MCX
METAL & ENERGY
Trade with Trust

INDEX FUTURES
PERFORMANCE REVIEW



FY 2022 - 2023

FOREWORD

The Index Futures Performance Report (PR) is the outcome of the SEBI circular SEBI/HO/CDMRD/DNPMP/CIR/P/2020/21 dated February 04, 2020, directing all recognised Stock Exchanges offering Commodity Derivatives Segment to conduct performance review of commodity derivatives contracts on an annual basis based on various parameters. The said performance review shall be consulted with the Product Advisory Committee (PAC) and the same shall be disclosed by 30th June of the following financial year.

The Index Futures Performance Report highlights information on the Volume, Turnover, Open Interest of Index Futures on MCX iCOMDEX BULLDEX®, METLDEX® and ENRGDEX® on the Exchange, along with the price correlations with underlying instrument.

Acknowledgement:

We have been ably guided by the MCX PAC members in improving the content of the report and we are extremely thankful to them. We hope to keep improvising the report going forward.

Contents

1. BACKGROUND 4

2. TRADING RELATED PARAMETER 9

3. PRICE MOVEMENTS 13

4. OTHER PARAMETERS 15

5. ANY OTHER INFORMATION TO BE DISCLOSED AS DEEMED IMPORTANT BY THE EXCHANGE OR AS SUGGESTED BY THE PAC. 16

INDEX FUTURES PERFORMANCE REPORT

1. BACKGROUND

a. Brief about the Commodity Index.

MCX India Commodity Indices (iCOMDEX) are excess return indices which consist of Single Commodity Indices, Sectoral Indices and Composite Index. MCX iCOMDEX indices derive values from prices of futures contracts traded on Multi Commodity Exchange of India Ltd. (MCX). An excess return index is considered to be ideal for benchmarking and trading as, along with price returns, it also shows the return attributed to rolling constituent contracts to a new expiry.

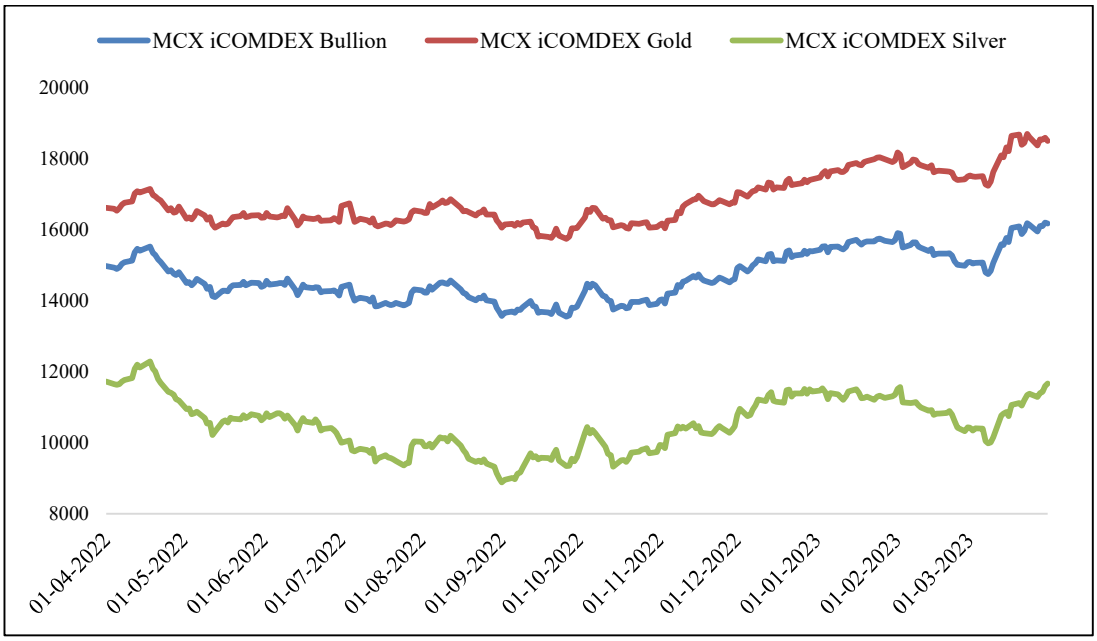
I. BULLDEX

MCX iCOMDEX Bullion Index® is one of the sectoral indices in the MCX iCOMDEX family that reflects real-time performance of bullion sector as a whole. It provides an efficient tool to investors looking to manage their investments in bullion. The index includes gold (1 Kg) futures and silver (30 kg) futures listed on MCX. Each commodity within the index is weighted three-fourths by its liquidity and one-fourth by its physical market size in India, determined by local production and imports.

Long-term investors can use the MCX iCOMDEX Bullion Index® for gaining from exposure to the bullion sector as an asset class. Market participants including individual investors, professional traders, and financial institutions such as hedge funds and mutual funds, can use the MCX iCOMDEX Bullion Index® either as a reference benchmark for their investments in bullion or related asset classes or as the basis of investment products which provide direct exposure to bullion.

The MCX iCOMDEX Bullion Index® conforms to the standards of the International Organisation of Securities Commissions (IOSCO) Principles for Financial Benchmarks (July 2013) in its computation and governance.

The price movements in the MCX iCOMDEX Bullion, Gold and Silver indices are provided below.



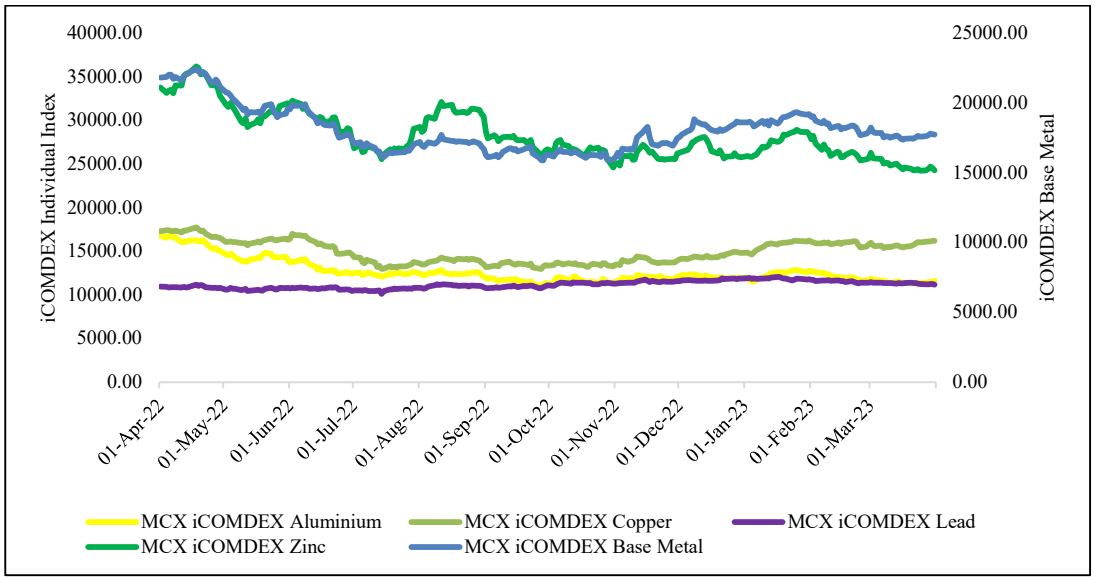
II. METLDEX

MCX iCOMDEX Base Metal Index® is one of the sectoral indices in the MCX iCOMDEX family, providing an efficient tool to investors looking to manage their investments in base metals. The index includes 4 base metals futures listed on MCX, viz., Aluminium (5 MT), Copper (2.5 MT), Lead (5 MT), and Zinc (5 MT). This index can therefore serve as an indicator of the performance of the Indian industrial sector. Every commodity within the base metal index is weighted three-fourths by its liquidity and one-fourth by its physical market size in India, determined by local production and imports. Additionally, the commodity selection process is also subject to further conditions and needs to meet the threshold set forth in the methodology.

Market participants including individual investors, professional traders, and financial institutions such as hedge funds and mutual funds, can use the MCX iCOMDEX Base Metal Index® either as a reference benchmark for their investments in base metals or related asset classes, or as the basis of investment products to provide direct exposure to Indian base/industrial metals.

The MCX iCOMDEX Base Metal Index® conforms to the standards of the International Organisation of Securities Commissions (IOSCO) Principles for Financial Benchmarks (July 2013) in its computation and governance.

The price movements in the MCX iCOMDEX Base Metal Index® and other single commodity indices are provided below.



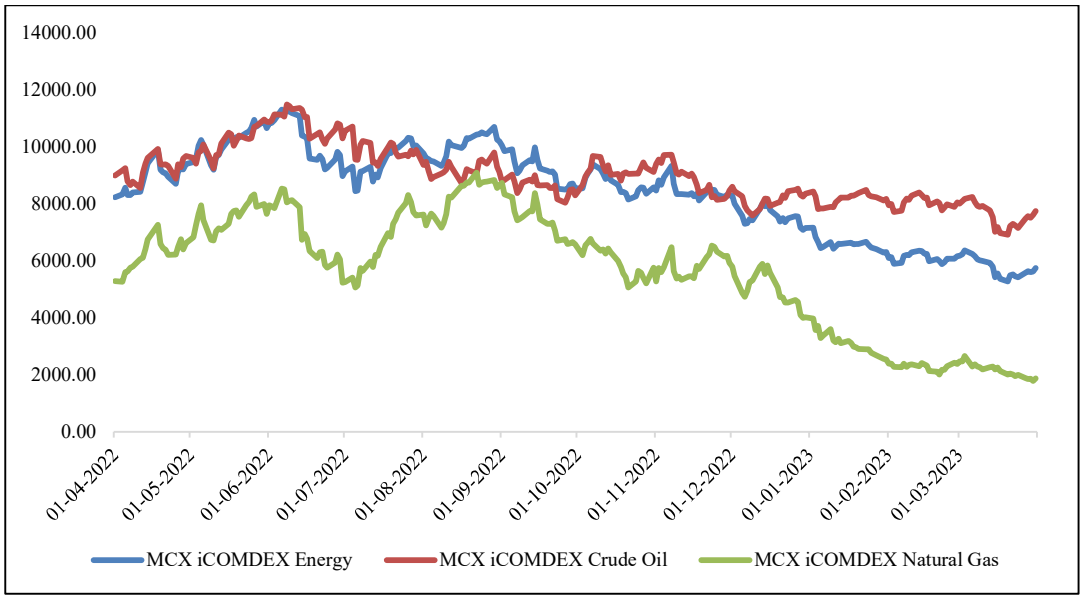
III. ENRGDEX

MCX iCOMDEX Energy® Index is one of the sectoral indices in the MCX iCOMDEX family, providing an alternative tool to investors looking to manage their investments in energy sector. The index includes Crude Oil (100 bbl.) and Natural Gas (1250 mmBtu) futures listed on MCX. To arrive at the weights of the constituents, each commodity within the index is weighted three-fourths by its liquidity and one-fourth by its physical market size in India, determined by local production and imports and subject to caps and floors as per the methodology of MCX iCOMDEX indices.

Market participants including individual investors, professional traders, and financial institutions such as hedge funds and mutual funds, can use the MCX iCOMDEX Energy Index® either as a reference benchmark for their investments in the energy sector or related asset classes or as the basis of investment products which provide direct exposure to energy sector.

The MCX iCOMDEX Energy Index® conforms to the International Organisation of Securities Commissions (IOSCO) Principles for Financial Benchmarks (July 2013) in its computation and governance.

The price movements in the MCX iCOMDEX Energy Index® and other single commodity indices are provided below.



b. Commodity fundamentals and balance sheet

c. Major changes in the polices governing trade in the spot markets of the commodity

d. Geopolitical issues in the commodity and its impact on Indian scenario.

Please find details in respect to points 1 (b), (c) and (d) below.

The brief fundamentals of underlying commodities are elucidated as under.

MCX iCOMDEX Bullion Index futures underlying commodities

Silver

- Silver Mine production rises by 2.4% as projects ramping-up are partly offset by disruptions, lower grades and closures.
- Industrial demand is forecast to rise yet again, by 4% to a new record high this year.
- The March banking crisis has provided a boost to precious metals.
- Bar and coin demand jumped by 22% y/y to a new high of 332.9Moz (10,356t)
- Silver recycling grew by 3% in 2022 to a 10-year high of 180.6Moz (5,618t)
- India imported a record 306.6Moz (9,535t) of silver last year, up a massive 244%.
- Industrial silver fabrication increased by 5% to a record high of 556.5Moz (17,309t)
- Global silver jewelry demand jumped by 29% to a record 234.1Moz (7,280t)

Gold

- Annual gold demand (excluding OTC) jumped 18% to 4,741t, almost on a par with 2011 – a time of exceptional investment demand. The strong full-year total was aided by record Q4 demand of 1,337t.
- Jewellery consumption softened a fraction in 2023, down by 3% at 2,086t. Much of the weakness came through in the fourth quarter as the gold price surged.

- Total annual gold supply increased by 2% in 2023, to 4,755t. Mine production inched up to a four-year high of 3,612t.
- A second consecutive quarter of huge central bank demand (417t) took annual buying in the sector to a high of 1,136t, the majority of which was unreported.
- Full-year mine production grew 1% but failed to match its 2018 peak. Annual recycling supply made only marginal gains, despite strong local currency price rises in many markets.
- Gold reserves in India increased to 794.63 Tonnes valued at Rs. 3,71, 500 crore (as on March 31, 2023) from 760.42 Tonnes valued at Rs. 3, 23, 596 crore (as on April 1, 2022).

MCX iCOMDEX Base Metal Index futures underlying commodities

- Base metal segment performance was jittery in the FY 2022-23 as bearish pressure remained strong in the first half of the year. Most of them including copper, zinc, aluminium, and nickel corrected after touching a new high in the previous year. The fall was primarily attributed to weak global consumption.
- All metals, in the second half, have faced weak demand due to multiple reasons including Debt crisis, Fed rate hikes and poor performance of banking industry in USA. Adding to the problem is reduced consumption in China.
- Industrial metals were also impacted due to the IMF announcement of lower global economic growth forecast and issuing a warning on rising inflation, sparking demand concerns. The initial annualised rate of GDP in the US unexpectedly shrank by 1.4% in the first quarter, which turned negative for the first time since mid-2020, causing concern that the slowdown in economic growth will suppress the demand for metals.

MCX iCOMDEX Energy Index futures underlying commodities

Continued sanctions and fears around Russian supply sustained crude oil prices during the year. Moreover, the disconcerting situation in other oil producing countries, fueled uncertainties in the market. The global oil and gas crisis triggered by Russia's invasion of Ukraine drove up oil and gas prices across key Asian and European markets.

For further details, please refer to Performance Review report of respective individual commodity.

2. TRADING RELATED PARAMETER

a. Monthly and Annual traded volume (quantity in appropriate units)

Volume (in lots)

Month/ Year	BULLDEX	METLDEX	ENRGDEX
Apr-22	31,175	42	23
May-22	32,934	1	5
Jun-22	33,860	NA	NA
Jul-22	28,731	NA	NA
Aug-22	27,325	NA	NA
Sep-22	32,348	NA	NA
Oct-22	26,588	NA	NA
Nov-22	26,885	NA	NA
Dec-22	21,302	NA	NA
Jan-23	18,899	NA	NA
Feb-23	15,819	NA	NA
Mar-23	15,158	NA	NA
FY 22-23	**3,11,024**	**43**	**28**

Note: Contract size is 50 times of Index.

b. Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

c. Annual traded volume as proportion of total annual production (quantity in appropriate units)

d. Annual average Open interest as proportion of total production

e. Annual average Open interest as proportion of total deliverable supply

- Points 2 (b) to 2 (e) are Not Applicable

For product specific details of underlying commodities, please refer to Performance Review report of respective individual commodity.

f. Monthly and Annual value of trade (in Rs. Crores)

Average Daily *Turnover (Rs. in Crores – Single Sided)*

Month/ Year	BULLDEX	METLDEX	ENRGDEX
Apr-22	117.77	0.22	0.13
May-22	108.17	0.01	0.02
Jun-22	110.76	NA	NA
Jul-22	96.21	NA	NA
Aug-22	88.43	NA	NA
Sep-22	101.26	NA	NA
Oct-22	89.01	NA	NA
Nov-22	88.22	NA	NA
Dec-22	73.45	NA	NA
Jan-23	70.20	NA	NA
Feb-23	61.32	NA	NA
Mar-23	51.56	NA	NA
FY 22-23	**1056.36**	**0.23**	**0.15**

g. Monthly and Annual quantity of delivery (in appropriate units)

h. Monthly and Annual value of delivery (in Rs. Crores)

Points 2 (g) and 2 (h) are Not Applicable

i. Monthly and Annual Average Open Interest (OI) (in appropriate units)

Average Daily Open Interest (in lots)

Month/ Year	BULLDEX	METLDEX	ENRGDEX
Apr-22	786.25	27.15	8.35
May-22	1057.6	1.3	0.3
Jun-22	941	NA	NA
Jul-22	1267	NA	NA
Aug-22	1107	NA	NA
Sep-22	1560	NA	NA
Oct-22	914	NA	NA
Nov-22	678	NA	NA
Dec-22	730	NA	NA
Jan-23	505	NA	NA
Feb-23	531	NA	NA
Mar-23	563	NA	NA
FY 22-23	**888.83**	**2.217**	**0.67**

j. Annual average volume to open interest ratio

Index Futures	Average Daily Volume (in lots)	Average Daily Open Interest (in lots)	Volume to Open Interest ratio
BULLDEX	1205.50	888.84	1.36
METLDEX	0.11	2.22	0.05
ENGRDEX	0.17	0.67	0.25

k. Total number of unique members and clients who have traded during the financial year.

Index Futures	Total number of unique members	Total number of unique clients
BULLDEX	157	8,545
METLDEX	15	19
ENRGDEX	9	10

l. Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

Commodity	Instrument	UNIT	Average of Open Interest	Average of FPOs/ Farmers LongVCPs/ Hedgers Long	Average of FPOs/ FarmersShortVCPs/ HedgersShort	Average of Long %	Average of Short %	Max of FPOs/ Farmers Long VCPs/ Hedgers Long	Max of FPOs/ Farmers Short VCPs/ Hedgers Short
MCXBULLDEX	Futures	UNIT	44591.86	548	396	1.39	1.08	3050	7350
MCXENRGDEX	Futures	UNIT	1272.06	0	0	0	0	0	0
MCXMETLDEX	Futures	UNIT	871.43	0	0	0	0	0	0

Note: Details are provided based on daily disclosure on the Exchange website for the period April 2022 to March 2023 in line with SEBI circular no SEBI/HO/CDMRD/DNPMP/CIR/P/2019/08 Dated January 04, 2019, Based on the data provided by the members from time to time pertaining to Farmers/ FPOs, VCPs/ Hedgers.

m. Number of unique FPOs/ farmers and VCPs/ hedgers who traded in the financial year.

Index Futures	VCPs/Hedgers
BULLDEX	44
METLDEX	-
ENRGDEX	-

Note:

- *Based on the classification provided by the members as on March 31, 2023, for clients traded during FY 2022-23.*
- *In case of classification of OWN (Prop Account) is uploaded as VCPs for any commodity, the same is included in "VCPs/ Hedger' category.*

n. Algorithmic trading as percentage of total trading

Index Futures	Percentage
BULLDEX	47.74
METLDEX	15.24
ENRGDEX	21.82

o. Delivery defaults

- **Number of instances**
- **Quantity involved**
- **Value involved**

  - Not Applicable

3. **PRICE MOVEMENTS**

a. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international futures price (wherever relevant comparable are available).

No representative Index futures are traded globally.

b. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

Not Applicable

c. Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.

Correlation with MCX iCOMDEX Bullion Index Futures:

	MCX iCOMDEX Bullion Index
Correlation (%)	98.90
Ratio of standard deviation	0.97

Correlation with MCX iCOMDEX Base Metal Index Futures:

	MCX iCOMDEX Base Metal Index
Correlation (%)	54.54
Ratio of standard deviation	1.20

Note: Correlation computed based on daily returns using: LN (Pt/ Pt-1)

Correlation with MCX iCOMDEX Energy Index Futures:

	MCX iCOMDEX Energy Index
Correlation (%)	48.65
Ratio of standard deviation	1.03

d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

No representative Index futures are traded globally.

e. Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre.

Not Applicable

f. Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility.

The volatility details for MCXBULLDEX, MCXMETLDEX and MCXENRGDEX or F.Y. 2021-22 is provided as under:

Commodity	Max Future Price Volatility %	Min Future Price Volatility %	Max Spot Price Volatility %	Min Spot Price Volatility %
MCXBULLDEX	1.17	0.47	1.22	0.55
MCXMETLDEX	3.37	0.28	3.57	0.76
MCXENRGDEX	2.54	0.28	4.19	1.7

Note: Above details are based on near month contract volatility and for the period 1-Apr-22 to 31-Mar-23.
Methodology adopted for computing the volatility is Exponential Weighted Moving Average (EWMA).

g. Number of times the futures contract was in backwardation/contango by more than 4% for the near month contract in the period under review. (PENDING)

Particulars	No. of times Index Futures contract	In Contango/ Backwardation
METLDEX®	1 (April 05, 2022)	Backwardation

Formula: (Index Futures – Underlying Index)/Underlying Index *100

4. **OTHER PARAMETERS**

a. Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations.

Hedge Ratio and Basis risk for BULLDEX, METLDEX and ENRGDEX futures:

The methodology adopted is also indicated below.

Hedge Ratio for 2022-23	
Commodity	**Hedge Ratio**
MCXBULLDEX	0.9951
MCXMETLDEX	0.8073
MCXENRGDEX	0.7616

Note:
Hedging ratio is the value of Coefficient of Determination (R^2) obtained from regressing changes in five-day moving average of daily MCX Futures Prices on changes in five-day moving average of daily MCX Spot Prices (index values) during the period.

Basis Risk for 2022-23			
Commodity	**Unit of Basis**	**Avg Return of Basis**	**Basis Risk**
MCXBULLDEX	Rs/Unit	-0.95	11.19
MCXMETLDEX	Rs/Unit	-0.40	8.57
MCXENRGDEX	Rs/Unit	-0.00	52.01

Note:

- Basis Risk is computed as the Standard Deviation of normal returns in Basis, which is excess of Spot over Futures price.
- In case Basis is zero for any day, next day's Basis return has been ignored for computing the Standard Deviation.
- *'Hedge Ratio' is defined as the number of units of futures contracts which minimises the risk of the hedged asset position. When futures prices are perfect estimators of spot prices, Hedge Ratio is expected to be 1. That is, one unit of the asset position can be fully hedged by one unit of the futures contract. But, with imperfect link between spot and futures prices, as well as unequal volatility, the hedge ratio usually diverges from 1.*

b. Details about major physical markets of the commodity vis-à-vis market reach in terms of availability of delivery centers (information to be provided state-wise and UT-wise).

Not Applicable

c. Details about major physical markets of the commodity and average Open Interest for each month generated from those regions.

Not Applicable

d. Details, such as number and target audience, of stakeholders' awareness programs carried out by the exchange.

Index Futures	No. of awareness programs	No. of Target audience
FY2021-22	835	28374
FY2020-21	823	22886
FY2022-23	1504	70606

Target audience includes value chain participants, financial institutions, and investors.

e. Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts.

Conducted more than 1504 awareness programs during the FY 2022-23.

5. ANY OTHER INFORMATION TO BE DISCLOSED AS DEEMED IMPORTANT BY THE EXCHANGE OR AS SUGGESTED BY THE PAC.

None

Disclaimer: *The information contained in this report is provided for information purpose only and are provided on as available basis. Along with MCX information, this report also contains the information obtained from third party sources/ market sources on best effort basis. The user of the information assumes the entire risk of any use of such information provided herein at its sole discretion. MCX ensures accuracy and reliability of information, to the best of its endeavors, however, makes no warranty or representation as to the accuracy, completeness, or reliability of any of the information along with the third-party information contained herein. MCX expressly disclaims any and all liability whatsoever to any person for any damage or loss of any nature arising out of use or as a result of reliance, any error, misrepresentations, or omissions of any of the information provided herein. The information contained in this document is not intended to provide any professional council or investment advice. No information contained herein may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means - electronic,*

mechanical, photocopying, recording, scanning, or otherwise without explicit prior permission of MCX.