COMMODITIES AND A DIVERSIFIED PORTFOLIO

As global commodity prices continue to linger in a protracted slump, investors in these hard assets have seen disappointing returns for several years. From the bottom of the Global Financial Crisis in March of 2009, $1 invested in the S&P 500 Index would now be worth almost $4, while investors in the S&P GSCI index of commodities would have *lost* roughly one-third of their money over this eight-year period. With only modest growth in global demand for raw materials in recent years and no obvious signs of a rapid surge in economic growth on the horizon, some investors are questioning whether commodities still serve a role in their portfolio.

We believe they do, and this paper will set forth our rationale for maintaining a modest strategic allocation to this distinct asset class within a diversified portfolio.

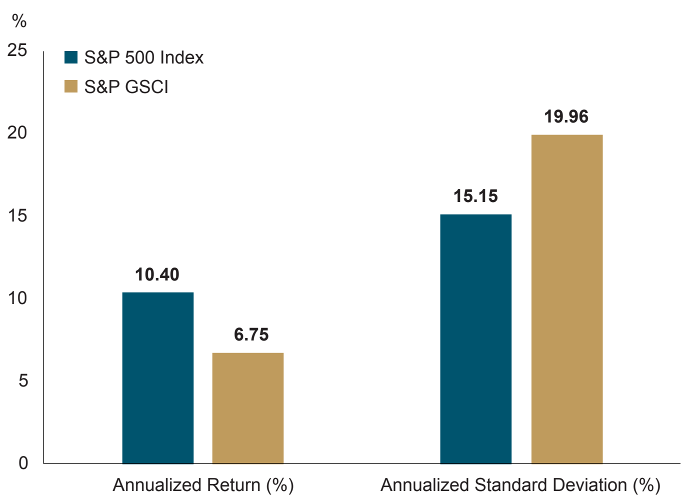
Different Asset Classes, Different Roles

When structuring a diversified portfolio, we can think of three fundamental roles a given investment or asset class may play:

1. **Increase expected returns above a low-risk or "risk-free" baseline.** Equities are the classic example of this, as they are highly volatile but have historically offered a significant return premium over safer investments such as Treasuries.
2. **Provide stability and liquidity for an investor's spending or other goals.** Traditionally, cash and bonds serve this role – offering lower returns than stocks but with the benefit of less volatility, which is important particularly if being drawn on to meet periodic liquidity needs.
3. **Diversify the portfolio.** Some "alternative" asset classes, while just as volatile as equities, are not correlated with the price movements of the rest of the portfolio. By moving independently (sometimes in the opposite direction) of other elements of the portfolio, these assets can help reduce overall portfolio risk. This, in our view, is where commodities fit.

We have typically held a small allocation to commodities in our investors' portfolios, due less to an expectation that hard assets will generate a high return over long investment periods than to the diversification benefit they offer to the overall portfolio mix. Considered on their own, commodities are in some ways "worse" than stocks, historically having lower returns and higher risk (as measured by standard deviation). If an investor wanted to own just one asset class for the long term, our advice would almost certainly be to hold equities rather than hard assets (see Exhibit 1).

Exhibit 1: Long-Term Return and Risk – Equities vs. Commodities
Jan. 1, 1970–May 31, 2017



Sources: Standard & Poor's, Gerstein Fisher Research

Yet, considered in a portfolio context, commodities and precious metals do have something to offer: very low or even negative correlations with stocks and bonds. If there were an unexpected jump in inflation, for example, we would anticipate that commodities would perform well, while bonds and stocks might suffer. In this scenario, commodities would serve to dampen overall portfolio volatility. Historically, this has been the case, with periods of higher or rising interest rates being marked by significantly higher commodity returns, and even periods in which commodities outpaced equity markets (see Exhibits 2 & 3).

Exhibit 2: Equities and Commodity Returns Comparison – Different Interest Rate Environments
Jan. 1, 1970–May 31, 2017

Period	Period Type	S&P 500 Returns	S&P GSCI Returns
Jan. 1970–Feb. 1972	Falling	10.79	18.46
Mar. 1972–Jul. 1974	Rising	(8.69)	59.51
Aug. 1974–May 1975	Falling	24.57	(19.23)
Jun. 1975–Jul. 1977	Stable–High	7.97	(5.45)
Aug. 1977–Jul. 1981	Rising	13.01	19.43
Aug. 1981–Oct. 1986	Falling	17.96	4.45
Nov. 1986–Mar. 1988	Stable–High	7.81	23.59
Apr. 1988–Apr. 1989	Rising	22.12	34.97
May 1989–Oct. 1992	Stable–Low	12.68	12.98
Nov. 1992–May 1995	Rising	13.01	(2.76)
Jun. 1995–Dec. 2000	Stable–High	19.60	11.58
Jan. 2001–Jan. 2002	Falling	(12.22)	(31.91)
Feb. 2002–Jun. 2004	Stable–Low	2.13	29.14
Jul. 2004–Jul. 2007	Rising	10.21	7.45
Aug. 2007–Jan. 2009	Falling	(29.87)	(30.89)
Feb. 2009–May 2017	Stable–Low	16.20	(5.80)

Sources: Federal Reserve, Standard & Poor's, Gerstein Fisher Research

Exhibit 3: Equities and Commodity Returns Comparison – Different Interest Rate Environments Combined
Jan. 1, 1970–May 31, 2017

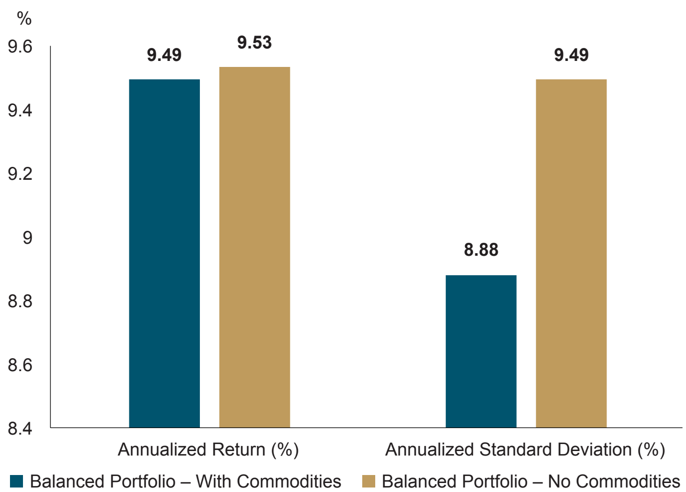
Interest Rate Period Type	Frequency – % of All Months	Average Monthly Returns – S&P 500	Average Monthly Returns – S&P GSCI
Falling	24%	0.45%	-0.10%
Rising	27%	0.90%	1.58%
Stable – Average or Above Average	19%	1.29%	0.86%
Stable – Below Average	30%	1.09%	0.49%
All Months	100%	0.92%	0.71%

Sources: Federal Reserve, Standard & Poor's, Gerstein Fisher Research

As a result of this imperfect correlation (driven by different reactions to interest rates, GDP growth, global shipping, supply and demand trends, and many other variables), commodities have historically had a helpful role to play in a multi-asset class portfolio. With a small allocation to commodities in a balanced portfolio of stocks and bonds, we can see that even after almost a decade of especially poor commodity returns behind us, over the longer term, commodities have been helpful in building a more risk-efficient investment strategy (see Exhibit 4).

Exhibit 4: Balanced Portfolio Risk and Return Comparison – With and Without Commodities

Jan. 1, 1970–May 31, 2017



Note: Balanced Portfolio with Commodities is composed as follows – 55% S&P 500 Index, 40% 5-Year Treasuries, 5% S&P GSCI index. Balanced Portfolio without Commodities is composed as follows – 60% S&P 500 Index, 40% 5-Year Treasuries. All portfolios are rebalanced quarterly.
Sources: Standard & Poor's, Gerstein Fisher Research

A Smoother Ride

Historically, bear market periods in which equity markets are experiencing negative returns are also periods when having a small allocation to commodities has meaningfully limited downside. In fact, in a balanced portfolio, the worst 3-, 5- and 10-year periods experienced in the last four decades were all modestly more positive (or less negative) if they included a small commodity allocation (see Exhibit 5).

Exhibit 5: Balanced Portfolio Downside Comparison – With and Without Commodities

Jan. 1, 1970–May 31, 2017

	Worst 3-Year Return (%)	Worst 5-Year Return (%)	Worst 10-Year Return
Balanced Portfolio – With Commodities	-5.6%	-1.4%	1.6%
Balanced Portfolio – Without Commodities	-5.8%	-1.7%	0.9%

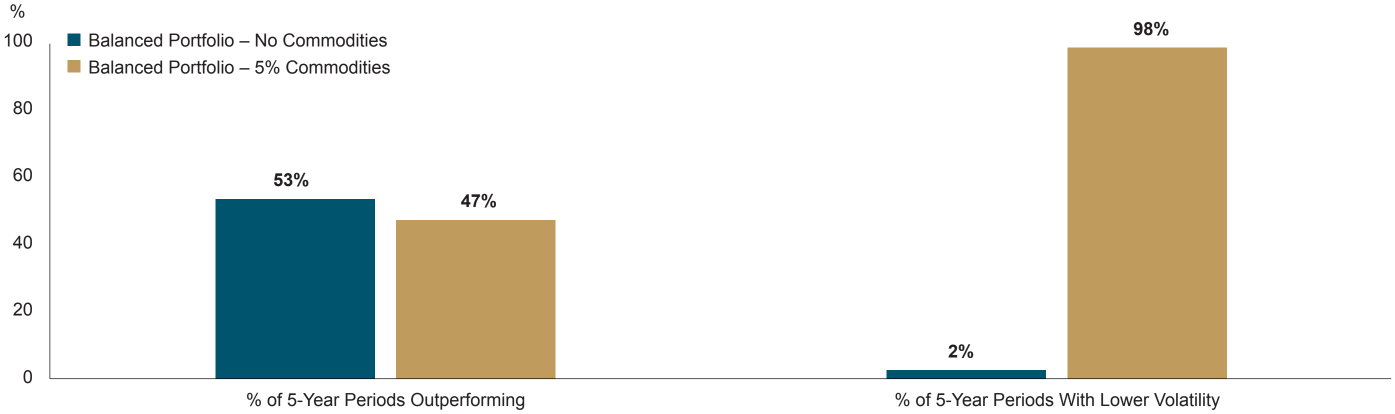
Note: Balanced Portfolio with Commodities is composed as follows – 55% S&P 500 Index, 40% 5-Year Treasuries, 5% S&P GSCI index. Balanced Portfolio without Commodities is composed as follows – 60% S&P 500 Index, 40% 5-Year Treasuries. All portfolios are rebalanced quarterly.
Sources: Standard & Poor's, Morningstar, Gerstein Fisher Research

Looking at all five-year periods back to 1970, calculated monthly for a total of 510 separate investment periods, we also know that while commodities exposure is essentially a gamble with regards to adding return, it is exceptionally reliable at reducing volatility. Commodities outperformed equities and added to overall portfolio returns approximately half the time, but in virtually *all* periods, portfolio volatility was lower – offering investors a smoother investment experience (see Exhibit 6).

Why is volatility important for the investor? This might be best explained by looking at the only scenario in which it would *not* be important: if an investor can calmly watch his nest egg lose a quarter, a third, or a half of its nominal value over a short period and also be completely disciplined about the size and timing of any withdrawals from his portfolio. Taking income from a portfolio can have a major impact on an investor's future investment experience. The lower the volatility, the easier it is to maintain a stable income from a portfolio (all else being equal).

For example, if we look at the last 10 years or so, we see a challenging time to be retired, with the biggest market correction since the Great Depression occurring in 2008–2009. We also see a period where commodity returns (as we've discussed) were weak, and a balanced portfolio with commodities modestly *underperforming* a balanced portfolio without commodities. However, if we were to take those nominal returns and then simulate a $1,000,000 portfolio where a hypothetical investor needed to take $40,000/year of income, the lower volatility and better downside protection actually results in more money (an extra $15,000 or so) for the investor, even though they earned a lower overall return (see Exhibit 7). Reducing downside is critically important in the real world where investors need to draw on their investments and may not have the luxury of waiting for "good" market years in which to do this.

Exhibit 6: All 5-Year Rolling Periods Comparison – Balanced Portfolio With and Without Commodities
Jan. 1, 1970–May 31, 2017

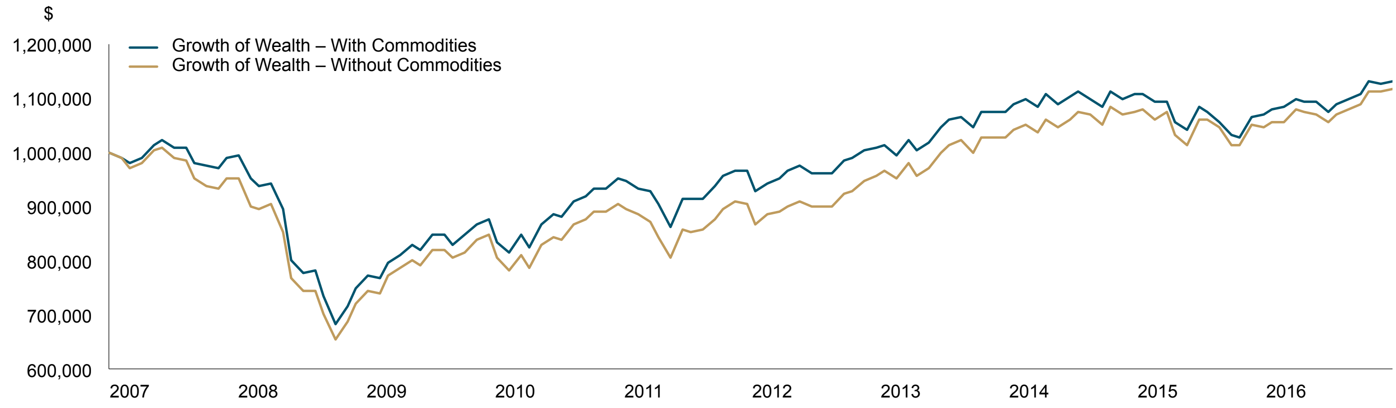


	Balanced Portfolio – No Commodities	Balanced Portfolio – 5% Commodities
Average 5-Year Return	9.9%	9.8%
Average 5-Year Volatility	9.5%	8.9%

Note: Balanced Portfolio with Commodities is composed as follows – 55% S&P 500 Index, 40% 5-Year Treasuries, 5% S&P GSCI index. Balanced Portfolio without Commodities is composed as follows – 60% S&P 500 Index, 40% 5-Year Treasuries. All portfolios are rebalanced quarterly.
Sources: Standard & Poor's, Morningstar, Gerstein Fisher Research

Exhibit 7: Balanced Portfolio Withdrawal Scenario Comparison – With and Without Commodities
Jun. 1, 2007–May 31, 2017

Growth of Wealth Comparison



	Annualized Return (%)	Annualized Standard Deviation (%)
Balanced Portfolio – With Commodities	5.60%	8.57%
Balanced Portfolio – Without Commodities	5.64%	8.85%

Note: Balanced Portfolio with Commodities is composed as follows – 55% S&P 500 Index, 40% Barclay's 1–5 Yr Treasury Index, 5% S&P GSCI index. Balanced Portfolio without Commodities is composed as follows – 60% S&P 500 Index, 40% Barclay's 1-5 Yr Treasury Index. All portfolios are rebalanced quarterly.
Sources: Standard & Poor's, Barclay's, Gerstein Fisher Research

Concluding Thoughts

As investors or asset managers, it's important to incorporate historical data of how markets and asset classes performed in the past to provide context for investment decisions. However, the logic and *process* by which a portfolio is managed is also critical – data should ideally be interpreted through a consistent and disciplined strategic view. In the late 1990s, for example, the US equity markets had experienced extremely good returns (over 27% annualized, or almost 250% cumulatively for the five years ending in June 1999), while commodities had been essentially flat. In looking at recent history, investors in the middle of 1999 would have been hard-pressed to feel positive about any investment made in commodities – every dollar allocated from equities to this alternative asset class had essentially given up the opportunity to more than triple in value (at least with 20/20 hindsight).

By what thought process then, would an asset manager have made the decision to allocate to commodities in such an environment (as Gerstein Fisher did in the early 2000s)? Our core rationale when structuring a portfolio begins with our belief that the broad global marketplace and economy should be well represented in a diversified portfolio. Even if an investor has a "home bias" (i.e., allocates more heavily to US equities than the overall market weight), completely avoiding exposure to significant sectors or asset classes opens up investors to risk by reducing diversification. Commodities represent approximately 30% of global trade and 5–10% of the world's GDP, based on UN data, which can provide a baseline of what level of exposure an investor can target.

Additionally, investors should always keep in mind that, while recent returns are not predictive, it is frequently the case that out-of-favor sectors may represent rebalancing opportunities. For example, we described above how the five years ending in June 1999 saw massive outperformance of US equities over commodities, but in the five following years (from July 1999 to June 2004), equities underperformed, falling 10% cumulatively while commodities more than doubled. Just as we would never have advised investors to liquidate their equity allocations in 2008 (when stocks had a negative 10-year trailing return), we are also not recommending removing exposures to commodities after a period of a few years where they saw weak returns.

In macroeconomic terms, we would also keep in mind that in recent years, commodities have performed poorly largely due to the dramatic decline in prices of energy and industrial metals. But those commodity declines have also helped to control inflation and boost the profits of many corporations around the globe, which translates into enhanced equity performance. This is one factor among several that support continued low-to-negative correlations between commodities and (broadly speaking) global equities.

For almost any investor, we believe that designing a strategy that makes sense, takes reasonable and diversified risks, and is managed consistently through the ups and downs of the markets is the best way to meet long-term goals and objectives.