

Is the currently elevated inflation durable ?

And how to take advantage of it...

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March 2022

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Inflation market review

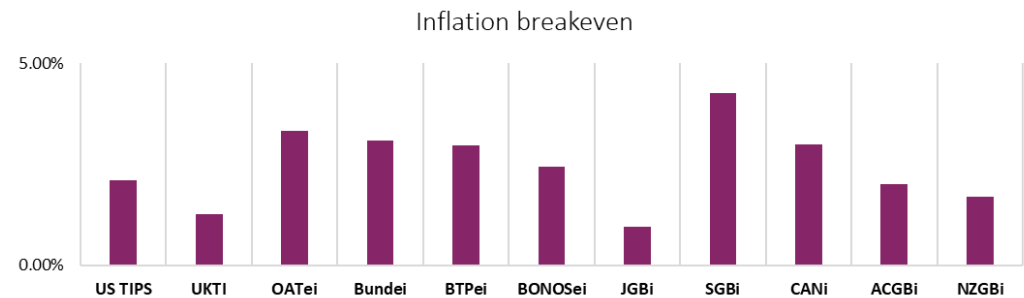
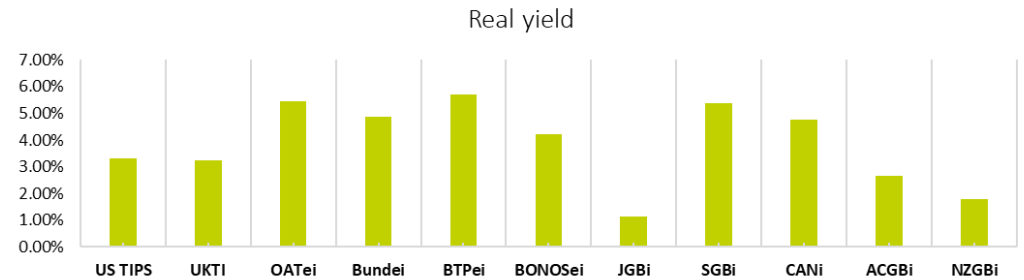
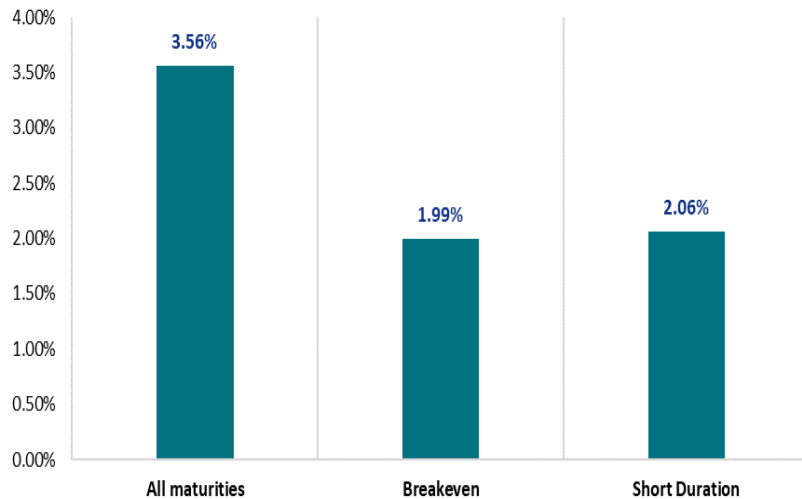
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Inflation-linked bonds performance

Since February 18th 2022



Russia/Ukraine war has triggered a risk off movement over the par week that has benefitted fixed Income securities. Inflation-linked bonds have delivered a particularly strong performance as geopolitical tensions put further pressure on inflation, mostly through energy prices.

Source: AXA IM, Bloomberg as at 01/03/2022

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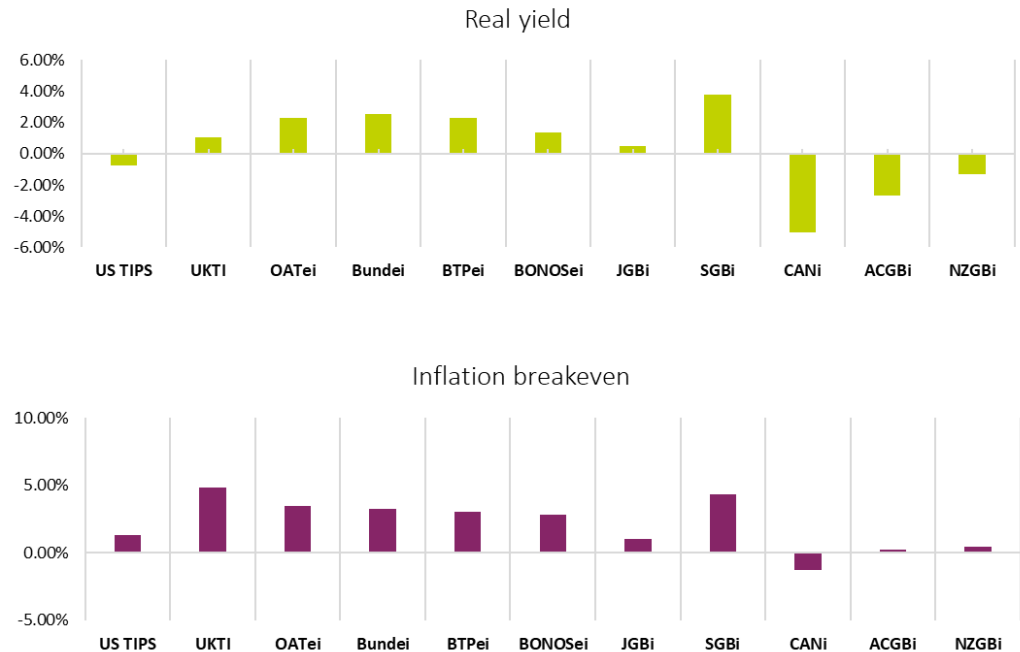
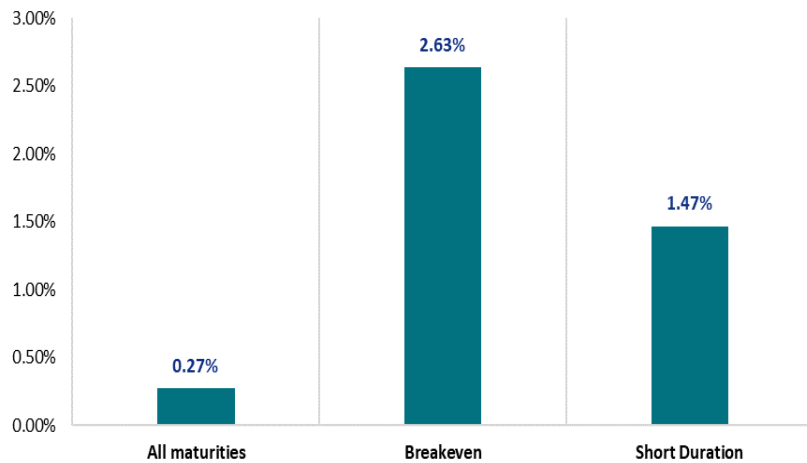
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Inflation-linked bonds performance

YTD



Inflation breakevens and short term inflation linked bonds have benefitted the most since the beginning of the year as realized inflation continues to surprise to the upside. On that context, investors have priced more aggressiveness from Central Banks hurting longer maturities in some markets.

Source: AXA IM, Bloomberg as at 01/03/2022

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Are we in a stagflation phase?

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The macroeconomic consequences of Russia's attack

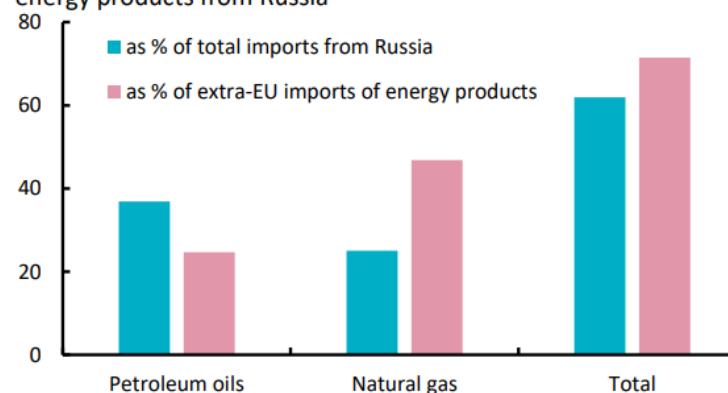
What about growth?

Direct trade links with Russia/Ukraine

Country	Russia (to/from)		Ukraine (to/from)	
	Exports % GDP	Imports % GDP	Exports % GDP	Imports % GDP
Euro area	1.4	1.9	0.3	0.2
Germany	1.8	2.4	0.4	0.4
France	0.8	0.9	0.2	0.1
Italy	1.0	1.8	0.2	0.4
Spain	0.6	0.7	0.2	0.3
US	0.0	0.1	0.0	0.0
China	0.4	0.6	0.1	0.1
UK	0.2	1.2	0.0	0.0

Source: Eurostat, United Nations and AXA IM Research, 2020 data

European countries import a sizable share of energy products from Russia



Source: Eurostat and AXA IM Research, 24 February 2022

We expect the direct disruption of trade links between Russia, Ukraine and the rest of the world as unlikely to be the main risk to economic growth for the global economy. We consider the biggest economic shocks to be transmitted through energy markets

Source: AXA IM

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 Investment Managers

The macroeconomic consequences of Russia's attack

We consider the conflict likely to lift inflation even further and more persistently over the coming two years

Assumptions and projections

Summary of Russia-Ukraine conflict assumptions and projections					
Assumptions		2022		2023	
Oil price (WTI)		\$125 (peak)		\$100 (end)	
European gas price		€125/MWh (peak)		€80/MWh (end)	
Projections (%)		Projected new forecast		Current forecast	
		2022	2023	2022	2023
Global	GDP (avg)	3.6	3.2	4.0	3.5
	GDP (avg)	3.0	1.6	3.4	2.1
Euro area	CPI (avg)	5.1	2.2	4.0	1.7
	Policy rate (end yr)	-0.25	0.00	-0.25	0.0
US	GDP (avg)	2.9	2.2	3.2	2.0
	CPI (avg)	5.8	3.1	5.0	2.9
	Policy rate (end yr)	1.25	2.25	1.25	2.75
China	GDP (avg)	5.0	5.0	5.0	5.3
	CPI (avg)	2.5	2.8	2.0	2.3
	Policy rate (end yr)	2.65	2.65	2.75	2.75
UK	GDP (avg)	4.0	1.7	4.3	2.1
	CPI (avg)	6.3	2.4	5.5	2.1
	Policy rate (end yr)	1.00	1.00	1.00	1.00
EM	GDP (avg)	4.0	3.9	4.4	4.3

Source: AXA IM Research, 25 February 2022

Source: AXA IM Research

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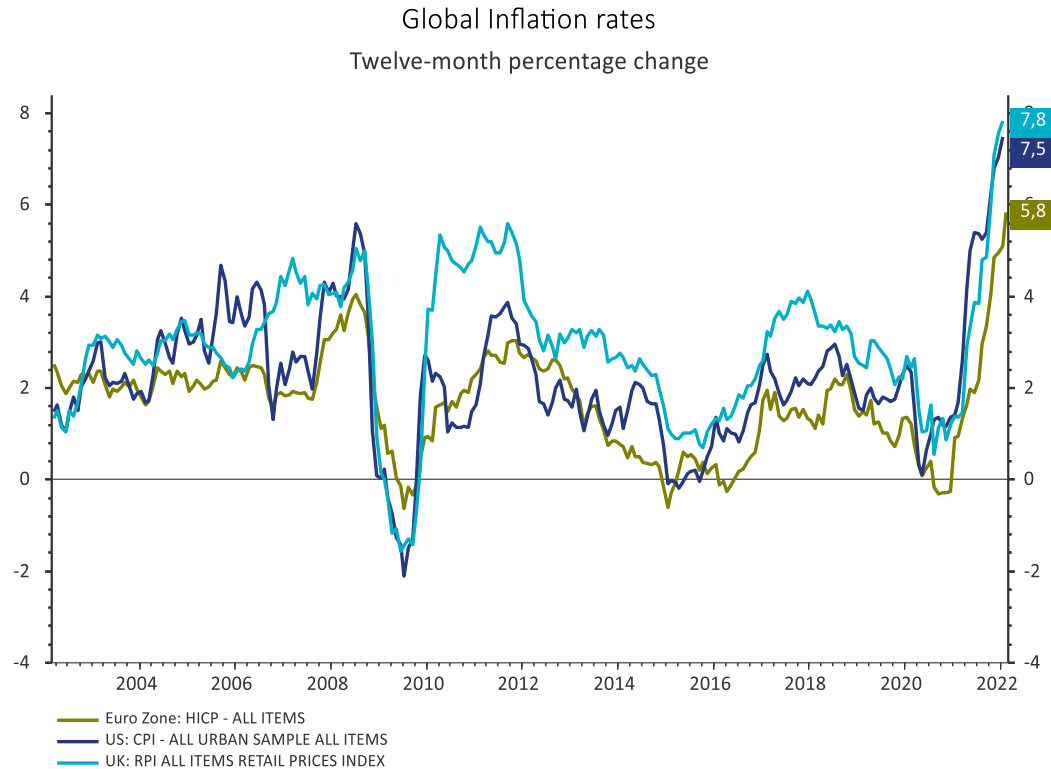
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Inflation is at a 40-year high in the US

The inflation is - as very often - synchronised across mature countries



Source: Refinitiv Datastream 02/03/2022

Inflation is at its highest levels since the 80's. After more than decade with low and stable inflation, consumers' prices increase over the past year has taken many investors by surprise.

Source: AXA IM – For illustrative purposes only

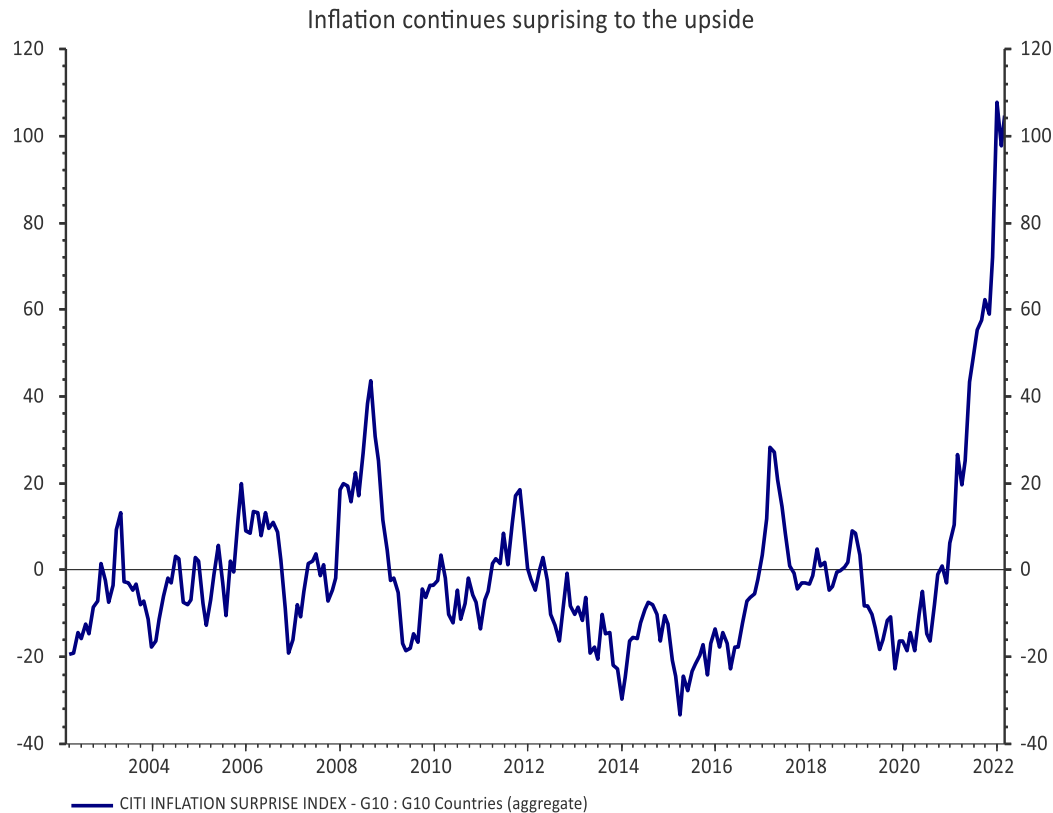
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Beyond high inflation, the magnitude of surprises is never seen in over 20 years

Even after a year of higher than expected inflation, upside surprises continue month after month



Source: Refinitiv Datastream 02/03/2022

Inflation is at its highest levels since the 80's. After more than decade with low and stable inflation, consumers' prices increase over the past year has taken many investors by surprise.

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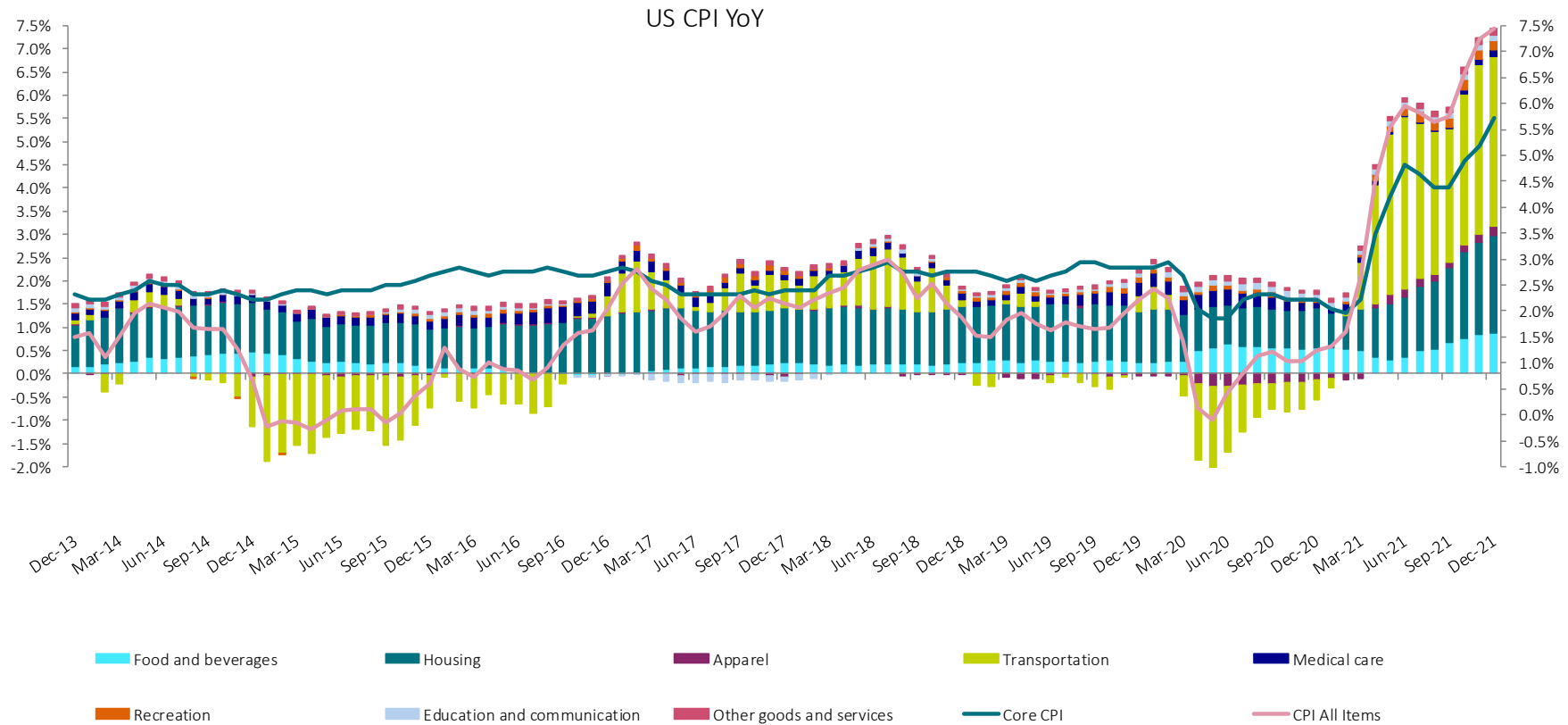
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Current inflation is essentially “exogenous”

Supply chain disruptions and shortages are the main culprits



While current inflation is essentially coming from “exogenous” factors the longer inflation will remain elevated the greater the risk that inflation will remain sustainably high.

Source: Bureau of Labor Statistics <http://www.bls.gov/news.release/cpi.t01.html> as at 31/01/2022

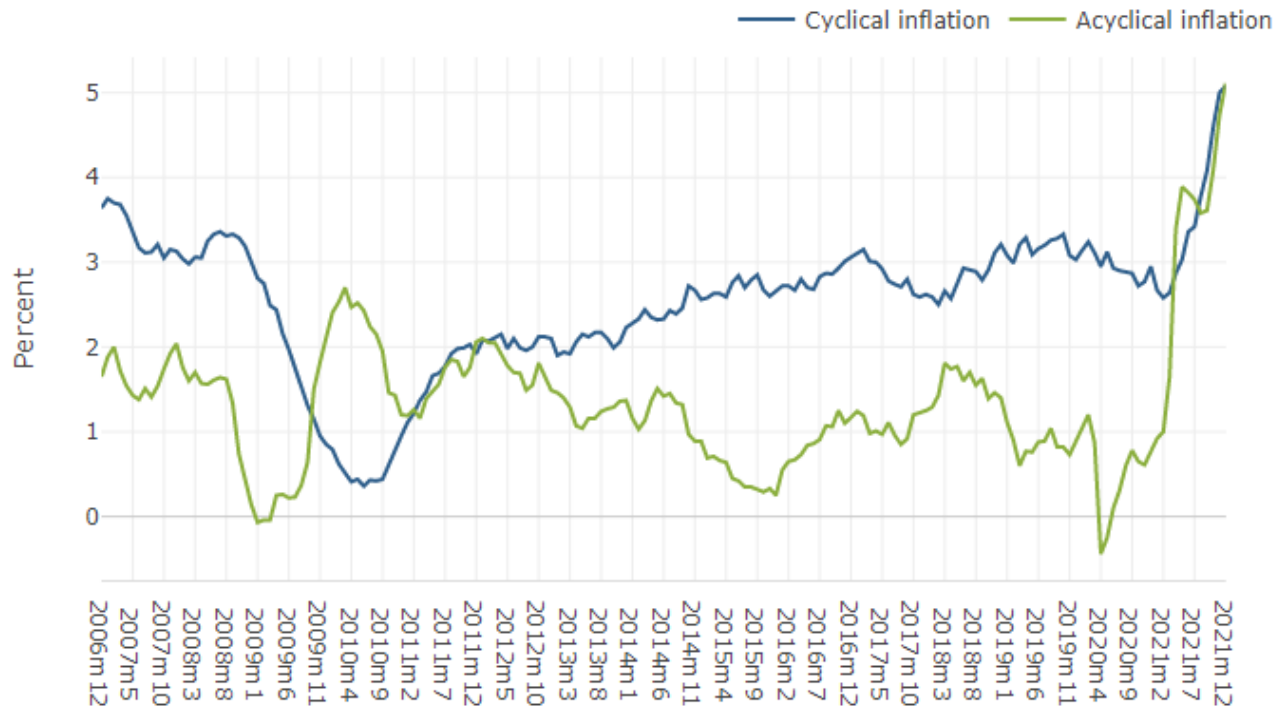
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Inflation is probably starting to become “endogenous”

Domestic forces are also playing a role on inflation

San Francisco Federal Reserve’s measure of Cyclical and Acyclical Inflation



Some indicators start to suggest that inflation is not only imported but domestically generated as well.

Source: San Francisco Fed : <https://www.frbsf.org/economic-research/indicators-data/cyclical-and-acyclical-core-pce-inflation/>

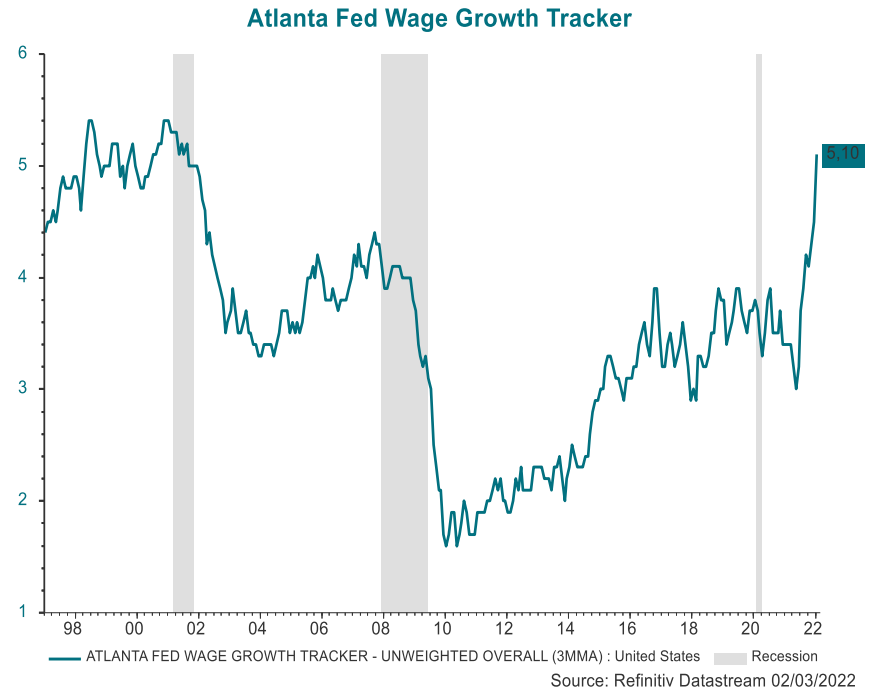
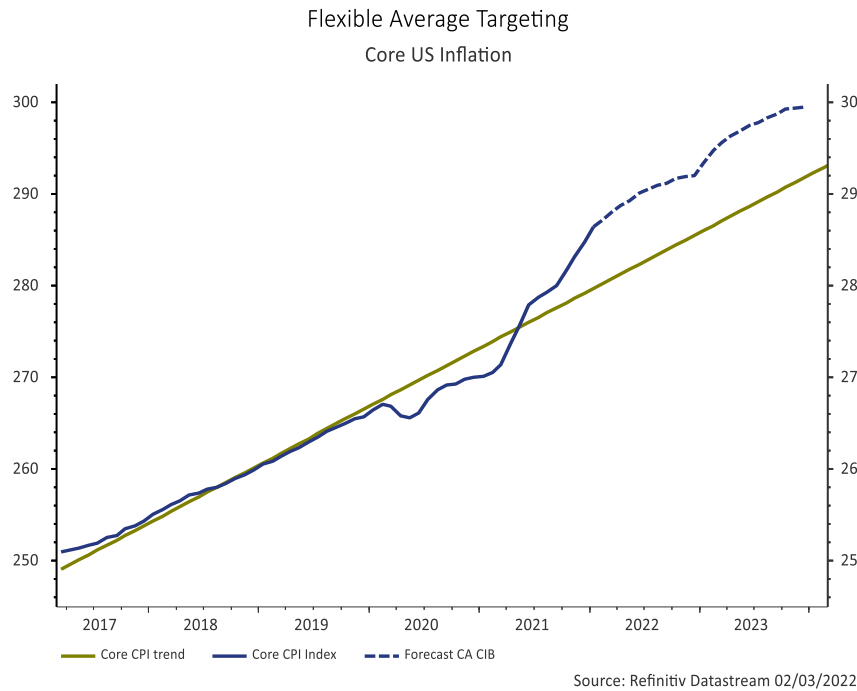
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Why have Central Banks suddenly become hawkish

Monetary policy objectives are met and second round effects are starting to materialise



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Near term pressures overshadow longer term risks

Long term risks are likely underestimated by the market

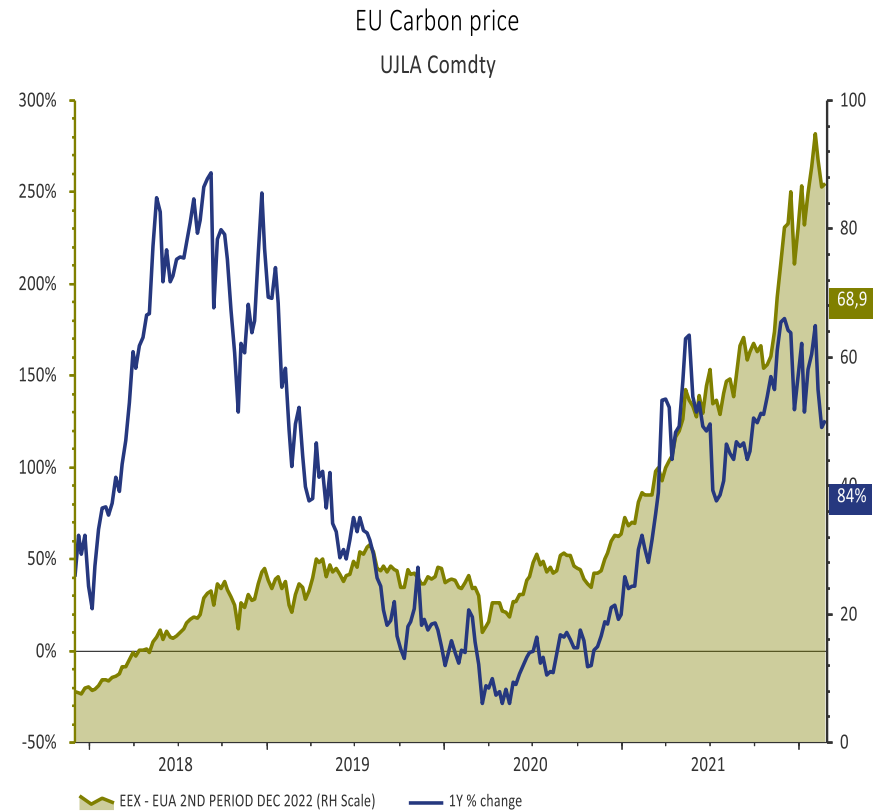


Near term pressures

- Reduced mobility and lower economic activity
- Oil prices
- Shortages and supply chain issues
- Higher wages

Medium to long term pressures

- Fiscal spending
- Deglobalization and trade wars
- Green revolution



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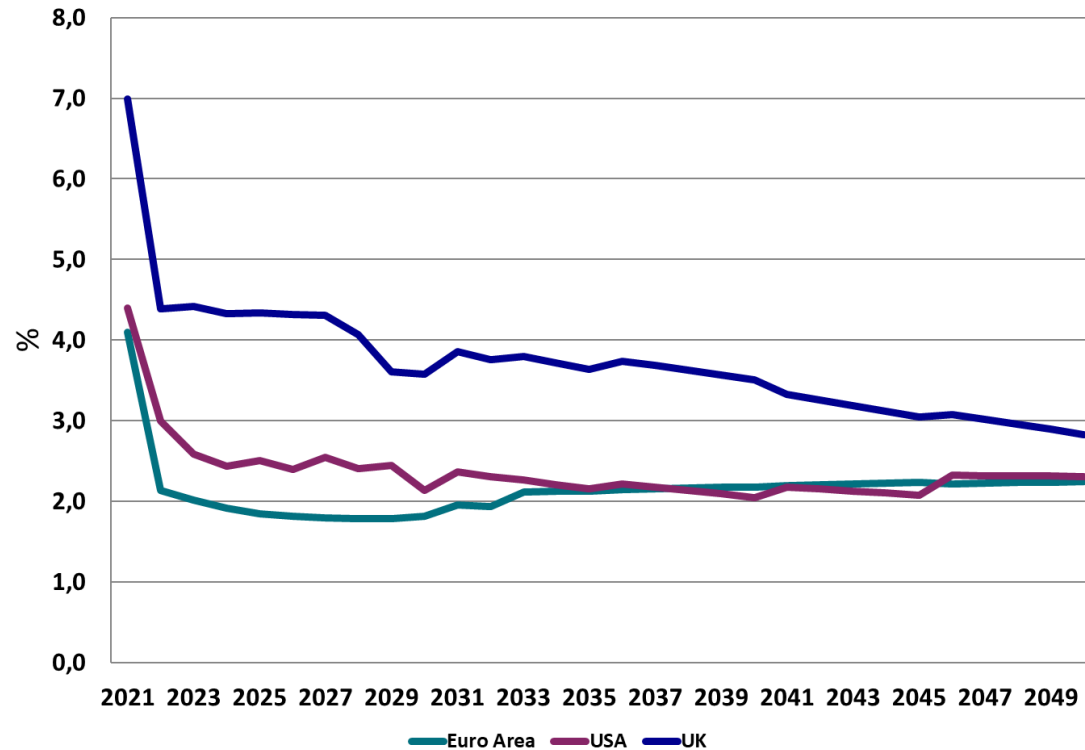
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What is priced into the market

A short term inflation spike and not sustainably high inflation

Annual inflation rates priced into the inflation swap market



The strip of 1Y inflation swaps helps understand what are the annual inflation rates priced into the market. This shows that outside of the UK, markets expect inflation to be mostly transitory.

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Implications for investors

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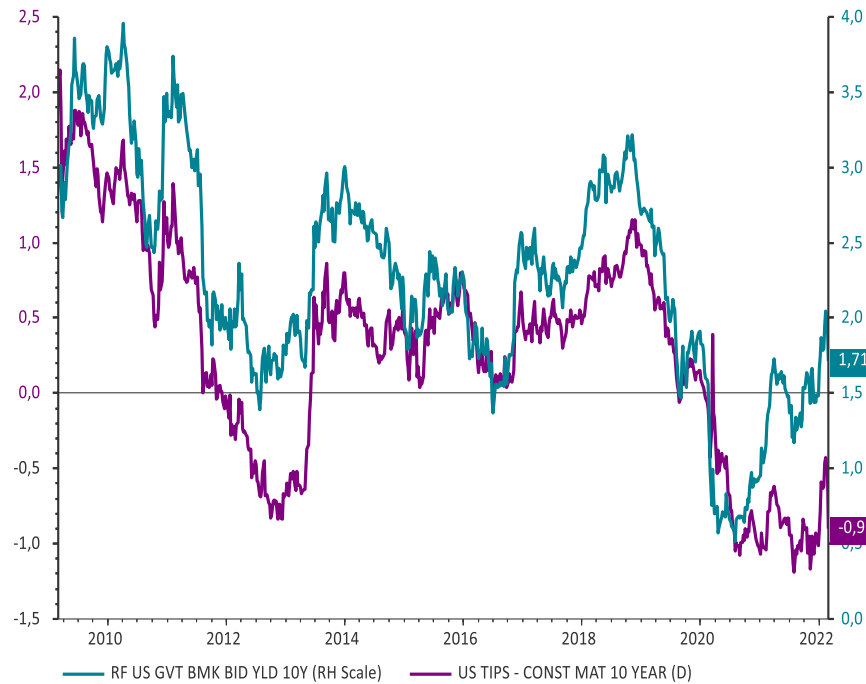
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Implications of high inflation for investors

Risk of higher interest rates until annual inflation starts to moderate

US 10-year nominal vs real yield



Source: Refinitiv Datastream 02/03/2022

Bund 10-year nominal vs real yield



Source: Refinitiv Datastream 02/03/2022

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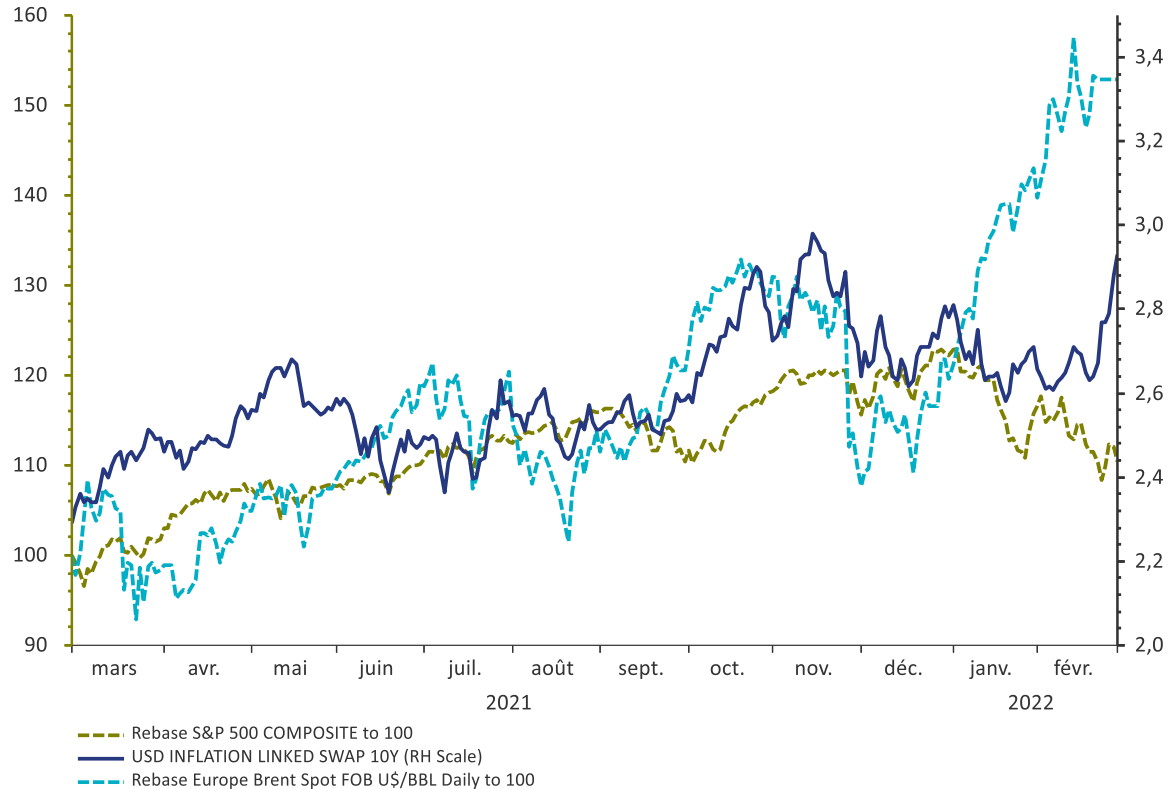
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Implications of high inflation for investors

Inflation breakevens have been held down by risk aversion while oil prices have moved higher

Inflation expectations have lagged the increase in oil prices



Source: Refinitiv Datastream 02/03/2022

Source: AXA IM. The above represents our current market views only and does not constitute investment advice.

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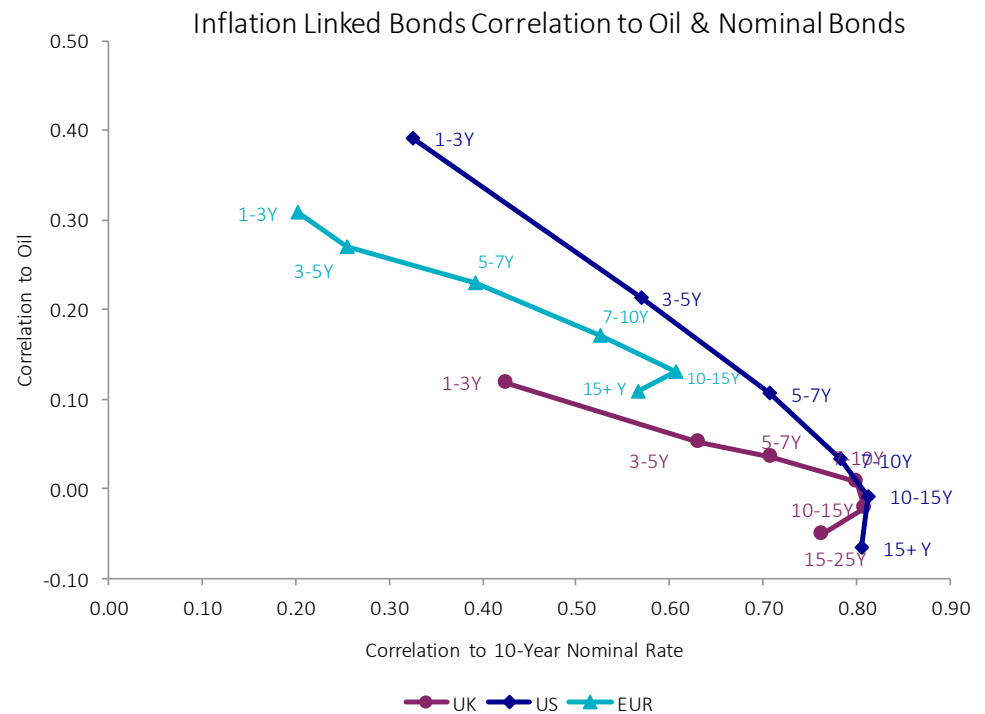


Inflation Linked Bonds

Short-end inflation linked bonds are the most sensitive to oil price developments

Short maturities inflation linked bonds are less sensitive to interest rates and more so energy prices.

- Short-end inflation linked bonds are the most sensitive to oil.
- Across markets, US TIPS are also the most sensitive to oil prices and by extension inflation.
- Ultra-long UK linkers are less correlated to rates than you may think.
- ✓ Local pension funds are very active in the 30-year and longer maturities.



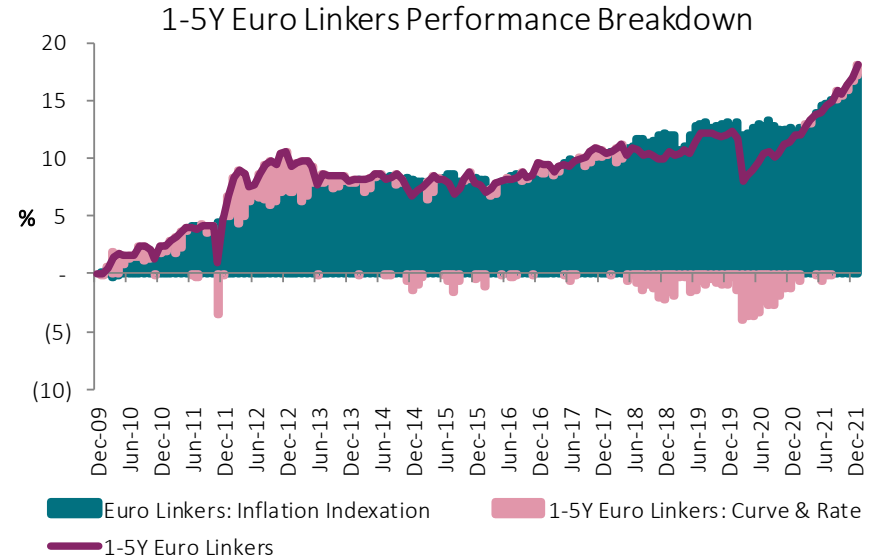
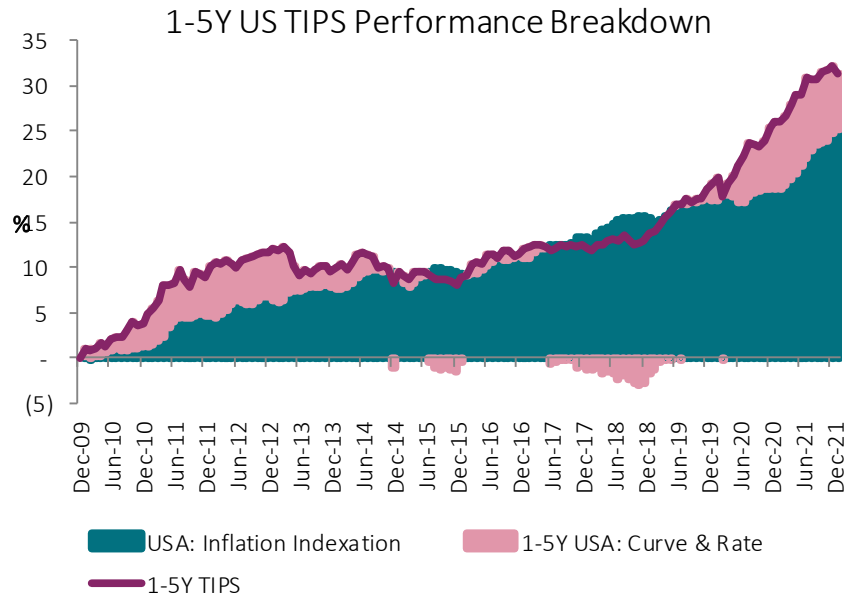
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Short Duration Inflation Linked Bonds

Performance



Short duration inflation linked bonds performance is historically close to inflation itself

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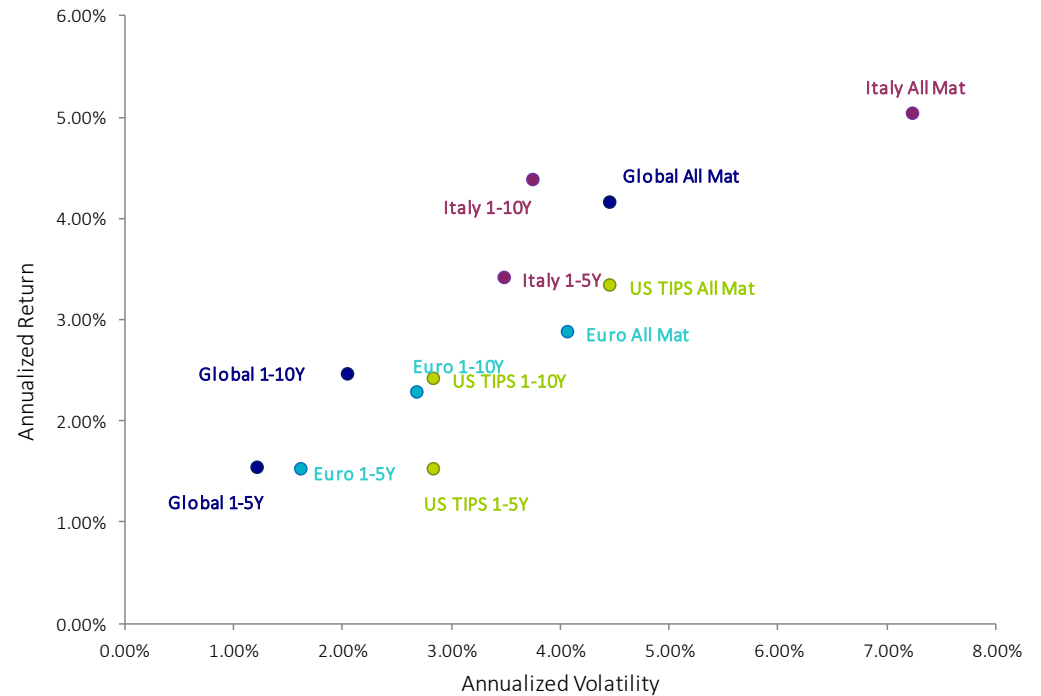
Inflation Linked Bonds

Risk & Return picture

It appears to us that there is a diversification benefit with a global approach in inflation linked bonds.

Short duration inflation linked bonds have roughly delivered more than half of all maturity's performance for a third of the volatility.

Inflation Linked Bonds: 10-Year Risk / Return Picture








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What and When?

Understanding our Global inflation strategies

	Global Inflation Bonds	Global Inflation Bonds REDEX ¹	Global Inflation Short Duration Bonds
 MATURITY	All Maturities	All Maturities	Short Maturities
 DURATION EXPOSURE	HIGH (~ 13 years)	REDUCED by selling 10yr interest rate futures (~ 2 years)	LOW (~ 3 years)
 PERFORMANCE ENGINE	1. Rates & Duration 2. Inflation indexation (residual)	Inflation breakeven (expectations)	1. Realized Inflation 2. Duration
 WHEN?	<ul style="list-style-type: none"> • Real Interest rates ↓ or = • Positive Inflation 	<ul style="list-style-type: none"> • Interest rates ↑ • Rising inflation breakevens 	<ul style="list-style-type: none"> • Positive realized Inflation • Residual interest rate impact
 SPECIFIC RISKS	<ul style="list-style-type: none"> • Interest rates risk • Falling / Low inflation 	<ul style="list-style-type: none"> • Interest rates risk • Potentially negative carry • Falling / Low inflation 	<ul style="list-style-type: none"> • Interest rates risk • Falling / Low inflation

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AXA WF Global Inflation Short Duration Bonds

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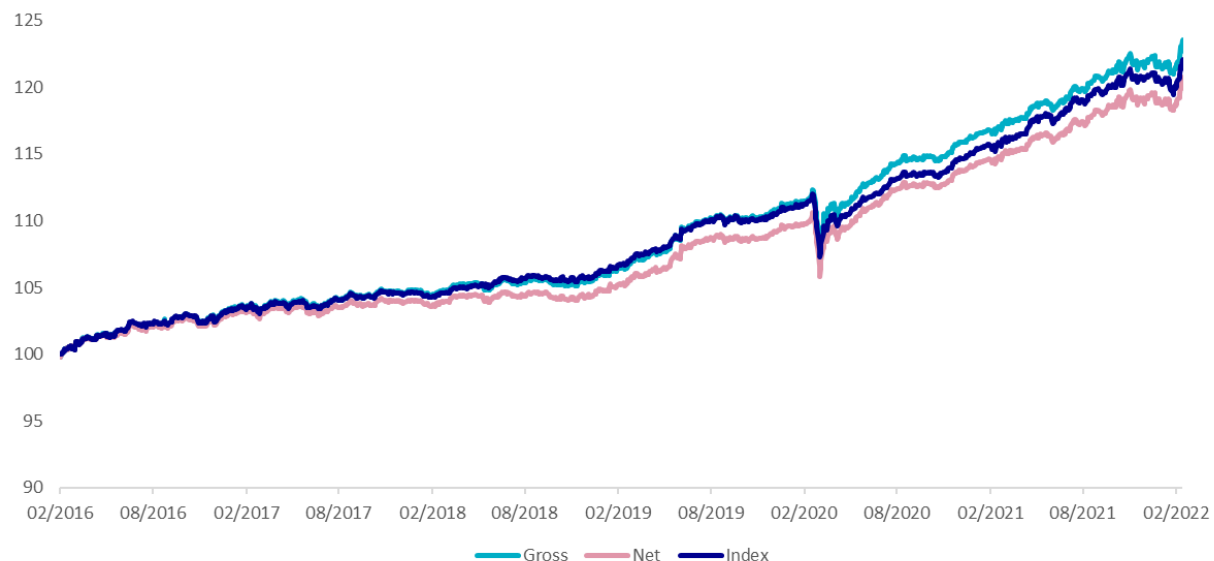
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AXA World Funds Global Inflation Short Duration Bonds I USD

Performance

Gross and Net cumulative performance (index=100, Feb 2016)



Cumulative Performance	YTD	1M	3M	1Y	3Y	5Y	SL	Cumulative Performance	1Y	3Y	5Y
Net Performance	0,99%	1,40%	1,27%	5,52%	14,71%	16,87%	20,72%	Net Performance	5,49%	4,68%	3,17%
Gross Performance	1,05%	1,44%	1,37%	5,94%	16,06%	19,16%	23,55%	Gross Performance	5,90%	5,08%	3,57%
Performance Indicator ¹	0,83%	1,25%	1,06%	5,67%	14,42%	17,80%	22,08%	Performance Indicator	5,64%	4,59%	3,33%
Excess Return (Gross)	0,22%	0,19%	0,31%	0,27%	1,64%	1,36%	1,47%	Excess Return (Gross)	0,26%	0,49%	0,24%
Tracking Error	1,23%	1,40%	1,26%	0,55%	0,44%	0,39%	0,36%				
Fund's Volatility	3,73%	4,53%	3,30%	2,16%	1,70%	1,53%	1,47%				
Information Ratio	1,18	2,43	0,72	0,87	1,13	0,61	0,56				

Source: AXA IM/UBS Delta Paris as at 28/02/2022. Past performance is not a guide to future performance. No assurances can be made that profits will be achieved or that substantial losses will not be incurred, The portfolio first NAV date was on 16/02/2016. (1) The fund is managed in reference to Barclays Capital World Government Inflation-Linked 1-5 yr Bond Hedged USD index. The fund was launched on 16/02/2016. Performance analysis is relative estimated performance based on unaudited data sourced from UBS Delta. The chart includes gross and net performance. For net, the deduction of fees reduces the level of returns

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AXA World Funds Global Inflation Short Duration Bonds

Income estimation over 1-year

	USD	EUR	CHF
Total income	4.79	3.40	3.22
Real yield	-2.15	-2.15	-2.16
Roll down effect	0.87	0.87	0.89
Inflation indexation	5.74	5.74	5.74
Hedging cost/benefit	0.32	-1.06	-1.25
<i>EUR</i>	<i>0.27</i>	<i>0.00</i>	<i>-0.04</i>
<i>USD</i>	<i>0.00</i>	<i>-0.91</i>	<i>-1.03</i>
<i>GBP</i>	<i>0.00</i>	<i>-0.10</i>	<i>-0.11</i>
<i>JPY</i>	<i>0.04</i>	<i>-0.02</i>	<i>-0.03</i>
<i>AUD</i>	<i>0.00</i>	<i>-0.01</i>	<i>-0.01</i>
<i>CAD</i>	<i>0.00</i>	<i>-0.01</i>	<i>-0.01</i>
<i>DKK</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>NZD</i>	<i>0.00</i>	<i>-0.01</i>	<i>-0.01</i>
<i>SEK</i>	<i>0.01</i>	<i>0.00</i>	<i>0.00</i>

Market	Custom Inflation Assumptions
GBP	7.95
USD	6.24
EUR	4.85
CAD	3.64
DKK	1.56
AUD	3.09
NZD	3.22
JPY	1.54
SEK	1.60
France	3.21

Source: AXA IM as at 28/02/2022. Total Income is estimated using current real yields, current roll down impact, inflation indexation forecast and hedging cost/benefit. Inflation indexation forecasts used are average inflation over the year from top forecaster of our quarterly inflation survey. Total income estimates assume there is no market movement or any impact on the price of a security (ceteris paribus). For illustrative purposes only.

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Inflation-linked bonds

Key concepts of investing in inflation linked bonds

REAL RATES

- **Premium received** every year by the buyer of the indexed linked bond **in addition to inflation**
- As future inflation is fully guaranteed by the bond issuer, market participants will agree on the annual premium earned on top of inflation every year when they trade.

INFLATION INDEXATION

- Most of the inflation accrual that occurs over the life of an inflation linked bond is **paid out at maturity as part of the indexation to inflation of the principal** of the bond (the rest is paid as part of coupons).
- Inflation indexation is **computed and adjusted daily** so that investors pay for past and already known inflation while getting exposure to future inflation accrual.

INFLATION BREAKEVEN

- The breakeven is the inflation level for which an investment made in an inflation linked bond equals an investment made in a nominal bond.
- Breakeven **reflects the expected rate of inflation** until the bond's maturity, **embedded in market prices**
- However it is also influenced by supply / demand imbalances, the inflation risk premium and relative liquidity.

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