

Fixed income strategies in times of an inverted yield curve

Lessons from past episodes



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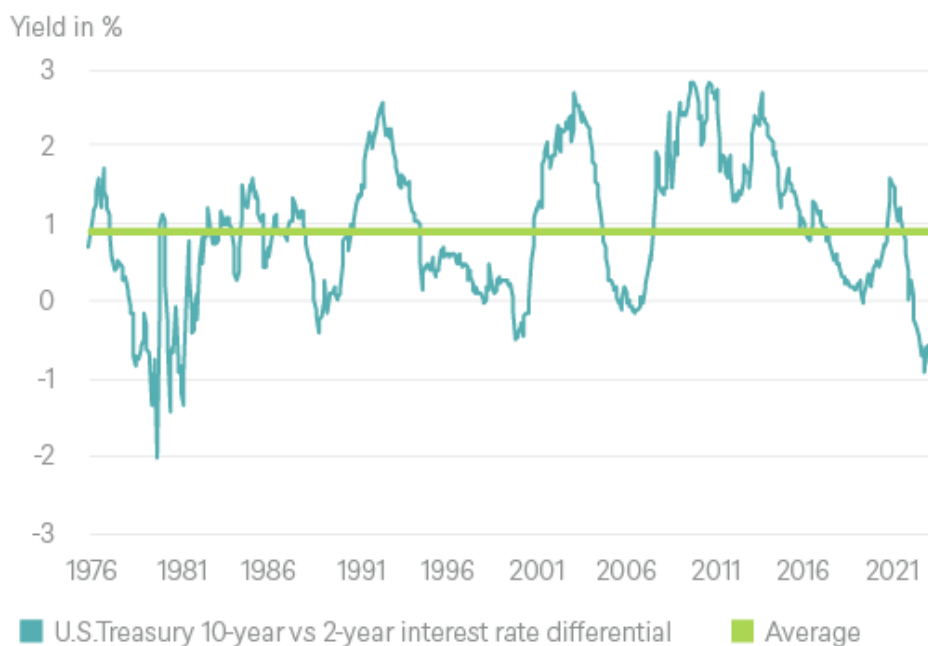
- Yield curve inversions have happened repeatedly over the past decades
- As long as yield curves stayed inverted, money market instruments delivered the highest returns
- Lengthening the investment horizon to three years, investors fared best by investing in medium term bonds, with long maturity bonds performed best over an investment horizon of five years or longer

In many ways, over the past 18 months financial markets seem to have returned to what used to be called “normal”. Gone are the days of negative interest rates and trillion-dollar bond-buying programs by central banks. After a decade when, with brief interruptions at best, virtually all asset classes delivered returns above their long-term averages, the picture in 2022 was one of red ink with just a few exceptions. As a consequence of the sharp rate hikes by central banks in response to rising inflation, investments in money market instruments and short-term bonds currently are offering higher yields than long-term fixed-income securities. This CIO View Special examines how a yield curve inversion can be put into historical context and what investors can learn from comparable periods in the past.

1 / What is the average realized term premium?

Throughout modern history, yield curves have generally been positively sloping. Since May of 1976, the average differential between the 10yr and the 2yr U.S Treasury yields has been 0.89% as shown in Chart 1, with a positive slope observed in over 85% of the monthly observations.

Chart 1: U.S. Treasury 10-year vs 2-year interest rate differential

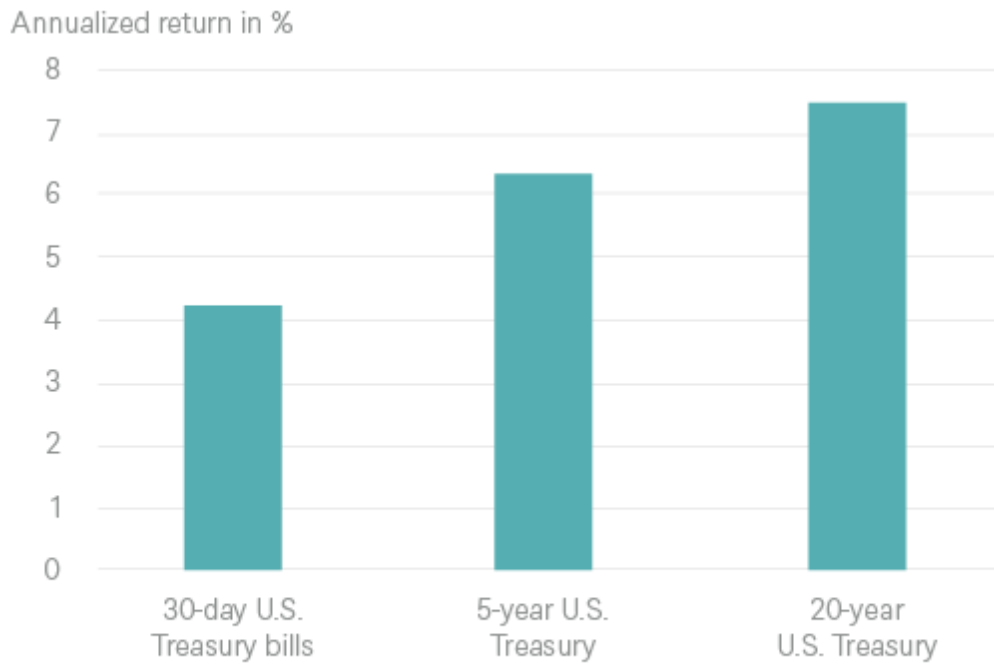


Sources: Bloomberg Finance L.P., DWS Investment GmbH as of 9/20/23.
 Data from 31st May 1976 to 30th June 2023.

The impact of positive-sloping yield curves on investment returns is quite intuitive: on average, investment into longer-tenor sovereign bonds have yielded higher nominal returns, with annual returns on 20-year and 5-year U.S. Treasuries exceeding 30-day T-bills by 3.3% and 2.1%, respectively, since 1976 (see Chart 2).

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Chart 2: U.S. Treasury annualized returns

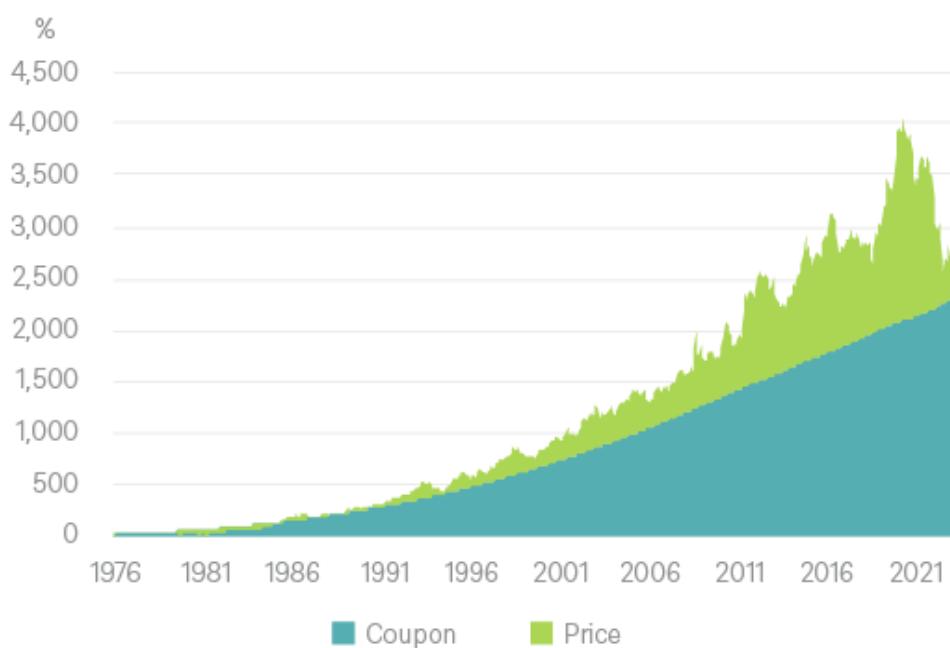


Sources: Bloomberg Finance L.P., DWS Investment GmbH as of 9/20/23

DWS calculation from 31st May 1976 to 30th June 2023

Ultimately, fixed-income investment returns, particularly in sovereign bonds, are driven primarily by interest levels (see Chart 3).

Chart 3: 20-year U.S. Treasuries contribution to total return



Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23

DWS calculation from 31st May 1976 to 30th June 2023

With term premia most frequently positive, income generation combined with a downward structural bias in yields because of demographics and the associated long-term disinflationary trends generally favors longer-duration sovereign bonds. As we explore in the following section, realized positive term premia is still quite consistent even in inverted yield curve environments, as inverted yield curves typically normalize rather quickly, and investors are again compensated for owning longer-duration bonds.

2 / Historical returns during inverted yield curve environments

2.1 Findings from the United States bond market

Since the 1970s, the Fed has engaged in six interest rate hiking cycles including the current cycle. Inverted yield curve environments are not without precedent, and in fact have occurred with some frequency throughout modern history during these periods of aggressive interest rate hiking. Generally speaking, however, inverted yield curve environments have rarely persisted for more than a few quarters. The current inverted yield curve regime has lasted roughly a year to this point and is already the second longest such continuous period over our time series, second only to September 1980 to September 1981. In order to illustrate these periods of yield curve inversion, we compare the 10-year U.S. Treasury yield to the 2-year U.S. Treasury yield, the latter being a less volatile measure of both the point-in-time level of short-term interest rates and the trajectory of said rates over the subsequent 2 years. Chart 4 shows the 10-year and 2-year Treasury yields and highlights the periods where the 2-year yield exceeded the 10-year yield.

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Chart 4: U.S. Treasury 10-2 yield curve and inversion



Sources: Bloomberg Finance L.P., DWS Investment GmbH as of 9/20/23

Sources: Bloomberg Finance L.P., DWS Investment GmbH as of 9/20/23
Data from 31st May 1976 to 30th June 2023

In an inverted yield curve environment, investors face the question of whether it is a better strategy to take advantage of nominally higher interest rates by investing in short-term securities, but running the risk of reinvestment at worse conditions, or to lock in a lower yield for a longer period. In the following section, we examine what conclusions can be drawn from the historical performance of short-term money market investments, medium-term (5-year) bond investments, and long-term bond investments. In a first step, we examine the experience in the U.S. bond market, and in a second step we take a look at the German Bund market.

During these inverted yield curve environments, quite intuitively, the average monthly return for 30-Day T-Bills exceeded longer-tenor US Treasuries, although interestingly the differential between T-Bills and 5-year US Treasuries is quite small.

Chart 5: Average monthly returns during inverted 10-2 periods

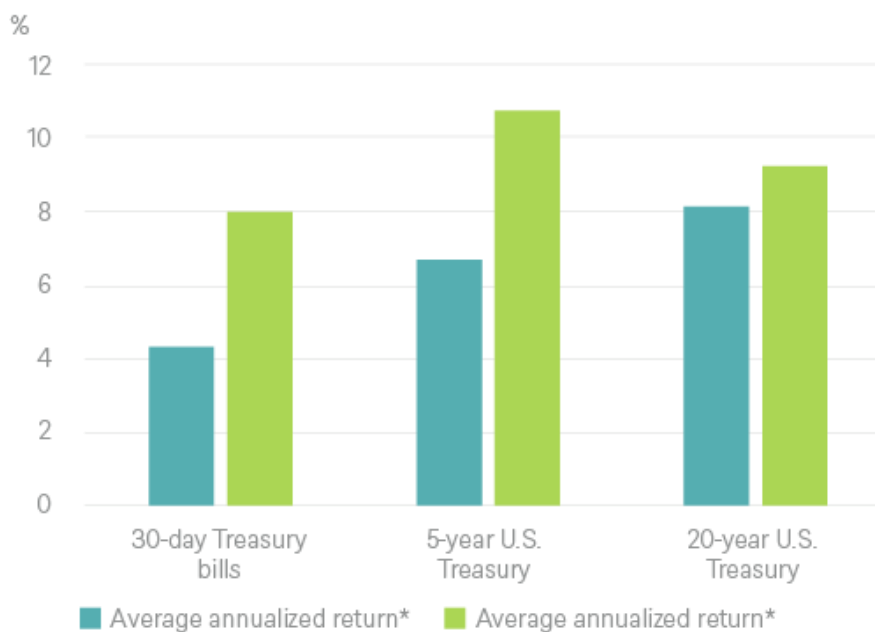


Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23
 DWS calculation from 31st May 1976 to 30th June 2023

When looking over a medium-to-longer time horizon, this return differential between short duration and longer duration Treasuries fades rather quickly. Over 3-, 5-, and 10-year rolling periods, the subsequent average annualized returns of different duration Treasuries during periods of yield curve inversion shows significantly higher average subsequent returns of 5-year and 20-year US Treasuries relative to 30-day T-Bills.

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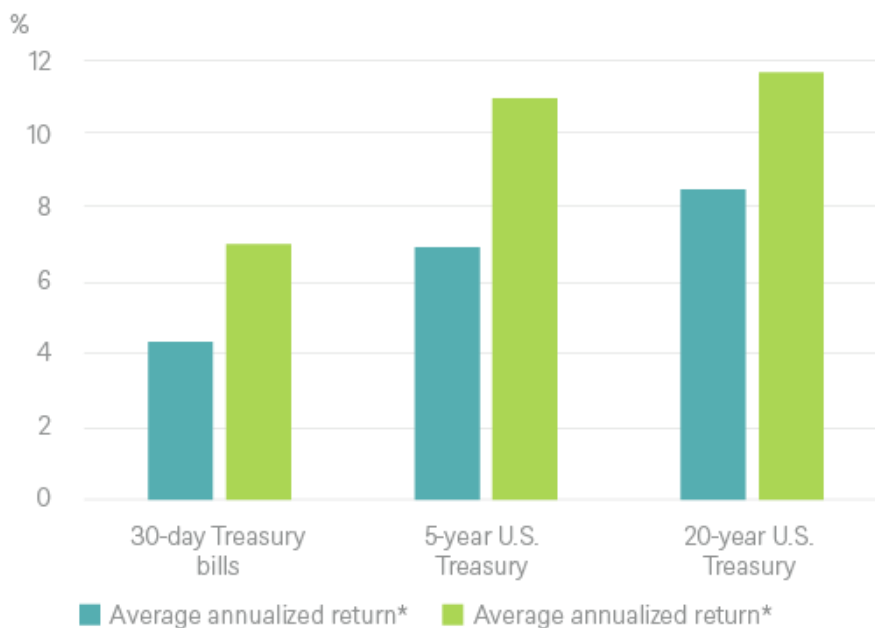
Chart 6: Average subsequent 3-year returns during inverted 10-2 periods, annualized



Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23
 *Average 3-year rolling return, annualised

DWS calculation from 31st May 1976 to 30th June 2023

Chart 7: Average subsequent 5-year returns during inverted 10-2 periods, annualized



Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23
 *(inverted 10-2) average 5-year rolling return, annualized
 DWS calculation from 31st May 1976 to 30th June 2023

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Chart 8: Average subsequent 10-year returns during inverted 10-2 periods, annualized



Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23
 *inverted (10-2) average 5-year rolling return, annualized
 DWS calculation from 31st May 1976 to 30th June 2023

As we approach the end of the current Fed hiking cycle, we can also analyze how different tenor U.S. Treasuries performed subsequent to the peak in short-term interest rates.

Over our time series, from May 1976 to June 2023, there have been, apart from temporary inversions, 4-major regimes of inversion between 10-year and 2-year US Treasury yields highlighted in Chart 4. Following the point of the most negative spread between 10-year and 2-year U.S. Treasuries, we can examine the subsequent returns across different tenor Treasuries. Chart 9 illustrates that longer-duration U.S. Treasuries have outperformed T-bills quite significantly over 3-, 5-, and 10-year periods following the peak in yield curve inversion.

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Chart 9: Subsequent returns during peak inverted 10-2 periods, annualized (%)

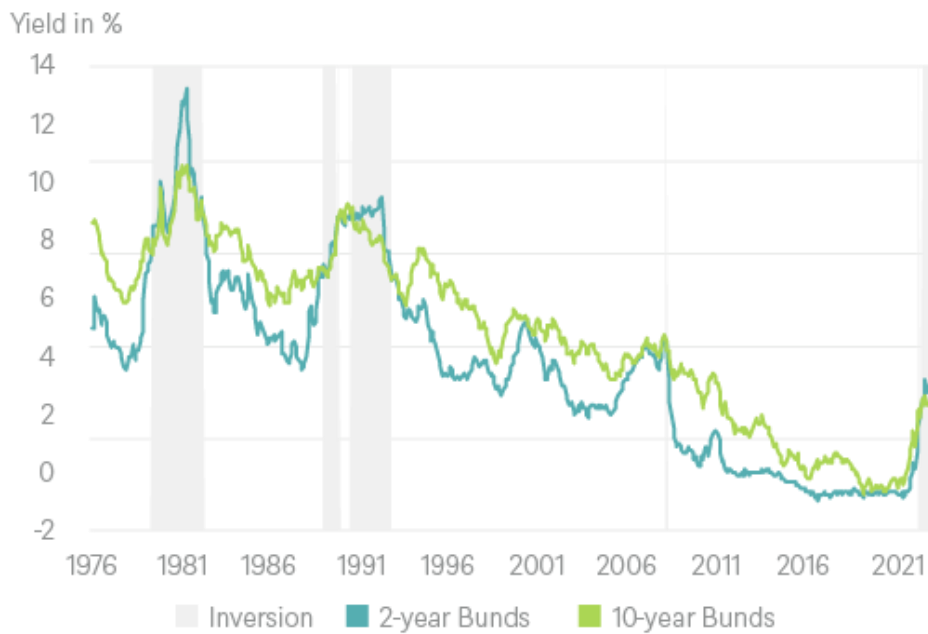
	Peak inversion date	30-day Treasury bills	5-year U.S. Treasury	20-year U.S. Treasury
Next 3 years	2/29/1980	12.00%	17.70%	16.50%
	3/31/1989	6.90%	11.40%	12.40%
	3/31/2000	3.40%	10.50%	11.20%
	11/30/2006	2.20%	7.30%	6.90%
Next 5 years	2/29/1980	10.90%	14.30%	12.20%
	3/31/1989	5.40%	10.20%	12.10%
	3/31/2000	2.50%	6.70%	8.70%
	11/30/2006	1.40%	7.00%	9.40%
Next 10 years	2/29/1980	8.80%	12.70%	13.60%
	3/31/1989	5.20%	8.50%	11.00%
	3/31/2000	2.60%	6.10%	6.90%
	11/30/2006	0.70%	4.20%	6.40%

Sources: Morningstar Direct, DWS Investment GmbH as of 9/20/23
DWS calculation from 31st May 1976 to 30th June 2023

2.2 Findings from the German Bund market

Looking back to the establishment of the European Monetary Union, the German bund market has experienced three inverted yield curve regimes since September 1972 including the current regime. The previous two regimes lasted roughly three years on average, although the most recent period of yield curve inversion was not continuous, while the current inverted yield curve began in November of 2022. Chart 10 shows the periods of inversion between the 10-year and 2-year German Bund yields.

Chart 10: German Bund 10-2 yield curve and inversion

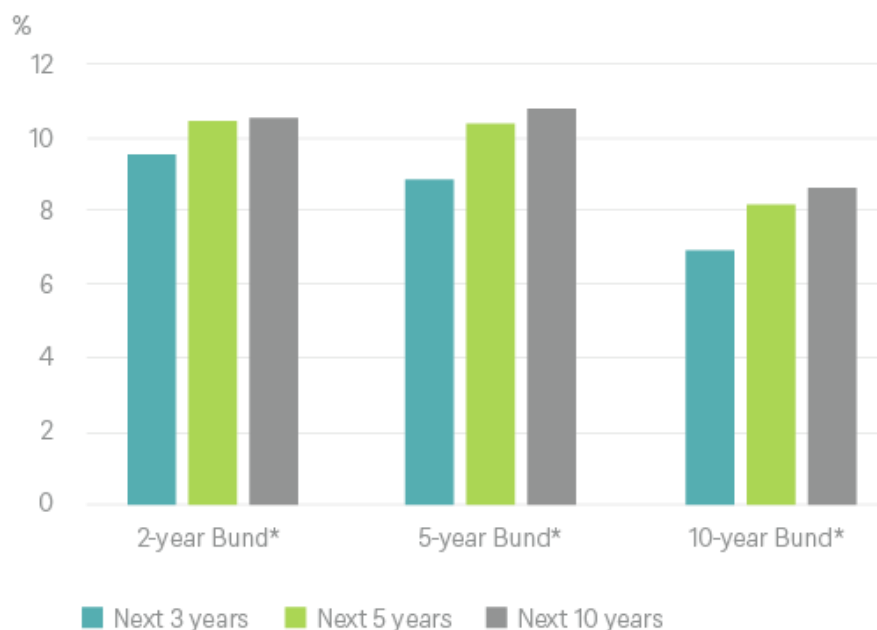


Sources: Deutsche Bundesbank, DWS Investment GmbH as of 9/20/23

DWS calculation from 1976 to 30th June 2023

During these previous two periods of inversion between 10-year and 2-year German Bund yields, the subsequent 3-, 5-, and 10-year returns were on average, higher for longer-tenor bonds despite higher short-term rates during the investment period. Chart 11 shows the average annualized returns of different tenor bonds across these subsequent timeframes.

Chart 11: Average annualized returns during inverted 10-2 periods



Sources: Deutsche Bundesbank, DWS Investment GmbH as of 9/20/23
*annualized return

DWS calculation from 30th September 1972 to 30th June 2023

Looking specifically at the point of most negative spread between the 10-year and 2-year German Bund yields, Chart 12 shows that subsequent 3-, 5-, and 10-year returns were higher for medium-to-long-term bonds relative to shorter-duration fixed income.

Chart 12: Subsequent returns during peak inverted 10-2 periods, annualized (%)

	Peak inversion date	30-day Treasury bills	5-year U.S. Treasury	20-year U.S. Treasury
Next 3 years	8/31/1981	11.77%	13.57%	13.44%
	7/31/1992	8.70%	10.03%	9.49%
Next 5 years	8/31/1981	10.60%	13.16%	14.46%
	7/31/1992	7.79%	10.36%	10.77%
Next 10 years	8/31/1981	7.86%	8.78%	8.84%
	7/31/1992	6.00%	7.76%	8.70%

Sources: Deutsche Bundesbank, DWS Investment GmbH as of 9/20/23
DWS calculation from 30th September 1972 to 30th June 2023

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Glossary

Bunds is a commonly used term for bonds issued by the German federal government with a maturity of 10 years.

A **central bank** manages a state's currency, money supply and interest rates.

describes a slowing of the pace of price inflation.

Fixed Income broadly refers to those types of investment security that pay investors fixed interest or dividend payments until its maturity date.

Inflation is the rate at which the general level of prices for goods and services is rising and, subsequently, purchasing power is falling.

Key interest rates stated by central banks to determine the most important rates of borrowing.

Sovereign bonds are bonds issued by governments.

The **spread** is the difference between the quoted rates of return on two different investments, usually of different credit quality.

Treasuries are fixed-interest U.S. government debt securities with different maturities: Treasury bills (1 year maximum), Treasury notes (2 to 10 years), Treasury bonds (20 to 30 years) and Treasury Inflation Protected Securities (TIPS) (5, 10 and 30 years).

The **U.S. Federal Reserve**, often referred to as "**the Fed**," is the central bank of the United States.

Yield is the income return on an investment referring to the interest or dividends received from a security and is usually expressed annually as a percentage based on the investment's cost, its current market value or its face value.

A **yield curve** shows the annualized yields of fixed-income securities across different contract periods as a curve. When it is inverted, bonds with longer maturities have lower yields than those with shorter maturities.

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