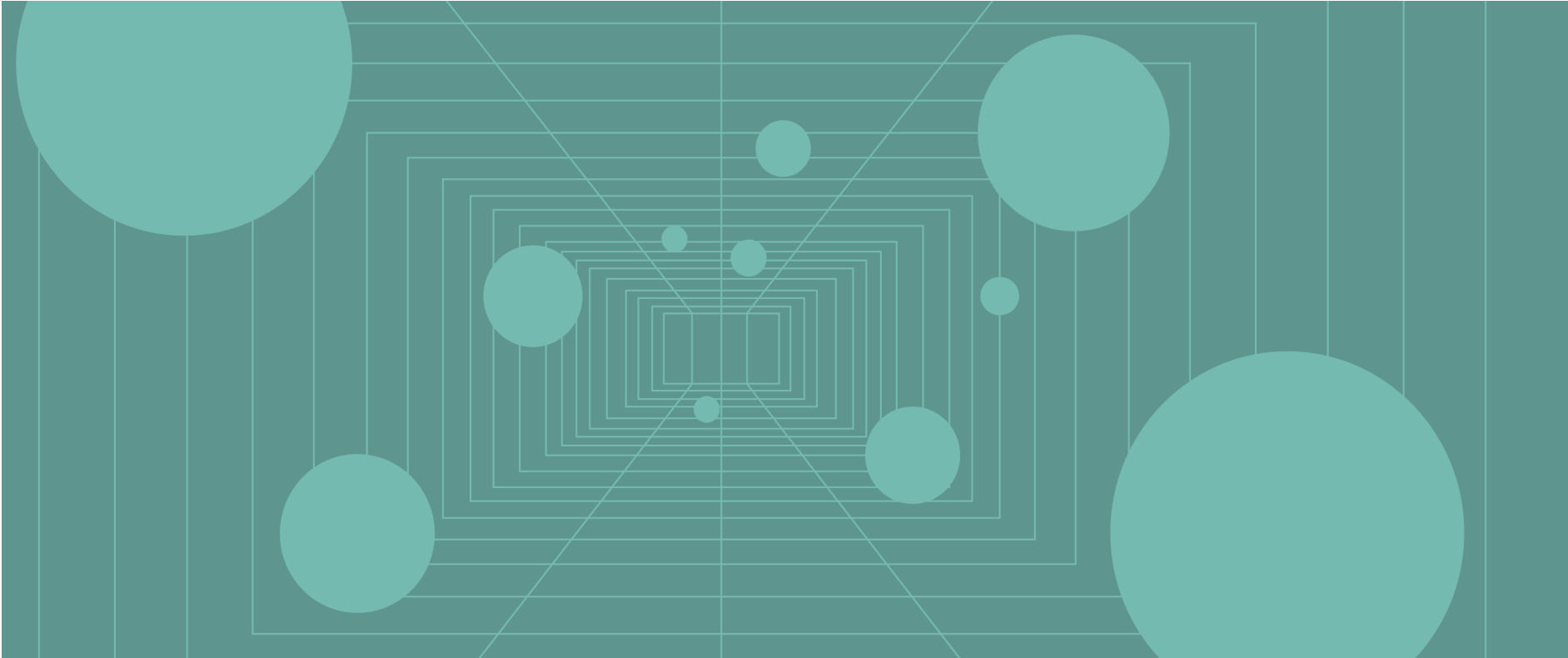


# DECADES OF DATA: EUROPE EX UK

1900–2021



## Executive Summary

- **Basing investment decisions on the extrapolation of capital markets returns from recent, relatively short periods is a common mistake.** Viable conclusions about long-term expected returns cannot be drawn from return data for periods shorter than several decades, and even then, investors should be mindful that long-term statistics are beginning- and end-point sensitive and that returns are more variable than commonly assumed. Still, consideration of shorter time periods within a longer-term context can provide a powerful framework for evaluating current market conditions.
- **Eurozone equities (22.7%) advanced in 2021 on strong earnings growth, and inflation rates surged to multi-decade highs.** Eurozone equity performance ranked in the 70th percentile of calendar year returns since 1951, as equities continued to rebound from 2020's pandemic-driven drawdown. Eurozone stocks have now returned 15.8% annualized over the trailing three calendar years, which was the strongest three-year performance since the period ended in 2007. Global price inflation was a prominent market theme in 2021, and the Eurozone was no exception. Consumer price inflation accelerated to 5.0% year-over-year by December, the highest rate since 1991. The inflationary spike resulted from a strong demand recovery in the aftermath of the COVID-19–induced recession and its related supply constraints. Resurgent consumer prices have bucked their longer-term downtrend since the high inflation environment of the late 1970s/early 1980s. In fact, December's inflation print was more than four times higher than its trailing ten-year average, the most extreme reversal from longer-term trends on record.
- **Recent Eurozone equity returns have struggled to keep up with their long-term average.** Investors in Eurozone stocks have earned a nominal average annual compound return (AACR) of 10.4% over the past ten years, slightly below the full-period (1951–2021) AACR of 10.5%. Relatively weak performance has persisted for some time. The rolling ten-year AACR for Eurozone equities has been below the full-period average for the past 15 years. However, investors should bear in mind that rolling AACR analyses are sensitive to beginning- and end-point timing, even over ten-year periods. The latest trailing ten-year return—which is the strongest since the period ended December 2006—now excludes performance from the height of the European Sovereign Debt Crisis in 2011 when Eurozone stocks returned -15.2%. In another example, ten-year AACRs reached 9.9% through February 2019, which was their strongest trailing ten-year return since the period ended May 2007. That ten-year window excludes the worst months from the global financial crisis (GFC) and begins when Eurozone equities hit their nadir in March 2009.

## Executive Summary (continued)

- **Eurozone equities, bonds, and cash all outpaced inflation over very long-term periods, based on data since the mid-20th century.** Over rolling 50-year periods, real AACRs for Eurozone stocks ranged from a low of 3.7% to a high of 8.7%, outpacing inflation by the widest margin. Eurozone bonds and cash also gained in real terms, even during the weakest performance periods, with returns ranging from 1.8% to 3.5% and from 0.3% to 0.8%, respectively. Eurozone inflation has averaged 3.7% annually since 1950, roughly in line with other developed economies. For comparison, benchmark Eurozone government bonds and cash produced full-period AACRs of 5.7% and 3.7%, respectively, over the same time span, which is a significantly narrower spread vis-à-vis inflation relative to stocks versus inflation. Still, given today's unprecedented low yields, Eurozone bonds and cash may have a more difficult time outpacing inflation in the years ahead. With negative central bank policy rates, even low inflation can eat away at purchasing power.
- **Over the long term, Eurozone equity investors have a high probability of being compensated for the additional risk of holding stocks.** Since 1950, Eurozone equity returns exceeded bond returns during 68% of all five-year periods, 76% of all ten-year periods, and 95% of all 25-year periods (calculated on a nominal basis using rolling monthly data). While equities tend to outperform in the long term, there have been periods of underperformance over rolling five-year periods, as volatile equities are prone to larger drawdowns than bonds. Such periods are a reminder of the ballast fixed income allocations can provide to portfolios in terms of diversification, though today's historically low-yield environment has challenged this conventional wisdom.
- **Earnings growth and dividend reinvestment are the primary contributors to equity total return over time, while the effects of valuation mean reversion diminish the impact of multiple rerating.** Earnings growth provided the highest degree of return contribution since 1969, on average, but can vary significantly from decade to decade. Dividends provide a steady stream of reliable income, but their contribution is weaker in magnitude, comprising only about half the contribution provided by earnings. Earnings growth has been the primary driver of performance so far this decade (2020–21), as the strong earnings rebound in 2021 more than offset the pandemic-driven earnings contraction in 2020.

## Executive Summary (continued)

- **Starting valuations are a useful indicator for long-term (10+ years) subsequent equity returns, but the relationship is somewhat weaker over shorter time horizons.** Normalized valuations and subsequent returns have a stronger relationship over long time periods (e.g., ten-year subsequent returns), but starting valuations alone do not completely explain subsequent returns—many factors can influence equity performance. Since 1979, our cyclically adjusted price-to-cash earnings (CAPCE) ratio for Europe ex UK stocks has explained 74% of the variation in subsequent ten-year real returns, a strong yet imperfect guide to future performance. At December 31, 2021, Europe ex UK equity valuations ended in the 91st percentile of historical observations, and from this valuation decile, the median subsequent ten-year real return for equities has been -2.3% per annum.
- **High- or low-valuation environments alone are not a catalyst for market reversals and may persist for several years; waiting for valuations to mean revert can be an exercise in frustration.** Low valuations provide what famed investment analyst Benjamin Graham called “a margin of safety.” High valuations, on the other hand, typically price in lofty projections for the future, providing little room for error. Despite uncertainty regarding the timing of market reversals, the historical record for Eurozone equities is clear—periods of low valuations are followed by higher long-term subsequent returns, while periods of high valuations are followed by poorer long-term returns.
- **Europe ex UK equity dividend yields are not statistically related to subsequent performance; normalized earnings multiples are the more useful indicator.** Europe ex UK dividend yields explained only 18% of the variation in subsequent ten-year real AACRs over the past 50 years, which pales in comparison to the explanatory power of normalized earnings multiples. For example, from the 2021 year-end dividend yield of 2.1%, the historical range of subsequent Europe ex UK equity real ten-year returns was about 15 percentage points. Despite the weak statistical relationship, dividend yields and subsequent returns display the expected positive relationship, in that higher starting dividend yields (i.e., lower equity prices relative to dividends) have typically been associated with higher subsequent ten-year returns relative to long-term averages. However, the importance of dividend reinvestment as a driver of total return should not be understated. In fact, since 1969, Europe ex UK companies managed to maintain a net positive average dividend growth rate during recessions. While earnings growth is more sensitive to the economic cycle, dividends provide a relatively stable tailwind to total returns.

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## Executive Summary (continued)

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- **Subsequent nominal ten-year Eurozone bond returns closely track the starting yield.** Eurozone bond yields remained near their all-time lows at year-end 2021, creating a challenging environment for future long-term returns. There is no comparable period of such low yield levels in the Eurozone, but if the strong correlation between starting yields and subsequent performance observed since 1970 (correlation coefficient=0.81) is a guide, Eurozone bonds are likely to post flat returns in the ensuing ten years. Additionally, from these levels even low-price inflation would result in losses in real terms. While investors benefited from falling yields over the past 40 years, with Eurozone bonds returning 7.0% annualized since 1981, they may need to consider other avenues for defensive portfolio diversification in today's environment. During the COVID-19–driven equity market sell-off, European bonds with negative yields provided poor returns, highlighting their reduced capacity as a defensive hedge.
- **There is a distinct inverse relationship between the level of government bond yields and equity market valuations in European markets.** Many have argued in recent years that high stock valuations, particularly in the United States, are justified (or at least in part explained) by the low level of government bond yields. The reasoning is straightforward; when discount rates fall, the present value of future cash flows increases, thus pushing up valuations. However, government bond yields do not tell the whole story. Since 1979, ten-year European government bond yields have explained 43% of the variation in equity market valuations, but they do not account for the other half. While an inverse relationship exists overall, there can be periods when equity valuations and yields move together. For example, in the early 2000s period preceding the GFC, there was a positive relationship, in that equity valuations and yields both increased. Given the possibility of differences across market environments, investors must consider the drivers of changes in interest rates, rather than their outright levels, and what impact such drivers may have on equity markets.

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## Executive Summary (continued)

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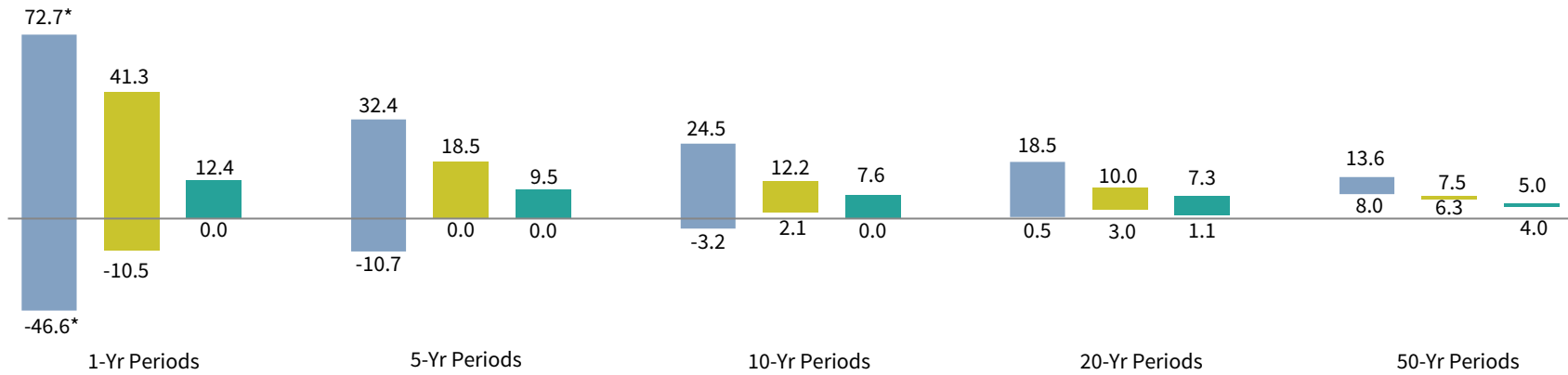
- **The relationship between asset prices and inflation is complex and nuanced.** Due, in part, to the extraordinary amount of fiscal and monetary stimulus extended in response to the COVID-19 crisis and global supply chain disruptions, inflation has risen to multi-decade highs. Inflation's impact on Eurozone equity returns is unclear; median stock performance is the lowest during seventh-decile inflationary periods, but equities experienced the largest downside during fourth-decile inflationary environments. The highest inflationary periods can erode nominal returns, but upside and median performance across the other inflationary deciles are largely similar. In nominal terms, bonds exhibit limited downside during periods of high inflation, as higher yield levels historically help offset any capital losses as bond prices fall. However, bond markets do suffer in real terms when consumer price levels increase 3% annualized or more.

# The range of investment returns narrows as holding periods increase

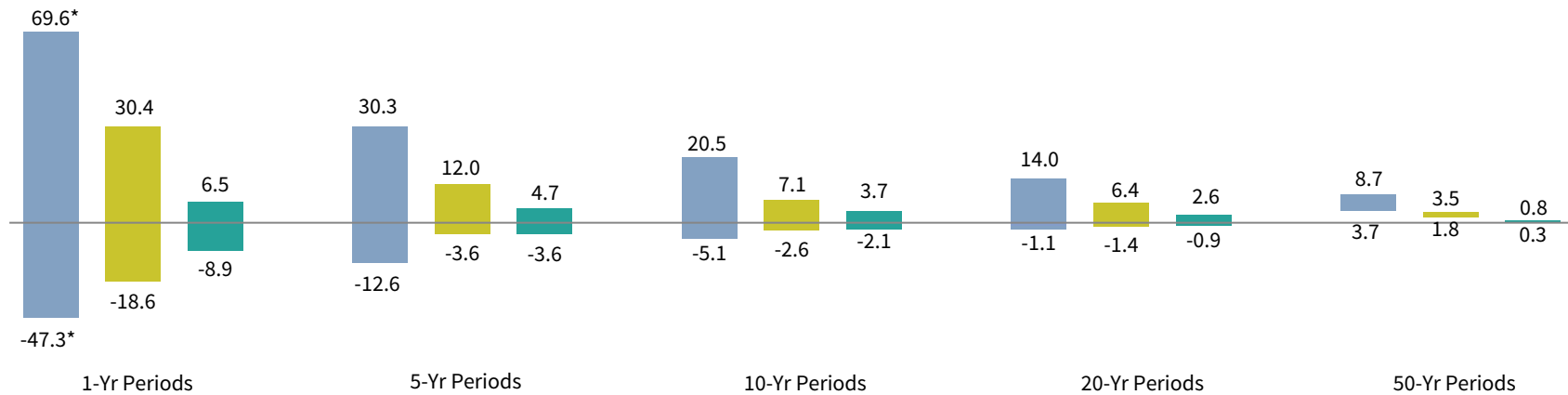
## RANGE OF EQUITY, BOND, AND CASH RETURNS FOR VARIOUS ROLLING MONTHLY TIME HORIZONS

1951–2021 • Average Annual Compound Return (%)

### Nominal Returns



### Real Returns



■ Equities ■ Bonds ■ Cash

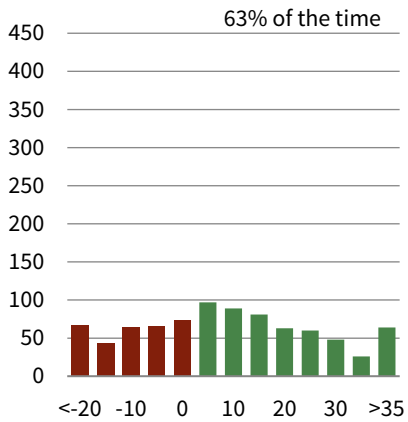
# Equities outperform bonds and cash over the long term, but can underperform in the short run

## EXCESS RETURNS OF EQUITIES OVER BONDS AND CASH

1951–2021 • Number of Rolling Monthly Periods

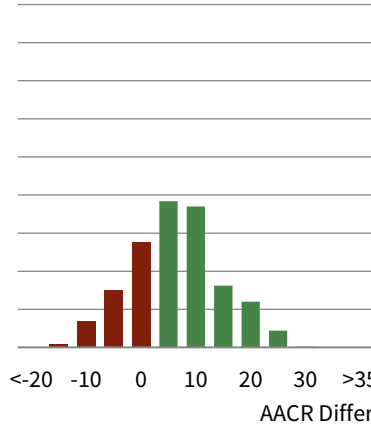
### 1-Yr Periods

Equities have outperformed bonds



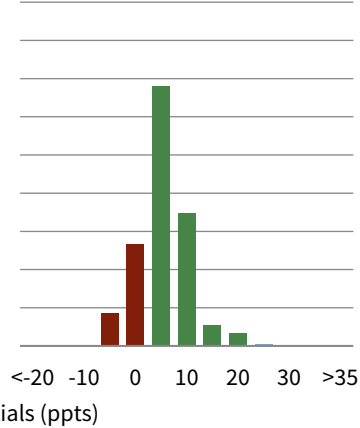
### 5-Yr Periods

68% of the time



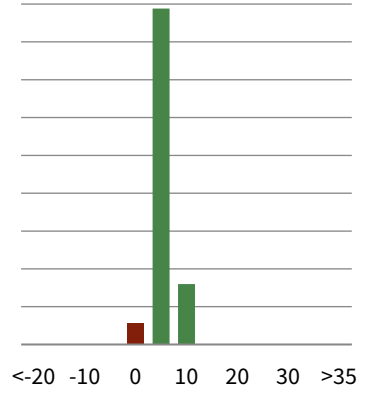
### 10-Yr Periods

76% of the time



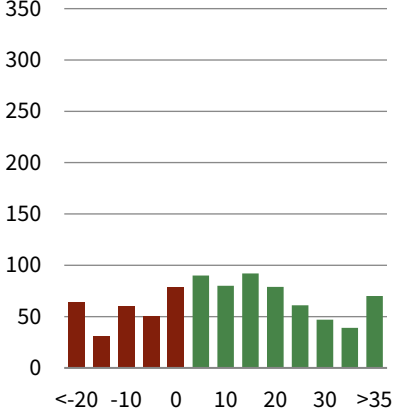
### 25-Yr Periods

95% of the time

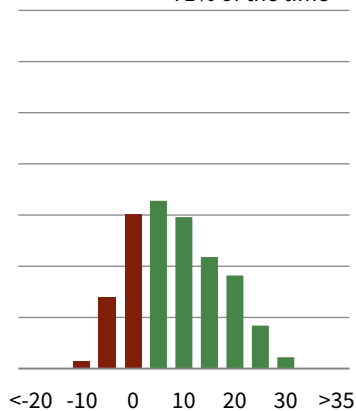


### Equities have outperformed cash

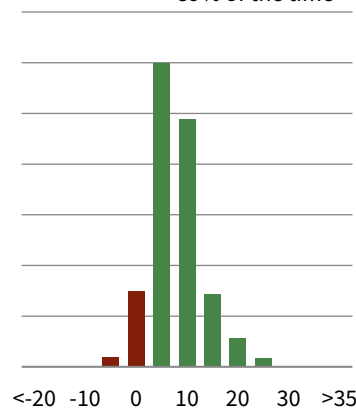
66% of the time



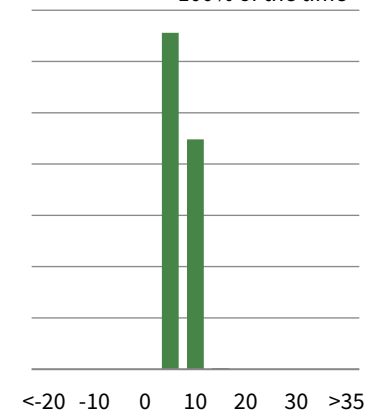
71% of the time



89% of the time



100% of the time





# Eurozone bonds tend to outperform cash, particularly over longer horizons

## EXCESS RETURNS OF BONDS OVER CASH

1951–2021 • Number of Rolling Monthly Periods

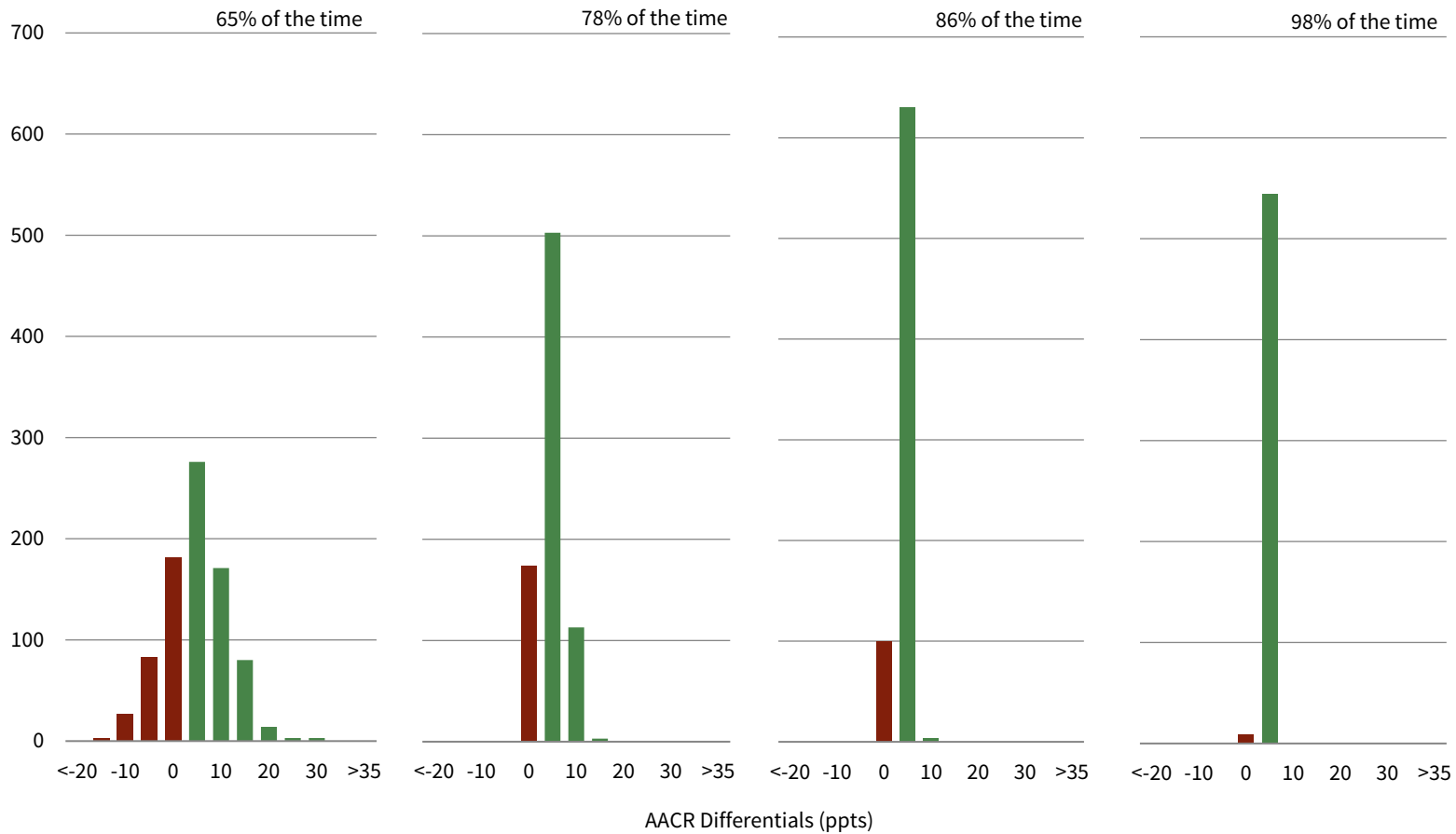
1-Yr Periods

5-Yr Periods

10-Yr Periods

25-Yr Periods

Bonds have outperformed cash



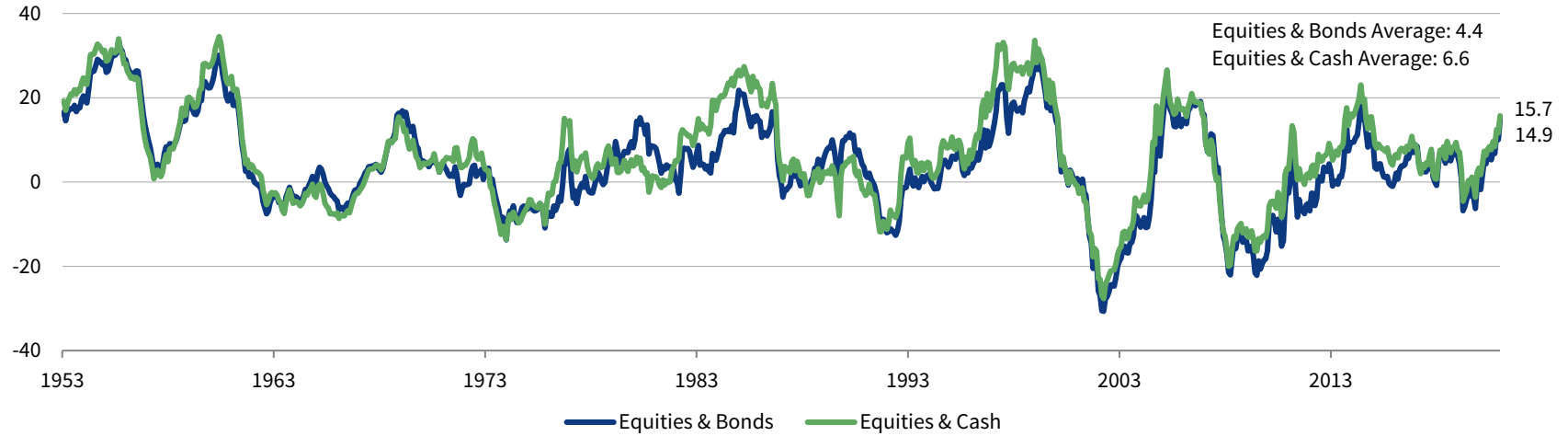
Source: Global Financial Data, Inc.

Notes: Buckets represent ranges of 5 percentage points each with the label denoting the high end of the range, inclusive. For example, the "0" bucket corresponds to the number of rolling monthly periods in which the excess return of bonds over cash was greater than -5 but equal to or less than zero.

# Equities outperform bonds and cash by a wide margin; bonds outperform cash to a lesser degree

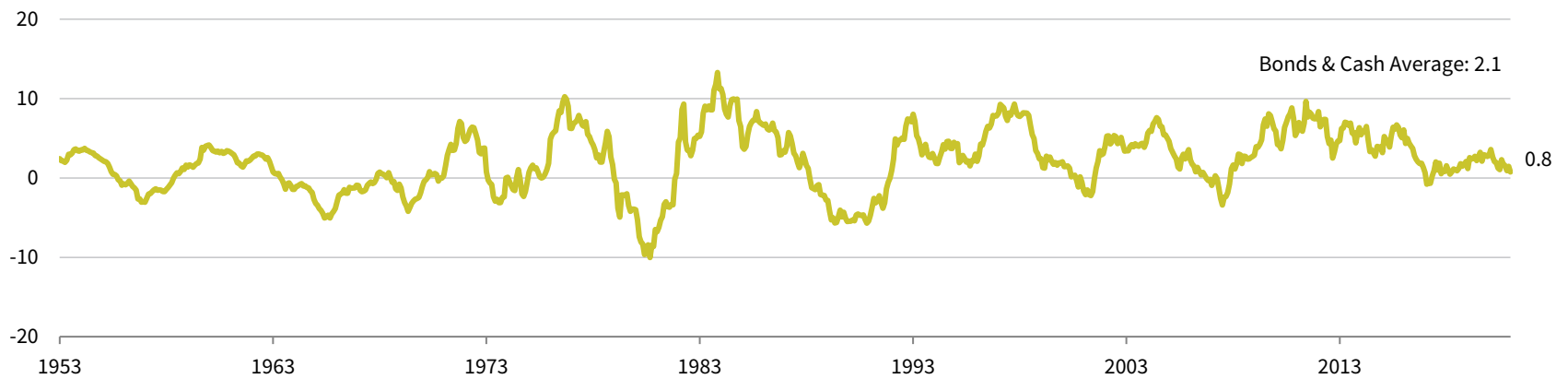
## AACR OF ROLLING MONTHLY 3-YR RETURN DIFFERENTIAL BETWEEN EQUITIES, BONDS, AND CASH RETURNS

1953–2021 • Percent (%)



## AACR OF ROLLING MONTHLY 3-YR RETURN DIFFERENTIAL BETWEEN BONDS AND CASH RETURNS

1953–2021 • Percent (%)

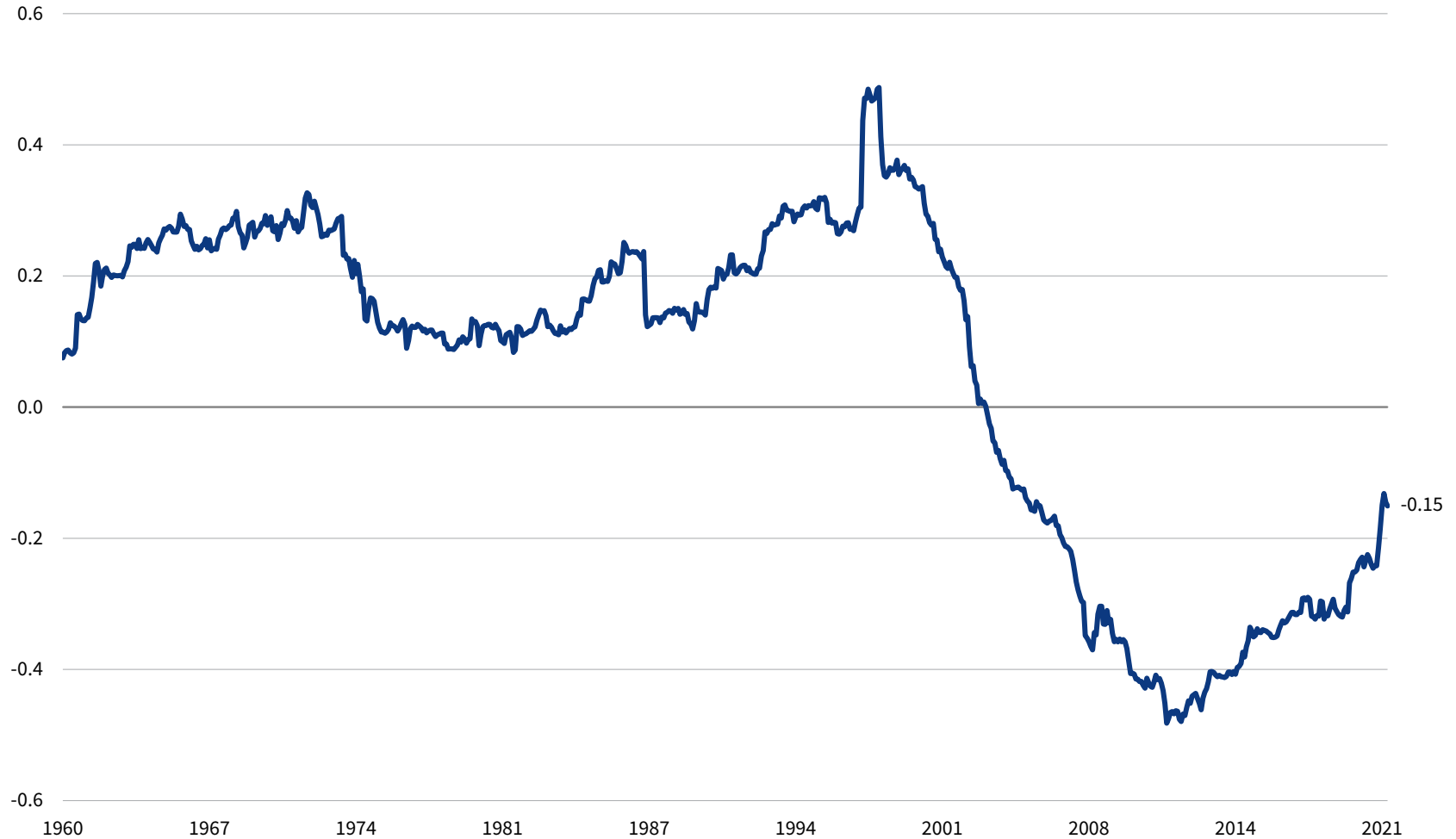


Source: Global Financial Data, Inc.

## Stock and bond correlation has increased in the last decade but remains negative

### ROLLING 10-YR CORRELATIONS OF STOCK AND BOND RETURNS

December 31, 1960 – December 31, 2021 • Correlation Coefficient

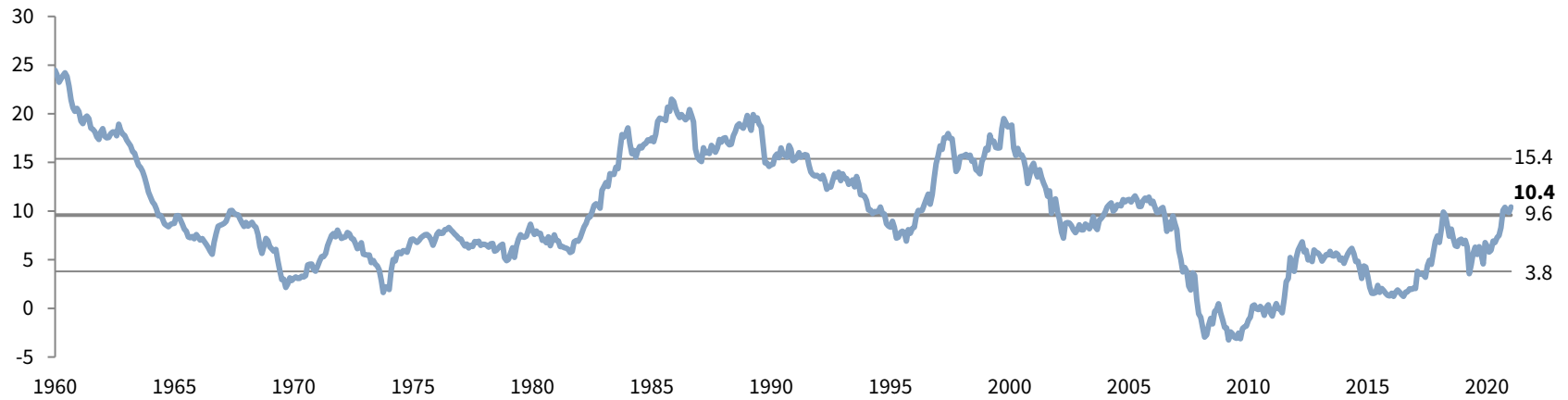


## Equity performance tends to mean revert, but above- or below-average returns can be sticky

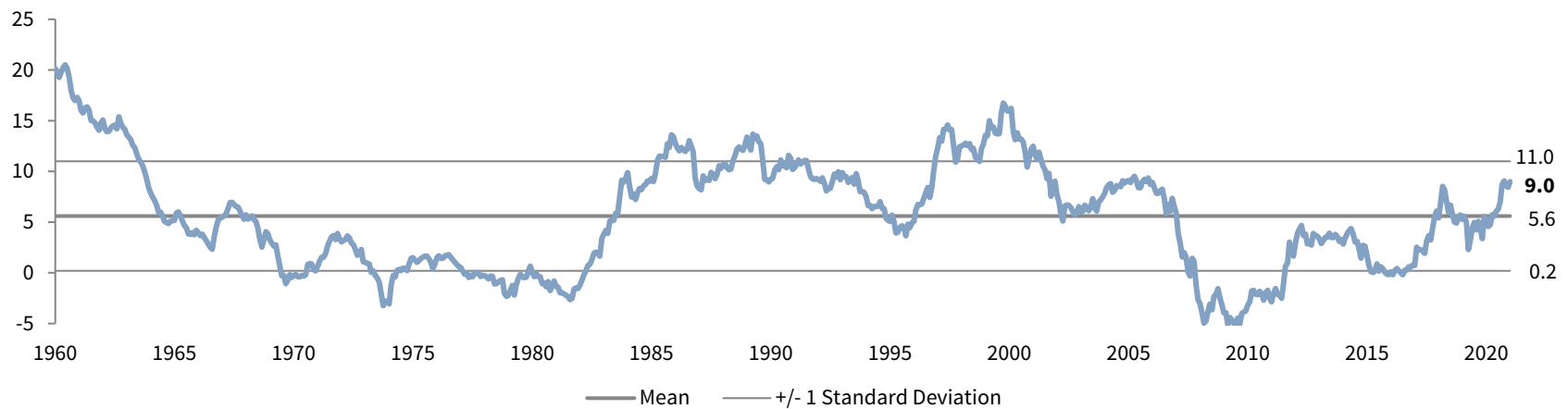
### ROLLING MONTHLY EQUITY TOTAL RETURN 10-YR AACR

1960–2021 • Percent (%)

#### Nominal Returns



#### Real Returns



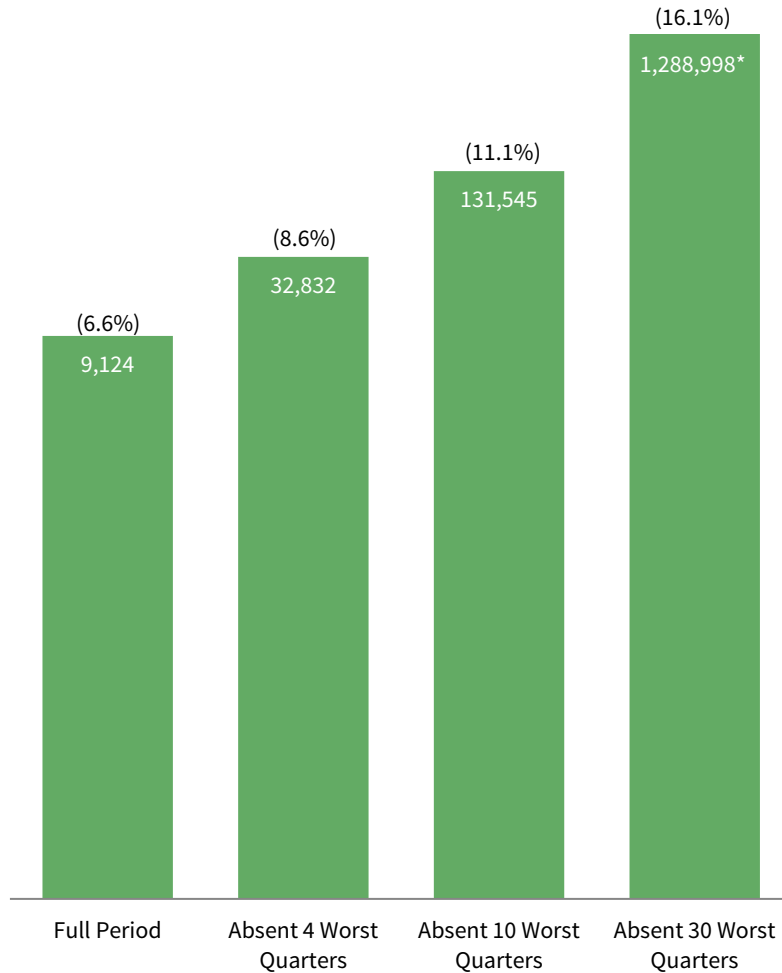
— Mean — +/- 1 Standard Deviation

Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

## Attempting to time the market is a risky proposition

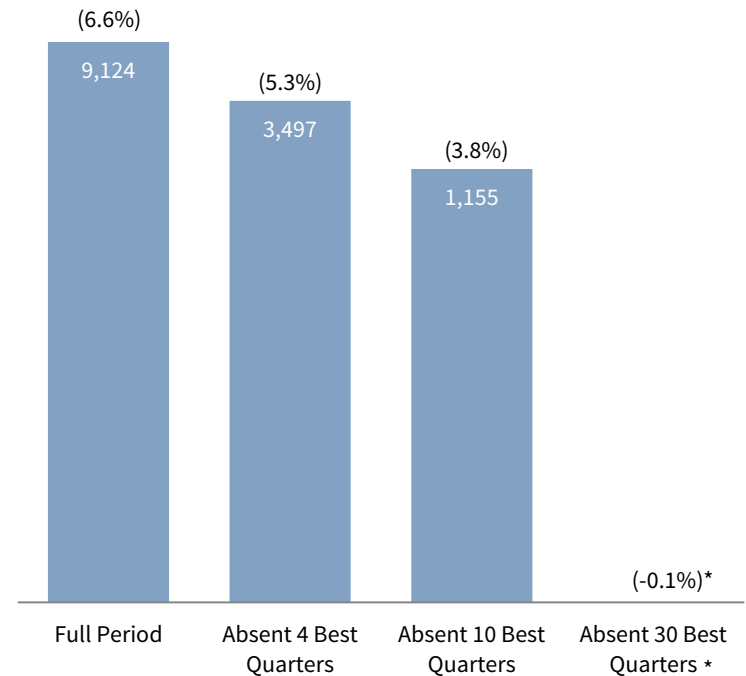
### CUMULATIVE REAL WEALTH ABSENT WORST QUARTERS

1951–2021 • January 1, 1951 = 1 • AACR (%) in Parentheses



### CUMULATIVE REAL WEALTH ABSENT BEST QUARTERS

1951–2021 • January 1, 1951 = 1 • AACR (%) in Parentheses

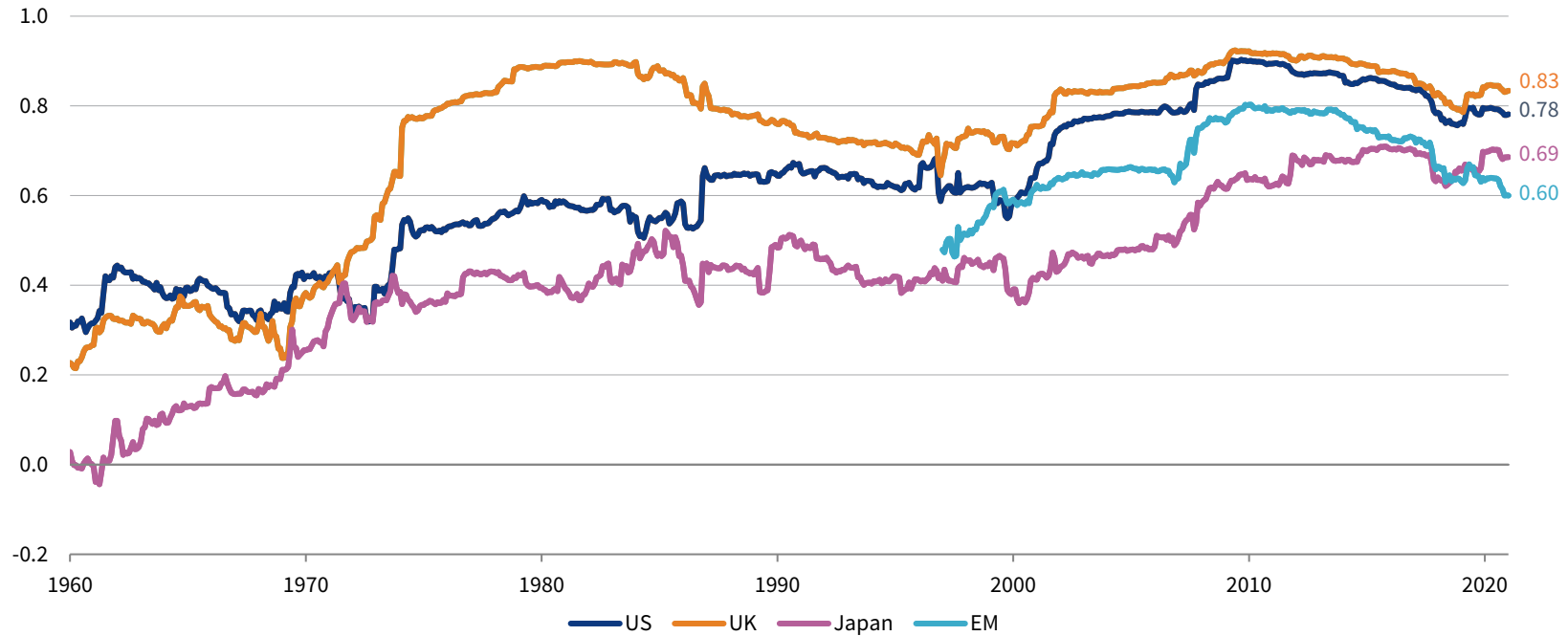


\* Cumulative real wealth absent 30 best quarters is -5. Axis capped for scaling purposes.

## Regional equity markets are strongly correlated with European stocks

### ROLLING 10-YR CORRELATIONS: EUROPE EX UK EQUITY VS GLOBAL PEERS

December 31, 1960 – December 31, 2021 • Correlation Coefficient



### CORRELATION MATRIX

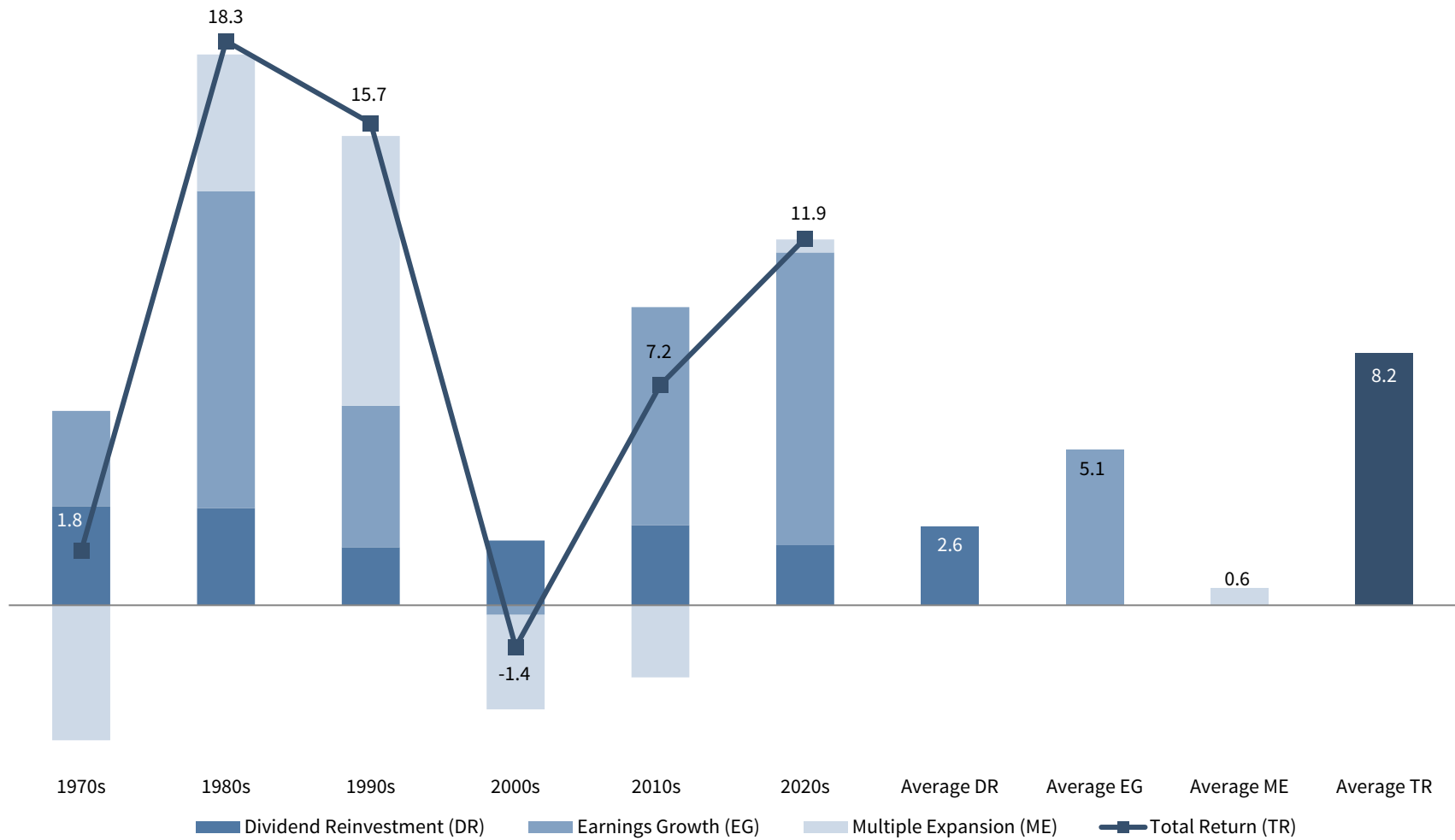
January 31, 1951 – December 31, 2021

	Europe ex UK	US	UK	Japan	EM
Europe ex UK	1.00				
US	0.65	1.00			
UK	0.69	0.56	1.00		
Japan	0.43	0.35	0.31	1.00	
EM	0.63	0.67	0.63	0.50	1.00

## Earnings growth and valuation multiple rerating vary over time; dividends are more stable

### BREAKDOWN OF TOTAL RETURN AACR OVER TIME

1970–2021 • Percent (%)



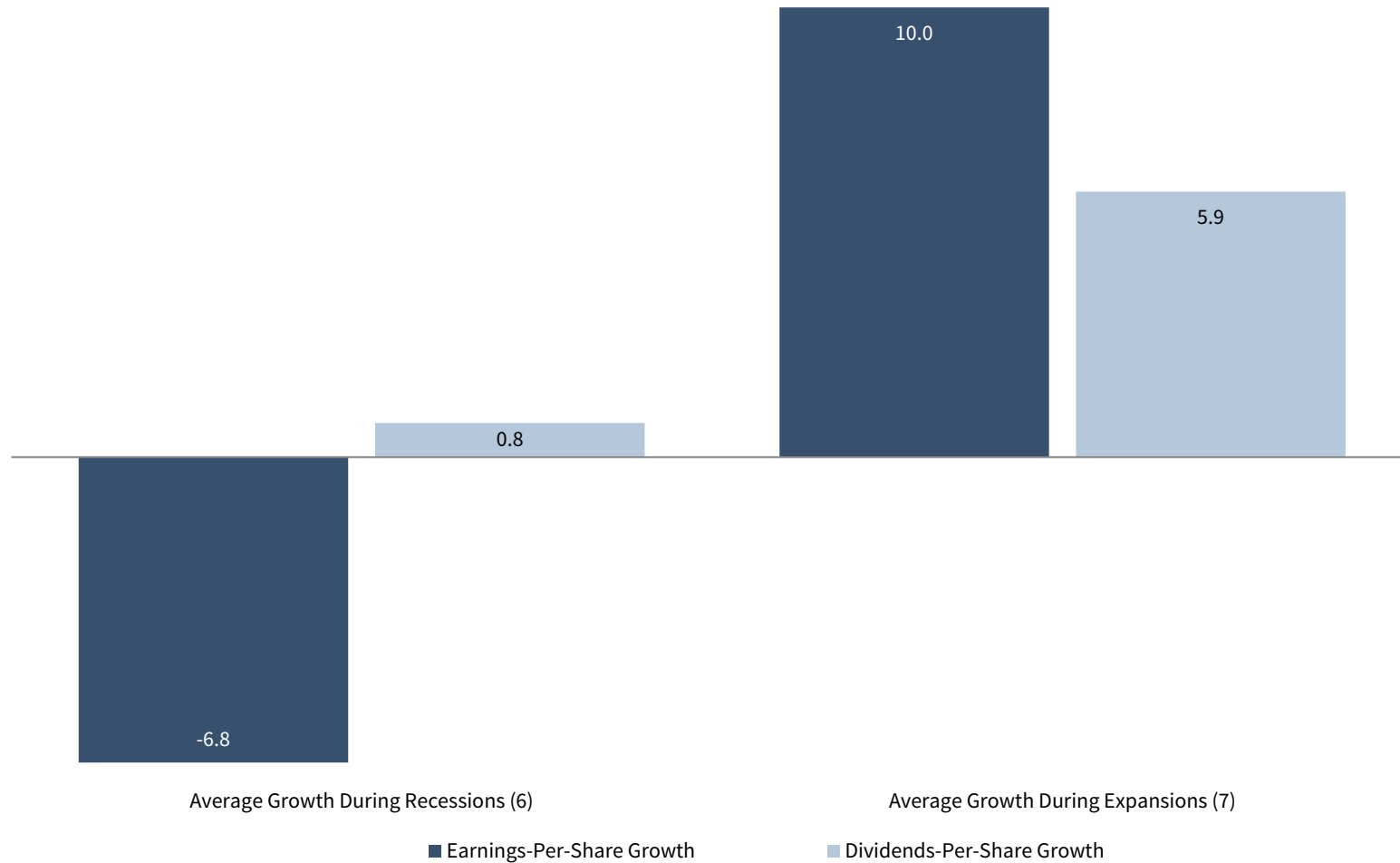
Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: Figures will not sum exactly to total return calculation due to the effect of combining cross terms.

# European equities managed to grow dividend payouts during recessions and expansions alike

## MSCI EUROPE EX UK EARNINGS PER SHARE AND DIVIDENDS PER SHARE YEAR-OVER-YEAR CHANGE

1969–2021 • Percent (%)

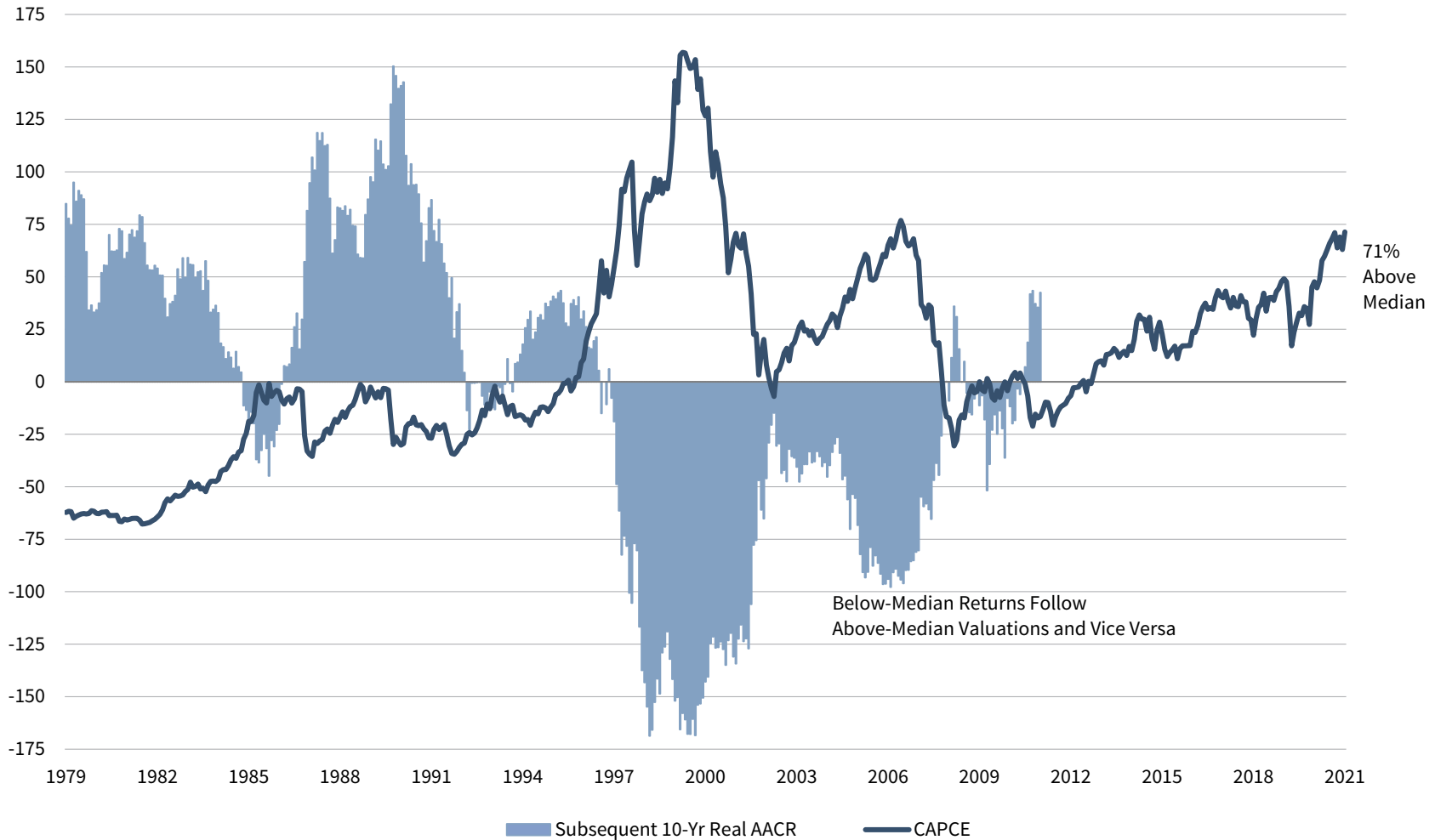




## Elevated starting valuations portend weak subsequent returns and vice versa

### CYCLICALLY ADJUSTED PRICE-TO-CASH EARNINGS RATIOS AND SUBSEQUENT REAL 10-YR AACRS

December 31, 1979 – December 31, 2021 • Shown as Percent Above/Below Respective Long-Term Median (%)



Sources: Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

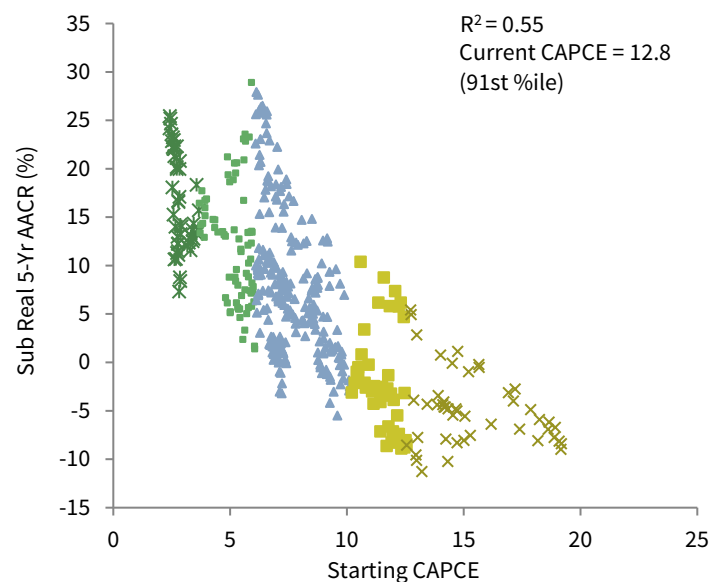
Notes: Chart shows percent above/below median for returns and valuations. Line shows point-in-time cyclically adjusted price-to-cash earnings (CAPCE) ratios. Bars are based on monthly data and show subsequent rolling ten-year real average annual compound returns (AACRs) as a percentage above/below the long-term median ten-year real return of 6.5% since 1979. For example, the first data point shows that the real AACR for the period 1979–88 was 84.8% above the median ten-year real return.

# Starting valuations are a useful guide in setting long-term return expectations

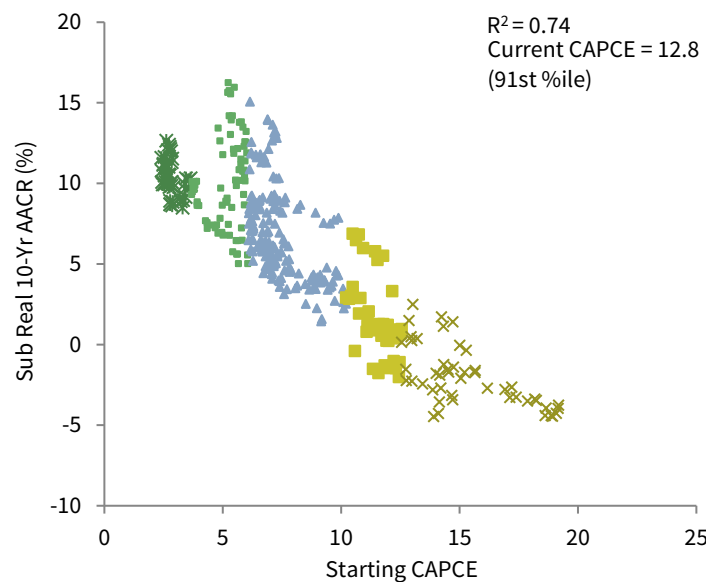
## RELATIONSHIP BETWEEN CYCLICALLY ADJUSTED PRICE-TO-CASH EARNINGS RATIOS AND SUBSEQUENT REAL 5- AND 10-YR AACRS

December 31, 1979 – December 31, 2021

### Initial Valuation and Subsequent 5-Yr AACR



### Initial Valuation and Subsequent 10-Yr AACR

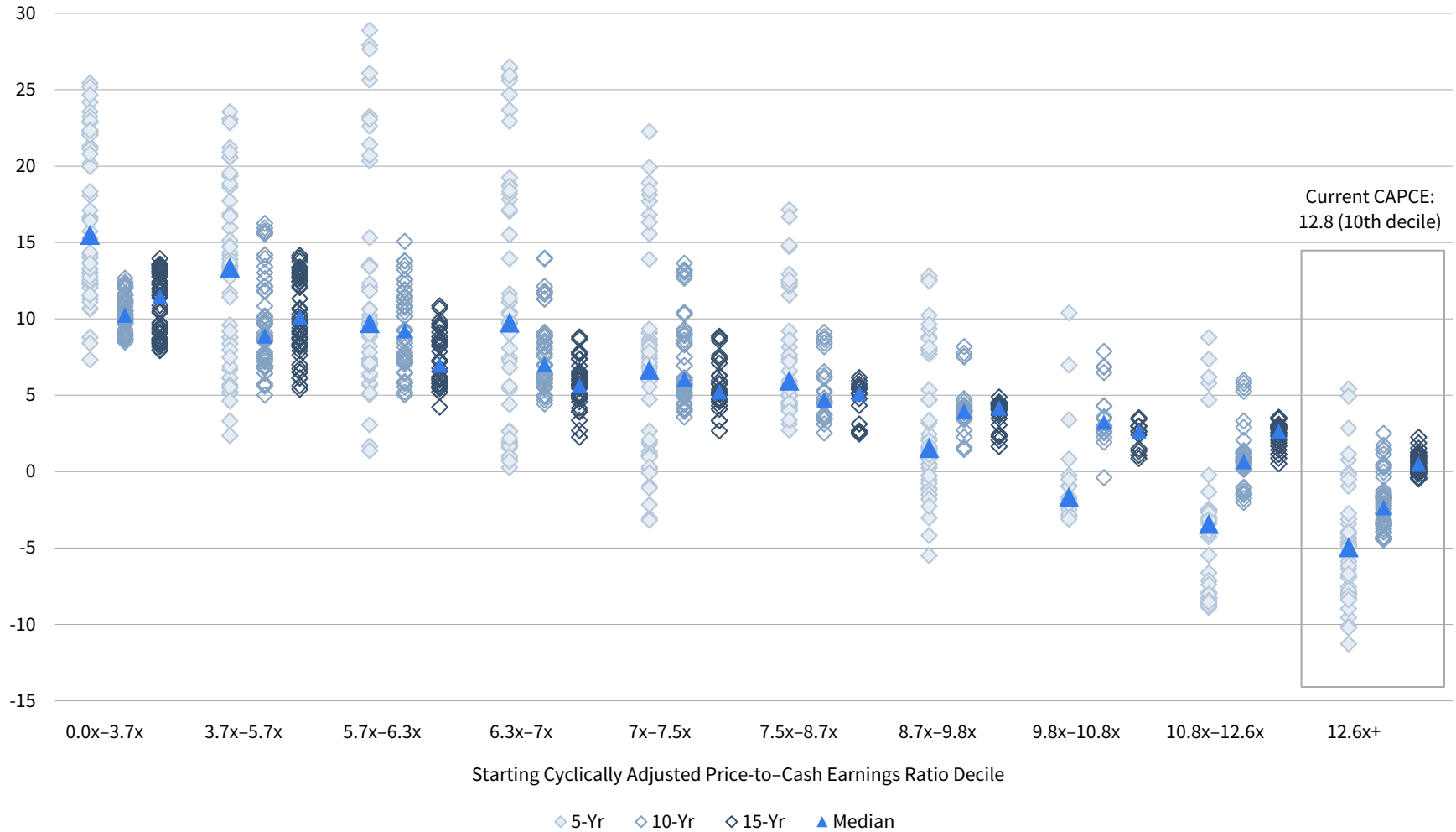


P/CE Ratio Percentile	Starting Cyclically Adjusted Price-to-Cash Earnings Ratio			Subsequent Real 5-Yr AACR (%)			Starting Cyclically Adjusted Price-to-Cash Earnings Ratio			Subsequent Real 10-Yr AACR (%)		
	Median	High	Low	Median	High	Low	Median	High	Low	Median	High	Low
0-10	2.8	3.7	2.4	15.3	25.4	7.3	2.8	3.7	2.4	10.3	12.7	8.5
10-25	5.4	6.1	3.7	12.3	28.9	1.4	5.4	6.1	3.7	9.8	16.2	5.0
25-75	7.3	10.2	6.1	7.0	27.9	-5.5	7.2	10.2	6.1	6.2	15.1	1.4
75-90	11.7	12.6	10.2	-3.0	10.4	-8.9	11.7	12.6	10.2	0.9	6.9	-2.0
90-100	14.7	19.2	12.6	-5.0	5.4	-11.3	14.7	19.2	12.6	-2.3	2.5	-4.5
<b>Overall</b>	<b>7.2</b>	<b>19.2</b>	<b>2.4</b>	<b>7.0</b>	<b>28.9</b>	<b>-11.3</b>	<b>7.0</b>	<b>19.2</b>	<b>2.4</b>	<b>6.5</b>	<b>16.2</b>	<b>-4.5</b>

# Starting normalized valuations are more meaningful as holding periods increase

## DISTRIBUTION OF SUBSEQUENT REAL RETURNS FROM STARTING NORMALIZED VALUATION DECILES

December 31, 1979 – December 31, 2021 • Subsequent Real Return AACR (%)



Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

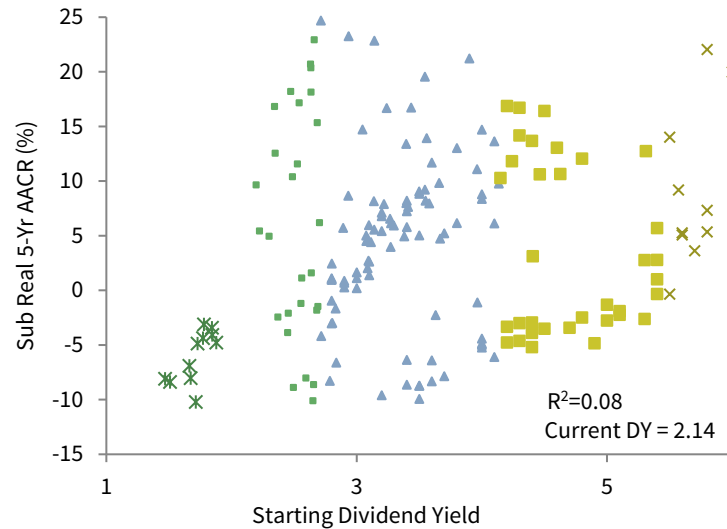
Notes: Data are monthly. The last full five-year period was January 1, 2017 to December 31, 2021, the last full ten-year period was January 1, 2012 to December 31, 2021, and the last full 15-year period was January 1, 2007 to December 31, 2021.

# Dividend yields exhibit positive relationship with subsequent returns, but statistical fit is weak

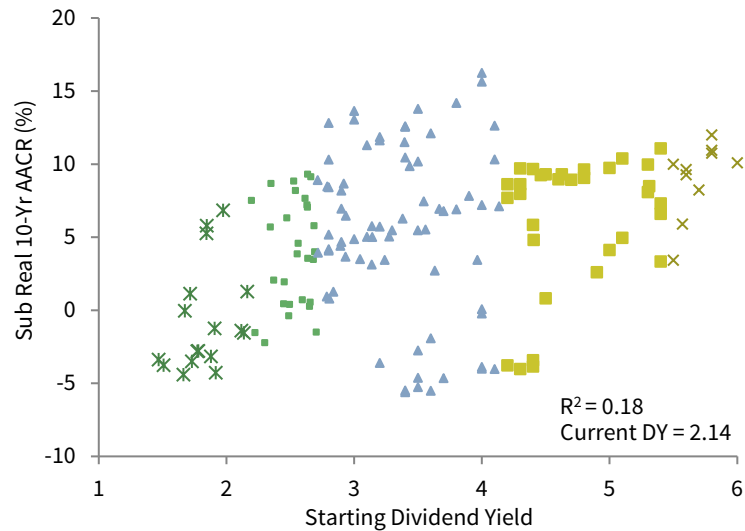
## RELATIONSHIP BETWEEN DIVIDEND YIELDS AND SUBSEQUENT REAL AACRS

Fourth Quarter 1969 – Fourth Quarter 2021

### Dividend Yield and Subsequent 5-YR AACR



### Dividend Yield and Subsequent 10-YR AACR



Dividend Yield Percentile	Starting Period Dividend Yield (%)			Subsequent Real 5-Yr AACR (%)			Starting Period Dividend Yield (%)			Subsequent Real 10-Yr AACR (%)		
	Median	High	Low	Median	High	Low	Median	High	Low	Median	High	Low
0-10	1.7	1.9	1.5	-4.9	-3.1	-10.2	1.8	2.2	1.5	-1.5	6.8	-4.4
10-25	2.6	2.7	2.2	5.8	26.1	-10.1	2.6	2.7	2.2	3.9	9.3	-2.2
25-75	3.3	4.1	2.7	5.2	28.9	-9.9	3.4	4.1	2.7	5.7	16.2	-5.6
75-90	4.6	5.4	4.1	0.3	16.9	-5.2	4.6	5.4	4.2	8.3	11.1	-4.0
90-100	6.0	6.6	5.5	12.3	24.7	-0.3	6.0	6.6	5.5	10.1	12.7	3.4
<b>Overall</b>	<b>3.4</b>	<b>6.6</b>	<b>1.5</b>	<b>4.9</b>	<b>28.9</b>	<b>-10.2</b>	<b>3.4</b>	<b>6.6</b>	<b>1.5</b>	<b>5.9</b>	<b>16.2</b>	<b>-5.6</b>

Sources: Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

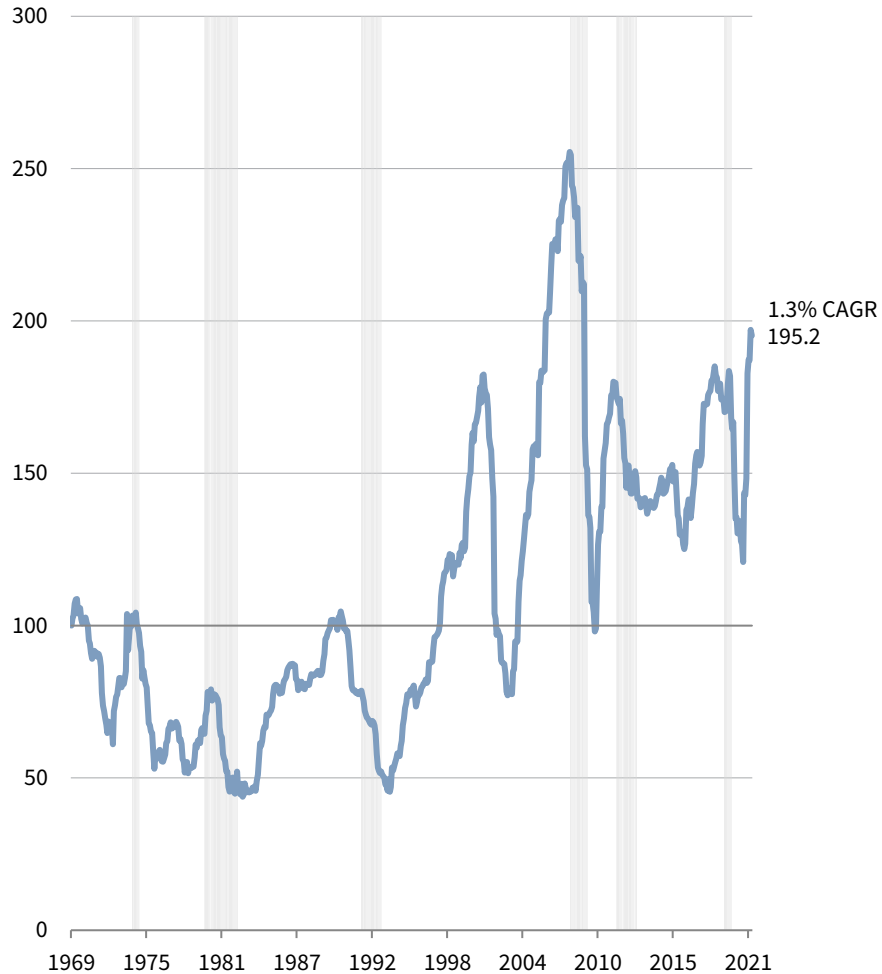
Notes: Data are quarterly. The last full five-year period was first quarter 2017 through fourth quarter 2021. The last full ten-year period was first quarter 2012 through fourth quarter 2021.

Outliers are not shown on graph but are included in R<sup>2</sup>.

# European earnings have not surpassed pre-GFC peaks as return on equity was rangebound

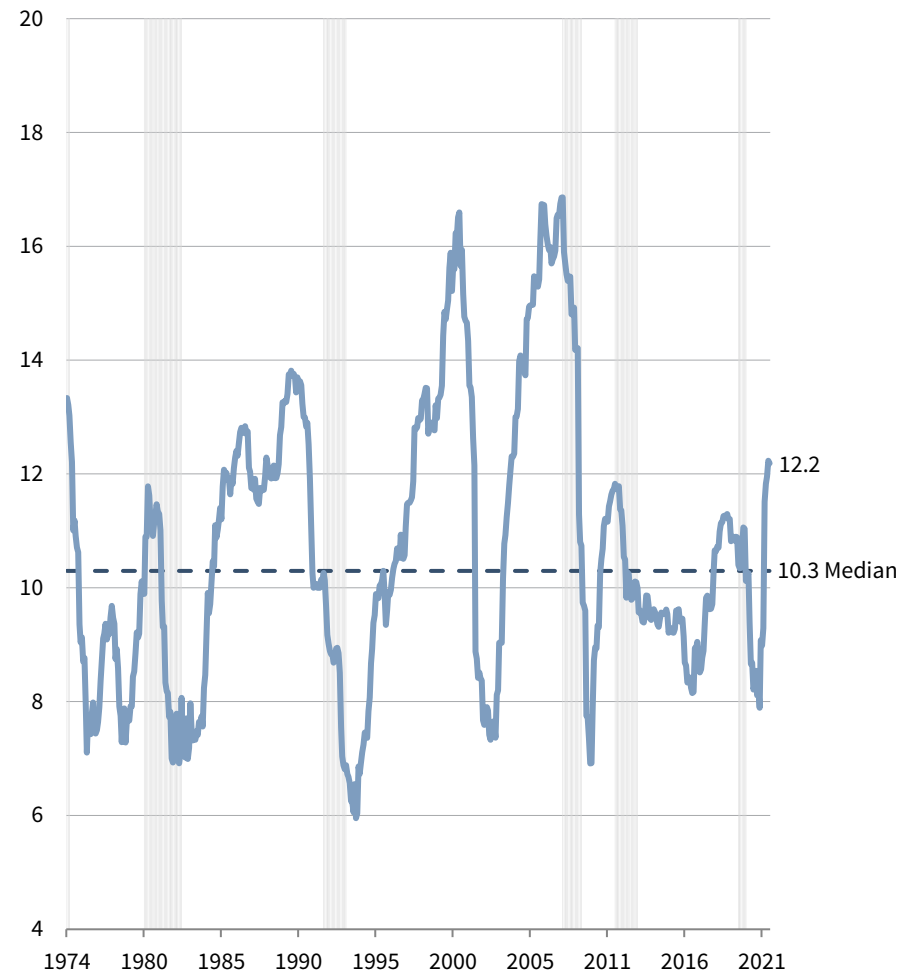
## REAL EARNINGS PER SHARE OVER TIME

December 31, 1969 – December 31, 2021 • December 31, 1969 = 100



## RETURN ON EQUITY

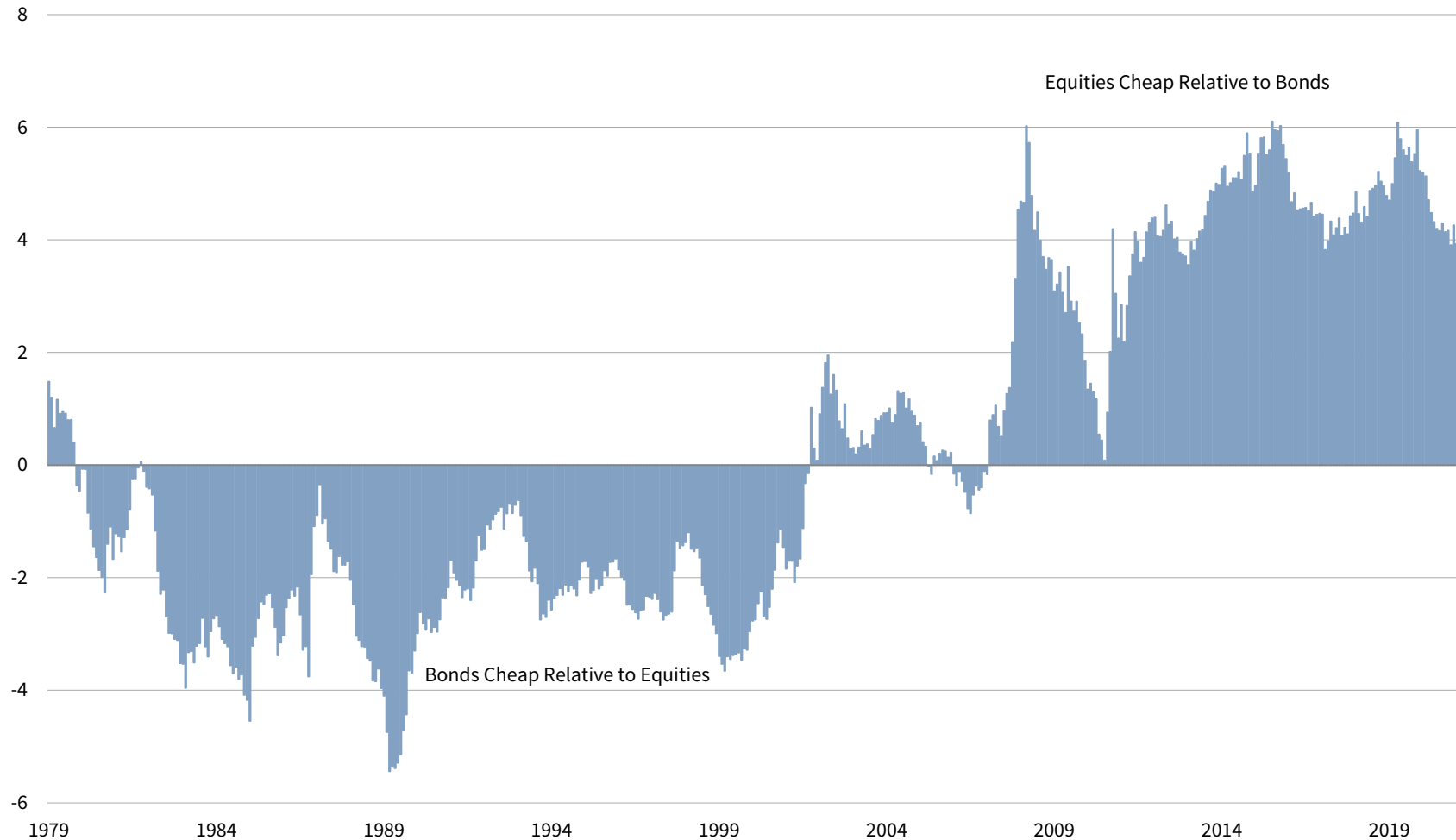
December 31, 1974 – December 31, 2021 • Percent (%)



## European equity valuations have been more attractive than bonds in the post-GFC period

### SHILLER EARNINGS YIELDS VERSUS 10-YR BOND YIELDS

1979–2021



## Subsequent nominal bond returns closely track their starting yield

### RELATIONSHIP BETWEEN GOVERNMENT BOND YIELDS AND SUBSEQUENT 10-YR AACRS

1970–2021 • Percent (%)



Source: Global Financial Data, Inc.

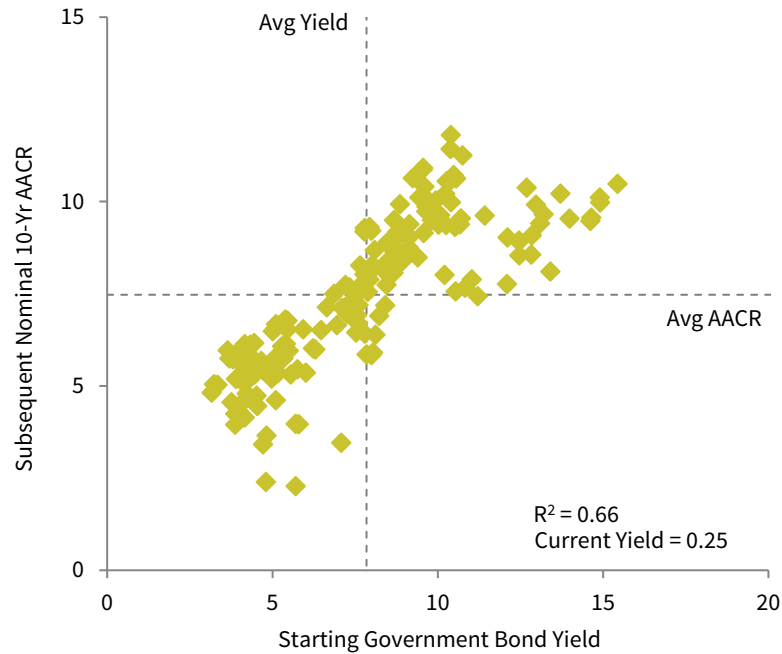
Notes: Data are monthly. The last full ten-year period was January 1, 2012 to December 31, 2021.

# The starting yield-subsequent return relationship is weaker when accounting for inflation

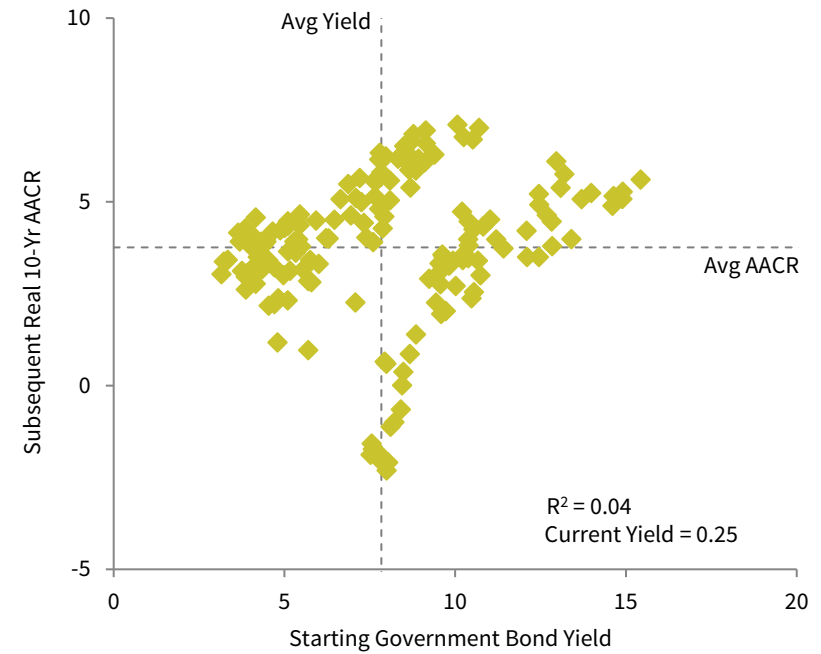
## RELATIONSHIP BETWEEN GOVERNMENT BOND YIELDS AND SUBSEQUENT 10-YR AACRS

1970–2021 • Percent (%)

### Nominal Returns



### Real Returns



Yield	Starting Period			Subsequent Nominal			
	Government Bond Yields			10-Yr AACR (%)			
Quartiles	Mean	High	Low	Mean	High	Low	Std Dev
First	4.23	5.11	3.16	5.15	6.67	2.40	0.85
Second	6.58	7.85	5.11	6.48	9.28	2.28	1.39
Third	8.74	9.73	7.88	8.75	10.91	5.83	1.21
Fourth	11.80	15.44	9.82	9.50	11.80	7.43	1.05
<b>Overall</b>	<b>7.84</b>	<b>15.44</b>	<b>3.16</b>	<b>7.47</b>	<b>11.80</b>	<b>2.28</b>	<b>2.08</b>

Yield	Starting Period			Subsequent Real			
	Government Bond Yields			10-Yr AACR (%)			
Quartiles	Mean	High	Low	Mean	High	Low	Std Dev
First	4.23	5.11	3.16	3.41	4.58	1.17	0.73
Second	6.58	7.85	5.11	3.56	6.33	-2.07	2.26
Third	8.74	9.73	7.88	3.60	6.94	-2.31	2.79
Fourth	11.80	15.44	9.82	4.48	7.10	2.37	1.19
<b>Overall</b>	<b>7.84</b>	<b>15.44</b>	<b>3.16</b>	<b>3.76</b>	<b>7.10</b>	<b>-2.31</b>	<b>1.96</b>

Source: Global Financial Data, Inc.

Notes: Data are quarterly. The last full ten-year period was first quarter 2012 through fourth quarter 2021.

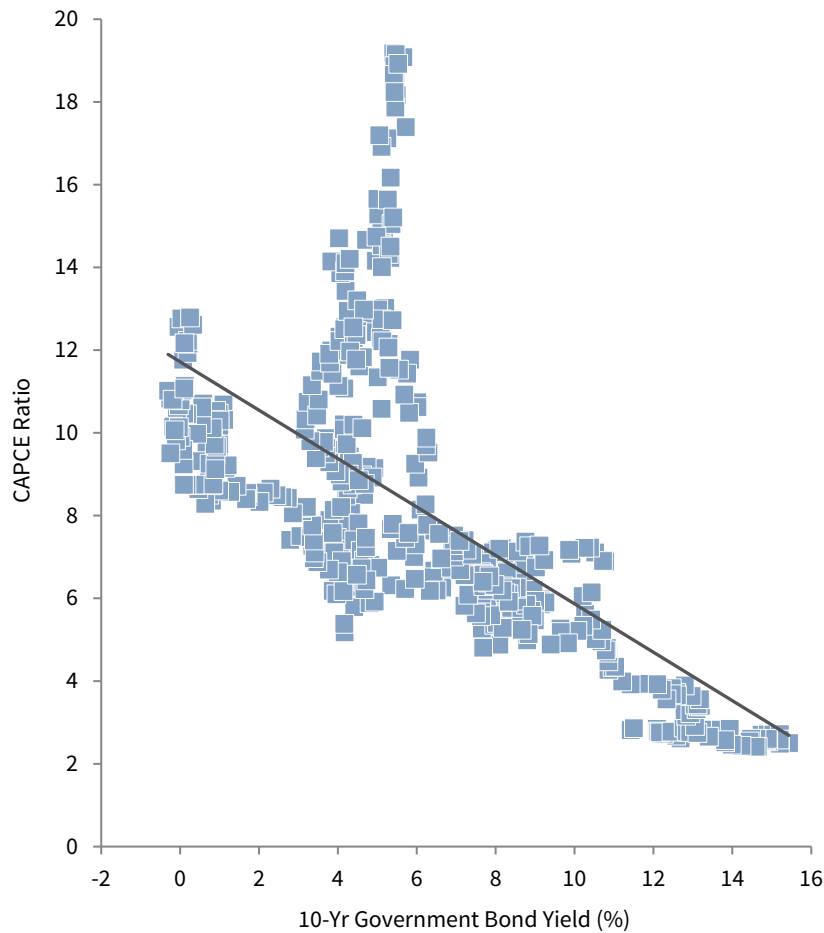


# Low bond yields are generally associated with higher equity valuations

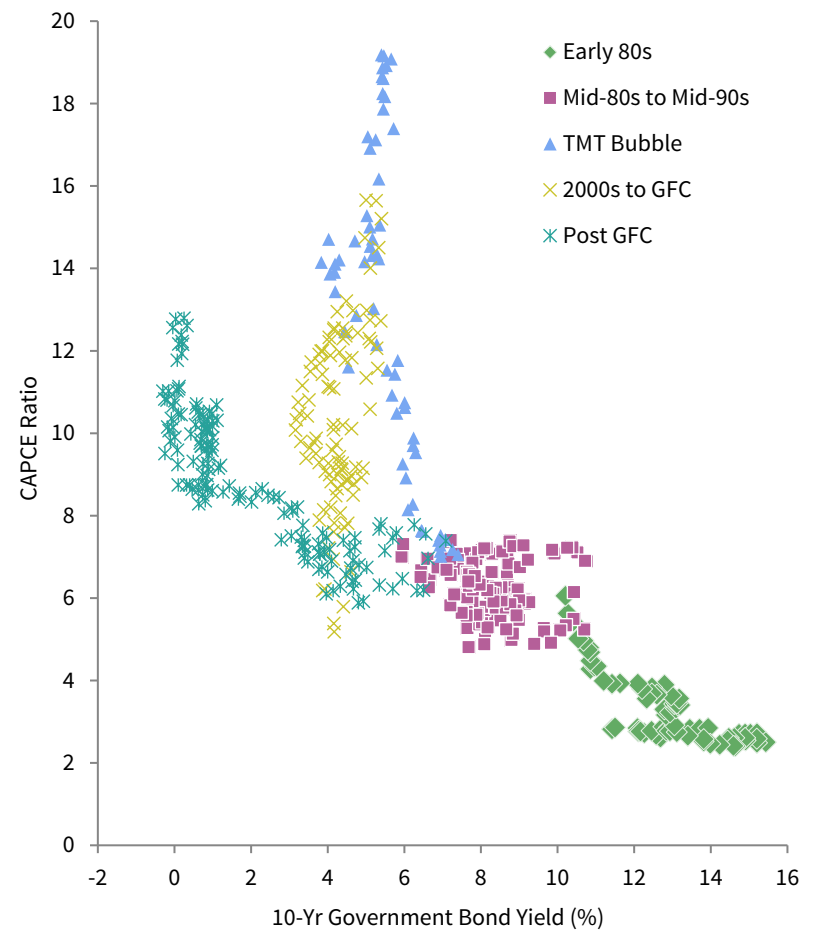
## RELATIONSHIP BETWEEN EQUITY VALUATIONS AND 10-YR GOVERNMENT BOND YIELDS

December 31, 1979 – December 31, 2021

Full Period



By Market Environment

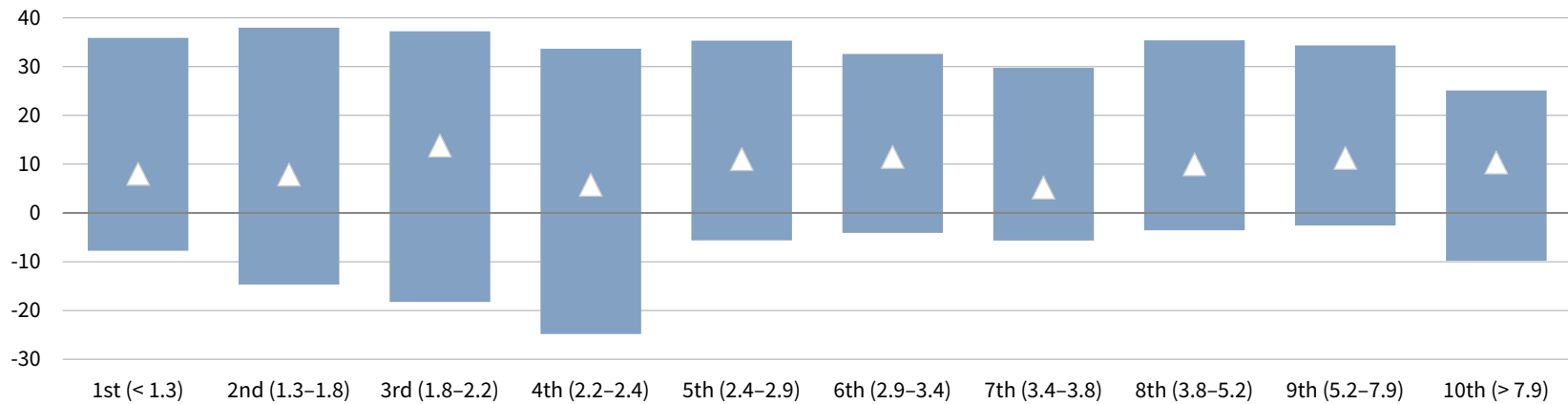


## Median equity returns are similar across inflation regimes; higher yields historically supported bonds during inflationary bouts

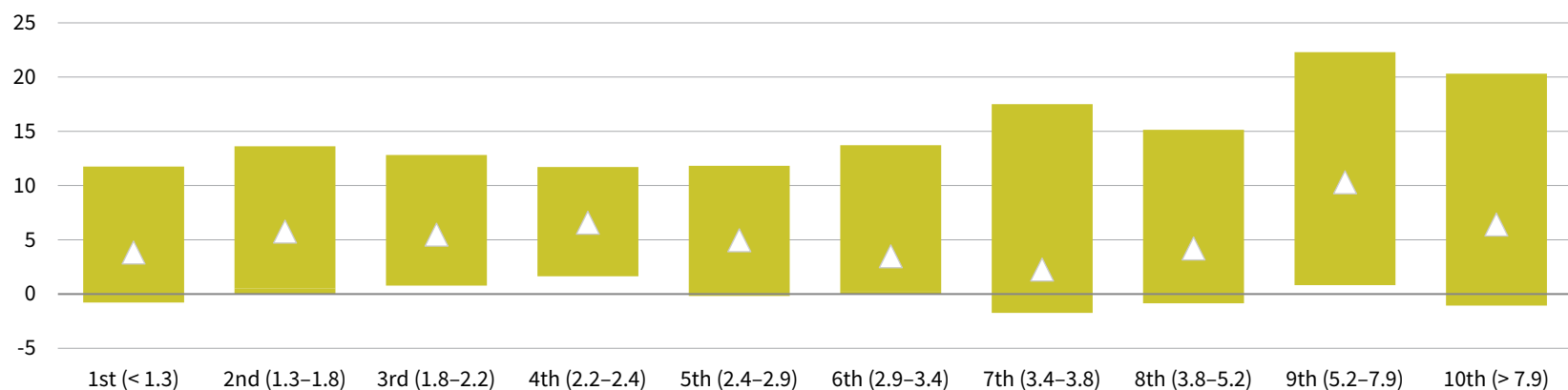
### ROLLING 3-YR NOMINAL STOCK AND BOND RETURNS BY INFLATION DECILE

January 31, 1951 – December 31, 2021 • AACR (%)

#### Nominal Stock Returns



#### Nominal Bond Returns



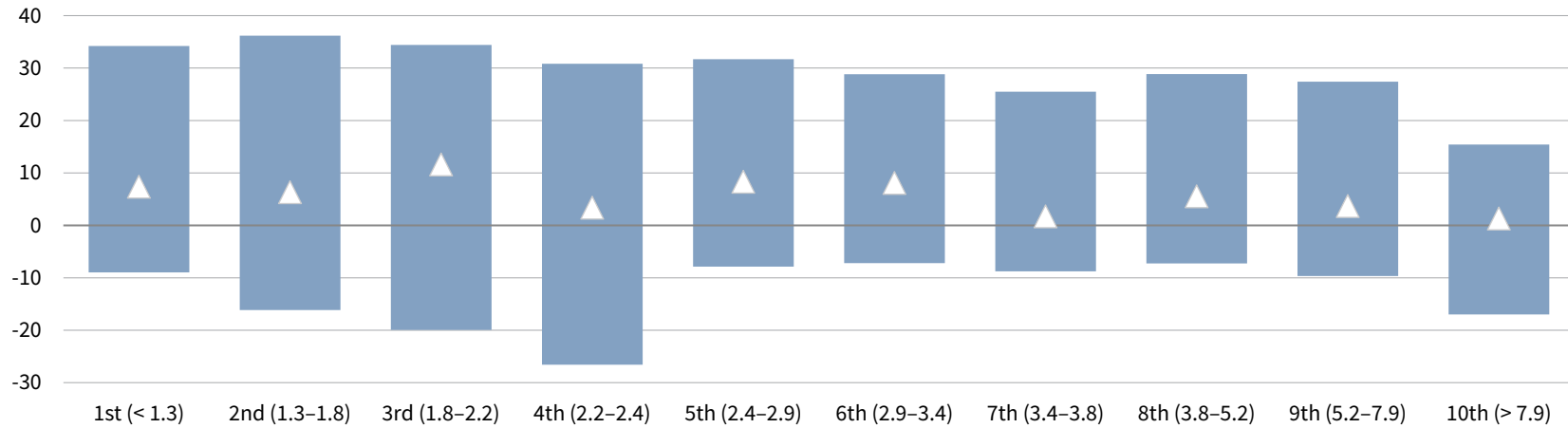
△ Median

# High inflation erodes bond returns and reduces equity performance upside

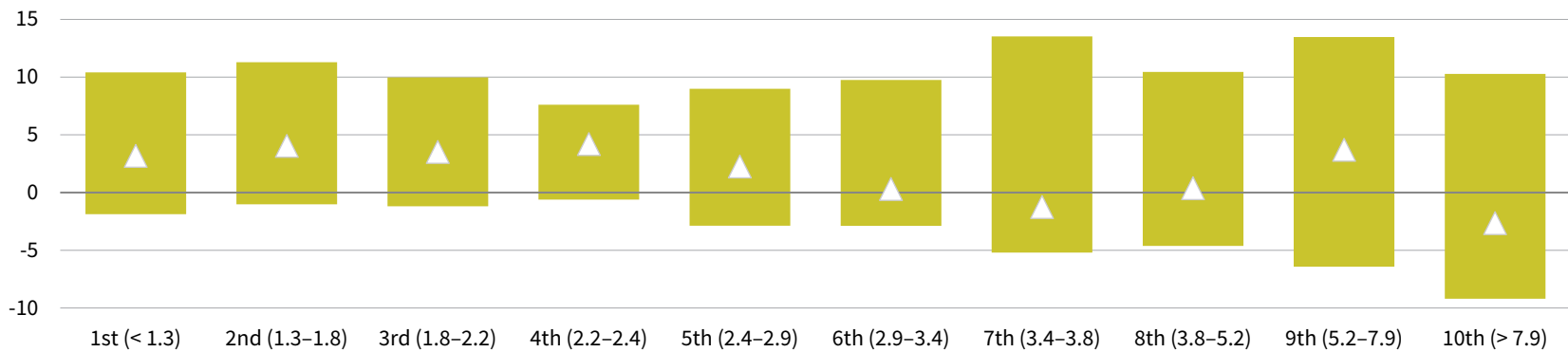
## ROLLING 3-YR REAL STOCK AND BOND RETURNS BY INFLATION DECILE

January 31, 1951 – December 31, 2021 • AACR (%)

### Real Stock Returns



### Real Bond Returns



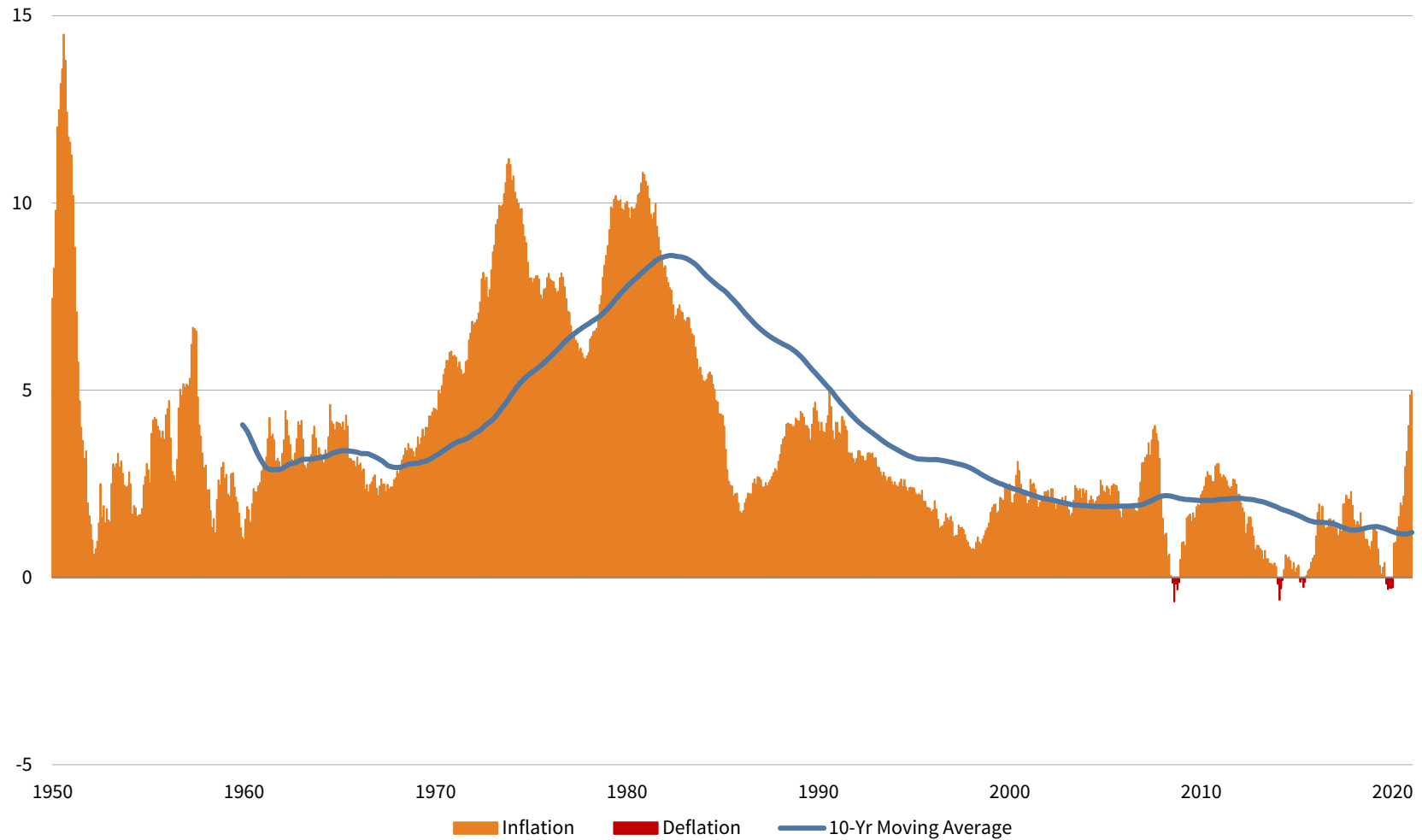
△ Median

Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

Note: X-axis data in parentheses are inflation ranges by decile.

# Inflation spiked in 2021 but has reached higher levels over its long-term history

**EUROZONE INFLATION**  
1950–2021 • Year-Over-Year (%)



Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.  
Notes: Data are monthly. Moving average begins ten years after the first monthly observation.



Contributors to this report include Stuart Brown, Sean Duffin, Brendan Castleman, Ilona Vdovina, and Graham Landrith.

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