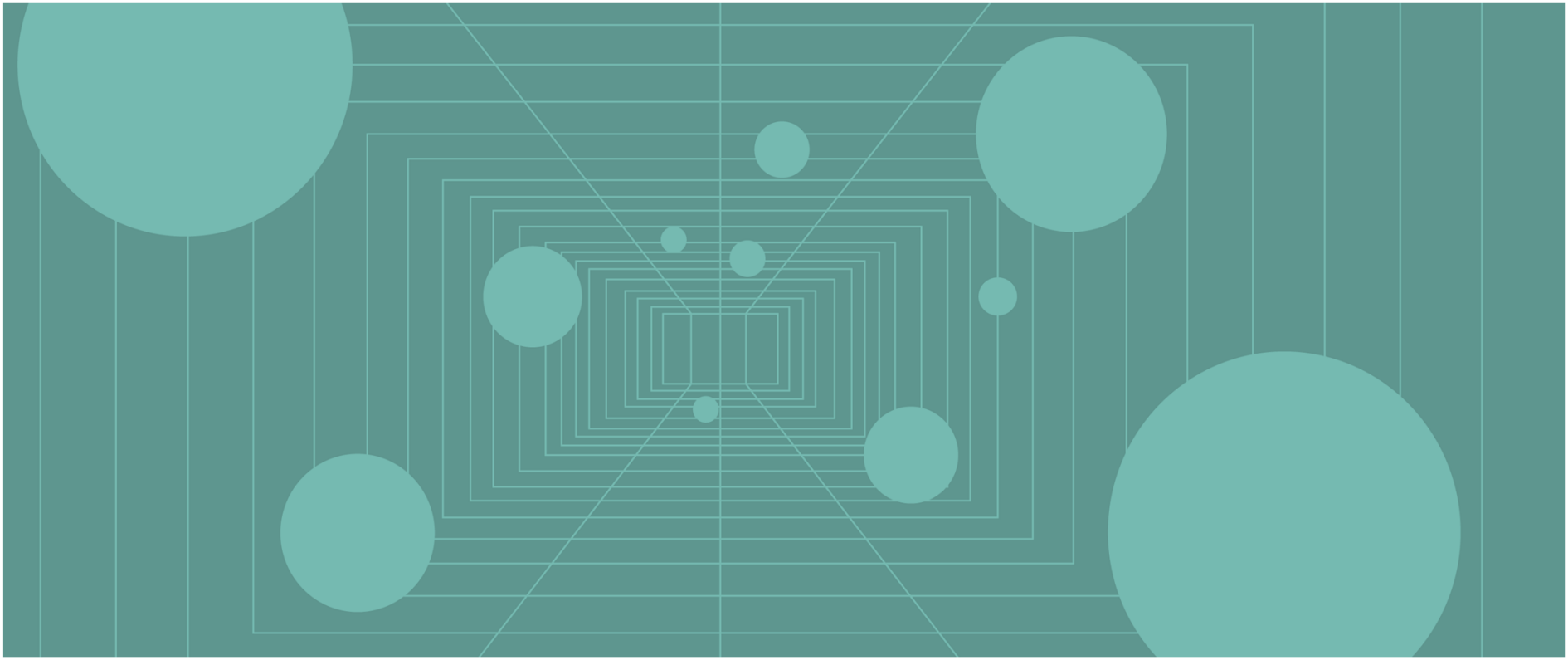
DECADES OF DATA: EUROPE EX UK

1900–2019



CAMBRIDGE ASSOCIATES

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 (26.1%) advanced in 2019 to new all-time highs, in contrast to negative performance in 2018.** Eurozone shares gained the most since calendar year 2009, with 2019's performance ranking 14th best out of the 69 calendar years since 1951. Such strong performance for Eurozone stocks is not necessarily uncommon. Eurozone stocks have earned double-digit returns in 40 calendar years over that same timespan, more than half of the time. Investors might reasonably expect a market pullback in the subsequent year following such strong returns; however, the data show that strong performance can continue. In fact, in the initial calendar year following 26%+ market gains, Eurozone stocks posted double-digit positive returns in seven out of 13 years, and declined in only four of those years, for an overall subsequent calendar year average of about 13%.
- **In the decade closed at the end of 2019, Eurozone equities posted returns below their very long-term averages.** Investors in Eurozone stocks have earned a nominal average annual compound return (AACR) of 6.7% over the past ten years. For the full period analyzed, Eurozone equities (1951–2019) have fared better, posting a nominal AACR of 10.5%. Recent below-average performance has persisted for some time; the rolling ten-year AACR for Eurozone equities has been below the full period average for the past 13 years. However, investors should bear in mind that rolling AACR analyses are sensitive to beginning- and end-point timing, even over ten-year periods. Monthly rolling ten-year AACRs reached 9.9% through February 2019, which was their strongest ten-year rolling return since the period ended May 2007, but still below average. One major reason that period posted relatively stronger returns is that the worst months from the global financial crisis (GFC) fell out of the data set, as the ten-year window began when Eurozone equities hit a 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 5.9% and 3.8%, 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 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, 75% 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 sustained 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.
- **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. In the decade closed at the end of 2019, contributions from earnings growth exceeded that of dividend reinvestment by nearly 3x, while multiple contraction detracted from performance for the second consecutive decade.

Executive Summary (continued)

- **Starting valuations are a useful indicator for long-term (ten+ 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 returns. At December 31, 2019, Europe ex UK equity valuations ended in the 84th percentile of historical observations, and from this valuation decile the median subsequent ten-year real return for equities has been only about 1.5% 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 valuations 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 valuations. For example, from the 2019 year-end dividend yield of 3.1%, the range of subsequent Europe ex UK equity real ten-year returns was about 20 percentage points, which does not instill confidence in forecasting exercises based solely on dividend yields. 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. But the wide range of outcomes tells us that dividend yields fail to capture the whole picture, and many other factors influence equity market returns.

Executive Summary (continued)

- **Subsequent nominal ten-year Eurozone bond returns closely track the starting yield.** Eurozone bond yields turned negative in 2019 and ended the year just barely positive, implying that future long-term returns are likely to be low. In August 2019, Eurozone ten-year government bond yields fell to their lowest month end levels on record (-0.57%) and ended the year at 0.12%. 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=0.83) is a guide, Eurozone bonds are likely to post flat returns in the ensuing ten years. Additionally, low but positive price inflation will likely result in losses in real terms. While investors benefitted from falling yields over the past 40 years, with Eurozone bonds returning 7.4% annualized since 1981, the current low-yield environment poses a major headwind to forward returns.

- **Although rising interest rates are commonly viewed as detrimental to equity prices, this is not necessarily the case**—the drivers of change in interest rates, rather than their outright levels or the amount of changes in the rates, are what impact equity returns. Stocks can rise amid rising bond yields if such yields reflect improving growth conditions or increasing consumer confidence. In fact, a positive, albeit weak, statistical relationship exists between short-term interest rates and subsequent ten-year returns in the Eurozone, counter to what one would expect. While history suggests that bill yields are not a significant consideration in developing a Eurozone equity outlook, it is hard to argue against the fact that ultra-easy monetary policy in the recent decade has supported stock performance. However, we have few data examining subsequent long-term equity performance from such low starting interest rate levels.

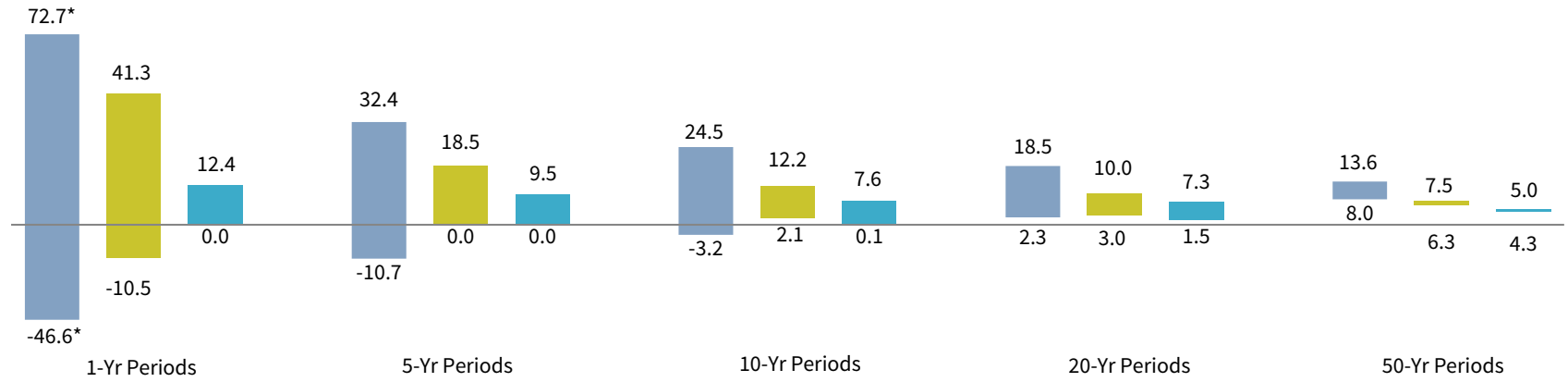
- **Eurozone economic growth has slowed in recent years following back-to-back recessions during the GFC and European Debt Crisis.** This slow economic growth appears to have impacted company fundamentals. Real EPS levels for Europe ex UK equities peaked in January 2008 and remain more than 30% below such levels as of year-end 2019. One profitability metric, return on equity, has remained mostly below historical median levels since 2009. Banking reforms following these two financial crises likely weighed on fundamentals, as European equities are highly exposed to the financial sector. Also, austerity measures implemented after the European debt crisis posed a headwind to economic growth despite extraordinarily loose monetary policy. While the US yield curve is widely viewed as a leading economic indicator, the Eurozone yield curve (ten-year/three-month yield spread) is not as reliable in presaging economic downturns. Still, the Eurozone curve has flattened over the past decade and inverted in 2019 for the first time since 1992, based on month-end levels.

The range of investment returns narrows as holding periods increase

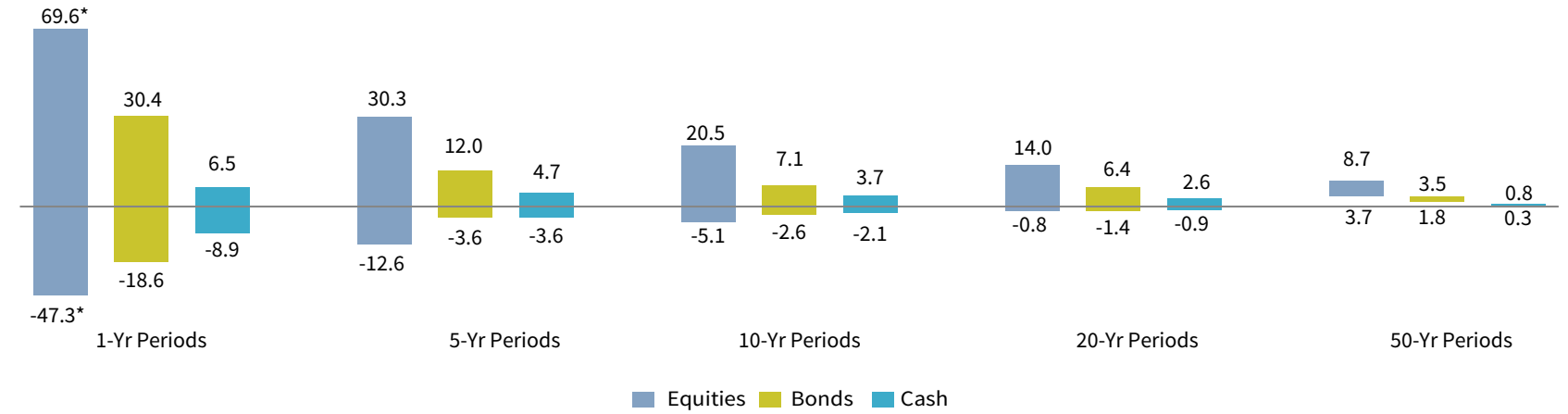
RANGE OF EQUITY, BOND, AND CASH RETURNS FOR VARIOUS ROLLING MONTHLY TIME HORIZONS

1951–2019 • Average Annual Compound Return (%)

Nominal Returns



Real Returns



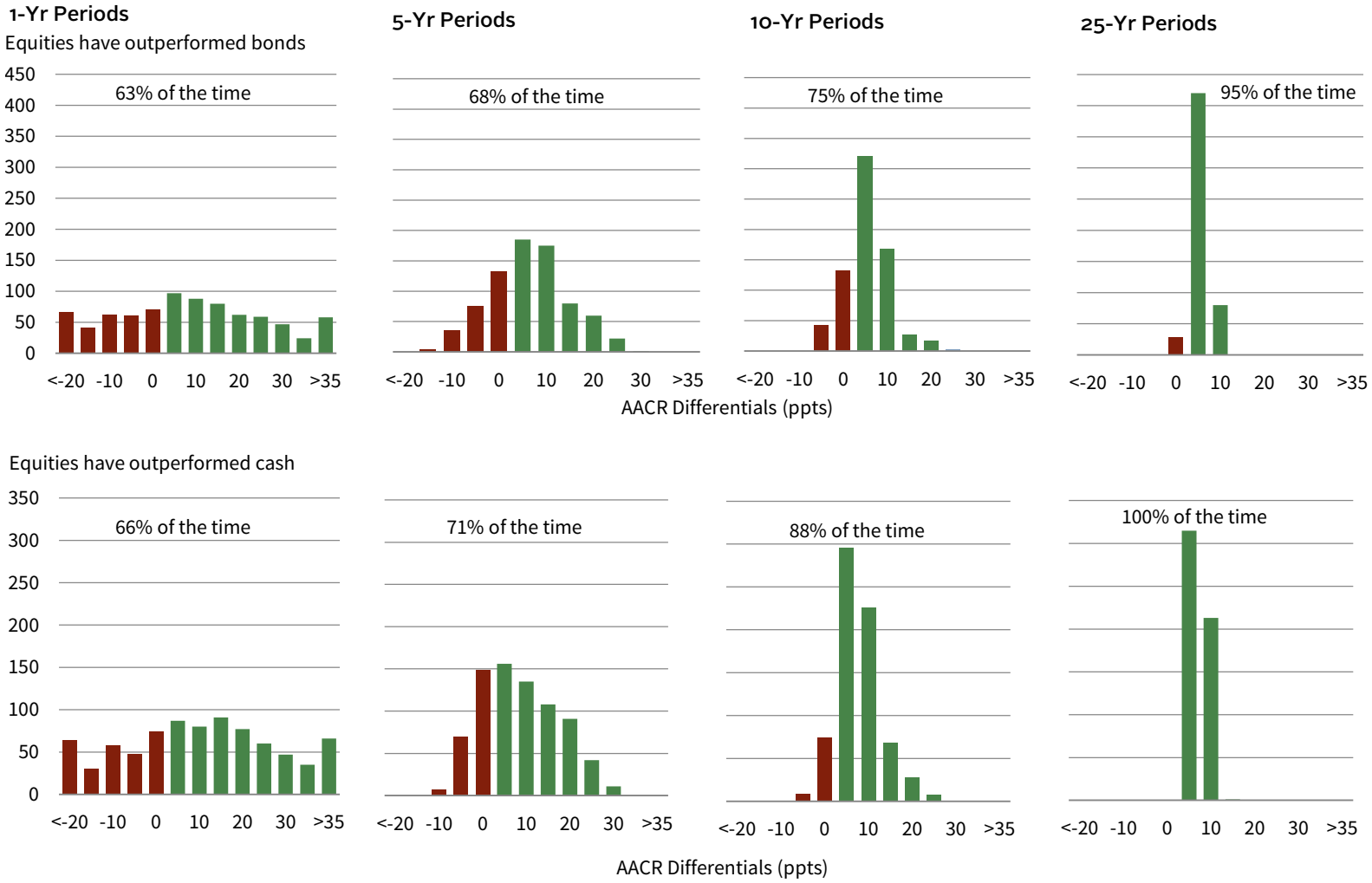
* Axis capped for scaling purposes.

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

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

EXCESS RETURNS OF EQUITIES OVER BONDS AND CASH

1951–2019 • Number of Rolling Monthly Periods



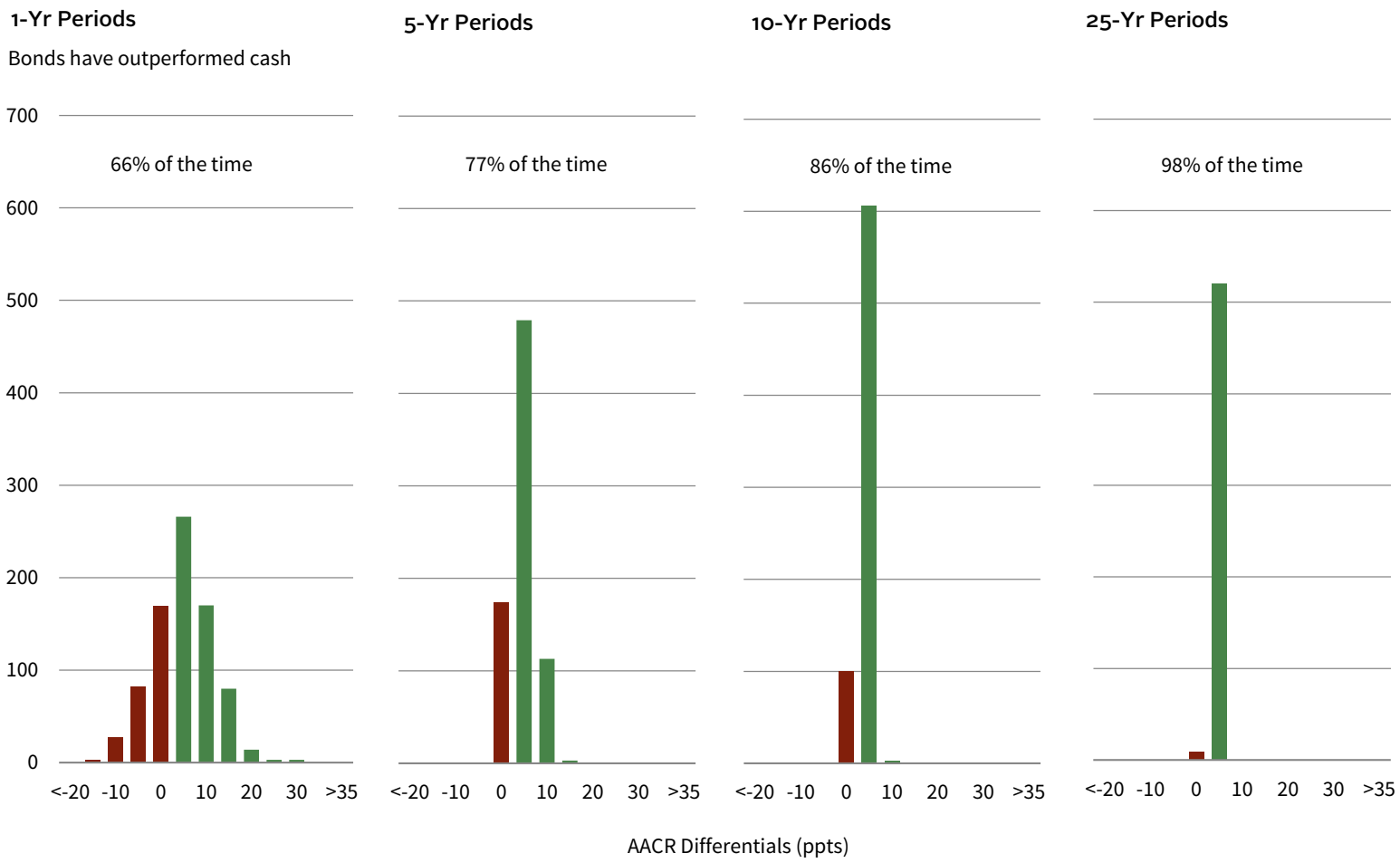
Source: Global Financial Data, Inc.

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 equities over bonds/cash was greater than -5, but equal to or less than zero.

Eurozone bonds tend to outperform cash, particularly over longer periods

EXCESS RETURNS OF BONDS OVER CASH

1951–2019 • Number of Rolling Monthly Periods



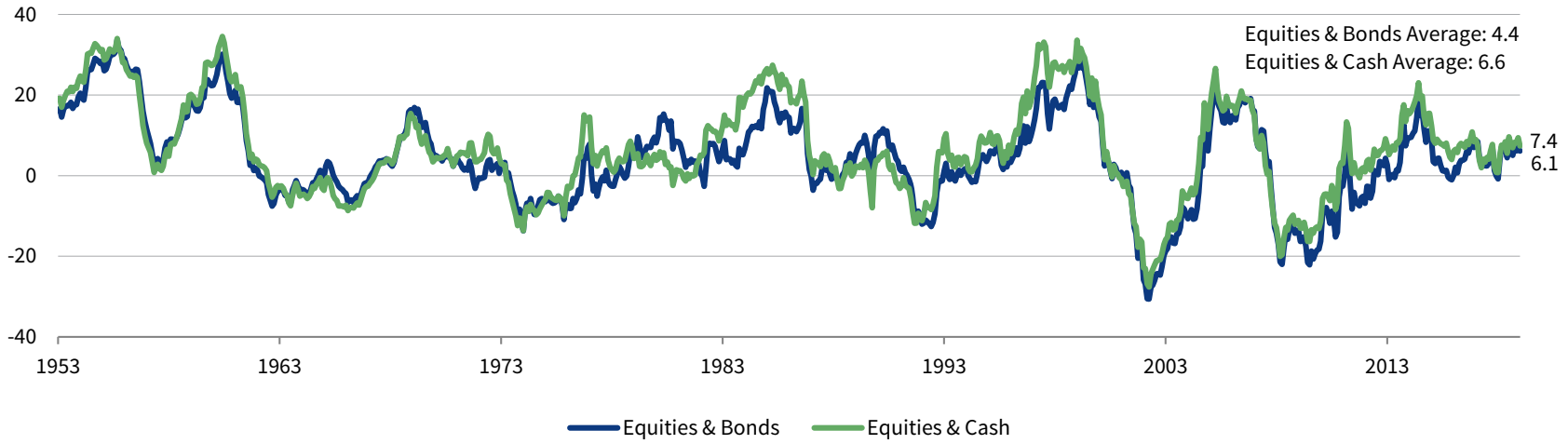
Source: Global Financial Data, Inc.

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

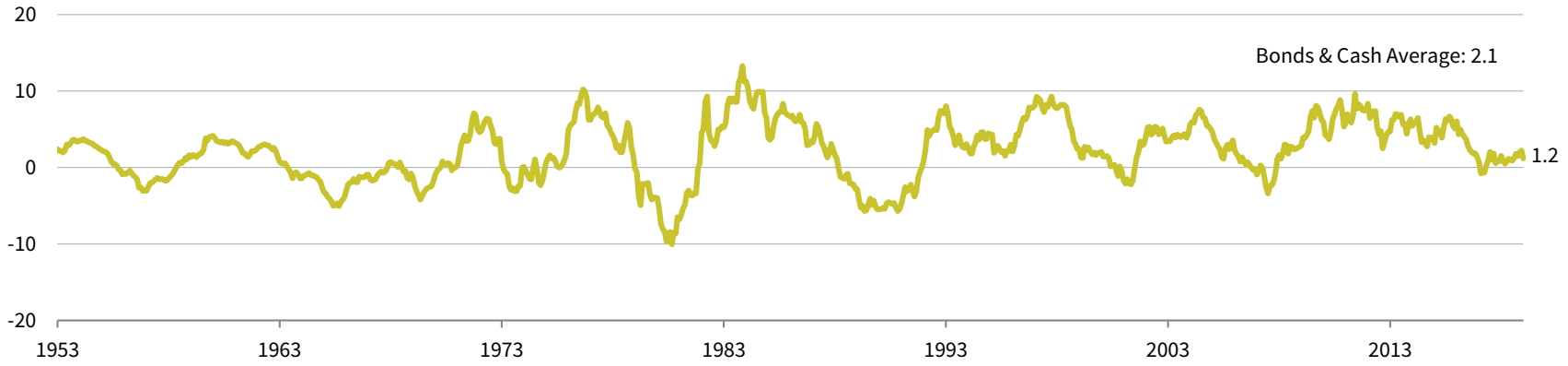
AACR OF ROLLING MONTHLY 3-YR RETURN DIFFERENTIAL BETWEEN EQUITY, BOND, AND CASH RETURNS

1953–2019 • Percent (%)



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

1953–2019 • Percent (%)

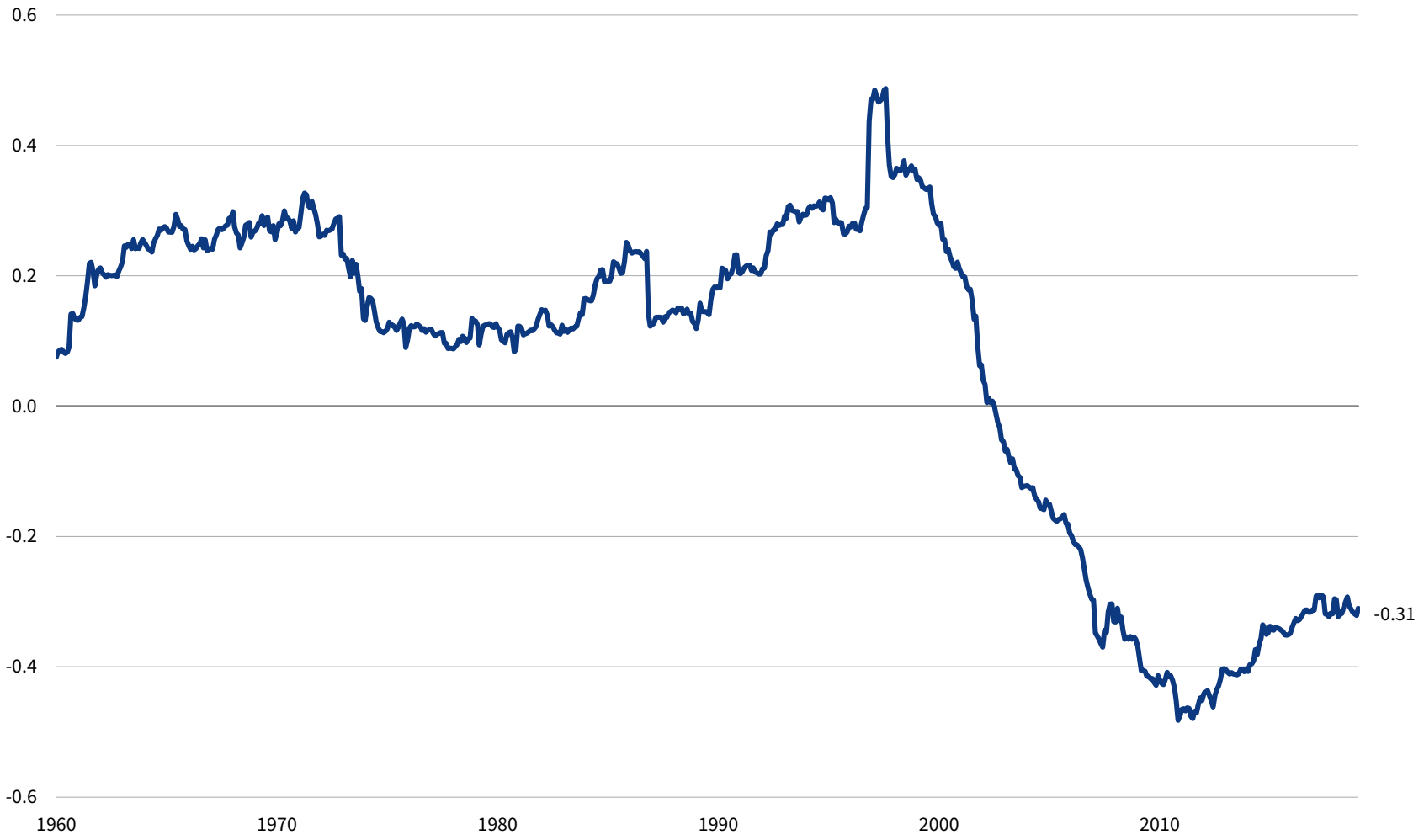


Source: Global Financial Data, Inc.

Stock and bond correlation remains near historical lows

ROLLING 10-YR CORRELATIONS OF STOCK AND BOND RETURNS

December 31, 1960 – December 31, 2019 • Correlation Coefficient



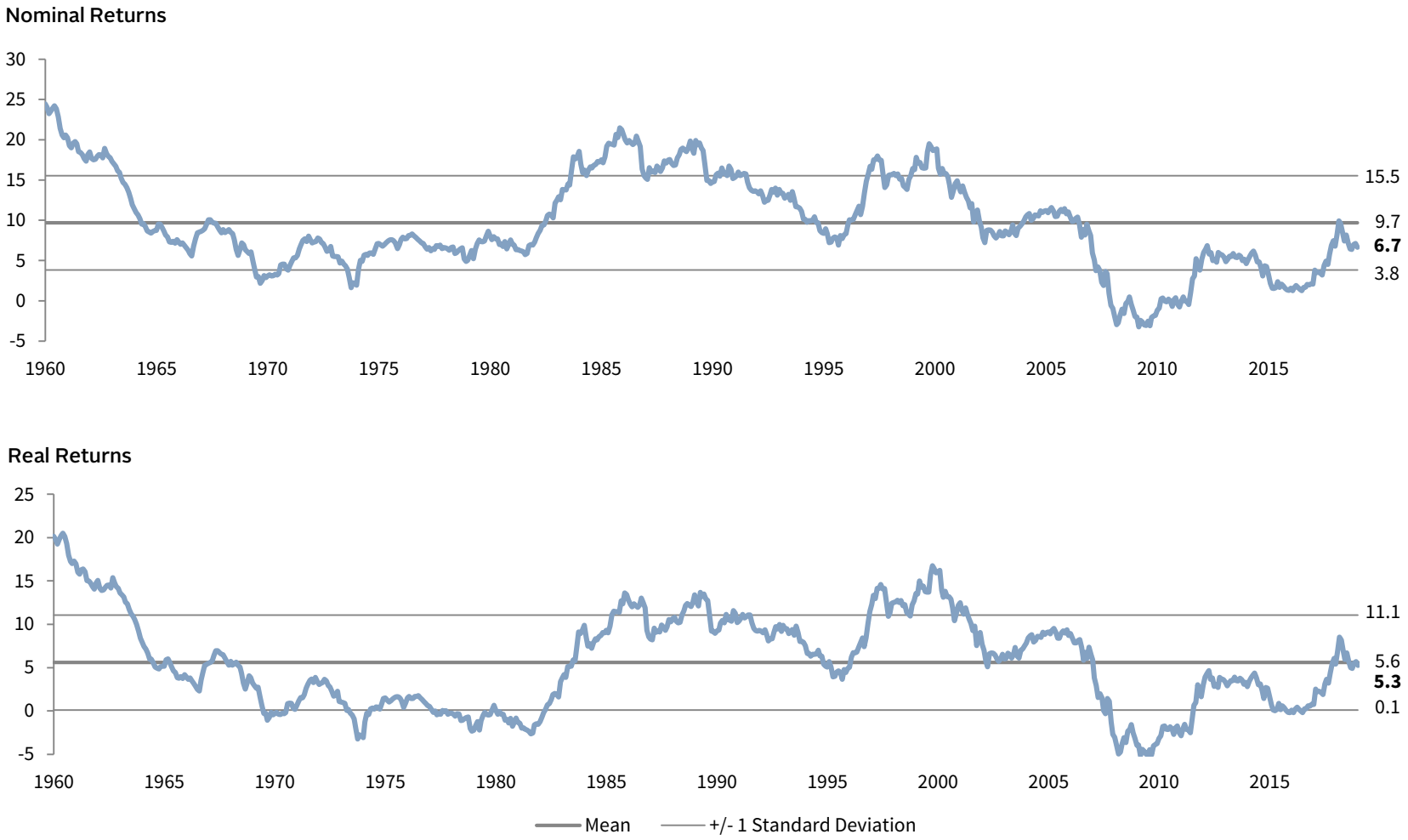
Source: Global Financial Data, Inc.

Notes: Data begin on January 31, 1951. All return data are monthly.

Equity performance exhibits mean reversion, but above- or below-average returns can persist

ROLLING MONTHLY EQUITY TOTAL RETURN 10-YR AACR

1960–2019 • Percent (%)

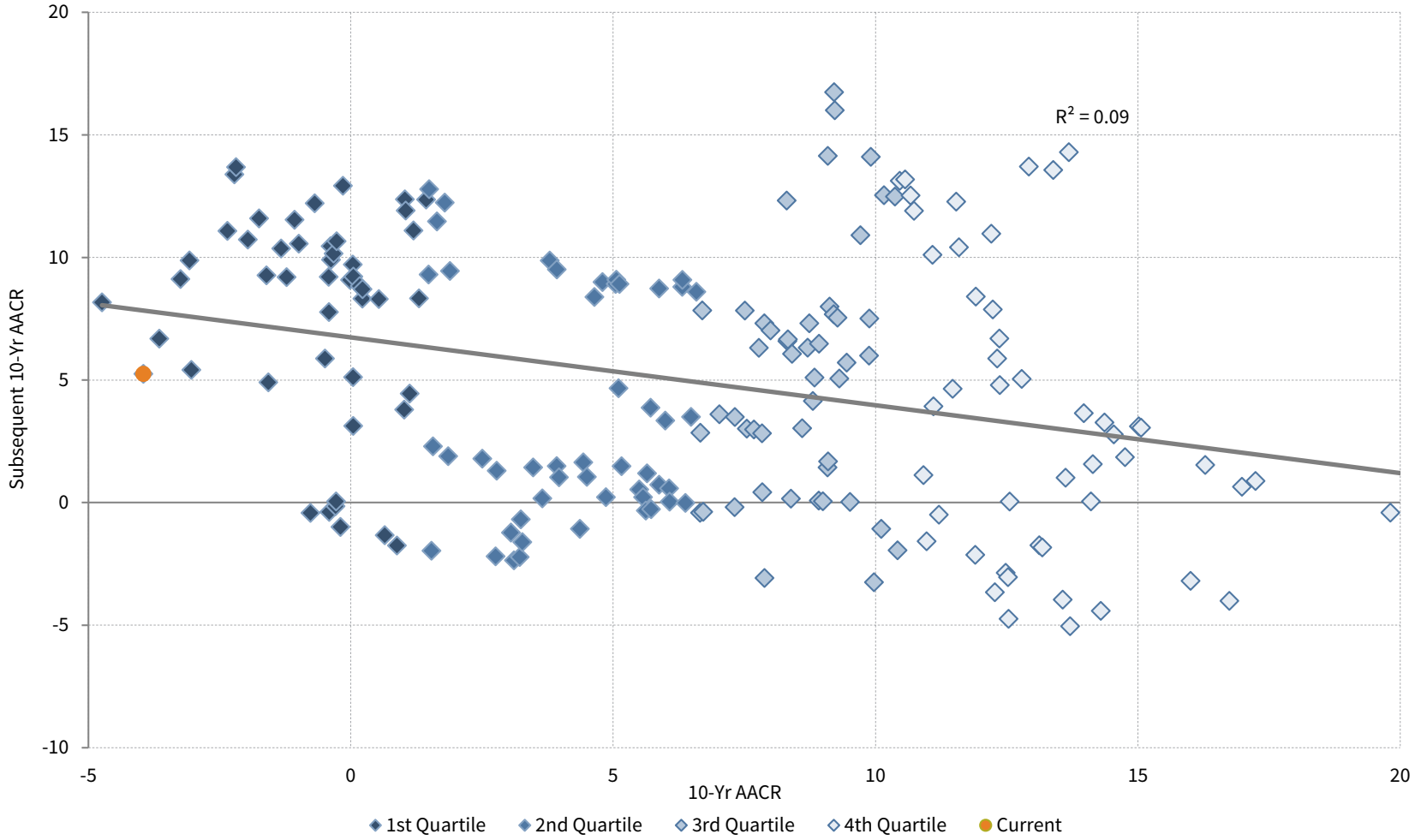


Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

Weak but slightly inverse relationship between past and future performance

RELATIONSHIP BETWEEN ROLLING QUARTERLY 10-YR EQUITY REAL AACR AND SUBSEQUENT 10-YR EQUITY REAL AACR

1951–2019 • Percent (%)

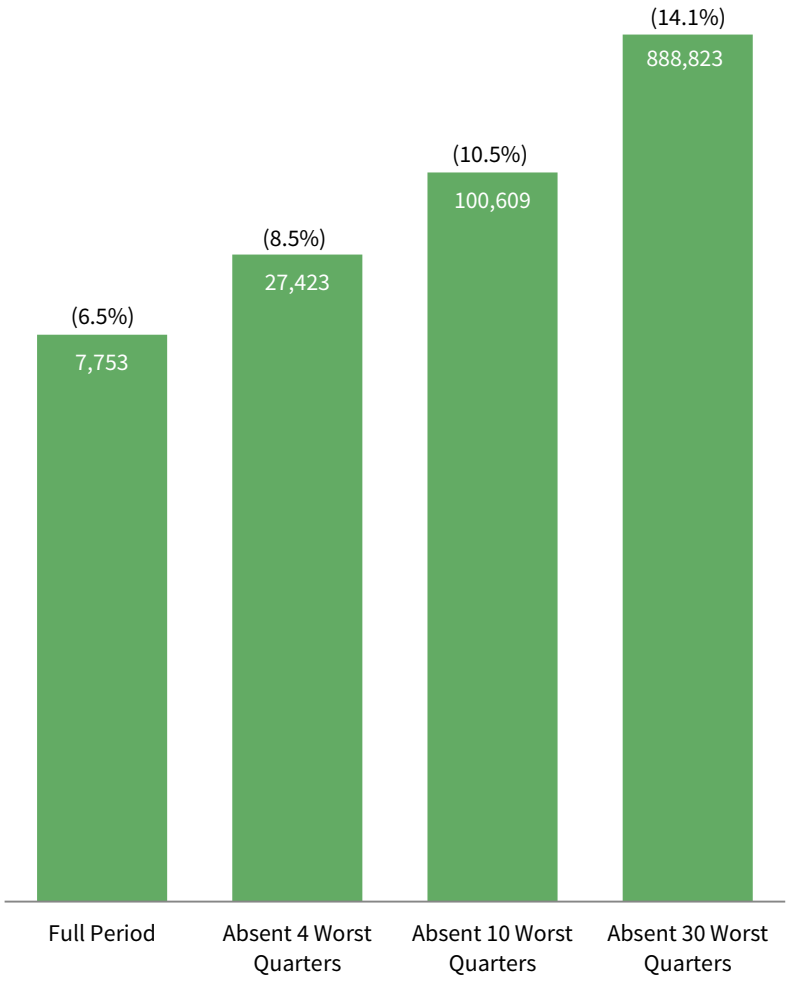


Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

Attempting to time the market carries significant risk

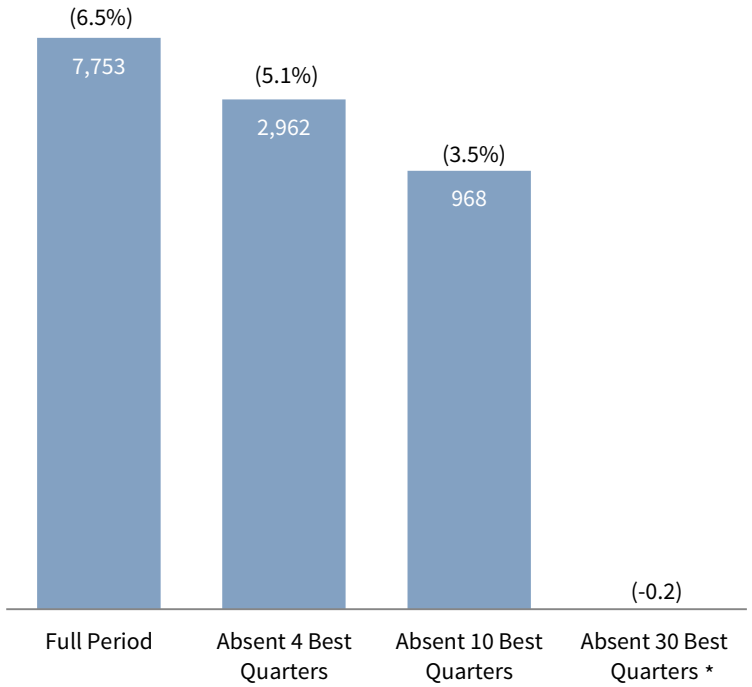
CUMULATIVE REAL WEALTH ABSENT WORST QUARTERS

1951–2019 • January 1, 1951 = 100 • AACR (%) in Parentheses



CUMULATIVE REAL WEALTH ABSENT BEST QUARTERS

1951–2019 • January 1, 1951 = 100 • AACR (%) in Parentheses



* Cumulative real wealth absent 30 best quarters is -13.

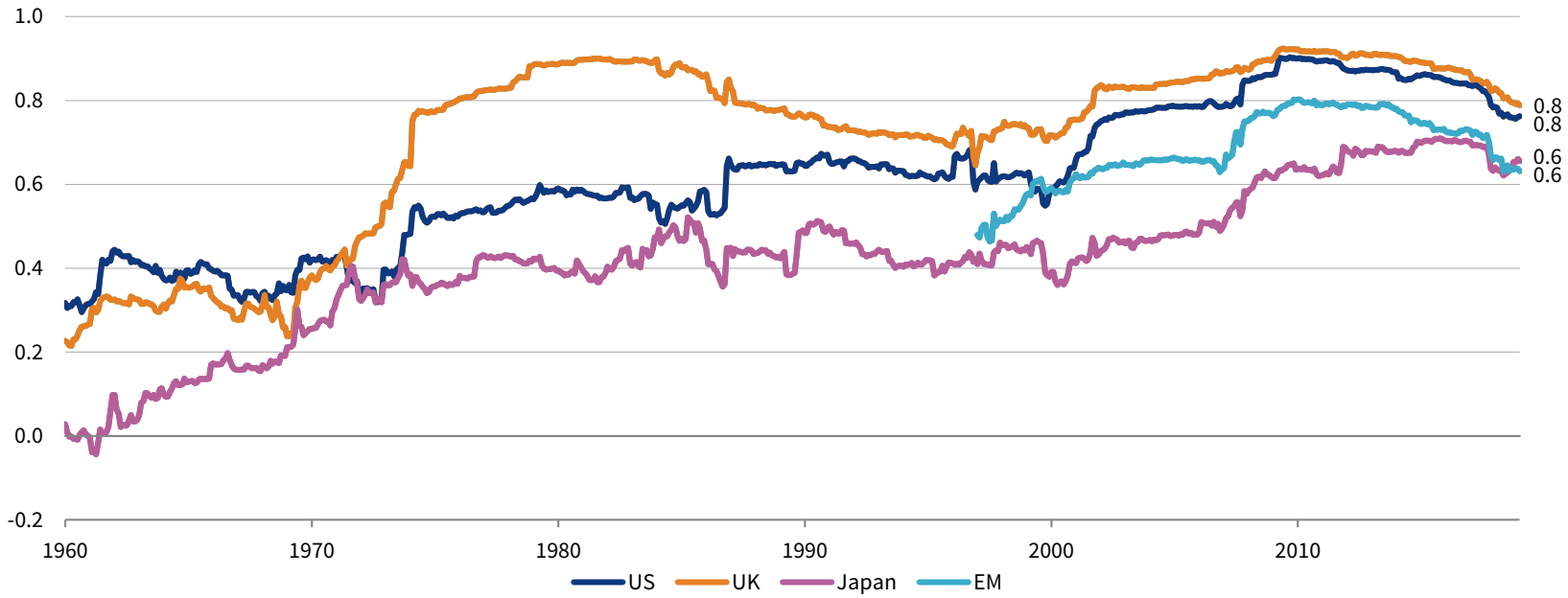
Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

Note: Cumulative real wealth is shown on a logarithmic scale.

Interregional equity correlations have increased, but turned slightly lower in the past decade

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

December 31, 1960 – December 31, 2019 • Correlation Coefficient



CORRELATION MATRIX

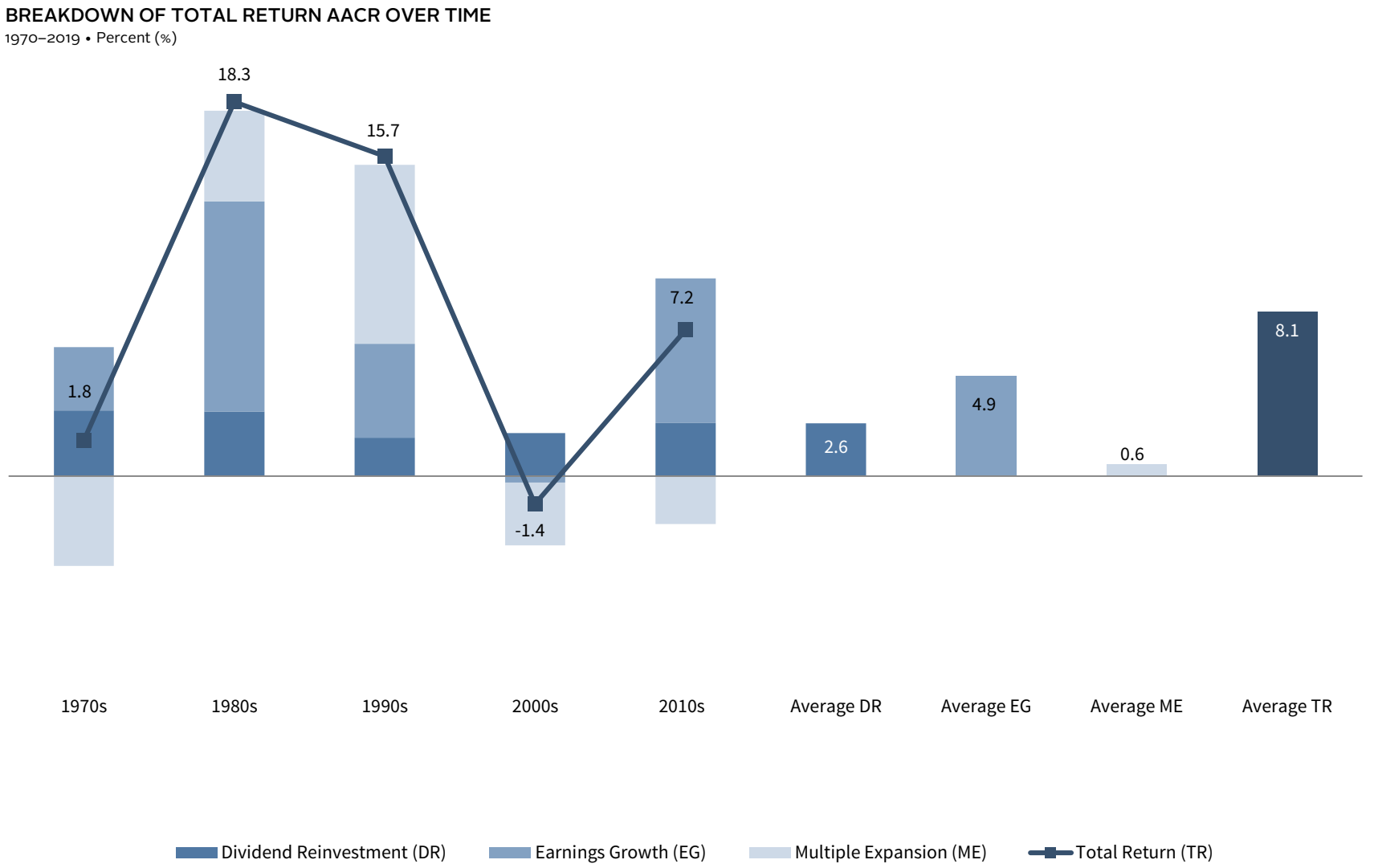
January 31, 1951 – December 31, 2019

	Europe ex UK	US	UK	Japan	EM
Europe ex UK	1.00				
US	0.64	1.00			
UK	0.68	0.55	1.00		
Japan	0.42	0.34	0.29	1.00	
EM	0.63	0.67	0.62	0.50	1.00

Sources: FTSE International Limited, Global Financial Data, Inc., MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

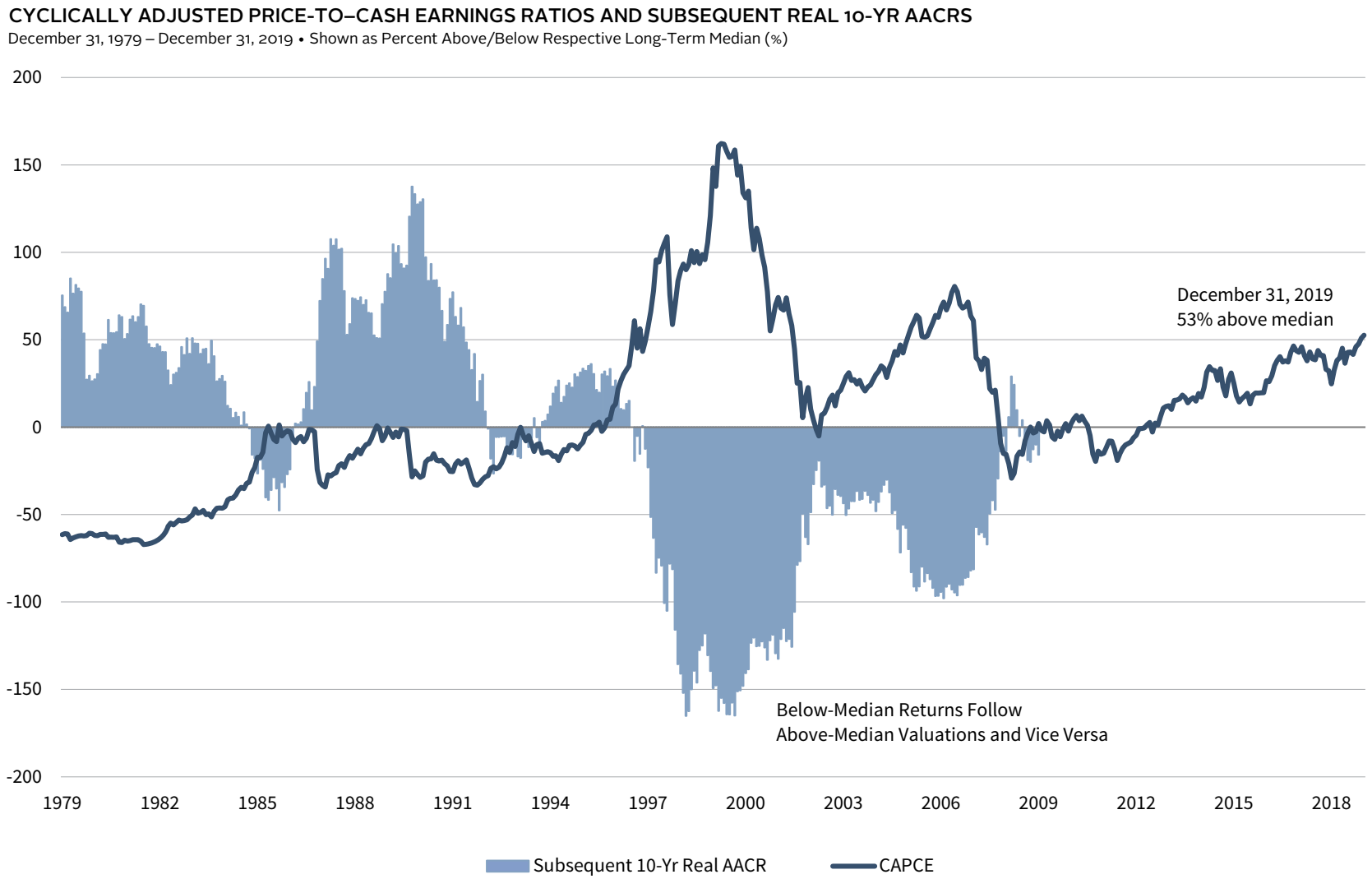
Notes: Data for the Europe ex UK, US, UK, and Japan begin on January 31, 1951. Data for EM begin on January 31, 1988. All return data are monthly. EM returns are in USD terms. All other returns are in local currency.

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



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.

High valuations imply weak subsequent returns and vice versa



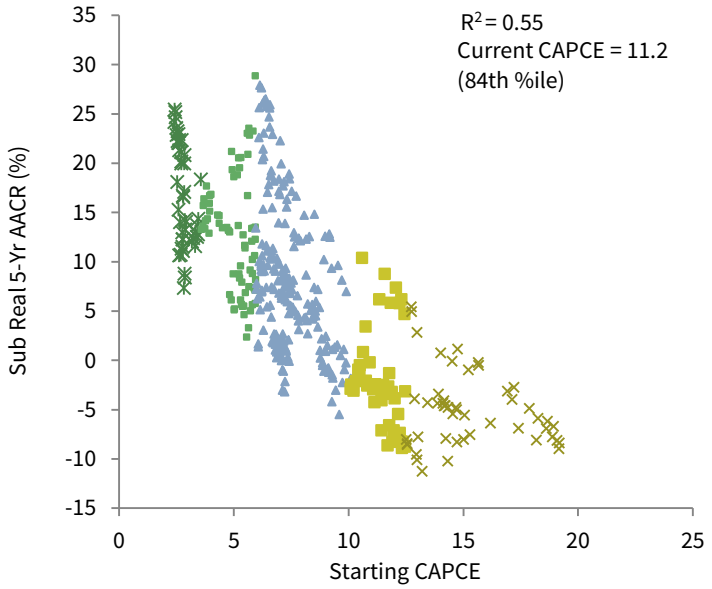
Sources: Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Chart shows percent above/below median for returns and valuations. Line shows point-in-time cyclically adjusted price-to–cash earnings (CAPCE) 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 6.8% since 1979. For example, the first data point shows that the real AACR for the period 1979–88 was 75.4% above the median ten-year real return.

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

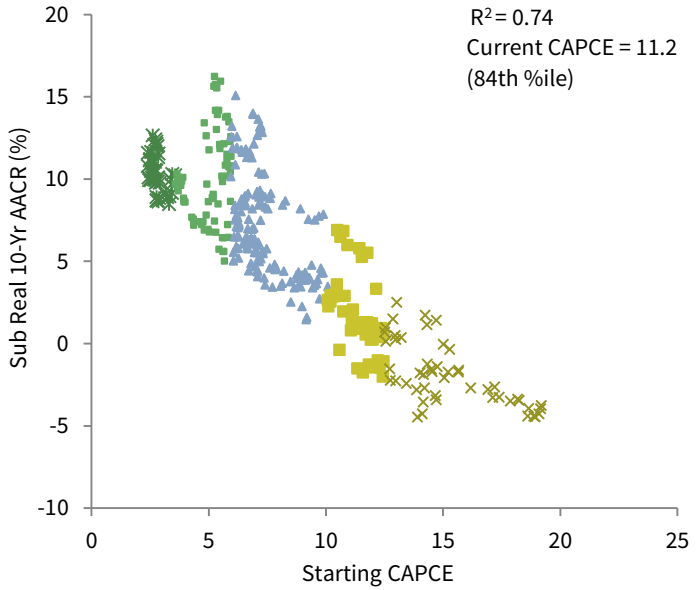
RELATIONSHIP BETWEEN CYCLICALLY ADJUSTED PRICE-TO–CASH EARNINGS RATIOS AND SUBSEQUENT REAL 5- AND 10-YR AACRS

December 31, 1979 – December 31, 2019

Initial Valuation and Subsequent 5-Yr AACR



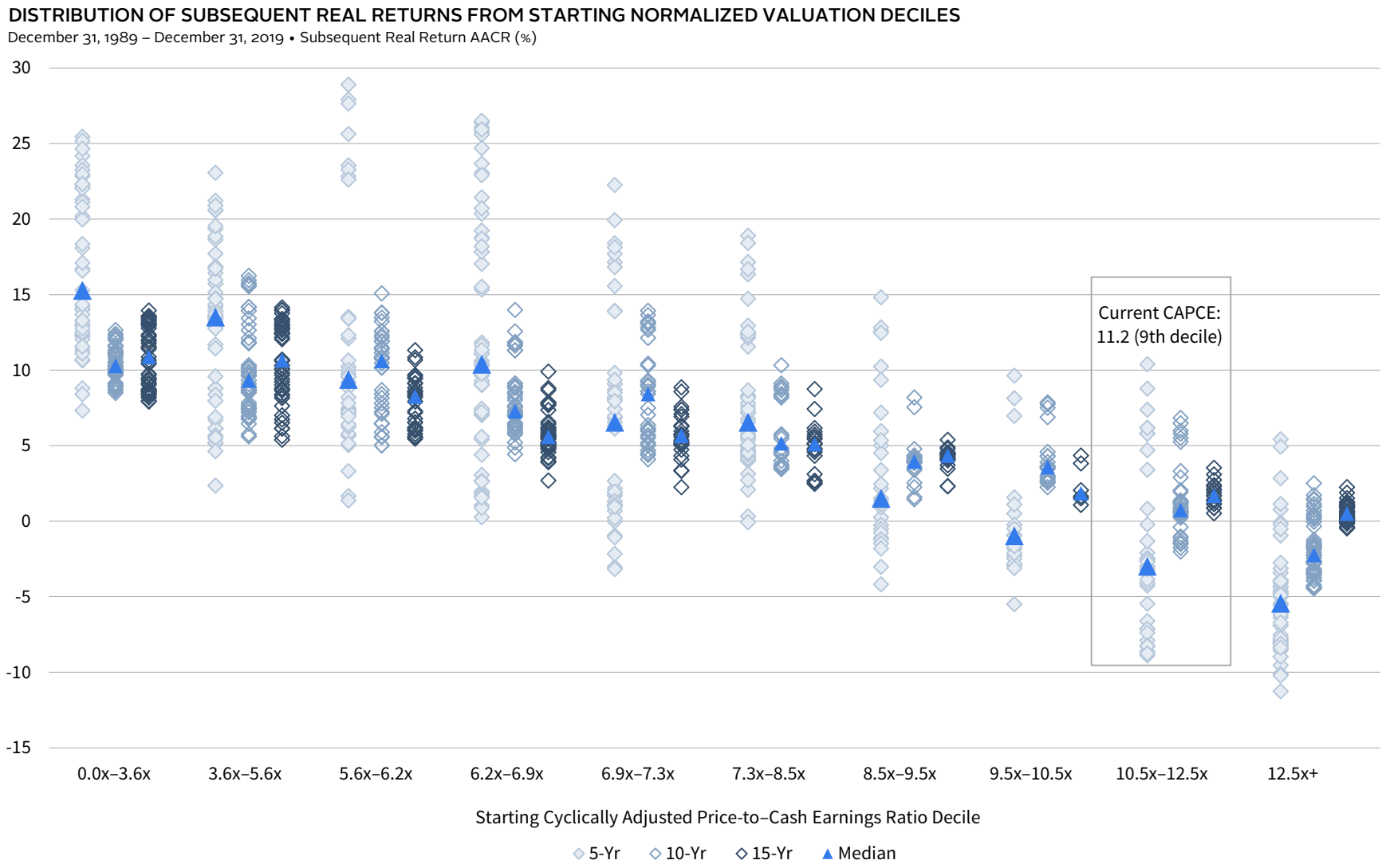
Initial Valuation and Subsequent 10-Yr AACR



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	3.6	2.4	15.9	25.4	7.3	2.8	3.6	2.4	10.3	12.7	8.5
10–25	5.3	5.9	3.6	13.1	28.9	2.4	5.3	5.9	3.6	9.8	16.2	5.0
25–75	7.2	10.1	5.9	7.1	27.9	-5.5	7.1	10.1	5.9	6.4	15.1	1.4
75–90	11.6	12.5	10.1	-2.7	10.4	-8.9	11.6	12.5	10.1	1.1	6.9	-2.0
90–100	14.7	19.2	12.5	-5.4	5.4	-11.3	14.7	19.2	12.5	-2.2	2.5	-4.5
Overall	**7.1**	**19.2**	**2.4**	**7.1**	**28.9**	**-11.3**	**6.9**	**19.2**	**2.4**	**6.8**	**16.2**	**-4.5**

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 monthly. The last full five-year period was January 1, 2015, to December 31, 2019, and the last full ten-year period was January 1, 2010, to December 31, 2019.

Starting normalized valuations are more meaningful as holding periods increase



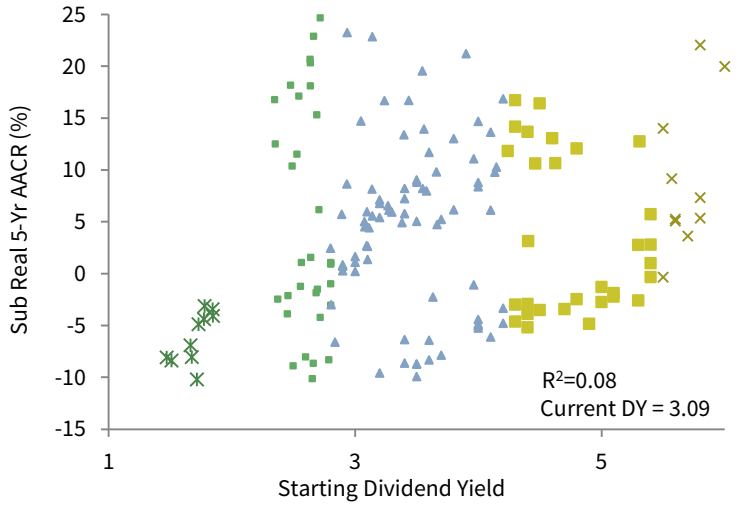
Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without and express or implied warranties.
Notes: Data are monthly. The last full five-year period was January 1, 2015, to December 31, 2019, the last full ten-year period was January 1, 2010, to December 31, 2019, and the last full 15-year period was January 1, 2005, to December 31, 2019.

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

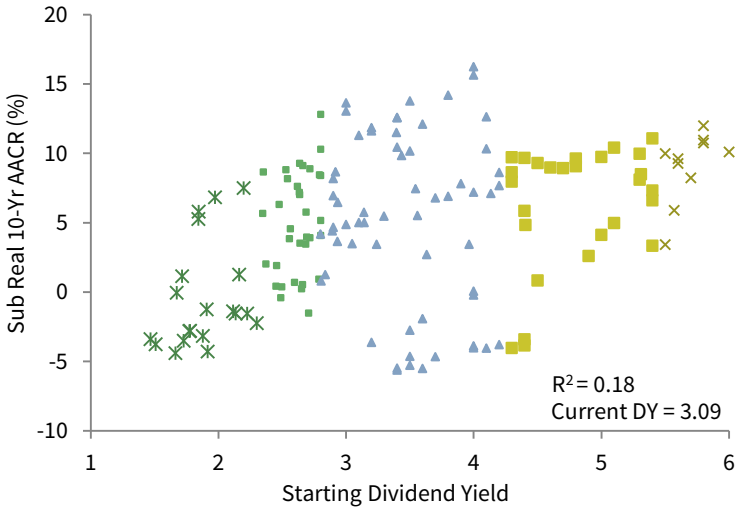
RELATIONSHIP BETWEEN DIVIDEND YIELDS AND SUBSEQUENT REAL AACRS

Fourth Quarter 1969 – Fourth Quarter 2019

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	1.8	1.5	-5.9	-3.1	-10.2	1.9	2.3	1.5	-1.5	7.5	-4.4
10–25	2.6	2.8	2.3	1.1	26.4	-10.1	2.6	2.8	2.3	4.9	12.8	-1.5
25–75	3.4	4.2	2.8	5.6	28.9	-9.9	3.5	4.2	2.8	5.8	16.2	-5.6
75–90	4.7	5.4	4.2	0.3	16.7	-5.2	4.8	5.4	4.3	8.1	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
Overall	**3.4**	**6.6**	**1.5**	**4.9**	**28.9**	**-10.2**	**3.4**	**6.6**	**1.5**	**5.9**	**16.2**	**-5.6**

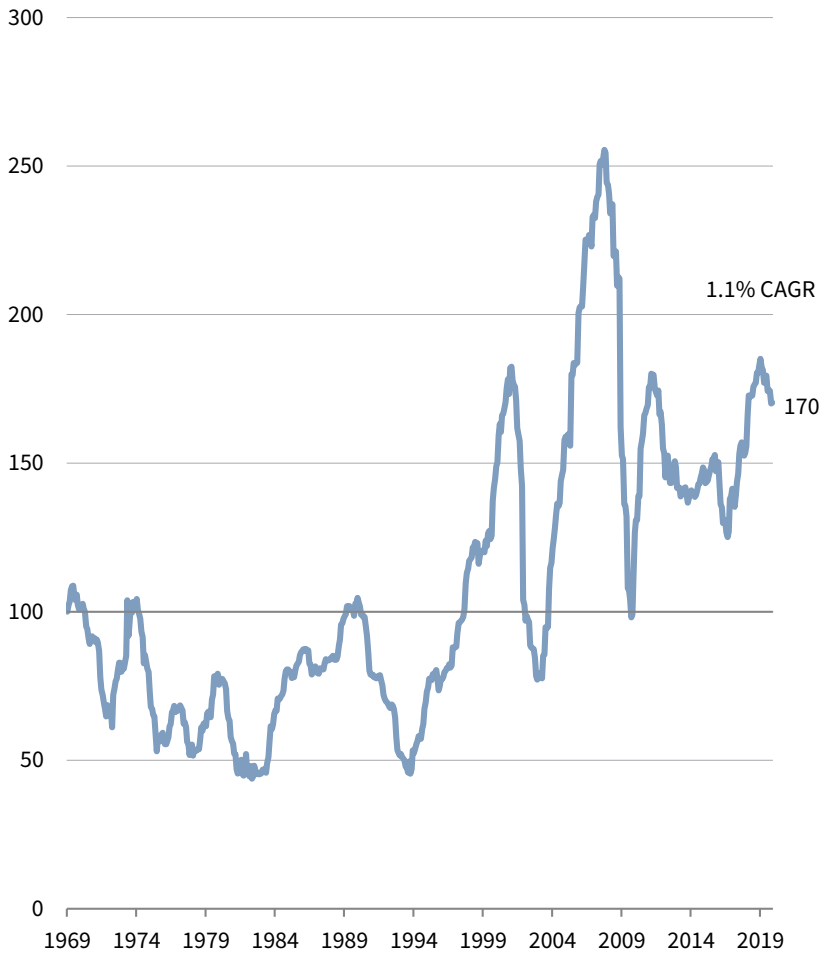
Sources: Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Data are quarterly. The last full five-year period was first quarter 2015 through fourth quarter 2019. The last full ten-year period was first quarter 2010 through fourth quarter 2019. Outliers are not shown on graph but are included in R^2.

Real EPS levels remain below GFC peak; ROE was generally below median in the past decade

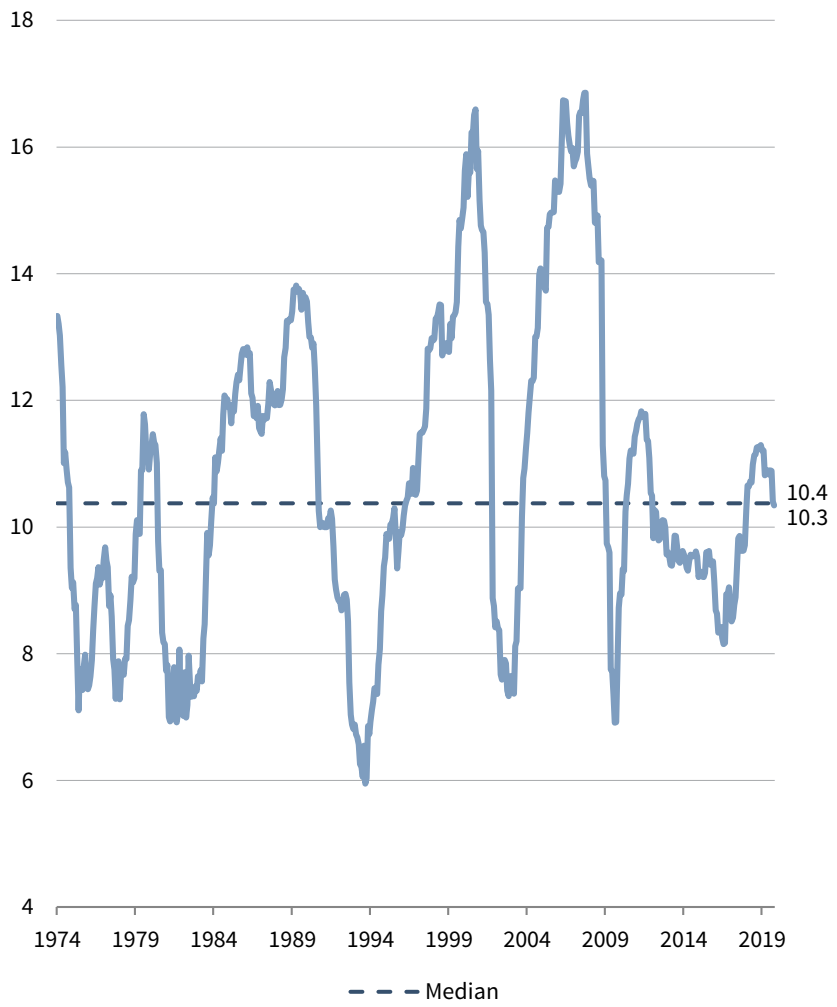
REAL EARNINGS PER SHARE OVER TIME

December 31, 1969 – December 31, 2019 • December 31, 1969 Cumulative Wealth = 100



RETURN ON EQUITY

December 31, 1974 – December 31, 2019 • Percent (%)



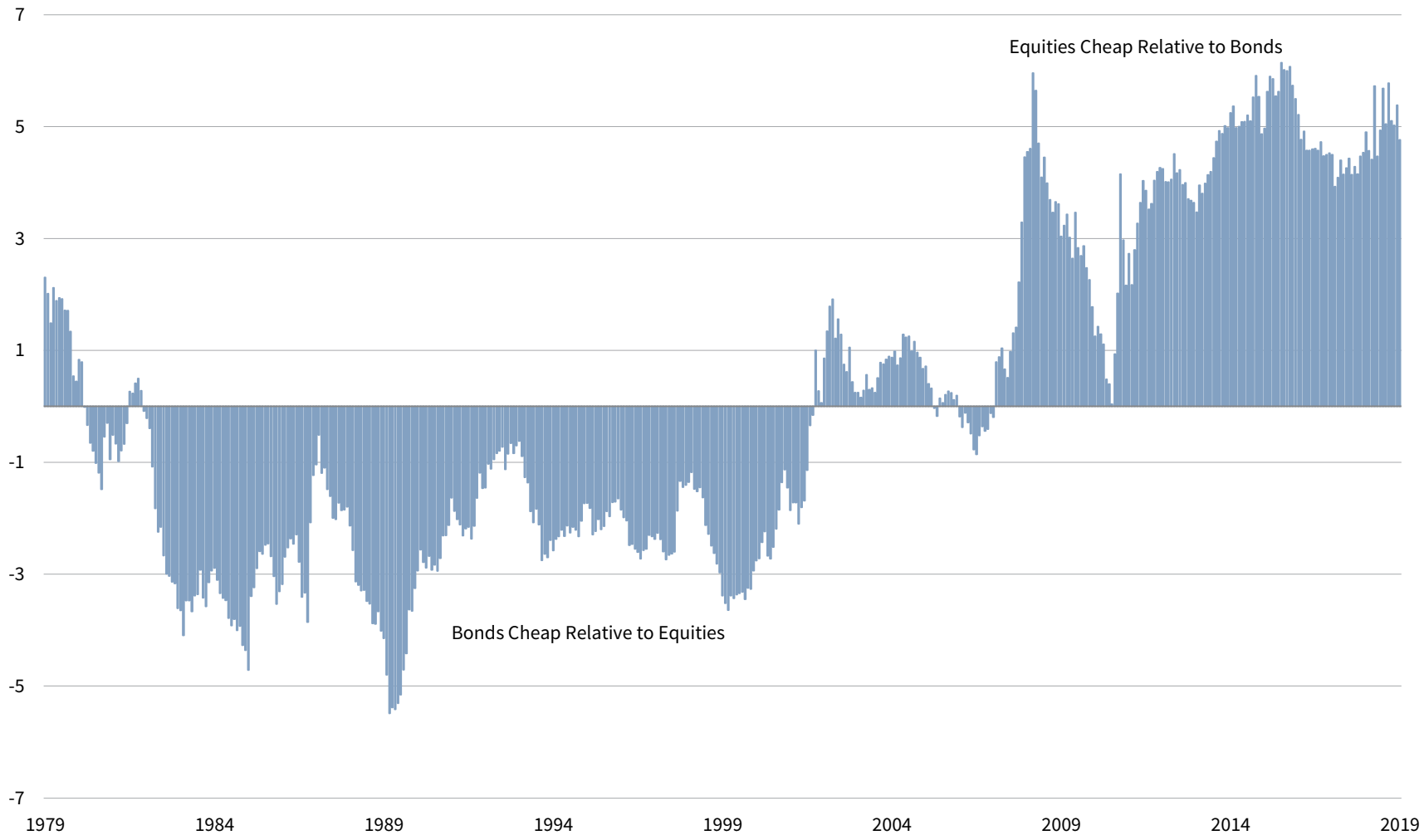
Sources: Global Financial Data, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: Real earnings per share and return on equity are based on the MSCI Europe ex UK Index.

Post-GFC low-yield environment has made equities more attractive to bonds

SHILLER EARNINGS YIELDS VERSUS 10-YR BOND YIELDS

1979–2019



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 monthly. Chart shows the spread between the normalized earnings yields and ten-year bond yields calculated as earnings yield minus bond yield. Normalized earnings yields are based on the Shiller P/E ratio.

Starting bond yields are an informative guide to subsequent returns

RELATIONSHIP BETWEEN GOVERNMENT BOND YIELDS AND SUBSEQUENT 10-YR AACRS

1970–2019 • Percent (%)

Source: Global Financial Data, Inc.

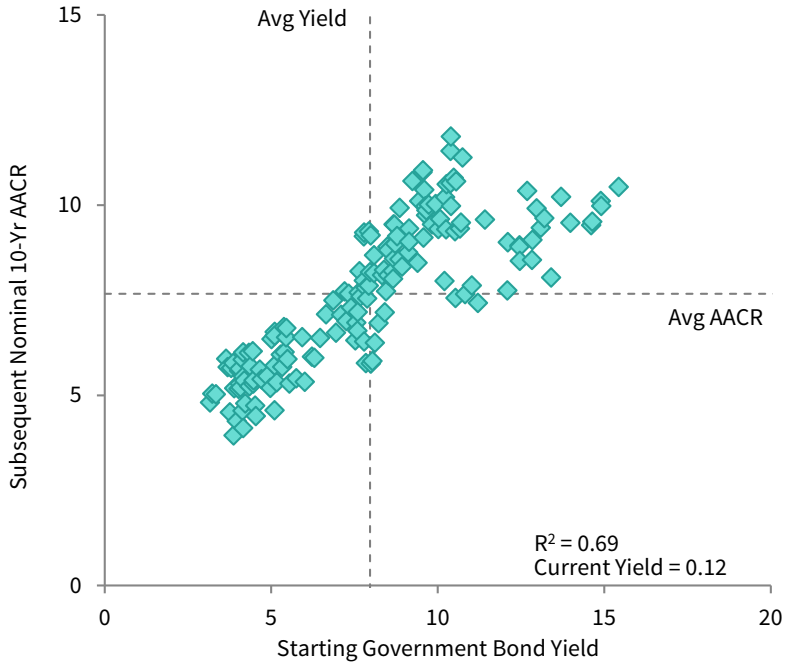
Notes: Data are monthly. The last full ten-year period was January 1, 2010, to December 31, 2019.

All-time low starting yields imply low subsequent nominal and real returns for bonds

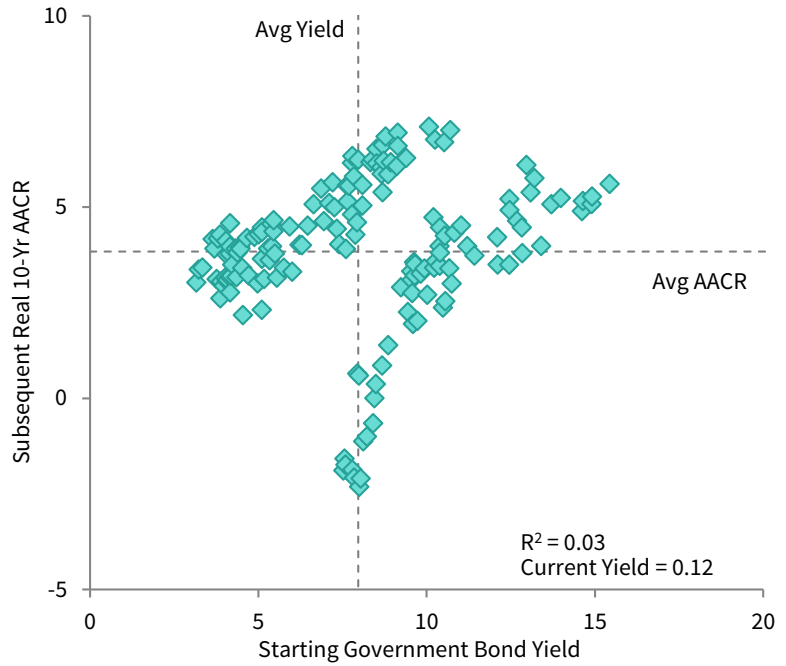
RELATIONSHIP BETWEEN GOVERNMENT BOND YIELDS AND SUBSEQUENT 10-YR AACRS

1970–2019 • Percent (%)

Nominal Returns



Real Returns



Yield Quartiles	Starting Period Government Bond Yields Mean	High	Low	Subsequent Nominal 10-Yr AACR (%) Mean	High	Low	Std Dev
First	4.24	5.11	3.16	5.37	6.67	3.95	0.65
Second	6.84	7.97	5.17	6.97	9.31	5.31	1.05
Third	8.88	9.94	7.99	8.86	10.91	5.83	1.23
Fourth	11.90	15.44	10.02	9.49	11.80	7.43	1.07
Overall	**7.97**	**15.44**	**3.16**	**7.67**	**11.80**	**3.95**	**1.92**

Yield Quartiles	Starting Period Government Bond Yields Mean	High	Low	Subsequent Real 10-Yr AACR (%) Mean	High	Low	Std Dev
First	4.24	5.11	3.16	3.56	4.58	2.18	0.60
Second	6.84	7.97	5.17	3.71	6.33	-2.07	2.35
Third	8.88	9.94	7.99	3.55	6.94	-2.31	2.79
Fourth	11.90	15.44	10.02	4.54	7.10	2.37	1.19
Overall	**7.97**	**15.44**	**3.16**	**3.84**	**7.10**	**-2.31**	**1.97**

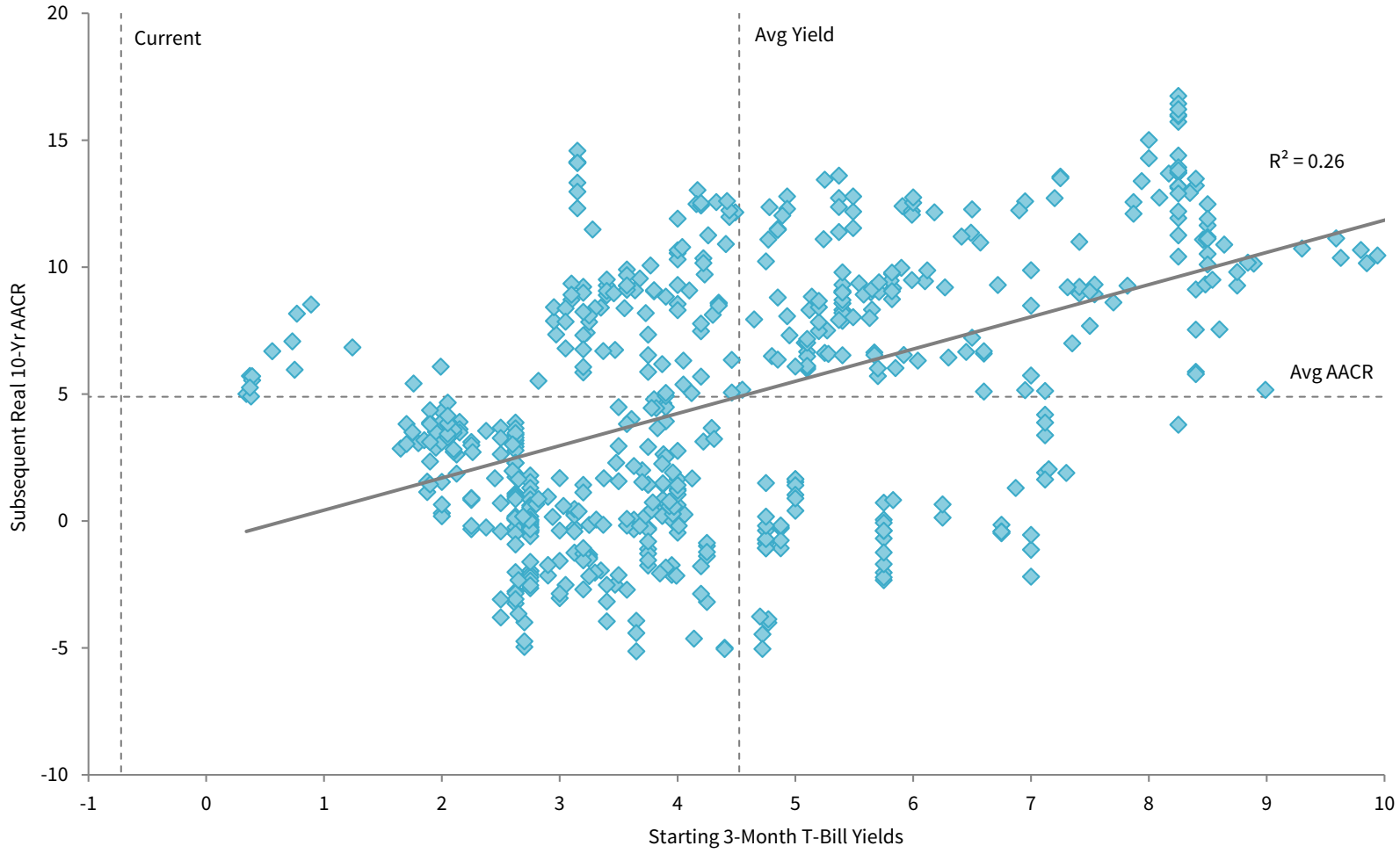
Source: Global Financial Data, Inc.

Notes: Data are quarterly. The last full ten-year period was first quarter 2010 through fourth quarter 2019.

Higher cash yields associated with higher equity returns historically, but relationship is weak

RELATIONSHIP BETWEEN TREASURY BILL YIELDS AND SUBSEQUENT REAL 10-YR EQUITY AACRS

January 31, 1960 – December 31, 2019 • Percent (%)



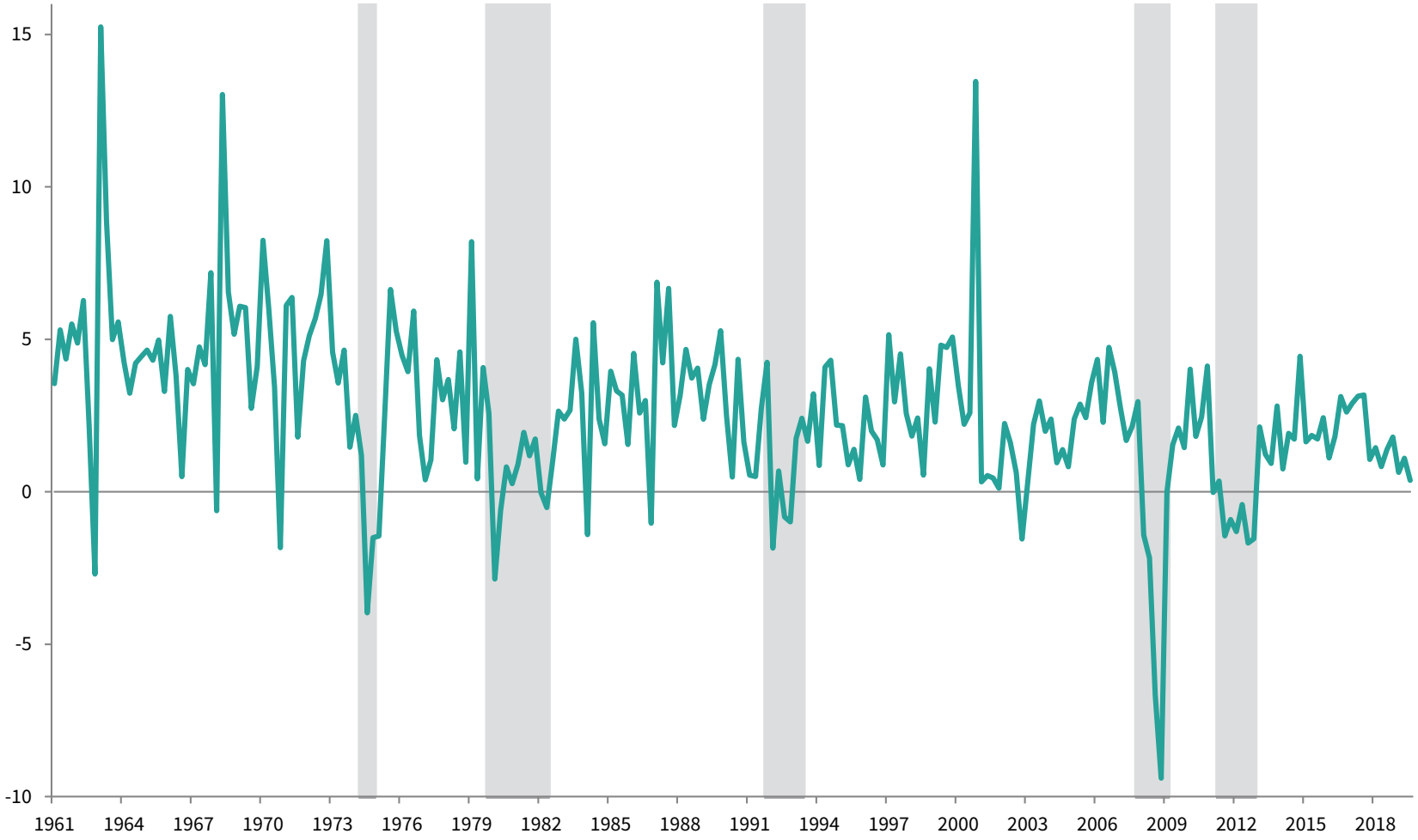
Sources: Global Financial Data, Inc. and Thomson Reuters Datastream.

Notes: Data are monthly. Yields reflect the German three-month bill. The last full ten-year period was January 1, 2010, to December 31, 2019.

Current expansion's growth rate has been the weakest since the 1960s

EUROZONE REAL GDP

1961–2019 • Annualized, Quarter-Over-Quarter (%)

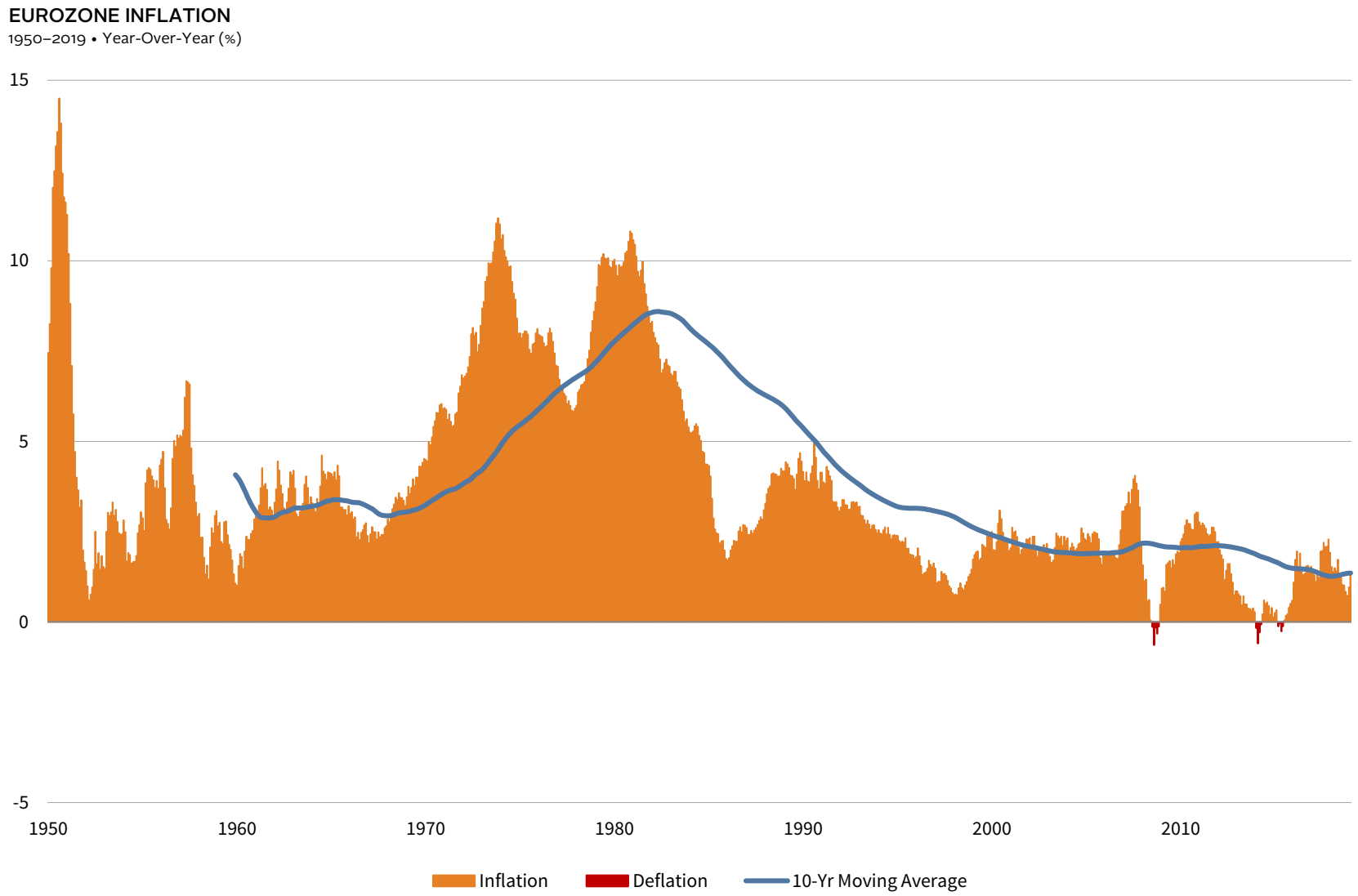


Sources: Euro Area Business Cycle Network, Eurostat, OECD, and Thomson Reuters Datastream.
Note: Gray bars are recessions defined by Euro Area Business Cycle Network business cycle peak-to-trough dates.

Eurozone yield curve is an unreliable recession indicator

Sources: Euro Area Business Cycle Network and Global Financial Data, Inc.
Notes: Data are monthly. Gray bars are recessions defined by the Euro Area Business Cycle Network business cycle peak-to-trough dates. The cash yield (three month) is represented by Germany's money market yield.

Inflation has stabilized and trended downwards in recent years relative to more volatile history



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

CAMBRIDGE ASSOCIATES

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