

2022 Annual Market Review

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This report features world capital market performance for the past year.

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Time the Market at Your Peril

Fourth quarter 2022

David Booth, Executive Chairman and Founder, Dimensional Fund Advisors

Technology enables immediate access to everything wherever and whenever we want it. In many cases, such as staying in touch with friends and family, or learning about world events, that's a good thing. However, when it comes to investing and money management, my fear is that faster and easier ways of investing will allow people to lose more money faster and easier.

As access to investing expands, it becomes even more important to adopt an investment plan that doesn't try to actively pick stocks or time the market. The purpose of having an investment plan is so you can relax. So you don't look at the market every day, stressing out and asking, "How'm I doing? How'm I doing?" Investors actively trading are not just potentially missing out on the expected return of the market—they're stressed out, worrying about how the news alert they just received will impact their long-term financial health, and whether they can or should do anything about it.

I don't blame people for this. The financial services industry has not done a good enough job educating investors that the best approach for their long-term financial well-being is to make a plan, implement it, and stick with it.

But it has done a great job selling index funds. Over the past decade, the percentage of the stock market that is passively held has grown considerably, with equity index funds representing 52% of the US equity fund market at the end of 2021.¹ And yet some investors appear to be

using index funds to pursue an active investment approach. For example, the largest S&P 500 ETF had the highest average daily trade volume of US-listed securities in 2021, at \$31 billion.² So instead of picking individual stocks, people seem to be acting like stock pickers when buying and selling index funds and ETFs.

Despite the overwhelming evidence and compelling story to the contrary. When economist Michael Jensen published his landmark 1968 paper, which showed that active stock pickers added no consistent value, other academics soon confirmed his insights. More than five decades and 50 years of data later, the theory still holds up. There are some stock pickers who experience success, but we don't know how to identify them before the fact. We can't separate skill from luck. Picking stocks is more like gambling than investing.

This academic research inspired the invention of the index fund, which allowed investors not only to buy the broad stock market, but also to track the performance of the manager and compare costs. I worked on one of the first index funds. When I co-founded Dimensional, we built strategies that were informed by indices but weren't limited by the same mechanical constraints. So I accepted this research early on and built a company based on it. I still believe it 50 years later. My colleagues and I weren't sure at the beginning that it would appeal to a lot of people, but it did.

1. Data sourced from Morningstar; funds of funds are excluded.

2. US dollars.

Time the Market at Your Peril

(continued from page 3)



I'm proud of the fact that we have always viewed marketing as a way to educate financial professionals and investors. In fact, we started by working with institutions and only expanded to individual investors by working with financial advisors who could help teach their clients how to think about the market and invest for the long term. We wanted to prevent people from making the mistake I still see too many people making.

But I fear it will only get worse. ETFs make it easier to trade. So do free platforms that allow people to trade on their phones. There seem to be as many ETFs as there are stocks that make up those ETFs. I really like ETFs. They are another chapter in this 50-year story of creating safer and better financial products for investors. Our firm has been using them to give financial professionals and investors more choice in how they access Dimensional Investing. But they are tools, and they have to be used effectively.

Which is why you may need an advisor more than ever—to help keep you from jumping from one thing to another. Our approach is to get you out of the game of worrying and guessing by having a plan that can provide peace of mind. It's a sensible approach you can live with. Trust the financial advisor who trusts the market.



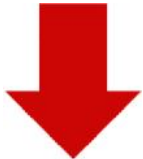



The financial industry has made great strides improving the investment options available, but we have more work to do helping investors with those options. There are great solutions right in front of people. As an industry, we need to do a better job of educating current and potential clients. How the bulk of our society lives out their later years depends on it.

Investments involve risks. The investment return and principal value of an investment may fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original value. Past performance is not a guarantee of future results. There is no guarantee strategies will be successful. Diversification does not eliminate the risk of market loss. The information in this material is intended for the recipient's background information and use only. It is provided in good faith and without any warranty or representation as to accuracy or completeness. Information and opinions presented in this material have been obtained or derived from sources believed by Dimensional to be reliable, and Dimensional has reasonable grounds to believe that all factual information herein is true as at the date of this material. It does not constitute investment advice, a recommendation, or an offer of any services or products for sale and is not intended to provide a sufficient basis on which to make an investment decision. Before acting on any information in this document, you should consider whether it is appropriate for your particular circumstances and, if appropriate, seek professional advice. It is the responsibility of any persons wishing to make a purchase to inform themselves of and observe all applicable laws and regulations. Unauthorized reproduction or transmission of this material is strictly prohibited. Dimensional accepts no responsibility for loss arising from the use of the information contained herein. This material is not directed at any person in any jurisdiction where the availability of this material is prohibited or would subject Dimensional or its products or services to any registration, licensing, or other such legal requirements within the jurisdiction. "Dimensional" refers to the Dimensional separate but affiliated entities generally, rather than to one particular entity. These entities are Dimensional Fund Advisors LP, Dimensional Fund Advisors Ltd., Dimensional Ireland Limited, DFA Australia Limited, Dimensional Fund Advisors Canada ULC, Dimensional Fund Advisors Pte. Ltd., Dimensional Japan Ltd. and Dimensional Hong Kong Limited. Dimensional Hong Kong Limited is licensed by the Securities and Futures Commission to conduct Type 1 (dealing in securities) regulated activities only and does not provide asset management services. Dimensional Fund Advisors LP is an investment advisor registered with the Securities and Exchange Commission. Investment products: • Not FDIC Insured • Not Bank Guaranteed • May Lose Value • Dimensional Fund Advisors does not have any bank affiliates.



Market Summary

Index returns

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
2022	STOCKS				BONDS	
	-19.21%	-14.29%	-20.09%	-24.36%	-13.01%	-9.76%
						
Since Jan. 2001						
Average Yearly Return	8.9%	6.1%	11.4%	9.2%	3.8%	3.6%
Best Year	33.6%	39.4%	78.5%	37.4%	10.3%	8.8%
	2013	2003	2009	2006	2002	2014
Worst Year	-37.3%	-43.6%	-53.3%	-45.7%	-13.0%	-9.8%
	2008	2008	2008	2008	2022	2022

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International Developed Stocks (MSCI World ex USA Index [net div.]), Emerging Markets (MSCI Emerging Markets Index [net div.]), Global Real Estate (S&P Global REIT Index [net div.]), US Bond Market (Bloomberg US Aggregate Bond Index), and Global Bond Market ex US (Bloomberg Global Aggregate ex-USD Bond Index [hedged to USD]). S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2023, all rights reserved. Bloomberg data provided by Bloomberg.

US Stocks

2022 index returns

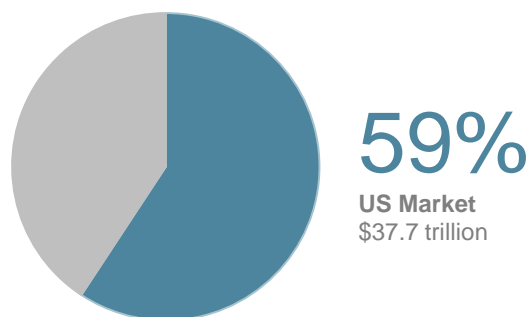
The US equity market posted negative returns for the year and underperformed non-US developed markets, but outperformed emerging markets.

Value outperformed growth.

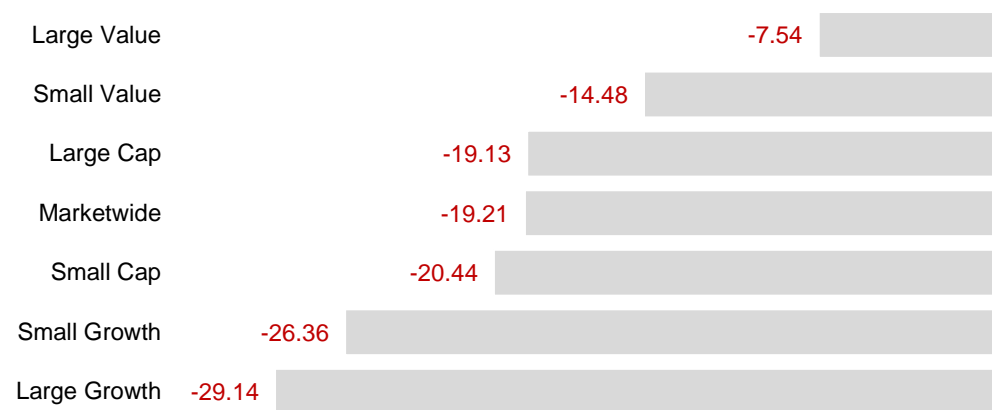
Small caps underperformed large caps.

REIT indices underperformed equity market indices.

World Market Capitalization—US



Ranked Returns (%)



Period Returns (%)

Asset Class	Annualized			
	1 Year	3 Years	5 Years	10 Years
Large Value	-7.54	5.96	6.67	10.29
Small Value	-14.48	4.70	4.13	8.48
Large Cap	-19.13	7.35	9.13	12.37
Marketwide	-19.21	7.07	8.79	12.13
Small Cap	-20.44	3.10	4.13	9.01
Small Growth	-26.36	0.65	3.51	9.20
Large Growth	-29.14	7.79	10.96	14.10

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International Developed Stocks

2022 index returns

Developed markets outside of the US posted negative returns for the year and outperformed both US and emerging markets.

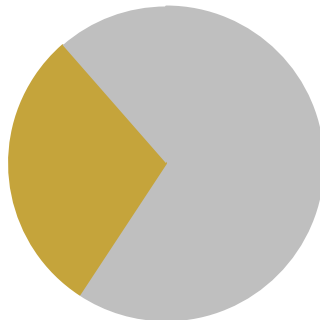
Value outperformed growth.

Small caps underperformed large caps.

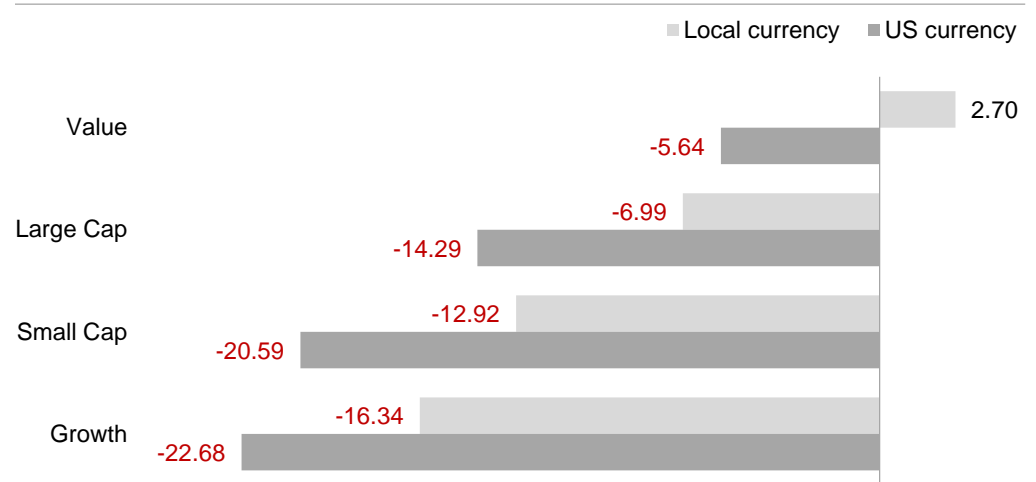
World Market Capitalization—International Developed

29%

International
Developed Market
\$18.6 trillion



Ranked Returns (%)



Period Returns (%)

Asset Class	1 Year	3 Years	Annualized	
			5 Years	10 Years
Value	-5.64	1.13	0.56	3.55
Large Cap	-14.29	1.27	1.79	4.59
Small Cap	-20.59	-0.15	0.45	5.77
Growth	-22.68	0.71	2.56	5.35

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI World ex USA Index), Small Cap (MSCI World ex USA Small Cap Index), Value (MSCI World ex USA Value Index), and Growth (MSCI World ex USA Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI World ex USA IMI Index is used as the proxy for the International Developed market. MSCI data © MSCI 2023, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

Emerging Markets Stocks

2022 index returns

Emerging markets posted negative returns for the year and underperformed both US and non-US developed markets.

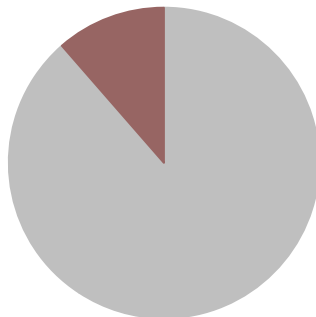
Value outperformed growth.

Small caps outperformed large caps.

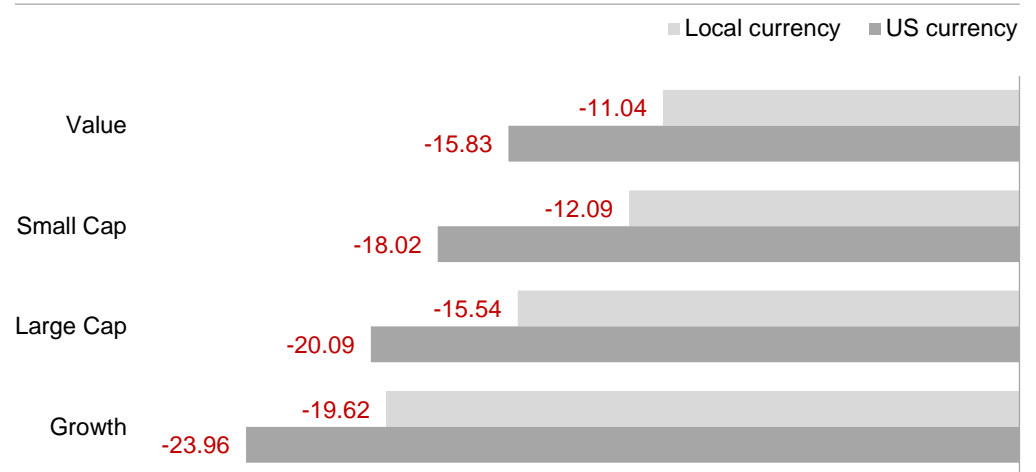
World Market Capitalization—Emerging Markets

11%

Emerging Markets
\$7.3 trillion



Ranked Returns (%)



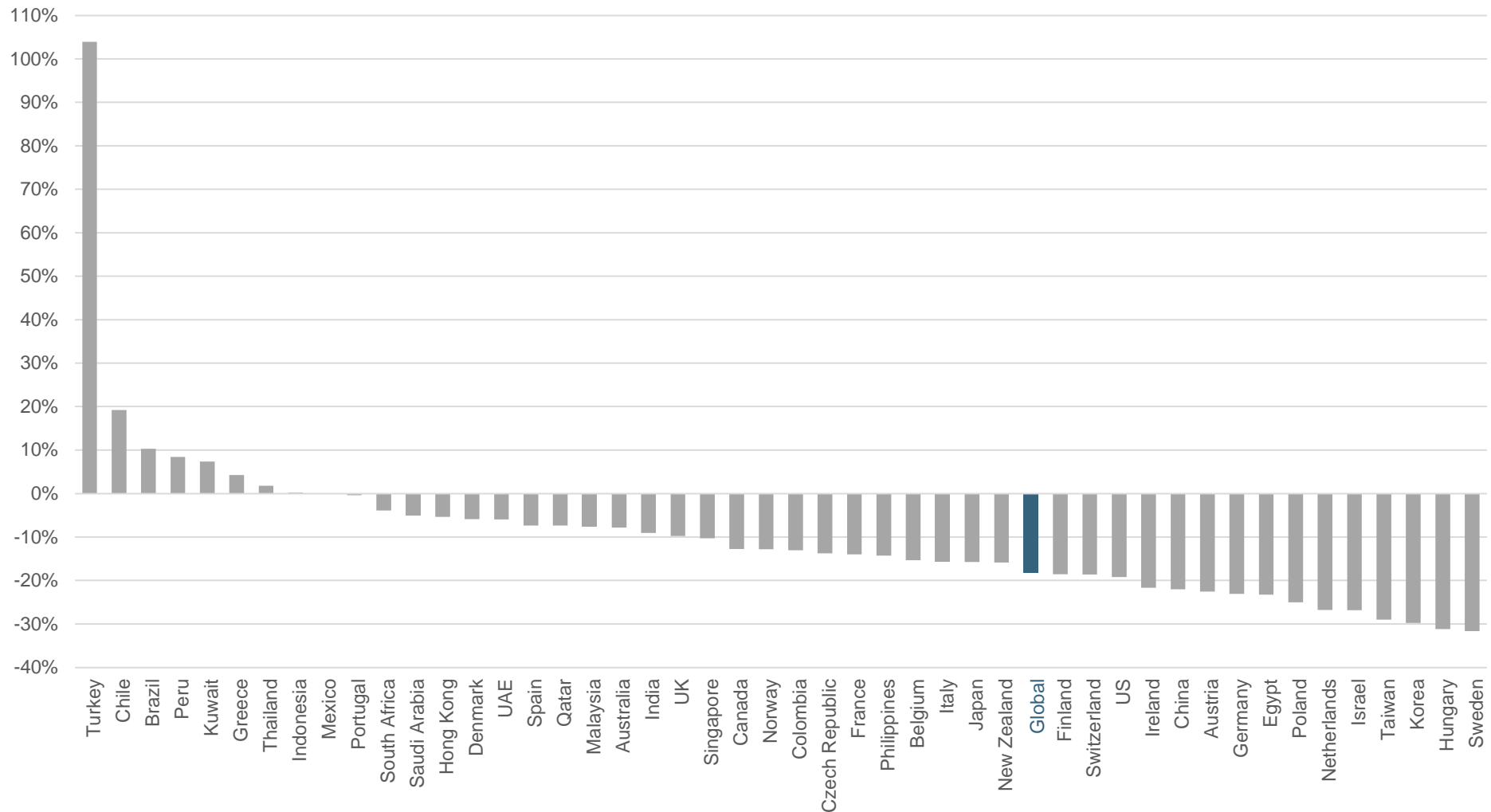
Period Returns (%)

Asset Class	Annualized			
	1 Year	3 Years	5 Years	10 Years
Value	-15.83	-2.62	-1.59	0.06
Small Cap	-18.02	5.11	1.06	3.21
Large Cap	-20.09	-2.69	-1.40	1.44
Growth	-23.96	-2.93	-1.33	2.68

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Country Returns

2022 index returns



Past performance is no guarantee of future results.

Country returns are the country component indices of the MSCI All Country World IMI Index for all countries except the United States, where the Russell 3000 Index is used instead. Global is the return of the MSCI All Country World IMI Index. MSCI index returns are net dividend. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Frank Russell Company is the source and owner of the trademarks, service marks and copyrights related to the Russell Indexes. MSCI data © MSCI 2023, all rights reserved.

Real Estate Investment Trusts (REITs)

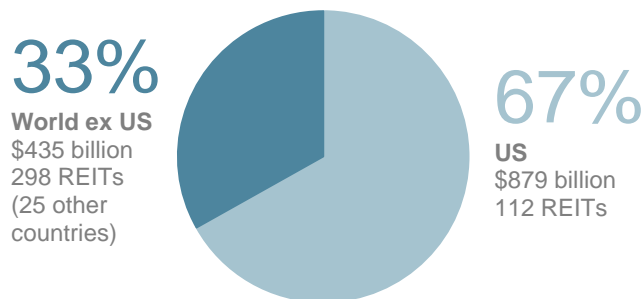
2022 index returns

US real estate investment trusts underperformed non-US REITs during the year.

Ranked Returns (%)



Total Value of REIT Stocks



Period Returns (%)

Asset Class	Annualized			
	1 Year	3 Years	5 Years	10 Years
Global ex US REITs	-22.56	-7.77	-2.13	1.61
US REITs	-25.96	-1.37	2.50	5.74

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Number of REIT stocks and total value based on the two indices. All index returns are net of withholding tax on dividends. Total value of REIT stocks represented by Dow Jones US Select REIT Index and the S&P Global ex US REIT Index. Dow Jones US Select REIT Index used as proxy for the US market, and S&P Global ex US REIT Index used as proxy for the World ex US market. Dow Jones and S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

Commodities

2022 index returns

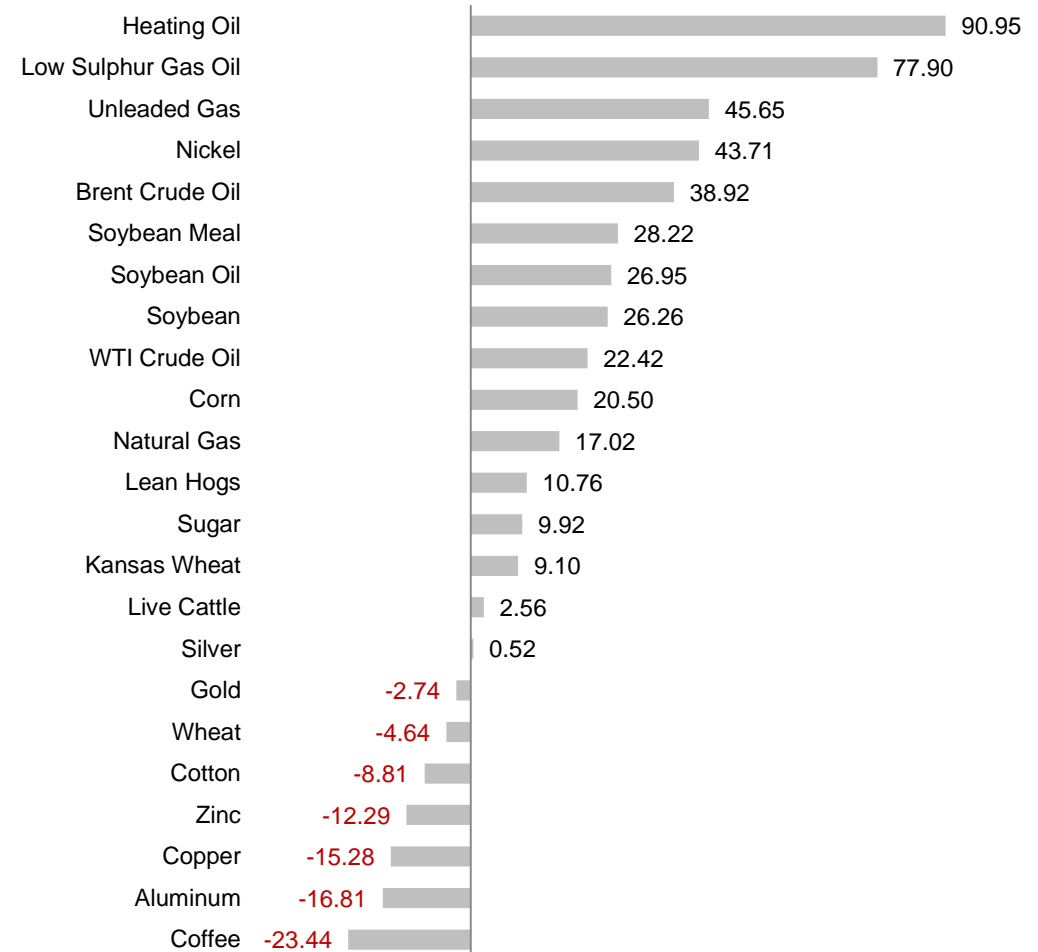
The Bloomberg Commodity Total Return Index returned +16.09% for the year.

Heating Oil and Low Sulphur Gas Oil were the best performers, returning +90.95% and +77.90% during the year, respectively. Coffee and Aluminum were the worst performers, returning -23.44% and -16.81% during the year, respectively.

Period Returns (%)

Asset Class	Annualized			
	1 Year	3 Years	5 Years	10 Years
Commodities	16.09	12.65	6.44	-1.28

Ranked Returns for Individual Commodities (%)



Fixed Income

2022 index returns

Interest rates increased across all maturities in the US Treasury market for the year.

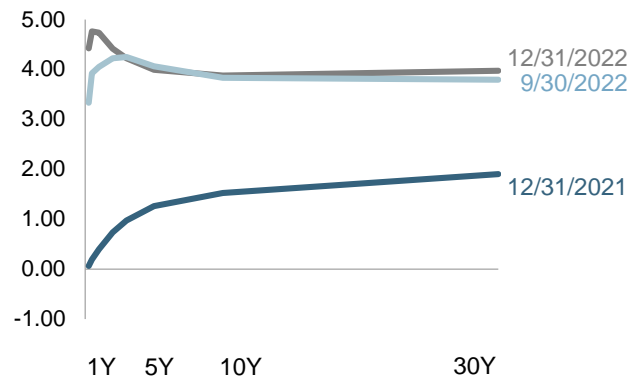
On the short end of the yield curve, the 1-Month US Treasury Bill yield increased 406 basis points (bps) to 4.12%, while the 1-Year US Treasury Bill yield increased 434 bps to 4.73%. The yield on the 2-Year US Treasury Note increased 368 bps to 4.41%.

The yield on the 5-Year US Treasury Note increased 273 bps to 3.99%. The yield on the 10-Year US Treasury Note increased 236 bps to 3.88%. The yield on the 30-Year US Treasury Bond increased 207 bps to 3.97%.

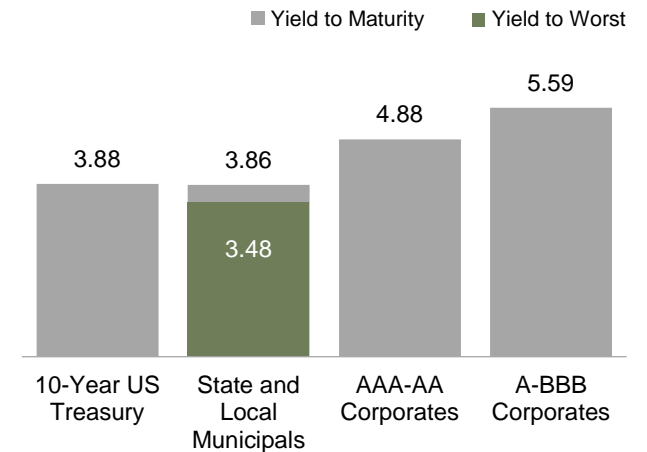
In terms of total returns, short-term US treasury bonds returned -5.47% while intermediate-term US treasury bonds returned -7.77%. Short-term corporate bonds returned -5.62% and intermediate-term corporate bonds returned -9.40%.¹

The total return for short-term municipal bonds was -3.17% and -6.01% for intermediate-term municipal bonds. Within the municipal fixed income market, general obligation bonds outperformed revenue bonds, returning -7.74% vs -9.29, respectively.²

US Treasury Yield Curve (%)



Bond Yield Across Issuers (%)



Period Returns (%)

Asset Class	1 Year	Annualized		
		3 Years	5 Years	10 Years
ICE BofA US 3-Month Treasury Bill Index	1.46	0.72	1.26	0.76
ICE BofA 1-Year US Treasury Note Index	-1.02	0.23	1.09	0.74
FTSE World Government Bond Index 1-5 Years (hedged to USD)	-4.49	-0.75	0.73	0.98
Bloomberg Municipal Bond Index	-8.53	-0.77	1.25	2.13
FTSE World Government Bond Index 1-5 Years	-8.73	-2.44	-1.15	-1.20
Bloomberg U.S. High Yield Corporate Bond Index	-11.19	0.05	2.31	4.03
Bloomberg U.S. TIPS Index	-11.85	1.21	2.11	1.12
Bloomberg U.S. Aggregate Bond Index	-13.01	-2.71	0.02	1.06
Bloomberg U.S. Government Bond Index Long	-29.19	-7.39	-2.19	0.61

1. Bloomberg US Treasury and US Corporate Bond Indices

2. Bloomberg Municipal Bond Index

One basis point (bps) equals 0.01%. Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Yield curve data from Federal Reserve. State and local bonds, and the Yield to Worst are from the S&P National AMT-Free Municipal Bond Index. AAA-AA Corporates represent the ICE BofA US Corporates, AA-AAA rated. A-BBB Corporates represent the ICE BofA Corporates, BBB-A rated. Bloomberg data provided by Bloomberg. US long-term bonds, bills, inflation, and fixed income factor data © Stocks, Bonds, Bills, and Inflation (S&BBI) Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). FTSE fixed income indices © 2023 FTSE Fixed Income LLC, all rights reserved. ICE BofA index data © 2023 ICE Data Indices, LLC. S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

Global Fixed Income

2022 yield curves

Interest rates generally increased within global developed markets for the year.

Realized term premiums were negative within global developed markets.

In Japan, except for ultra-short term interest rates, interest rates were positive. In Canada, the ultra-short-term segment of the yield curve inverted.

Changes in Yields (bps) since 12/31/2021

	1Y	5Y	10Y	20Y	30Y
US	430.2	274.3	233.8	221.9	205.8
UK	306.6	280.5	279.6	283.4	278.4
Germany	295.5	297.9	269.3	250.9	225.3
Japan	10.6	34.0	52.1	80.9	84.3
Canada	368.7	211.6	183.2	165.5	158.6
Australia	302.0	239.2	236.4	208.8	194.6

