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Why Commodities?

June 2022

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This Piece Covers:

- ⇨ Why should investors consider an allocation to active commodities and why now
- ⇨ Commodity Price Super-Cycles
- ⇨ Commodities vs Stocks and Bonds
- ⇨ The Case for Commodities: Supply Constraints, Demand, Inflation, Ownership
- ⇨ Active Commodity Investing
- ⇨ Commodities: The Next Frontier (China)

Why Commodities?

- ⇨ Over the past 14 years we have been living in a world of artificial prices for financial assets supported by the ever-increasing quantitative easing, low volatility, and unusually low dispersion. All of that is now changing
- ⇨ Commodities have outperformed other asset classes in 2022 after being a forgotten asset class for over a decade

Short-term driving factors (1-3 years):

a. Commodities should continue to provide excellent opportunities, both long and short, due to structural shifts in the global economy that are compounded by short-term supply and demand imbalances
b. Inflationary pressures should persist and the supply destruction that occurred at the end of the previous super cycle will build the foundations for a new super cycle going forward
c. Covid, lockdowns and the war in Ukraine have also impacted supply in the short term across most sectors including energy, precious metals and agriculture
d. Commodities offer inflation participation and will also benefit from a weakening dollar

Long-term driving factors (3+ years):

a. Supply deficits will persist since years of depressed prices, government policies and the push to ESG have caused significant underinvestment in the energy and basic material sectors
b. The shifting geopolitical landscape suggests that the relatively free flow of commodities will not return
c. Longer term demand pressures will continue due to the transition to clean energy, the continued population growth and urbanisation, and the electrification of the world.
d. Investors are under invested in commodities due to a decade of poor performance and high volatility. We believe investors will start to look at incorporating them into their asset allocation frameworks within the next 18 months as the recent track record gets extended and there is continued outperformance versus both equities and bonds

Commodities are a volatile asset class, but active commodity strategies can deliver superior risk adjusted returns by taking advantage of idiosyncratic supply and demand dynamics and the significant dispersion of individual returns. More importantly, they can protect from the significant drawdowns that are characteristic of long only passive investments, i.e., ETFs.

> *"O fortunatos nimium, sua si bona norint, agricolas! quibus ipsa procul discordibus armis, fundit humo facilem uictum iustissima tellus."*
>
> *"If farmers only knew how fortunate they are, they'd be the happiest of men! To them, earth's generosity abundantly supplies an easy living from the soil, far from the violence of war."*
>
> *(Virgil, The Georgics, book 2, verse 458)*

Virgil, the famous ancient Roman poet, clearly evidences his love for the beauty, charm and quiet of country life, away from war, in this poem that has tormented students of Latin. However, in 2022, farmers around the globe are worried about the war raging in the Ukraine, as the rampant inflation in fertilisers, diesel, electricity, and freight are adding to the existing price pressures in the supply chain caused by the pandemic and the subsequent co-ordinated global re-opening.

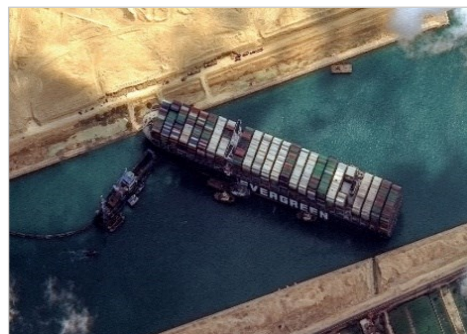


Figure 1: Suez Canal 2019

https://www.bloomberg.com/news/articles/2021-09-09/ship-briefly-stranded-in-suez-canal-before-being-freed

Commodities were a forgotten asset class up until the end of 2019, after dropping by nearly -40% over the last decade[1]. And in 2020, we actually witnessed negative prices for WTI crude. But in recent months, commodities have come back to the forefront of portfolio discussions, since commodities are the only major asset class that has, until the end of May 2022, delivered a positive year-to-date return.

31.05.2022	Cash (USD)	Global IG	Global HY	DM Equities	EM Equities	Commodities	Hedge Funds
YTD Return	0.1%	-11.1%	-10.1%	-12.8%	-11.7%	32.7%	-3.3%

Table 1 (Source Bloomberg, CdR Calculations, LD12TRUU, LEGATRUU, LG30TRUU, GDDUWI, GDUEEGF, BCOMTR, HFRXGL.)

The lost decade for commodity investors coincided with a period of low inflation (1.7% annualised) and a strengthening US dollar (2.1% annualised). But as inflationary pressures have returned, or perhaps because of these, commodity prices have soared with the BCOM Total Return Index more than doubling since the April 2020 lows.

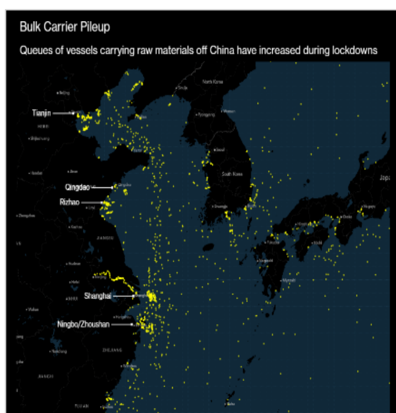


Figure 2

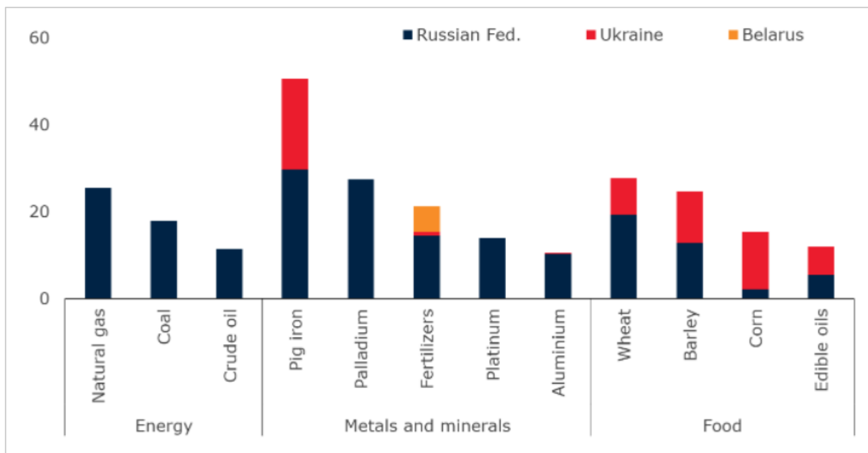
https://www.bloomberg.com/news/articles/2022-04-11/477-bulk-ships-wait-off-east-china-s-ports-amid-virus-lockdowns

History and intuition suggest that during inflationary periods, financial assets underperform real assets. But the surge in commodity prices was caused by the confluence of increased demand, due to the global economic re-opening, that was met by disruptions in the production and transportation of commodities around the world. What is more impressive is that commodity prices have soared despite the US dollar strengthening. The strength in commodity prices has been, and will continue to be compounded, by the supply chain disruptions caused by the China's zero Covid Policy and the war in Ukraine.

The price for grains, cooking oils, energy and fertilisers have all jumped following Russia's invasion of Ukraine, further stoking inflation, even though China, the biggest importer of commodities in the world, has been imposing lockdowns to contain the pandemic.

For investors that remember the China-fuelled commodity super cycle of the 2000's a key question is whether the recent move in commodity prices signal the beginning of a new commodities super-cycle, or a temporary cyclical upswing driven by post-pandemic growth.

[1] BCOM TR return -38.4% from December 2009 to December 2019.



In this document, we will argue that the recent commodity upswing is the result of many different complex factors that will persist in the longer term and offer significant opportunities to active investors.

Figure 3

Source: Russia, Ukraine and Belarus Export Shares Chart, Source World Bank (link)

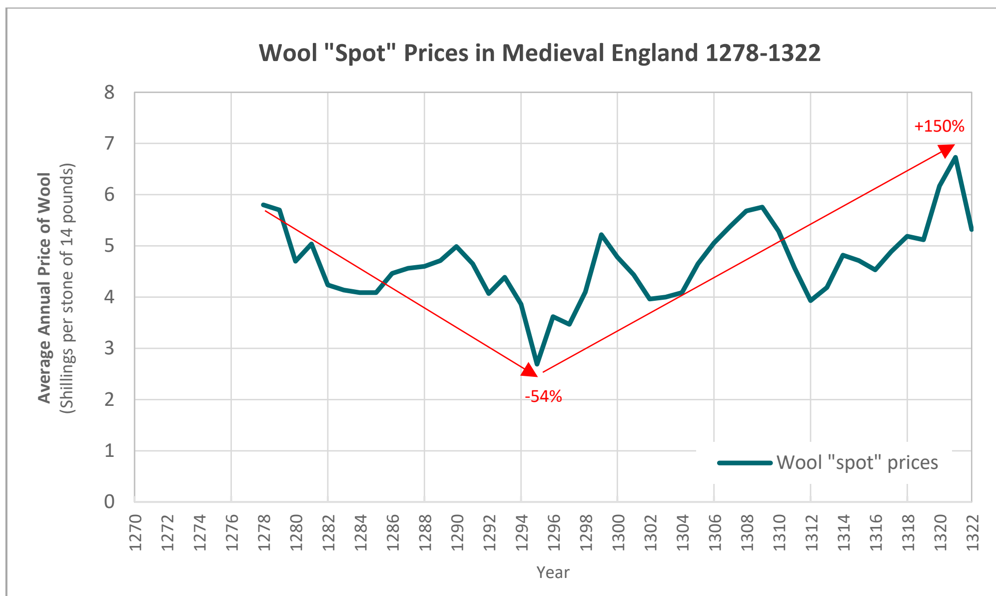
Export share chart

The demand caused by the transition towards a low-carbon economy, the supply imbalance caused by the chronic under-investment post the end of the previous super-cycle, and the underexposure to commodities of institutional investors imply that commodities will continue to offer a fertile environment for active investing strategies.

Commodity Price Super-Cycles

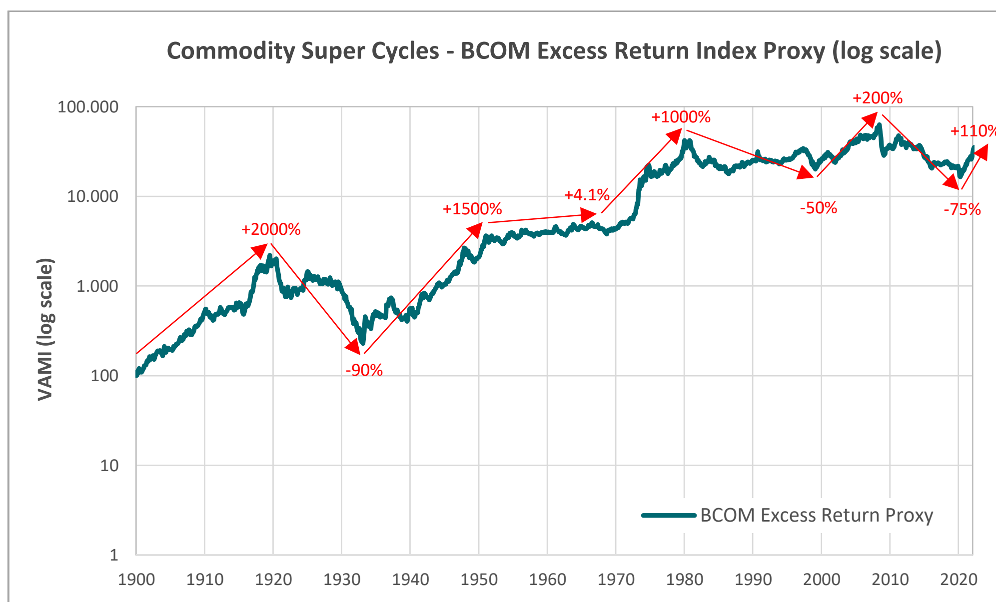
Throughout history, commodity prices have experienced extended periods of boom and bust, known as "super-cycles". In medieval England, the wool market dominated the English export trade and helped England cement its position as a political and economic power in Europe.

Research on wool prices in medieval England show that even in medieval times, an important commodity such as wool prices fell by more than 50% between 1277 and 1295 before rallying by 150% over the next 25 years.



Source: Bell, A.R., Brooks, C. and Dryburgh, P., 2007. Interest rates and efficiency in medieval wool forward contracts. Journal of Banking & Finance, 31(2), pp.361-380.

Similar extended swings have been observed in commodity prices since the early 1900s as seen in the figure below. Since 1900, we have seen 4 super cycles. The bull phase for each cycle led to significant gains in commodity prices that lasted between 9 and 19 years, whereas the bear market phase led to corrections in excess of -50% and lasted between 12 and 17 years.



Source: Data: January 1900 – December 1959, Levine, A., Ooi, Y.H., Richardson, M. and Sasseville, C., 2018. Commodities for the long run. Financial Analysts Journal, 74(2), pp.55-68. January 1960 onwards Bloomberg. CdR calculations

Super-cycles are caused by persistent demand and supply imbalances, caused by structural changes. Commodities are inelastic in their supply in the short to medium term. This inelastic supply leads to a deficit in the short to medium term as unexpected, persistent and positive shocks to commodity demand cannot be met by slow-moving supply responses. For example, it takes 4-12 years to develop a copper mine and 2-3 years for a new oil rig to become operational.

But after the initial time lag needed to add supply, overinvestment, technological advancements, and increased investment in re-cycling lead to oversupply, while price appreciation leads to demand destruction or substitution. These forces bring the market back into balance causing a significant correction in prices. This price correction once again leads to underinvestment and supply destruction which in turn lead to the genesis of a new super cycle in the future.

All previous super cycles were tied to a transformational period of the global economic environment: the ascension of the US economy in the early 1900s and the First World War, the global economic recovery post the 1930s depression and the Second World War, the 1970's Vietnam War and the Energy Crisis, and the rapid industrialisation and economic growth of the BRIC economies and particularly China.

In each of these episodes, significant increases in demand for raw materials caused by infrastructure expansion, industrialisation and population growth could not be met by increased supply by producers, leading to significant increases in commodity prices that were compounded by war and supply disruptions.

Commodity prices have always been sensitive to global growth but can be very volatile in the short term with dramatic moves to the upside as well as the downside due to geopolitical evets, overinvestment, temporary collapse in demand, supply disruptions, wars and shortages.

However, unlike financial assets, particularly fixed income instruments, where central bank and government policy can cause significant dislocations, commodity prices are primarily determined by supply and demand. Supply is inelastic in the short run, since for some commodities it takes several years and significant investment to bring new production online, whereas for others supply is seasonal.

Nevertheless, there is significant dispersion in individual commodity as well as commodity sector returns, within these super cycles, and on a year-to-date basis in 2022, energy commodities have been leading the pack with significant gains, while precious metals and livestock are down for the year. This shows that even during super cycle bull trends, active investing can add significant value to investors' portfolios.

Commodities vs Stocks and Bonds

Until recently, several market commentators were highlighting that over the last 40 years, financial assets, such as the S&P 500 or government bonds, had significantly outpaced commodities in terms of total returns.

However, this period has been one of great moderation of inflation and has coincided with a significant bull run in fixed income instruments as interest rates collapsed from 15% on the US 10Y to 3%. Few investors that are still active will have traded during the previous commodity super cycles.

Closer examination of the data and an expansion to a much longer time series shows that the total return on a diversified commodity portfolio would have delivered significant positive returns but also, perhaps more importantly, would have offered significant diversification to a traditional portfolio that consists of only stocks and bonds. The table below shows that an allocation of 5% to a long only commodity futures strategy (see column 57.5/37.5/5) can improve the risk adjusted returns of a traditional 60% equities 40% bonds portfolio, particularly in inflationary periods.

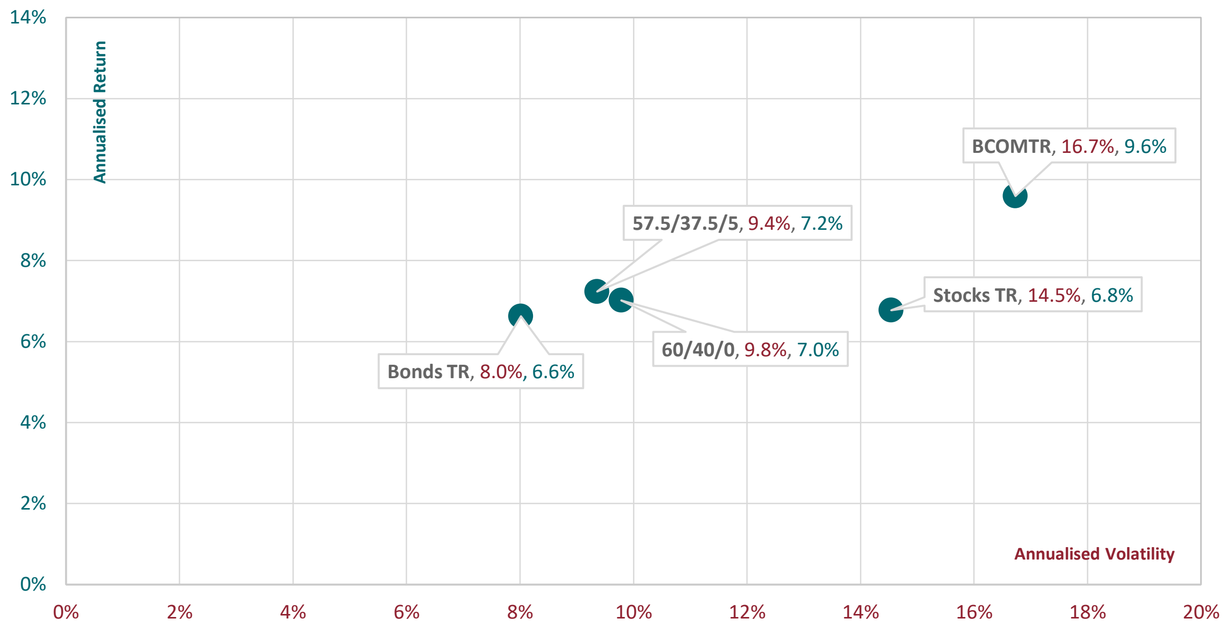
1960 - 2022		Stocks TR	Bonds TR	BCOM TR	60 / 40 / 0	57.5 / 37.5 / 5
Ann. Return		8.7%	6.0%	8.3%	8.0%	**8.1%**
Ann. Volatility		14.7%	7.6%	15.9%	9.5%	**9.2%**
Max Drawdown		-52.0%	-15.7%	-72.0%	-30.3%	-31.0%
Ann. Return	**YoY CPI > 2%**	6.8%	6.6%	9.6%	7.0%	**7.2%**
Ann. Volatility	**YoY CPI > 2%**	14.5%	8.0%	16.7%	9.8%	**9.4%**
Ann. Return	**YoY CPI < 2%**	12.9%	5.0%	3.4%	10.1%	9.8%
Ann. Volatility	**YoY CPI < 2%**	15.1%	6.7%	13.6%	8.8%	8.7%
Ann. Return	**Recession**	-3.1%	12.6%	0.0%	3.6%	3.5%
Ann. Volatility	**Recession**	21.7%	11.2%	23.7%	14.4%	13.9%
Ann. Return	**Non-Recession**	10.3%	5.2%	8.9%	8.5%	8.7%
Ann. Volatility	**Non-Recession**	13.4%	7.0%	14.4%	8.6%	8.3%

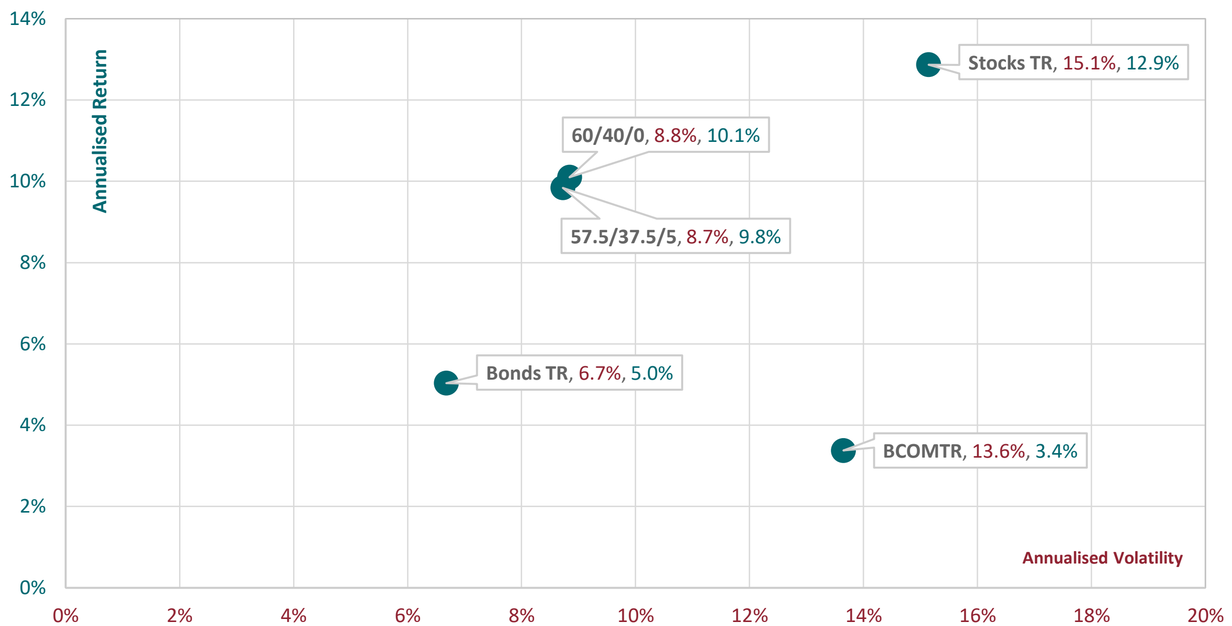
Correlation 1960 - 2022	Stocks TR	Bonds TR	BCOM TR
Stocks TR	**1**	**0.06**	**0.12**
Bonds TR	**0.06**	**1**	**-0.17**
BCOM TR	**0.12**	**-0.17**	**1**

Table 2

Source: Data from Bloomberg and Shiller http://www.econ.yale.edu/~shiller/data.htm, Stocks TR is the S&P 500 index including dividends, Bonds TR is approximated using Damodaran's methodology of monthly total returns based on changes to the level of the 10Y treasury. BCOM TR is the Bloomberg Commodity Total Return index and is a long only investment in a diversified basket of futures contracts including the returns on a fully collateralized investment in the BCOM, CdR Calculations.

The diversification benefit is evident versus fixed income where the correlation is negative irrespective of the economic environment and particularly in environments where inflation is above 2%.





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The diversification benefits for commodities, particularly in terms of fixed income investments, are compelling.

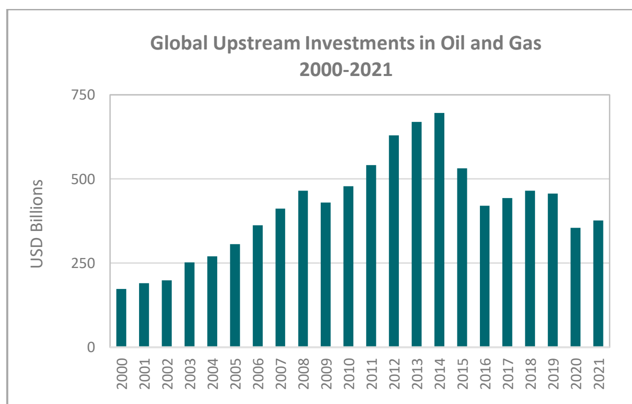
The Case for Commodities: Supply Side Constraints

After the end of the previous super cycle, post the Global Financial Crisis, energy, and metals commodity producers significantly reduced capex as a response to lower prices, ESG pressures and the potential impact of the green energy revolution. Capex in upstream oil and gas fell by almost 50% between 2014 and 2020, and in the major diversified miners it fell by 60%.

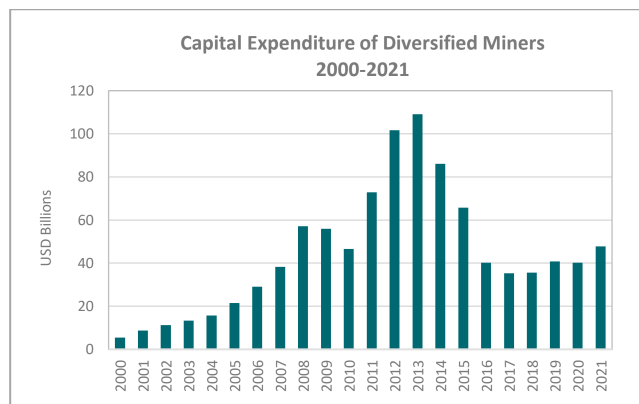
This consistent underinvestment in future commodity production would mean that the demand created by the global economic recovery cannot be immediately met with increased supplies in the short to medium term. Moreover, government attempts around the world to address climate change will restrict investment in fossil fuels even as supply constraints force prices higher, therefore paving the way for a further supply shock.

Supply chain disruptions have been exacerbated by the war in the Ukraine. Russia represents 11% of the global oil supply, but also Russia and Ukraine have a significant share in the export of sunflower seeds, pig iron, palladium, wheat, barley and natural gas.

The fast changing geopolitical environment and the end of the German Ostpolitik that started in 1969[2], makes the outlook for free trade in commodities bleaker than in the previous 40 years with strategic stockpiling in commodities further restricting supply.



Source: IEA, https://www.iea.org/data-and-statistics/charts



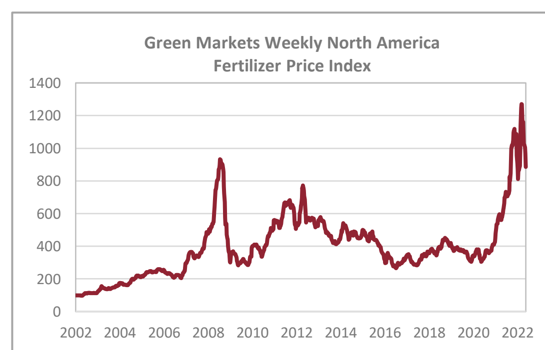
Source: Bloomberg, CAPEX Data for BHP LN, RIO LN, VALE3 BZ, GLEN LN, AAL LN, FCX US, FMG AU, TECK/B CN, FM CN

Perhaps more importantly for future agricultural production, the rise in energy costs, since natural gas is the main input for nitrogen fertilisers, and the war in Ukraine has led to a steep increase in fertilizer prices.

In 2020, Russia was the largest exporter of fertilisers in the world, with exports worth $7.6bn to countries like Brazil ($1.43B), Estonia ($555M), India ($540M), China ($531M), and the United States ($442M). Russia is a large exporter of low cost crop nutrients and countries like Brazil, that is a major exporter of soybeans, coffee and sugar, are heavily dependent on fertiliser imports.

Fertilizer prices may continue to increase, and this has left governments struggling to secure vital basic food imports and crop nutrients, therefore re-enforcing concerns that the record global food inflation will persist. Unlike Virgil's farmers in roman times, today farmers around the world are worried about war.

The supply outlook for commodities across sectors appears challenged, but historically, this has been a fertile environment for commodity investing strategies that can go long and short individual commodities.



Source: Bloomberg

[2] https://www.theguardian.com/world/2022/jun/02/germany-dependence-russian-energy-gas-oil-nord-stream

The Case for Commodities: Demand Size Expansion

Over the last 2 years commodity prices have seen upward pressures due to the temporary surge in demand caused by the co-ordinated global re-opening. However, there are longer term factors that will continue to put pressure on the demand for key commodities, long after the world re-normalises from the Covid pandemic.

In the 2000's China led the world in a surge of demand for key commodities as it rapidly industrialised and built the necessary, and sometimes unnecessary, infrastructure. Post 2020 the US, China, Europe and India are focusing on an infrastructure-driven recovery as a solution for economic stimulus and growth. In 2020, 2,551 projects were announced, representing a total value of $740bn. Estimates suggest that the world faces a $15 trillion infrastructure investment gap by 2040[3] and the vast majority of these will be focused on renewables and sustainable energy.

The trend towards Electrification and the Transition to a Low Carbon Economy will continue. According to the world bank, the transition to clean energy will be significantly more reliant on mineral based electricity generation than fossil fuel based.

As seen in the table below, industrial metals like copper, aluminium, nickel, zinc and lead as well precious metals like silver and platinum are required on top of chromium, manganese, and molybdenum for a wide range of low-carbon technologies.

Group	Power	Power	Power	Power	Power	Power	Power	Auto	Auto	Auto	Other	Other	Sum
Technology	**Wind**	**Solar**	**Hydro**	**Geo thermal**	**Nuclear**	**Gas**	**Coal**	**Energy Storage**	**Electric Vehicles**	**Electric Motors**	**Carbon Capture, Storage**	**Light Emitting Diodes**	
Copper	•	•	•	•	•	•	•	•	•	•	•	•	**12**
Aluminium	•	•			•	•	•	•	•	•	•	•	**10**
Nickel	•	•	•	•	•	•	•	•	•		•	•	**11**
Zinc	•	•	•		•			•				•	**6**
Lead	•	•	•		•			•				•	**6**
Tin		•											**1**
Silver	•	•			•				•			•	**5**
Platinum								•	•				**2**
Iron	•							•					**2**
Steel	•	•							•	•			**4**
Chromium	•		•	•	•	•	•	•	•	•	•	•	**11**
Cobalt	•						•	•	•		•		**5**
Molybdenum	•	•	•	•	•	•	•		•	•	•	•	**11**
Manganese	•		•	•		•	•	•	•		•		**8**
Neodymium & Rare Earth Elements	•								•	•			**3**
Titanium			•	•	•	•	•		•				**6**
Indium		•			•						•	•	**4**
Lithium	•							•	•				**3**
Vanadium						•	•	•					**3**
Graphite	•							•	•				**3**
Tellurium		•											**1**
Boron	•	•							•	•			**4**
Silicon	•	•							•	•			**4**
Iridium		•						•	•				**3**
Niobium	•								•				**2**
Cadmium		•											**1**
Gallium		•											**1**
Germanium		•											**1**
Selenium		•											**1**
Sum	**18**	**18**	**8**	**6**	**10**	**8**	**9**	**14**	**18**	**8**	**8**	**9**	

Table 3

Source World Bank, Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition, 2020, and Critical Raw Materials for Strategic Technologies and Sectors in the EU

[3] Global Infrastructure Hub, a G20 Initiative, https://www.gihub.org/

The demand for industrial metals will not only come from the necessity to decarbonise road transport and therefore to build the motors and chassis for 135 million electric vehicles that are expected to come online in the next 10 years.

Critically, the infrastructure required to support a transition to low-carbon and other clean energy, such as hydrogen-based vehicles, where platinum would play a key role, remains to be addressed. Moreover, the renewed defence spending and the decision by Germany to re-build an army, will only put more pressure on the demand for industrial metals. If we add to this the necessity to connect to the grid the more than 800 million people who do not have access to electricity today then clearly, the demand for metals will be sustained long after the re-opening trade.

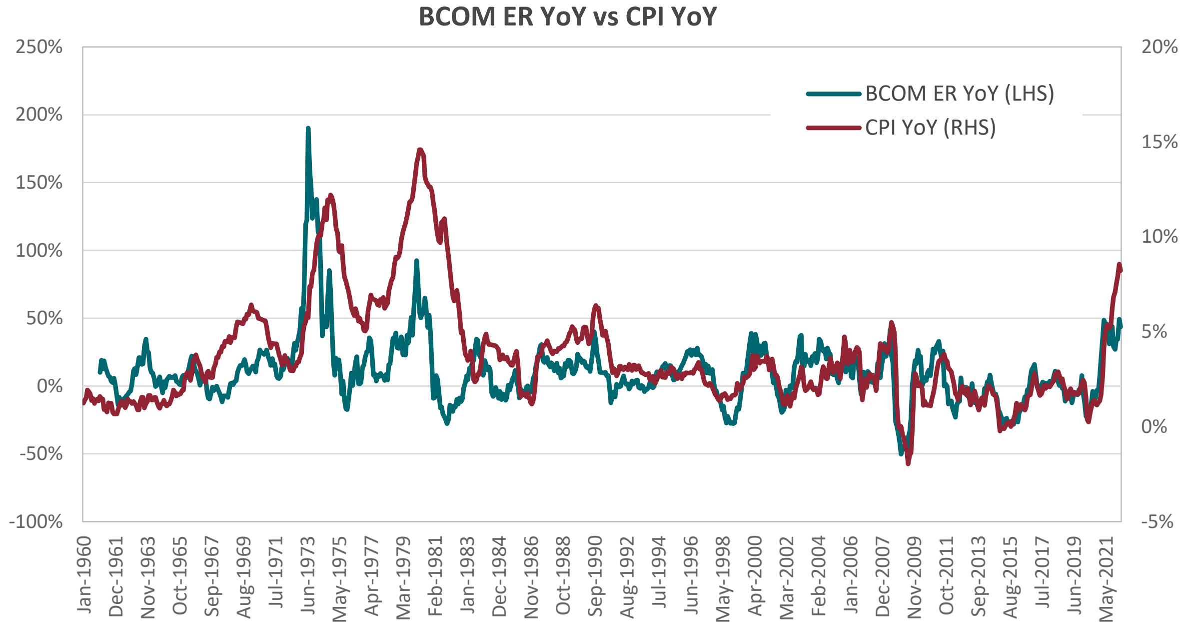
Moreover, the trends for urbanisation and population growth will put a further strain on the increasing demand for agricultural commodities. According to the UN, more than 800million people are undernourished and 1.3 billion people have nutrient deficiencies[4]. As global growth resumes and GDP per capita increases, so will the demand for foodstuff going forward.

The commodity demand story goes beyond traditional fossil fuels, and even though the demand for some commodities is heavily dependent on global economic growth, active commodity strategies that look beyond oil, copper and gold, can take advantage of the structural shifts in that will take place over the next 30 years.

[4] FAO, IFAD, UNICEF, WFP, and WHO. (2019). The State of Food Security and Nutrition in the World 2019. Safeguarding Against Economic Slowdowns and Downturns. Rome: FAO. Available online at: http://www.fao.org/3/ca5162en/ca5162en.pdf

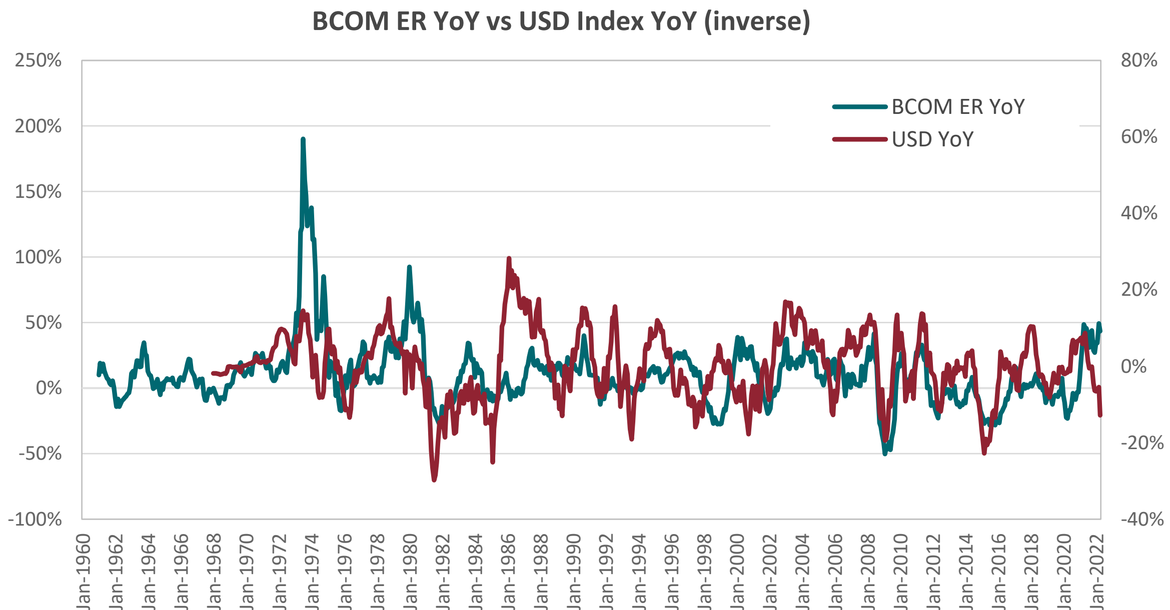
The Case for Commodities: Inflation

Commodities have historically provided inflation participation as can be seen in the figure below. Commodities are not an inflation hedge, as many market commentators freely say, but as real assets, their prices increase with the general price index, and sometimes, as they did in the 1970's they do themselves cause inflation.



Source: Bloomberg

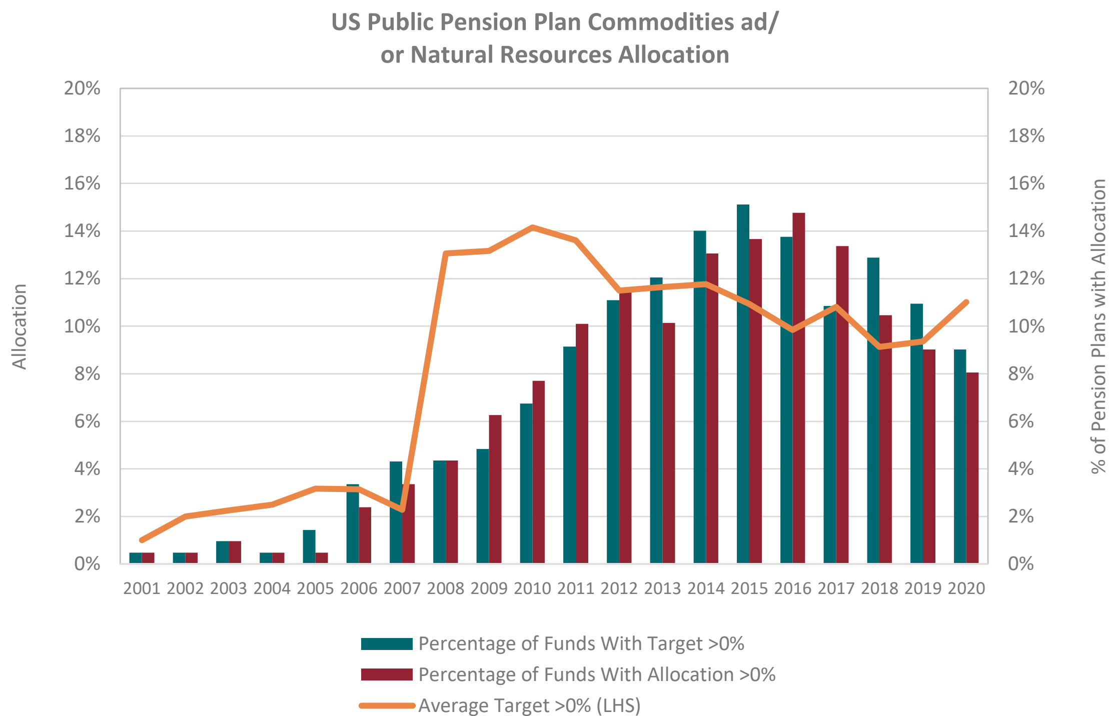
Moreover, commodities have been historically negatively related to the US dollar, even though commodities have continued to rally in 2022, despite the stronger US dollar, given the increased demand and supply disruption noted earlier. Over the long term, the US twin deficit should start to weigh on the reserve currency, and the weaponisation of the US dollar following the war in Ukraine will only accelerate the search for new reserve currencies around the world. Should crypto currencies re-emerge from their most recent drawdown, this will only put further pressure on the US dollar.



Source: Bloomberg

The Case for Commodities: Ownership

After the end of the previous commodity super-cycle, institutional investors significantly reduced their allocation to real assets like natural resources. In 2020, only 8% of public pensions plans in the US reported an actual allocation to commodities and natural resources, representing less than 0.7% of total assets ($25.6bn out of a total of $3.9tn). For those plans that had a targeted allocation to the sector, the average target weight was 4.9% in commodities and 6% in natural resources. However, according to Jeff Currie, Global Head of Commodities Research at Goldman Sachs, the high volatility of the asset class, ESG considerations and a history of poor returns suggest that investors are cautious in deploying capital to this asset class.

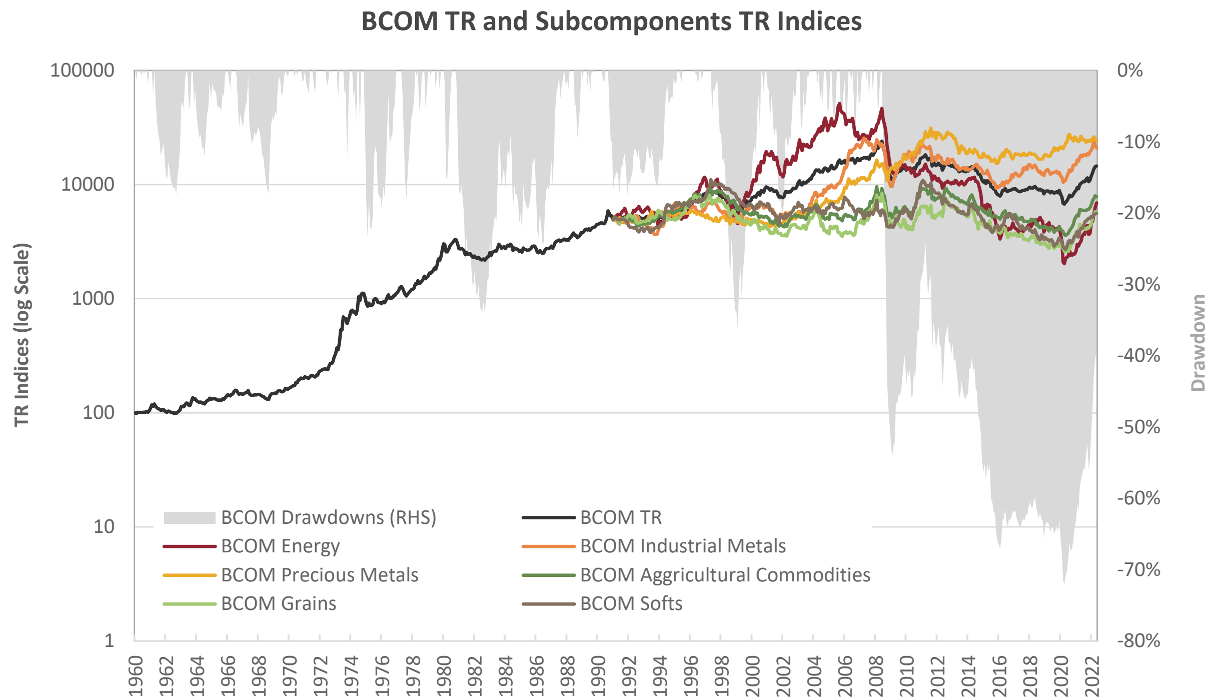


Source : https://publicplansdata.org/public-plans-database

As institutional investors increase their allocation to the asset class, given the diversification benefits and the inflation participation characteristics, it is expected that demand for investible commodities is only going to increase too. Given the nature of commodity markets, a dynamic, long-short allocation that can participate to the upside, but also benefit from protracted drawdowns, and deliver returns in sideways moving markets may be preferable. The increase in capital allocated to the space should also lead to increased dispersion, that should further increase the opportunity set for long short strategies.

The Case for Commodities: Active Commodity Investing

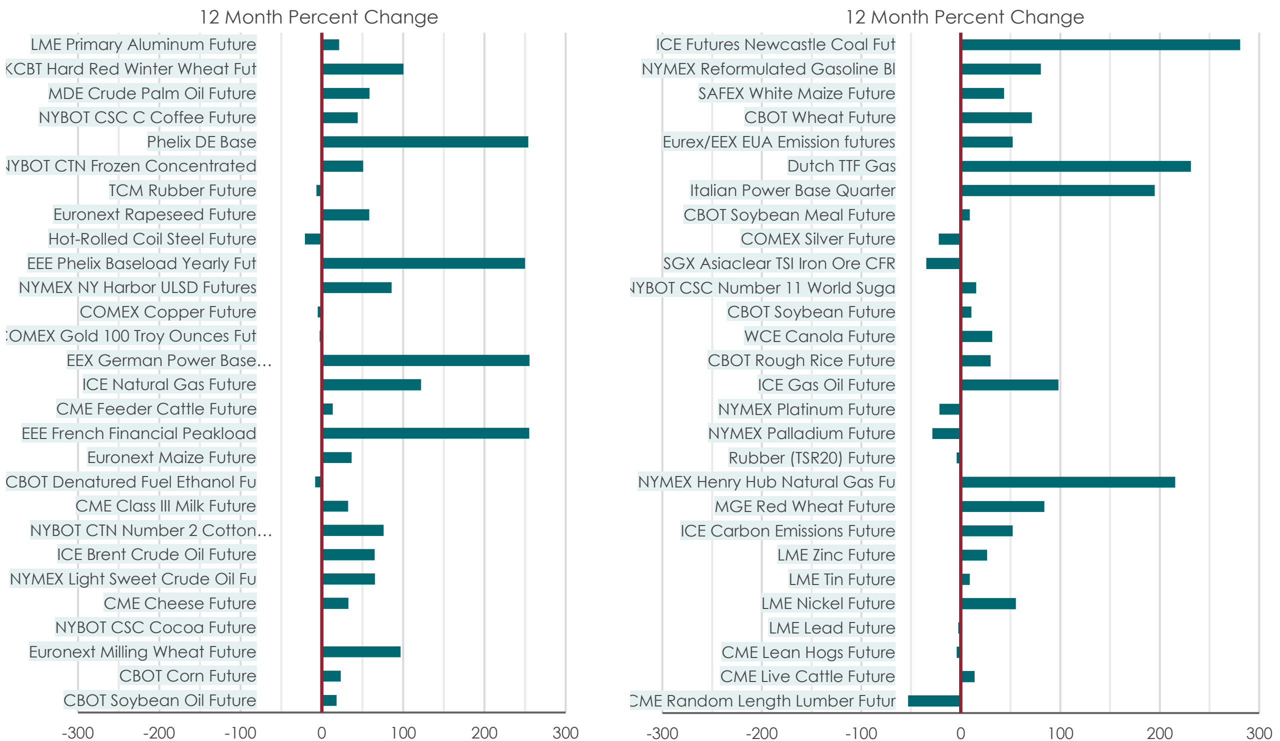
Most investors have ignored commodities over the last 10 years, while others think of commodities as a "fire and forget" long only allocation within their portfolio. However, given the significant drawdowns that can be observed in commodity benchmarks, and more importantly within sectors, and individual commodities, a more active approach, may be preferable.



Source: Bloomberg

Given the global nature of commodity markets, commodities offer significant opportunities to active investors that follow a systematic approach. The nature of market participants gives rise to behavioural, structural and risk sharing risk premia that can be exploited to generate alpha, vs a traditional buy and hold strategy. Strategies that "follow the trend", can add value, by participating in the upside during bull markets and going short in difficult times. Moreover, individual sector demand and supply dynamics, as well as idiosyncrasies within a commodity sector, lead to significant dispersion in commodity returns even during a commodity super cycle. Carry strategies, that benefit from the relative slope of a commodity futures curve, can extract returns by going long commodities with a high expected carry and short commodities with low expected carry. Finally, risk sharing behaviour by physical producers and users of a particular commodity, suggest that volatility carry strategies, appropriately constructed, can extract alpha by capitalising on the difference between implied and realised volatility.

As seen in the figure below, during the bull market of the last 12 months, some commodities have significantly outperformed, while others have lagged behind. This suggests that investors can potentially extract outsized returns in certain commodities particularly those that are not included in traditional benchmarks.



Over time, other commodities strategies, such as carry and volatility carry (volatility carry is a strategy that benefits from the difference between implied and realised volatility in each commodity market) can also add significant value particularly during sideways moving markets or periods of mean reversion.

Commodities: The Next Frontier

China, with a population of 1.4bn and the world's largest consumer of many commodities, offers access to some of the world's most liquid listed markets as it opens-up to international investors.

There are three main commodity exchanges in China: Shanghai (SHFE), Dalian (DCE) and Zhengzhou (ZCE). There's also an international Energy Exchange (INE), owned by the Shanghai exchange, and the Guangzhou Futures Exchange (GFE), launched one year ago, which focuses on; energy transition, innovative and globalised products (initially 16 commodities). Together they cover 70+ listed commodity futures and options contracts, across all major sectors, with trading volumes now far exceeding other international exchanges in this asset class (see below).

In November 2021the Qualified Foreign Institutional Investor (QFII) rules were changed providing a clear route for offshore asset managers to access these markets. Added to this, onshore exchanges have stepped-up their efforts to grow the universe of available international market commodities contracts (currently 7 listed commodities and 2 options). Both will be available for international investors with direct electronic market access.

Conclusion

After a forgotten decade, commodities are back in the forefront for clients that wish to diversify their traditional strategic asset allocation portfolios. As of June 2022, commodities have outperformed other asset classes and in the short term, demand as the world re-normalises post Covid, and restricted supply due to Covid restrictions and the ongoing conflict in the Ukraine, suggest that the rally may continue. But the demand and supply imbalances should continue in the medium to longer term, as the structural forces of historical underinvestment after the end to the previous super cycle, and demand growth due to green revolution. Investors should give the asset class serious consideration.

Commodities are a volatile asset class and have historically trapped investors in significant drawdowns. This may suggest why institutional investors have not yet significantly allocated to the space, particularly given the recent rally. Active and systematic commodity strategies can extract alpha from behavioural, structural and risk sharing risk premia that are present in this diverse asset class, and expanding investing into more than just macro-commodities like oil, gold and copper can offer idiosyncratic opportunities to generate returns on both the long and the short side. More-importantly systematic strategies can offer some protection during the significant drawdowns that characterise the space and generate returns from off the beaten track commodities such as carbon credits, orange juice and cooking oils which are not used by macro traders to express views.

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