



APRIL 2022 – MARKET REVIEW

April 7, 2022

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AssetGrade Market Summary

April 2022 Review – Both Stocks & Bonds Decline in Q1

Only commodities had positive returns so far in 2022:

- For the first time in decades, **commodities were the only asset class that had positive returns**. Commodities have increased as inflation has continued to stay between 6% and 8%.
- The investment world was hit by **two significant events in Q1**: the **rise in bond yields** started early in the quarter, then the **war in Ukraine** began in February.
- As bond yields go up, the value of existing bonds goes down (who wants to have those old bonds that pay 1.5% when you can have a shiny new bond that pays 2.5%?). Because yields increased significantly, **bonds around the world fell 5% - 6%** in the first quarter.
- **Stocks around the world also took a hit**, as the war in Ukraine escalated. US stocks had begun to decline before the Ukraine invasion, then were joined by developed and emerging market stocks as the war continued.
- **US Treasury real yields have now fallen even further to near-record levels of -4%** as inflation rose quickly. Real yields are what bondholders actually receive when inflation is taken into account, so 10-year Treasury bond investors are now losing 4% to inflation every year.

Despite the recent declines, there are positive signals for investors given that the world is coming out of the pandemic, interest rates are no longer near zero, but are still at historically low levels and expected economic growth and corporate profits are still high:

- Even with the bad news over the last couple of years (pandemic, war in Ukraine, inflation), **US stock market valuations have continued to remain high and corporate profits are at record high levels**.
- Consumer sentiment has fallen to levels generally only seen during the depths of severe recessions like 1980, 1990 and 2008. When consumer sentiment falls, the S&P 500 returns are generally high over the next year, which bodes well for investors.
- The **US Treasury yield curve is mostly flat and has started to become inverted**, at least for 5 year Treasury bonds. “Inverted yield curves” are the term used when short-term rates are higher than long-term rates. Inverted yield curves get a lot of attention because they often, but not always, occur before a recession.
- While bondholders have been hurt over the last quarter, the rise in yields means that longer-term bonds have started to become more attractive for investors.

AssetGrade is a registered investment adviser. For information about AssetGrade's registration status and business operations, please consult the Firm's Form ADV disclosure documents, the most recent versions of which are available on the SEC's Investment Adviser Public Disclosure website at www.adviserinfo.sec.gov.

Appendix

AssetGrade Market Summary

Commodities Only Asset Class With Positive Returns in Q1

																2007 - 2021	
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD	Ann.	Vol.
EM Equity 39.8%	Fixed Income 5.2%	EM Equity 79.0%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	REITs 2.8%	Small Cap 21.3%	EM Equity 37.8%	Cash 1.8%	Large Cap 31.5%	Small Cap 20.0%	REITs 41.3%	Comdty. 25.5%	Large Cap 10.6%	REITs 23.2%
Comdty. 16.2%	Cash 1.8%	High Yield 59.4%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Large Cap 1.4%	High Yield 14.3%	DM Equity 25.6%	Fixed Income 0.0%	REITs 28.7%	EM Equity 18.7%	Large Cap 28.7%	Cash 0.0%	Small Cap 8.7%	EM Equity 22.9%
DM Equity 11.6%	Asset Alloc. -25.4%	DM Equity 32.5%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	Fixed Income 0.5%	Large Cap 12.0%	Large Cap 21.8%	REITs -4.0%	Small Cap 25.5%	Large Cap 18.4%	Comdty. 27.1%	Asset Alloc. -3.9%	REITs 7.5%	Small Cap 22.5%
Asset Alloc. 7.1%	High Yield -26.9%	REITs 28.0%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Cash 0.0%	Comdty. 11.8%	Small Cap 14.6%	High Yield -4.1%	DM Equity 22.7%	Asset Alloc. 10.6%	Small Cap 14.8%	Large Cap -4.6%	High Yield 6.6%	Comdty. 19.1%
Fixed Income 7.0%	Small Cap -33.8%	Small Cap 27.2%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	DM Equity -0.4%	EM Equity 11.6%	Asset Alloc. 14.6%	Large Cap -4.4%	Asset Alloc. 19.5%	DM Equity 8.3%	Asset Alloc. 13.5%	REITs -5.3%	Asset Alloc. 5.7%	DM Equity 18.9%
Large Cap 5.5%	Comdty. -35.6%	Large Cap 25.5%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	Asset Alloc. -2.0%	REITs 8.6%	High Yield 10.4%	Asset Alloc. -5.8%	EM Equity 18.9%	Fixed Income 7.5%	DM Equity 11.8%	High Yield -5.7%	EM Equity 4.8%	Large Cap 16.9%
Cash 4.8%	Large Cap -37.0%	Asset Alloc. 25.0%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	High Yield -2.7%	Asset Alloc. 8.3%	REITs 8.7%	Small Cap -11.0%	High Yield 12.6%	High Yield 7.0%	High Yield 1.0%	DM Equity -5.8%	DM Equity 4.1%	High Yield 12.2%
High Yield 3.2%	REITs -37.7%	Comdty. 18.9%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -4.4%	Fixed Income 2.6%	Fixed Income 3.5%	Comdty. -11.2%	Fixed Income 8.7%	Cash 0.5%	Cash 0.0%	Fixed Income -5.9%	Fixed Income 4.1%	Asset Alloc. 11.7%
Small Cap -1.6%	DM Equity -43.1%	Fixed Income 5.9%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -14.6%	DM Equity 1.5%	Comdty. 1.7%	DM Equity -13.4%	Comdty. 7.7%	Comdty. -3.1%	Fixed Income -1.5%	EM Equity -6.9%	Cash 0.8%	Fixed Income 3.3%
REITs -15.7%	EM Equity -53.2%	Cash 0.1%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -24.7%	Cash 0.3%	Cash 0.8%	EM Equity -14.2%	Cash 2.2%	REITs -5.1%	EM Equity -2.2%	Small Cap -7.5%	Comdty. -2.6%	Cash 0.7%

Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.

Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Global HY Index, Fixed Income: Bloomberg US Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg US Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period from 12/31/2006 to 12/31/2021. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns.

Guide to the Markets – U.S. Data are as of March 31, 2022.

Asset class returns do not reflect returns in any AssetGrade portfolio, but show the rate of return for the asset classes listed.

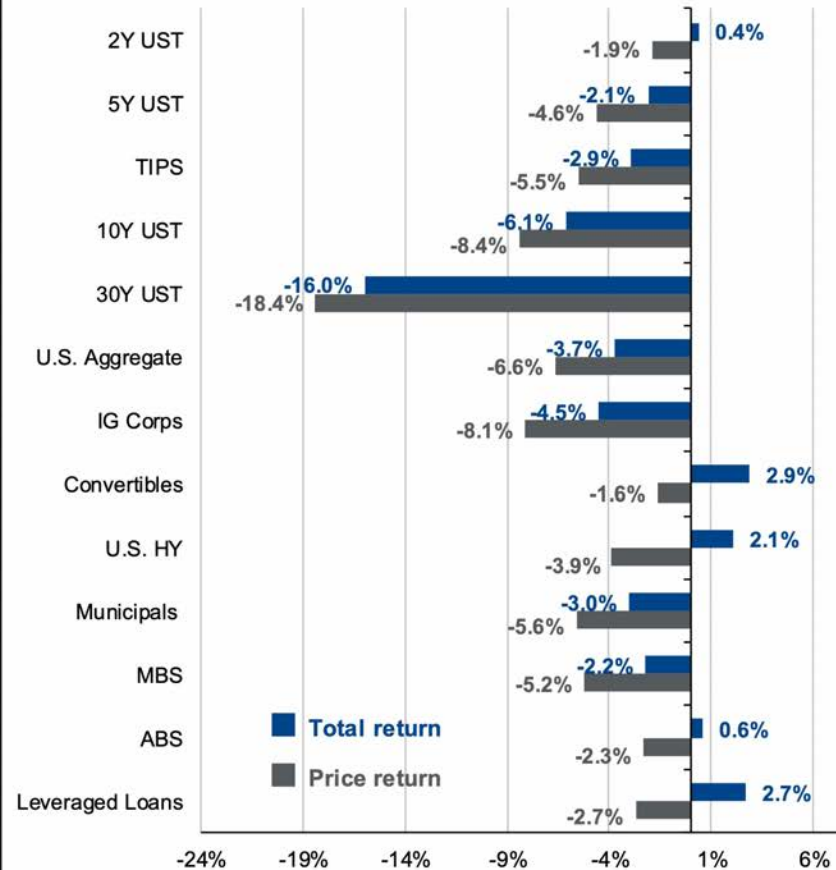
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US Bonds Took Hit in Q1

U.S. Treasuries	Yield		Return	Avg. Maturity	Correlation to 10-year	Correlation to S&P 500
	03/31/2022	12/31/2021	2022 YTD			
2-Year	2.28%	0.73%	-2.54%	2 years	0.68	-0.37
5-Year	2.42%	1.26%	-5.16%	5	0.92	-0.34
TIPS	-0.52%	-1.04%	-3.02%	10	0.58	0.21
10-Year	2.32%	1.52%	-6.86%	10	1.00	-0.31
30-Year	2.44%	1.90%	-11.41%	30	0.93	-0.30
Sector						
U.S. Aggregate	2.92%	1.75%	-5.93%	8.8	0.85	0.04
IG Corps	3.60%	2.33%	-7.69%	11.9	0.44	0.39
Convertibles	4.44%	3.66%	-5.42%	-	-0.26	0.87
U.S. HY	6.01%	4.21%	-4.84%	6.2	-0.23	0.73
Municipals	2.60%	1.11%	-6.23%	12.9	0.40	0.10
MBS	2.99%	1.98%	-4.97%	7.1	0.81	-0.13
ABS	3.45%	1.96%	-2.11%	2.4	-0.42	0.62
Leveraged Loans	5.41%	4.60%	-0.01%	2.7	0.16	0.13

Impact of a 1% rise in interest rates

Assumes a parallel shift in the yield curve



Source: Bloomberg, FactSet, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; ABS: J.P. Morgan ABS Index; Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; TIPS: Treasury Inflation-Protected Securities; Convertibles: U.S. Convertibles Composite. Convertibles yield is as of most recent month end and is based on U.S. portion of Bloomberg Global Convertibles Index. Yield and return information based on bellwethers for Treasury securities. Sector yields reflect yield-to-worst. Convertibles yield is based on U.S. portion of Bloomberg Global Convertibles. Correlations are based on 15-years of monthly returns for all sectors. Past performance is not indicative of future results.

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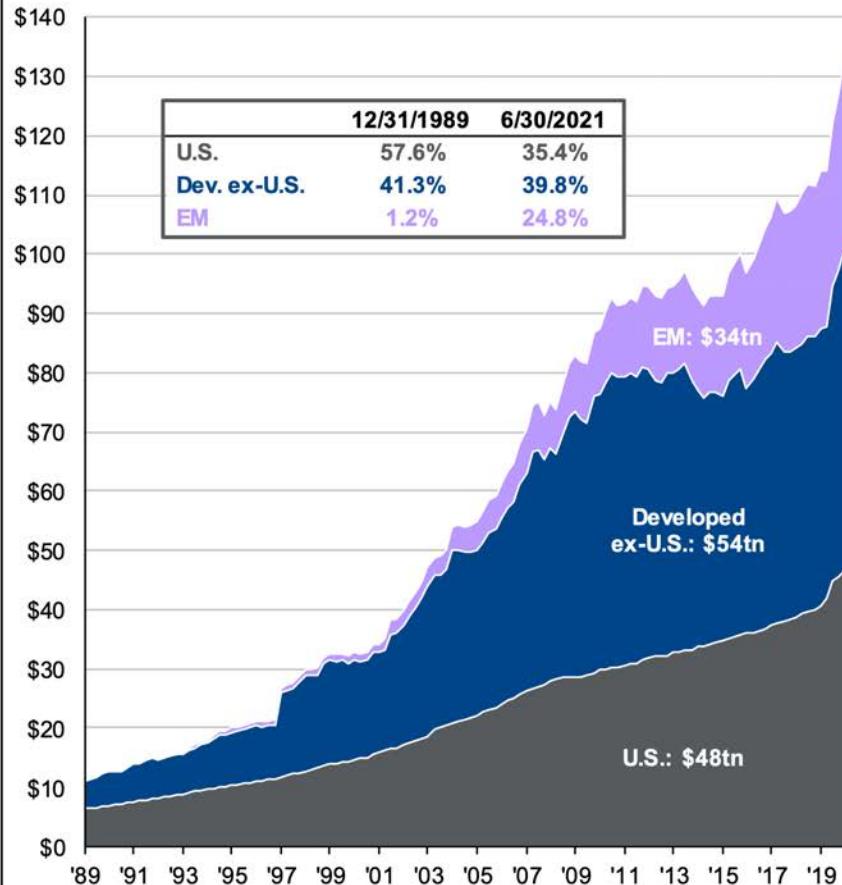
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International Bonds Also Took a Hit in Q1

Aggregates	Yield		2022 Return		Duration	Correlation to 10-year
	03/31/2022	12/31/2021	Local	USD		
U.S.	2.92%	1.75%	-5.93%	-5.93%	6.6 years	0.89
Gbl. ex-U.S.	1.71%	1.07%	-	-6.28%	7.70	0.40
Japan	0.36%	0.18%	-1.52%	-6.57%	9.50	0.54
Germany	0.89%	0.05%	-4.92%	-6.98%	7.00	0.22
UK	2.02%	1.18%	-6.75%	-9.35%	10.30	0.31
Italy	1.48%	0.76%	-4.47%	-6.53%	7.00	0.05
Spain	1.13%	0.32%	-5.10%	-7.15%	7.20	0.05
Sector						
Euro Corp.	1.55%	0.52%	-4.96%	-7.01%	5.0 years	0.22
Euro HY	5.18%	3.55%	-4.13%	-6.20%	3.70	-0.19
EMD (\$)	6.42%	5.27%	-	-10.02%	6.90	0.01
EMD (LCL)	6.23%	5.72%	-7.77%	-6.46%	5.10	-0.03
EM Corp.	5.44%	4.11%	-	-8.82%	5.50	0.03

Global bond market

USD trillions



Source: J.P. Morgan Asset Management; (Left) Bloomberg, FactSet; (Right) BIS.

Fixed income sectors shown above are provided by Bloomberg and are represented by the global aggregate for each country except where noted. EMD sectors are represented by the J.P. Morgan EMBIG Diversified Index (USD), the J.P. Morgan GBI EM Global Diversified Index (LCL) and the J.P. Morgan CEMBI Broad Diversified Index (Corp). European Corporates are represented by the Bloomberg Euro Aggregate Corporate Index and the Bloomberg Pan-European High Yield Index. Sector yields reflect yield-to-worst. Correlations are based on 10-years of monthly returns for all sectors. Past performance is not indicative of future results. Global bond market regional breakdown may not sum to 100% due to rounding.

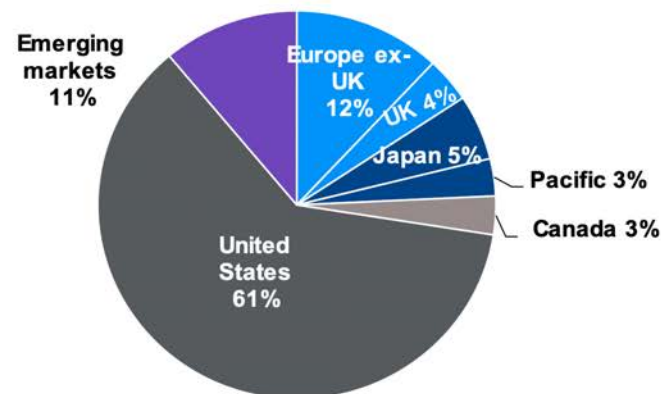
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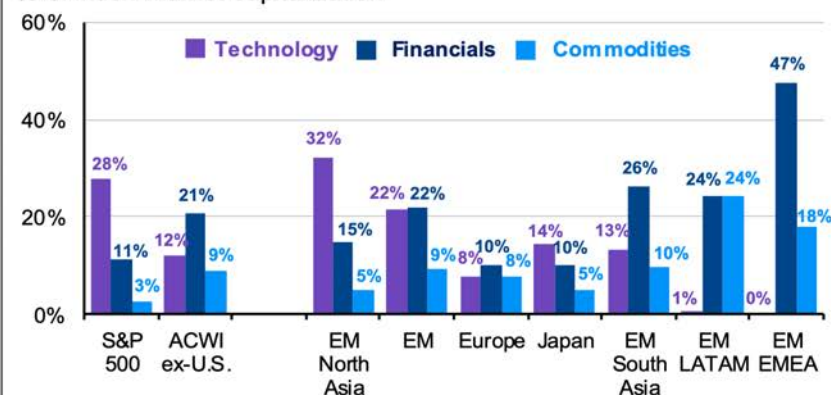
Stocks Took a Hit Around the World in Q1

Returns	2022 YTD		2021		15-years	
	Local	USD	Local	USD	Ann.	Beta
Regions						
U.S. (S&P 500)	-	-4.6	-	28.7	10.7	0.90
AC World ex-U.S.	-3.8	-5.3	13.5	8.3	4.2	1.07
EAFE	-3.6	-5.8	19.2	11.8	4.1	1.04
Europe ex-UK	-8.1	-9.8	24.4	16.5	4.8	1.18
Emerging markets	-6.1	-6.9	0.1	-2.2	4.8	1.18
Selected Countries						
United Kingdom	4.8	1.8	19.6	18.5	2.3	1.02
France	-6.6	-8.6	29.7	20.6	4.7	1.22
Germany	-10.9	-12.8	13.9	5.9	4.7	1.31
Japan	-1.4	-6.4	13.8	2.0	3.4	0.72
China	-13.9	-14.2	-21.6	-21.6	5.8	1.10
India	0.1	-1.8	28.9	26.7	6.7	1.26
Brazil	16.0	36.0	-11.2	-17.2	0.9	1.50
Russia	-	-	21.6	20.0	0.9	1.49

Weights in MSCI All Country World Index
% global market capitalization, float adjusted



Representation of key sectors in international markets
% of index market capitalization



Source: FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management. All return values are MSCI Gross Index data. 15-year history based on USD returns. 15-year return and beta figures are calculated for the time period 12/31/2006 to 12/31/2021. Beta is for monthly returns relative to the MSCI AC World Index. Annualized volatility is calculated as the standard deviation of quarterly returns multiplied by the square root of 4. Chart is for illustrative purposes only. Please see disclosure page for index definitions. Past performance is not a reliable indicator of current and future results. EM North Asia includes China, Taiwan and South Korea. EM South Asia includes India, Indonesia, Malaysia, Pakistan, Philippines, Taiwan and Thailand. Guide to the Markets – U.S. Data are as of March 31, 2022.

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Real Returns – How Low Can They Go?

Real yields, which are the returns bond investors receive after inflation, are now down to -4.09%

Nominal and real U.S. 10-year Treasury yields



Source: BLS, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month. For the current month, we use the prior month's core CPI figures until the latest data is available.

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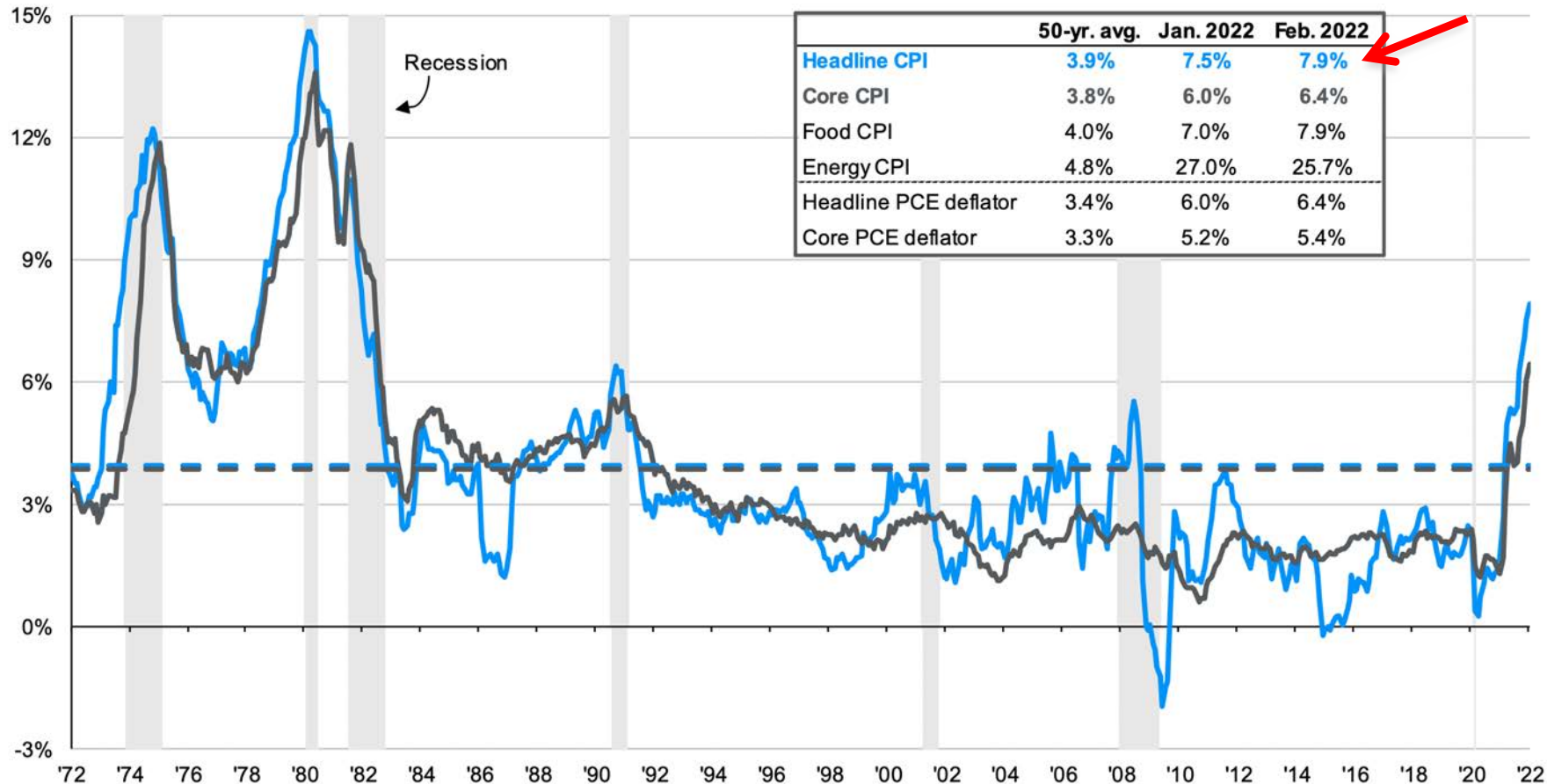
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Inflation!

CPI and core CPI

% change vs. prior year, seasonally adjusted



Source: BLS, FactSet, J.P. Morgan Asset Management.

CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.

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International Valuations and Dividend Yields

International: Price-to-earnings discount vs. U.S.

MSCI AC World ex-U.S. vs. S&P 500 Indices, next 12 months



International: Difference in dividend yields vs. U.S.

MSCI AC World ex-U.S. minus S&P 500 Indices, next 12 months



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
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International stocks at record discount relative to US.

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S&P 500 Valuations

Although stock valuations fell in Q1, they are still at historically high levels.

S&P 500 Index: Forward P/E ratio



Source: FactSet, FRB, Refinitiv Datastream, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.

Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since March 1997 and by FactSet since January 2022. Current next 12-months consensus earnings estimates are \$233. Average P/E and standard deviations are calculated using 25 years of history. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend yield is calculated as the next 12-months consensus dividend divided by most recent price. Price-to-book ratio is the price divided by book value per share. Price-to-cash flow is price divided by NTM cash flow. EY minus Baa yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Baa seasoned corporate bond yield. Std. dev. over-/under-valued is calculated using the average and standard deviation over 25 years for each measure. *P/CF is a 20-year average due to cash flow availability.

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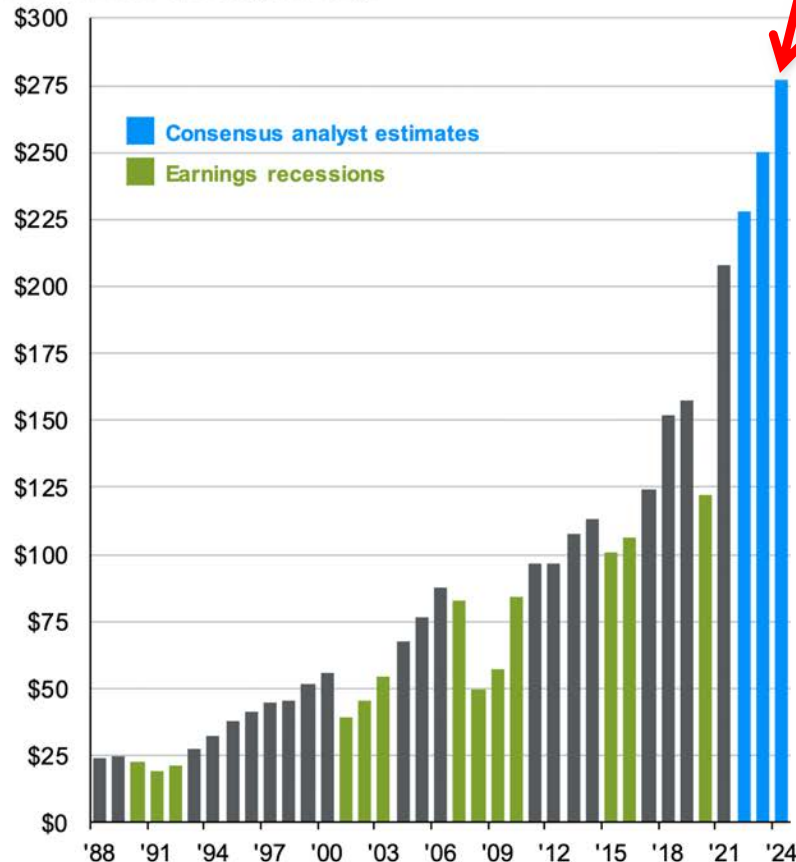


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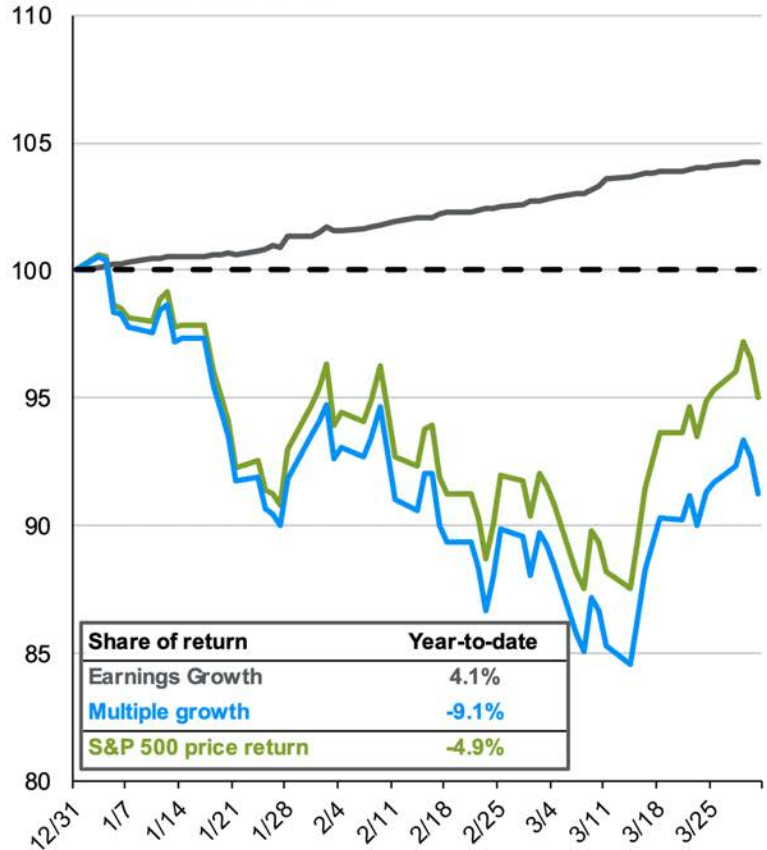
S&P 500 Earnings

Corporate profits at record high levels.

S&P 500 earnings per share
Index annual operating earnings



Percent change in S&P 500, earnings and valuations*
Year-to-date, indexed to 100



Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management.

Historical EPS levels are based on annual operating earnings per share. Earnings estimates are based on estimates from Standard & Poor's and FactSet Market Aggregates. *Earnings and multiple growth are both percent changes over the next 12 months. Past performance is not indicative of future returns.

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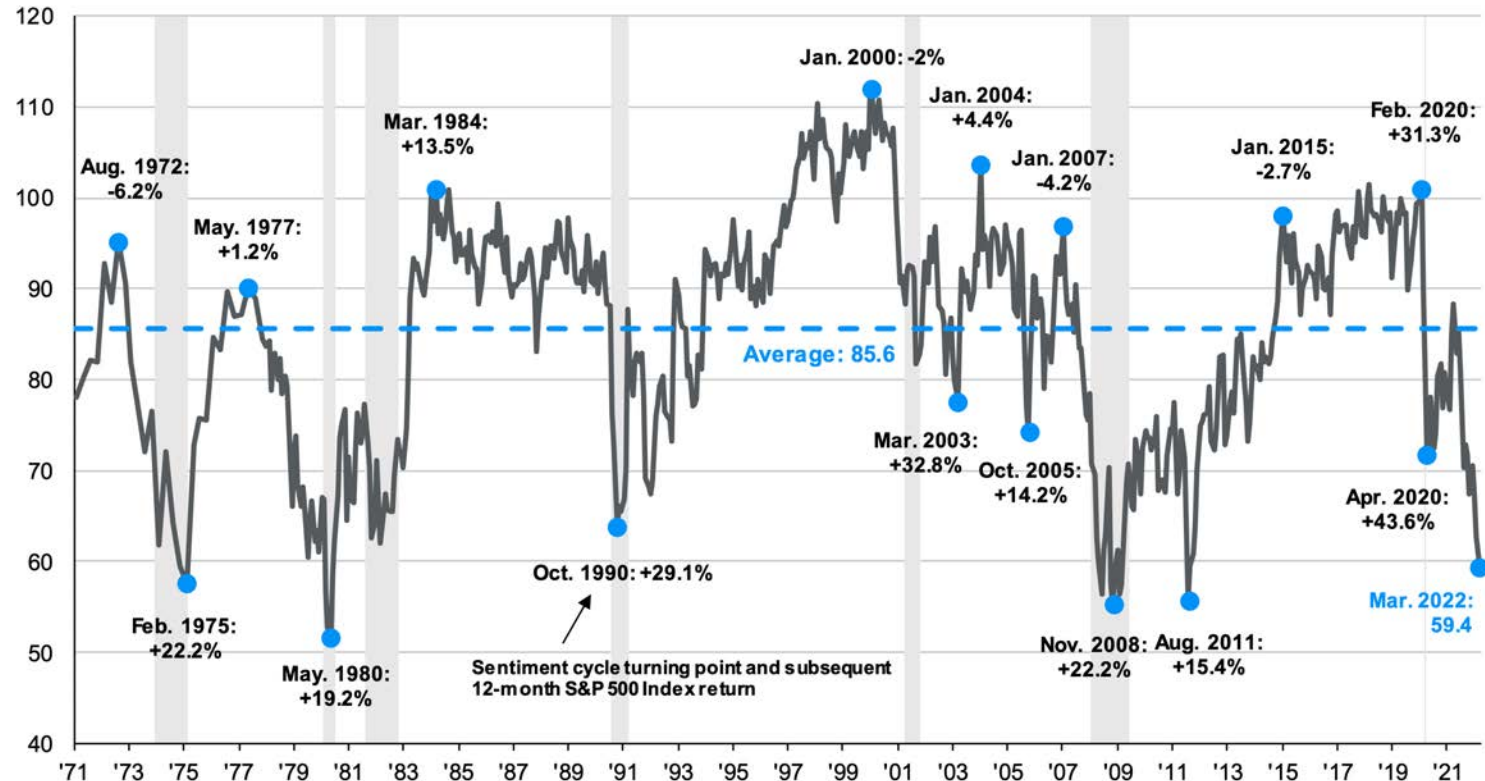
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Consumer Sentiment vs. S&P 500 Returns

Consumer Sentiment Index and subsequent 12-month S&P 500 returns



Source: FactSet, Standard & Poor's, University of Michigan, J.P. Morgan Asset Management.

Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest index value before a series of higher highs.

Subsequent 12-month S&P 500 returns are price returns only, which excludes dividends. Past performance is not a reliable indicator of current and future results.

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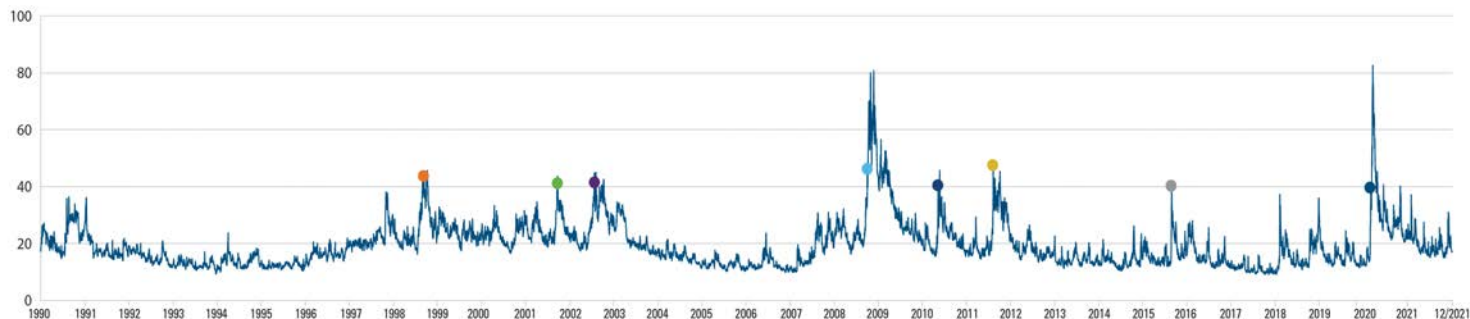
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VIX vs. S&P 500 Returns

Buying Stocks When Fear Runs High Has Historically Led to Long-Term Gains

Chicago Board Options Exchange (Cboe) Volatility Index (1990-2021)

VIX levels of 40 or higher indicate extremely high levels of fear



S&P 500 Index Returns (%) When VIX >40 Since 1990

Date	1 Year	3 Year	5 Year	S&P 500 Daily Loss*	Event
8/31/1998	39.82	7.14	2.48	-6.80	Russia's economic crisis
9/17/2001	-14.64	4.55	6.76	-4.89	Trading resumes for the first time following the September 11 terrorist attacks
7/22/2002	22.73	16.64	15.43	-3.29	Accounting scandals highlighted by bankruptcies at Enron and WorldCom
9/29/2008	-1.54	3.90	11.32	-8.79	US House of Representatives rejects a proposed \$700 billion bank bailout plan
5/7/2010	23.05	15.98	15.88	-1.53	"Flash Crash" causes stocks to decline rapidly with no apparent reason. Dow Jones Industrial Average falls 999 points intraday before recovering.
8/8/2011	28.09	22.59	16.76	-6.65	European debt crisis and S&P downgrades US government debt from AAA to AA+ for the first time in history
8/24/2015	17.48	17.34	14.94	-3.94	China currency devaluation sparks selloff
2/28/2020	31.29	?	?	-0.81	Coronavirus outbreak induces fear-based selling

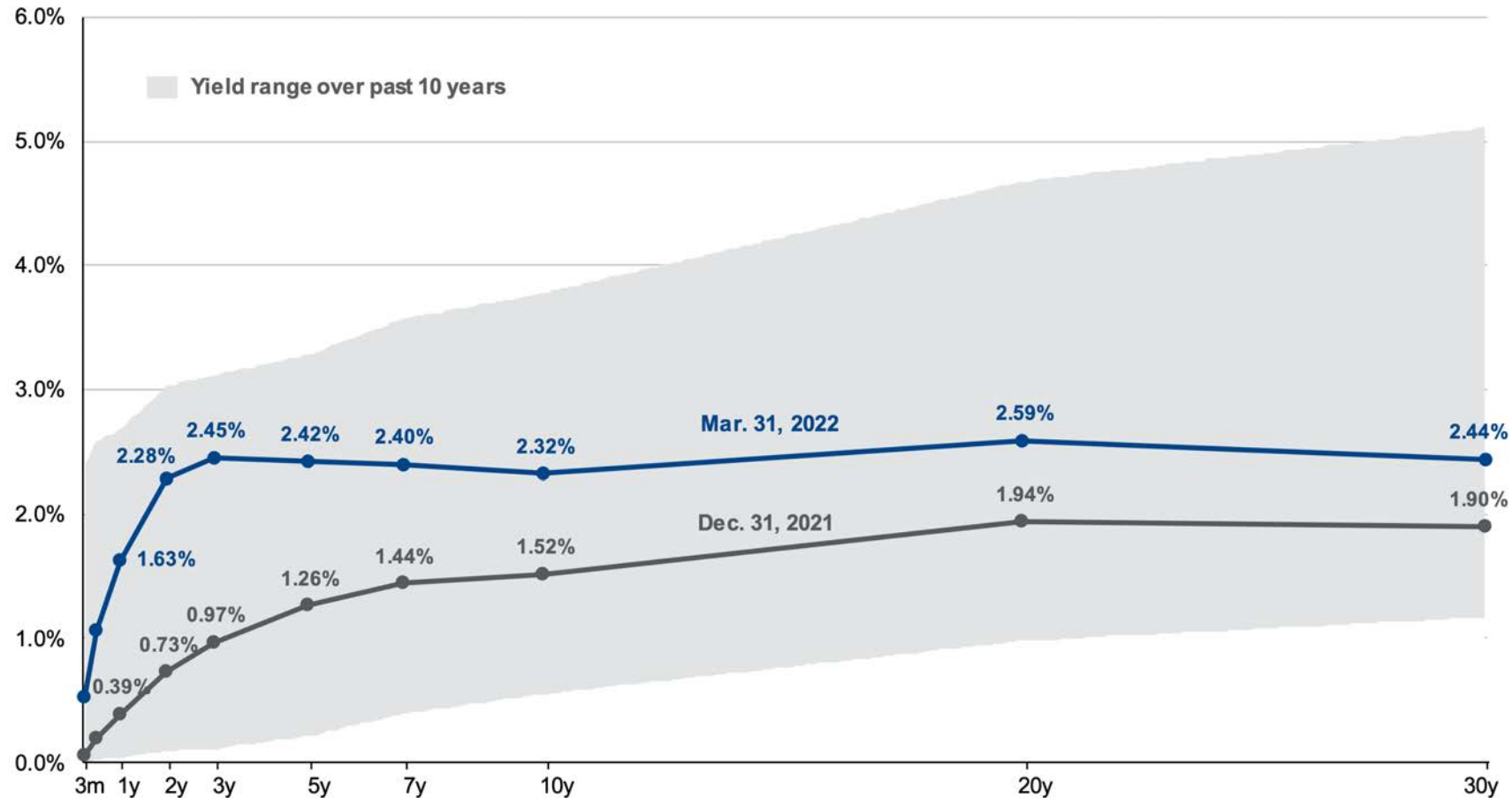
Past performance does not guarantee future results. Assumes reinvestment of capital gains and dividends and no taxes. Indices are unmanaged and not available for direct investment. *This column shows the S&P 500 Index's one-day loss on the date shown in column 1. Data Sources: Hartford Funds, Morningstar, and Factset, 2/22

Chart provided compliments of Hartford Funds

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US Treasury Yield Curve Now Flat

U.S. Treasury yield curve



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.
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Disclosures

The Standard & Poor's 500 Index is an unmanaged index of 500 U.S. companies, and is a common measure of performance of the overall U.S. stock market.

The Russell 2000 Index is an unmanaged index of 2000 small-capitalization companies, and is a common measure of performance of U.S. "small-cap" equities.

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