S&P DOW JONES INDICES
McGRAW HILL FINANCIAL

PRACTICE ESSENTIALS®

REAL ASSETS 101

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ACCESSING REAL ASSETS THROUGH EQUITIES

Real Assets: Direct versus Equity-Based Exposure

Investors have increasingly begun to recognize real assets as a distinct asset class that can offer both inflation protection and portfolio diversification. The most frequently tracked real assets are those that are tangible and essential to the economy and society on a long-term basis. These real assets include commodities, real estate and infrastructure.

A number of approaches are available for accessing real assets (see Exhibit 1). Direct exposure can entail direct ownership of precious metals or properties, or diversified investments in futures-based commodity indices (e.g., S&P GSCI®), property funds or infrastructure funds. However, real asset exposure can also be achieved indirectly via equities, such as natural resources stocks, real estate investment trusts (REITs) and publicly-listed infrastructure assets. While the benefits of accessing real estate through equity REITs have long been recognized by advisors and investors, this paper focuses on the broader asset class of real assets, where equity-based exposure may offer similar benefits.

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Exhibit 1: Accessing Real Assets

Real Assets	Direct Exposure	Equity-Based Exposure
Commodities	Futures-based commodity index Direct ownership (e.g., gold)	Natural resources stocks Commodity producer stocks
Real Estate	Property funds Direct property ownership	Real estate investment trusts (REITS) Publicly traded property stocks
Infrastructure	Infrastructure funds	Publicly listed infrastructure assets

For illustrative purposes only.

When evaluating the equity-based approach to accessing real assets, it is important to consider the following questions:

- What are the benefits and drawbacks of the equity-based approach compared to more direct means of investing in real assets?
- Do real asset equities provide appropriate exposure to changes in real asset prices?
- Do real asset equities provide inflation protection, much like direct real asset investments?
- Would real asset equities amplify portfolio risk rather than provide diversification, given their high positive correlation with the equity market?

Exhibit 2: Comparing Direct and Equity-Based Approaches

Factor	Direct Exposure	Equity-Based Exposure
Liquidity & Transparency	Lower liquidity and pricing transparency, especially for real estate and infrastructure	Higher liquidity and greater pricing transparency
Complexity & Accessibility	Some complexity associated with commodity futures (e.g., contango); Private real estate/infrastructure funds may be accessible only to more sophisticated investors	Equity investment widely understood and accessed by investors
Diversified Exposure	Commodity index offers diversified exposure; Direct real estate/infrastructure investments can often be concentrated	Possible to invest in companies in all real asset sectors, including those that are difficult to access directly (e.g., water, timber and forestry)
Underlying Risk	Pure play on commodity/real asset prices	May be dominated by equity risk; Poor tracking of real asset prices in the short-term
Portfolio Diversification	Higher portfolio diversification potential due to low correlation with equities	Lower portfolio diversification potential in the short-term due to high equity beta

For illustrative purposes only.

Real asset-based equities may not closely track changes in real asset prices, especially in the short-term.

Exposure to Real Asset Prices

Real asset-based equities may not closely track changes in real asset prices, especially in the short-term. For instance, although higher commodity prices will generally lead to higher earnings for commodity producers, the relationship is far from linear and depends on many other factors such as the financial and operational leverage of the producer and whether the producer hedges commodity prices. In addition, commodity producer stocks can be heavily influenced by the volatility and valuation of the broader equity market, as well as company-specific events (e.g., BP's catastrophic oil spill in 2010).

Nevertheless, diversified real asset-based equity portfolios may provide some level of exposure to real assets over long-term periods. Exhibit 3 shows that over the last 15 years, the S&P North American Natural Resources Sector Index, a commodity-based equity index, has moved generally in tandem with commodity prices, as reflected by the S&P GSCI Spot, and has behaved quite differently from core equities, as measured by the S&P 500®. The S&P North American Natural Resources Sector Index has also performed in line with energy futures. This performance profile suggests that commodity-based equity is driven more by fundamentals in the commodity market than those in the equity market and that, historically, this market has served as an effective alternative route to obtaining exposure to commodities.

Commodity-based equities are driven more by fundamentals in the commodity market than those in the equity market.

Exhibit 3a: Commodity-Based Equity Indices versus Commodity Prices

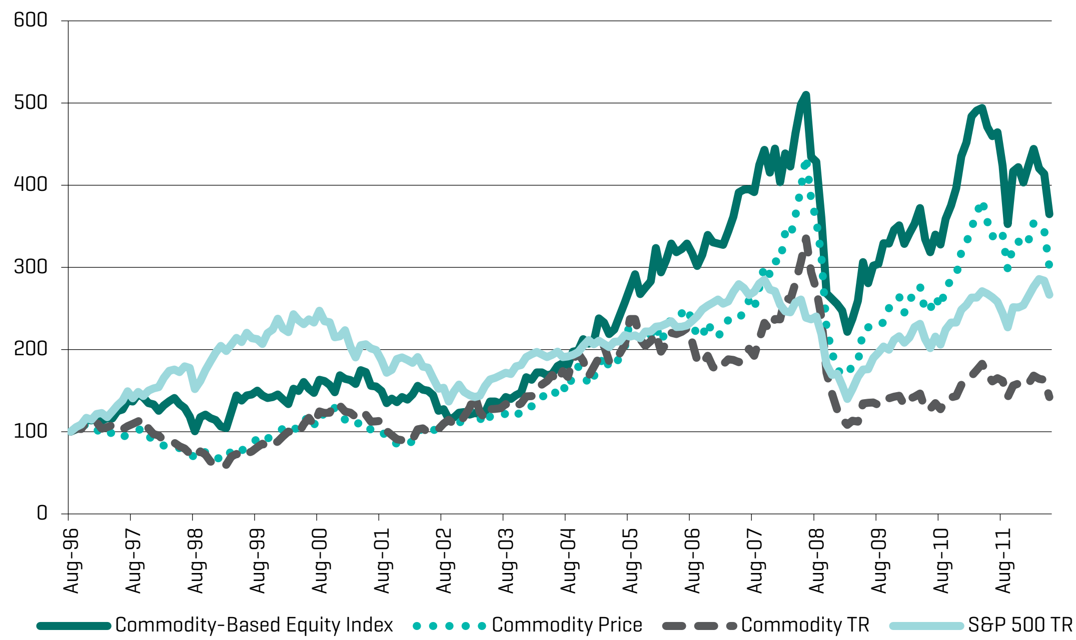
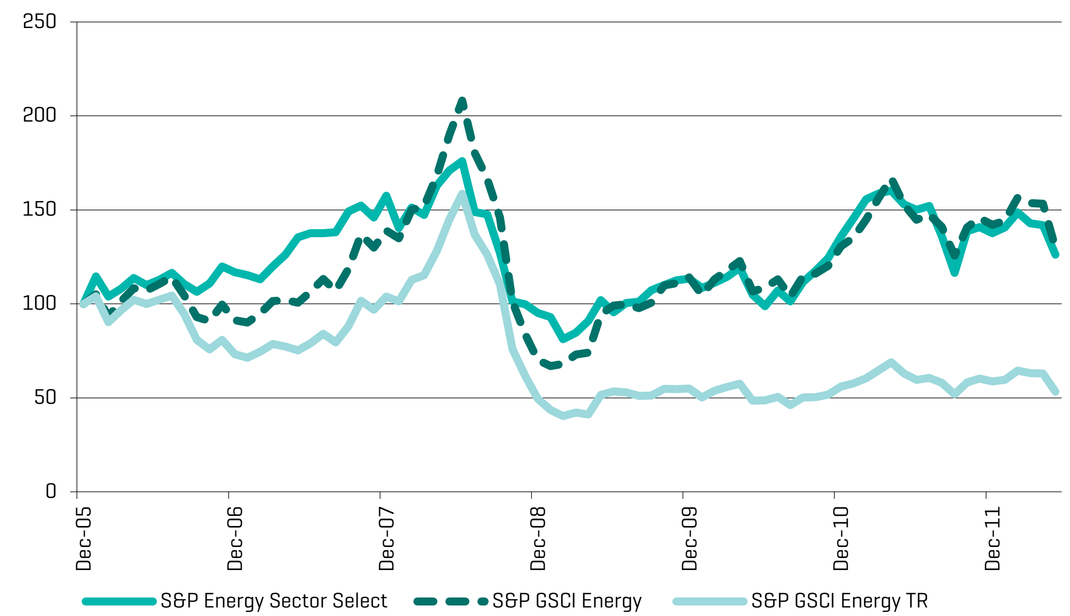


Exhibit 3b: Energy-Based Equity Indices versus Energy Futures



Source: S&P Dow Jones Indices. Data as of May 31, 2012. Commodity-Based Equity Index is represented by the S&P North American Natural Resources Sector Index; Commodity Price is represented by the S&P GSCI Spot; Commodity TR is represented by S&P GSCI Total Return. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect 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.

It is still important to note that despite the high correlation between commodity-based equities and commodity prices, commodity-based equities are also influenced by equity risks. If the objective is a pure play on commodity prices, commodity futures and futures-based commodity indices such as the S&P GSCI may be consistent with that objective. For instance, the S&P GSCI Gold Index has an almost perfect correlation of 0.99 with the spot price of gold bullion, significantly above the 0.85 correlation between gold producer equities and the gold spot price.

Inflation Protection Potential

Real assets -- especially commodities -- tend to provide inflation protection, as they are among the primary drivers of inflation. A relevant question is whether commodity-based equities and real asset-based equities in general also offer inflation protection potential. For this analysis, we constructed a hypothetical composite index of real asset-based equities that equally weights three components: commodity-based equities (33.33%), REITs (33.33%) and listed infrastructure-based equities (33.33%). We found that over the last 15 years, based on this construction, real asset-based equities and commodity-based equities have significantly outperformed core equity indices and commodity indices, respectively, with comparable volatility.

Real asset-based equities and commodity-based equities have significantly outperformed core equity indices and commodity indices, respectively, with comparable volatility.

Exhibit 4a: Historical Risk and Return: Annualized Returns

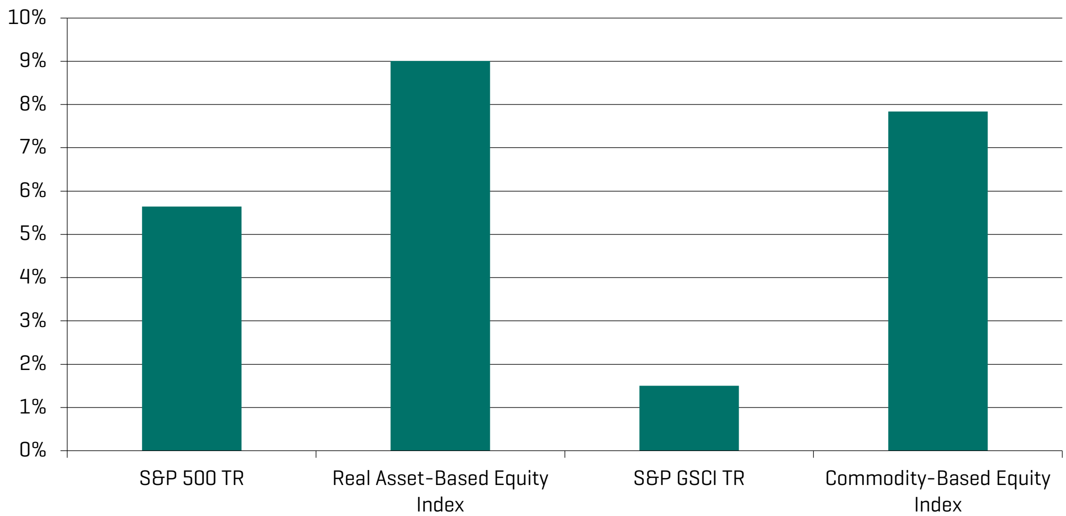
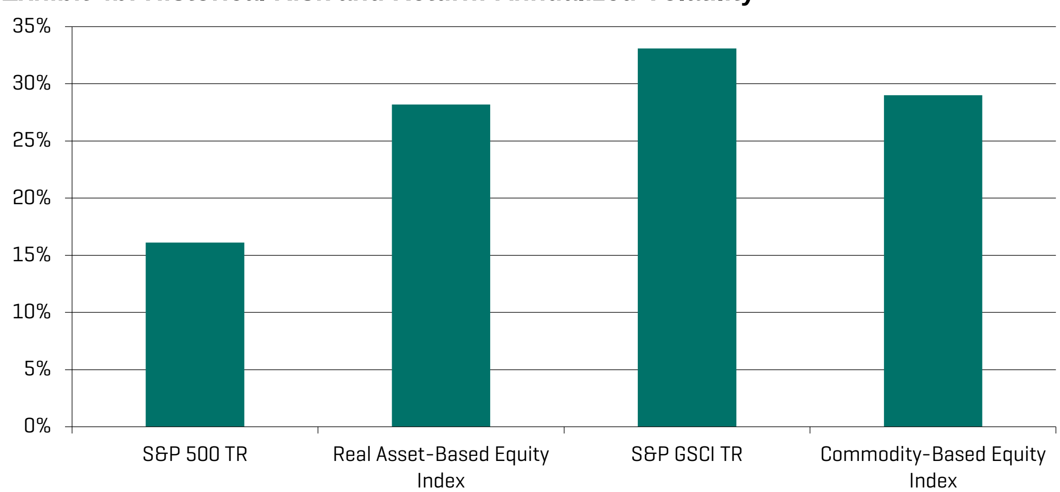


Exhibit 4b: Historical Risk and Return: Annualized Volatility



Sources: S&P Dow Jones Indices. Data from December 31, 1996 to May 31, 2012. Commodity-Based Equity Index is represented by the S&P North American Natural Resources Sector Index; Real Asset-Based Equity Index is represented by an equal-weighted (monthly rebalanced) composite of the S&P North American Natural Resources Sector Index, the S&P US REIT and the S&P Global Infrastructure. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect 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.

As Exhibit 5 shows, commodity-based equities and real asset-based equities are positively but not strongly correlated with changes in inflation. Of all the assets included in the analysis, commodities (as represented by S&P GSCI Total Return) are the most highly correlated with inflation.

Exhibit 5: Correlation Matrix

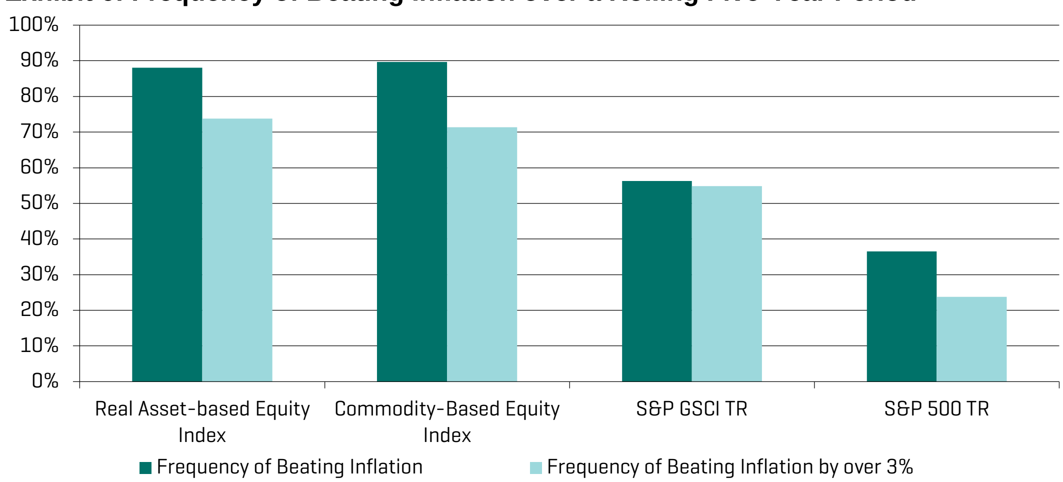
	Inflation	S&P 500 TR	Barclays Global Aggregate	Commodity Equities	Real Asset Equities	S&P GSCI TR	NCREIF Property Index
Inflation	1.00	0.09	0.04	0.15	0.15	0.33	0.28
S&P 500 TR	0.09	1.00	0.14	0.66	0.74	0.25	0.21
Barclays Global Aggregate	0.04	0.14	1.00	0.24	0.35	0.23	-0.05
Commodity Equities	0.15	0.66	0.24	1.00	0.87	0.65	0.21
Real Asset Equities	0.15	0.74	0.35	0.87	1.00	0.52	0.25
S&P GSCI TR	0.33	0.25	0.23	0.65	0.52	1.00	0.23
NCREIF Property Index	0.28	0.21	-0.05	0.21	0.25	0.23	1.00

Sources: S&P Dow Jones Indices. Data from December 31, 1996 to May 31, 2012. Commodity-Based Equity Index is represented by the S&P North American Natural Resources Sector Index; Real Asset-Based Equity Index is represented by an equal-weighted (monthly rebalanced) composite of the S&P North American Natural Resources Sector Index, the S&P U.S. REIT Index and the S&P Global Infrastructure. Tables are provided for illustrative purposes. Past performance is no guarantee of future results. This table may reflect 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.

In rolling five-year periods, commodity-based equities and real asset-based equities have beaten inflation more frequently than commodities futures and core equities.

While this correlation analysis measures the short-term sensitivity of asset returns to inflation, it does not fully capture investors' experience over typical investment horizons of three to five years. Exhibit 6 examines the historical performance of different assets relative to inflation over five-year investment horizons. In the rolling five-year periods over the last 15 years, commodity-based equities and real asset-based equities have beaten inflation more frequently than commodity futures and core equities.

Exhibit 6: Frequency of Beating Inflation over a Rolling Five-Year Period



Sources: S&P Dow Jones Indices. Data from December 31, 1996 to May 31, 2012. Commodity-Based Equity Index is represented by the S&P North American Natural Resources Sector Index; Real Asset-Based Equity Index is represented by equal-weighted (monthly rebalanced) composite of S&P North American Natural Resources Sector Index, S&P U.S. REIT and S&P Global Infrastructure. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect 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.

Portfolio Diversification Potential

Compared to real asset-based equities, direct real asset investments tend to be less correlated with the equity market (see Exhibit 5). The relatively high correlation between real asset-based equities and the broad equity market leads to the common perception that real asset-based equities provide fewer portfolio diversification benefits than direct real asset investments, and may even increase portfolio volatility.

However, correlation does not provide a complete picture of diversification potential. Another important factor that impacts diversification is dispersion of asset returns. Since real asset-based equities often exhibit performance profiles that are distinct from those of core equities, they may provide a certain degree of portfolio diversification.

Adding real asset-based equities helped portfolios achieve risk profiles that were comparable to that of a portfolio with only direct commodity exposure, while enhancing returns.

Exhibit 7 examines the risk and return of portfolios with different real asset exposures. It shows that adding commodity-based equities or real asset-based equities (as shown in Portfolios 3 and 4 of the chart) helped portfolios achieve risk profiles that were comparable to that of a portfolio with only direct commodity exposure (as demonstrated by Portfolio 2), while enhancing returns.

Exhibit 7: Portfolios with Different Real Asset Exposures

	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Equities	70%	50%	50%	50%
Fixed Income	30%	30%	30%	30%
Real Asset Exposure	-	20% in commodities	10% in Commodities and 10% in commodity equities	10% in Commodities and 10% in real asset equities
Annualized Volatility	11.8%	10.9%	11.4%	11.0%
Annualized Return	6.8%	6.5%	7.1%	7.1%

Source: S&P Dow Jones Indices. Data from December 31, 1996 to May 31, 2012. Equities is represented by the S&P 500 Total Return; Fixed Income is represented by the Barclays Capital Global Aggregate Index; Commodities is represented by the S&P GSCI Total Return; Commodity-Based Equities is represented by the S&P North American Natural Resources Sector Index; Real Asset-Based Equities is represented by an equal-weighted (monthly rebalanced) composite of S&P North American Natural Resources Sector Index, S&P U.S .REIT and S&P Global Infrastructure. Tables are provided for illustrative purposes. Past performance is no guarantee of future results. This table may reflect 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.

Conclusions

Real asset-based equities offer fundamental exposure to underlying real assets such as commodities, real estate and infrastructure. Historically, real asset- and commodity-based equities have significantly outperformed core equities and commodity futures, respectively, and have also provided inflation protection and portfolio diversification. Depending on investment objectives and constraints, investors who may be seeking a real asset allocation need not be handcuffed by traditional asset class boundaries, and may consider real asset-based equities as an alternative means of accessing commodities, real estate and infrastructure.

Exhibit 8: Investment Products Linked to S&P Real Asset-Based Equity Indices

Real Asset Equities	Investment Product	ETP Ticker
Commodities – Diversified	iShares S&P North American Natural Resources Sector ETF SPDR S&P Global Natural Resources	IGE GNR
Commodities – Energy	SPDR Energy Select Sector Fund SPDR S&P Oil & Gas Exploration & Production SPDR S&P Oil & Gas Equipment & Services	XLE XOP XES
Commodities – Metals	SPDR S&P Metals and Mining	XME
Commodities – Other Natural Resources	Guggenheim S&P Global Water Index ETF iShares S&P Global Timber & Forestry	CGW WOOD
Real Estate	iShares S&P Developed ex-U.S. Property Index Fund First Trust S&P REIT Index Fund ETF Vanguard Global ex-U.S. Real Estate ETF	WPS FRI VNQI
Infrastructure	iShares S&P Global Infrastructure Index Fund	IGF

Performance Disclosure

The inception date of the S&P Global Infrastructure Index was February 22, 2007 at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spindices.com.

The inception date of the S&P North American Natural Resources Sector Index was April 30, 1998 at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spindices.com.

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Another limitation of back-tested hypothetical information is that generally the back-tested calculation is prepared with the benefit of hindsight. Back-tested data reflect 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 (or 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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