GLOBAL X ETFs RESEARCH

Introducing the Carbon Credits Strategy ETF (NTRL)

Authored by:
Yili Wu

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Topic: Sustainable Investing

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NTRL – Global X Carbon Credits Strategy ETF

On May 25, 2023, we listed the Global X Carbon Credits Strategy ETF (NTRL) on the New York Stock Exchange. NTRL is designed to provide exposure to multiple global carbon allowance markets that stand to benefit from climate transition, as governments and companies aim to meet net-zero emissions goals in line with the 2015 Paris Agreement, an international treaty on climate change adopted by 196 parties at the UN Climate Change Conference with the overarching goal of limiting global warming.

Climate change is one of the biggest challenges facing our planet today. The increasing concentration of greenhouse gases in the atmosphere is causing elevated temperatures, more frequent extreme weather events, and rising sea levels. As a result, we've seen the emergence of a variety of tools and technologies that can be used to fight climate change. One of those emerging and early-stage tools is carbon credits. The basic concept of carbon credits is to provide a financial incentive for companies to reduce their carbon footprints through a market-based approach.

Decarbonization has become a major priority for policymakers and investors alike. As the pressure to meet net-zero targets builds, we expect the compliance carbon markets to see increased trading and price activity.

Key Takeaways

- Compliance carbon markets are expected to expand worldwide. In addition to existing emissions trading schemes maturing, new programs in other countries are expected to continue to emerge over the coming years, increasing the market size of carbon allowances in the long term.
- Investing in carbon allowance futures can provide portfolio diversification and exposure to potentially rising prices of carbon allowances while encouraging corporate decarbonization mechanisms.
- The pressure to meet Paris-aligned emissions reduction commitments is intensifying, and regulators worldwide are looking to tighten emissions caps, potentially increasing the scarcity and price of carbon allowances.

What Are Carbon Credits?

Carbon credits, also known as carbon allowances, are part of emissions trading schemes (ETS) or "cap-and-trade" programs run by governments that issue permits to emit a unit of emission, generally one ton of carbon dioxide (CO_2). Under these programs, regulators can set limits or caps on a company's carbon emissions. Therefore, companies that release fewer emissions in their business operations than their allocated cap could have excess carbon allowances. Companies can sell their extra allowances to other companies that have surpassed the carbon emissions threshold and need to purchase additional allowances to meet the assigned limits.

The process of using carbon credits to offset emissions is relatively simple. First, a company or organization calculates its carbon footprint, which is the total amount of greenhouse gases it emits. This can include emissions from manufacturing processes, transportation, and energy consumption.

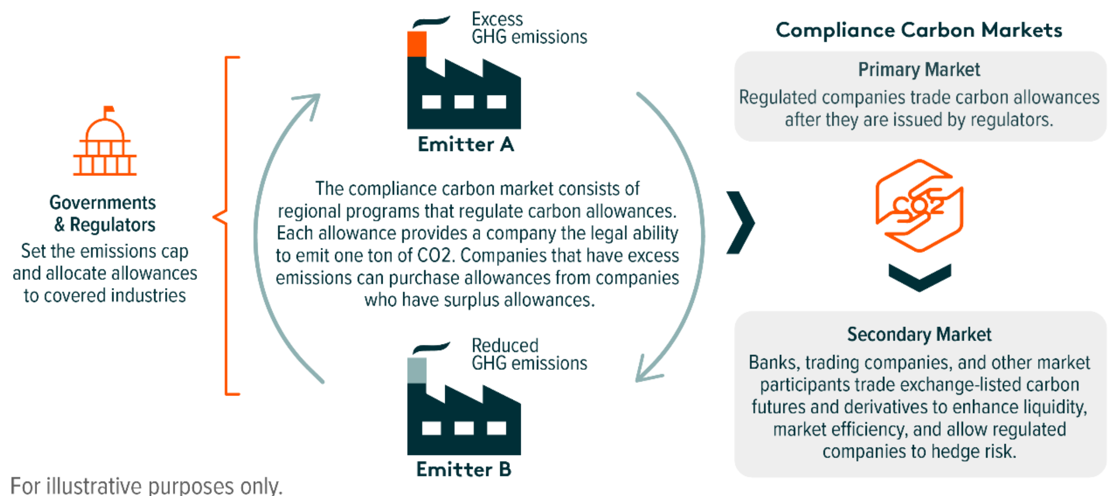
Once the carbon footprint has been calculated, the company can purchase carbon credits from a carbon market. The number of credits required depends on the amount of emissions that need to be offset. For example, if a company emits 100 tons of carbon dioxide and wants to fully offset them, it would need to purchase 100 carbon credits.

After purchasing the carbon credits, the company can retire them, which means they are no longer available for purchase. This action effectively reduces the overall supply of carbon credits, which in turn increases their value. This financial incentive encourages companies to reduce their carbon footprint and invest in renewable energy or carbon sequestration projects.

Ultimately, the price of carbon credits is expected to be a function of the emissions limits set by the regulator and the number of available credits in circulation.

HOW THE CARBON MARKETS WORK

Source: Global X ETFs.



For illustrative purposes only.

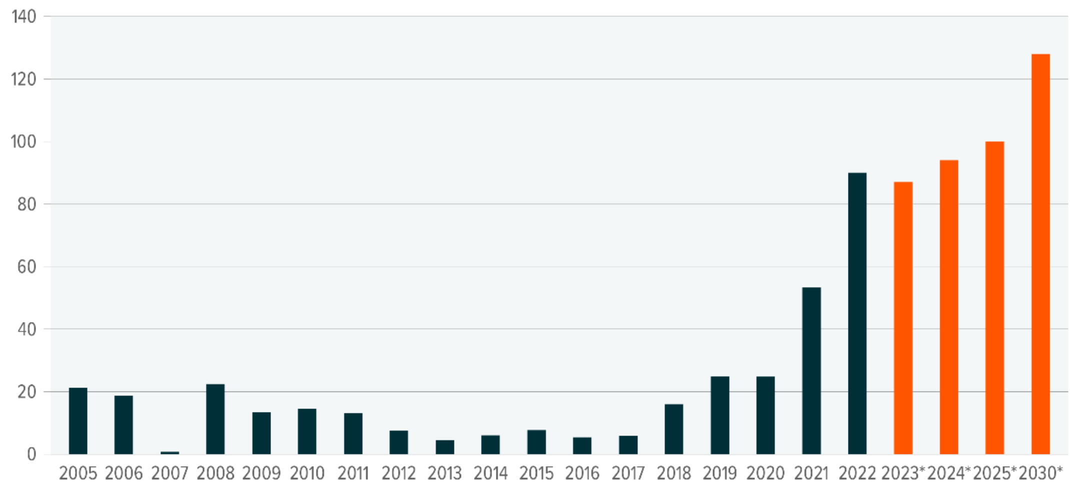
Evaluating Carbon Credit Prices

Carbon credit prices have been on the rise in recent years. EU carbon allowances, for example, surpassed €100 per ton of CO2 equivalent in February 2023 for the first time, up from €5 per ton in early 2017.[1,2]

Looking ahead, there are reasons to be optimistic about the future of carbon credit prices. Expectations for tighter emissions caps, particularly in Europe, have continued to push demand for carbon allowances globally. These climate ambitions are expected to remain robust over the long term, which could push European carbon credit prices up to €120/ton by 2030 from €5 five years ago.[3]

EU ALLOWANCES PRICE FORECAST 2023—2030 (€/TON)

Sources: Global X ETFs with information derived from: S&P Global and International Carbon Action Partnership.



*Forecast

Expanding Carbon Coverage

Currently, four markets are covered in the Global X Carbon Credits Strategy ETF: the European Union, the United Kingdom, California Cap-and-Trade, and the Regional Greenhouse Gas Initiative.

The European Union's ETS is the largest in the world, with a derivatives market that accounted for 87% of global carbon allowance market in 2022.[4]

The second oldest investable emissions trading scheme is the Regional Greenhouse Gas Initiative (RGGI), the first mandatory cap-and-trade program in the United States. RGGI is composed of eleven Northeastern states and administered its first auction of carbon allowances in 2008. RGGI member states reduced their annual average CO2 emissions from electric generation sources by 53% from 2017-2019 compared to the base period of 2006 to 2008.[5]

Although RGGI is older, the California cap-and-trade program is larger, due to the size of California's economy and greater coverage of sectors beyond power, covering about 85% of California's carbon emissions. The program decreased the overall greenhouse gas emissions cap by 3% annually from 2015 to 2020, and aims to reduce emissions by an additional 5% annually from 2021 to 2030.[6]

Following Brexit, the UK Emissions Trading Scheme was launched in 2021 to replace the country's previous participation in the EU ETS. The UK ETS applies to energy intensive industries, the power generation sector, and aviation. It is a key tool to meeting the UK's net-zero targets by 2050.

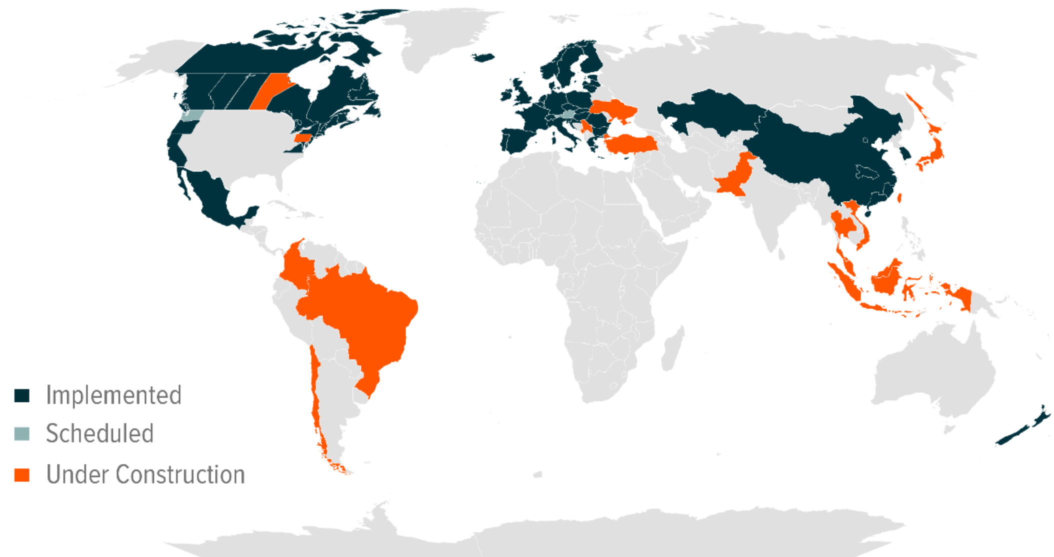
New emissions trading schemes are in development all over the world, and should result in an increasing carbon market size, with more types of investable carbon derivatives in the long term.

For example, China launched its own ETS in 2022 and could became the world's largest carbon market, expected to be over three times the size of the European Union's.[7] Other countries and regions will need to mature in terms of policy and liquidity before becoming available in the

derivatives market, but once new emissions trading schemes reach a higher level of legitimacy and adoption, it's expected there will be an expanded menu of carbon allowances available globally to invest in.

MAP OF EMISSIONS TRADING SCHEMES IMPLEMENTED, SCHEDULED AND UNDER CONSTRUCTION AS OF OCTOBER 2022

Sources: Global X ETFs with information derived from: Carbon Pricing Dashboard by the World Bank.



Regulatory Environment to Support the Growth of Carbon Markets

The compliance carbon markets have another lever beyond broad economic forces that can affect demand and supply. Regulators can pass legislation to bolster the competitiveness of the compliance carbon markets, which may result in price increases.

The European Union's 'Fit for 55' package, for example, includes provisions to increase the ambition of emissions reductions covered by the EU ETS from 43% to 62% of covered sectors by 2030.[8] This is expected to include increasing the annual reduction rate of the emissions cap from 2.2% a year to 4.3-4.4% a year until 2030, resulting in the reduction of allowances on the market.[9] In addition to a reduction in the supply of European Union Allowances (EUAs), the proposed reform to the EU ETS includes coverage of new sectors like maritime transport, as well as a separate new ETS for sectors including buildings, road transport, and fuels.[10] Increased usage of EUAs in tandem with steeper annual reductions of supply could strengthen the value of compliance carbon allowances.

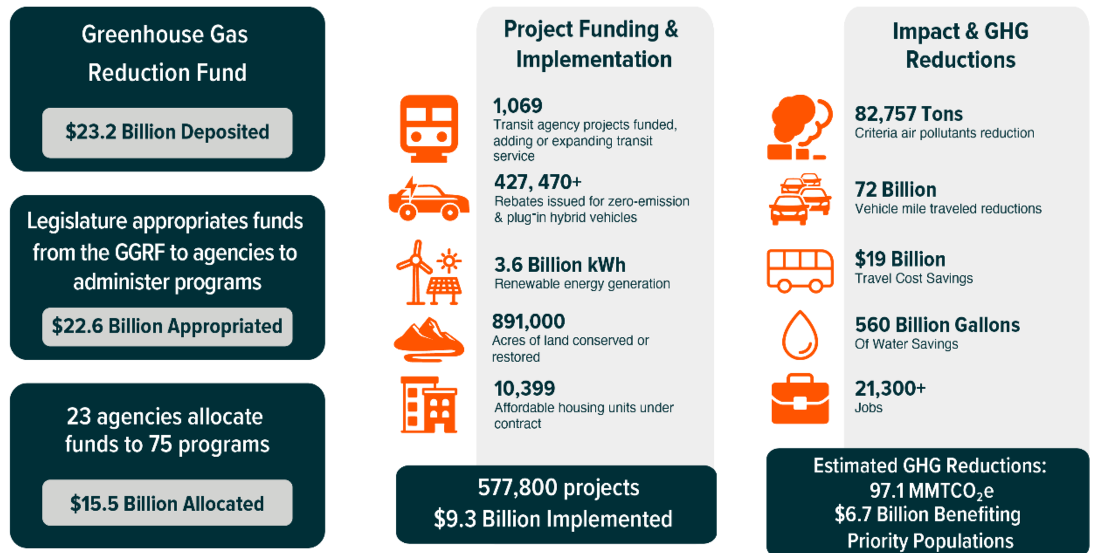
Carbon Allowances for Sustainable Investing

Some believe that carbon allowances are a purely economic mechanism that does not result in actual emissions reduction or climate impact. If polluting companies can purchase carbon allowances from companies with excess carbon allowances, then where is the actual emissions reduction? The impact of the compliance carbon markets goes beyond monitoring and limiting corporate greenhouse gas emissions. The revenues generated from emissions trading schemes can fund other public climate projects. Revenues from California's cap-and-trade program have flowed into the state's Greenhouse Gas Reduction Fund since 2012. This fund supports California Climate Investments and allocated over $3 billion in new appropriations in 2022 alone.[11] In 2022,

over 19,600 new projects were implemented, which are expected to reduce 10.4 million metric tons of carbon dioxide equivalent (MMTCO2e) over the projects' lifetimes.[12]

CALIFORNIA CLIMATE INVESTMENTS GHG REDUCTIONS OVER TIME

Sources: Global X ETFs with information derived from: California Climate Investments 2023 Annual Report.



In addition to greenhouse gas emissions reduction, the Greenhouse Gas Reduction Fund supports many other climate and environmental justice projects in the state, including the development of a high-speed rail project, the construction of over 10,000 affordable housing units, expanding public transit services, and issuing rebates for zero-emission and plug-in hybrid vehicles.[13] Investing in carbon allowance derivatives can support the growth of an asset class that provides funding for diverse environmental projects and a low carbon transition.

In Europe, as part of the revised EU ETS under the 'Fit for 55' package, the European Commission proposed a Social Climate Fund where a share of revenues from the new ETS covering buildings, road transport, and fuels would flow into. The EU's Social Climate Fund aims to finance temporary direct income support for vulnerable households and to nurture investments that reduce emissions in road transport and building sectors to aid vulnerable households, micro-enterprises, and transport users.[14]

Carbon Allowance Derivatives for Portfolio Diversification

Investing in carbon allowance derivatives can provide portfolio diversification when combined with traditional asset classes. The Global X Carbon Credits Strategy ETF (NTRL) invests in multiple carbon markets, providing geographic and political diversification. Additionally, carbon allowances have a low correlation with multiple asset classes, such as global equities, fixed-income securities, oil, and other commodities. Since compliance carbon markets are heavily influenced by regulators, they are typically less correlated with markets that move closer in line with the broader economy.

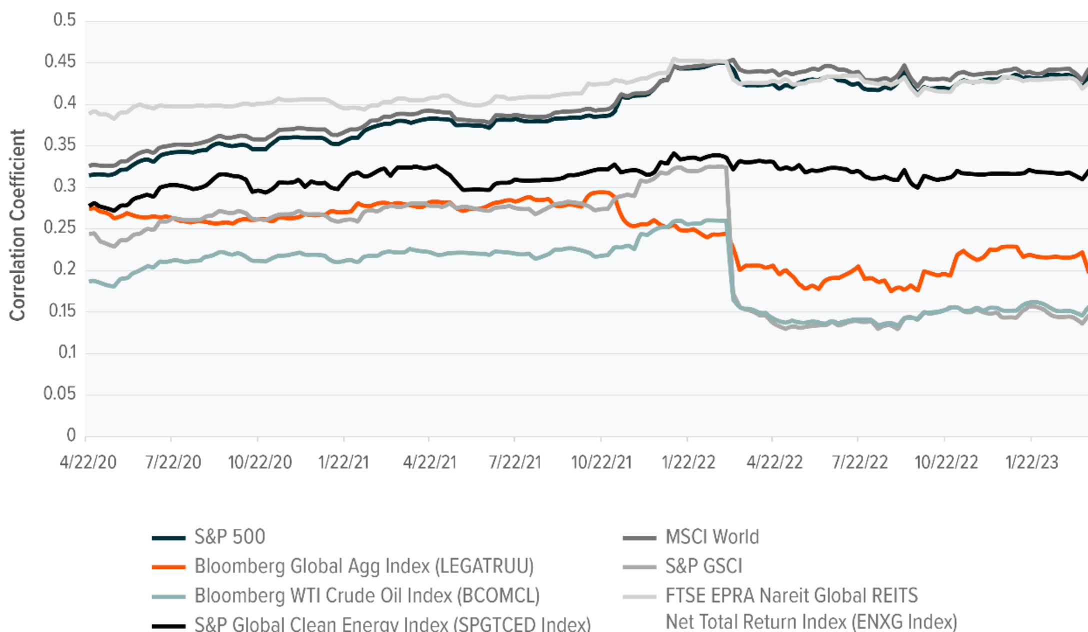
As mentioned before, the price of carbon allowances futures is determined by supply and demand factors generally controlled by regulators. Separately, public companies within the commodities and oil sectors are subject to a range of factors that can influence their stock prices, including geopolitical events, supply and demand factors, and global economic conditions. This can cause volatility in commodity markets, and the volatility of the carbon allowance market does not

necessarily go in lockstep with the same factors. Volatility in the carbon allowance market can be caused due to sudden regulatory changes that may not necessarily affect commodities similarly.

While there may be some indirect relationships between the price of carbon allowances and the equities of companies within the covered sectors of emissions trading schemes, the underlying drivers of these equities and carbon allowance futures are fundamentally different. Therefore, we believe that carbon allowance futures can provide diversification benefits to a portfolio.

CORRELATION OF CARBON CREDITS VS. OTHER ASSET CLASSES

Sources: Global X ETFs with information derived from Bloomberg using monthly data from 4/22/2020-3/31/2023. Carbon Credits is being measured by the ICE Global Carbon Futures Index.



Index returns are for illustrative purposes only and do not represent actual Fund performance. Index returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.

Conclusion: The Case for Carbon Credits

Although the European ETS has been in existence since 2005, carbon allowances have seen exponential growth in recent years, paving the way for new schemes around the world. Tighter regulatory scrutiny and an increased urgency to meet net-zero emissions commitments create a conducive market environment to support the adoption and growth of carbon allowances worldwide.

The Global X Carbon Credits Strategy ETF seeks to provide exposure to multiple emissions trading schemes globally by investing in the most actively traded carbon credit futures. The role of investing in carbon allowance futures provides the potential for price increases while supporting public environmental programs. The demand for carbon allowances is likely to increase as the supply can be constricted by regulators, potentially making carbon allowance futures an attractive investment opportunity. Investing in carbon allowance futures can also provide portfolio diversification benefits compared to traditional asset classes, while supporting the transition to a more sustainable future.

Footnotes

1. Associated Press. (2023, February 22). EU carbon prices passes symbolic 100 euros as reforms bite.
2. International Carbon Action Partnership. ICAP Allowance Price Explorer. Data as of September 30, 2022.
3. Ibid.
4. Refinitiv, (2023, February 6).Carbon Market Year in Review 2022
5. The Regional Greenhouse Gas Initiative. (2022, June 15). CO2 Emissions from Electricity Generation and Imports in the Regional Greenhouse Gas Initiative: 2019 Monitoring Report
6. Center for Climate and Energy Solutions. (n.d.) California Cap and Trade.
7. Forbes. (2022, April 18). China's Emissions Trading System Will Be The World's Biggest Climate Policy.
8. European Union. Council of the European Union. (2022, December 18). Fit for 55: Council and Parliament reach provisional deal on EU emissions trading system and the social climate fund.
9. Ibid.
10. Ibid.
11. California Climate Investments. (2023, April). California Climate Investments 2023 Annual Report.
12. Ibid.
13. California Climate Investments. (2023, April). California Climate Investments 2023 Annual Report.
14. European Commission. (n.d.). Social Climate Fund. Delivering the European Green Deal

Glossary

S&P 500 Index: The index includes 500 leading U.S. companies and captures approximately 80% coverage of available market capitalization.

MSCI World Index: The index is a broad global equity index that represents large and mid-cap equity companies across all 23 developed market countries.

Bloomberg Global Aggregate Total Return Index: The index is a broad measure of global investment grade debt from a multitude of local currency markets. This multi-currency benchmark includes treasury, government-related, corporate, and securitized fixed-rate bonds from both developed and emerging market issuers.

S&P GSCI Index: The index is a benchmark commodities index that is broad-based and production weighted to represent the global commodity market. It includes the most liquid commodity futures.

Bloomberg WTI Crude Oil Index: The Index is measured by the price of futures contracts of West Texas Intermediate (WTI) sweet, light crude oil.

FTSE EPRA Nareit Global REITS Net Total Return Index: The index is a free-float adjusted market capitalization-weighted index designed to track the performance of listed real estate companies in both developed and emerging countries worldwide.

S&P Global Clean Energy Index: The index is designed to measure the performance of companies in the global clean energy-related businesses from both developed and emerging markets, producing energy from solar, wind, hydro, biomass, and other renewable sources. It also invests in companies that build and provide clean technology.

Information provided by Global X Management Company LLC.

This material represents an assessment of the market environment at a specific point in time and is not intended to be a forecast of future events, or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding the fund.

Investing involves risk, including the possible loss of principal. Diversification does not ensure a profit or guarantee against a loss. The Fund invests in carbon credit futures. The price and performance of futures may differ from the current price of carbon credits. These differences could be significant. Futures are subject to margin requirements, collateral requirements and other limits that may prevent the ETF from achieving its objective. Margin requirements for futures and costs associated with rolling (buying and selling) futures may have a negative impact on the fund's performance and its ability to achieve its investment objective.

The Fund relies on the existence of cap and trade regimes. There is no assurance that cap and trade programs will continue to exist. Cap and trade may not prove to be an effective method of reducing greenhouse gas emissions. As a result, or due to other factors, cap and trade programs may be terminated or may not be renewed upon their expiration.

The Fund expects to gain Carbon Futures exposure by investing in a subsidiary of the Fund organized under the laws of the Cayman Islands. The Subsidiary is not registered under the 1940 Act, and, unless otherwise noted in the prospectus, is not subject to all the investor protections of the 1940 Act. The Fund and the Subsidiary will be considered commodity pools, thereby subjecting the Fund to regulation under the Commodity Exchange Act and CFTC rules. Registration as a CPO imposes additional compliance obligations on the Advisor and the Fund related to additional laws, regulations, and enforcement policies, which may increase compliance costs and may affect the operations and financial performance of the Fund.

International investments may involve risk of capital loss from unfavorable fluctuation in currency values, from differences in generally accepted accounting principles or from social, economic or political instability in other nations. NTRL is non-diversified.

Shares of ETFs are bought and sold at market price (not NAV) and are not individually redeemed from the Fund. Brokerage commissions will reduce returns.

Carefully consider the fund's investment objectives, risks, and charges and expenses before investing. This and other information can be found in the fund's full or summary prospectuses, which may be obtained at globalxetfs.com. Please read the prospectus carefully before investing.

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