MyStratWeekly
Market views and strategy

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N° 038 // **September 27, 2021**

Topic of the week: The climate risk and the sovereign

- **The overexploitation of natural resources, the "environmental credit crunch" is not sustainable in the long term and a "climate Minsky moment" cannot be excluded;**
- **The climate risk would then turn into a financial risk. For the sovereign, the inclusion of a carbon risk premium by the market would push the rates of some countries significantly higher;**
- **The regulator may push this risk into consideration;**
- **This would distort investors' incentives for institutional investors and be of major importance for price formation in financial markets.**

Market review: A hawkish turn is taking shape

- **The Fed and the BoE signal a reduction in monetary support;**
- **US yields rose sharply to 1.45%, with Bunds close to -0.2%;**
- **Evergrande weighed on equities early on;**
- **Credit markets barely budged last week.**

Chart of the week

If the price of natural gas remains very high in Europe, the mini-energy crisis we are experiencing is broader than that. For instance, the price of coal in China, which has also surged. Since the beginning of the year it has gained 123%.

In comparison, oil prices remain relatively reasonable at the moment. The Brent, as we write these lines is just under 80 dollars, which remains an increase of more than 50% since the beginning of the year.

The winter period could be difficult to pass, with more pressure on prices, and thus on the disposable incomes of the most disadvantaged.

Figure of the week

20

The referendum on the Maastricht Treaty was held in France on 20 September 1992.

Source : Ostrum AM


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Topic of the week

The climate risk and the sovereign

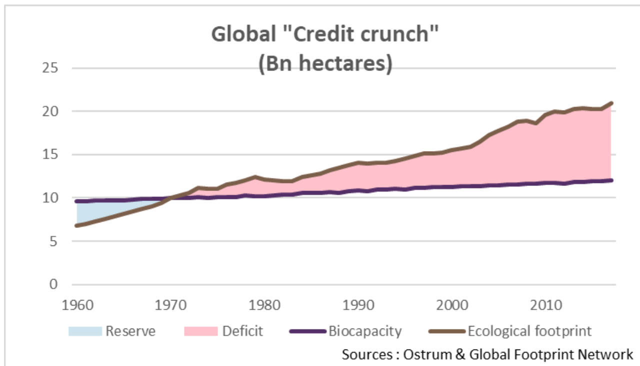
The overexploitation of natural resources, the "environmental credit crunch" is not sustainable in the long term. Even if certain evolutions allow for limited hope, the risk of abrupt adjustment, a «climate Minsky moment» cannot be excluded. In this case, the climate risk would turn into a financial risk. For the sovereign, taking into account a carbon risk premium by the market would push the rates of some countries significantly higher. This argument is also echoed by some Central Banks, which are thinking of imposing prudential ratios on investors who take position on risky sovereigns, that is to say the countries most dependent on carbon emissions. Such measures, ultimately, would distort investment incentives for institutional investors and would be of major importance for price formation in financial markets.

An environmental "credit crunch"

In economics, the idea of a "credit crunch" is that an individual has borrowed a lot, to the point that his creditors no longer trust him and refuse to lend him more. A loan is a way to consume immediately, to the detriment of future consumption: it will be necessary to save at some point in the future, and thus reduce its consumption, to repay the loan. Borrowing is therefore a means of living temporarily above one's means in return for a lower future consumption.

By analogy, we refer to "environmental credit crunch". The idea is that natural resource development is taking place at a rate far too high to be sustainable in the long run. It will therefore be necessary to reduce the consumption of natural resources in the future in order to rebuild stocks. This will be the time for a credit crunch.

Back to the figures, the curves showing biocapacity and ecological footprint crossed in 1970. So that's when we started living on environmental credit. Since then, the two curves have continued to diverge as shown in the graph below.



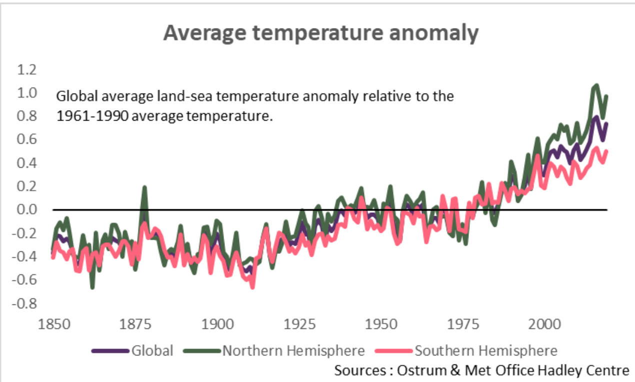
In terms of details the table shows, not surprisingly, that it is the most developed countries that are the main culprits.

Ecological footprint - share by use	Cropland	Grazing land	Forest land	Fishing ground	Carbon	Built-up land	Area per person	Footprint/ biocapacity
High income countries	18%	6%	10%	3%	60%	2%	5.6	1.8
Intermediary income countri	28%	9%	10%	5%	45%	4%	1.9	1.1
Low income countries	42%	11%	20%	5%	16%	6%	1.1	1
Africa	35%	16%	20%	5%	20%	4%	1.5	1
Middle east / Central Asia	24%	8%	5%	2%	59%	2%	2.5	2.7
APAC	28%	4%	9%	7%	47%	4%	1.6	1.9
Latam	24%	25%	14%	4%	30%	3%	2.7	0.5
North America	16%	3%	12%	1%	67%	1%	7.1	1.4
EU	24%	7%	11%	3%	51%	3%	4.7	2.1
World	**22%**	**8%**	**10%**	**4%**	**55%**	**2%**	**2.7**	**1.5**

Source : WWF, Ecological footprint

One of the consequences, unfortunately well-known and documented, is an increase in greenhouse gas emissions that has led to a temperature trajectory that has been recovering sharply for more than a quarter of a century.

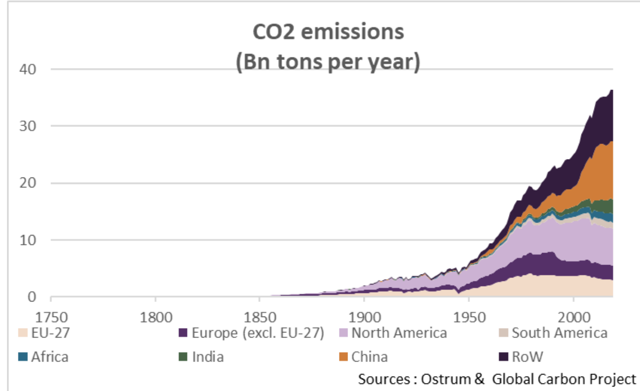
Finally, it is now indisputable that men have had a major impact in this increase in temperatures, as well as in the increase in CO_2 concentration in the atmosphere. For the anecdote, there is a website that contradicts the climatosceptic arguments[1]. To be precise, 198 arguments are refuted!



"Environmental Productivity"

Against this distressing observation, it should be noted, however, that while global CO_2 emissions are rising sharply, a point of inflection has been passed for developed countries. Emissions fell 29% in the EU-27 between the peak of 1979 and 2019. They have decreased by 39% in the rest of Europe since the peak in 1990 and by 12% in North America since 2014.

Of course, this decline was largely offset by growth in emerging countries, including China, which accounted for half of the increase in global emissions over the past decade, and India, which accounted for a good fifth.



Despite the very strong upward trend in global emissions, the downward trend in developed countries over a period of economic growth is interesting. It shows that economic growth has been more virtuous (at least in terms of greenhouse gas emissions).

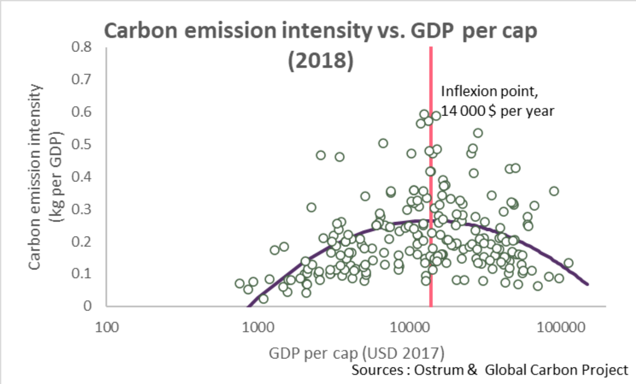
We are seeing what economists call environmental productivity gains. "More with Less", we are able to generate a higher GDP with fewer emissions.

The Environmental "Kuznets Curve"

The graph below shows the carbon intensity level in 2019 for 228 countries ranked by level of development. The main lesson of this graph is that the relationship between growth and pollution is not monotonous. In the initial phase of development, which generally corresponds to rapid industrialization, the CO_2 intensity grows very quickly. But after a certain standard of living, the intensity decreases. Empirically, this inflection point is currently found to be a GDP per capita of USD 14,000 per year.

This graph has been called the Environmental Kuznets Curve. The Kuznets curve shows the relationship between a country's level of development and its level of inequality. The curve is "bell-shaped": inequalities increase with economic development, then decrease when a certain level is reached, and a middle class emerges. By analogy, the Kuznets environmental curve does the same with the intensity of the emissions and we get, again, a bell curve.

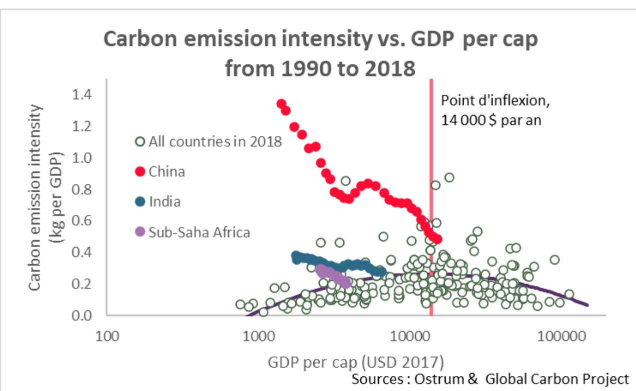
[1] See: https://skepticalscience.com/argument.php



Several reasons can explain this:

- The most developed countries have a growth rate mainly driven by services and are deindustrializing. Their growth is therefore driven by less energy-intensive sectors.
- The cost of low carbon technologies has indeed decreased (Cf. below) but remains high in many cases. Only rich countries can afford decarbonization. Climate or environmental concerns are more prevalent in developed countries.
- Some of the emissions were "exported" to poor countries, with the most polluting products and process being relocated to these countries.

We can take another step by looking at the evolution of energy intensity for some of the most polluting countries. The two main contributors to the increase in greenhouse gas emissions, China and India, have in fact passed the inflection point much earlier than suggested by the static analysis above. The historical evolution over the last thirty years is shown in the following graph. In both cases, the improvement in carbon intensity occurred much earlier.

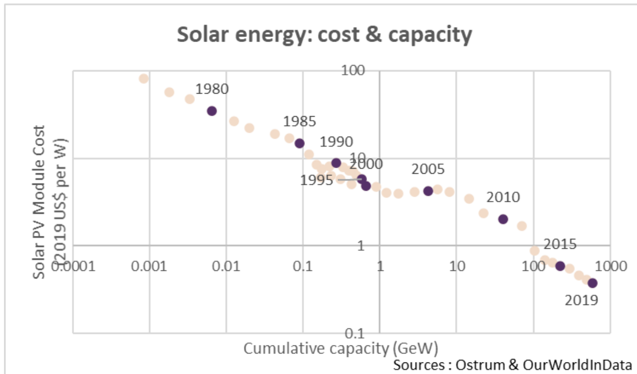


From this point of view emerging countries are therefore more virtuous than developed ones: they have begun to reduce their carbon intensity at a much earlier point in their development. Why? Largely due to technological change.

For example, the cost of alternative energy collapsed, allowing an earlier transition to renewable energy.

The main conclusion from this story is that growth does not necessarily generate more greenhouse gases. On the contrary, beyond a certain level of development, empirical evidence suggests that emissions are decreasing, particularly through the adoption of more efficient technologies. Economic decay is therefore not necessarily the ideal solution either. Reality is more complex than a simple Malthusian analysis suggests.

In "The case for optimism on climate change," Al Gore provided some interesting examples. In 2000, global wind capacity forecasts were 30 TWh, in 2010, they actually reached 346, or 11 times higher; in fact, they are currently at 844 TWh. Similarly, in 2002, the forecast was that 1 GW of solar capacity would be installed in the year 2010: in fact, it was 17 times higher… and 58 times in 2015. The reason is simple, a collapse in the cost of these energies that makes the financial equation more appealing. The graph below shows the evolution.



While technological innovation and development make it possible to do more with less, evolution is far too slow to meet climate stabilization targets.

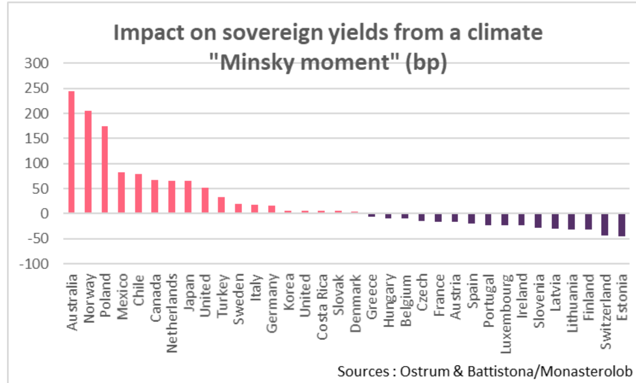
A climate «Minsky moment»

Since the improvement is insufficient, the risk, instead of a gradual adjustment, is to arrive at a point of inflection that generates a brutal adjustment. The current surge in natural gas prices can be a taste of this kind of rupture. This is, once again by analogy with excessive debt, what Mark Carney, former governor of the Bank of England and currently "Special Envoy for Climate Change and Finance" at the UN, calls a "climate Minsky moment": just as excessive indebtedness leads to a breaking point, the famous "Minsky moment", environmental credit crunch can also lead to a brutal stop. A "too late, too fast" adjustment would lead to a reassessment of the valuations of carbon-intensive assets, such as coal-fired power plants, steel mills, or chemical plants, that have operational lifetimes measured in decades. This could destabilize markets and cause a crash, leaving these assets “stranded”[2]. Hence the climate Minsky moment.

In a recent article Stefano Battistona and Irene Monasterolob estimate the implications for sovereigns of such a risk[3]. The paper begins with the remark that “A disorderly transition to low carbon could bring new sources of risk to the financial stability of countries lagging behind in the decarbonization of their economies.” The idea is to model, through a relatively detailed sector model, the impact on the total economy of a large and disorderly increase in carbon prices. By “disorderly”, the authors refer to both how policies are implemented and how the market responds to those policies. If climate policies are introduced late and suddenly, in line with decarbonization targets (e.g. EU 2030 climate and energy targets), they could trigger a disorderly reaction from financial actors who may not be able to anticipate policies in their investment strategies. In this carbon-intensive context, low-emission companies would face unexpected negative market valuation shocks, affecting the value of financial contracts issued by these companies.

Ultimately, this will have an impact on the observed and potential tax revenues of governments. And consequently, on the sustainability of their debt and eventually on their probability of default.

One of the main results is shown on the following graph. This is the risk premium on sovereign rates for 34 countries, if the risk of climate crisis is taken into account. On the list, 18 countries are seeing their rates rise, 3 of them over 100 bps (Australia, Norway and Poland).



The magnitude of the effect is not fully reflected by the markets, and that may be the main point, so it’s an extra-financial risk that is not taken into account, or very partially so, by the markets.

When the regulator gets involved

The example of carbon risk for the sovereign is only one dimension of the problem. A recent ECB study suggests a more comprehensive risk typology[4]. It notes, for example, the risk of collateral if assets are impaired in the event of a climate shock, the exposure of bank loans to risky companies (30% of bank loans are allocated to companies that carry a physical risk), climate risk insurance (Henri de Castries said that a +2° world is “not insurable”), etc.

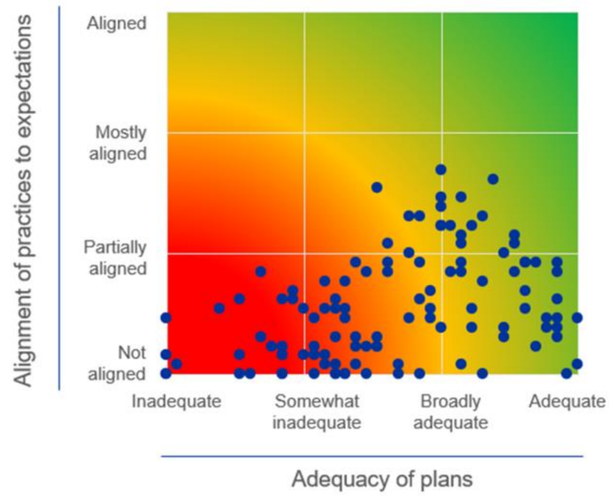
The regulator therefore increasingly considers that this is a risk to be taken into account. The example of sovereign carbon risk shows that the size is not negligible. The European Systemic Risk Board (ESRB) has published a study on the subject[5]. One way of thinking would be to impose prudential ratios on the financial industry or penalties for exposures that are too "carbon-rich". One could, for example, think of a variable capital buffer depending on the degree of risk.

Although embryonic for the moment, these reflections evolve quickly. A large-scale implementation would distort the incentives of institutional investors, which would then have to favor green investments even more explicitly. The ECB is

[2] A “stranded asset” refers to investments or assets that lose value due to market developments. This devaluation of assets is mainly linked to significant and sudden changes in legislation, environmental constraints or technological innovations, which then renders assets obsolete before they are fully depreciated.
[3] “The Climate Spread of sovereign bonds”, Stefano Battistona & Irene Monasterolob (2020) http://web.stanford.edu/group/emf-research/docs/sm/2019/wk2/Monasterolo3.pdf
[4] Climate-related risks to financial stability” https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202105_02~d05518fc6b.en.html
[5] Climate-related risk and financial stability https://www.esrb.europa.eu/pub/pdf/reports/esrb.climateriskfinancialstability202107~79c10eba1a.en.pdf?71a273dc36a85ef05c8bed530466f900

considering a green QE: it has published several preparatory studies for the strategic review it has put in place this week, and climate concerns can be found in several places. The reference document is an "Occasional paper" entitled "Climate change and monetary policy in the euro area", which summarizes (in 193 pages…) the preparatory work of the ECB.

It is also relevant to quote the study by the European banking supervisor, "Time is running out for banks to manage climate and environmental risks", which shows that taking these risks into account is still insufficient in the European banking system. The graph below taken from this study shows that while the banking industry actually intends to move in the right direction (all the points are on the right of the graph), the realization remains insufficient (the points are very low on the graph). Hence the two-step conclusion: "banks must accelerate their efforts" and "banks and supervisor have very busy months ahead".



Source : ECB

However, the effectiveness of a green QE can be questionable: other market players could defer their investments and neutralize the ECB's effort. On the other hand, a regulatory action would force all these investors to operate in the same direction. There is considerable leverage there. With potentially an effect on the prices of financial assets, again very important.

Stéphane Déo

Market review

A hawkish turn is taking shape

The Fed and the BoE will reduce their monetary support. Equities, heckled by Evergrande, are resisting the sharp rise in rates.

The policy meetings of the Fed and the BoE set the tone in financial markets despite a rocky start of the week due to the financial difficulties of the Chinese real estate developer Evergrande. The initial decline in equity markets, amplified by the closing of Asian markets and uncertainty surrounding Chinese authorities' handling of the crisis, subsided by midweek. The fixed income markets reacted to the restrictive turn in UK monetary policy. The T-note yield rose to 1.45% pulling the German Bund towards -0.22%. The steepening of the European curve impacted sovereign spreads to some extent, without undue stress, however. Credit is resisting rising bond yields like equities, which ultimately rose for the week despite increased volatility.

Emergency monetary support policies appear to be coming to an end. The Fed's statement suggests a decline in monthly asset purchases in the near future. The formal announcement will likely come as early as the next FOMC scheduled for November 2. The hypothesis of a 12-month tapering seems less likely now given the growing number of Fed members planning to raise Fed Funds as early as 2022. The reduction in asset purchases could accelerate. Nine of the eighteen participants expect one or two hikes, although the Board remains in favor of the status quo. The BoE also takes note of the sharp rise in inflation so that the end of quantitative easing and a first rate hike are envisaged in November. The Norges Bank raised the repo to 0.25% and a similar move is announced for December. Inflation is a concern in most countries, including Turkey (20%) where government interference has resulted in a 100bp rate cut, which unsurprisingly weakened the Turkish Lira. In this context, the resolutely accommodating posture of the ECB seems to isolate the Frankfurt institution. However, ECB council members openly question staff projections for a slower inflation going forward (1.5% in 2023). There was a time when Philip Lane would have been allowed to intervene verbally in order to counter the rise in bond yields. This is no longer the case and reluctance to talk yields lower inevitably foreshadows a deeper recalibration of asset purchases next year. The end of the PEPP will only be partially offset by an increase in the APP to € 40-50 billion.

The T-note corrected by around 12bp over the week to reach 1.45% at the close. The flattening of the 5s30s spread after the Fed's decision gave way to a significant re-steepening of the US yield curve. Long interest of final investors is mostly concentrated on long-term maturities, while hedge funds have fueled the market pullback, selling 5-year bonds. Asset purchase tapering and the expected cycle of rate increases announced by the Fed pushed real yields higher (+ 10bp) leaving breakeven inflation rates broadly unchanged over the week. However, the TIPS auction went well. The market acceleration to the downside stems from the BoE meeting, which resulted in a 'hawkish' status quo as two out of nine votes for an immediate end to QE. For once, it was the Gilt that dictated the trend in global interest rates... just after the launch of the first Green Gilt (a 12-year issue). The Bund as well as Australian and Canadian bonds corrected sharply. The current level of -0.23% on the German 10-year bond is approaching our target of -0.20% at the end of the year. Long yields have repriced the most so that the German 30-year is now trading around 0.25%, its highest since early July. The yield of the French 30-year OAT (0.90%) is 20bp off the highs for the year. Institutional demand will accelerate to around 1% yield levels. Spreads on peripheral sovereign debt fluctuated weakly without trend. Italian 10-year BTPs trades at 100bp of the Bund. In addition, the euro credit markets seem to have absorbed the pressure from higher interest rates well. Spreads are stable on IG around 83bp even as the Monday session was quite volatile especially in hybrid debt space. Primary issuance slowed slightly, though Green and sustainability bond sales keep growing fast. European high yield, on the other hand, tightened by 3bp.

The equity market is worried about the possible contagion effects of Evergrande's financial difficulties. Evergrande failed to pay a coupon on dollar-denominated bond. The exposure of European banks is marginal, but the bankruptcy of the first Chinese real estate developer would not be without consequences for the Chinese economy. Construction accounts for fully 29% of Chinese GDP, a much higher proportion than the norm for developed countries. Most of the debt is held by local investors, most of them small banks. One must still assess the impact on commodities and the Chinese consumer in the event of a sharp fall in property prices. Against this backdrop, liquidity and demand for new EM bond issues has deteriorated even as spreads remained broadly stable.

In this context, European stock indexes plunged 2% on Monday while the Chinese equity markets were closed. European bank stocks performed well likely reflecting higher bond yields. Rising crude and gas prices benefit the energy sector as some cyclical sectors perform well (automotive, leisure).

Axel Botte
Global strategist

Main market indicators

G4 Government Bonds	27-Sep-21	-1wk (bp)	-1m (bp)	YTD (bp)
EUR Bunds 2y	-0.68 %	+3	+5	+2
EUR Bunds 10y	-0.21%	+11	+21	+36
EUR Bunds 2s10s	47 bp	+7	+16	+34
USD Treasuries 2y	0.28 %	+6	+6	+16
USD Treasuries 10y	1.49 %	+18	+18	+58
USD Treasuries 2s10s	121 bp	+12	+12	+42
GBP Gilt 10y	0.96 %	+17	+39	+77
JPY JGB 10y	0.06 %	+1	+3	+4
€ Sovereign Spreads (10y)	**27-Sep-21**	**-1wk (bp)**	**-1m (bp)**	**YTD (bp)**
France	34 bp	+0	-1	+11
Italy	102 bp	-1	-3	-9
Spain	64 bp	-1	-8	+3
Inflation Break-evens (10y)	**27-Sep-21**	**-1wk (bp)**	**-1m (bp)**	**YTD (bp)**
EUR OATi (9y)	157 bp	+4	+16	-
USD TIPS	236 bp	+5	-3	+37
GBP Gilt Index-Linked	388 bp	+11	+24	+88
EUR Credit Indices	**27-Sep-21**	**-1wk (bp)**	**-1m (bp)**	**YTD (bp)**
EUR Corporate Credit OAS	84 bp	+1	+0	-8
EUR Agencies OAS	42 bp	+1	+0	+1
EUR Securitized - Covered OAS	37 bp	+0	+0	+5
EUR Pan-European High Yield OAS	288 bp	+7	-12	-70
EUR/USD CDS Indices 5y	**27-Sep-21**	**-1wk (bp)**	**-1m (bp)**	**YTD (bp)**
iTraxx IG	49 bp	-2	+4	+1
iTraxx Crossover	243 bp	-10	+13	+2
CDX IG	51 bp	-3	+4	+1
CDX High Yield	293 bp	+5	+15	-1
Emerging Markets	**27-Sep-21**	**-1wk (bp)**	**-1m (bp)**	**YTD (bp)**
JPM EMBI Global Div. Spread	352 bp	+9	+3	+0
Currencies	**27-Sep-21**	**-1wk (%)**	**-1m (%)**	**YTD (%)**
EUR/USD	$1.170	-0.24	-0.82	-4.24
GBP/USD	$1.370	+0.34	-0.44	+0.25
USD/JPY	¥110.9	-1.32	-0.96	-6.9
Commodity Futures	**27-Sep-21**	**-1wk ($)**	**-1m ($)**	**YTD ($)**
Crude Brent	$79.4	$5.5	$7.7	$28.5
Gold	$1 753.2	-$11.0	-$64.4	-$145.2
Equity Market Indices	**27-Sep-21**	**-1wk (%)**	**-1m (%)**	**YTD (%)**
S&P 500	4 455	0.51	-1.20	18.62
EuroStoxx 50	4 164	2.99	-0.63	17.22
CAC 40	6 653	3.06	-0.43	19.85
Nikkei 225	30 240	-0.27	9.40	10.19
Shanghai Composite	3 583	-0.67	1.72	3.16
VIX - Implied Volatility Index	19.12	-25.63	16.66	-15.96

Source: Bloomberg, Ostrum Asset Management

Additional notes

Ostrum Asset Management

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Final version dated 27/09/2021

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