

# Understanding Commodities and the S&P GSCI

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## EXECUTIVE SUMMARY

S&P Dow Jones Indices has been providing index-based performance measures of real assets since 2007.<sup>1</sup> Whether you prefer equity-based exposure to companies that produce commodities, or more direct exposure through futures contracts, S&P Dow Jones Indices offers tools for better understanding and accessing commodities market exposures. This paper focuses on understanding commodities as an asset class as well as the [S&P GSCI](#), a preeminent measure of a basket of commonly traded commodities futures contracts.

## WHAT ARE COMMODITIES?

Commodities such as gold and oil frequently capture media and investor attention. So what are commodities, and why are some financial advisors considering allocating portions of their clients' portfolios to commodities and other real assets?

Commodities are:

- Basic, standardized real assets that are in demand and can be supplied without substantial product differentiation across markets;
- Fungible, or in other words, considered equivalent for trading purposes despite coming from different producers; and
- In the case of physical goods traded as commodities, widely used as production inputs.

Because commodities are fungible and traded on exchanges globally, commodity prices are driven by global supply and demand. These performance characteristics set commodities apart from equity or fixed income investments, whose returns are linked to additional market fundamentals.

Some commodities, such as precious metals, are held for their store of value<sup>2</sup> characteristics. However, since the storage costs of many commodities are prohibitive, some investors may use futures contracts to

<sup>1</sup> S&P acquired the GSCI from Goldman Sachs on Feb. 2, 2007.

<sup>2</sup> Store of value: By definition, any commodity or asset which can be stored and has a value which can be retrieved over time is considered a store of value, but in order for a commodity to have a store of value similar to a stable currency (or as an alternative to an unstable currency), the commodity must be extremely liquid. Gold is a commodity which often displays this characteristic.

gain commodities exposure and avoid physical delivery or storage costs. Still, the question remains: is it better to physically hold a commodity like gold, or be diversified across a basket of commodities futures?

## **ESTABLISHING AND MEASURING A REPRESENTATIVE “BASKET” OF COMMODITIES FUTURES**

*Commodity prices are driven by global supply and demand.*

Futures markets have existed for centuries, allowing suppliers and users to “lock in” prices and therefore limit some of the risk inherent to those markets. Futures markets also enable investors to gain price exposure to a commodity, or a number of commodities, without facing the liquidity and resource constraints associated with holding physical commodities.

Investing in an exchange-traded fund (ETF) that tracks a commodities index like the S&P GSCI can provide total return<sup>3</sup> exposure to the commodities futures market. ETFs based on the S&P GSCI, for example, track a published “basket” or weighted holdings of 24 commodity futures contracts spanning all commodity sectors (six energy products, five industrial metals, eight agricultural products, three livestock products, and two precious metals).

*Some investors may use futures contracts to gain commodities exposure...*

This broad range of constituent commodities ensures that the S&P GSCI remains highly diversified. In addition, the S&P GSCI methodology employs liquidity filters that allow only the most actively traded global commodities contracts to be included in the index. Alternatively, while the S&P GSCI represents a broad base of commodities, its methodology excludes some commodities that are less frequently traded, such as steel. A futures-based commodity index such as the S&P GSCI is designed to be an investable measure of a broad base of commodities, thus offering broad exposure to the commodities market while attempting to limit the risk nuances of investing in physical commodities.

*...and avoid physical delivery or storage costs.*

<sup>3</sup> The S&P GSCI TR is designed to measure a fully collateralized commodity futures investment that is rolled forward from the fifth to the ninth business day of each month. The S&P GSCI includes nearby futures contracts based on 24 commodities. The returns generated by the S&P GSCI TR can differ significantly from the returns generated by investing in physical commodities.

**Exhibit 1: S&P GSCI Constituents**

COMMODITY	TICKER	2019 INDICATED WEIGHT (%)	2019 TOTAL DOLLAR VALUE TRADED <sup>4</sup> (USD BILLION)
Chicago Wheat (Chicago)	W	2.77	892.1
Wheat (Kansas City)	KW	1.15	369.5
Corn	C	4.36	1776.7
Soybeans	S	3.14	2950.7
Coffee	KC	0.72	550.6
Sugar #11	SB	1.54	508.1
Cocoa	CC	0.32	274.8
Cotton #2	CT	1.41	359.9
Lean Hogs	LH	1.27	268.3
Live Cattle	LC	3.48	736.1
Feeder Cattle	FC	1.27	268.3
Crude Oil	CL	26.42	23306.8
Heating Oil	HO	4.24	3924.5
RBOB Gasoline	RB	4.48	3954.8
Brent Crude Oil	LCO	18.61	16416.4
Gasoil	LGO	5.56	4900.4
Natural Gas	NG	3.11	3900.1
Aluminum	MAL	3.89	3376.5
Copper	MCU	4.45	6324.9
Lead	MPB	0.78	805.2
Nickel	MNI	0.76	1899.2
Zinc	MZN	1.28	2679.1
Gold	GC	3.72	11008.5
Silver	SI	0.42	1995.9

*When measuring a basket of globally traded commodities...*

*...the relative impact of specific commodities' components is best measured by their relative global economic significance.*

Source: S&P Dow Jones Indices LLC. Data as of June 28, 2019. Table is provided for illustrative purposes.

Exhibit 1 lists the S&P GSCI constituents and their respective index weights, determined by world production figures. By dollar volume, crude oil is the most widely produced commodity in the world, the basis for the most actively traded futures contract, and thus, the most heavily weighted commodity in the S&P GSCI.

Why use world production weighting? When measuring a basket of globally traded commodities, the relative impact of specific commodity components is best measured by their relative global economic significance.

<sup>4</sup> Total Dollar Value Traded from September 2017-August 2018.

## PAST PERFORMANCE DATA FOR THE S&P GSCI: RETURNS AND CORRELATIONS

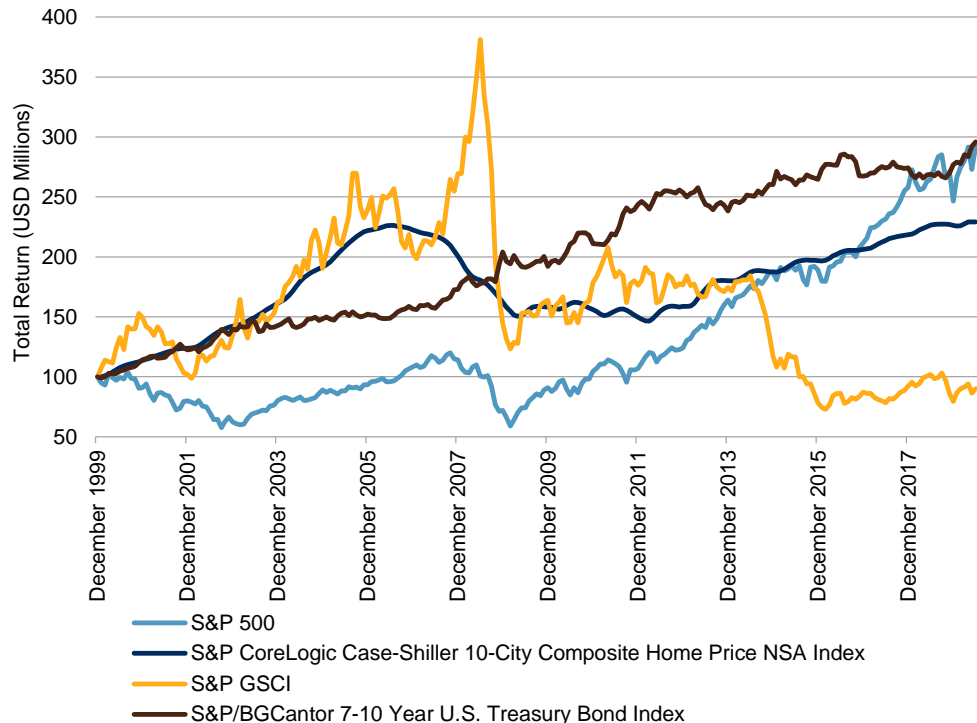
*Commodities indices have typically seen equities-like total returns...*

In general, augmenting equity-, bond- and, cash-based portfolios with a partial allocation to real assets and real asset futures-based funds has historically provided better overall portfolio performance with lower volatility. Commodities indices have typically seen equities-like total returns, but usually with low return correlations to most other asset classes. In addition, real asset exposure has helped mitigate some event risk, as well as inflation and energy shocks in most portfolios.

*...but usually with low return correlations to most other asset classes.*

Exhibit 2 depicts the total returns of the S&P GSCI along with various indices during the period spanning Dec. 31, 1999, to June 28, 2019. The S&P GSCI ended Q2 2019 down 1.42% from the prior quarter, but it was up 4.43% for June 2019. Over the same period, the [S&P 500®](#) was up 3.79% for the quarter and up 6.89% for the month. For the 12-month period ending in June 2019, the S&P 500 showed a low correlation of 0.43 to the S&P GSCI.<sup>5</sup>

**Exhibit 2: S&P GSCI TR Performance**



*Real asset exposure has helped mitigate some event risk, as well as inflation and energy shocks in most portfolios.*

Source: S&P Dow Jones Indices LLC. Data as of June 28, 2019. Index performance based on [total return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

<sup>5</sup> Return correlations vary and past performance is not a predictor of future correlations. During extreme global market shocks, return correlations of real assets may not reflect historical averages.

## UNDERSTANDING HOW FUTURES CONTRACTS ARE MEASURED BY THE S&P GSCI

*Commodity futures have periodic maturities...*

Since commodity futures have periodic maturities, the S&P GSCI is designed to measure the price movement of the basket of relevant commodities futures by periodically moving, or “rolling,” from the maturing contract to the next-most active futures contract available. The cost measured during this rolling procedure can be considered the “cost of carry” and normally reflects the cost of storing those commodities. This roll process is documented in more detail in the [S&P GSCI Methodology](#).

## HOW CONTANGO AND BACKWARDATION AFFECT THE TOTAL RETURN

*...and roll from the maturing contract to the next-most active futures contract available.*

Maintaining a basket of futures contracts across time means that the transaction of moving from a maturing contract to the next actively traded contract must be measured by the index. Sometimes the transaction exacts a cost, and other times, it provides a profit. The index measures a transaction as a cost when the further-out futures contracts trade at higher prices—a phenomenon known as contango. Thus, when contango conditions exist, total index returns will be reduced due to rolling into higher-priced futures contracts. Alternatively, when the further-out futures contracts trade at lower prices, a phenomenon known as backwardation occurs. When backwardation occurs, rolling into lower-priced futures contracts will increase total index returns. The level of contango and backwardation in an individual commodity’s futures curve is typically a reflection of the commodity’s storage costs. Commodities with minimal storage costs, like gold, normally have a flat and stable futures curve. Natural gas, on the other hand, is one of the most difficult-to-store commodities, and thus, typically has a futures curve that reflects a steep contango.

*The cost measured during this rolling procedure can be considered the “cost of carry...”*

A good rule of thumb to remember in terms of relative commodity storage costs is the “can I store it my basement?” factor. Commodities with similar storage characteristics to gold are not typically in contango. On the other hand, most commodities have higher storage costs, and contango is viewed as “normal” for commodities like natural gas with high storage costs. Backwardation conditions normally appear when commodities are in short supply, causing the front part of the futures curve to show that it has been bid up, while the further-out part of the curve reflects the expectation of inventory normalization. In an amply supplied market, contango is the typical situation for most futures, due to the futures market’s reflection of storage costs.

*....and normally reflects the cost of storing those commodities.*

This knowledge could be helpful for financial advisors, because spot price returns cannot be achieved by investors due to commodity storage costs. Whether storage costs are borne by the holder of physical commodities or

are the result of contango occurring in commodities futures, the cost must be recognized. Therefore, if commodities are held in a client's portfolio, it is important for advisors to set clients' expectations to net total returns, rather than spot returns, which fail to take into account the true costs of exposure to commodities.

## **PUTTING THIS INFORMATION INTO PRACTICE**

*Investors may use  
ETFs as an alternative  
to physical assets...*

While investors cannot invest directly in an index, S&P Dow Jones Indices has licensed ETF providers in numerous countries to create products for investors, based on the index. Advisors may view these products as a more broad-ranged alternative to physically holding individual commodities and as a tool for easily gaining access to a world production-weighted basket of real asset-based futures contracts that may help diversify a client's portfolio.

*...and as a way to  
access a world  
production-weighted  
basket of real asset-  
based futures  
contracts.*

## PERFORMANCE DISCLOSURE

The S&P/BGCantor 7-10 Year U.S. Treasury Bond Index was launched Dec. 7, 2009. The S&P CoreLogic Case-Shiller 10-City Composite Home Price NSA Index was launched Dec. 18, 2006. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at [www.spdji.com](http://www.spdji.com). Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at [www.spdji.com](http://www.spdji.com) for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

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