Commodities: Bottoming-out process has begun

Commodity markets

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- Commodity prices stabilized into 2Q and have moved higher lately. But prices are likely to stay volatile as markets grapple with weak economic activity and excess supply in the short run.
- Flattening futures curves in energy are a good sign, but with roll costs still elevated, investors should wait before positioning for a broad uptrend in 2H.
- We like to be long gold and livestock. Precious metals and select base metals can be used for volatility-selling strategies.

Source: Gettyimages

Our view

Commodity performance in 2Q suggests that prices have stabilized. On a spot basis, broad BCOM and CMCI indexes are up 7.3% and 6.0%, respectively, this quarter. But the aggregated performance number masks larger performance dispersion among commodities. Heating oil, lead, palladium, corn, wheat and live cattle are down in 2Q, while crude oil, copper, gold, silver, cotton and lean hogs are up by high-single to double-digit percentages. Such dispersion reflects an approaching inflection point for prices, in our view.

While volatility for global equities soared above 50% during the last three months, the generally diverse nature of commodities, where each sector is influenced by unique supply and demand factors, has limited the overall volatility increase of diversified commodity indices at around 30%. But it hasn't prevented them from sliding 21% this year.

Performance of commodity markets

Values standardized to 100

Source: Bloomberg, UBS, as of May 2020

Gold's almost 15% price increase this year is a reminder of the metal's unique performance characteristics in challenging times.

Looking into 2H, natural resource demand should recover as lockdown measures are eased. Energy and industrial metal inventories should top out and stabilize in 3Q, followed by a contraction toward the end of the year. As for livestock, prices should rise quickly once meat processors reopen. This is not expected for agricultural commodities where we see abundant supply. Overall, we target a 10%–15% price increase for both the BCOM and CMCI in 2H. This coming rally is likely to have some false starts, however, as economic data is likely send mixed signals in the short run.

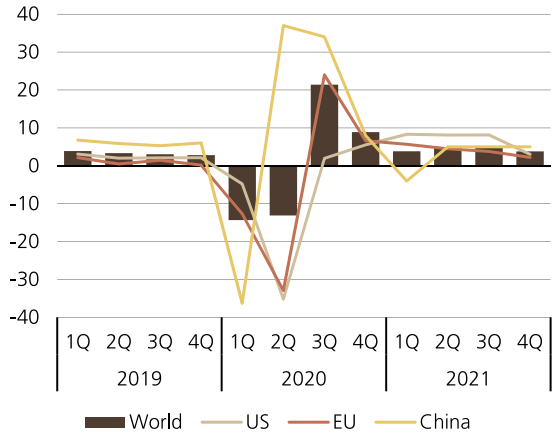
Roll costs for broad indices could weigh on total returns, potentially in the mid- to high single digits, until the end of the year, particularly in energy (although oil's futures curves have flattened quickly). We therefore advise only going long the broad indices after pullbacks. On a sector and individual commodity level, we like to be long gold and livestock. Selling volatility is advised in gold, silver, platinum and nickel.

Bottoming-out process has begun

In our last commodity markets report "Supply discipline needed," we highlighted the difficulties for commodity prices, ex-precious metals, to look through the activity slump in 1H. Unlike equities, which are strongly driven by expectations, commodity prices are influenced by actual supply and demand dynamics. On this assessment, nothing has fundamentally changed.

Economic activity is set to bounce in 2H

Values in % q/q, saar



Source: UBS, as of May 2020

What has changed is we now forecast global GDP to contract even more, by 7.1% y/y in 2Q, 3.4% y/y in 3Q and 2% y/y in 4Q.

In contrast, our March estimates were for GDP to contract by around 3% y/y in 2Q and to grow by year-end. But, sequentially, we still target a growth recovery in the second half. Global GDP growth, in our view, should expand 21% q/q in 3Q and 9% q/q in 4Q on a seasonally adjusted annual rate basis.

Critical for cyclically linked commodities is the economic recovery in China from 2Q onwards, when growth outside China is likely still sinking. The focus here falls on the country's infrastructure uptick, which has triggered firm import demand for natural resources and led industrial production to grow again. On the other hand, the latest PMI readings for China give a rather mixed forward-looking picture on the consumer. High-frequency economic data in general will be scattered in the short run, in our view, in line with a global economy that reaches an inflection point by the end of 2Q.

Negative economic surprises should reverse in the coming months

Daily data, economic surprises versus market exceptions

Source: Bloomberg, UBS, as of May 2020

The two big questions now center on the path of the economic recovery and how strongly commodity prices can follow suite.

Underlying assumptions behind our growth view

Our outlined growth path for 2H is based on three key assumptions: mobility restrictions are lifted from May onwards, the potential second wave of infections is minor and doesn't trigger renewed lockdowns, and US-China

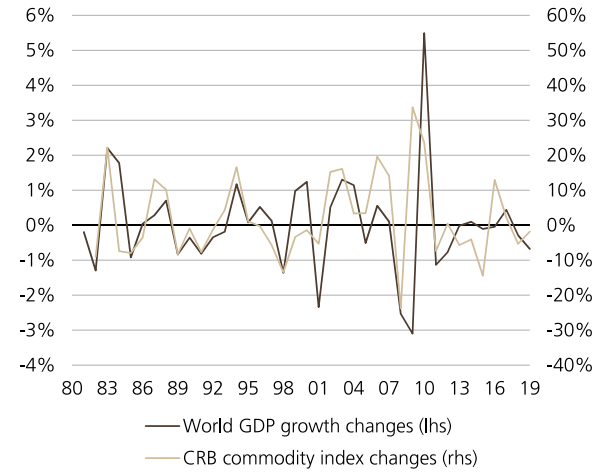
tensions stay relatively contained into the US presidential elections. Our view on the latter is based on the risk to the US economy's recovery should tensions escalate dramatically. This should temper the US administration's actions and keep the Phase 1 deal intact, along with its ramifications for commodity offtake by China from the US.

Still, the anticipated recovery of activity in 2H will come with a high degree of uncertainty. After lifting COVID-19 restrictions, it will likely take some time for consumer spending to recover given weaker household balance sheets, bankruptcies and financial worries. In a similar vein, restoring corporate balance sheets amid lower or negative earnings growth could limit the capex uplift and thus commodity demand over the coming quarters. This suggests that more monetary and fiscal policy should not be ruled out, as recently highlight by the Federal Reserve chair.

In that context, we are closely watching the upcoming National People's Congress in China (plenary sessions of the National People's Congress, the country's top legislature, and the Chinese People's Political Consultative Conference, the country's top political advisory body) to see if Beijing's policymakers will implement more policy support to lift economic growth, particularly for the commodity-intensive infrastructure side.

Change in economic growth and commodity returns tend to go hand-in-hand

Year-on-year changes



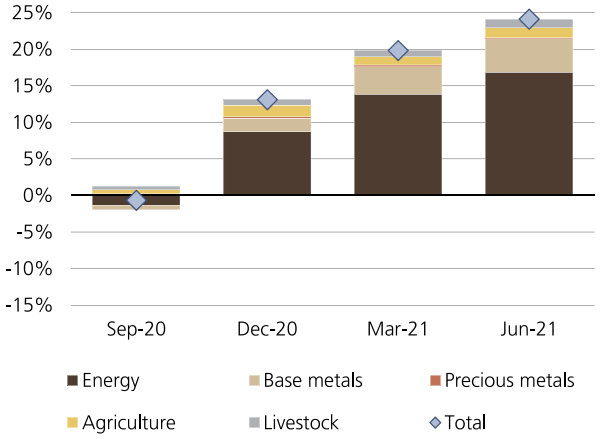
Source: Bloomberg, IMF, UBS, as of May 2020

Commodities to follow the inflection point in growth

Historically, changes in GDP growth have a meaningful impact on commodity returns on a broad index level. Hence, we expect higher commodity prices in 2H as economic growth accelerates. The return of energy and base metal demand should allow market surpluses to shrink rapidly. Inventories are set to peak in 3Q and to decline thereafter, especially crude oil. Once meat processors reopen, livestock prices are expected to move higher as well. Commodity producers regaining some pricing power and a broadly weak USD should lift commodity prices across the asset class. For broadly diversified commodity indices, like the BCOM and the CMCI, we foresee price advances of around 10%–15% by the end of the year, with additional gains in 2021. Such an increase, which would likely not come in a straight line, has occurred before: prices rallied more than 50% and 30% in the 12 months after the troughs in 4Q18 and in 1Q16, respectively.

We expect a firm increase in commodity prices over the coming quarters

CMCI indices, expected spot moves



Source: Bloomberg, UBS, as of May 2020

Which sector will bounce the most?

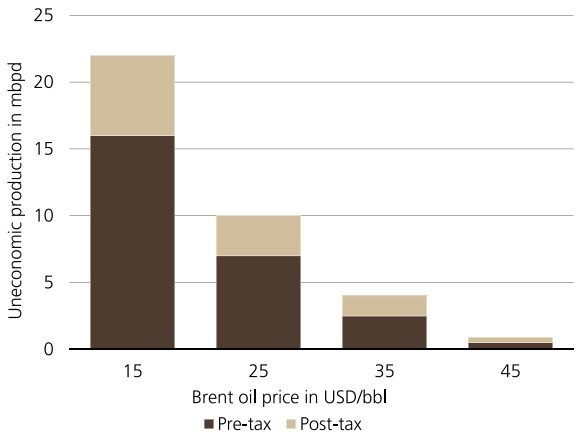
We expect the **energy** sector to lead the recovery with a spot price increase of 40% by the end of the year. The run up in energy prices, mainly crude oil, follows the record decline in prices and reflects our view that the oil market will be balanced in 3Q and in deficit of nearly 4mbpd in 4Q. The prospects of greater-than-expected oil supply adjustments by voluntary production cuts by OPEC and its allies (OPEC+) and large involuntary production and capex cuts due to low prices in North America may come as demand improvements become more visible in 2H. This clearly hinges on lockdown measures being eased quickly and oil producers (i.e., OPEC+) staying disciplined until oil demand is largely restored.

On the latter, a too-sharp price rally in the short run would be counterproductive because it may cause shut-

in production to return to the market too early. Although that makes to oil market vulnerable to setbacks in the short run, we reiterate our Brent price forecast of USD 43/bbl at end-December. Oil production shut-ins in the lower-48 US states, which stand at 1.3mbpd according to Wood Mackenzie, should have a negative knock-on effect on US natural gas production, via lower associated gas production from oil fields. Alongside firmer winter demand, we expect US natural gas prices to reach USD 3.2/mmt by the year-end.

Higher crude prices are likely to bring back some of the shut-in production

Production that does not cover operating costs at different price levels



Source: Wood Mackenzie, UBS, as of May 2020

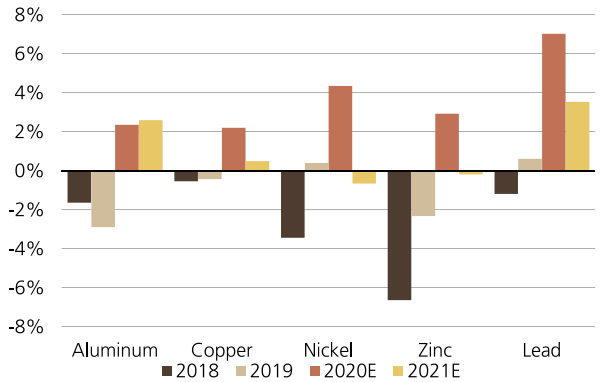
The **base metal** sector is in the process of bottoming out as well, and we forecast high-single-digit returns in 2H. Our expectation for a synchronized pick-up in economic activity toward the year-end favors stronger base metal demand, particularly for infrastructure- and housing-linked metals. We forecast the copper price at USD 5,700/mt by end-December. That said, we also recognize that final demand will reach 2019 levels only in 2021. This limits the metal's recovery potential, in our view, and makes its risk-reward symmetrical in the very short run.

Unexpected weakness in Chinese metal demand, caused by destocking activity of final and intermediary goods while demand outside China remains weak is a possible scenario. Moreover, mine production disruptions will end at some point. Supply disruption estimates as a percentage of annual output range from 15%–20% for copper, 20%–25% for zinc and 5%–10% for nickel. The disruptions to aluminum (1%–2%) and lead (around 5%) production are relatively minor.

Production disruptions have kept inventory increases at bay and have even allowed them to reverse lately. But with lockdowns being lifted around the world, supply reactivation should progress quickly. The result could be a halving of these disruption numbers, if not more. To prevent near-term inventory uplifts, metal demand outside of China needs to strengthen firmly.

Market surpluses in base metals for this year are expected to shrink or flip into deficits next year

Values in % of global demand



Source: WookMackenzie, UBS, as of May 2020

Precious metal prices, which have gained further ground in 2Q, could take another step higher over the coming months, with gains in the mid-single digits. The underlying drivers remain real interest rate expectations shifting more negative, with the USD giving up its gains and weakening broadly toward the year-end. The Fed's signal that more stimulus might be needed to lift economic activity to bring the US unemployment rate down quickly adds to a supportive price backdrop for the sector.

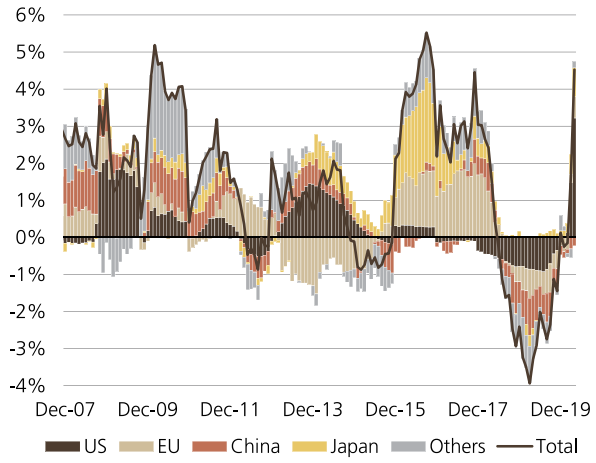
Financial repression is generally a big topic for investors around the world, particularly in developed economies. Ballooning government debt and central banks coming to the rescue to keep borrowing costs at historical lows give investors no choice but to take on more portfolio risks. This has kept investors' interest in real assets, like gold and silver, high. ETF demand for gold and silver should therefore stay strong throughout the year, with net non-commercial account positions in the futures market also showing more supportive dynamics toward the sector.

We expect gold to trade up to USD 1,800/oz this year, with upside risk to USD 1,900–2,000/oz. But investors' focus should not be on gold alone. As economic activity returns in 2H, improving industrial application demand for precious metals should increase investment demand

for silver, platinum and palladium. Those three metals could therefore outperform gold, especially palladium as recovering vehicle sales should bring the market's structural deficit to the fore. Silver prices are expected to reach USD 19/oz.

Central banks' balance sheets are growing rapidly again

Year-on-year changes in % of global GDP



Source: Bloomberg, UBS, as of May 2020

The COVID-19 pandemic has upended food and **agricultural** supply chains. Panic buying temporarily lifted some commodities (wheat and rice), while the crude oil price drop and supply chain disruptions dragged others (corn, sugar, cotton and livestock) to multi-year lows. The USDA released its much-awaited initial forecasts for grains, oilseeds and cotton for the 2020-21 planting year, where abundant supplies across all commodities was the key message.

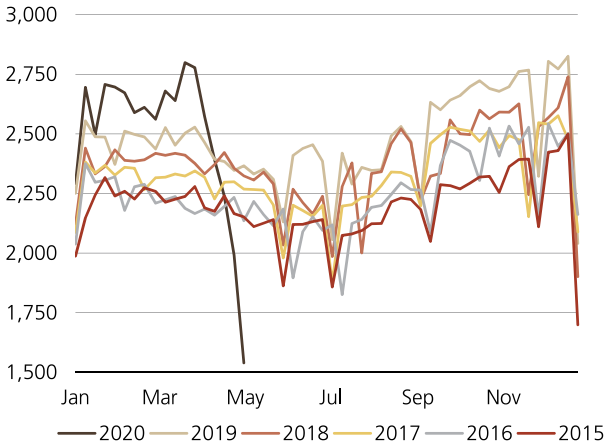
Global weather patterns remain benign with the typical regional variations. So demand is the focal point of any recovery—specifically, the recovery of meat processing, a rebound in energy demand and amicable relations between the US and China. Combining these, sugar, soybeans and coffee hold the best prospects.

North American meat processors have been ravaged by the pandemic. **Livestock** producers have borne the brunt of slaughterhouses being shuttered as workers fell sick and borders were closed. Tyson Foods, the US's largest meat processor, said during an investor briefing (5 May) that hog processing capacity had dropped significantly and beef supply was badly impacted. But we think prices can rise quickly once processors reopen for a few reasons.

First, many farmers, faced with few options, had to cull animals, thus reducing the immediate supply overhang. Second, weak producer margins and uncertainty are likely to negatively impact US herd expansion over the next 6–18 months. Third, the pandemic has also slowed the recovery of the pork industry in China from African swine fever, leading to increased reliance on meat imports. And we anticipate strong domestic restocking as food services slowly start back up. We forecast returns in the mid-to-high teens by the year-end.

Shutdowns caused the number of hogs slaughtered in the US to plummet

In thousand heads



Source: USDA, UBS as of May 2020

Mind the futures curve

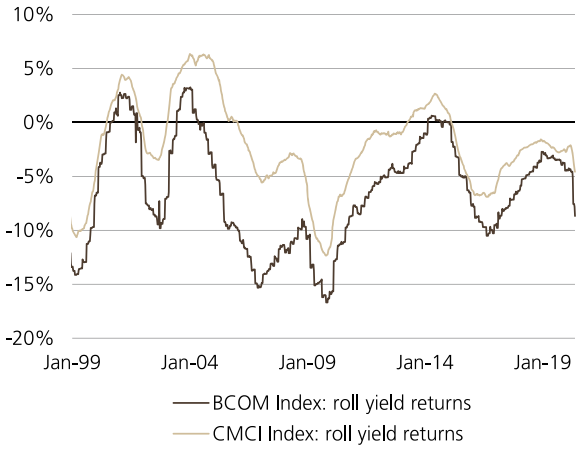
When futures curves are firmly upward sloped, like they are today in energy, roll yields need to be considered before taking direct exposure to commodity markets. The premiums investors have paid to take exposure to commodity futures have cost them 6.3% in performance year-to-date for the broad BCOM index and almost 3.1% for the broad CMCI index. Moreover, the futures curves is pricing a mid-single-digit appreciation for the asset class by the end of the year.

The expected appreciation for the energy sector by the futures market stands out and should be the focal point for investors. Here, the futures curves imply a 12% to almost 18% appreciation by the end of the year, depending on the commodity weights. Crude oil, heating oil and US natural gas have the steepest upward-sloped futures curves. The market has more modest price expectations for the other sectors, ranging from –3% to +1%.

Considering that the energy sector accounts for roughly 30% of the broad BCOM index and 35% for the CMCI index, a solid spot appreciation is required to deliver meaningful positive returns. This is especially true for investors who seek solid risk-adjusted performance. On an ex-ante basis, we expect the volatility of broadly diversified commodity indices to be around 15%–20%.

Roll yields in comparison

Year-on-year changes



Source: Bloomberg, UBS, as of May 2020

Another factor to consider is that roll yields (costs) are path dependent. So it matters how prices reach a certain end point, like December 2020. For example, should energy prices rally sharply and reach our end-December forecasts in 1–2 months, roll costs are likely to be considerably smaller than implied by the current futures curves. This would be due to a flatting of the futures curve or even a flip into backwardation (futures curve being downward sloped), which is not expected.

On the other hand, if we are wrong about the growth recovery into 3Q and renewed lockdowns—for example, due to a large second wave of infections that grip oil demand—the futures curve would likely move back into "super" contango (strongly upward sloped). As a result, roll costs would soar sharply beyond what is currently implied by the futures curve. Even if energy prices recover by the year-end and reach our current forecasts, in the latter scenario, investors would be left with very little returns because roll costs would erode the capital base before the price rally kicks in.

Compared to equities, this makes timing a more important factor when taking on broad commodity exposure. With this in mind, acknowledging the bottoming-out process of commodities will be bumpy, we do believe investors should wait a bit longer before chasing broad commodity exposure. Greater clarity on supply trends in crude oil (like the upcoming OPEC+ meeting on 10 June), more confirmation of demand recovery in June post-lockdown (in oil and industrial metals), stimulus intentions by China (Two Sessions on 22 May) and numbers of new COVID-19 at the end of May (about two weeks after the lockdown measures have been eased) are key factors to watch.

Investment recommendations

Although we don't hold an open recommendation to engage in broadly diversified commodity indices, the asset class continues to offer some attractive opportunities on a sector and individual commodity level. We like to be long gold and livestock. On the volatility side, we like to pick up yield by selling the downside price risks in gold, silver, platinum and nickel.

New positions

Long livestock (15% targeted return, stop loss at –7%, six months)

Lean hogs (and live cattle) have borne the brunt of pandemic-related shutdowns but now look oversold. US slaughterhouses will reopen over the next few months and export demand for meat should remain strong. The recovery in food services should be another tailwind for the sector.

We expect livestock prices to stage a modest recovery after the steep decline this year

CMCI total return index

Source: Bloomberg, UBS, as of May 2020

Speculators' net positioning remains low, frozen meat inventories are being drawn down and herd culling is removing the supply overhang.

We forecast a 15% return over the next six months. Key risks include a breakdown of the Phase 1 US-China trade agreement and new waves of the virus, which could disrupt the supply chain further. Exposure to livestock should be taken via second generation commodity indices, with exposure across the futures curve.

Open positions

Long gold – investment theme (target USD 1,800/oz)
Real assets like gold should continue to benefit from the aggressive monetary stimulus of key central banks across the globe. We continue to see gold as a valuable insurance asset in a portfolio context and expect the price of the yellow metal to rise to USD 1,800/oz over the coming months.

Yield pick-up strategy in nickel (10% p.a. targeted return, six months)
Although the nickel market moved into surplus this year due to COVID-19, recovering demand and the suspension of nickel ore exports from Indonesia should help rebalance the market toward the year-end. In our view, this limits further price setbacks.

We believe nickel prices have bottomed out
Daily data, USD/MT

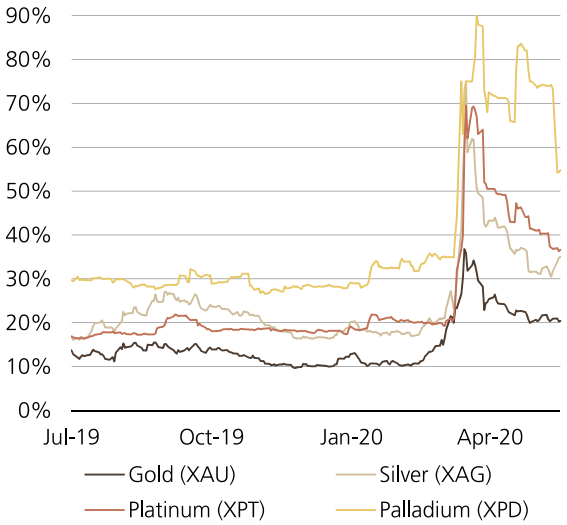
Source: Bloomberg, UBS, as of May 2020

Thus, we recommend selling the downside risks in nickel from a level of USD 11,500/mt. If prices drop below this level, we recommend being outright long nickel and target a move back to USD 11,500/mt. Investors that sold volatility with strikes from USD 10,300/mt to USD 13,100/mt previously should stick to their positions until maturity, and should target a potential reversal if the nickel price trades below their respective strike levels

Yield pick-up strategy in precious metals (5%–8% p.a. targeted return, three to six months)
Our positive view on precious metal prices over the next four quarters and option volatility across the precious metal sector still being elevated speak in favor of selling the downside price risks in gold, silver and platinum for a fixed yield. Silver and platinum are particularly attractive, considering their underperformance versus gold this year and their elevated option volatility profile versus the yellow metal. Moreover, improving economic activity in 2H could entice more investment demand, giving both metals more upside versus gold as well.

For gold, we like strike levels at USD 1,650/oz and favor tenors of three months. This gives investors a yield of around 5% p.a. For silver, we target a yield of 7% p.a., strike levels at USD 14.9/oz and tenors of six months. For platinum, we believe yields of 8% p.a., with a strike level at USD 725/oz and a tenor of six months, is an attractive value proposition.

There is still value left in option volatility across the sector
3-month ATM option volatility



Source: Bloomberg, UBS, as of May 2020

Closed recommendations

Extract value from the forward curves in the energy sector – opened on 9 April 2020, closed on 18 May 2020
Energy markets remain oversupplied in 2Q, but with demand improving due to easing travel restrictions and

supply falling fast, inventories will likely rise only moderately over the coming weeks. While the futures curves in energy markets are still upward sloped (contango), they are not as steep (super-contango) as they were in early April. Our recommendation to be long second-generation indexes and short first-generation ones will likely still generate some returns from here, but they will be too small to compensate for the underlying volatility. Hence, we close our theme.

Closed recommendations – follow-up guidance

Brent crude oil: We reiterate our guidance for investors that followed our recommendation and sold the downside risks in Brent crude oil for a yield pick-up at USD 50/bbl. We advise investors to hold on to their positions until expiry and target an oil price to above USD 50/bbl over the next 12 months.
Lead: Investors who sold the downside price risks in lead from USD 1,795/mt to USD 1,885/mt, should hold their positions until maturity and target a price reversal toward their initial strike levels, in case lead prices trade below their respective strike level.
Copper: Investors who sold the downside price risks in copper from USD 5,650/mt to USD 6,300/mt should keep their existing positions until maturity. Investors who added exposure at higher prices (USD 6,850/mt) should seek long copper exposure by targeting our June 2021 forecast at USD 6,300/mt or higher.

Forecast changes

We have made several changes to our commodity forecasts since the beginning of May. Below we highlight the changes for the key commodities.

In **energy**, we marginally lifted our end-September Brent forecast from USD 30/bbl to USD 32/bbl. Our main aim was to indicate a WTI discount over Brent by around USD 3/bbl, while also acknowledging a faster supply adjustment globally and a less negative demand backdrop.

Our forecast changes for energy

Energy					
Commodity	**A. Futures**	**Sep-20**	**Dec-20**	**Mar-21**	**Jun-21**
Brent Oil (USD/bbl)	34.94	32.0	43.0	50.0	55.0
Old forecast		*30.0*			
WTI Oil (USD/bbl)	32.14	29.0	40.0	47.0	52.0
Old forecast					
Nat. Gas (mmbtu)	1.815	2.50	3.20	2.80	2.90
Old forecast					
Coal AU (USD/mt)	55.90	55.0	60.0	60.0	65.0
Old forecast					

Source: Bloomberg, UBS, as of May 2020

For **base metals**, we have adjusted higher all our forecasts for September except aluminum because we underestimated the supply outages triggered by COVID-19 and the more muted inventory increases across exchanges. Moreover, China's metal demand offtake has been very solid. That said, the shift higher in our forecasts leaves some setback potential for copper until September (USD 5,000/mt forecasted). As supply is returning and China's initial wave of imports ebbs somewhat, the metal should come under downward pressure in the short run. For zinc and lead, our forecast picture for September points to largely sideways moves, with lead (USD 1,700/mt) outperforming zinc (USD 1,900/mt) due to a recovery in car sales and the fact that lead prices have no recovered at all so far. As for aluminum, we kept our September forecast unchanged but lowered the December and March 2021 outlooks to USD 1,650/mt and USD 1,750/mt, respectively, on excess supply availability and very limited production outages. Even after our forecast adjustments, we see the risks to these forecasts as more skewed to the downside than they are symmetrical.

Our forecast changes for base metals

Base metals					
Commodity	**Spot**	**Sep-20**	**Dec-20**	**Mar-21**	**Jun-21**
Copper (USD/mt)	5,359	5,000	5,700	6,100	6,300
Old forecasts		*4,900*			
Aluminum (USD/mt)	1,493	1,550	1,650	1,750	1,800
Old forecasts			*1,750*	*1,800*	
Nickel (USD/mt)	12,445	13,000	14,000	15,000	15,000
Old forecasts		*11,500*			
Zinc (USD/mt)	2,022	1,900	1,975	2,150	2,200
Old forecasts		*1,875*			
Lead (USD/mt)	1,675	1,700	1,750	1,875	1,900
Old forecasts		*1,675*			

Source: Bloomberg, UBS, as of May 2020

For **precious metals**, we have kept our views unchanged except for silver. We see room for greater investment demand as global economic activity reaches an inflection point and as the Fed could stay more accommodative for longer. Our forecast shifts up to USD 19.0/oz (previously USD 17.0/oz) for September, USD 18.5/oz (previously USD 17,5/oz) for December and USD 18.0/oz (previously USD 17.5/oz) for March 2021 call for the silver price to overshoot followed by a leveling off. This mainly relates to a renewed fabrication balance surplus next year, which requires constant ETF inflows.

Our forecast changes for precious metals

Precious metals					
Commodity	**Spot**	**Sep-20**	**Dec-20**	**Mar-21**	**Jun-21**
Gold (USD/oz)	1,747	1,800	1,800	1,800	1,800
Old forecast					
Silver (USD/oz)	17.48	19.0	18.5	18.0	17.5
Old forecast		*17.0*	*17.5*	*17.5*	
Platinum (USD/oz)	838	850	850	950	950
Old forecast					
Palladium (USD/oz)	2,044	2,400	2,500	2,500	2,500
Old forecast					

Source: Bloomberg, UBS, as of May 2020

In **agriculture**, we have made minimal changes to our forecasts overall. We trimmed our sugar forecasts across the forecast horizon because we now see Brazil production at 32–34mn tons (vs. 28–30mn tons before), as the shift to lower amounts of cane being crushed for ethanol has been stickier than we initially thought. We forecast prices to reach USD 0.12/lb by end-June 2021 (previously USD 0.135/lb). Corn prices have been lifted to USD 3.25/bu by end-June 2021 (from USD 3.0/bu), taking into account our more optimistic energy view and its link through a rebound in ethanol production. For wheat, we expect the importance of weather risks to diminish over our forecast horizon and export restrictions to ease. We forecast wheat at USD 4.75/bu by end-2020 and at USD 4.50/bu by end-June 2021 (previously USD 5.0/bu and USD 4.75/bu, respectively). We have also lowered our cotton forecasts because clothing retailers and cotton mill operations worldwide have been forced to close their doors amid national lockdowns, which have restricted textile sales. We now forecast it at 0.65/lb end-June 2021 (previously USD 0.70/lb).

Our forecast changes in agriculture

Agriculture					
Commodity	**A. Futures**	**Sep-20**	**Dec-20**	**Mar-21**	**Jun-21**
Corn (USD/bu)	3.190	3.25	3.50	3.25	3.25
Old forecast					*3.00*
Wheat (USD/bu)	4.973	4.75	4.75	4.75	4.50
Old forecast		*5.25*	*5.00*	*5.00*	*4.75*
Soybeans (USD/bu)	8.438	8.75	9.00	8.75	8.75
Old forecast				*9.25*	*9.00*
Palm Oil (MYR/mt)	2,157	2,250	2,250	2,250	2,250
Old forecast			*2,500*	*2,500*	*2,500*
Cotton (USD/lb)	0.594	0.60	0.60	0.65	0.65
Old forecast					*0.70*
Sugar (USD/lb)	0.109	0.110	0.115	0.115	0.120
Old forecast		*0.115*	*0.120*	*0.130*	*0.135*
Coffee (USD/lb)	1.071	1.15	1.15	1.15	1.15
Old forecast					
Cocoa (USD/mt)	2,435	2,500	2,500	2,500	2,500
Old forecast					

Source: Bloomberg, UBS, as of May 2020

We also raised our **livestock** forecasts over six and 12 months. For lean hogs, we lifted the end-December forecast to USD 0.70/lb (previously USD 0.65/lb), as we see stronger Chinese demand for US pork and fewer hogs available due to herd culling. Likewise, we see strong demand for US beef as food service reopens, exports continue and low margins sees lower herd growth in 2021.

Our forecast changes in livestock

Livestock					
Commodity	**A. Futures**	**Sep-20**	**Dec-20**	**Mar-21**	**Jun-21**
Lean hogs (USD/lb)	0.563	0.65	0.70	0.70	0.75
Old forecast			*0.65*	*0.75*	
Live cattle (USD/lb)	0.991	1.00	1.05	1.10	1.15
Old forecast			*1.00*		*1.10*

Source: Bloomberg, UBS, as of May 2020

Forecast table

Sector/Commodity			Market data		Sep-20		Dec-20		Mar-21		Jun-21	
Energy	**Units**	**Exch.**	**Hist. Vol.**	**Act. F.**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**
Brent Crude Oil	USD/bbl.	ICE	110.8%	34.94	32.0	-8.4%	43.0	23.1%	50.0	43.1%	55.0	57.4%
WTI Crude Oil	USD/bbl.	NYM	133.4%	32.14	29.0	-9.8%	40.0	24.5%	47.0	46.2%	52.0	61.8%
Natural Gas HH	USD/MMBtu	NYM	63.8%	1.815	2.50	37.7%	3.20	76.3%	2.80	54.3%	2.90	59.8%
NW Thermal Coal (AU)	USD/MT	ICE	29.3%	55.90	55.0	-1.6%	60.0	7.3%	60.0	7.3%	65.0	16.3%
Precious metals	**Units**	**Exch.**	**Hist. Vol.**	**Spot**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**
Gold	USD/t oz.	CMX	22.7%	1,747	1,800	3.0%	1,800	3.0%	1,800	3.0%	1,800	3.0%
Silver	USD/t oz.	CMX	44.4%	17.48	19.0	8.7%	18.5	5.8%	18.0	3.0%	17.5	0.1%
Platinum	USD/t oz.	NYM	48.8%	838	850	1.4%	850	1.4%	950	13.4%	950	13.4%
Palladium	USD/t oz.	NYM	75.5%	2,044	2,400	17.4%	2,500	22.3%	2,500	22.3%	2,500	22.3%
Base metals	**Units**	**Exch.**	**Hist. Vol.**	**3M F.**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**
Copper	USD/MT	LME	27.1%	5,359	5,000	-6.7%	5,700	6.4%	6,100	13.8%	6,300	17.6%
Aluminum	USD/MT	LME	16.1%	1,493	1,550	3.8%	1,650	10.5%	1,750	17.2%	1,800	20.6%
Nickel	USD/MT	LME	29.6%	12,445	13,000	4.5%	14,000	12.5%	15,000	20.5%	15,000	20.5%
Zinc	USD/MT	LME	24.1%	2,022	1,900	-6.0%	1,975	-2.3%	2,150	6.3%	2,200	8.8%
Lead	USD/MT	LME	32.1%	1,675	1,700	1.5%	1,750	4.5%	1,875	11.9%	1,900	13.4%
Agriculture	**Units**	**Exch.**	**Hist. Vol.**	**Act. F.**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**
Corn	USD/bu.	CBT	22.6%	3.195	3.25	1.7%	3.50	9.5%	3.25	1.7%	3.25	1.7%
Wheat (CBT)	USD/bu.	CBT	25.2%	4.978	4.75	-4.6%	4.75	-4.6%	4.75	-4.6%	4.50	-9.6%
Soybeans	USD/bu.	CBT	15.4%	8.430	8.75	3.8%	9.00	6.8%	8.75	3.8%	8.75	3.8%
Crude Palm Oil	MYR/MT	MDE	43.3%	2,151	2,250	4.6%	2,250	4.6%	2,250	4.6%	2,250	4.6%
Cotton	USD/lb.	NYB	32.1%	0.596	0.60	0.7%	0.60	0.7%	0.65	9.1%	0.65	9.1%
Sugar	USD/lb.	NYB	38.3%	0.109	0.11	1.4%	0.12	6.0%	0.12	6.0%	0.12	10.6%
Coffee (Arabica)	USD/lb.	NYB	44.8%	1.071	1.15	7.4%	1.15	7.4%	1.15	7.4%	1.15	7.4%
Cocoa	USD/MT	NYB	31.1%	2,435	2,500	2.7%	2,500	2.7%	2,500	2.7%	2,500	2.7%
Livestock	**Units**	**Exch.**	**Hist. Vol.**	**Act. F.**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**	**Forecast**	**ESM**
Lean Hogs	USD/lb.	CME	82.0%	0.563	0.65	15.5%	0.70	24.4%	0.70	24.4%	0.75	33.3%
Live Cattle	USD/lb.	CME	40.7%	0.991	1.00	0.9%	1.05	6.0%	1.10	11.0%	1.15	16.1%

Source: Bloomberg, UBS, as of 20 May 2020; Forecasts refer to end of period; Abbreviations: Hist. Vol. = Historical volatility, Act Fut. = Active Futures, ESM = Expected spot return in %,

Term / Abbreviation	Description / Definition	Term / Abbreviation	Description / Definition
Backwardation	When the spot price trades above the prices of futures	BCF	Billion cubic feet
BCM	Billion cubic meters	BCOM	Bloomberg Commodity Index
Bu	Bushel (1 ton = 36.7bu wheat/soybean; 39.37 bu corn	CBOT	Chicago Board of Trade
CFTC	Commodity Futures Trading Commission	CIF	Cost, insurance and freight
CME	Chicago Mercantile Exchange	CMCI	UBS Bloomberg Constant Maturity Commodity Index
CNIA	China Non-Ferrous Metals Industry Association	COMEX	New York Commodities Exchange
CONAB	Companhia Nacional de Abastecimento (Brazilian government agency)	Contango	When the spot price trades below the prices of futures
COT	Commitment of Traders	CRB Index	Index Commodities Research Bureau Index
Crush margin	Difference between the value of the oil and meal produced from the soybeans	CTA	Commodity Trading adviser
DOE	U.S. Department of Energy	EIA	Energy Information Administration
ETC	Exchange Traded Commodity	ETF	Exchange Traded Fund
Excess Return (ER)	Excess return = spot return + roll yield return (rolling of futures contracts)	FAO	Food and Agriculture Organisation
FOB	Free on Board	HH Natural Gas	Henry Hub Natural Gas
IEA	International Energy Agency	IAI	International Aluminium Institute
ICCO	International Cocoa Organisation	ICE	Intercontinental Exchange
ICO	International Coffee Organisation	ICSG	International Copper Study Group
IIZSG	International Lead and Zinc Study Group	IMF	International Monetary Fund
INSG	International Nickel Study Group	JM	Johnson Matthey
JODI	Joint Oil Data Initiative	KCBT	Kansas City Board of Trade
LME	London Metal Exchange	LNG	Liquefied Natural Gas
mbpd	Million barrels per day	Mtoe	Million tons oil equivalent
NOAA	National Oceanic and Atmospheric Administration	NYBOT	New York Board of Trade
NYMEX	New York Mercantile Exchange	OECD	Organisation for Economic Co-operation & Development
OPEC	Organization of Petroleum Exporting Countries	PGM	Platinum Group Metals
RICI	Rogers International Commodity Index	S&P GSCI	Standard and Poor's-Goldman Sachs Commodity Index
SHFE	Shanghai Futures Exchange	SI	Silver Institute
TC/RC	Treatment/Refining Charges	TCF	Trillion cubic feet
Thomson Reuters GFMS	Research consultancy specializing in precious metals, base metals and steel market research	TOCOM	Tokyo Commodity Exchange
Total Return (TR)	Total return = excess return + return from the cash collateral	USDA	US Department of Agriculture
UNICA	Sugar and Alcohol Millers Association of São Paulo state	USD/bbl	USD per barrel
USD/bu	US Dollar /bushel	USD/gl	USD per gallon
USD/lb	USD per pound	USD/mmbtu	USD per 1 million British thermal unit
USD/mt	USD per metric ton	USD/oz	USD per oz, (1 oz = 31.10 grams)
USGS	U.S. Geological Survey	WBMS	World Bureau of Metal Statistics
WGC	World Gold Council	WPIC	World Platinum Investment Council
WTI Crude Oil	West Texas Intermediate Crude Oil	WTO	World Trade Organisation

Appendix

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