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Commodities: Power for the future

March 2021

- Commodities are well-positioned to become a rewarding long-term investment; empirical evidence demonstrates their enduring inflation-hedging abilities for inflationary trends and spikes.
- Today's economic, social and political environment is conducive to a demand boom for commodities. Universal and sector-specific drivers are likely to lead to a new commodity supercycle.
- NN (L) Commodity Enhanced, a UCITS fund, is an efficient solution to profit from commodities' upward trend and to be diversified within commodities sectors to mitigate the downside risks.

Commodities returns have been lacklustre for a long time, and many investors have divested from the asset class. In this report, we put the spotlight on commodities, which are poised to become an invaluable component in the investor's portfolio. There are numerous reasons for commodities to be worthy of an allocation, especially now. We not only expect attractive returns for the foreseeable future but are also convinced that it is an efficient hedge against inflationary pressures.

We first focus on the efficacy of commodities for hedging inflation, and then outline the economic, social, political, and sector-specific reasons that make commodities an attractive asset class.

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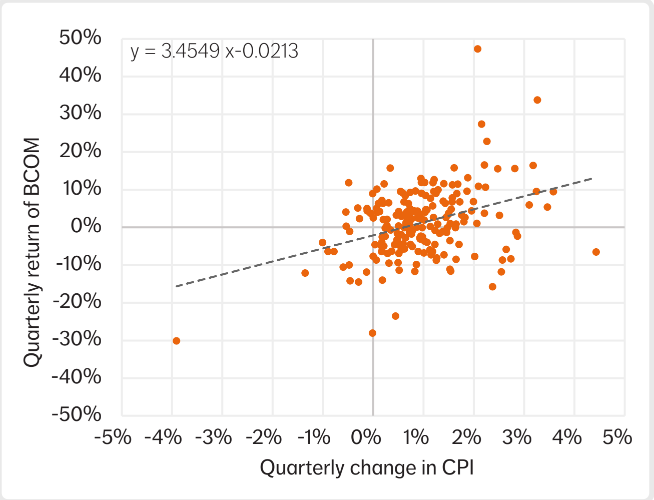
Behaviour of commodities when inflation rises

Inflation is a worry to most investors, especially those invested in fixed income. Inflation, which represents a decline in purchasing power, is often expressed as changes in the consumer price index (CPI). The CPI tracks the average price level of a basket of goods. The major groups represented in this index are housing, apparel, transportation, education & communication, recreation, medical care, food & beverages and other goods and services. Commodities are a direct input for most of these groups. For example, transportation is heavily dependent on oil prices, while food & beverages are dependent on the prices of agricultural commodities. Industrial metals, an input for numerous production processes, also influence inflation.

Commodities are not the only source of inflation, but they are an important driver of it. This relationship automatically makes commodities an effective hedge against inflation. Figure 1 shows the quarterly changes in the US CPI Urban Consumer Index versus the quarterly returns on the Bloomberg Commodity index (BCOM) between January 1970 and December 2020.

Figure 1: Scatter plot of the quarterly returns on the Bloomberg Commodity Index and changes in US CPI

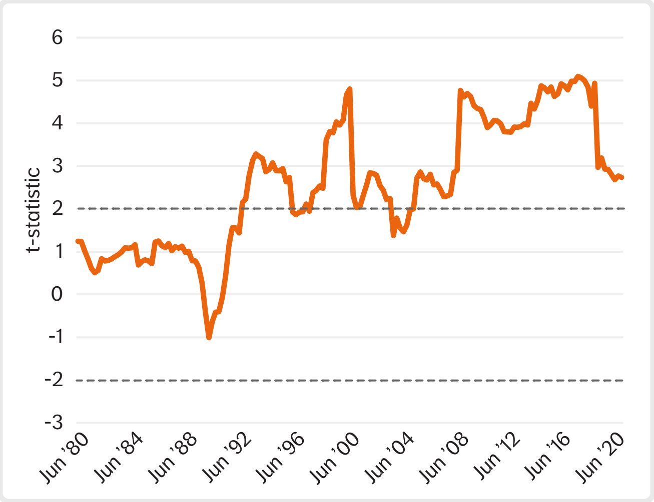


Source: BCOM Index, CPURNSA Index, Bloomberg, NN Investment Partners

Empirically, there is a positive relationship between commodity prices and inflation. The regression slope implies that when inflation rises by one percent, the BCOM can be expected to rise by 3.5%.

To assess whether the relationship holds during different economic cycles, we visualize the statistical significance of the relationship between inflation and commodities prices over a 10-year rolling window in Figure 2. A “t-statistic” above two is generally seen as being significant, that is, not explainable by chance. The relationship has been significant since 1988, which reinforces commodities’ effectiveness as a hedge against inflation.

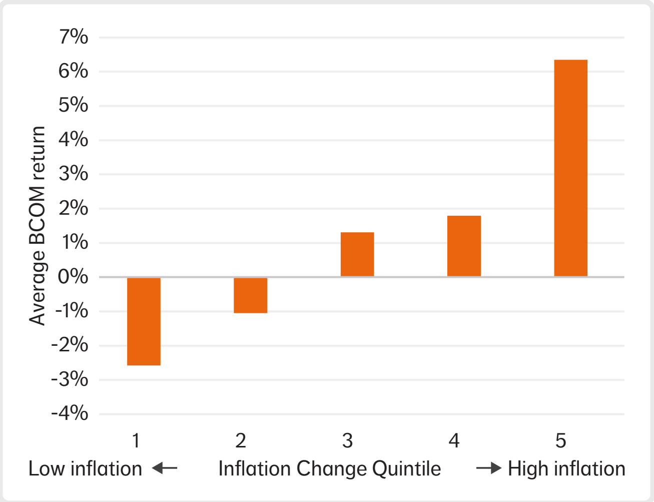
Figure 2: T-statistic of the slope coefficient t-statistic between the quarterly BCOM returns and change in inflation over a rolling 10-year window



Source: Bloomberg, NN Investment Partners

Figures 1 and 2 show that there is a link between commodities and inflation. Investors, however, are mostly worried about large unexpected increases in inflation, rather than small changes. We can analyse the extent to which commodities can hedge such unexpected shocks by ranking the inflation rate by quintile, and comparing each quintile with the average BCOM returns of the same time period. Figure 3 shows that when inflation is high, the return on commodities is also higher. Commodities are thus not just a hedge for general inflation. They also mitigate the risk that investors dread most: inflation spikes.

Figure 3: Average BCOM return per inflation quintile

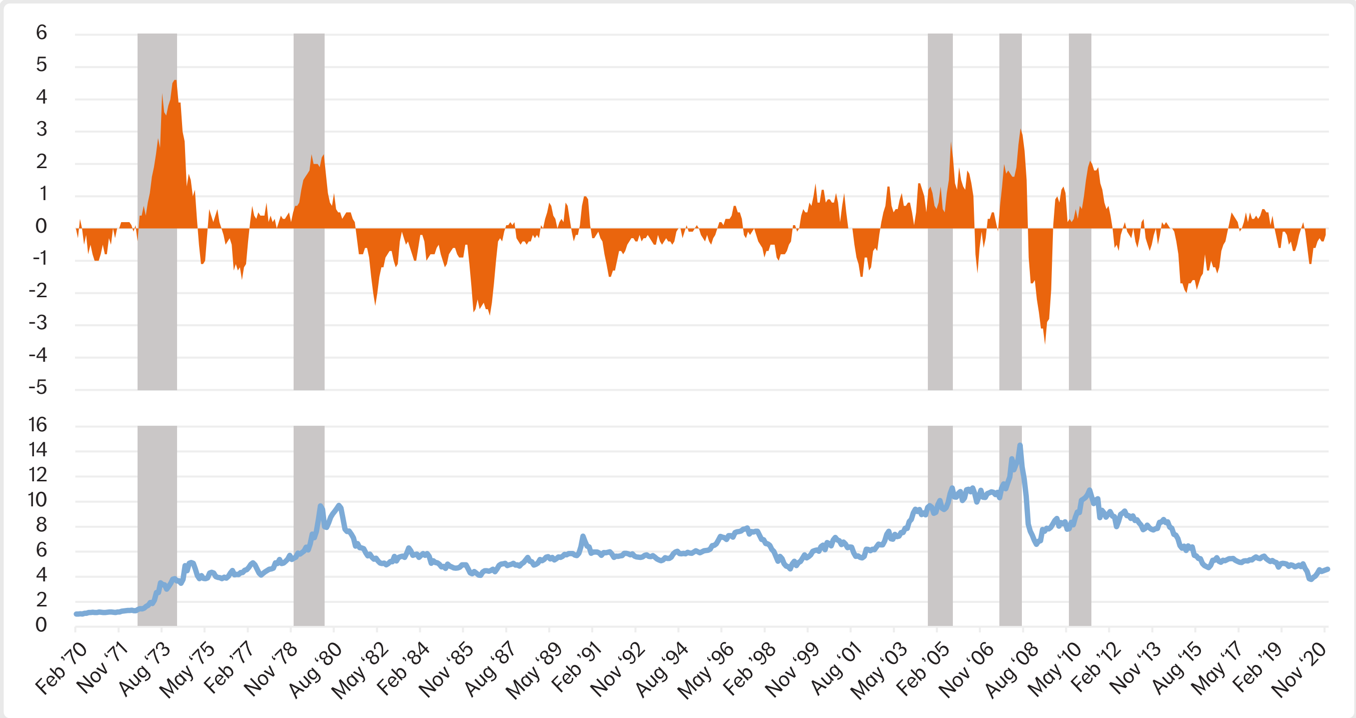


Source: Bloomberg, NN Investment Partners

Inflation spikes and commodities

Inflation spikes are often driven by price shocks in food or energy. These two sectors exhibit higher short-term price volatility. We gauge the inflation arising from these sources by looking at changes in “core” CPI, a basket that excludes those categories, and deducting that from the CPI on the full basket, or “headline” CPI. Let us call this the “food & energy” inflation, which is shown in Figure 4.

Figure 4: Changes in food & energy inflation (top, % points) and BCOM returns (bottom, %)



Upper panel: Headline Inflation: CPI YOY Index - Core Inflation: CPI XYOY Index. Lower panel: BCOM Index rebased to one.
Source: Bloomberg, NN Investment Partners

We show that commodities are a good hedge for these likely culprits for spikes in inflation. Therefore, commodities provide sound protection against inflation shocks. Figure 4 shows food & energy inflation since 1970.

The top panel displays distinct jumps in inflation arising from food and energy prices. To assess the effectiveness of commodities as a hedge against inflation spikes, we focus on the five periods when the change in food & energy inflation is greatest. These periods are marked in grey in Figure 4 and correspond to periods 1 to 5 from left to right in Table 1. We then compare the returns of commodities during those periods.

Table 1 attests to the efficiency of commodities in hedging the food & energy inflation, as the BCOM returns are correspondingly high when there is a spike in food & energy prices.

Thus, commodities hedge inflation well in general. The higher the level of inflation, the more effective it becomes. Furthermore, it hedges particularly well when inflation is driven by food and energy prices — a key force of inflationary shocks.

Commodities: The time is now

Having established a clear link between commodity prices and inflation, we now turn to the forces that will likely push inflation higher going forward. We will also discuss reasons other than inflation that make it interesting to invest in commodities now, because we believe a new commodity supercycle is around the corner. While the recovery from the Covid-19 pandemic and an expected weakening of the US dollar would serve as stimuli for overall commodity prices, the other drivers of commodity prices are often sector-specific. These drivers make the case for a diversified approach, rather than a sector-specific commodity investment that effectively puts all your eggs in one basket. We outline them below.

1) Inflation: A Looming Threat

The US Federal Reserve has changed its long-term inflation-targeting policy. The Fed used to target a 2% inflation, regardless of past realized inflation. Now, the target is an average of 2%, which thus includes the past. As inflation was below 2% recently, the revised policy implies that the Fed will allow inflation to rise above 2%. In addition, the Fed has said it will not raise short-term interest rates until employment is at the maxi-

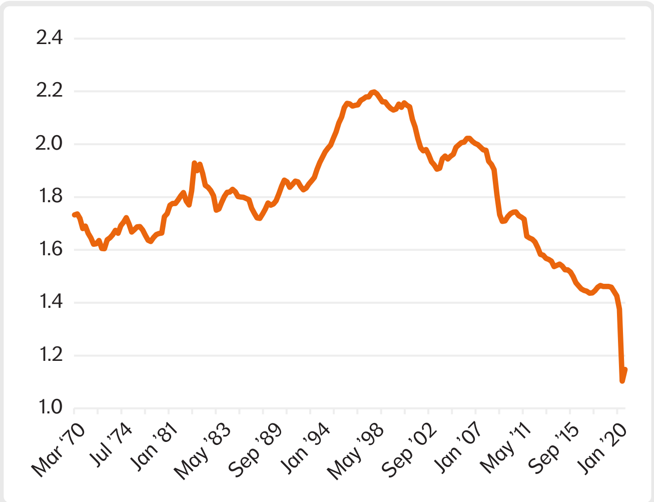
Table 1: Five periods of greatest increases in food & energy inflation

Period	1	2	3	4	5
Start	31 Aug 1972	31 Dec 1978	30 Sep 2004	31 Aug 2007	30 Jun 2010
End	31 Mar 1974	31 Mar 1980	30 Sep 2005	31 Jul 2008	31 May 2011
Rise in food & energy inflation (annual change, percentage points)	5.00	1.80	2.20	3.20	1.90
BCOM return	164.30%	45.05%	16.37%	23.88%	32.44%

Source: Bloomberg, NN Investment Partners mum sustainable level, and inflation is above 2% and expected to rise even further. Therefore, the consensus is that the Fed will not respond to every increase in inflation until it expects the rise to be persistent.

Globalization was a key force behind disinflation in the past decades. In the last few years, we saw this trend revert. Brexit and the Trump-era policies were catalysts of this phenomenon. The Covid-19 pandemic further accelerated deglobalization as companies transitioned from just-in-time management to just-in-case management. More local and less global production will put upward pressure on domestic wages, boosting inflation.

Figure 5: Velocity of money (M2) for the US



The VELOM2 Index measures the average number of times a unit of money turns over during a specified period. M2 reflects a set of liquid financial assets including coins, currencies and demand deposits, as well as savings, time deposits and money market funds.
Source: Bloomberg, NN Investment Partners

The Covid-19 pandemic has also led to a huge increase in the money supply as central banks sought to support the economy. In developed markets, central banks increased their balance sheets by an unprecedented 16% of GDP on average. Due to lockdowns, the velocity or circulation of money has severely dwindled, as is clearly visible in Figure 5.

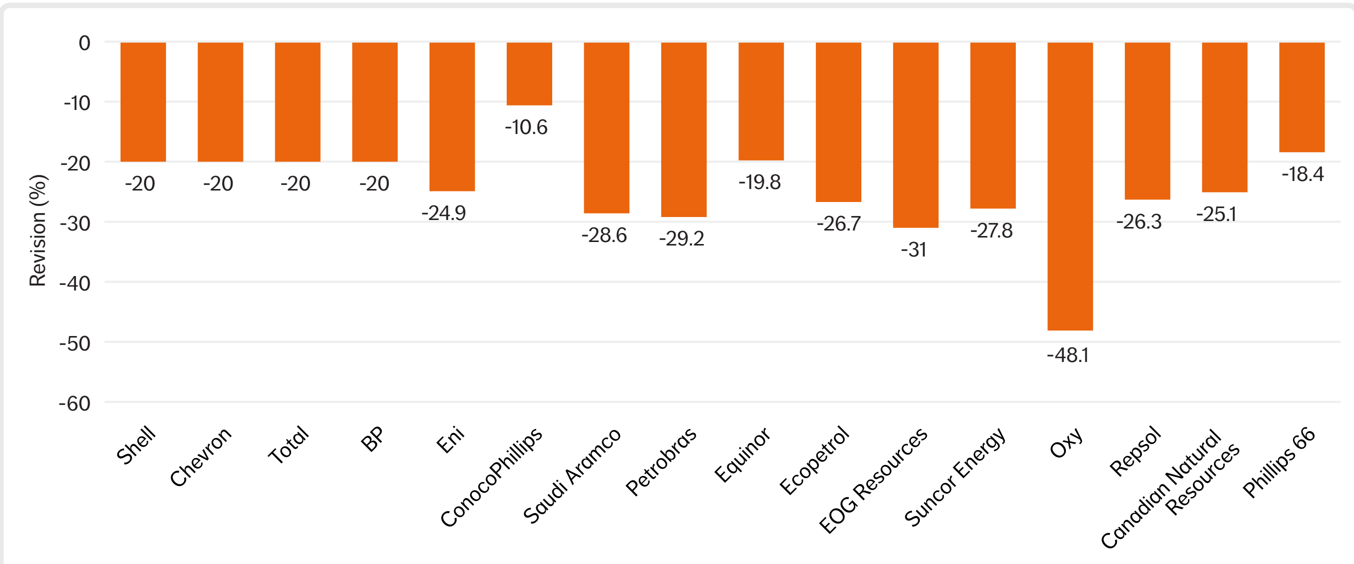
The figure also shows that the reduction of velocity has been a longer-term trend. Therefore, the impact of increased central bank balance sheets on inflation has been limited to asset inflation. With the rollout of vaccines that permit the re-opening of economies, the velocity of money is likely to increase. The pent-up consumer demand following more than a year of lockdown is conducive to more consumer spending, which would drive inflation higher.

2) Covid-19: a turning point for commodities

Commodity markets suffered as a result of the marked drop in demand during the pandemic. Returns were already uninspiring in the last decade; negative prices for oil futures won't be forgotten any time soon! Mass vaccinations would reopen economies and boost demand, which would help commodity returns in the short term. Production capacity is likely to be insufficient to meet post-recovery demand, given the prolonged low capital expenditures. For instance, global oil and gas companies announced an average reduction in capital expenditure of close to 25% in 2020 (see Figure 6).

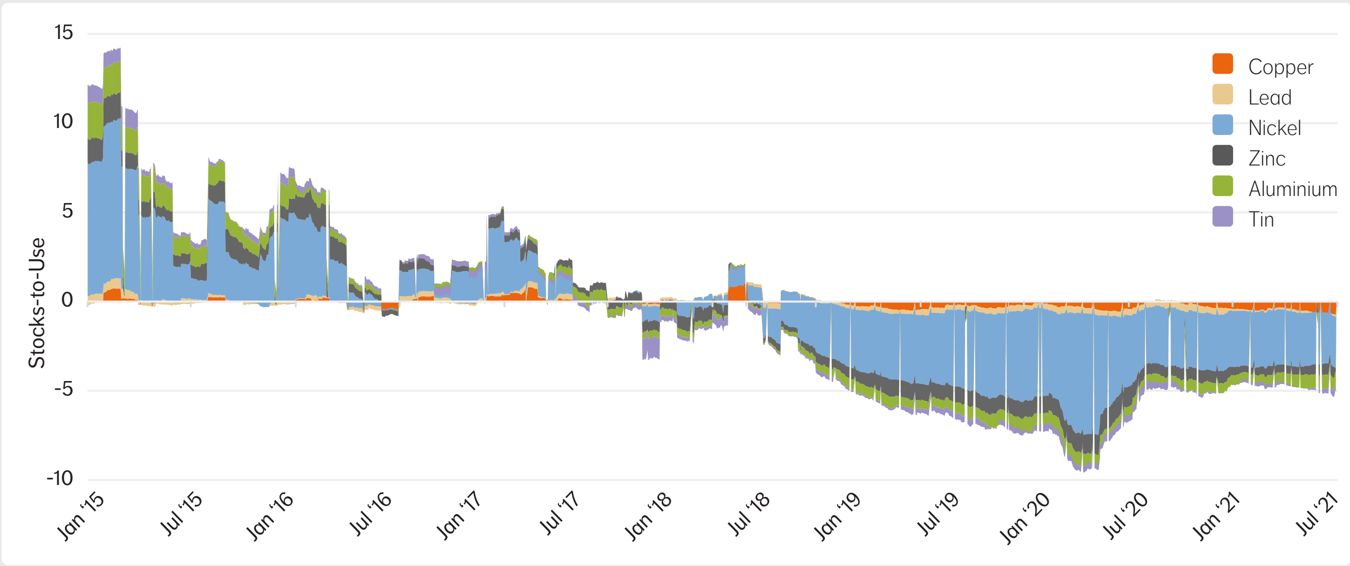
Deficits are present in many commodity markets. To measure the supply of commodities relative to demand, we present the stocks-to-use ratio. This is the sum of beginning inventory and total production, net of total demand, as a proportion of total demand. A high stock-to-use ratio suggests plentiful inventories. In 2020, the stocks-to-use ratio for metals, relative to its five-year average (2015-2019), was persistently negative (see Figure 7). The same ratio for corn, soybean and wheat exhibits more seasonality, but it too ended 2020 at a historic low (see Figure 8). This extended low supply relative to demand could be a boon to commodity prices.

Figure 6: Announced reductions in capital expenditure by oil and gas companies in 2020



Source: IEA, NN Investment Partners

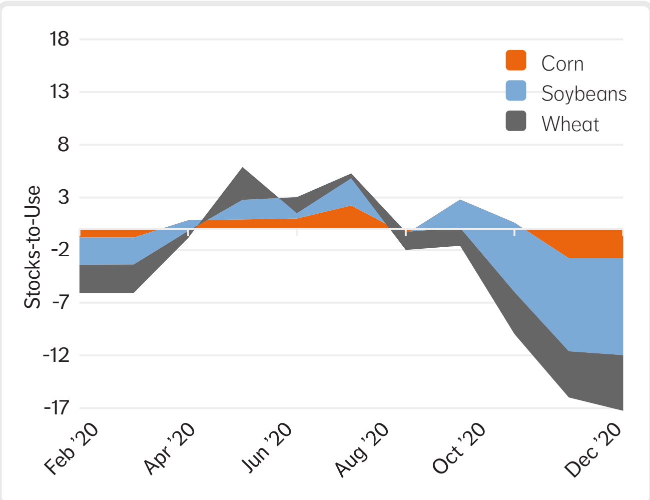
Figure 7: Stock-to-use ratio of metals from 2015 to 2021, relative to the 2015-2019 average



Source: Bloomberg, NN Investment Partners

In addition, commodities prices should get a boost from demand arising from large-scale government infrastructure programs that constitute part of the pandemic relief. Among these are the USD 10 billion for highway infrastructure programmes in the US, and the USD 26 billion Investing in Canada Infrastructure Program (ICIP). Therefore, commodities will be highly sought after in the global recovery.

Figure 8: Stock-to-use ratio of soft commodities in 2020, relative to the 2015-2019 average



Source: Bloomberg, NN Investment Partners

Covid-19 is an unforeseen event where commodities remain a reliable bet. In various other disruptive scenarios, commodities' hedging role in the portfolio extends beyond inflationary concerns. For example, weather-related risks cause agricultural commodities prices to increase. Wars often lead to higher oil prices and embargoes increase the prices of affected commodities, whether directly or indirectly. While commodities do not hedge all catastrophes or political impasses, they play a specific role in several such situations, which helps with diversification within the portfolio. Most traditional asset classes, in contrast, would suffer in the aforementioned scenarios.

3) Macro and political tailwinds

Much of the economic growth in the past decade was not evenly distributed. Most gains, mainly asset price inflation, went to high-income and asset-rich households, which are by far the minority of the global population and do not have a large impact on total consumption of commodity-reliant goods. Inequality has risen to the forefront of social and political discourse, so there may be more progress towards an equal society in the coming decade. If growth is more equally distributed, consumption will increase more broadly, and this will support commodities.

Higher commodity prices also reduce global inequality because they benefit commodity-exporting countries, many of which are emerging markets. Latin America, for instance, experienced a significant lift in its term of trade during the commodity boom in the first decade of the 21st century. Inequality reduced as a result of job creation that began in the commodity sector, and subsequently spilled over to the wider economy. The population's increased purchasing power fuelled demand for more commodities, thus prompting a positive feedback loop for commodities.

4) US dollar weakness

Most analysts expect the US dollar to weaken in the coming years. The main reasons are the global economic recovery and the combination of loose monetary policy and fiscal stimulus. President Joe Biden has initiated a substantial fiscal stimulus in response to the pandemic. Together with a monetary policy that remains extremely loose, and the large expected increases in debt to fund the pandemic relief bill, it puts downward pressure on the dollar.

Why does a weaker dollar matter for commodities? Normally, but not always, there is a negative relationship between the dollar and the price of commodities, simply due to commodities being denominated in dollars. Case in point: oil is consumed and produced all over the world, but quoted in dollars. A weaker dollar does not curb global demand, because demand is driven by economic growth, nor does it make the production of oil cheaper. As a result, the price of oil will stay roughly equal in value. Consequently, it would cost more dollars to buy the same amount of oil.

Euro-based commodities investors can benefit from the weakening dollar as long as they hedge their currency risk. Then when the dollar weakens, putting an upward effect on commodity prices, investors benefit not only from the higher commodity prices but are also compensated for the weakening of the dollar via the currency hedge.

5) Specific drivers for individual commodities and sectors
Commodities are a heterogenous asset class. The different sectors as well as individual commodities have different return drivers and risk. Within agriculture for instance, crops are planted in different seasons and at different locations around the world. Weather in a particular region might impact one commodity more than others. This shows that commodities as a group not only offer diversification to other asset classes, but also within the group. We will now discuss why we believe prices will rise in specific commodity sectors.

Industrial & precious metals
China's imports of base and bulk have surged due to strategic stockpiling, infrastructure and construction. These imports have outweighed the decrease in demand of the West. China has in essence destocked the West. The domestic Chinese market has shown no signs of slowing down, so demand should stay high. We anticipate higher demand for silver, partly due to the implementation of 5G technologies. These will give rise to new functionalities and use cases for semiconductors, automotive electronics, consumer electronics and LED. Moreover, on-going government programs to promote renewable energies also support demand for silver, which is used in solar panels.

Copper is another essential metal for green technologies used in windfarms and electric-vehicle charging stations. The continuation of Europe's green energy transition (EUR 225 billion dedicated to energy transition over next three years), in addition to more environment-friendly policies expected from President Biden (USD 2 trillion energy transition plan) and in China, where more details are expected in the 14th five-year plan, would all contribute to increased demand for metals.

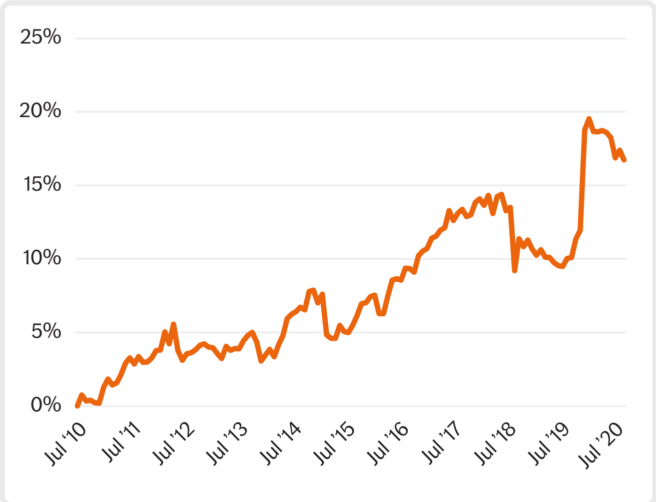
Agriculture & livestock
This sector is mostly driven by demand in China to combat rising domestic food prices and low inventories in 2020. China, which is restoring its hog herd after losing half of it to the African swine fever in 2018-2019, is making large purchases of corn and soybeans for livestock feed.

Agriculture is also very susceptible to weather. Supply risks are likely, due to shifting weather patterns such as La Niña, which bring heavier than usual rains to Asia, West Africa and Australasia while causing drought in the Americas. When agricultural yield prospects are uncertain, prices rise.

Energy
Shale oil production resulted in excess supply in energy for many years. Saudi Arabia has also tried to put shale oil drillers in other countries out of business by flooding the market with Saudi crude since early 2020. Covid-19 led to a huge decrease in demand, exacerbating the surplus. This simultaneous supply and demand shocks forced US shale oil drillers to reduce production to cut losses. Despite Saudi Arabia's announcement that it would decrease production by 1 million barrels per day through February and March 2021, shale oil rigs in the US are unlikely to resume production until oil prices have recovered sufficiently to ensure profit margins. Additionally, the cancellation of the Keystone XL pipeline, as well as a ban on Arctic drilling and new drilling on US federal land and waters will curtail higher production capacity in the longer term. The aforementioned reduction on capital expenditures, as illustrated in Figure 6, impacts supply on the longer-term, whereas harsher weather conditions due to La Niña can cause a spike in demand. All these reasons would support increasing energy prices.

What we offer
NN (L) Commodity Enhanced is our dedicated commodity UCITS fund that went live in 2010. Multiple hedged share classes are available. The fund invests in the same commodities as its benchmark Bloomberg Commodity (TR) index (BCOM) and thus has exposure to diversified sectors. This fund has a gross outperformance relative to the benchmark BCOM of 1.6% per annum up to the end of 2020 with a risk budget of 2%. The outperformance was achieved at a lower total risk than that of the benchmark. Since inception, our strategy has an annualized volatility of 12.9%, compared with 14.1% for the benchmark. Figure 9 shows the outperformance since inception and Table 2 presents the performance statistics.

Figure 9: Outperformance of NN (L) Commodity Enhanced compared to BCOM (since inception)



Source: NN Investment Partners

In the strategy we benefit from aspects unique to commodities. Agriculture has specific periods when crops are planted and harvested. In between is the growing season, when the crops are exposed to the weather. Farmers insure against weather risk by taking positions on the futures market. Our strategy profits by providing such insurance, i.e., purchasing futures. These risks are uncorrelated to traditional market risks, which further improves the diversification properties of commodities and are, above all, well-rewarded. Something similar is at play within the energy and metals markets, where producers as well as consumers hedge their risks, and this is reflected in the futures term structure. Based on the term structure, we take

Table 2: Performance of NN (L) Commodity Enhanced

Period	Strategy return	Benchmark return	Excess return	Information ratio	Tracking error	Portfolio risk	Benchmark risk
1 Year	3.78	-3.12	6.90	1.11	6.23	15.72	19.96
3 Years*	-1.04	-2.53	1.50	0.32	4.69	11.84	13.94
5 Years*	3.09	1.03	2.06	0.54	3.82	10.78	12.38
Since Inception*	-2.54	-4.19	1.65	0.53	3.11	12.87	14.11

* Annualized statistics
Source: NN IP Performance Measurement. Benchmark: Bloomberg Commodity (TR) index. Returns are presented after all transaction costs, but before Ongoing Charges (consisting of Management Fee + Fixed Service Fee + Tax d'abonnement). Returns include the reinvestment of income. Fund was launched in July 2010. Past performance is no guarantee of future results and the possibility of loss does exist. The Ongoing Charges vary per share class – please refer to the share classes' Key Investor Information Document.

positions in futures that we believe offer the highest compensation for risk. We also minimize the costs of rolling from one contract to another, and we do so in a smarter way than the benchmark.

Moreover, the financialization of commodity markets has fostered the creation of commodity-indexed products, many of which are held by passive investors. Commodity indices have a transparent schedule of the contracts held, called benchmark contracts, each month. As the currently held contracts are rolled into the next contract at a pre-determined date, there is predictable demand for the next benchmark contracts. Our strategy takes advantage of this rise in demand by holding the next benchmark contract. As a liquidity provider to the benchmark trackers, we profit from the price increase.

An efficient way to invest in commodities
In this article, we underscored the relationship between the Bloomberg Commodity Index and inflation. The NN Commodity Enhanced strategy is an efficient way to invest in commodities. It has inflation-hedging properties similar to the index and a better performance with lower realized volatility. Furthermore, we discussed several drivers that are likely to lead to higher commodities prices. Some of these drivers are sector-specific. Since not all of them will bear fruits, we believe that a diversified exposure to commodities, combined with advantageous positioning coming from our perceptive understanding of the commodities markets, will be rewarding in the upcoming years.

For a more detailed description of our strategy, please reach out to us.

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