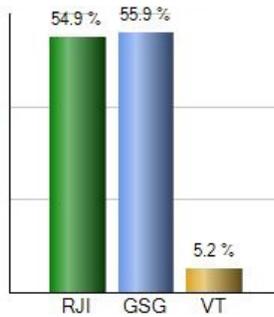


ARE COMMODITIES DUE?

"Commodities are the cheapest asset class in the world now. Commodities have a stronger case than equities now because many of them are still down. The American stock market and many other stock markets are making all-time highs. Commodity is the only asset class around the world that is cheap on a historic basis... I would rather own commodities than stocks."

- Jim Rogers, original "Market Wizard", *The Economic Times*, May 2021¹

Goldman Sachs has been pounding the table that **dislocations around the world will create a commodities "supercycle" that lasts a decade.** Their commodity team said in a note to investors last month *"While this year is off to another strong start for commodities... the relative setup on valuations is unprecedented."*²



*In fact, since January 25th of last year, commodities have greatly outperformed globally diversified stocks. The graph to the left shows a total returns comparison between the exchange-traded note (ETN) that tracks the [Jim] Rogers International Commodity Index (RJI)³, the iShares S&P GSCI Commodity-Indexed Trust (GSG)⁴, and Vanguard's Total World Stock exchange-traded fund (VT)⁵. **Past performance not indicative of future performance.***

Commodities Have Never Been Cheaper

The most well-known commodity index was launched by Goldman Sachs in 1991. The Goldman Sachs Commodity Index ("GSCI") was back-filled to 1970, and in 2007 ownership of it was transferred to Standard & Poor's. Utilizing the S&P GSCI as the proxy for 'commodities', charts like the ones below comparing the ratio of equities (S&P 500) to commodities began to circulate throughout the financial world back in 2017 or so:

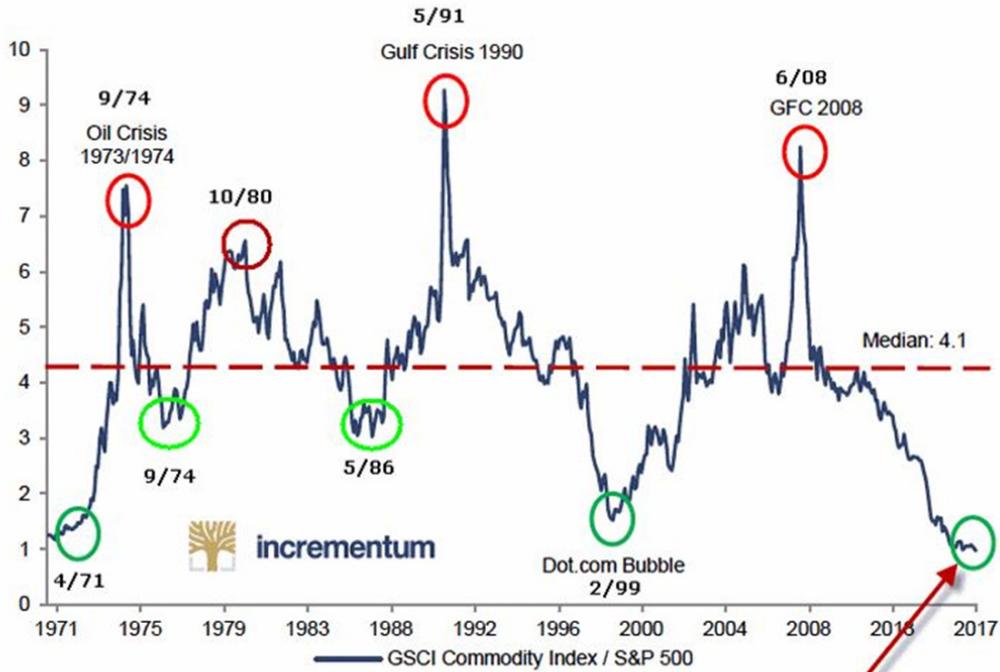
Commodities Have Never Been Cheaper⁶

Compared to the S&P 500, the price of commodities has never been cheaper.



Past performance is not necessarily indicative of future performance. Indexes have inherent limitations: they are uninvestable, do not incur management fees, transaction costs, or other expenses associated with an investment product.

GSCI/S&P500 ratio: equities expensive, commodities cheap?⁷

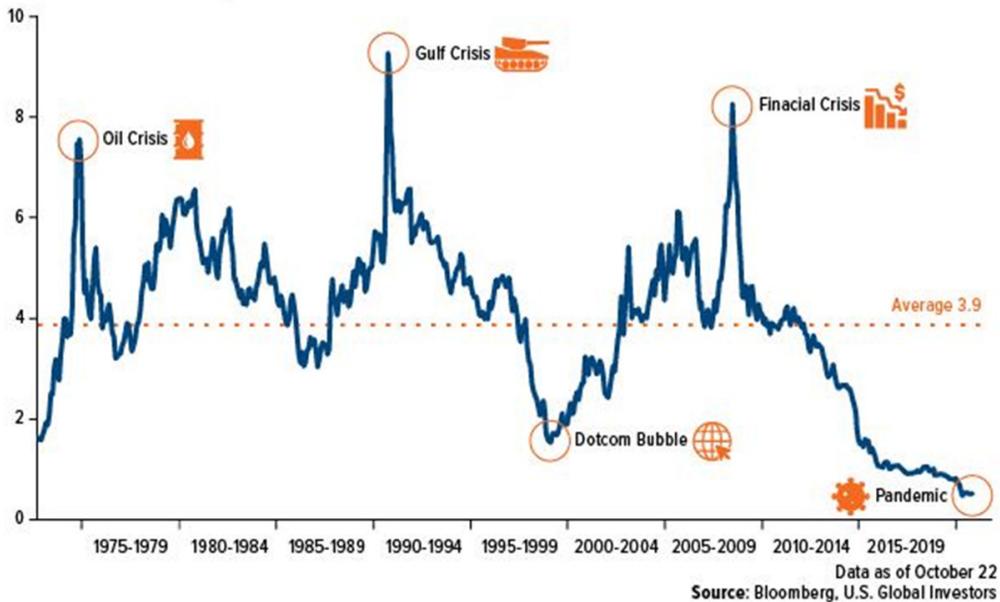


Source: Dr. Torsten Dennin, Incrementum AG

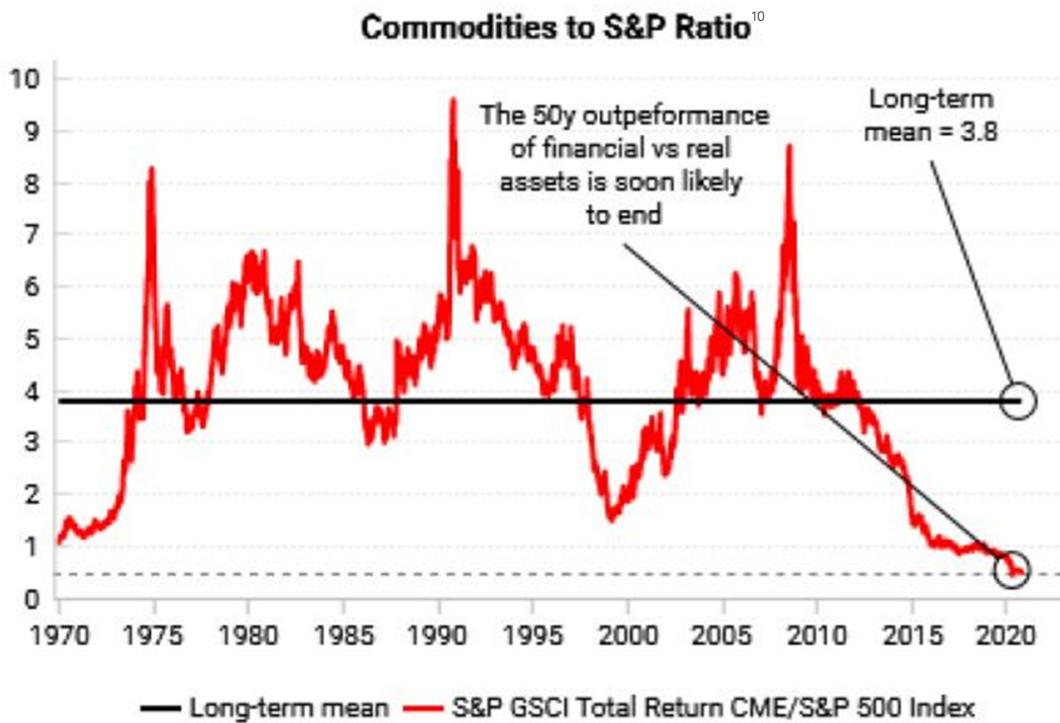
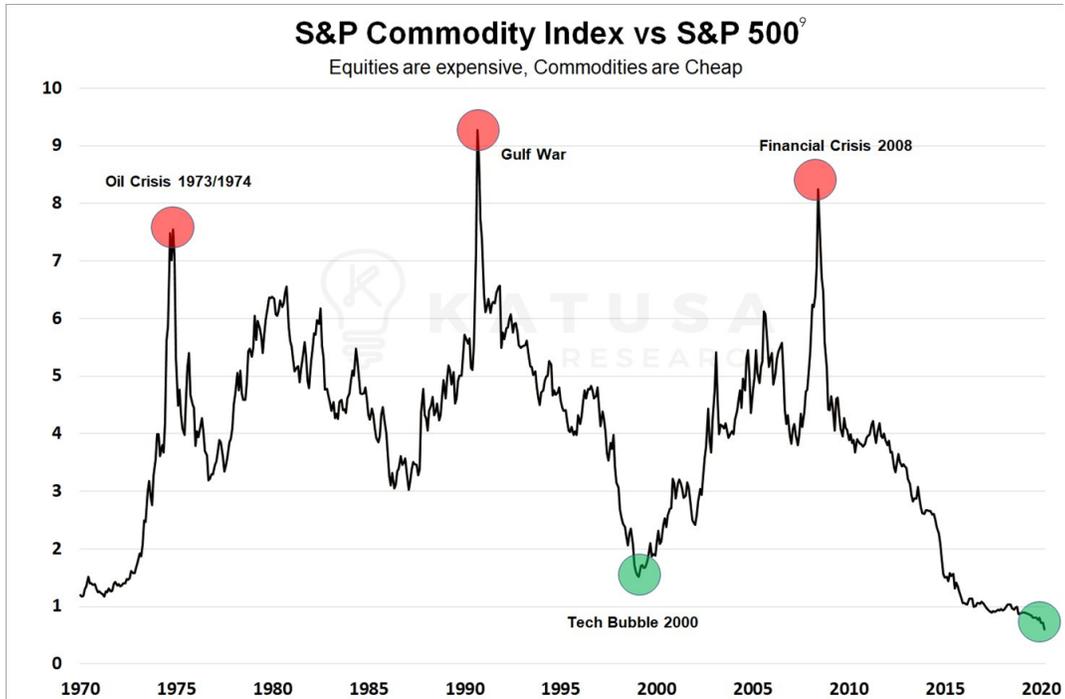
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Commodities Continue to Look Undervalued Relative to the Broader Market⁸

S&P GSCI / S&P 500 Index, 1972 – 2020



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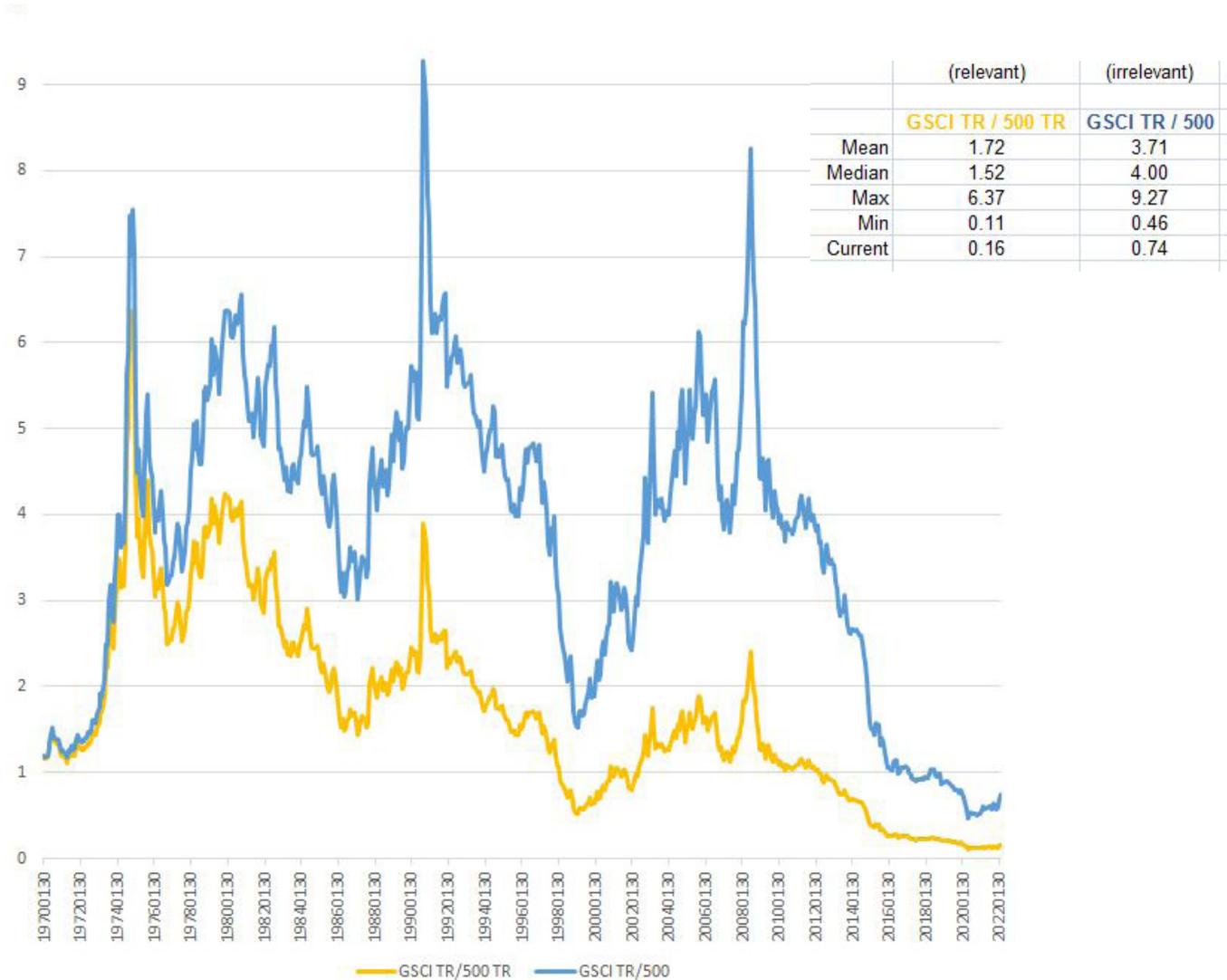
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Setting the Record Straight Regarding S&P GSCI / S&P 500 Comparisons

The data in the previous several charts certainly seem to confirm both Jim Rogers' and Goldman Sachs' contentions that commodities are currently extremely low relative to U.S. equities.

Unfortunately, the previous charts do not represent or convey what I would consider a meaningful comparison of the two asset classes.

Because I felt there were potential issues with the previous charts, I obtained data directly from the source for both indexes: Standard & Poor's¹¹. Sure enough, my own analysis of the data confirmed my suspicion and concern: that the previous charts appear to have compared the S&P 500 (but not 'Total Returns') to the GSCI (Total Returns). Keep in mind that for commodity futures, 'Total Returns' means the performance of the futures contracts which includes contract rolling -- plus the return from the collateral yield. And for the S&P 500, Total Returns means reinvesting dividends along the way. (See Appendix II for a reminder of the power of Total Returns.) The most accurate and honest way to compare the two asset classes is with a **Total Returns** comparison. The gold colored line below conveys the most apropos historical ratio: Total Returns for both S&P 500 and S&P GSCI. The blue line is irrelevant.



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Besides the need to use the correct return streams to compare the S&P GSCI to S&P 500 (Total Returns), there was another issue that occurred to me as I analyzed the previous comparisons. I knew that the S&P GSCI was (is) highly weighted toward energy exposure (too highly weighted, in my and a lot of other financial professionals' opinions). For example, over the past 3 years, the 60-day correlation between the S&P GSCI (ETF) and the WTI Crude Oil (ETF) has ranged between 82% and 98%, with the most recent value coming in at 97%.

So, while the gold (Tot Ret / Tot Ret) line ratio is the correct data to use to compare the two asset classes, using the GSCI in the first place as the proxy for commodities does not yield particularly useful information given its mirror-like performance with Crude Oil.

Given my concerns about the S&P GSCI, I thought it would be both interesting and informative to take a step back and analyze how a more broadly diversified (equally-weighted?) long-only commodity index has compared to U.S. stocks over the very long run.

Commodities for the Long Run

Happily I found a very thorough, comprehensive, and double-blind peer-reviewed academic white paper published by AQR Capital Management. While previous analyses of commodity futures focused on the post-1960 period, which includes relatively few economic or inflation cycles, the authors of *Commodities for the Long Run*¹² (2018, Financial Analysts Journal, A Publication of the CFA Institute) used a novel dataset of commodity futures that was significantly longer in length. Utilizing their dataset with daily futures prices dating back to 1877 (approximately 140 years!), the authors found that:

“Commodity index futures were positive and significant over the long run and, unlike stocks and bonds, have tended to be stronger during periods of positive inflation shocks.”

They also concluded:

“The evidence supports commodities as a potentially attractive asset class in portfolios of stocks and bonds.”

While the data and computations are rather complicated, the authors convey that futures returns can be decomposed either as the sum of spot returns and carry or as the sum of the excess of cash spot returns and interest rate-adjusted carry. They go on to say that they opted to focus on the sum of the excess of cash spot returns and interest rate-adjusted carry because this decomposition consists of two economically meaningful quantities...two sources of futures return premiums:

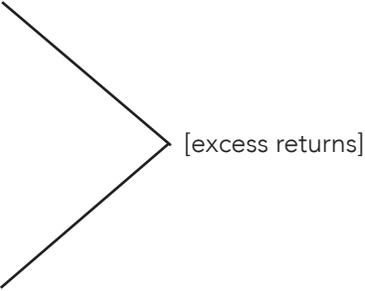
1. The Excess Spot Return Premium – the authors focused on two potentially offsetting risk premiums – namely, commodities' hedge against inflation and exposure to the business cycle.
2. The Interest Rate-Adjusted Carry – the literature suggests this is compensation for bearing inventory risk and/or providing liquidity to hedgers, especially during periods of low inventories.

For their entire analysis period, 1877 thru 2015, the authors found that an equally-weighted, regularly rebalanced commodity futures index compared favorably to excess returns from both stocks and bonds:

*[**Important Note: the following results presented from the AQR paper are **excess** returns (i.e not Total Returns). The authors state that their focus for their paper is on futures returns, which are in excess of cash. “Our goal is to gain a better understanding of the behavior of commodity futures returns, so we do not want to focus on the interest rate.”]*

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1877 - 2015			
	Commodities	Stocks	Bonds
Annualized return	4.6%	6.7%	1.1%
Volatility	17.7%	17.0%	5.5%
1946 - 2015			
	Commodities	Stocks	Bonds
Annualized return	5.4%	7.4%	1.7%
Volatility	14.1%	14.4%	7.1%



For the entire 1877-2015 analysis period, regarding potential portfolio diversification benefits of commodities, the authors conclude:

- ♦ "...whereas commodity returns are stronger during up inflation periods, [both] bond and stock returns are lower during these periods."
- ♦ "... in most periods the Sharpe Ratio rose when commodities were included in the portfolio." (i.e. when studying portfolios solely made up of stocks and bonds, versus portfolios that added an allocation to commodities as well.)

The authors' deeper analysis of the data into various inflationary environments confirms the standard intuition that commodity futures (bought and held; long only, but rebalanced) do well (poorly) when there are positive (negative) shocks to inflation.

And, particularly interesting to me, they offer a potential explanation for commodities' lower annualized returns (as compared with stocks'):

*"The strong performance of commodities in high-inflation periods provides a potential clue as to why commodities might generally offer lower expected returns than stocks. Investors value the inflation hedge and, therefore, do not require as much compensation for commodities as for other asset classes. In other words, there may be a **negative risk premium** for commodity futures because of the inflation hedge."*

What do they say about commodities particularly lack-luster performance over the past 10 years or so?

"Even though index returns are, on average, positive over the long run, long periods of flat or negative returns are not uncommon. The last decade reported is one such period and has been a focus of debate... [however]... in the context of the past 140 years, we consider that although the last decade is toward the low end of commodity performance, the period does not look unusual. In fact, three decades have produced worse results and another decade yielded only somewhat higher performance (albeit at lower volatility)."

Investors ought to be encouraged that there appear to be fundamental reasons and rationale to explain the legitimacy of commodity futures returns.

As a practitioner, though, I am primarily interested in assessing **Total Returns**. With commodity indexes, that means returns that include the additional beneficial effect of the Risk Free Rate, and with equities, the effects of reinvesting dividends. Therefore, in the next section, I focus on my own analysis of an equally-weighted commodity index (Total Return) versus the S&P 500 (Total Return) Index.

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Commodities (Total Return) vs. Stocks (Total Return)

The data that I prefer to use for commodities is an **equally-weighted**, diversified, regularly-rebalanced, and fully-collateralized (long-only) commodity index made available by the National Bureau of Economic Research (NBER). It is from the well-known *Facts and Fantasies About Commodity Futures*¹³ academic white paper by Gary Gorton & K. Geert Rouwenhorst and the NBER provides data online for it through 2014¹⁴. From 2015 through current I use the iPath Bloomberg Commodity Index Total Return (exchange-traded note symbol DJP)¹⁵. For the S&P 500 TR I use monthly data from Standard & Poor's through 2014, and from 2015 through current I use the largest S&P 500 Total Return ETF (SPDR ETF Trust symbol SPY)¹⁶.

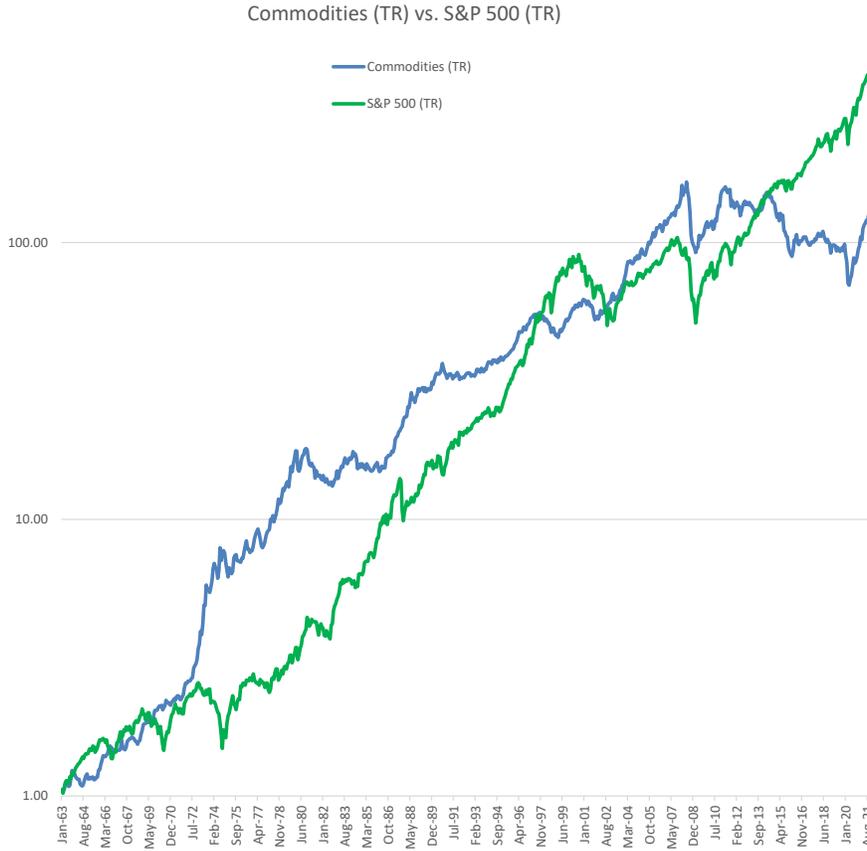
For consistency I will first present the two asset classes in the 'ratio' format as the previous charts did.

Commodities (TR) / S&P 500 (TR)



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Here are the two individual asset classes since 1963:

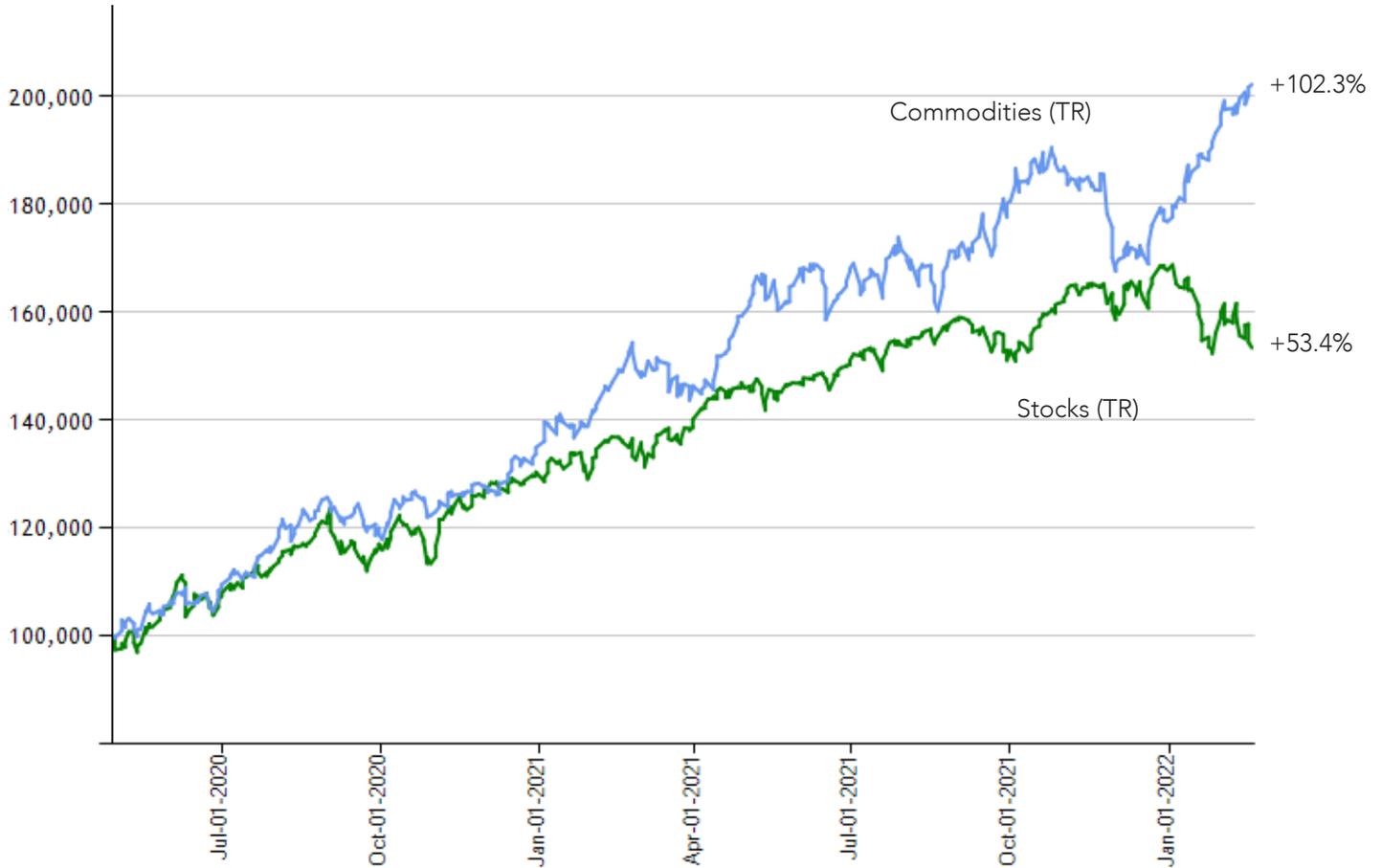


From 1963 through 2010 commodities actually produced higher absolute and risk-adjusted returns. Commodities then under-performed stocks from 2011 through April 2020. Here are performance statistics for both asset classes for the entire period (1963 - Feb 18, 2022):

	Commodities (TR)	S&P 500 (TR)
Annualized Return	8.73%	10.61%
Annualized Volatility	13.39%	14.79%
Ann. Ret / Ann. Vol	0.69	0.76
Sortino Ratio	1.14	1.19
Maximum Drawdown	-57.64%	-50.95%
Correlation	0.18	--

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Since the lowest that commodities have ever been relative to U.S. stocks (the end of April 2020, just after the Covid market melee; highlighted in chart near bottom of Page 7), commodities have been outperforming stocks:



Final thoughts:

- ◆ Perhaps some of the 2011 - April 2020 under-performance from commodities can be explained by the extreme amounts of Federal Reserve Bank (FRB) and other Central Banks' intervention in the markets? Some "risk assets" such as real estate and equities seemed to benefit more than commodities did from ZIRP, artificially-low interest rates, and Fed stimulus.
- ◆ As the data showed, monthly correlation between commodities and stocks was 0.18 throughout the entire period (1963 - current). Interestingly, monthly correlation rose to 0.50 during the aforementioned period of under-performance by commodities. Since that period of under-performance, however, the monthly correlation between commodities and stocks has once again dropped to a low 0.19.
- ◆ There is significant "home country bias" benefit in the performance of the "stocks" asset class throughout this entire paper. Said another way, since the S&P 500 has significantly outperformed World Stocks ex U.S., the same paper completed utilizing data for the MSCI All Country World (ex U.S.) or the E.A.F.E. instead of the S&P 500 would likely show commodities doing significantly better.

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Appendix I: A Friendly Challenge to Jim Rogers

In a recent interview¹⁷, Jim Rogers was asked what the best way is to buy commodities... and his reply was:

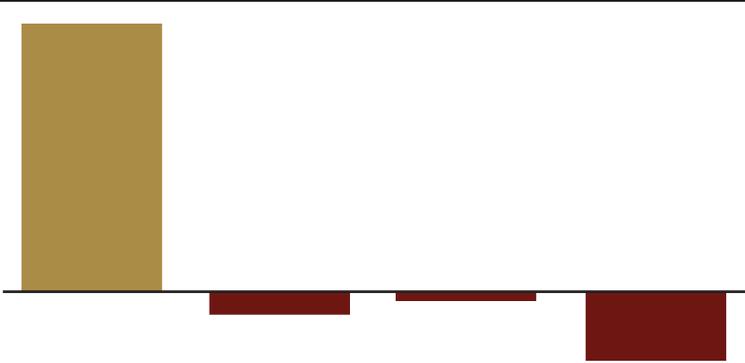
"Many, many studies show that most people should invest in indexes."

For the average investor, so long as they understand the potential risks and understand what they are buying, I probably agree.

However, for savvier investors who can afford to try to outperform commodity indexes, I'd recommend they consider the following quote from Morningstar¹⁸:

"... a Long/Short approach is logistically consistent with the underlying economics of commodities futures markets."

Red Rock Capital's Commodity Long-Short Program ("CLS") offers qualified investors an actively-managed alternative to commodity indexes.

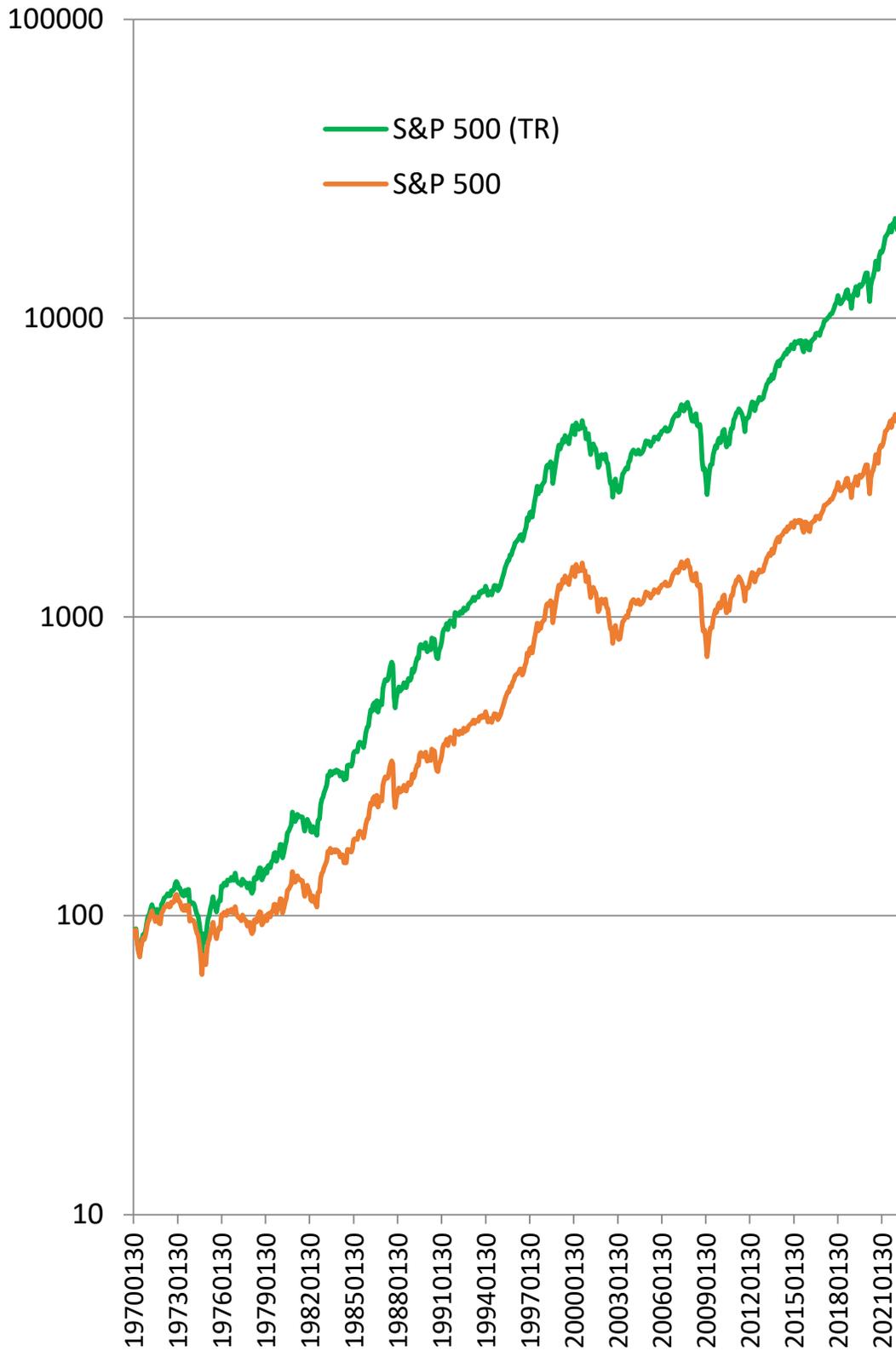


Sep 16, 2013 - Feb 18, 2022	CLS	DJP	RJI	GSG
Total Return	155.35%	-12.97%	-6.57%	-39.99%
Annualized Return	11.66%	-1.62%	-1.08%	-0.80%
Annualized Volatility	17.14%	15.82%	16.40%	17.43%
Largest Up Month	17.07%	10.17%	18.95%	12.32%
Largest Down Month	-8.76%	-16.05%	-10.16%	-21.89%
Maximum Drawdown	-30.11%	-59.95%	-60.54%	-75.00%
Sortino Ratio	1.41	-0.03	0.02	0.06
Skewness	0.67	-0.39	0.82	-0.65

We believe the Commodity Long-Short Program has demonstrated a significant edge over the (long-only) commodity indexes since its inception. As an academic exercise and to make this interesting, with the publication of this paper, Red Rock Capital hereby challenges Jim Rogers and his Rogers International Commodity Index ("RJI", the Total Return ETN that tracks it) to a formal 10-year competition. We believe that, over the next 10 years, CLS will produce a higher risk-adjusted return (Annualized Return / Maximum Drawdown, net of all fees) for its composite investors.

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Appendix II: The Power of Total Returns



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