**Topical Research:**

# Gold Market Trends

As of 12/17/21

## LONG-TERM TRENDS



## MARKET TRENDS



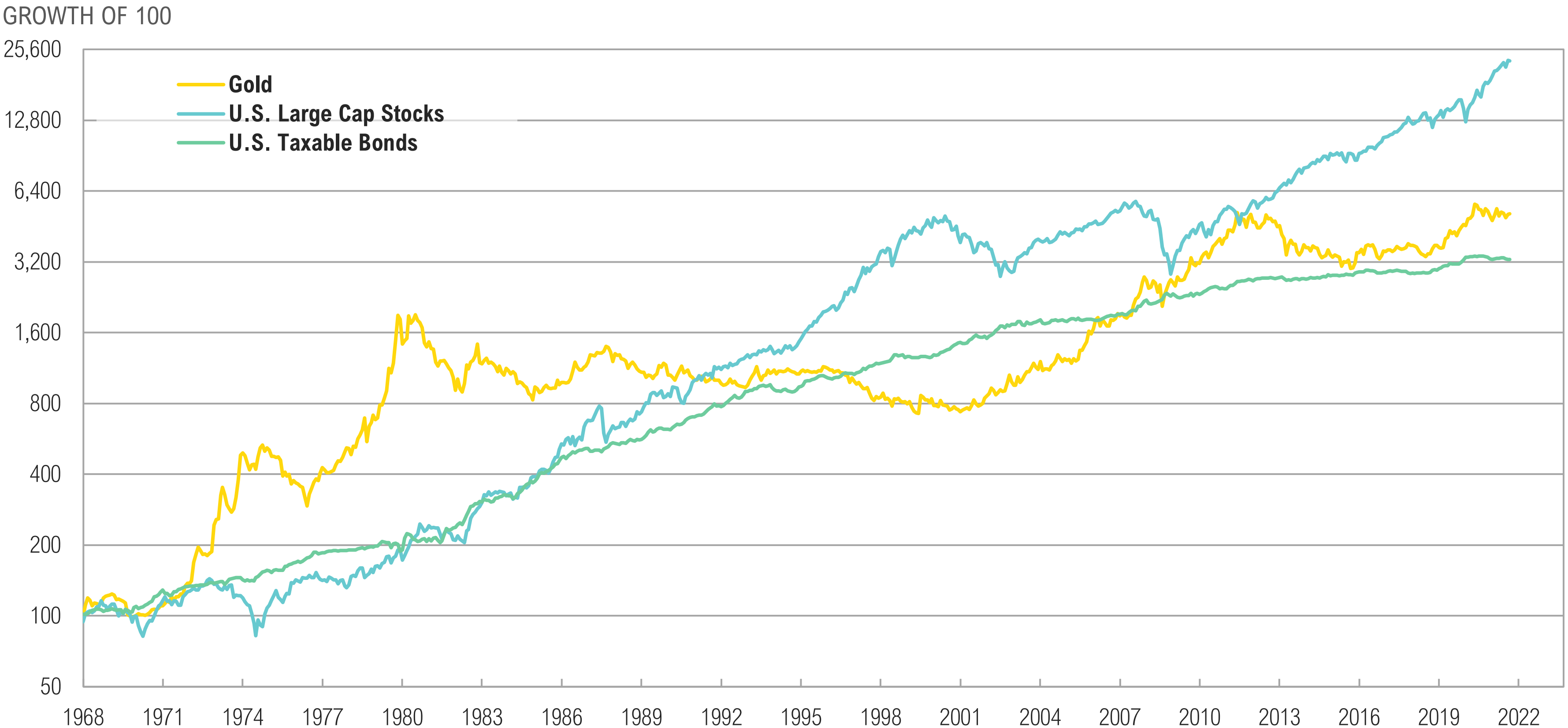
## CASE STUDIES



## APPENDIX


US 10-YEAR TREASURY NOTE
1 KG
1 KG
GERMAN BUNDS
TREASURIES
JGB
SAFE HAVENS
KROESE '20

# Gold has trailed stocks, but outpaced bonds for more than 50 years




| Asset Class | Name | QTD | YTD | 5-Yr | 10-Yr | 20-Yr | 50-Yr | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gold | LBMA Gold Price Index | 2.3 | -4.9 | 8.6 | 0.5 | 9.8 | 7.9 | 24.2 | 18.8 | -1.1 | 11.9 | 9.1 | -11.4 | -0.2 | -27.8 | 5.7 | -27.8 |
| U.S. Large Cap Stocks | IA SBBI US Large Stock Index | 6.9 | 23.2 | 17.9 | 16.2 | 9.3 | 11.1 | 18.4 | 31.5 | -4.4 | 21.8 | 12.0 | 1.4 | 13.7 | 32.4 | 16.0 | 32.4 |
| U.S. Taxable Bonds | IA SBBI US IT Govt Index | -0.9 | -2.7 | 2.7 | 2.1 | 3.9 | 6.8 | 7.3 | 8.3 | 1.2 | 1.6 | 1.9 | 1.8 | 3.0 | -3.7 | 1.7 | -3.7 |

Source: Bloomberg.
Returns for periods longer than 1 year are annualized. Data as of most recent month end.

# After strong returns out of the pandemic lows, gold has been a notable underperformer since the vaccine announcements

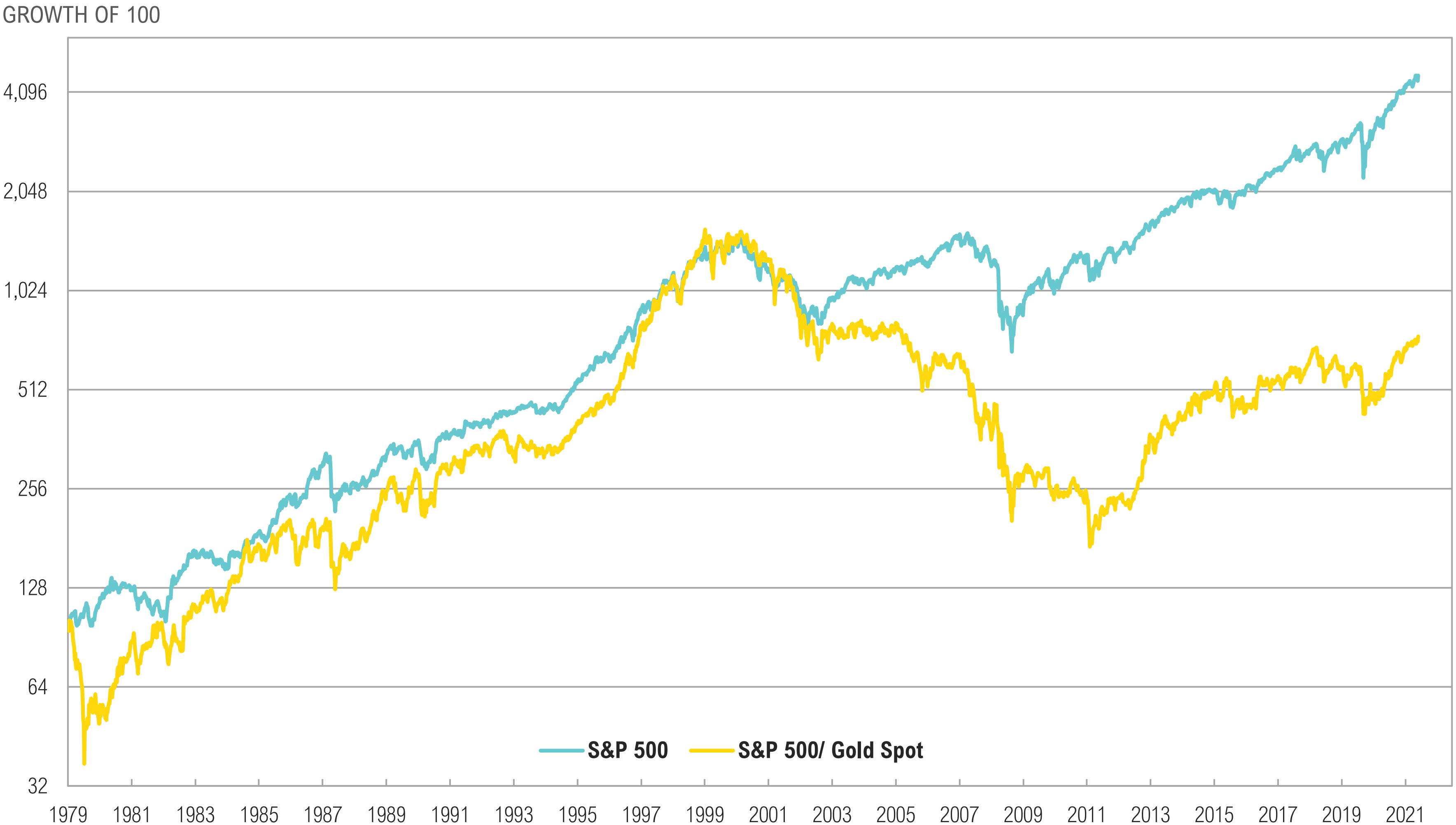
| Asset Class | Benchmark | 3/10/00 (Tech Bubble peak) | 10/9/02 (Tech Bubble low) | 10/9/07 (Housing Bubble high) | 3/9/09 (GFC low) | 11/8/16 (Trump election) | 1/26/18 (Jan high) | 3/21/18 (start of Trade War) | 9/21/18 (Sep 2018 high) | 12/24/18 (Dec low) | 8/1/19 (Trade War escalation) | 2/20/20 (Covid-19 escalation) | 11/9/20 (Covid-19 Vaccine) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cryptocurrencies | MVIS CryptoCompare Digital Top 25 In | - | - | - | - | 172.3 | 20.8 | 40.3 | 85.6 | 134.9 | 129.6 | 183.9 | 415.3 |
| Bitcoin | MVIS CryptoCompare Bitcoin Index | - | - | - | - | 138.6 | 47.8 | 59.0 | 88.7 | 138.3 | 97.1 | 140.3 | 193.2 |
| Midstream Energy | Alerian MLP Index | 2.7 | 8.1 | 3.6 | 7.9 | -1.4 | -4.8 | 0.3 | -5.1 | 2.8 | -4.9 | 2.0 | 64.0 |
| US REITs | MSCI US REIT Index | 11.7 | 11.2 | 6.8 | 18.5 | 10.5 | 12.2 | 14.5 | 12.4 | 18.3 | 12.6 | 10.6 | 44.5 |
| US Micro Cap Stocks | Russell Micro Cap Index | 12.1 | 11.1 | 7.6 | 17.1 | 14.8 | 10.1 | 10.7 | 9.6 | 23.2 | 20.4 | 21.7 | 39.9 |
| US Large Cap Stocks | S&P 500 Index | 15.1 | 11.9 | 10.4 | 18.7 | 19.1 | 16.0 | 18.0 | 17.9 | 28.7 | 23.4 | 22.0 | 32.9 |
| US Small Cap Stocks | Russell 2000 Index | 12.2 | 11.7 | 8.5 | 17.1 | 14.4 | 10.1 | 11.0 | 9.5 | 22.2 | 16.9 | 17.3 | 32.5 |
| Commodity Futures | Bloomberg Commodity Index | -2.2 | 0.8 | -3.4 | -0.2 | 4.0 | 3.0 | 4.2 | 5.6 | 8.9 | 9.6 | 14.0 | 30.0 |
| Global Real Estate Sec's | S&P Global Property Index | 8.5 | 9.7 | 3.8 | 14.4 | 8.0 | 5.6 | 7.5 | 7.8 | 11.8 | 7.2 | 4.4 | 27.5 |
| Closed-End Funds | S-Network Composite CEF Index | 7.8 | - | 6.7 | 12.9 | 9.8 | 7.9 | 9.0 | 9.4 | 15.6 | 10.1 | 8.1 | 22.2 |
| Intl Dev Ex-US Stocks | MSCI EAFE Index | 6.7 | 8.5 | 3.2 | 10.9 | 10.0 | 4.4 | 6.6 | 7.7 | 14.3 | 11.2 | 10.3 | 20.4 |
| Intl Dev Ex-US Real Est. | S&P Global Ex US Property Index | 6.4 | 9.1 | 1.9 | 11.8 | 5.9 | 0.4 | 2.1 | 3.9 | 6.6 | 2.5 | -1.2 | 13.4 |
| Municipal High Yield Bonds | Bloomberg US HY Muni Index | 6.8 | 6.3 | 5.4 | 8.3 | 6.4 | 7.4 | 7.6 | 7.4 | 7.8 | 6.6 | 5.2 | 10.4 |
| US High Yield Bonds | Bloomberg US Corporate HY Index | 7.1 | 8.6 | 7.2 | 10.8 | 6.4 | 5.7 | 6.4 | 6.4 | 8.9 | 6.3 | 5.7 | 7.6 |
| Emerging Market Stocks | MSCI EM Index | 4.8 | 11.4 | 2.6 | 10.5 | 9.4 | 2.2 | 3.4 | 8.4 | 12.3 | 10.4 | 9.3 | 7.2 |
| US Leveraged Loans | S&P/LSTA Leveraged Loan Index | 4.7 | 5.0 | 4.6 | 7.5 | 4.5 | 4.2 | 4.2 | 4.1 | 5.5 | 4.2 | 4.1 | 7.2 |
| Emerging Market Bonds | JPM EMBI Global Diversified Index | 5.9 | 8.0 | 6.2 | 7.9 | 4.0 | 3.4 | 4.3 | 5.5 | 6.1 | 2.4 | 0.6 | 1.6 |
| US Interm-Term Muni Bonds | Bloomberg Municipal Bond 1-10Y Inde | 2.9 | 3.4 | 3.5 | 3.3 | 2.6 | 3.1 | 3.4 | 3.7 | 3.5 | 2.4 | 1.8 | 1.2 |
| Cash | Bloomberg 1-3 Mth Treasury Index | 0.5 | 1.2 | 0.6 | 0.5 | 1.1 | 1.2 | 1.2 | 1.1 | 1.0 | 0.6 | 0.2 | 0.1 |
| Short-Term Bonds | Bloomberg 1-3 Year Treasury Index | 1.2 | 2.0 | 1.8 | 1.3 | 1.5 | 2.0 | 2.2 | 2.3 | 2.1 | 1.6 | 1.1 | -0.5 |
| US Interm-Term Bonds | Bloomberg U.S. Agg Bond Index | 3.5 | 4.1 | 4.1 | 3.9 | 3.0 | 3.9 | 4.4 | 5.0 | 4.9 | 3.3 | 2.0 | -1.0 |
| Developed Ex-US Bonds | S&P International Sov Ex-US Bond Inde | 1.4 | 4.2 | 2.4 | 2.4 | 1.6 | 0.1 | 0.3 | 1.8 | 2.2 | 0.7 | 1.7 | -5.8 |
| Gold | LBMA Gold Price PM | 4.1 | 9.4 | 6.5 | 5.2 | 6.6 | 7.3 | 8.5 | 12.8 | 12.4 | 9.8 | 5.9 | -7.6 |

Source: Bloomberg. Returns for periods longer than 1 year are annualized

# U.S. large cap stocks-to-gold ratio for over 100 years

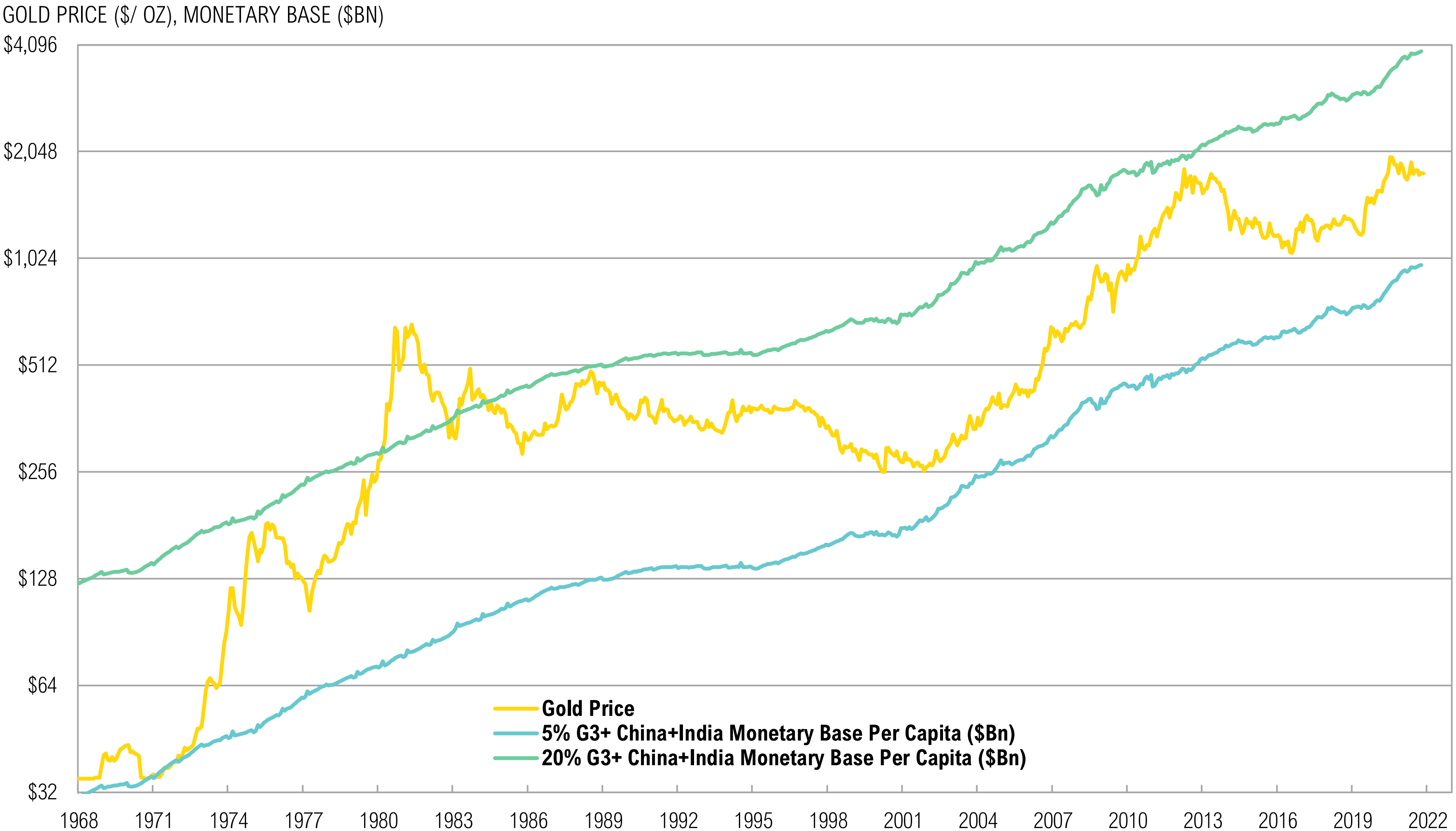

Source: Bloomberg

# Priced in gold, stocks are yet to regain Tech Bubble highs



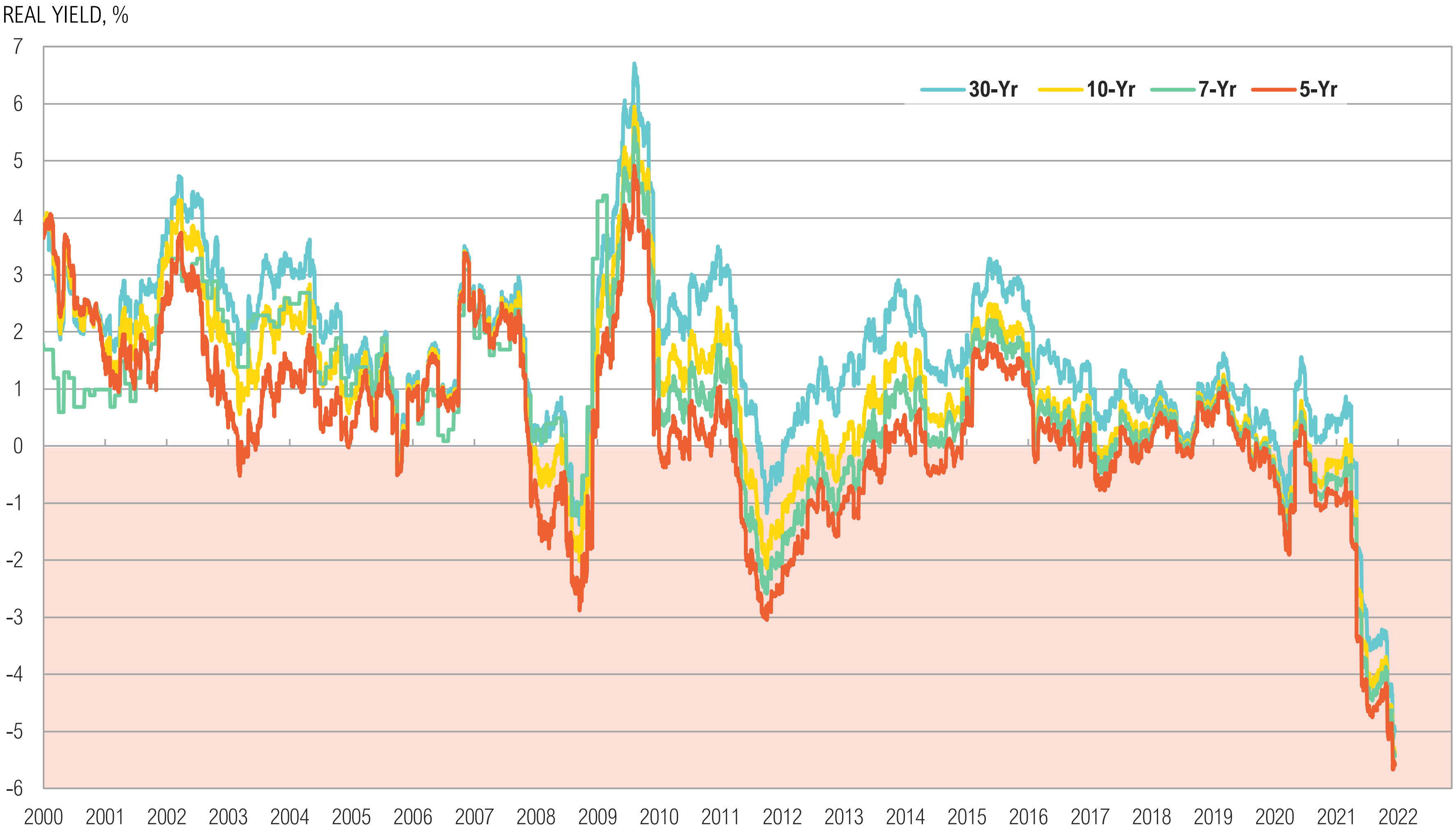

Source: Bloomberg

# Assuming the price of gold tracks global monetary base per capita over the long term implies expected returns over 6%



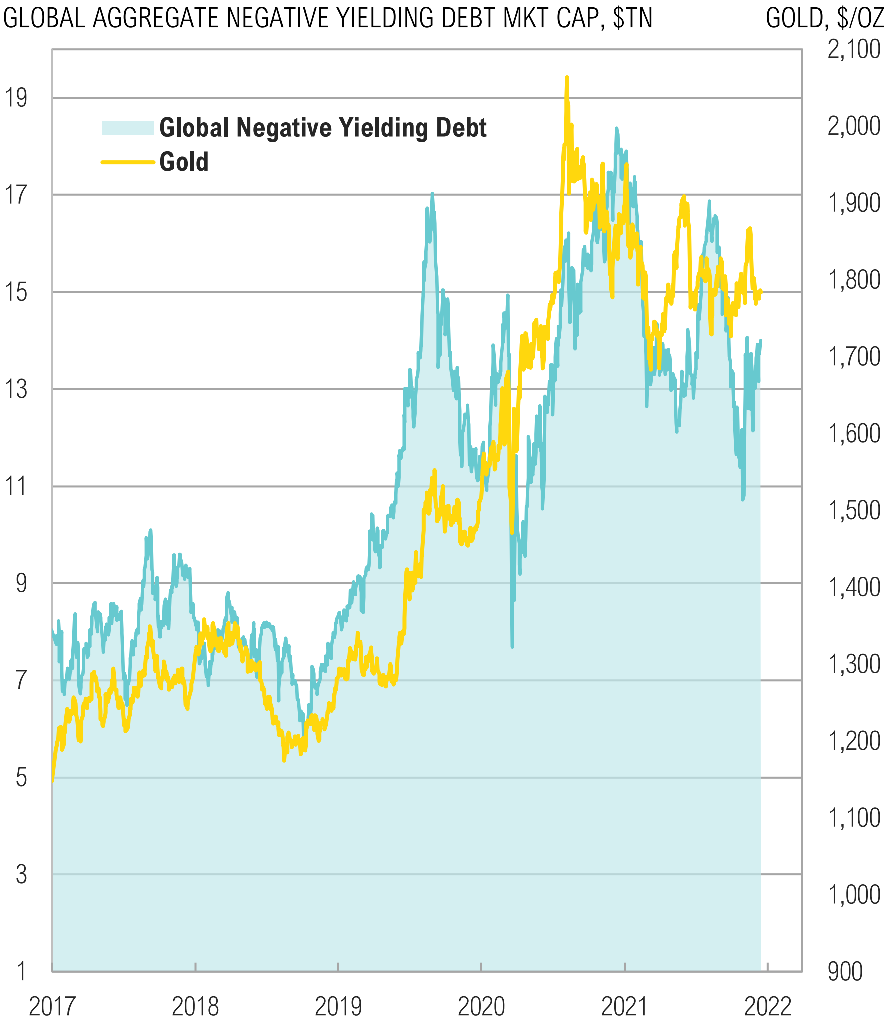

Source: Bloomberg. Monetary base data as of most recent available.
India M2 Money Supply data has been proxied using SpringTide estimates.

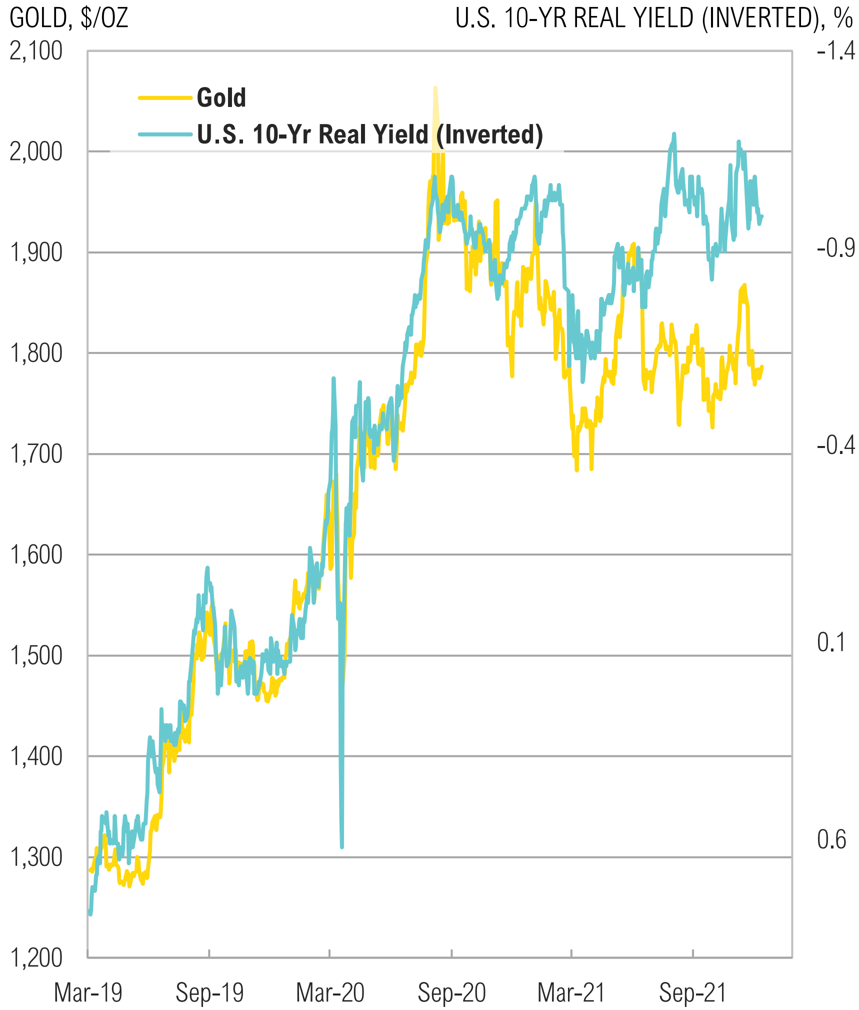
# Real yields, which historically have had a strong inverse correlation with the price of gold, are at the lowest level of the last 40 years…




Source: Bloomberg

# …but the relationship between real yields and gold appears to be breaking down, potentially as investors move to perceived digital safe-havens




Source: Bloomberg
U.S. 10-year Real Yield is represented by the U.S. Treasury Real Constant Maturity Treasury (R-CMTs) rate.

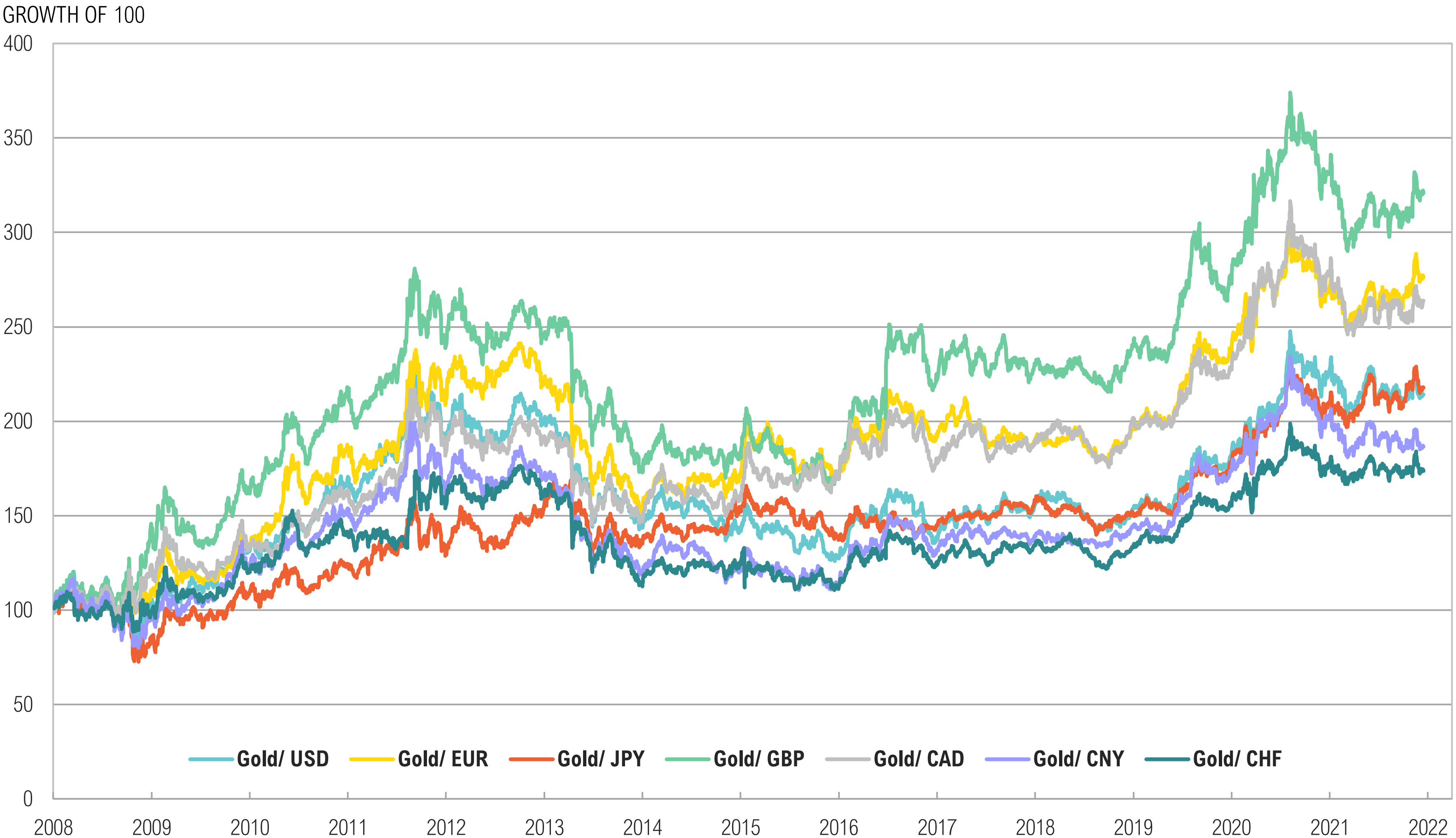
# Despite the year-to-year volatility, longer-term returns have been surprisingly consistent across multiple currencies

**Calendar Year Returns**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | YTD | 20-Yr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Average** | 1.6 | 14.3 | 35.3 | 10.2 | -0.2 | 23.2 | 18.4 | 21.9 | 20.6 | 18.4 | 26.9 | 16.8 | 6.0 | -23.1 | 10.7 | 2.2 | 11.2 | 8.7 | 10.2 | 21.2 | 28.9 | 2.3 | 12.1 |
| **Developed Markets** | -0.8 | 7.4 | 15.4 | 9.3 | 0.1 | 27.1 | 17.1 | 22.3 | 12.7 | 18.9 | 26.3 | 11.6 | 6.1 | -26.3 | 7.7 | -4.6 | 10.0 | 7.5 | 1.7 | 16.3 | 20.0 | -2.8 | 9.0 |
| U.S. Dollar | -5.8 | 2.4 | 24.8 | 19.4 | 5.4 | 17.9 | 23.2 | 30.9 | 5.8 | 24.5 | 29.5 | 10.1 | 7.1 | -28.3 | -1.8 | -10.2 | 8.1 | 13.5 | -1.6 | 18.3 | 25.1 | -5.9 | 9.8 |
| Euro | 2.4 | 8.4 | 5.8 | -0.6 | -2.4 | 35.0 | 10.4 | 18.5 | 10.5 | 22.3 | 38.6 | 13.7 | 5.2 | -30.8 | 11.4 | 0.1 | 11.8 | -0.7 | 3.1 | 21.0 | 14.9 | 1.9 | 8.5 |
| Canadian Dollar | -2.4 | 8.9 | 23.2 | -1.8 | -2.3 | 14.1 | 23.4 | 12.2 | 24.0 | 7.7 | 22.8 | 12.7 | 4.0 | -23.3 | 6.3 | 7.0 | 4.9 | 6.6 | 7.0 | 12.7 | 22.6 | -5.3 | 8.7 |
| Hong Kong Dollar | -5.5 | 2.3 | 24.8 | 18.8 | 5.6 | 17.8 | 23.4 | 31.3 | 5.1 | 24.5 | 29.8 | 10.0 | 6.8 | -28.1 | -1.8 | -10.3 | 8.2 | 14.8 | -1.7 | 17.7 | 24.5 | -5.3 | 9.8 |
| Israeli Shekhel | -7.5 | 11.4 | 34.5 | 10.5 | 3.9 | 25.6 | 12.7 | 19.7 | 3.7 | 24.9 | 21.0 | 19.1 | 4.9 | -32.6 | 10.5 | -10.4 | 7.4 | 2.2 | 5.8 | 9.7 | 16.3 | -8.8 | 8.1 |
| Japanese Yen | 6.2 | 17.9 | 12.6 | 7.7 | 0.7 | 35.4 | 24.3 | 22.9 | -14.0 | 27.7 | 12.9 | 4.3 | 20.8 | -12.9 | 10.7 | -9.9 | 5.0 | 9.8 | -4.2 | 17.1 | 18.8 | 3.5 | 9.2 |
| Norwegian Krone | 5.1 | 4.4 | -3.6 | 14.7 | -4.3 | 30.9 | 13.7 | 14.2 | 35.3 | 4.1 | 30.7 | 13.1 | -0.3 | -21.6 | 20.6 | 6.6 | 5.6 | 8.2 | 3.7 | 20.1 | 22.2 | -0.8 | 9.9 |
| Swiss Franc | -3.1 | 5.5 | 3.8 | 6.9 | -3.4 | 36.0 | 14.2 | 21.8 | -0.2 | 21.3 | 16.9 | 10.5 | 4.4 | -29.9 | 8.5 | -9.5 | 10.0 | 8.6 | -0.8 | 16.6 | 14.5 | -1.8 | 6.7 |
| British Pound | 3.2 | 5.3 | 12.6 | 7.6 | -2.0 | 31.4 | 8.2 | 29.3 | 44.0 | 12.9 | 33.9 | 10.6 | 2.4 | -29.5 | 4.5 | -5.1 | 29.2 | 4.1 | 4.2 | 13.7 | 21.3 | -2.7 | 10.3 |
| **Emerging Markets** | 4.1 | 21.3 | 55.2 | 11.1 | -0.6 | 19.3 | 19.7 | 21.5 | 28.4 | 17.9 | 27.5 | 22.0 | 5.9 | -19.9 | 13.8 | 9.0 | 12.3 | 10.0 | 18.7 | 26.1 | 37.7 | 7.3 | 15.2 |
| Brazilian Real | 1.0 | 21.1 | 91.2 | -2.5 | -3.2 | 3.7 | 12.6 | 9.6 | 37.6 | -6.9 | 23.2 | 23.7 | 17.9 | -17.1 | 10.1 | 34.4 | -10.8 | 15.1 | 15.4 | 23.1 | 61.6 | 2.9 | 14.7 |
| Argentine Peso | -5.9 | 2.3 | 319.2 | 4.1 | 6.7 | 20.2 | 24.4 | 35.4 | 16.0 | 36.9 | 35.5 | 19.4 | 22.1 | -4.5 | 27.6 | 36.9 | 33.2 | 32.7 | 99.3 | 89.3 | 76.5 | 13.8 | 38.4 |
| Chinese Renminmi | -5.8 | 2.3 | 24.8 | 19.4 | 5.4 | 15.0 | 19.1 | 22.3 | -1.1 | 24.5 | 25.0 | 5.3 | 5.9 | -29.6 | 0.7 | -6.1 | 16.6 | 5.5 | 3.9 | 20.4 | 17.2 | -8.1 | 8.4 |
| Hungarian Forint | 6.2 | -0.4 | 1.8 | 10.7 | -8.9 | 39.0 | 9.8 | 19.2 | 15.8 | 24.1 | 43.3 | 28.6 | -2.9 | -29.0 | 19.4 | -0.2 | 10.1 | -0.5 | 6.9 | 25.1 | 25.8 | 3.3 | 10.7 |
| Turkish Lira | 16.3 | 121.5 | 42.4 | 1.4 | 0.7 | 18.6 | 29.1 | 8.5 | 39.3 | 21.2 | 33.9 | 34.5 | 1.3 | -12.8 | 6.9 | 12.5 | 30.9 | 22.0 | 37.4 | 33.6 | 56.6 | 74.8 | 23.1 |
| Indian Rupee | 1.0 | 5.8 | 24.0 | 13.5 | 0.5 | 22.3 | 21.0 | 17.3 | 30.6 | 18.7 | 24.1 | 30.9 | 10.4 | -18.0 | 0.7 | -6.0 | 11.4 | 6.2 | 7.2 | 21.4 | 28.0 | -2.2 | 12.4 |
| Korean Won | 5.7 | 6.5 | 12.6 | 20.0 | -8.4 | 15.1 | 13.4 | 32.4 | 42.4 | 14.6 | 25.4 | 13.8 | -1.9 | -27.4 | 2.2 | -3.4 | 11.5 | -0.1 | 2.9 | 23.4 | 18.0 | 2.0 | 9.4 |
| Mexican Peso | -4.6 | -2.8 | 41.4 | 29.2 | 4.8 | 12.5 | 25.1 | 32.3 | 32.5 | 18.8 | 22.2 | 24.4 | -1.4 | -26.7 | 11.6 | 4.8 | 30.4 | 7.3 | -1.8 | 14.5 | 31.7 | -0.6 | 14.5 |
| South African Rand | 16.4 | 61.4 | -10.8 | -6.9 | -10.7 | 32.0 | 36.0 | 26.5 | 47.0 | -3.2 | 16.2 | 34.3 | 12.0 | -10.2 | 8.5 | 20.4 | -3.7 | 2.0 | 14.2 | 15.5 | 31.3 | 2.5 | 11.7 |
| Russian Ruble | -3.0 | 10.9 | 30.7 | 9.2 | -0.1 | 22.3 | 12.8 | 22.9 | 31.1 | 27.4 | 31.5 | 16.2 | 1.7 | -22.5 | 65.1 | 11.7 | -8.9 | 6.1 | 17.7 | 5.6 | 49.6 | -6.5 | 14.8 |
| Philippines Peso | 17.8 | 5.6 | 29.5 | 24.4 | 6.8 | 11.3 | 13.7 | 10.1 | 21.6 | 21.1 | 22.4 | 10.8 | 0.2 | -21.0 | -0.6 | -5.9 | 15.0 | 13.8 | 3.1 | 15.5 | 18.6 | -1.3 | 9.6 |

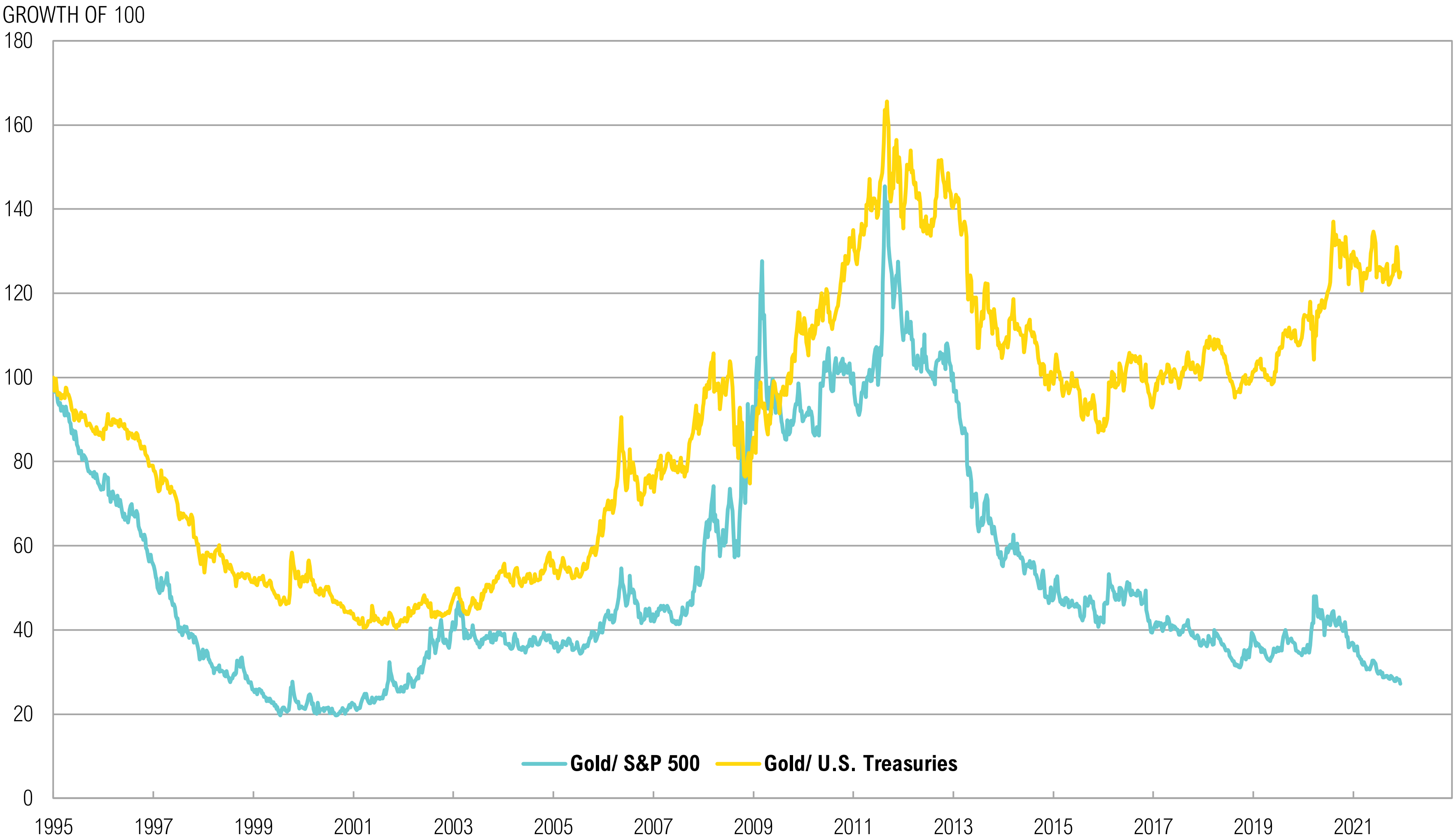
Source: Bloomberg
Returns for periods longer than 1 year are annualized.

# The longer-term bull market appears intact despite drawdown across several major currencies



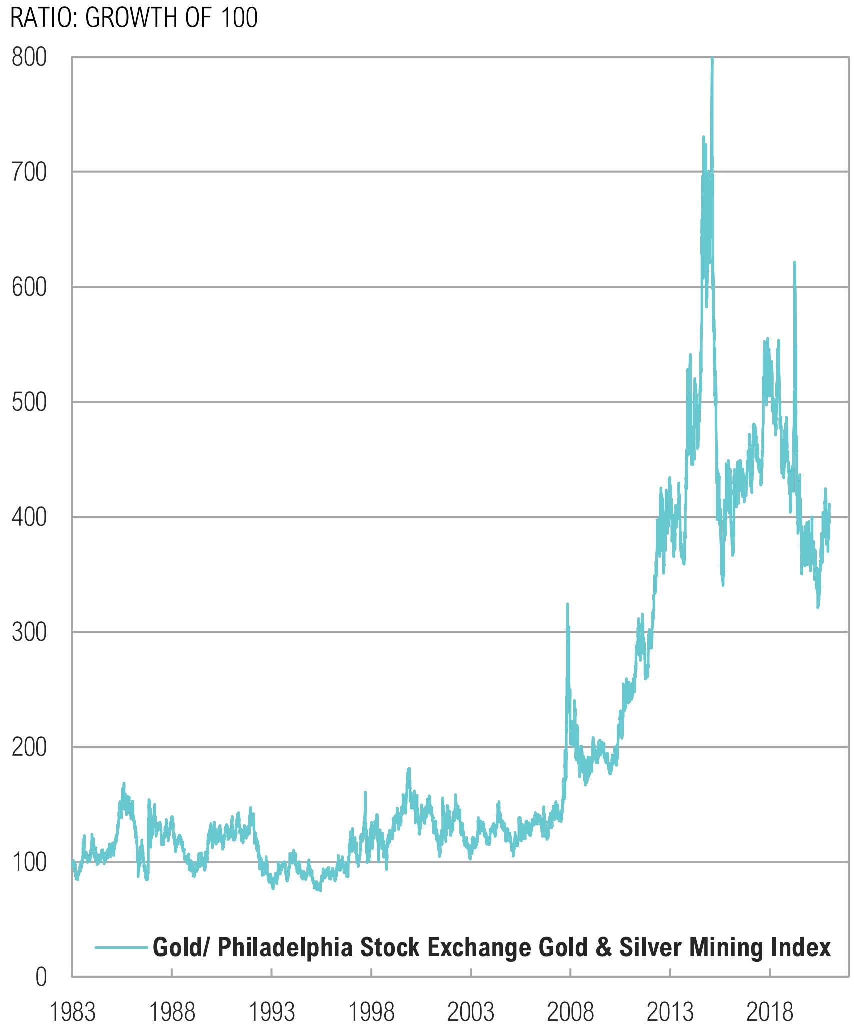

Source: Bloomberg

# Gold looks cheap relative to U.S. stocks and doesn't look overbought relative to Treasuries



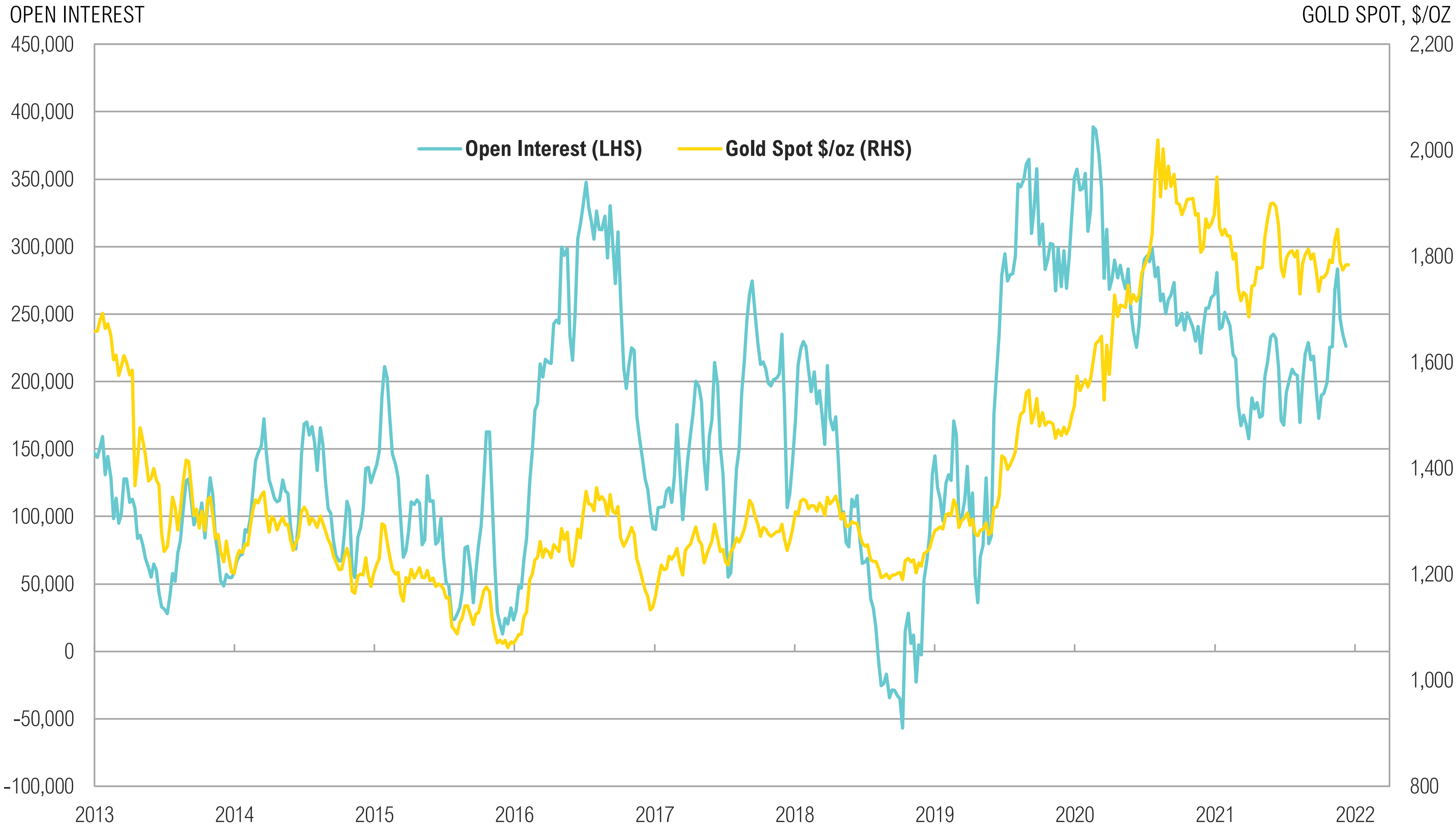

Source: Bloomberg

# Gold miners still look very cheap relative to bullion

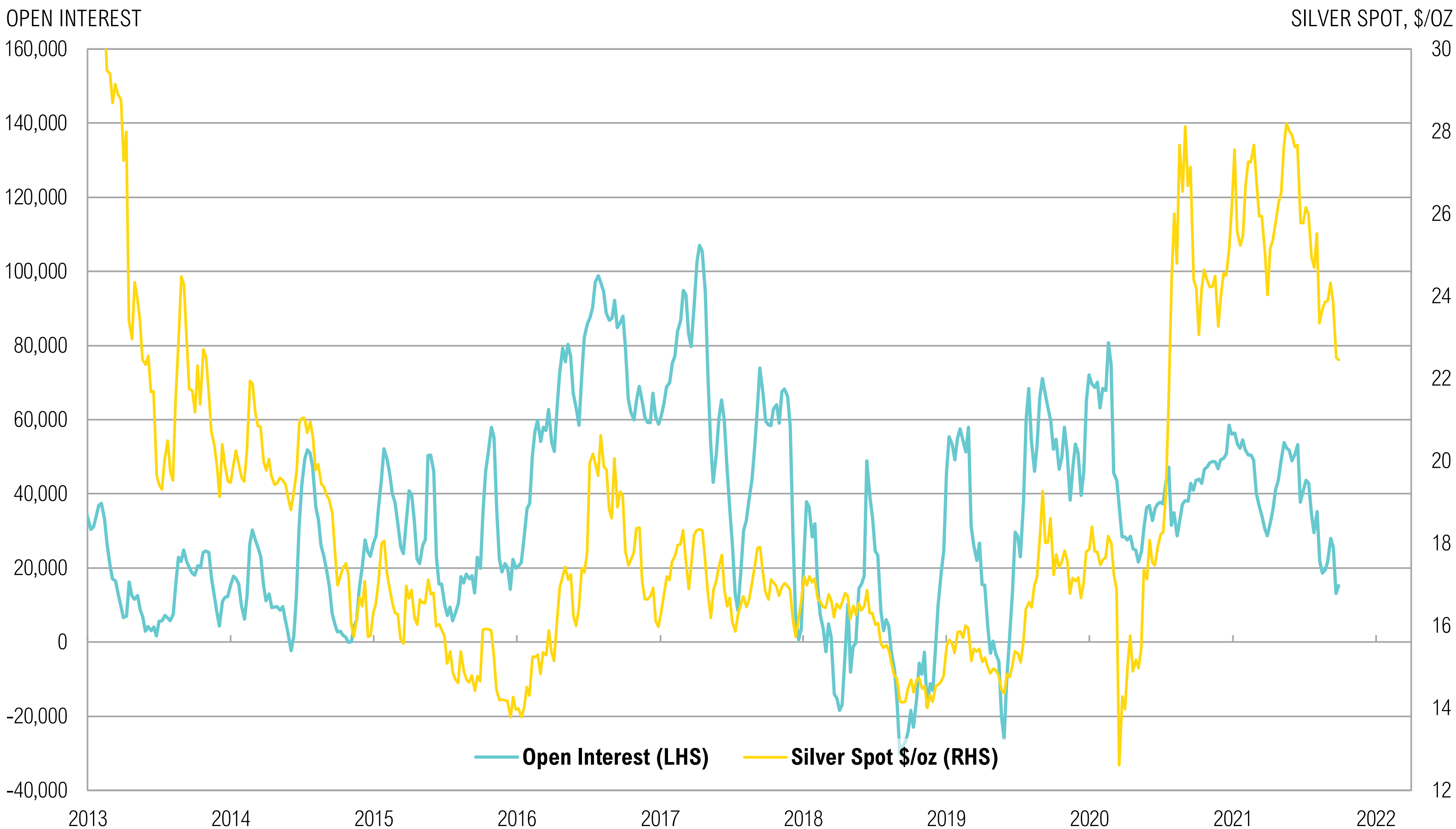

Source: Bloomberg

# Gold futures sentiment not overly bullish as gold price consolidates




Source: Bloomberg
*Data as of most recent available.

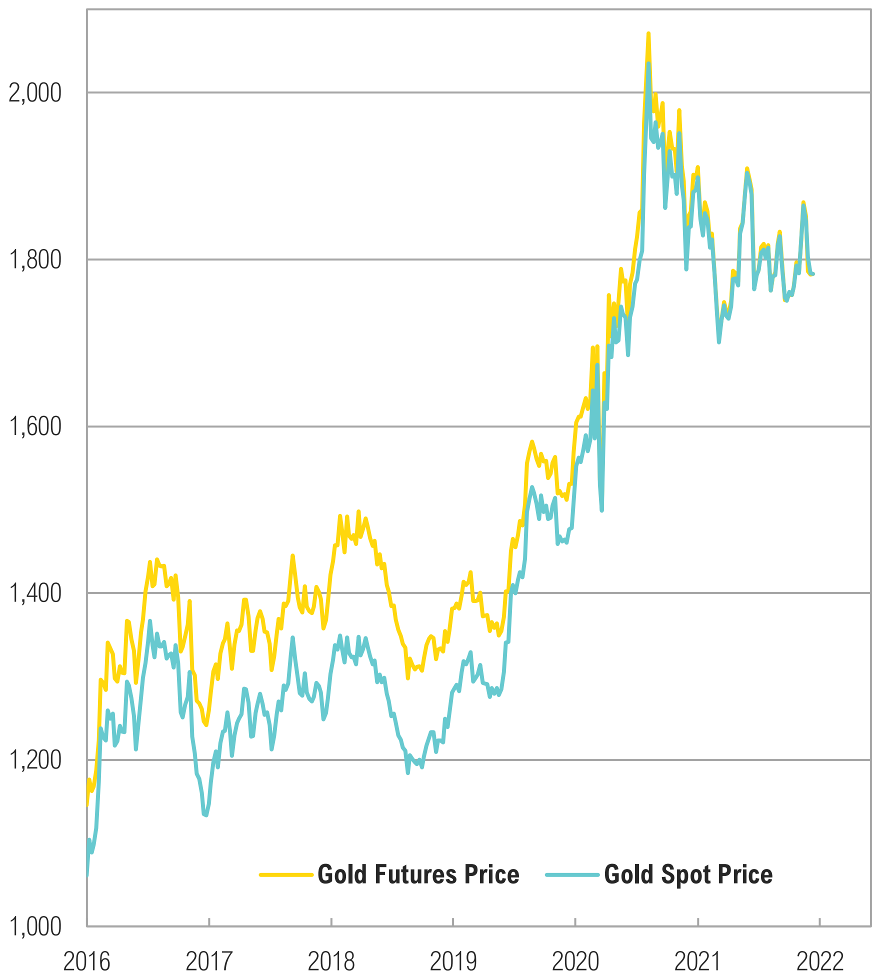
# Silver sentiment trending lower as price drops below support



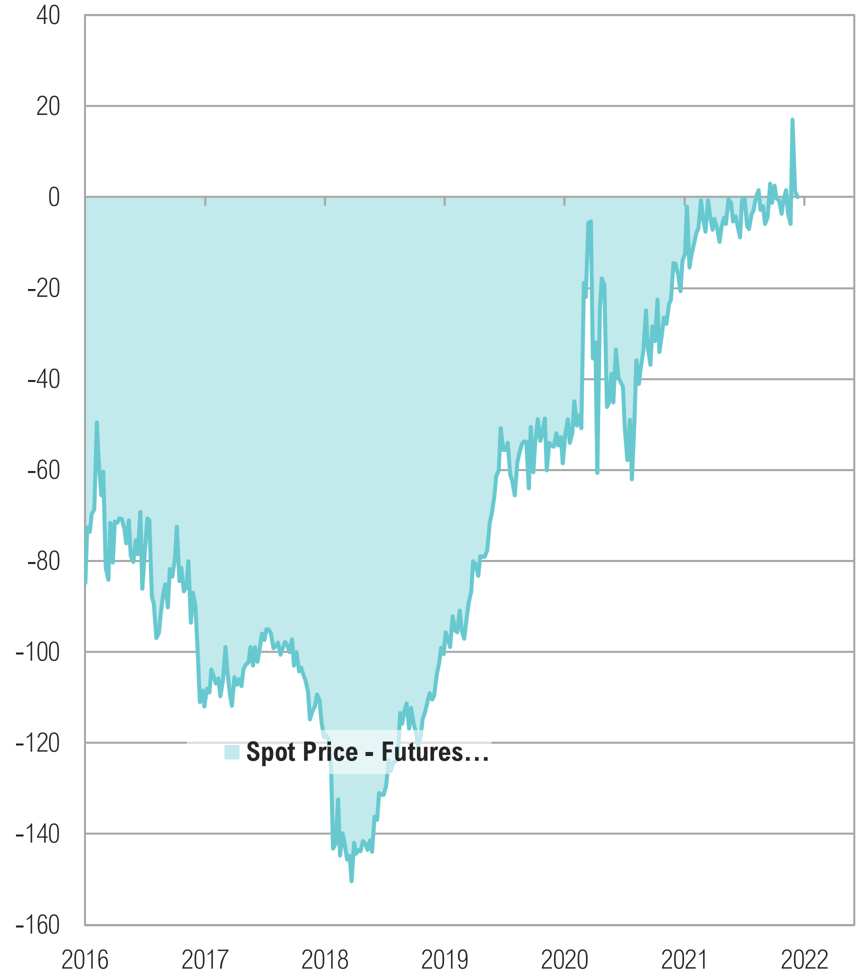

Source: Bloomberg
*Data as of most recent available.

# High demand for physical hints at increased perceived systemic risk

GOLD, $/OZ

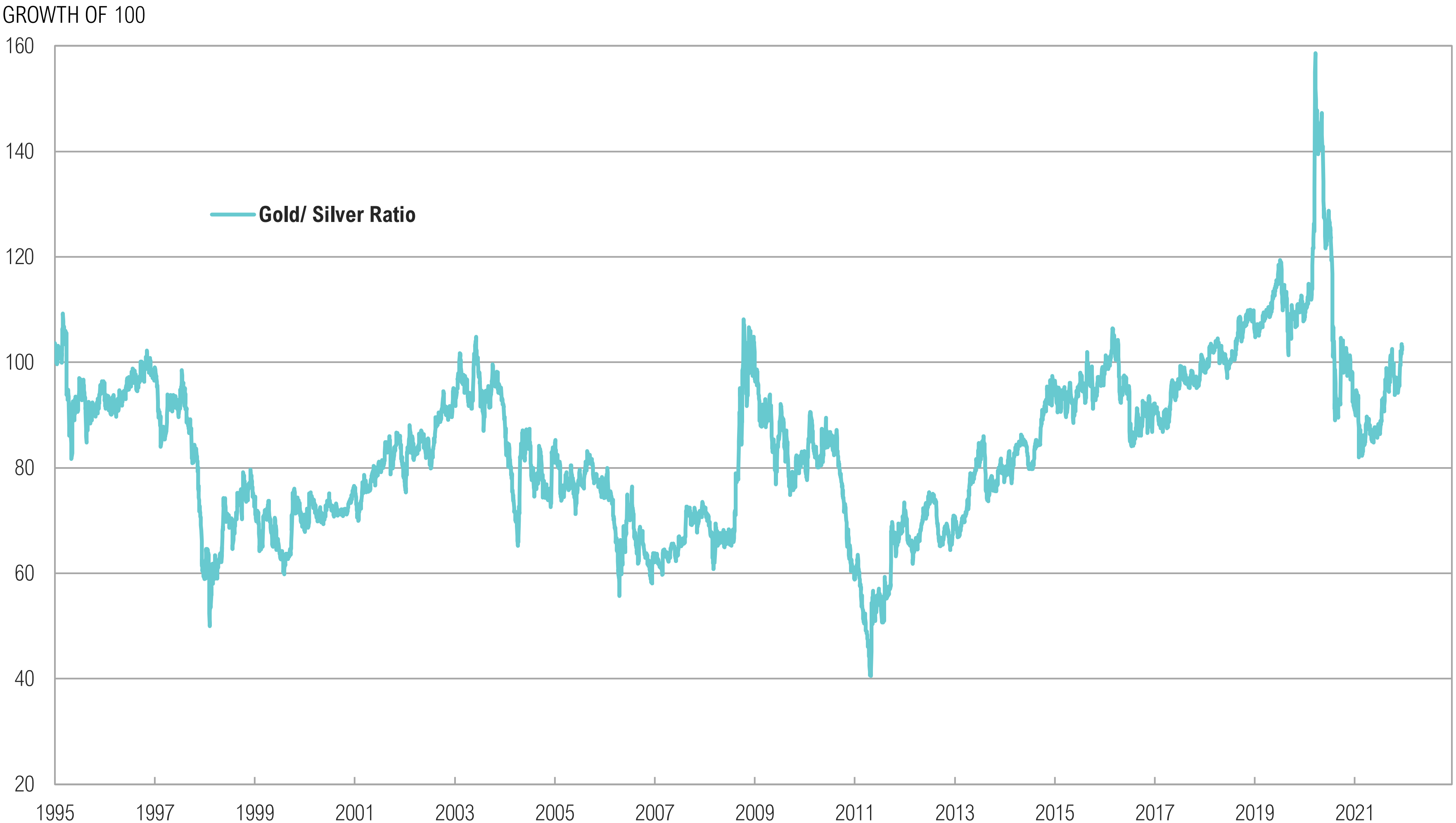



SPREAD: SPOT - FUTURES



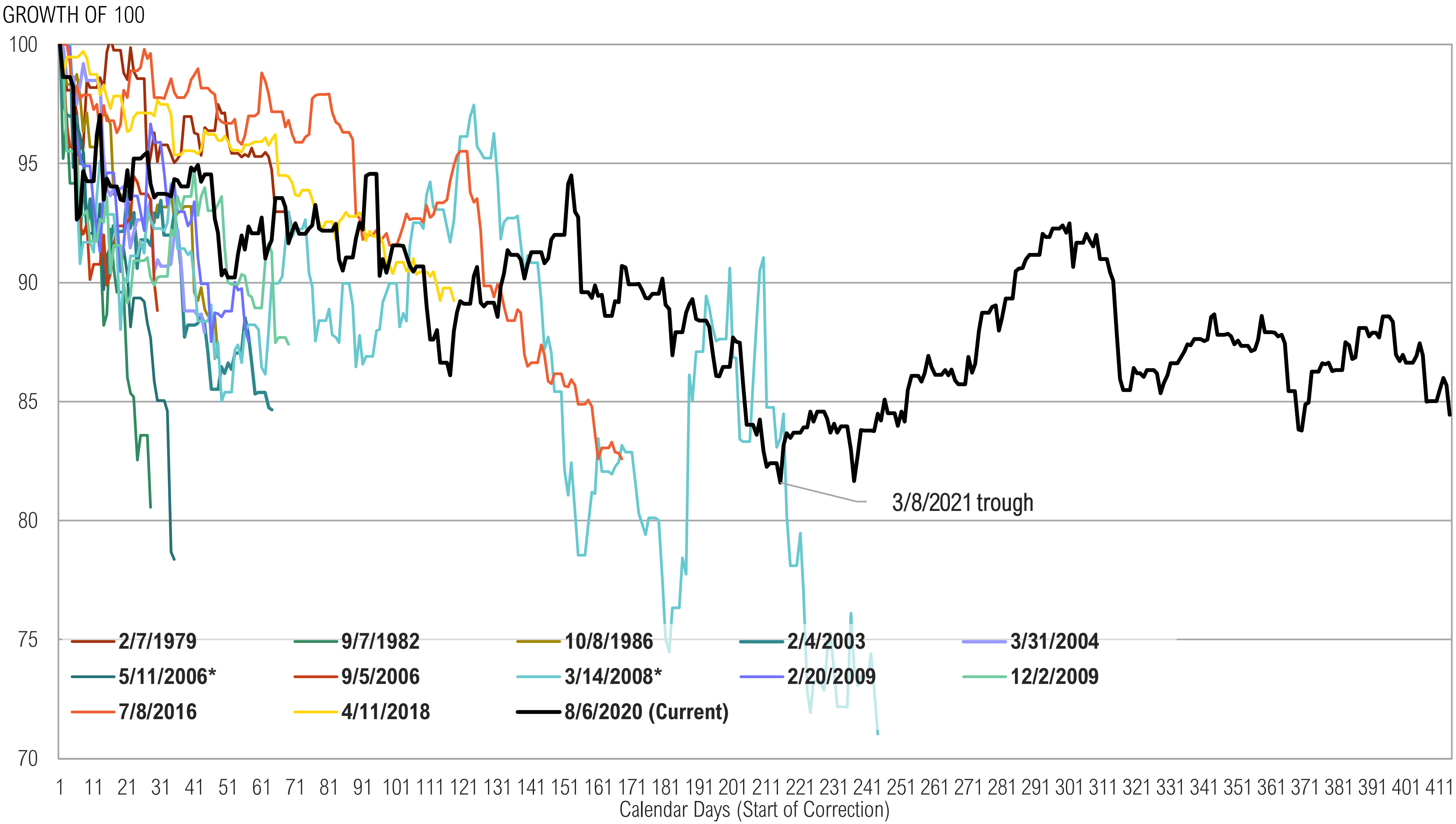

Source: Bloomberg

# Possible local low in gold relative to silver



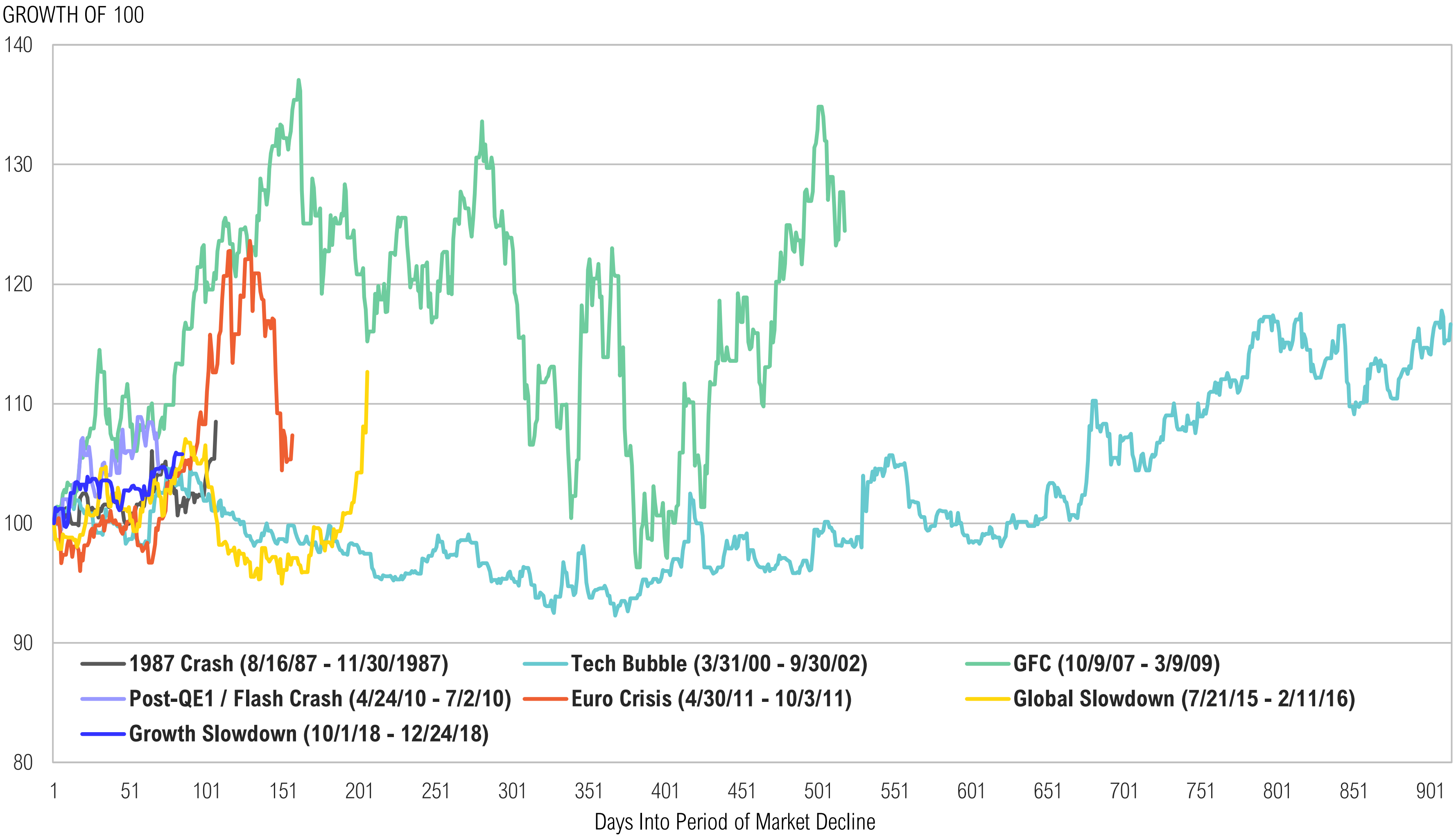

Source: Bloomberg

# Assuming 3/8/2021 was the low, this last correction was run-of-the-mill relative to historical bull market declines



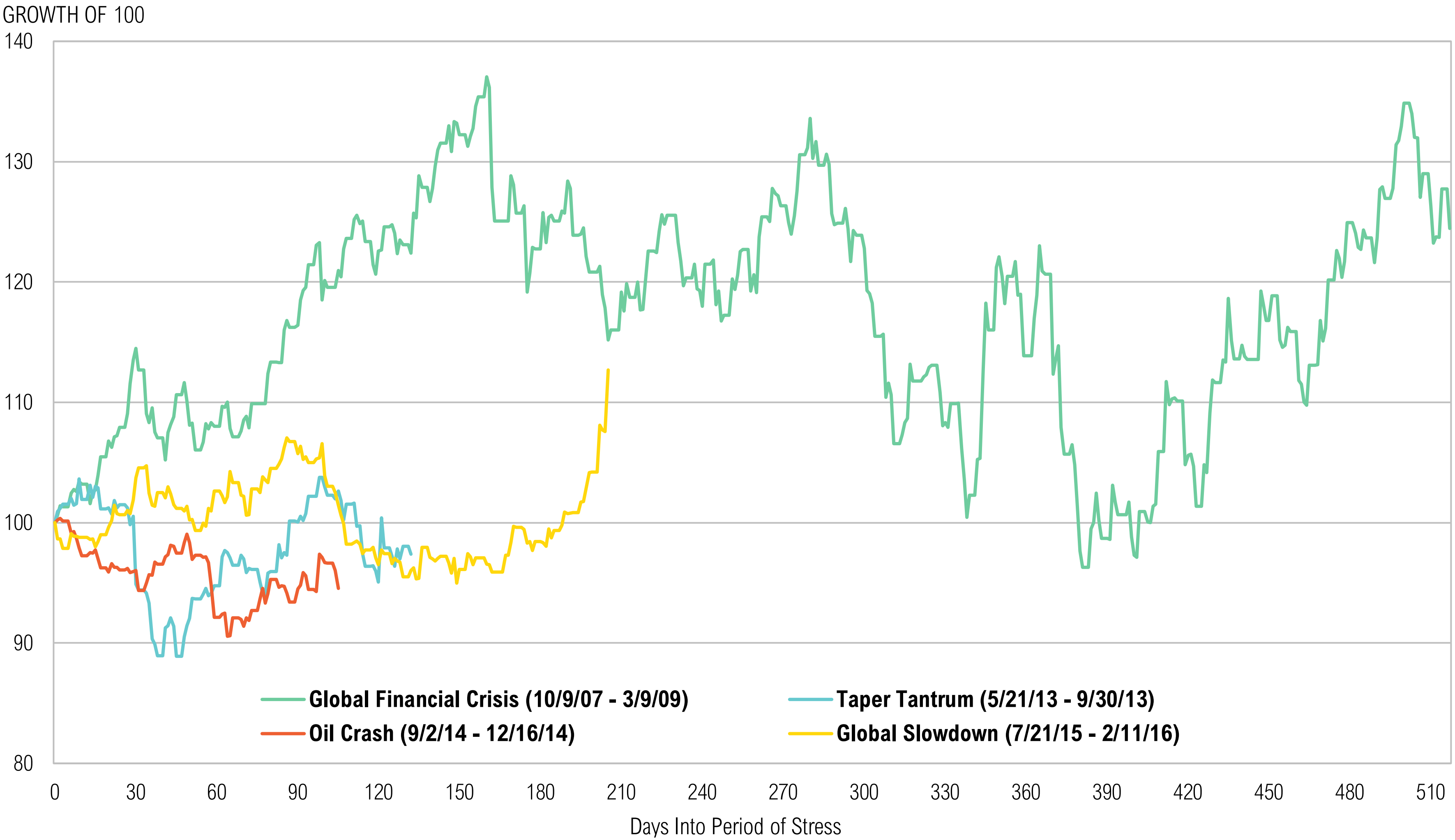

Source: Bloomberg
*Technical bear market in context of a larger bull market.

# Gold has had mixed, but generally positive returns during stock market declines



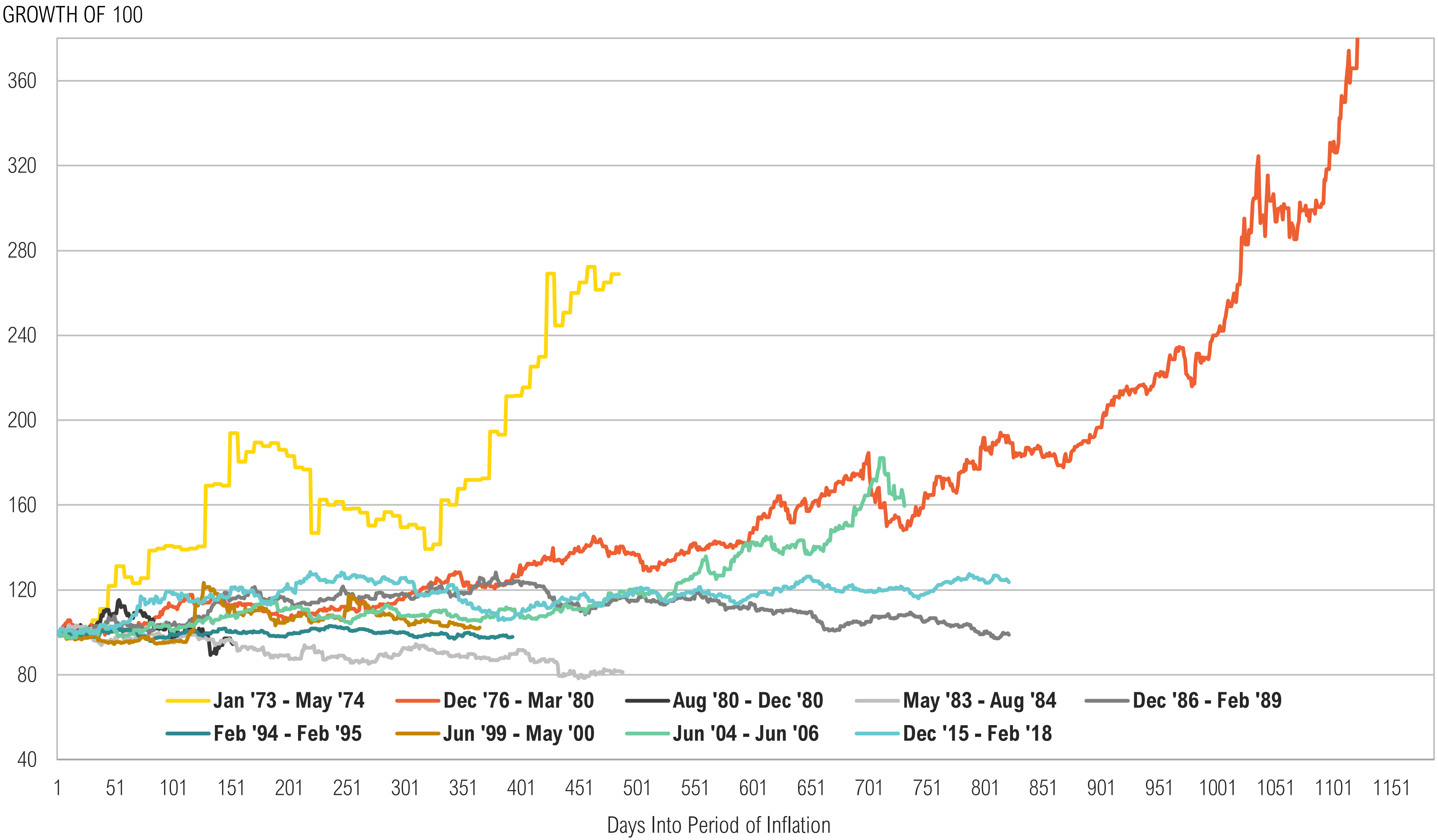

Source: Bloomberg

# Gold has mixed historical returns during significant market events



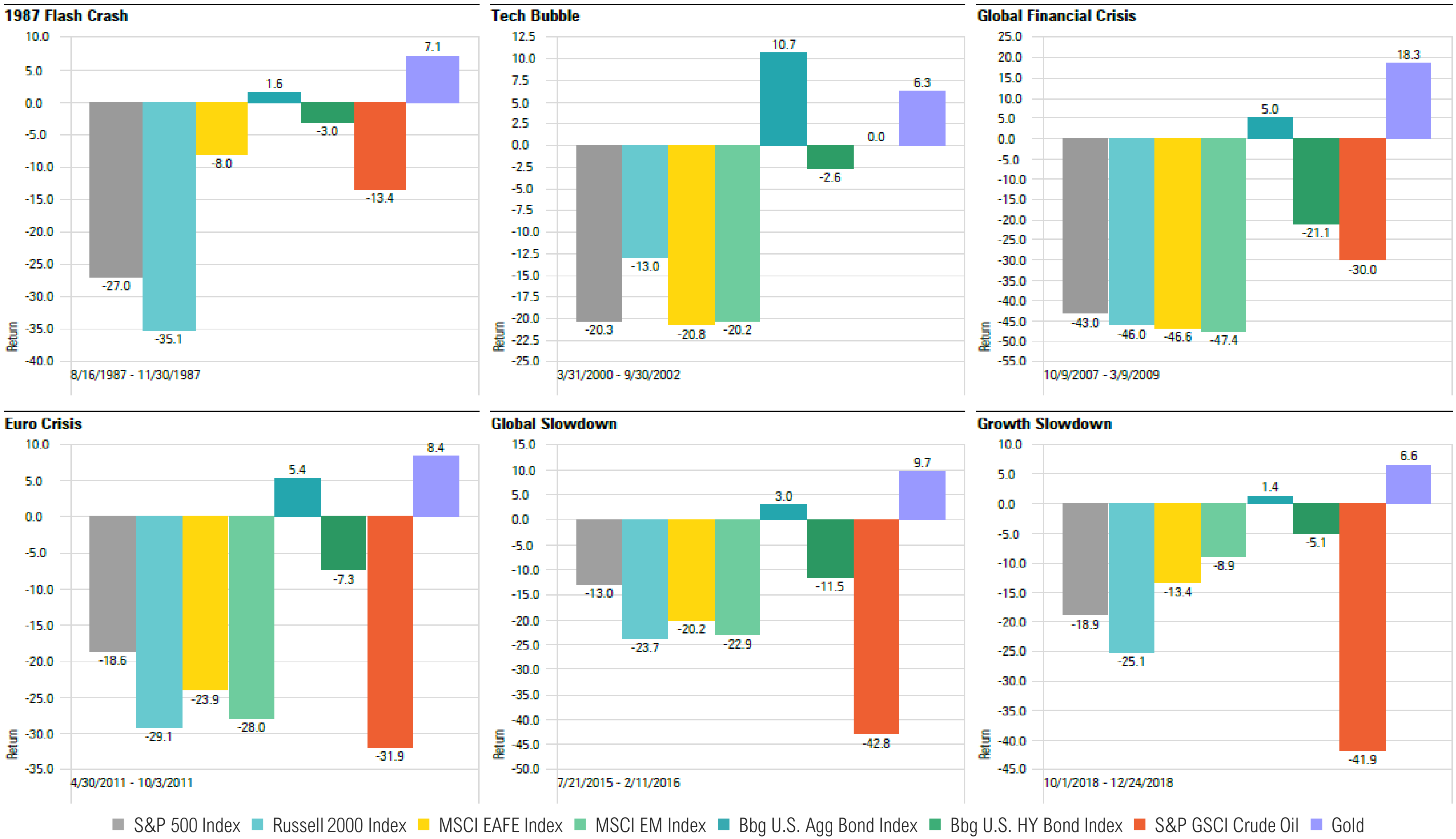

Source: Bloomberg

# Gold has a decent track record as an inflation hedge, but it is by no means a portfolio panacea during these episodes




Source: Bloomberg

# Case study 1: gold returns during stock market declines

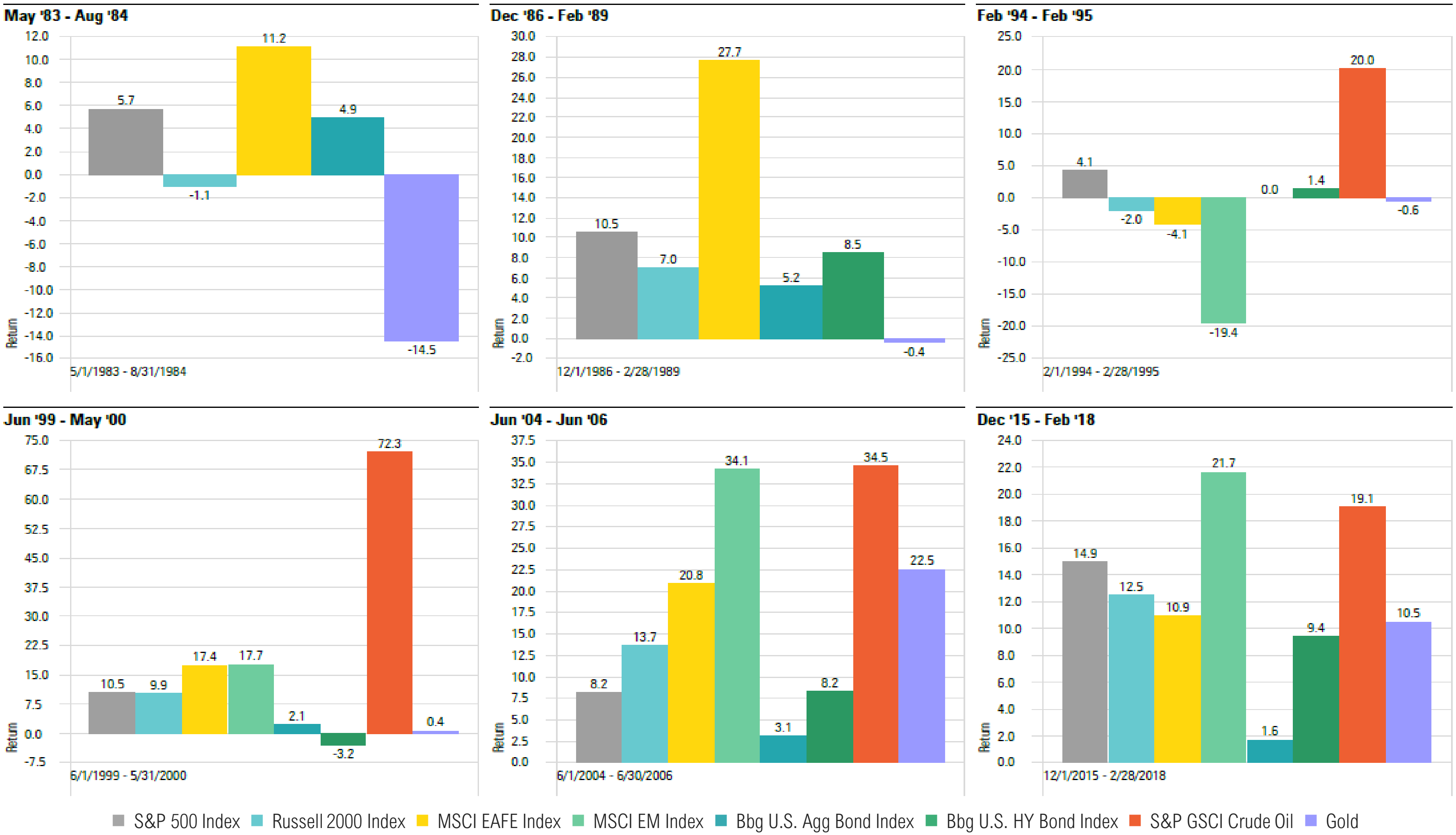



Source: Morningstar

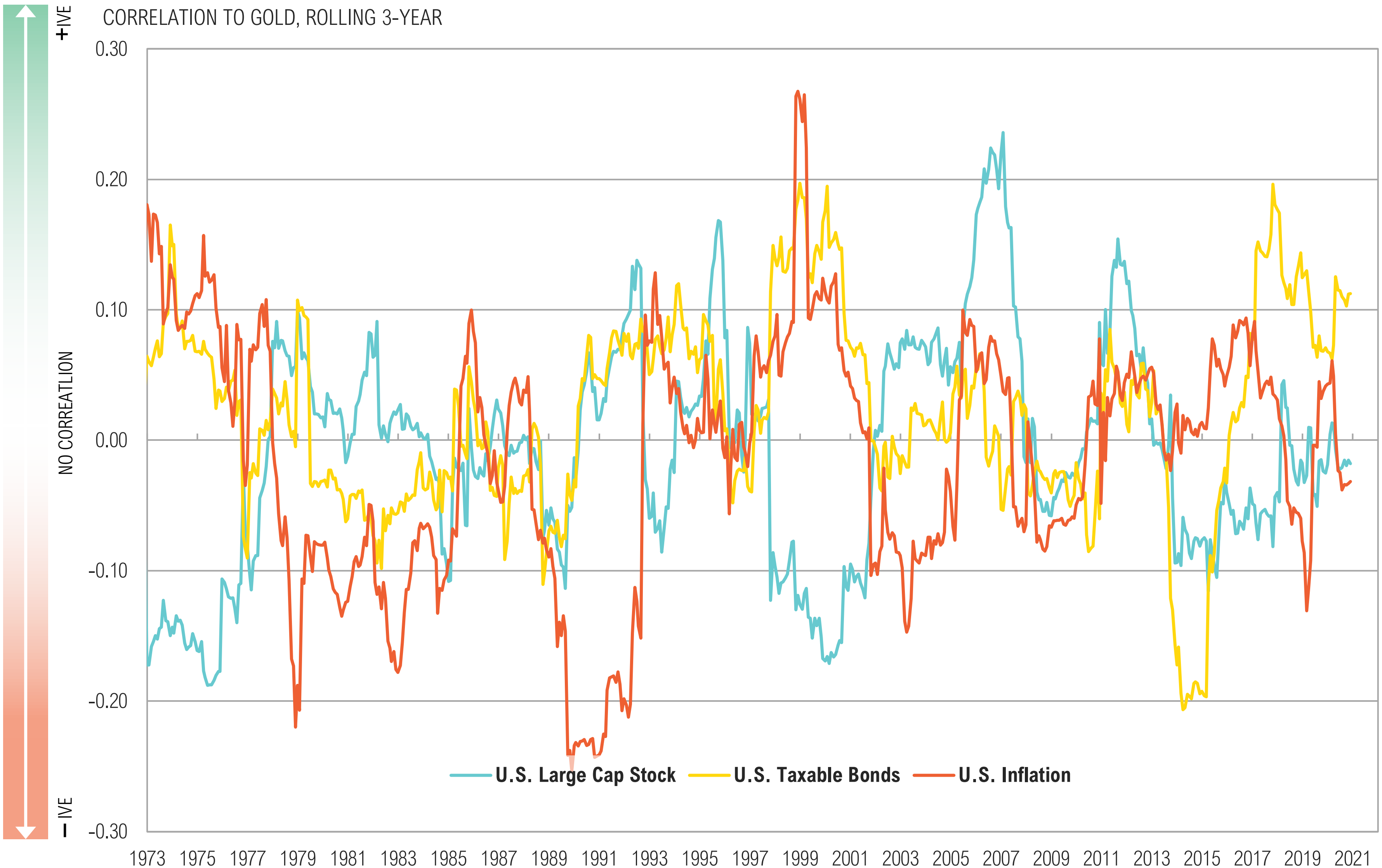
# Case study 2: gold returns during significant market events


Source: Morningstar

# Case study 3: gold returns during periods of rising inflation




Source: Morningstar




Source: Morningstar

| Asset Class | U.S. Large Cap Stocks | U.S. Small & Micro Cap | Intl Dev Large Cap Stocks | Intl Dev Small & Micro Stocks | Emerging & Frontier Mkt Stocks | Global Stocks | Private Equity | Venture Capital | U.S. Interm-Term Muni Bonds | U.S. Short-Term Muni Bonds | U.S. High Yield Muni Bonds | U.S. Interm-Term Bonds | U.S. Short-Term Bonds | U.S. High Yield Bonds | U.S. Bank Loans | Intl Developed Bonds | Emerging & Frontier Mkt Bonds | Public BDCs | U.S. REITs | Ex U.S. Real Estate Securities | Private Real Estate | Commodity Futures | Midstream Energy | Gold | Long/Short Equity | Managed Futures | Relative Value | Closed-End Funds | Insurance-Linked Securities | Digital Assets | Cash/Ultra-Short Bonds | U.S. Inflation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S. Large Cap Stocks | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U.S. Small & Micro Cap | 0.87 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Intl Dev Large Cap Stocks | 0.85 | 0.76 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Intl Dev Small & Micro Stocks | 0.85 | 0.79 | 0.95 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Emerging & Frontier Mkt Stocks | 0.71 | 0.66 | 0.81 | 0.80 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Global Stocks | 0.96 | 0.85 | 0.95 | 0.93 | 0.84 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Private Equity | 0.25 | 0.22 | 0.23 | 0.25 | 0.37 | 0.28 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Venture Capital | 0.15 | 0.18 | 0.12 | 0.14 | 0.29 | 0.18 | 0.85 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| U.S. Interm-Term Muni Bonds | 0.06 | -0.01 | 0.14 | 0.17 | 0.18 | 0.12 | 0.02 | 0.04 | 1.00 | | | | | | | | | | | | | | | | | | | | | | | |
| U.S. Short-Term Muni Bonds | 0.13 | 0.04 | 0.16 | 0.20 | 0.18 | 0.17 | 0.04 | 0.03 | 0.82 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| U.S. High Yield Muni Bonds | 0.19 | 0.17 | 0.25 | 0.28 | 0.30 | 0.25 | 0.00 | 0.01 | 0.78 | 0.56 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| U.S. Interm-Term Bonds | -0.01 | -0.11 | 0.02 | 0.02 | 0.13 | 0.03 | 0.02 | 0.02 | 0.73 | 0.51 | 0.54 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| U.S. Short-Term Bonds | -0.37 | -0.43 | -0.31 | -0.37 | -0.19 | -0.34 | -0.11 | -0.06 | 0.34 | 0.29 | 0.05 | 0.65 | 1.00 | | | | | | | | | | | | | | | | | | | |
| U.S. High Yield Bonds | 0.76 | 0.73 | 0.77 | 0.77 | 0.75 | 0.81 | 0.32 | 0.23 | 0.36 | 0.36 | 0.48 | 0.25 | -0.28 | 1.00 | | | | | | | | | | | | | | | | | | |
| U.S. Bank Loans | 0.65 | 0.68 | 0.62 | 0.69 | 0.59 | 0.68 | 0.24 | 0.17 | 0.24 | 0.34 | 0.48 | 0.08 | -0.44 | 0.87 | 1.00 | | | | | | | | | | | | | | | | | |
| Intl Developed Bonds | 0.29 | 0.19 | 0.44 | 0.45 | 0.57 | 0.42 | 0.20 | 0.17 | 0.43 | 0.37 | 0.36 | 0.54 | 0.25 | 0.46 | 0.29 | 1.00 | | | | | | | | | | | | | | | | |
| Emerging & Frontier Mkt Bonds | 0.57 | 0.48 | 0.66 | 0.64 | 0.69 | 0.66 | 0.17 | 0.13 | 0.60 | 0.52 | 0.67 | 0.49 | -0.08 | 0.82 | 0.71 | 0.61 | 1.00 | | | | | | | | | | | | | | | |
| Public BDCs | 0.76 | 0.83 | 0.71 | 0.74 | 0.58 | 0.76 | 0.22 | 0.13 | 0.18 | 0.25 | 0.35 | 0.06 | -0.40 | 0.80 | 0.83 | 0.26 | 0.64 | 1.00 | | | | | | | | | | | | | | |
| U.S. REITs | 0.66 | 0.63 | 0.58 | 0.58 | 0.51 | 0.65 | 0.19 | 0.17 | 0.33 | 0.22 | 0.48 | 0.39 | -0.09 | 0.66 | 0.58 | 0.38 | 0.63 | 0.66 | 1.00 | | | | | | | | | | | | | |
| Ex U.S. Real Estate Securities | 0.72 | 0.64 | 0.87 | 0.85 | 0.85 | 0.84 | 0.21 | 0.13 | 0.26 | 0.25 | 0.40 | 0.22 | -0.16 | 0.78 | 0.63 | 0.61 | 0.77 | 0.70 | 0.73 | 1.00 | | | | | | | | | | | | |
| Private Real Estate | 0.05 | 0.03 | 0.13 | 0.11 | 0.22 | 0.11 | 0.71 | 0.74 | 0.05 | 0.00 | 0.00 | 0.00 | -0.07 | 0.17 | 0.08 | 0.18 | 0.12 | 0.01 | 0.10 | 0.17 | 1.00 | | | | | | | | | | | |
| Commodity Futures | 0.49 | 0.48 | 0.54 | 0.54 | 0.58 | 0.56 | 0.32 | 0.21 | 0.08 | 0.11 | 0.20 | -0.09 | -0.24 | 0.61 | 0.54 | 0.38 | 0.46 | 0.48 | 0.31 | 0.59 | 0.20 | 1.00 | | | | | | | | | | |
| Midstream Energy | 0.70 | 0.68 | 0.63 | 0.64 | 0.56 | 0.70 | 0.34 | 0.23 | 0.16 | 0.21 | 0.24 | 0.07 | -0.34 | 0.73 | 0.75 | 0.26 | 0.54 | 0.79 | 0.55 | 0.62 | 0.12 | 0.49 | 1.00 | | | | | | | | | |
| Gold | 0.10 | 0.02 | 0.15 | 0.19 | 0.35 | 0.18 | 0.20 | 0.15 | 0.35 | 0.35 | 0.23 | 0.43 | 0.33 | 0.27 | 0.13 | 0.62 | 0.37 | 0.07 | 0.12 | 0.26 | 0.05 | 0.37 | 0.09 | 1.00 | | | | | | | | |
| Long/Short Equity | 0.88 | 0.90 | 0.87 | 0.90 | 0.81 | 0.93 | 0.31 | 0.22 | 0.07 | 0.17 | 0.30 | -0.02 | -0.40 | 0.81 | 0.75 | 0.35 | 0.61 | 0.81 | 0.59 | 0.81 | 0.10 | 0.61 | 0.75 | 0.18 | 1.00 | | | | | | | |
| Managed Futures | 0.33 | 0.23 | 0.29 | 0.27 | 0.29 | 0.33 | 0.17 | 0.11 | 0.25 | 0.23 | 0.26 | 0.32 | 0.15 | 0.24 | 0.14 | 0.24 | 0.28 | 0.22 | 0.29 | 0.32 | 0.09 | 0.19 | 0.24 | 0.33 | 0.37 | 1.00 | | | | | | |
| Relative Value | 0.70 | 0.73 | 0.74 | 0.77 | 0.69 | 0.76 | 0.24 | 0.17 | 0.28 | 0.33 | 0.55 | 0.07 | -0.45 | 0.87 | 0.92 | 0.32 | 0.75 | 0.84 | 0.59 | 0.77 | 0.09 | 0.61 | 0.77 | 0.12 | 0.86 | 0.27 | 1.00 | | | | | |
| Closed-End Funds | 0.85 | 0.79 | 0.84 | 0.85 | 0.76 | 0.89 | 0.27 | 0.16 | 0.33 | 0.33 | 0.46 | 0.21 | -0.31 | 0.88 | 0.81 | 0.43 | 0.77 | 0.86 | 0.75 | 0.83 | 0.09 | 0.57 | 0.79 | 0.21 | 0.87 | 0.34 | 0.86 | 1.00 | | | | |
| Insurance-Linked Securities | 0.17 | 0.12 | 0.15 | 0.18 | 0.19 | 0.17 | 0.02 | 0.01 | 0.13 | 0.17 | 0.41 | 0.04 | -0.44 | 0.60 | 0.58 | 0.22 | 0.51 | 0.51 | 0.45 | 0.53 | -0.02 | 0.46 | 0.40 | 0.17 | 0.49 | 0.06 | 0.58 | 0.52 | 1.00 | | | |
| Digital Assets | 0.26 | 0.26 | 0.34 | 0.34 | 0.23 | 0.30 | 0.30 | 0.30 | 0.12 | 0.08 | 0.19 | 0.01 | -0.16 | 0.30 | 0.30 | 0.17 | 0.23 | 0.36 | 0.29 | 0.34 | -0.08 | 0.25 | 0.37 | 0.06 | 0.34 | 0.29 | 0.36 | 0.34 | 0.06 | 1.00 | | |
| Cash/Ultra-Short Bonds | -0.17 | -0.21 | -0.16 | -0.21 | -0.11 | -0.16 | -0.12 | -0.07 | 0.00 | 0.11 | -0.08 | 0.16 | 0.45 | -0.18 | -0.24 | 0.04 | -0.12 | -0.22 | -0.14 | -0.10 | -0.13 | -0.10 | -0.21 | 0.12 | -0.22 | -0.03 | -0.25 | -0.19 | -0.20 | -0.27 | 1.00 | |
| U.S. Inflation | 0.06 | 0.03 | 0.06 | 0.09 | 0.05 | 0.07 | 0.01 | -0.01 | -0.02 | 0.04 | 0.17 | -0.13 | -0.10 | 0.11 | 0.15 | 0.04 | 0.06 | 0.07 | 0.01 | 0.02 | -0.05 | 0.31 | 0.03 | 0.02 | 0.14 | -0.05 | 0.22 | 0.11 | -0.07 | 0.24 | 0.00 | 1.00 |

Source: Bloomberg, Morningstar, Cambridge Associates, SpringTide calculations.
*Correlations for asset classes with less than 10 years of benchmark data are calculated since inception.

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