MSCI Taiwan Mar/Apr futures roll (ticker: HJA)

Exhibit 14: MSCI Taiwan – Current roll is rich versus recent history

The current roll is trading at -2bps. This is richer than last month (-121bps) and the 1-year average (-13bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

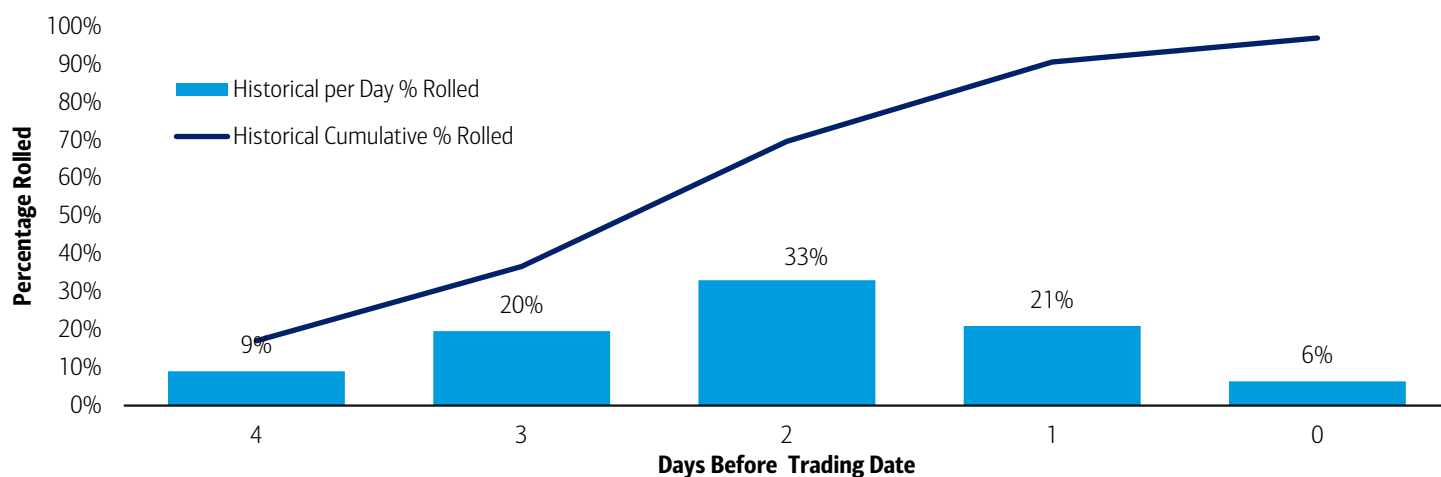
The Mar-24/Apr-24 MSCI Taiwan (HJA) futures roll is currently trading 2bps cheap to USD SOFR (based on 2.0 forecasted dividends).

This is rich versus recent years (67th 2-year percentile; Exhibit 14), and investors might want to make use of this statistical cheapness and roll long futures positions later.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 15).

Exhibit 15: MSCI Taiwan futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

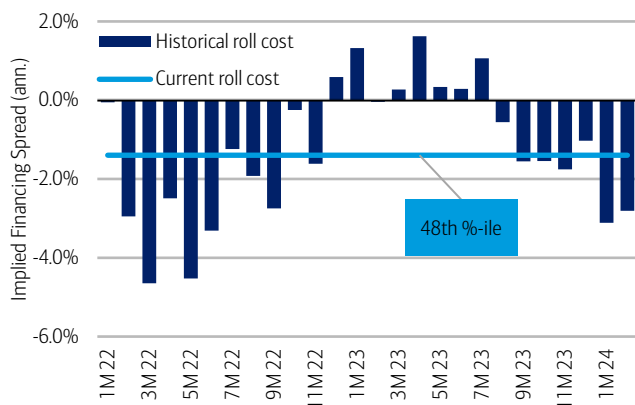
BofA GLOBAL RESEARCH

FTSE China A50 futures

FTSE China A50 Mar/Apr futures roll (ticker: XU)

Exhibit 16: FTSE China A50 – Current roll is neutral versus recent history

The current roll is trading at -140bps. This is richer than last month (-281bps) but cheaper than the 1-year average (-73bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

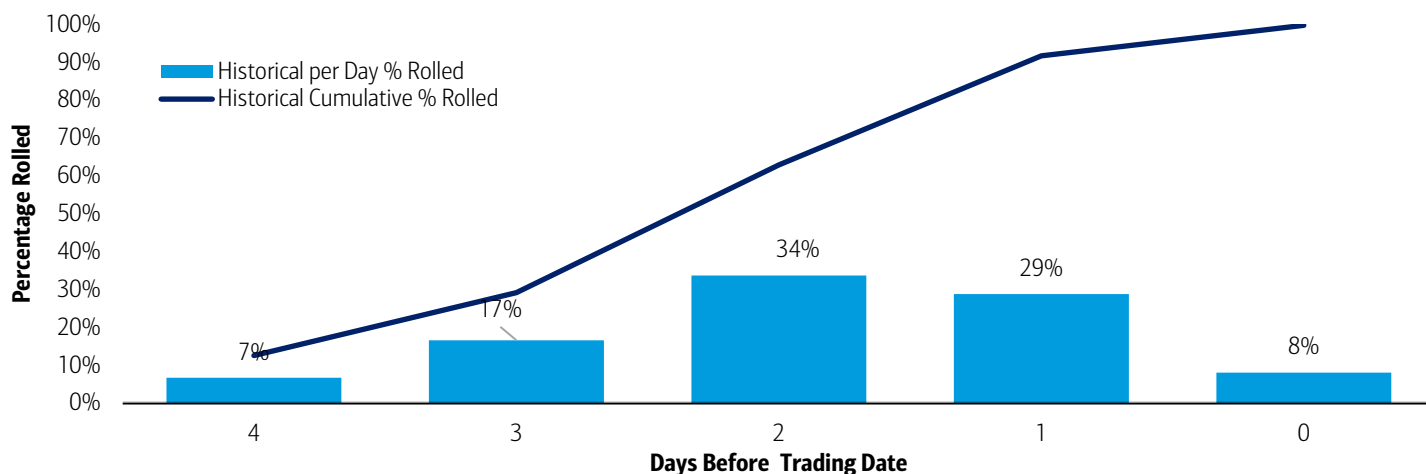
The Mar-24/Apr-24 FTSE China A50 (XU) futures roll is currently trading 140bps cheap to USD SOFR (based on forecasted gross dividends of 8.7 index points).

This is neutral versus recent years (48th 2-year percentile; Exhibit 16). Roll strategy, from the perspective of long futures holders, is close to neutral.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 17).

Exhibit 17: FTSE China A50 futures roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

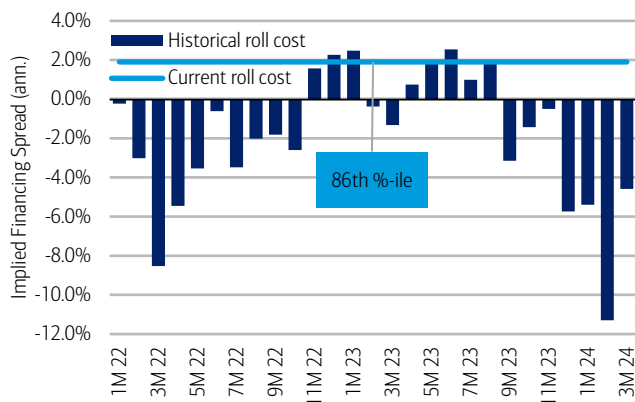
BofA GLOBAL RESEARCH

CSI300 futures

CSI300 futures Mar/Apr futures roll (ticker: IFB)

Exhibit 18: CSI300 futures – Current roll is rich versus recent history

The current roll is trading at +190bps. This is richer than last month* (-500bps) and the 1-year average (-172bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Mar-24. *last month: Roll cost of last month is based on Mar contract.

BofA GLOBAL RESEARCH

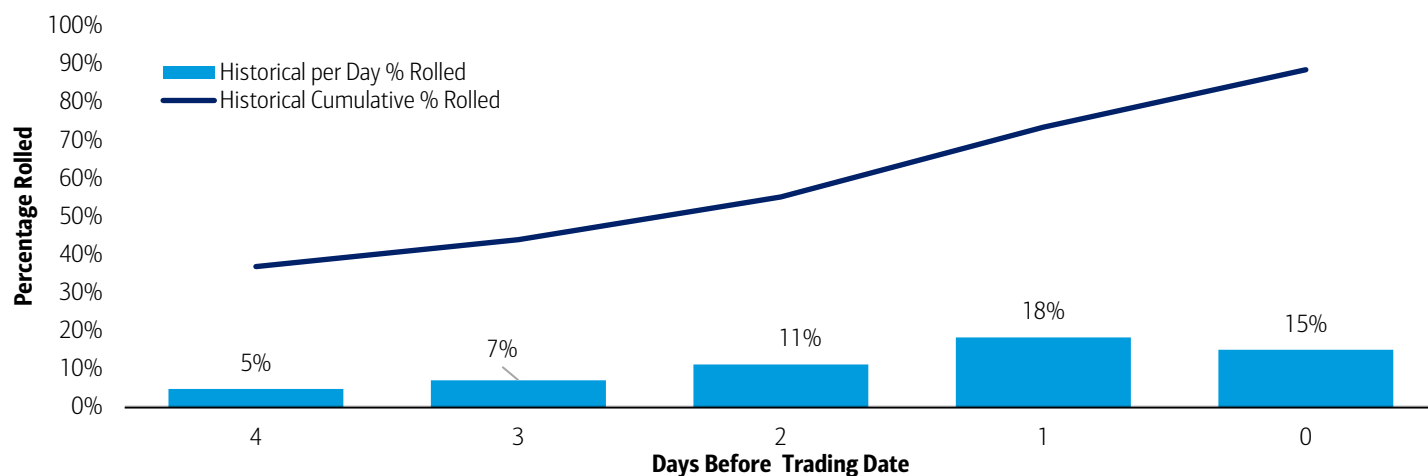
The Mar-24/Apr-24 CSI300 futures (IFB) futures roll traded -190bps rich to USD SOFR (based on forecasted gross dividends of 1.4 index points).

This is rich versus recent years (86th 2-year percentile; Exhibit 18).

Normally, we see the strongest roll activity in last 2 trading days (Exhibit 19).

Exhibit 19: CSI300 futures roll progression

Based on the open interest traded in the futures contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Mar-24.

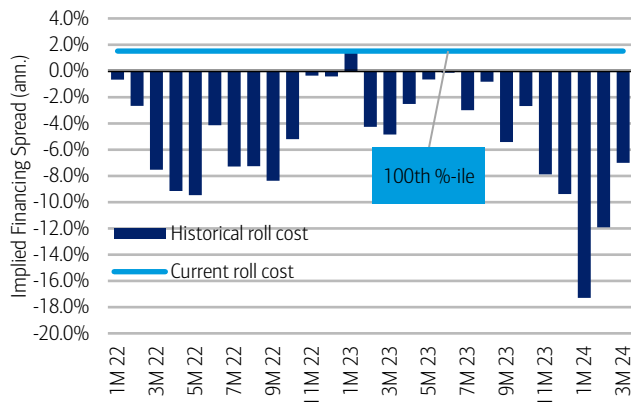
BofA GLOBAL RESEARCH

CSI500 futures

CSI500 futures Mar/Apr futures roll (ticker: FFD)

Exhibit 20: CSI500 futures – Current roll is rich versus recent history

The current roll is trading at +151bps. This is richer than last month* (-700bps) and the 1-year average (-555bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Mar-24. *last month: Roll cost of last month is based on Mar contract.

BofA GLOBAL RESEARCH

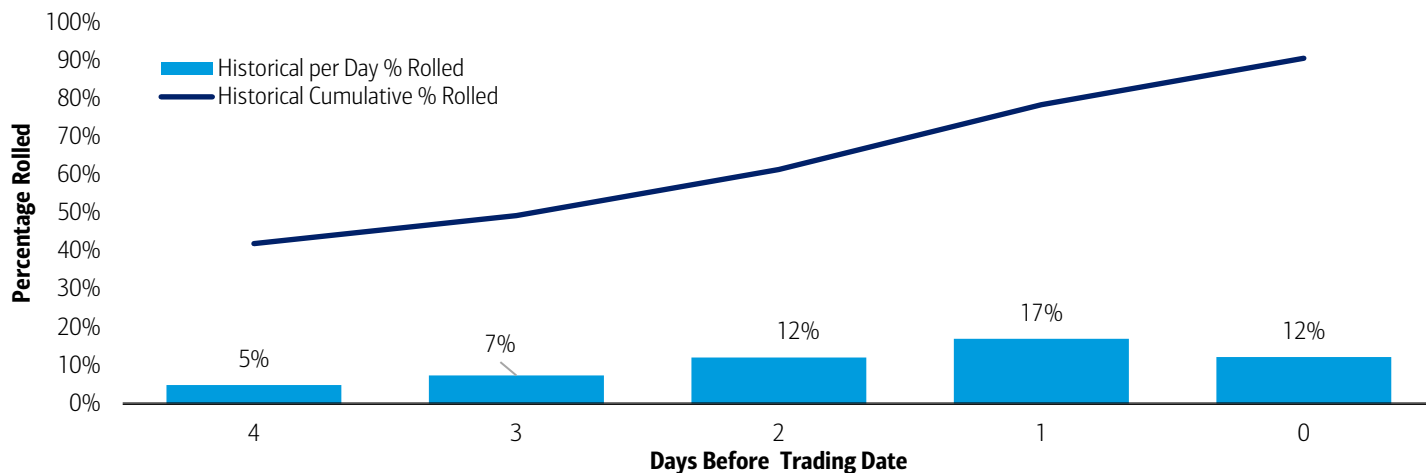
The Mar-24/Apr-24 CSI500 futures (FFD) futures roll traded 151bps rich to USD SOFR (based on forecasted gross dividends of 2.1 index points).

This is rich versus recent years (100th 2-year percentile; Exhibit 20).

Normally, we see the strongest roll activity in last 2 trading days (Exhibit 21).

Exhibit 21: CSI500 futures roll progression

Based on the open interest traded in the futures contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Mar-24.

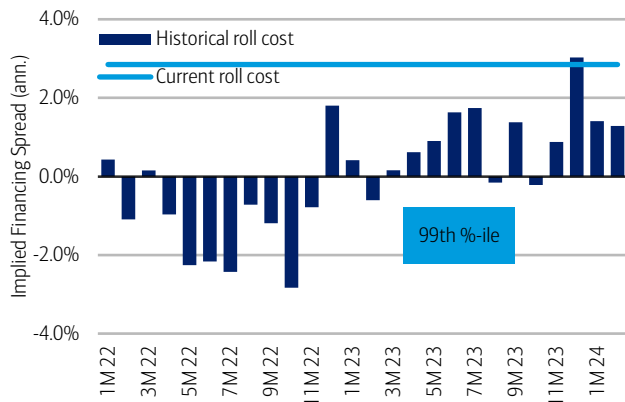
BofA GLOBAL RESEARCH

NSE NIFTY 50 futures

NSE NIFTY 50 Mar/Apr futures roll (ticker: NZ)

Exhibit 22: NSE NIFTY 50 – Current roll is rich versus recent history

The current roll is trading at +285bps. This is richer than last month (+129bps) and the 1-year average (+105bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24.

BofA GLOBAL RESEARCH

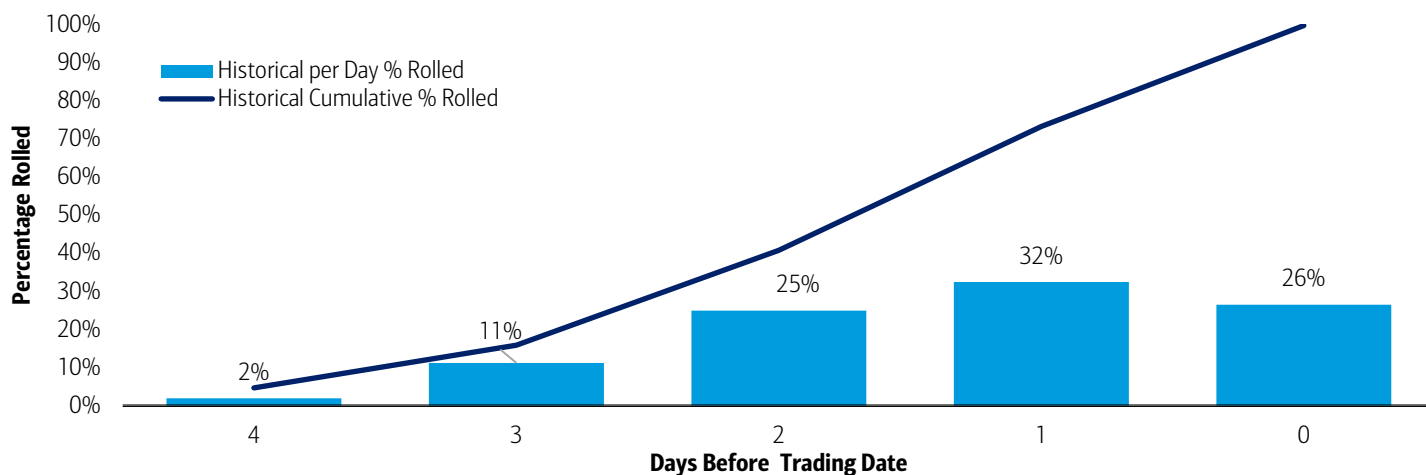
The Mar-24/Apr-24 NSE NIFTY 50 (NZ) futures roll is currently trading 285bps rich to 1M INR Swap (based on forecasted gross dividends of 2.7 index points).

This is rich versus recent years (99th 2-year percentile; Exhibit 22), and investors might want to make use of this statistical richness and roll long futures positions later.

Normally, we see the strongest roll activity in last 2 trading days (Exhibit 23).

Exhibit 23: NSE NIFTY 50 roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

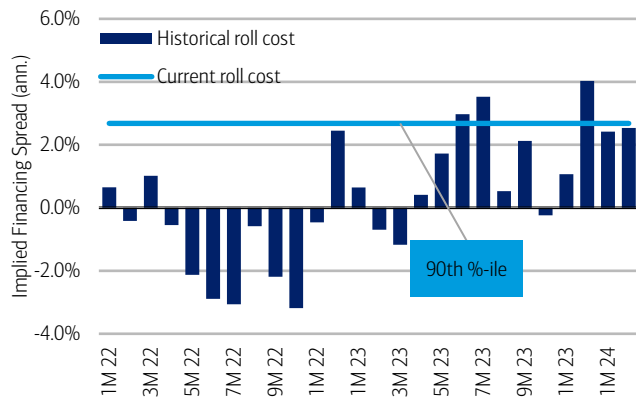
BofA GLOBAL RESEARCH

GIFT Nifty futures

GIFT Nifty Mar/Apr futures roll (ticker: JGS)

Exhibit 24: GIFT Nifty* – Current roll is rich versus recent history

The current roll is trading at +268bps. This is richer than last month (+253bps) and the 1-year average (+166bps).



Source: BofA Global Research. Data as of 15-Mar-24. The Percentile is based on data from Jan-22 to Feb-24. We have used the SGX Nifty contract for historical data (GIFT is the new contract).

BofA GLOBAL RESEARCH

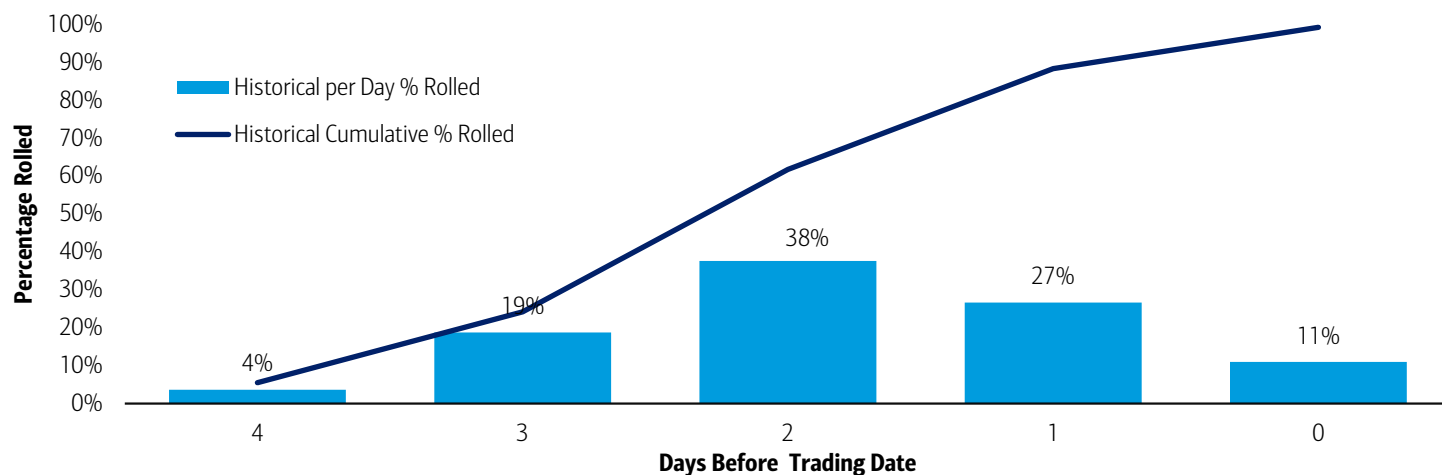
The Mar-24/Apr-24 GIFT Nifty (JGS) futures roll is currently trading 268bps rich to 1M INR Swap (based on forecasted gross dividends of 2.7 index points).

This is rich versus recent years (90th 2-year percentile; Exhibit 24), and investors might want to make use of this statistical richness and roll long futures positions later.

Normally, we see the strongest roll activity in last 2-3 trading days (Exhibit 25).

Exhibit 25: GIFT Nifty roll progression

Based on the volume traded in the futures spread contract



Source: BofA Global Research. Historical rolled is the average based on contracts from Jan-23 to Feb-24.

BofA GLOBAL RESEARCH

Disclosures

Important Disclosures

Due to the nature of the market for derivative securities, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofA or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options,



futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

Futures and options are not appropriate for all investors. Such financial instruments may expire worthless. Before investing in futures or options, clients must receive the appropriate risk disclosure documents. Investment strategies explained in this report may not be appropriate at all times. Costs of such strategies do not include commission or margin expenses.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. IQDatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.