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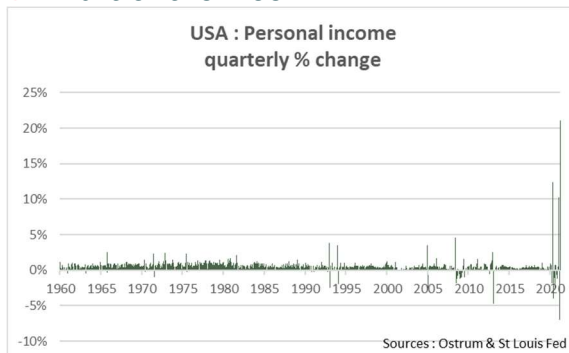
● Topic of the week: Commodities and megatrends

- The rebound in commodities since the Covid crisis is partly cyclical, but there are also a number of “megatrends” that have changed the game.
- Green energy, China’s place, US energy independence, investments in renewable energy, changes in eating habits are all factors.
- While all of these commodities appear to have reacted identically since March 2020, the underlying fundamental trends are very different.

● Market review: A Reagan moment for Biden?

- Fed: monetary status quo
- Biden presents the American Families Plan worth \$1.8T
- Yields up, credit spreads broadly stable
- Upbeat quarterly earnings season

● Chart of the week



The increase in personal income in the United States is impressive, 21.1% over the first quarter compared to the previous one.

This figure is of course linked to the Biden recovery plan and shows that the American recovery effort is very important. Private consumption growth over the first quarter was 10.7% on an annualized quarterly basis. The increase in income suggests even stronger consumption figures for the second quarter.

● Figure of the week

10k

Source: Ostrum AM

\$10,000 per ton of copper, the limit was briefly exceeded last week. This is the first time since 2011. The pressure on metals remains strong.



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• Topic of the week

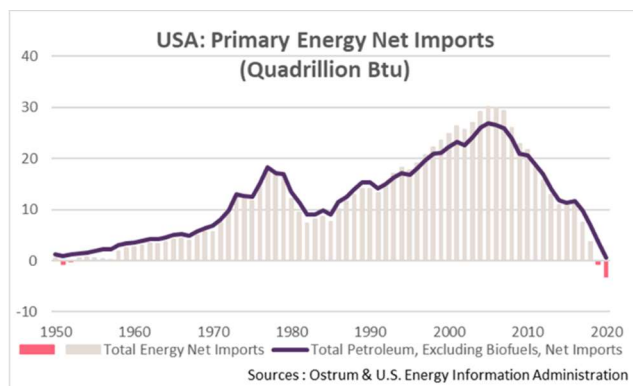
Commodities and megatrends

Since the worst of the crisis in March last year the price of raw materials has rebounded very quickly: oil, metals but also food. Although a significant part of this rebound is cyclical with the exit from the crisis, there are also a number of “megatrends” that have changed the game for these commodities. Instead, we focus on these long-term trends: renewable energy and energy independence of the United States in the case of oil, role of China and green investments for metals, changes in food behavior. These determinants are major components of price developments.

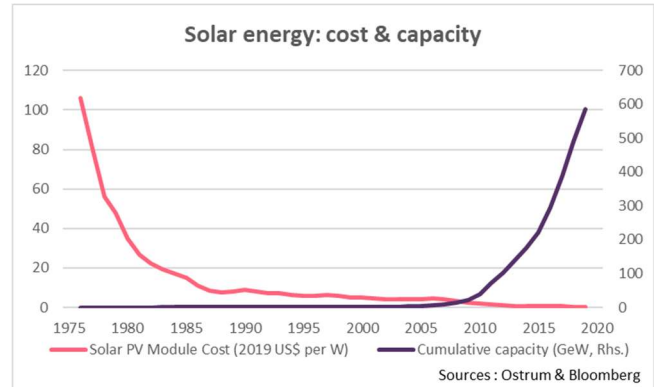
Oil

Giving honor where honor is due, let us begin, let us begin with oil. Before going into the details of the current economic situation, it is necessary to point out two megatrends which have structurally changed the oil market since the beginning of the century

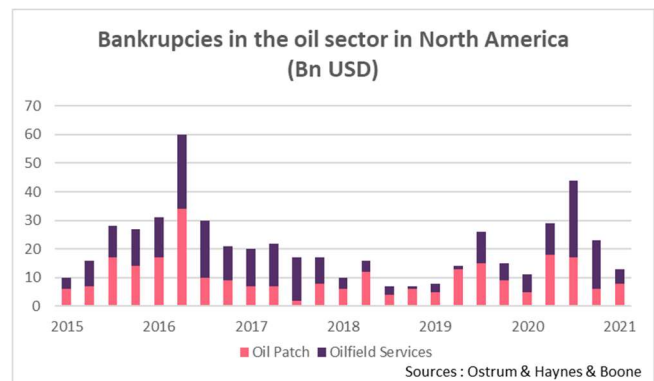
On one hand, the United States has gone from being the world’s leading importer to an energy balance. They were even, as shown in the graph below net energy exporter last year, even though the adjustment of the external balance of the last two decades is almost exclusively linked to the balance of hydrocarbons.



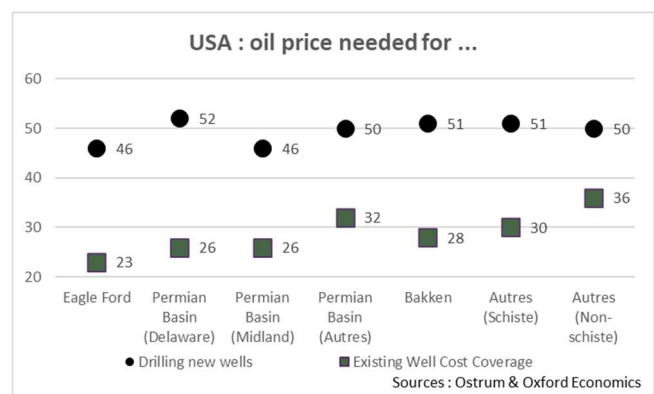
The second megatrend is the collapse of the cost of producing renewable energy. This very rapid drop in costs means that solar energy is now profitable if oil prices exceed \$60. So there is a long-term pullback force to that level. Or, in other words, a very strong incentive to solar energy, as soon as oil prices exceed \$60.



However, this context needs to be nuanced because the cyclical aspects are also very important. To return to the United States, significant production capacities were destroyed. The law firm of Haynes and Boone keeps track of bankruptcies in the oil patch, and as the chart below shows, 2020 was a tough year.

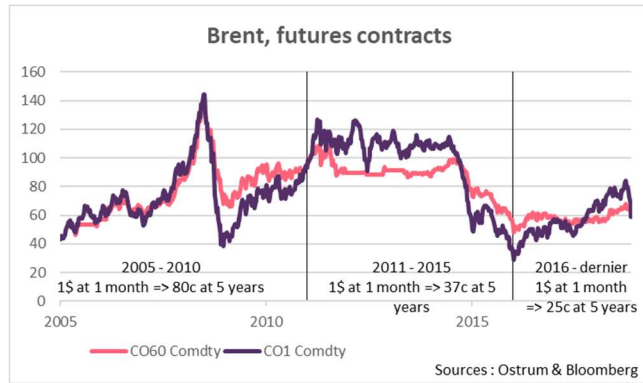


But here too we must keep in mind that capacity investment becomes profitable in the United States when the price of crude exceeds \$50. And we have seen in recent months the drilling activity recover quickly. Admittedly the Biden administration is much less lax than that of Trump, but here too the argument is that a sustainable price above \$60 leads to additional energy supply, and therefore limits the potential for increase beyond.



At the same time, OPEC seems to be managing its production quotas efficiently. If the capacity is estimated at 34.5 million barrels a day, the production is rather around 25 mbj. This is partly due to Saudi Arabia but also to some

countries that have experienced production problems.



In the medium term, however, the market seems to be converging towards our analysis: the price of oil cannot remain sustainably above \$60. The future contract on the Brent at 60 months (5 years is the longest that exists) tended

to move with the spot price during the decade 2000-2010 as shown in the chart below. Since 2016 this is no longer the case, this contract remains very close to \$ 60 regardless of the movements of the spot. The market is therefore assuming that the market will return to a level of equilibrium close to \$60.

Finally, we must also mention the significant trend for major oil companies to invest in renewable energies. The energy transition is inevitable, customers and authorities are pushing in this direction and the profitability of traditional operations is deteriorating. There is therefore a major effort in several dimensions:

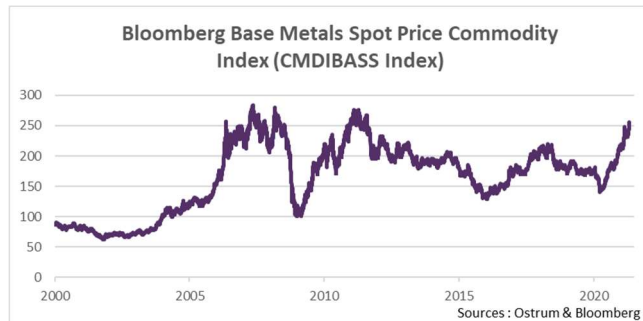
- Improvement of energy efficiency
- Reduction of energy consumption in production.
- Capture the growth prospects in the low carbon sector.

| | Scope 1+2 Targets & Ambitions | Full-Cycle Emissions Targets & Ambitions | Renewables Targets & Ambitions | Renewables Capex Targets & Ambitions |
|----------------|---|---|--|---|
| BP | Net zero on BP's operational emissions by 2050 or sooner. | On BP's own upstream volumes, net zero absolute emissions by 2050 or sooner. On BP's marketed products, reduce intensity by 50% by 2050 or sooner. | 5 GW of equity capacity via Lightsource by 2023 (gross target 10GW, BP 50% equity); plus 1GW current capacity ex-Lightsource. | Previous: ~3% of total (2019-21) - \$0.5bn p.a. 2020 low-carbon capex maintained. |
| ENI | Net Zero on upstream emissions by 2030. Net Zero on Eni Group's emissions by 2040. | Absolute terms: emissions reduction of 30% by 2035, 80% by 2050. Cut Intensity 15% by 2035, 55% by 2050 | Equity capacity for renewables: 3 GW by 2023, 5 GW by 2025, ~15 GW by 2030, >25 GW by 2035, >55 GW by 2050 | Previous: ~12% of total (up to 2023) on Transition Themes incl. renewables - €4bn. Prev. €3bn (of which €4bn renewables, 7% assuming €4.4bn). 2020 total capex cut €3.3bn, 2021 cut €5.3bn. |
| Equinor | Carbon Neutral globally by 2030 (Equinor Operated). Norway: 40% absolute reduction in operated onshore & offshore emissions by 2030, 70% by 2040, Net Zero by 2050. | Cut full-cycle emissions intensity at least 50% by 2050, on own production | 4-6GW renewables equity capacity 2026, 12-16GW by 2036. Focus is Offshore Wind. | Previous: Gross Basis (50/50 proj. fin. and cash): \$0.5-1bn 2020/21, \$2-3bn 2022/23. ~7% and ~20% of total respectively (4% and 10% on respectively cash basis). 2020: \$8.5bn capex total. 2021: potential \$10bn. |
| GALP | All electricity used in Portuguese operations to be from renewables by 2021. | No Scope 3 target. | 3.3 GW gross capacity by 2023, 10 GW gross capacity by 2030. Iberian Solar focus, but could look at other types. | Previous: 10-15% of total future capex (2020-22), implied €10-165m p.a. at midpoint of total guidance. Capex & Opex cuts of >€500m; 90% capex, previous range €1-12bn. |
| OMV | Reduce carbon intensity of operations by 19% by 2025 (vs 2010). Achieved 22% cut by 2019, new targets to be set for 2025. | Cut emissions from product portfolio by 4% by 2025 (vs 2010 level). Achieved in 2019, new targets to be set for 2025 | No targets | Up to €500m total into 'innovative energy solutions' by 2025. Not renewables. N.B. Borealis stake increasing to 75% |
| Repsol | No specific targets. NB. Intensity metric is Full-Cycle | 3% cut to full-cycle intensity by 2020 (vs 2016). 10% cut by 2025, 20% by 2030, 40% by 2040, Net Zero 2050. All apply to upstream emissions. NB. Emissions boundaries used. | Low carbon power generation: 7.5 GW (Equity) by 2025 - up to 5.2 GW implied renewables (currently 2.3GW CCGT/Cogen). | Previous: 18% of total (2020) - €0.7bn. 2020: 10% of capex cut from Commercial & Renewables Segment (€0.1bn). |
| Shell | Net Zero on products manufactured by Shell by 2050 'at the latest'. | Cut Net Carbon Footprint 2-3% by 2021 (vs 2016), 3-4% by 2022, 30% by 2035, and 65% by 2050. | 5 GW operational capacity by 2025. No preference for generation type. Are involved in several Offshore Wind projects. | Previous: ~8% of total (2021-25) - \$2-3bn p.a. 2020: \$1.25bn (25% of 2020 capex cut from Integrated Gas & New Energies. |
| Total | Net Zero on operational emissions by 2050 or sooner. | Reduce carbon intensity of products by 15% by 2030, 35% by 2040, 60% by 2050 or sooner. Net-Zero in Europe by 2050 or sooner (upstream production and products). | 25 GW operational capacity 2025. Total indicates 50% farm downs (implied 12.5 GW equity). Various generation types. Also holds ~2GW CCGT (2019). | Previous: ~10% of total (2020), \$1.2-2bn p.a. Low carbon capex for 2020 maintained \$1.5-2bn: ~10-14% of 2020 net investments. Indicated increasing to 20% by end of decade. |

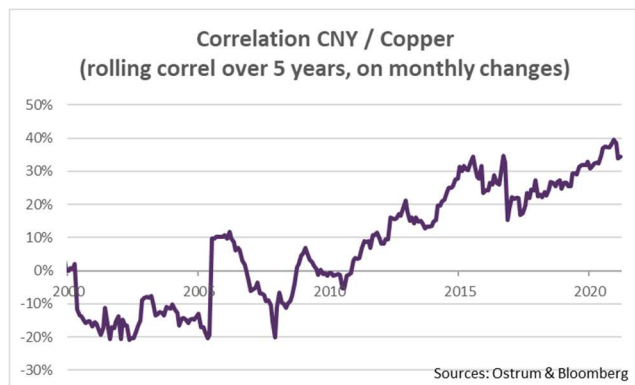
Source : Crédit Suisse

Metals

The Bloomberg Metals Index after hitting a low during the covid episode rebounded very strongly, gained 82% from its March 2020 lows and is now on track to its all-time highs. Much of this rebound is cyclical; the exit from the crisis explains the correction of the index. However, these cyclical aspects do not explain the violence of the rebound nor the high level reached by the index. As in the case of oil, there are several megatrends to be noted.



First point is the place of China which now absorbs about half of the world's copper production each year. The graph below shows this evolution, copper prices and Yuan are increasingly correlated. If the Chinese economy was negligible in the commodity market two decades ago, we see that it is one of the fundamental elements of price formation.



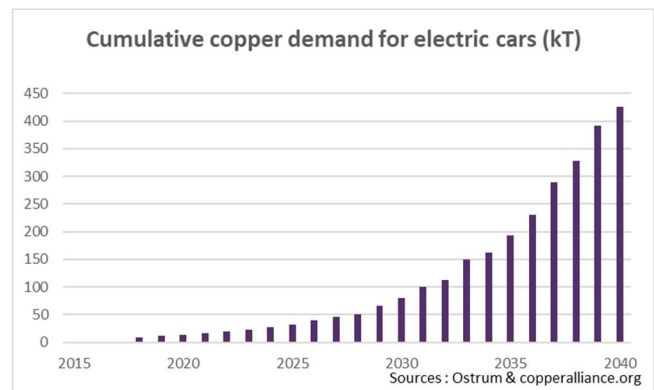
The other important point is green investment, which is very high in metals. Metals Important for Future Technologies (MIFTs) are the metals that are essential for green investment. The main ones are copper, nickel, zinc, aluminum, cobalt, lead and iron. But the list is broader as shown in the following table:

| | Power applications | | | Automotive | Other | | |
|-----------------------|--------------------|-------|----------------|------------|-------------------|-----------------|----------------|
| | Wind | Solar | Energy storage | | Electric vehicles | Electric motors | Carbon capture |
| Aluminium | X | X | X | | X | X | X |
| Chromium | X | | | | | X | X |
| Cobalt | | | X | X | | X | |
| Copper | X | X | | X | X | X | X |
| Lead | X | X | | | | | X |
| Lithium | | | | X | | | |
| Molybdenum | X | X | | | | X | X |
| Neodyme (rare hearth) | X | | | X | | | |
| Nickel | X | X | X | X | | X | X |
| Silver | | X | | X | | | X |
| Steel | X | | | | | | |
| Zinc | | X | | | | | X |

Source: World Bank

The demand for copper is particularly boosted by this trend, it fits into the design of the vast majority of new technologies. The sole use for electric vehicles is expected to explode over the next decade.

Of course, the same trend will apply to electricity generation, batteries, energy storage, distribution and transmission systems, etc.



On the other hand, it is much more difficult for production to follow. It takes about five to seven years between the decision to start a copper mine and the first production. The decline in the quality of new minerals discovered and the increase in costs add to the difficulties. Investment in mining is therefore very pro-cyclical and high prices and positive price estimates are needed to make such a decision.

If the example of copper becomes emblematic of the energy transition, the pressure on commodity prices should remain important in a much more general way:

NICKEL: key for energy storage. Environmental risk to production, no major risk to supply but production costs likely to increase.

LITHIUM: key for energy storage. Under development. Chemical process required before use.

ALUMINIUM: price pressure due to high production-related energy costs and Chinese competition. Lightweight metal, key for transport.

COBALT: so far, almost the monopoly of the Democratic Republic of Congo, which accounts for 60% of world production. Glencore is a key player in the DR Congo.

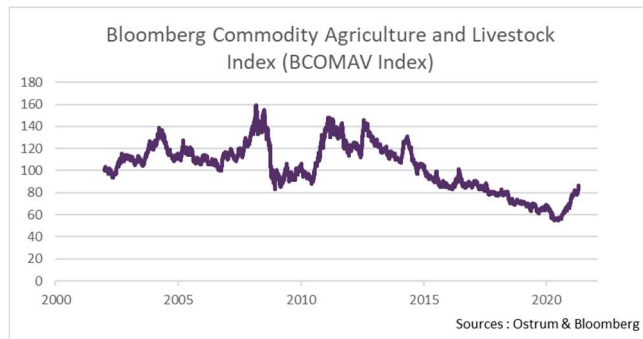
RARE EARTHS: so far, China dominates the market (55% of production).

COPPER: lower grades, increased costs, sustained demand in TM. Like nickel, copper can also be produced with by-products (cobalt, gold, silver, molybdenum). As a result, average real costs of production may be lower than the average cost of \$5,000/t while market prices are currently above \$9,000/t.

Ostrum AM follows 9 of the top 20 copper producers (9 of the top 13 players). ESG problem caused by other metals/products produced by these companies.

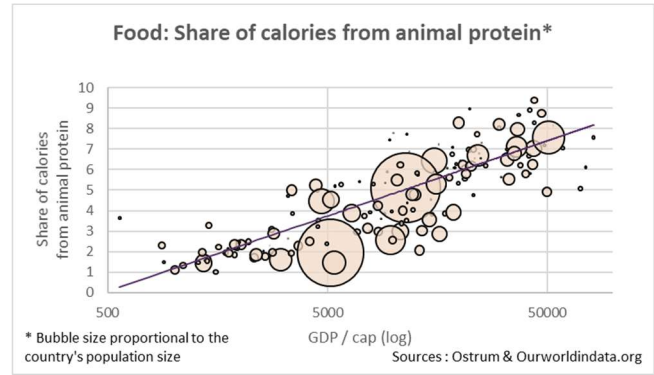
Food

In the case of food, too, there has been a very sharp rebound in prices since last March, almost 60%. This rebound is widely shared by all food products. Even if, in this case, the absolute level remains moderate especially in comparison with metals.



Here too structural changes are to be noted. Of course, the increase in the world's population creates a parallel increase in food demand. But this population growth has a tendency to decrease, China for example should know the effects of the policy "one child per couple" and see its population begin to decrease from the second half of the current decade.

On the other hand, there is a strong trend towards an increase in the proportion of animal protein in the diet. The chart below shows this trend, which is particularly strong in China.



The problem is that the consumption of protein is much demanding in resources for production. However, we do not necessarily always realize the size of the difference: to produce a kilo of vegetable protein, we need about 18 times less agricultural area, 10 times less water, 12 times less fertilizer, 10 times less pesticides than to produce a kilo of protein from a cow. The reason is simple, you have to produce a lot of plants to feed a cow. As one economist put it: "A third of what you put in a cow to feed it comes out as dung. Having a third of its return on investment in the form of manure does not seem very attractive".

The table below provides some additional figures. From an economic efficiency point of view animal consumption is a heresy, from a gustatory point of view it is of course something else:

| Water use to produce 1kg of: | |
|--|--|
| Apples: 700 litres | |
| Soybean: 2,145 litres | |
| Beef: 15,400 litres | |
| NB: a family of 4 in the United States uses 1,500 liters of water per day to produce its food. A shower uses 9 liters per minute. | |
| Energy use to produce 1kg of: | |
| Peaches: 344 Kj | |
| Beans: 2,861 Kj | |
| Fines: 4,646 Kj | |
| Beef: 7,880 Kj | |
| An average American household uses 104,000 Kj of electricity per day. | |
| Source: Hamerschlag et Venkat, 2011 | |

The increase in purchasing power in a number of emerging countries, which goes hand in hand with a more protein-rich diet, particularly in China, is therefore a pressure on natural resources which is at least as important as the simple growth of the world's population.

Conclusion

The recent rebound in commodities has been impressive. Not only because of its strength, but also because of its extent: oil, metals, food, and even wood whose prices have exploded. There is of course an undeniable cyclical aspect to this development. After a price collapse at the beginning of last year the rebound is partly a normalization of prices and a catch-up while production cannot adjust as fast as demand.

But beyond these purely cyclical aspects, there are more fundamental changes in these markets. In the case of oil, this amounts to capping the price of oil, which is difficult to see exceed \$60 in a sustainable way. It also means that part of the hydrocarbon reserves will never be profitable, the famous stranded assets. This is the amount of carbon that will remain in the soil. For metals the structural increase in demand will have to push mining towards more difficult resources to exploit, and thus towards a steady-state price

that should remain higher. Finally, in the case of food resources, the distortion of consumption while emerging countries are consuming more and more animal proteins, imposes more constraints on natural resources, water, cultivated area, energy, etc.

While all these commodities seem to have reacted identically since March 2020, the underlying fundamental trends are therefore very different.

Anne Pumir, credit analyst
Bruno Farvacque, credit analyst
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• **Market review**

A Reagan moment for Biden?

Fed status quo, Biden presents \$ 1.8 trillion American Families Plan, European banks outperform amid rebound in bond yields

The Fed continues to see the glass half full dismissing near-term inflationary risks. In fact, Fed monetary policy will remain constrained by future public borrowing needs. Cyclical budget support is now supplemented by two multi-year federal programs aimed at a profound overhaul of the role of the federal government. The change in public policy draws comparisons with that of Ronald Reagan's Presidency in 1981. The Fed's accommodative stance nonetheless remains favorable to risky assets, as the earnings of the first quarter point to a clear recovery in profitability. Bond yields are rising on asset allocation flows. In turn, credit spreads are broadly unchanged. The dollar remains weak even if the rise in US rates tends to ease the selling pressure.

The US economy posted annualized growth of 6.4% in the first quarter. Strength in equipment and R&D spending is proof of business confidence. Robust household demand driven by vaccination and federal transfers generates external imbalances and exerts pressure on supply chains. Inventory drawdown and the deterioration in the trade balance thus subtracted 3.6pp to GDP between January and March. The rebuilding of inventories and a nascent recovery in Europe will add to domestic momentum in the coming months. Inflation fears have worsened amid component shortages and rising input prices. Labor costs also increased by 0.9% in the first quarter. These price pressures are spreading through the economy, no matter what the Federal Reserve says. The Fed remains subject to fiscal dominance in the face of Joe Biden's unprecedented budget proposals. In addition to the economic program of \$ 1;900 trillion voted in March, fiscal stimulus will be enhanced via two plans of 2250 billion dollars over 8 years and 1800 billion dollars over 10 years respectively aimed in particular at the transition imposed by climate change and improving access by households to health care and education. The thin Democratic majority in the House and, more importantly, in the Senate, will make it hard for the Biden Administration to push its agenda through Congress. Republicans will likely use the debt ceiling to restrict Joe Biden's ability to act this summer.

In addition, the increase in the tax burden on businesses is partly due to the extraterritoriality of the US tax authorities, and the increase in taxes on capital gains and income will primarily hit wealthy households in predominantly

democratic states. The adoption of these plans will not be smooth.

In Europe, economic data releases have been mixed. The April surveys turned out to be better than expected considering the latest lockdown measures. However, the euro area contracted by 0.6% in the first quarter despite a rebound in France (+ 0.4%). Inflation is back to 1.6% on a year-over-year basis.

As regards financial markets, T-note yields rose by 8bp over the past week. Treasury bond auctions early on last week were met with poor final investor demand. However, the buybacks of short positions by leveraged fund accounts continued, limiting upward pressure on bond yields. The Fed's status quo also effectively mitigated the impact of the announcement of the \$ 1.8 trillion American Families Plan. The 10-year T-note yield is trading around 1.65% with no noticeable curve movement.

In the euro zone, sovereign debt issuance continues to weigh on bond markets. Bund yields went up towards - 0.20%, which led to a modest widening of 3bp in peripheral bond spreads. The other segments of the euro area credit market weathered the rise in interest rates. Euro investment grade credit tightened by 1bp to 84bp vs. Bunds. The primary market slowed somewhat, especially in non-financials space. Financial bond issuance reached € 100 billion in 2021, in line with the same period in 2020. There is some spread tightening in the BBB and high beta (hybrid) sectors. On the other hand, CDS indices are flat through April at 50bp despite some hedging flows. As for high yield, spreads narrowed by 17bp in April. The primary market remains very active in speculative-grade markets. Issuance already amount to 45 billion in 2021 (26 billion € net) against 103 billion € in the year 2020. A market theme betting on rising stars is developing as the market integrates the prospects for rating upgrades as the recovery unfolds. The BB ratings have significant potential to catch up with the BBB-rated bonds. On the other hand, the compression of B spreads vs. BB seems to be running out of steam. Finally, like the iTraxx IG, the Crossover index has been trading in a narrow 35p range since November.

The corporate earnings season brings its fair share of positive surprises. Almost two-thirds of S&P 500 companies have published first-quarter earnings and 86% of them beat the consensus. Annual growth stands at 52% with aggregate turnover up 11%. Consumer discretionary, commodities and financials posted outstanding numbers. In Europe, three-quarters of publications have surprised on the upside. Bank stocks (+ 7% last week) are benefiting from the rebound in rates to the detriment of cyclicals, which seem to have fully price in the recovery.

Axel Botte
Global strategist

● Main market indicators

| G4 Government Bonds | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
|------------------------------------|------------------|------------------|-----------------|-----------------|
| EUR Bunds 2y | -0.69 % | +0 | +2 | +1 |
| EUR Bunds 10y | -0.20% | +5 | +12 | +37 |
| EUR Bunds 2s10s | 48 bp | +5 | +10 | +35 |
| USD Treasuries 2y | 0.16 % | -1 | -3 | +4 |
| USD Treasuries 10y | 1.61 % | +4 | -11 | +70 |
| USD Treasuries 2s10s | 145 bp | +5 | -8 | +66 |
| GBP Gilt 10y | 0.84 % | +10 | +2 | +65 |
| JPY JGB 10y | 0.1 % | +2 | -3 | +8 |
| € Sovereign Spreads (10y) | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
| France | 35 bp | +2 | +11 | +12 |
| Italy | 108 bp | +3 | +12 | -3 |
| Spain | 66 bp | +1 | +2 | +4 |
| Inflation Break-evens (10y) | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
| EUR OATi (9y) | 136 bp | +5 | +10 | - |
| USD TIPS | 242 bp | +6 | +5 | +43 |
| GBP Gilt Index-Linked | 350 bp | +4 | -4 | +50 |
| EUR Credit Indices | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
| EUR Corporate Credit OAS | 84 bp | -1 | -7 | -8 |
| EUR Agencies OAS | 39 bp | +0 | +0 | -2 |
| EUR Securitized - Covered OAS | 31 bp | 0 | +0 | -2 |
| EUR Pan-European High Yield OAS | 297 bp | -8 | -18 | -61 |
| EUR/USD CDS Indices 5y | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
| iTraxx IG | 50 bp | -1 | 0 | +2 |
| iTraxx Crossover | 249 bp | -1 | +4 | +7 |
| CDX IG | 50 bp | -1 | 0 | +0 |
| CDX High Yield | 286 bp | -5 | -10 | -8 |
| Emerging Markets | 03-May-21 | -1wk (bp) | -1m (bp) | YTD (bp) |
| JPM EMBI Global Div. Spread | 339 bp | 0 | -20 | -12 |
| Currencies | 03-May-21 | -1wk (%) | -1m (%) | YTD (%) |
| EUR/USD | \$1.206 | -0.26 | +2.05 | -1.37 |
| GBP/USD | \$1.391 | +0.17 | +0.06 | +1.9 |
| USD/JPY | ¥109.09 | -0.88 | +0.93 | -5.31 |
| Commodity Futures | 03-May-21 | -1wk (\$) | -1m (\$) | YTD (\$) |
| Crude Brent | \$67.3 | \$2.2 | \$2.8 | \$15.8 |
| Gold | \$1 792.8 | \$13.9 | \$64.6 | -\$101.6 |
| Equity Market Indices | 03-May-21 | -1wk (%) | -1m (%) | YTD (%) |
| S&P 500 | 4 200 | 0.29 | 4.47 | 11.81 |
| EuroStoxx 50 | 4 000 | -0.51 | 1.38 | 12.60 |
| CAC 40 | 6 308 | 0.52 | 3.36 | 13.63 |
| Nikkei 225 | 28 813 | -1.29 | -3.49 | 4.99 |
| Shanghai Composite | 3 447 | -0.79 | -1.08 | -0.75 |
| VIX - Implied Volatility Index | 18.26 | 3.51 | 5.37 | -19.74 |

Source: Bloomberg, Ostrum Asset Management

Additional notes

Ostrum Asset Management

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