Amundi ASSET MANAGEMENT | ETF

Bond Explorer

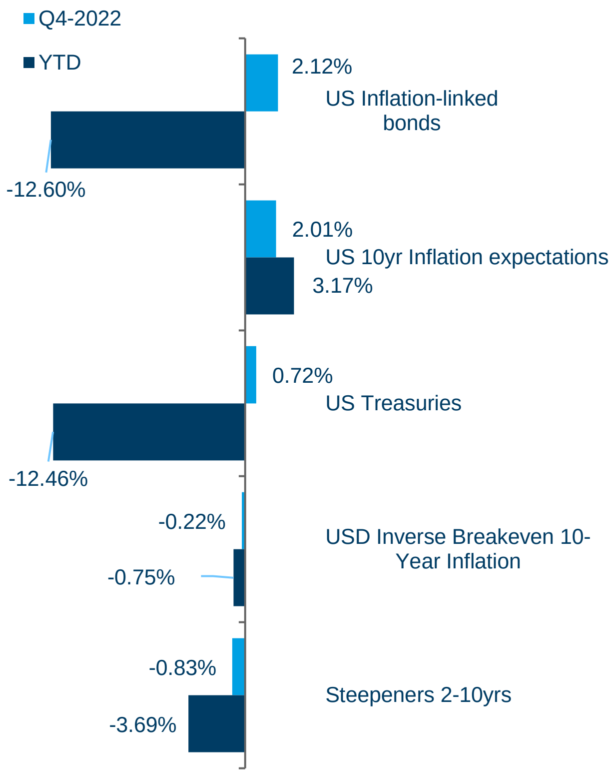
US inflation & rates Q4 2022

In this quarterly report, we review the main trends in the US fixed income market over the past quarter and discuss how these trends have influenced the performance of nominal and inflation-linked bonds as well as more sophisticated inflation-expectations and yield-curve strategies.

Key takeaways

- **Some respite for Treasuries:** Lower real rates provided for a recovery in TIPS performance and inflation expectation strategies (+2.12% and +2.01% respectively in Q4 - see p.6-8 for a full overview). Nominal bonds posted positive returns in Q4. 3-7yr maturity buckets benefitted the most.
- **US inflation decelerated:** The decline in headline prints was supported by a lower contribution from energy prices. The contribution from gasoline prices almost halved compared to September. Still, close to 80% of CPI categories recorded annual prints greater than 4% in November.
- **What's next?** We think that the slowdown in economic activity and further deceleration in inflation is positive for US Treasuries and will facilitate a reallocation on duration as the year progresses. Slower economic activity and inflation could also push the Fed to act quicker than currently anticipated with a reversal in policy rates in 2024. Such a move would trigger a sharp bull steepening of the US yield curve and benefit steepening strategies.

Performance overview*



*Performance figures show gross total returns in US dollar terms. Past performance is not a reliable indicator of future performance. For indices' full names, please refer to index glossary on p.4. Data as at 30/12/2022. Sources: Bloomberg, Amundi.

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Summary

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Market & performance overview

Inflation declined but remained elevated in Q4

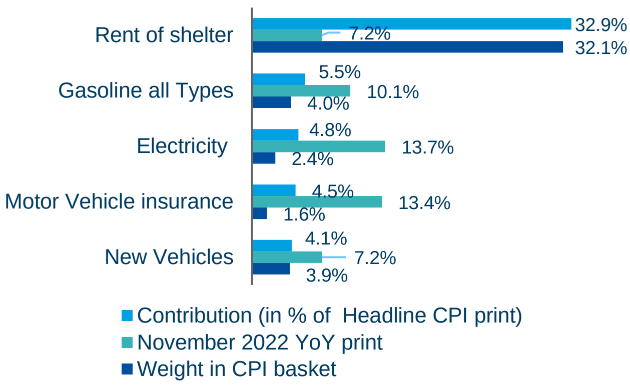
Long-term inflation expectations, as measured by 10Y inflation breakeven rates, stabilised in Q4 2022 at around 2.3% at a time when headline inflation decelerated back to 7.1% from a 9.1% YoY multi-decade high back in June. The decline in headline inflation prints was supported by a lower contribution from energy prices. Still, core inflation remained sticky over the period only moving back to 6.0% YoY, down from a 6.6% YoY high in September. Lower inflation also allowed the Fed to adjust policy rates in a less aggressive manner compared to Q3, with a 75bps increase in Fed Funds compared to 150bps in Q3. Inflation expectations also edged slightly higher in Q4. This, along with a rally of long-duration bonds provided for a recovery in TIPS performance and inflation expectation strategies (+2.12% and +2.01% respectively in Q4 - see p.6-8 for a full overview). Lastly, nominal bonds posted positive returns in Q4 with the 3-7yr maturity bucket benefitting the most (+1.28% in Q4).

Focusing on the drivers of the November inflation prints, shelter, energy and vehicles contributed the bulk of the print. High inflation remained well entrenched across categories, with close to 80% of CPI categories recording annual prints greater than 4% in November. Still, the pace has decelerated compared to Q3, supported. The contribution from gasoline prices almost halved compared to September.

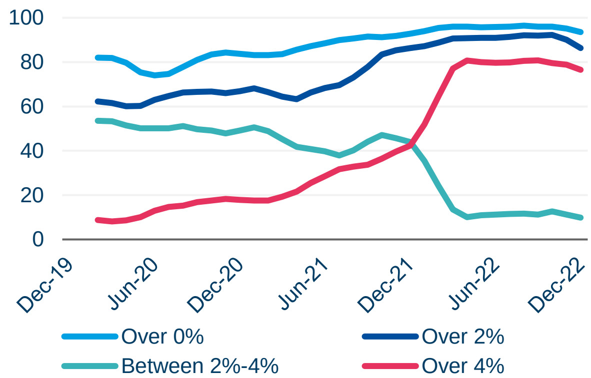
Looking ahead, inflation is likely to remain well above the Fed's long term 2% target in the coming quarters, given high diffusion levels across the CPI basket categories. Lower energy prices, and easing from supply-chain bottlenecks on the back of the China reopening should allow Goods price to come down further. Still, labour market imbalances will remain key to the inflation outlook. The latest payroll data showed robust hiring, and unemployment at a historically low level (3.5%) paired with easing pressures on wage growth. A stable labour market should mitigate the likelihood of an economic downturn materialising in the near term. While the Fed prepares to pause interest rate increases, inflation is likely to remain at above pre-pandemic levels allowing for some upward shift in inflation expectations which would support TIPS performance. We maintain a constructive view on real rates.

Inflation expectations stabilised in Q4 2022
US CPI & inflation breakeven and consumer expectations (in %)

Shelter & energy among the top contributors
US CPI top contributors by sub-category



The pace of rise in prices is slowing
US CPI diffusion levels – weighted share of CPI components (YoY)



US CPI diffusion indices are calculated by aggregating the CPI components weights where YoY % growth is above or below a defined threshold. Here data cover an aggregated weight of 99.5% of the underlying US CPI basket (174 categories). Sources: Bloomberg, BLS, Amundi. Data as at 30/12/2022. Past performance is not a reliable indicator of future returns

A slower pace of rate hikes from the Fed

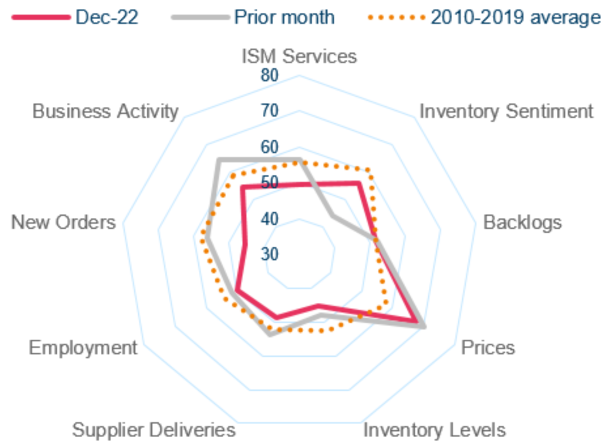
The deceleration in price levels allowed the Fed to slow the pace of rate hikes in December to 50bp. This provided some respite for US Treasuries across all maturity buckets, with intermediate maturities (3-7 years) the most favoured – see p.5 for a detailed performance analysis.

The US economic cycle showed signs of deceleration with higher rates and high inflation biting into consumers' disposable income and corporate margins. Business surveys turned down. The ISM survey for services sectors – which accounts for 80% of US GDP – plunged in December sending worrying signals that demand is cooling. The index plunged 6.9 points in December to 49.6, led by a severe downward shift in business activity (-10 points down to 54.7), and new orders (-10.8 points to 45.2). Still, 11 of 18 services industries reported growth but remained concerned about "continued inflationary pressures". The 2y10y yield curve went deeper in inverted territory in Q4. History suggests that a sustained yield curve inversion typically forebodes a recession. We anticipate stagnation in economic activity in the US for 2023 (+0.9% YoY) on the back of weak domestic demand.

Market expectations on the Fed's terminal rate – as priced by the OIS market - shifted higher from 4.50% late in Q3 to ~5.0% at the time of printing. In our view, the central bank will maintain its commitment to tackle inflation and we expect terminal rates of around 5.00%-5.25% and for this to occur at some point in Q2 this year. In our view, the higher yield regime offers interesting opportunities in the government bond space, particularly after over a decade of low-to-negative interest rates, and compelling entry points have emerged. We think that the slowdown in economic activity and further deceleration in inflation is positive for US Treasuries and will provide for a reallocation on duration as the year progresses. Downside surprises on economic activity and inflation could also push the Fed to act quicker than currently anticipated in our central scenario with a reversal in policy rates from late 2023. Such a move would trigger a sharp bull steepening of the US yield curve.

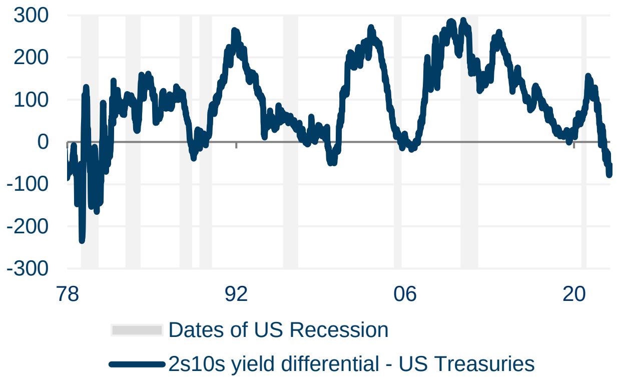
Business surveys flag downside risks to activity

ISM Services – breakdown by components



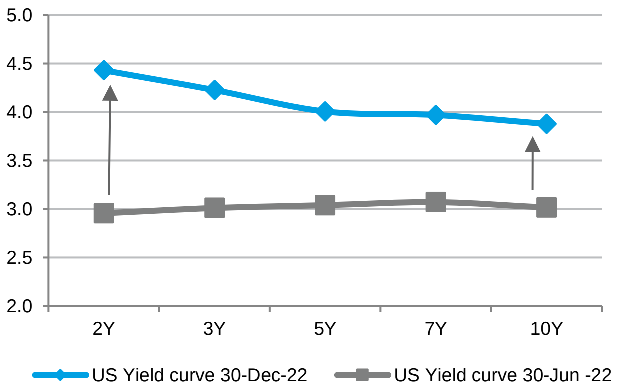
US Treasury curve deeper in inverted territory

US 2s10s yield gap and US recession



US Yield curve shifted higher and bear steepened in H2

US Treasury yield curve Dec 22 vs Jun 22



Sources: Bloomberg, NBER, Amundi. Data as 30/12/2022. Past performance is not a reliable indicator of future returns.

Index definition

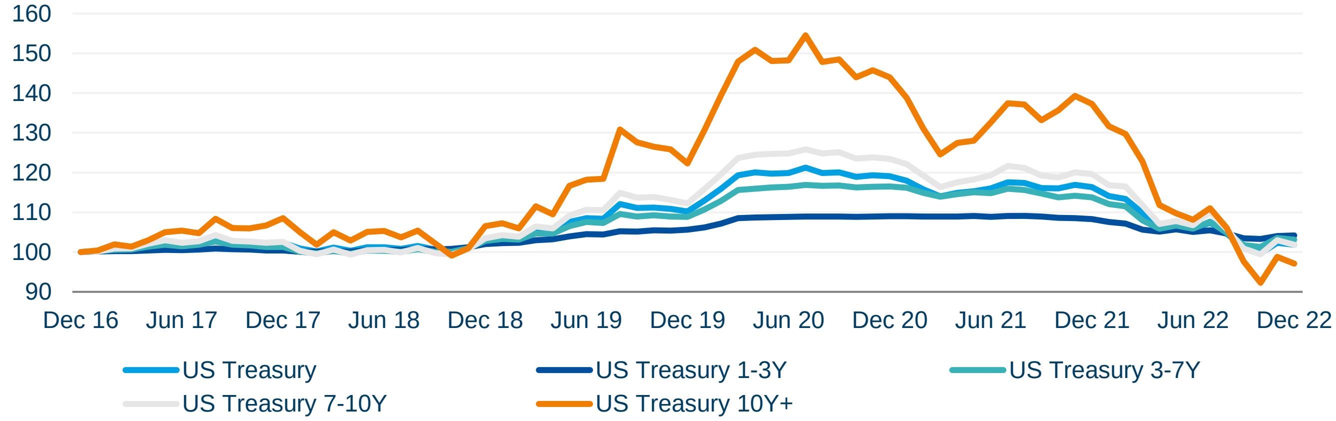
Index Exposure	Index name	Bloomberg ticker
US Inflation-Linked bonds	Bloomberg Barclays US Govt Inflation-Linked All Maturities TR Index	BCIT1T Index
	The index offers an exposure to the US Treasury Inflation Protect Securities (TIPS Market)	
US 10-Year Inflation Expectations	Markit iBoxx USD Breakeven 10-Year Inflation Index	IBXXUBF1 Index
	The index is representative of the performance of a long position in the 6 last issuances of U.S. 10-year Treasury Inflation-Protected securities and a short position in U.S. Treasury bonds with adjacent durations. The difference in yield between these bonds is commonly referred to as a “breakeven rate of inflation” and is considered to be a measure of the market’s expectations for inflation over a specified period of time.	
US Treasuries	Bloomberg Barclays US Treasury TR Index	LUATTRUU Index
	The Index measures US dollar-denominated, fixed rate, nominal debt issued by the US Treasury	
US Steepener 2-10 years	Solactive USD Daily (x7) Steepener 2-10 Index	SOUD7STT Index
	The index tracks the investment performance of a systematic strategy whose returns are directly linked to changes in the US treasury yield curve. The index is constructed such that for a 1bp increase in the steepness of the curve, the index is expected to increase roughly 7bps, though market factors may cause some deviation. The index consists of two underlying components: a long position in the 2Y US Treasury Bond Futures and a short position in the 10Y US Treasury Ultra Bond Futures.	

Source: Bloomberg, Solactive, IHS Markit Amundi.

US Treasuries

Bloomberg US Treasury Index and buckets

Index performance

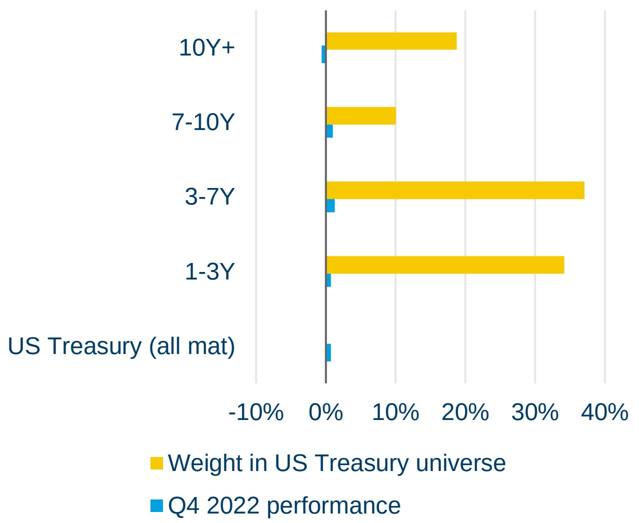


Base 100 = 01/06/2016
Sources: Amundi, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns

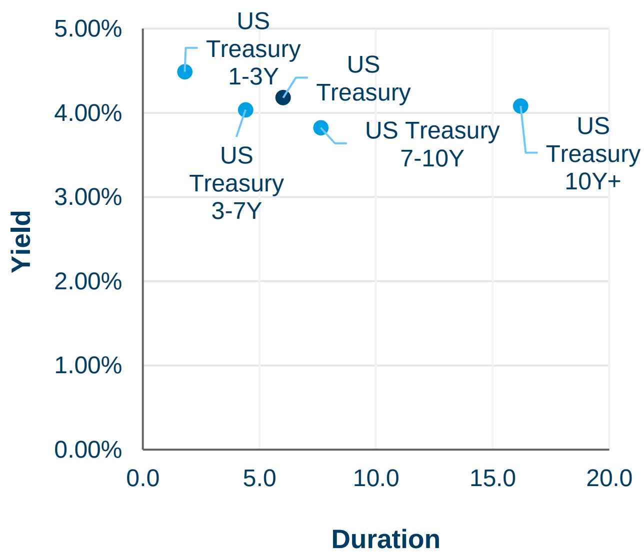
	Duration	Yield to Worst	QoQ yield change (in bps)	Q4 2022	YTD	2021
US Treasury	6.0	4.18%	4.6	0.72%	-12.46%	-2.32%
US Treasury 1-3Y	1.8	4.49%	18.3	0.73%	-3.81%	-0.60%
US Treasury 3-7Y	4.4	4.04%	-8.0	1.28%	-9.39%	-2.34%
US Treasury 7-10Y	7.6	3.82%	-0.3	0.97%	-14.89%	-3.07%
US Treasury 10Y+	16.2	4.08%	8.5	-0.59%	-29.26%	-4.65%

Sources: Amundi, Bloomberg. Data as at 30/12/2022. Performance is stated in USD and in gross total return. Past performance is not a reliable indicator of future returns

Index breakdown by maturity buckets



Yield Duration profiles

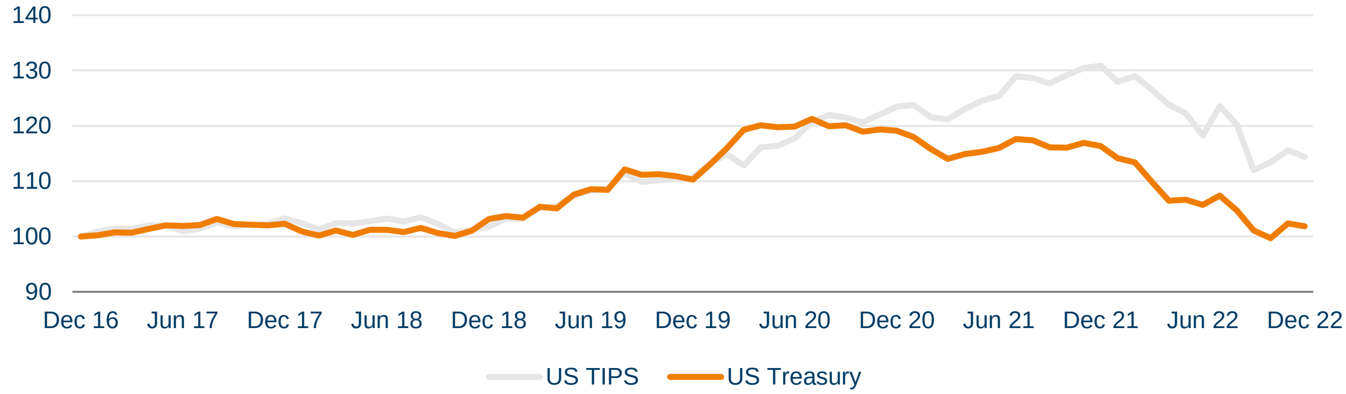


Sources: Amundi, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns.

Inflation-linked bonds (TIPS)

Bloomberg US Government Inflation-Linked Bond Index

Index performance

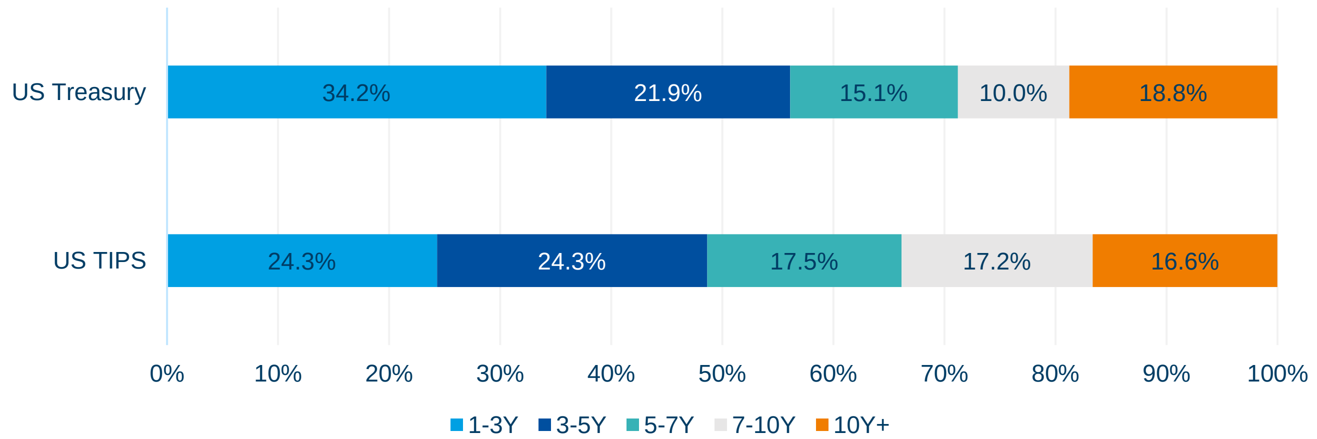


Base 100 = 01/06/2016
Sources: Amundi, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns.

	Duration	Yield to Worst[1]	QoQ yield change (in bps)	Q4 2022	2022	2021
US TIPS	6.9	1.85%	-11.0	2.12%	-12.60%	6.00%
US Treasury	6.0	4.18%	4.6	0.72%	-12.46%	-2.32%
US TIPS 1-3Y	1.9	2.25%	6.0	1.02%	-1.89%	5.53%
US TIPS 3-5Y	3.7	1.81%	-16.0	1.58%	-5.93%	5.55%
US TIPS 5-7Y	5.4	1.68%	-20.0	2.15%	-9.37%	5.36%
US TIPS 7-10Y	8.0	1.58%	-15.0	2.18%	-13.89%	6.17%
US TIPS 10Y+	19.7	1.76%	-17.0	4.47%	-31.22%	6.99%

Sources: Amundi, Bloomberg. Data as at 30/12/2022. Performance is stated in USD and in gross total return. Past performance is not a reliable indicator of future returns.

Index breakdown by maturity buckets

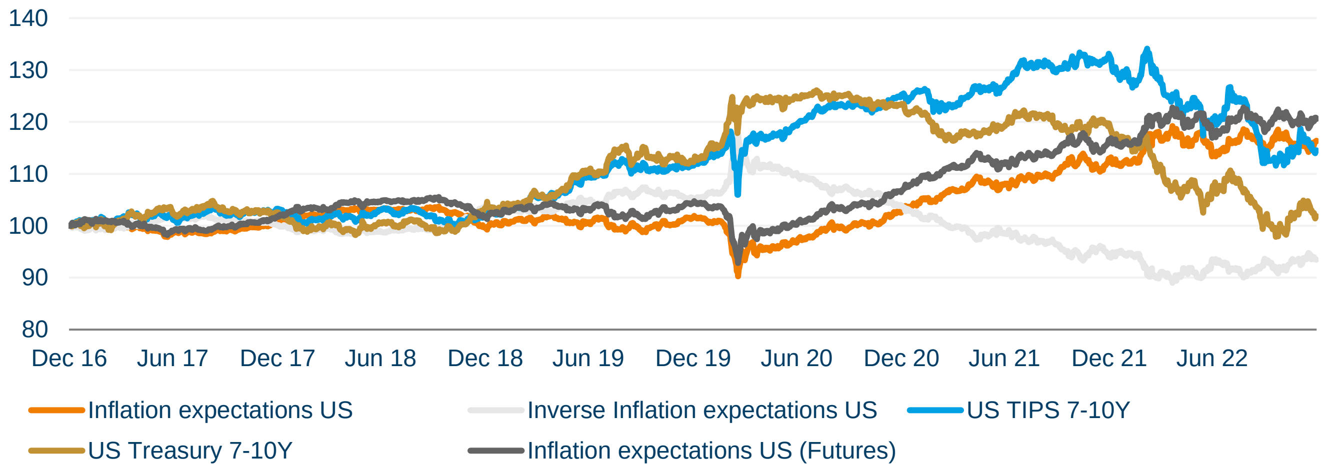


Sources: Amundi, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns.

10 Year Inflation Expectations

Markit iBoxx USD Breakeven 10-Year Inflation index
Markit iBoxx USD Inverse Breakeven 10-Year Inflation Index

Index performance

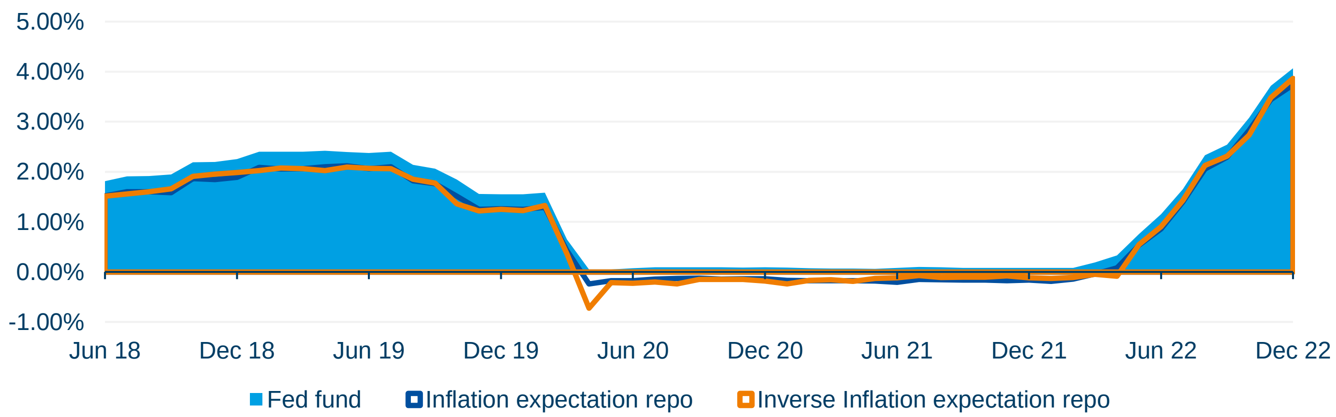


Base 100 = 01/06/2016
Sources: Amundi, Markit. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns

	Q4 2022	Q3 2022	YTD 2022	2021
Inflation expectations US	2.01%	0.63%	3.17%	9.74%
Inverse Inflation expectations US	-0.22%	0.12%	-0.75%	-9.28%
Inflation expectations US (futures)	2.16%	0.96%	3.66%	8.96%
US TIPS 7-10Y	2.18%	-5.82%	-13.89%	6.17%
US Treasury 7-10Y	0.97%	-5.53%	-14.89%	-3.07%

Sources: Amundi, Markit. Data as at 30/12/2022. Performance is stated in USD and in gross total return. Past performance is not a reliable indicator of future returns

Average repo return



Sources: Amundi, Markit. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns.

Markit iBoxx USD Breakeven 10-Year Inflation index

The index performance is the result of:

- The difference between the realised daily returns of the Inflation-Linked Bonds (ILB) basket and the US Treasuries (UST) bond basket
- This performance is adjusted for the cost of repo and rebalancing, when applicable.

	Q4 2022 Performance		Q3 2022 Performance		YTD Performance		2021 Performance	
TIPS basket performance	1.82%	TIPS	-6.11%	TIPS	-14.96%	TIPS	6.40%	TIPS
US Treasuries basket performance	0.70%	UST	-5.87%	UST	-15.72%	UST	-3.24%	UST
Average Scaling Factor	111.72%	SF	106.53%	SF	106.35%	SF	102.13%	SF
Average Repo return	0.82%	Repo	0.48%	Repo	1.40%	Repo	-0.17%	Repo
Rebalancing costs	0.00%	RC	0.05%	RC	0.11%	RC	0.10%	RC
Estimated performance Inflation expectations US								
TIPS - SF * (UST - Repo) - RC	**1.96%**		**0.59%**		**3.15%**		**9.44%**	
Actual index performance	2.03%		0.63%		3.19%		9.74%	

Sources: Amundi, Markit. Data as at 30/12/2022. Past performance is not a reliable indicator of future returns.

Markit iBoxx USD Inverse Breakeven 10-Year Inflation index

The index performance is the result of:

- The difference between the realised daily returns of the US Treasuries (UST) bond basket and the Inflation-Linked Bonds (ILB) basket.
- This performance is adjusted for the cost of repo and rebalancing, when applicable.

	Q4 2022 Performance		Q3 2022 Performance		YTD Performance		2021 Performance	
TIPS basket performance	1.82%	TIPS	-6.11%	TIPS	-14.96%	TIPS	6.40%	TIPS
US Treasuries basket performance	0.70%	UST	-5.87%	UST	-15.72%	UST	-3.24%	UST
Average Scaling Factor	89.52%	SF	93.90%	SF	94.13%	SF	97.95%	SF
Average Repo return	0.83%	Repo	0.49%	Repo	1.42%	Repo	-0.13%	Repo
Rebalancing costs	0.01%	RC	0.06%	RC	0.12%	RC	0.11%	RC
Estimated performance Inverse Inflation expectations US								
UST - SF * (TIPS - Repo) - RC	**-0.20%**		**0.27%**		**-0.42%**		**-9.75%**	
Actual index performance	-0.22%		0.12%		-0.75%		-9.28%	

Sources: Amundi, Markit. Data as at 30/12/2022. Past performance is not a reliable indicator of future returns

How does the index behave vs. the theoretical US breakeven inflation rate?

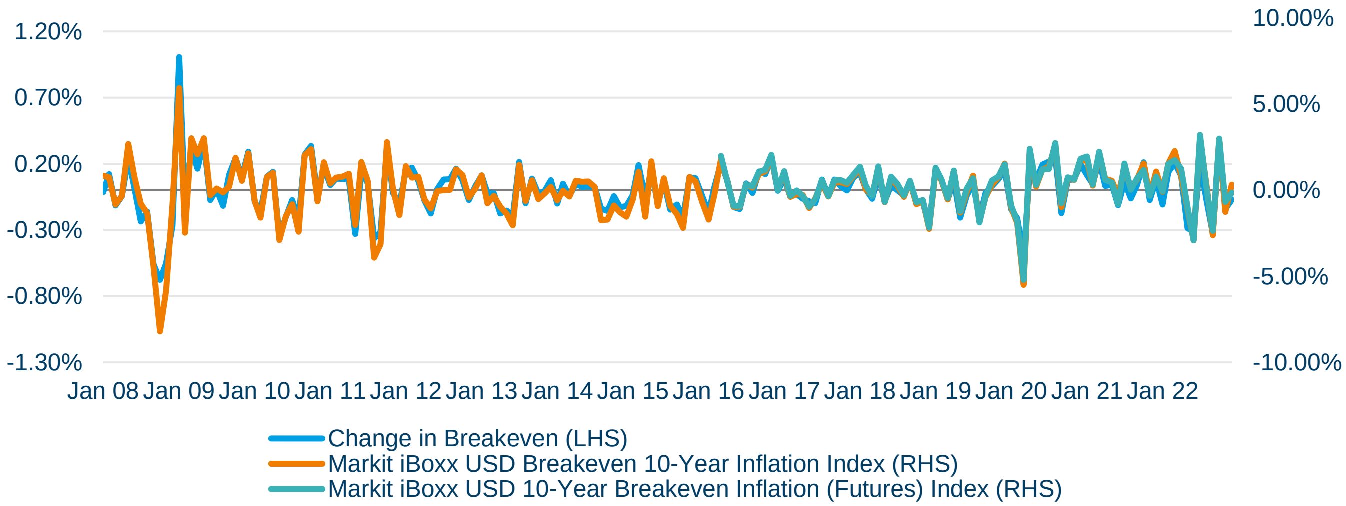
The index is designed to capture changes in the 10-year breakeven inflation rate. Due to the non-linear relationship between changes in yield, return and fluctuations in market supply and demand, the magnitude of index movements compared to changes in breakeven inflation varies from time to time.

The comparison between the index level and the breakeven rate can only be directional. The relationship between the changes in the two series is, however, clearly visible (chart below).

Historically, across the entries sample period, **a 1bp absolute change in the breakeven inflation rate corresponded to an approximately 8bp change in the index level**.

The correlation level can vary over time and should not be used as a systematic rule.

Markit iBoxx USD breakeven 10-year inflation vs changes in average breakeven*

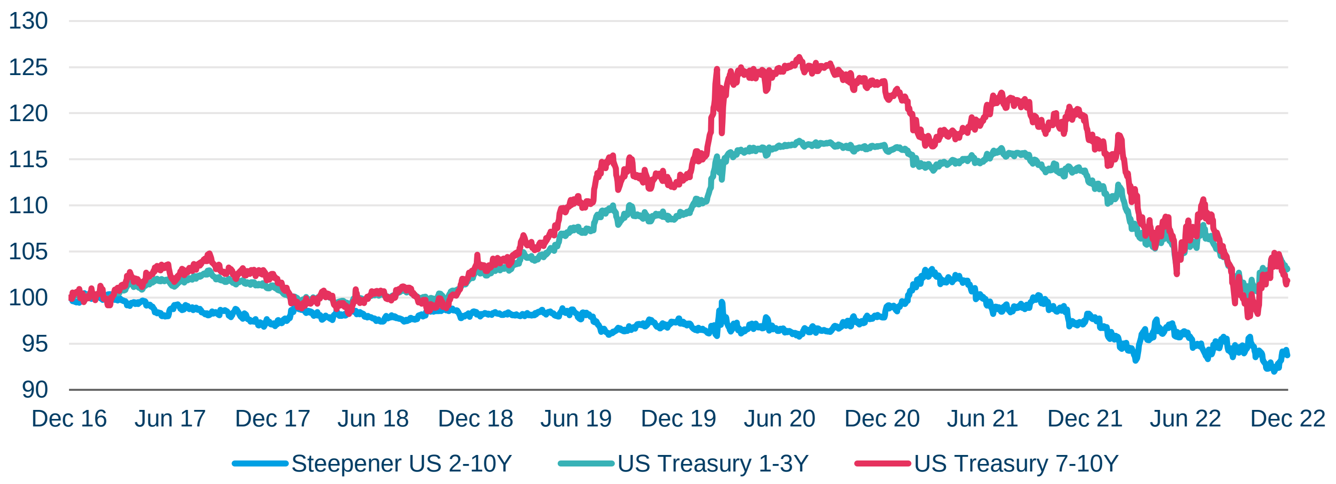


*based on monthly observation
Sources: Amundi, Markit. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns.

Curve strategies

Solactive USD Daily (x7) Steepener 2-10 Index

Index performance



Base 100 = 01/06/2016
Sources: Amundi, Solactive, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns

	Q4 2022	Q3 2022	2022	2021
Steepener US 2-10Y	-0.83%	-1.65%	-3.69%	-0.52%
US Treasury 1-3Y	0.73%	-1.55%	-3.81%	-0.60%
US Treasury 7-10Y	0.97%	-5.53%	-14.89%	-3.07%

Sources: Amundi, Solactive. Data as at 30/12/2022. Performance is stated in USD and in gross total return. Past performance is not a reliable indicator of future returns.

Index performance analysis

	Q4 2022				Q3 2022				YTD			
	Performance		Avg weight		Performance		Avg weight		Performance		Avg weight	
10Y Future basket	-0.12%	F^{10Y}	86%	(a)	-6.48%	F^{10Y}	84%	(a)	-17.43%	F^{10Y}	82%	(a)
2Y Future basket	-0.27%	F^{2Y}	393%	(b)	-1.98%	F^{2Y}	387%	(b)	-5.03%	F^{2Y}	386%	(b)
Cash	0.90%	Csh	100%		0.55%	Csh	100%		1.66%	Csh	100%	
Transaction costs	0.04%	TC			0.05%	TC			0.18%	TC		
Estimated performance Steepener US												
(b)*F^{2Y} - (a)*F^{10Y} + Csh -TC	**-0.12%**				**-1.73%**				**-3.58%**			
Actual index performance	-0.83%				-1.65%				-3.69%			

Sources: Amundi, Solactive, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns

How does the index behave vs. the 2-10yr differential in US Treasury yields?

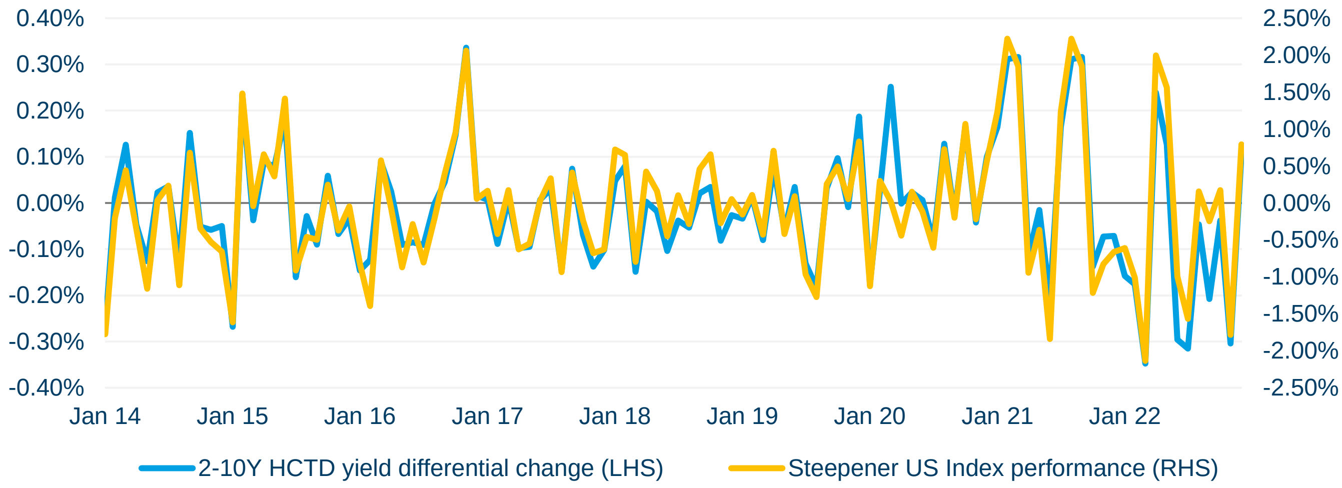
The index is designed to capture changes in the 2-10Y yield differential in US Treasuries. Due to the non-linear relationship between changes in yield and return and fluctuations in market supply and demand, the magnitude of index movements compared to changes in breakeven inflation varies from time to time.

The comparison between the index level and the yield differential can only be directional. The relationship between the changes in the two series is, however, clearly visible (chart below).

Historically, across the entries sample period, **a 1bp absolute change in the 2-10yr US Treasury yield differential corresponded to an approximately 7bp change in the index level**.

The correlation level can vary over time and should not be used as a systematic rule.

Solactive USD Daily (7x) Steepener 2-10yr vs changes in average 2-10yr yield differential*



*based on monthly observation
Sources: Amundi, Solactive, Bloomberg. Data as at 30/12/2022.
Past performance is not a reliable indicator of future returns

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Solactive

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Knowing your risk

It is important for potential investors to evaluate the risks described below and in the fund's Key Investor Document ("KID") or Key Investor Information Document ("KIID") for UK investors and prospectus available on our websites www.amundietf.com.

CAPITAL AT RISK

ETFs are tracking instruments. Their risk profile is similar to a direct investment in the underlying index. Investors' capital is fully at risk and investors may not get back the amount originally invested.

UNDERLYING RISK

The underlying index of an ETF may be complex and volatile. For example, ETFs exposed to Emerging Markets carry a greater risk of potential loss than investment in Developed Markets as they are exposed to a wide range of unpredictable Emerging Market risks.

REPLICATION RISK

The fund's objectives might not be reached due to unexpected events on the underlying markets which will impact the index calculation and the efficient fund replication.

COUNTERPARTY RISK

Investors are exposed to risks resulting from the use of an OTC swap (over-the-counter) or securities lending with the respective counterparty(-ies). Counterparty(-ies) are credit institution(s) whose name(s) can be found on the fund's website amundietf.com. In line with the UCITS guidelines, the exposure to the counterparty cannot exceed 10% of the total assets of the fund.

CURRENCY RISK

An ETF may be exposed to currency risk if the ETF is denominated in a currency different to that of the underlying index securities it is tracking. This means that exchange rate fluctuations could have a negative or positive effect on returns.

LIQUIDITY RISK

There is a risk associated with the markets to which the ETF is exposed. The price and the value of investments are linked to the liquidity risk of the underlying index components. Investments can go up or down. In addition, on the secondary market liquidity is provided by registered market makers on the respective stock exchange where the ETF is listed. On exchange, liquidity may be limited as a result of a suspension in the underlying market represented by the underlying index tracked by the ETF; a failure in the systems of one of the relevant stock exchanges, or other market-maker systems; or an abnormal trading situation or event.

VOLATILITY RISK

The ETF is exposed to changes in the volatility patterns of the underlying index relevant markets. The ETF value can change rapidly and unpredictably, and potentially move in a large magnitude, up or down.

CONCENTRATION RISK

Thematic ETFs select stocks or bonds for their portfolio from the original benchmark index. Where selection rules are extensive, it can lead to a more concentrated portfolio where risk is spread over fewer stocks than the original benchmark.

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Reservation thresholds are set by applying a percentage variation, indicated in the prospectus of the Funds mentioned in this Document, on either side of the Indicative Net Asset Value or "NAV" of these Funds, published by Euronext Paris SA and updated as estimates during the stock exchange trading session based on the variation in the index of each of the Funds indicated in this document. The Market Maker ensures that the market price of the Funds units does not deviate more than the percentage indicated in the prospectus of the Funds mentioned in this Document, and on the other hand from the net asset value of the UCITS, in order to comply with the reservation thresholds set by Euronext Paris SA.

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