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# White Paper

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## Real Assets

*The Role of Intrinsically Valuable Assets in Diversified Portfolios*

In the simplest terms, real assets are things you can touch that are intrinsically valuable. Real assets include *commodities, real estate, infrastructure assets, natural resources, farm land, art*, and countless other examples. Intrinsic value can be derived from productive value or other more subjective considerations. For example, land has intrinsic value because it can produce food, shelter, or natural resources; a piece of art has intrinsic value because it is unique. While gold lacks significant industrial productive application, humanity has long considered it valuable for its scarcity, beauty, and relative portability.

Unlike stocks, bonds, and other financial assets, real assets have intrinsic value, which is not derived from claims on an institution's future cash flows. Real assets can be critical diversifiers. Because intrinsic value is not based on nominal cash flow, real assets are more impervious to inflation shocks, irresponsible governmental economic policies, or geopolitical crises. In the most extreme case, real assets retain value even if fiat currencies become valueless (to the extent ownership rights are protected under such a dire circumstance). A bond interest payment or a stock dividend has no value if the money has no value.

The main categories of investable real assets are commodities, various real estate and land types, infrastructure, and natural resources. Additionally, Treasury Inflation-Protected Securities (TIPS) provide an inflation hedge like real assets. Strictly speaking, TIPS are not a real asset because they have no intrinsic value. Value is derived from a contractual obligation between borrower and lender, the classic definition of a financial asset. However, they do have some unique properties giving them a closer association to real assets.

Investors face many challenges in the decades ahead. However, one clear and present danger outshines all others. As of early 2011, annualized U.S. federal government budget deficits exceeded \$1.5 trillion, and the U.S. federal government debt-to-GDP ratio has rapidly accelerated beyond 100 percent. The total U.S. government debt is more than \$14.5 trillion. Moreover, unlike corporations which are required to include unfunded debt ratios, the U.S. government ignores unfunded liabilities for social security, Medicare, and Medicaid. According to the Wall Street Journal, the true deficit is closer to \$65 trillion. Possible remedies for this unsustainable fiscal condition include confiscatory tax increases (which would impair economic growth), significant spending cuts to entitlement programs (that risk political instability), or default either explicit or implicit. (Debt monetization by the Federal Reserve is a form of implicit default.) It is likely that the ultimate remedy may include all three elements. Fiscal policies are controlled by Congress and the political process, while monetary policy is controlled by the Federal Reserve. Too often, nations that cannot muster the political will required to rein in unsustainable deficits and debt have turned to debasing the currency (and the nominal value of debt) through inflationary monetary policy. While the Federal Reserve is supposedly an independent institution, unsustainable deficits can force the Federal Reserve to finance debt with printed money as an alternative to explicit sovereign default. Quantitative Easing (QE I and II) is a euphemism for such money “printing.”

Real assets can serve as a hedge against such currency debasement. Other distinctive attributes of real assets include a total return that rises with inflationary forces; hedges against geopolitical and certain economic and financial risks; and enhanced portfolio risk-adjusted performance when combined with financial assets. Traditional financial asset classes like stocks and bonds have generally performed poorly during accelerating inflationary environments or periods of geopolitical, financial, or economic instability.

## **Commodities**

A commodity is a raw material used in the production of other goods. The commodity asset class can be divided into two broad categories: hard commodities are normally mined, while soft commodities are typically farmed. Soft commodities include corn, coffee, and wool. Soft commodity prices tend to be volatile due to spoilage and weather-related risks. On the other hand, hard commodities are removed from the ground or extracted from other natural resources. Once extracted, they are commonly processed to create other types of commodities. For example, gasoline is refined from oil. Hard commodities are key ingredients in the industrial production process and generally do not spoil. Examples include oil, gold, and copper.

There are multiple ways to gain commodity exposure. A common way is through forward (or futures) contracts. A commodity futures contract is a standardized agreement to buy or sell a commodity at a predetermined price and date. Commodities producers (for example, natural gas producers) often sell a commodity futures contract to lock in a certain future sale price for their product. Buyers of commodity futures usually include commodity consumers (like power plants) that wish to lock in a future purchase price today and speculators who bet on rising commodity prices.

Instead of buying futures contracts to gain exposure to commodity prices, investors can also buy the stocks of commodity-producing companies. However, a commodity stock is not a pure commodity play. For example, the company may have hedged its commodity price exposure or have idiosyncratic

risks such as deteriorating financial conditions or labor disputes. An investor could also buy and take possession of physical commodities. This approach may work for large companies that use the commodity, but most investors do not want to manage storage and transportation.

The most practical route for most investors is through the futures market. There are three components of total return for commodity futures, changes in spot prices, the roll return, and the collateral return:

- ✓ *Changes in Spot Prices.* As the spot price, or current price, of a commodity increases or decreases, the close-to-maturity futures price rises or falls. This component of total return captures the impact of commodity price inflation over time.
- ✓ *Roll Return.* The roll return component is the most difficult to measure and requires assumptions about the motives of so-called hedgers and speculators. Longer-term futures contracts frequently have large discounts from the spot prices. This condition is known as backwardation. In backwardation, buying and holding a futures contract can earn a positive return as the spot and futures price converge at maturity of the contract (the futures price increases to match the spot price). A natural hedger, for example a heating oil distributor that owns the physical commodity, is already exposed to fluctuations in the commodity price. This heating oil distributor may want to insulate itself from falling future prices by selling a commodity futures contract. They risk missing out on higher profits if the commodity's spot price increases, but they have locked in the sale price ahead of time and protected themselves against a potential price decline. The distributor prefers a slightly lower, but certain profit today in exchange for a slightly higher expected (but also uncertain) profit later. Speculators take the other side of the trade (they "go long") on the futures contract. Hedgers transfer price risk to speculators, who may have an expected positive roll return (risk premium) for taking the commodity price risk. Over time, speculators achieve higher returns if this risk premium exists.
- ✓ *Collateral Return.* Collateral return is interest earned on the collateral posted for the futures contract. When buying a futures contract, there is no immediate transfer of cash, rather collateral is posted to assure the future payment. Because only a minimal margin requirement is needed to establish a futures position, commodity futures can be fully collateralized with a variety of fixed income securities. The total return earned from this collateral provides additional returns to the investor. Historically, this component of total return has been significant for commodity futures indices. Commodity futures index returns are calculated as if the collateral was invested in three-month T-Bills. If one invests the collateral in some other security, say TIPS bonds, excess return can be earned over the index (albeit only if the TIPS collateral outperforms T-Bills).

Commodity futures indices represent the total returns of holding long positions in agriculture, metals, energy, and livestock commodities. There are some limitations in constructing investable commodity indices. Not all commodities have futures markets, so it is impossible to construct a fully comprehensive commodity index using only futures markets.

Commodity indices differ in a number of ways. These differences include variations in selection and weighting criteria, as well as rolling mechanisms and rebalancing periods. The following compares two

widely used commodity indices; the Dow Jones-UBS Commodity Index and the S&P Goldman Sachs Commodity Index (GSCI).

### Dow Jones–UBS Commodity Index

The DJ-UBS commodity index is comprised of 19 physical commodity futures contracts and is designed to provide diversified exposure to commodities as an asset class. No related group of commodities (e.g., energy, precious metals, livestock, grains, etc.) may constitute more than 33 percent of the index. The liquidity of a commodity futures contract and the level of production of the underlying commodity are factors used to determine the weight of each contract within the index. No single commodity may constitute less than 2 percent of the index. Commodities represented in the index include natural gas, crude oil, unleaded gas, heating oil, live cattle, lean hogs, wheat, corn, soybeans, soybean oil, aluminum, copper, zinc, nickel, gold, silver, sugar, cotton, and coffee.

### S&P GSCI

The GSCI is world-production weighted; the weight of each commodity in the index is determined by the average quantity of production in the last five years. This weighting scheme makes the GSCI one of the most popular measures of commodity investment performance. The index is composed of physical commodities only, and energy generally represents more than 60 percent of its weight (approximately 66.5 percent as of December 31, 2010). There is no index rebalancing. Since it has no rebalancing, rising prices cause a commodity to have an increasing weight in the index.

Commodities are major inputs in the production process. Therefore, the prices of commodities, which are determined primarily by near-term events, should be positively related with the inflation rate. Specifically, higher commodity prices should ultimately result in higher inflation. Stock and bond prices that are based upon discounted cash flow expectations can react negatively to inflation, especially in the short term. Therefore, commodities can help protect a portfolio from the adverse impact of unanticipated inflationary pressures.

Due to low correlations with stocks and bonds, commodities provide significant diversification benefits. Instability in the Middle East, wars, and supply disruptions due to natural disaster like hurricanes, earthquakes, droughts, and floods may adversely impact the supply of certain commodities driving prices up. Meanwhile, most of these events hurt stock prices.

### **Equity Real Estate Investment Trusts and Private Real Estate**

Equity real estate investment trusts (REITs) are companies that own and actively manage income-producing commercial real estate properties. As of February 2011, there were 128 publicly traded equity REITs, representing \$392 billion in total market cap. In 1960, President Dwight Eisenhower signed into law the Cigar Tax Extension, which included a favorable tax provision allowing REITs to avoid taxation. In order for a REIT to qualify for the favorable tax treatment, it must invest at least 75 percent of its assets in real estate, generate at least 75 percent of its income from property leases, and distribute at least 90 percent of annual taxable income as dividends to shareholders.

While equity REIT shares constitute ownership interests in businesses, their high correlation with each other and low correlation with other types of stocks warrants their classification as a separate asset class. The liquidity and favorable tax treatment of publically traded REITs offer advantages over non-

REIT private real estate ownership. Because most institutional investors are tax exempt, they escape both direct and indirect income taxation. Another benefit of REITs over private real estate is that publicly traded REITs are registered and regulated by the Securities and Exchange Commission (SEC) and must adhere to corporate governance and financial reporting standards.

While all real estate represents real tangible assets, many commercial and residential properties derive significant value from their ability to generate cash flows from the rents of residential and commercial customers. So unlike farmland, which has intrinsic value because of its productive capacity to grow food, real estate properties in population centers demand valuation premiums because tenants are willing to pay for location. That location premium can be tied to the health of the economy, employment, and other local factors. When economies enter traditional recessions, the relatively long life of real estate leases can provide a revenue buffer; the economy hopefully recovers before many leases expire or renters default. REITs earnings are still tied to the sustainability of healthy economic activity. Lease contracts only have value to the extent that businesses and residential tenants have the capacity to honor their leases.

Private real estate and publically traded REITs both provide exposure to the same asset class. Private real estate is often touted as providing greater diversification benefits than REITs because REITs have some positive correlation to the stock market. However, private real estate has no readily observable market price, so correlation to stocks cannot be precisely measured over short intervals. An inability to measure correlation does not prove an absence of correlation.

Private real estate and public REITs have more fundamental differences than liquidity. REITs are usually comprised of well-established income-generating properties and do not typically invest in development projects or major property improvements. The best argument for investing in illiquid private real estate instead of REITs is that a skillful manager has greater flexibility to add value through development or major renovations and improvements. Private real estate investments also have greater latitude to use leverage, which can multiply returns (although with increased risk).

### **Energy Infrastructure Master Limited Partnerships**

Master Limited Partnerships (MLPs) are publicly traded partnerships that were born out of tax-friendly legislation in the 1980s. The Tax Reform Act of 1986 enabled companies organized under the MLP structure to pass all income, losses, gains, and deductions on to limited partners without corporate taxation. Fearing that many corporations would rush to adopt the tax-friendly MLP structure, Congress followed up with The Revenue Act of 1987. The Act limited the MLP structure to companies where at least 90 percent of their income was considered “qualifying income,” defined as “income and gains derived from the exploration, development, mining or production, processing, refining, transportation (including pipelines transporting gas, oil, or similar products), or the marketing of any mineral or natural resource including fertilizer, geothermal energy, and timber.” As a result, the majority of modern day MLPs own and operate energy infrastructure assets such as pipelines that transport crude oil, natural gas, and other petroleum products. As of December 2010, the 50 largest MLPs represent a total market cap of \$206 billion. Approximately 70 percent of the MLP market is dedicated to the (midstream) transportation of petroleum products and natural gas. Less than 7 percent are dedicated to exploration and production.

MLPs are traded like shares of stock on public exchanges and are regulated by the Securities and Exchange Commission. However, unlike ownership interests in traditional corporations, MLP ownership interests are divided into two groups, a general partner (GP) and limited partners (LP). The GP typically has a 2 percent stake, manages the partnership, and has unlimited liability. On the other hand, the LPs provide the capital and receive cash distributions from the partnership. The LP's risk is limited to their invested capital. Also, the LP's ownership interest is structured as "units" rather than as "shares" and the cash flows to the LPs are called "distributions" rather than "dividends."

In the 1980s, MLPs were involved in a variety of businesses, including risky oil and natural gas exploration and production companies. These exploration and production MLPs fell victim to falling energy prices and depleting reserve bases and often relied heavily on exploratory drilling to sustain cash flow. Without reinvestment, many of these MLPs were self-liquidating partnerships and were ultimately unable to sustain their distributions. In the late 1980s and early 1990s, large energy companies started transferring their low-growth physical pipeline assets (that generated "qualifying income") to the more tax-efficient MLP structure. MLPs were reborn, largely as midstream energy infrastructure assets that transported, processed, and stored natural gas, crude oil, and refined petroleum products. So unlike the exploration and drilling MLPs of the prior era, today's MLPs focus on energy transportation, refining, and storage and are relatively insulated from volatile energy prices.

Beginning in the late 1990s, many MLPs began making significant acquisitions, pursuing growth projects, and aggressively raising distributions. This change in focus was largely due to the continued availability of midstream energy transportation assets as large diversified energy companies (mainly C-Corps) divested their mature assets to redeploy capital to higher growth opportunities. MLPs were able to take advantage of their tax-exempt structure, which affords them a lower cost of capital and allows them to produce higher after-tax returns than traditional corporations.

Modern day MLPs mainly own midstream energy infrastructure assets like pipelines that generate "tariffs" for the transportation of crude oil and refined petroleum products (jet fuel, gasoline, and distillate fuel oil). These tariffs generate fee income, like a toll road. Most pipelines that cross state lines are regulated by the Federal Energy Regulatory Commission (FERC). The FERC regulates the rates that pipelines can charge, usually building in annual inflation adjusters. Therefore, the fees generated are usually not tied directly to changes in the price of the transported commodity, but rather simply to the quantity and distance of the transported good. This fee income tends to be fairly stable over time. As the volume of the commodity transported increases with demand growth (and inflation rises), the fee revenues increase.

Because MLPs distribute virtually all available cash to unit holders, they must access the capital markets to finance growth. This dynamic causes MLPs to be disciplined acquirers, at least compared to traditional corporations because management teams must demonstrate to unit holders that acquisitions and projects are immediately accretive to earnings.

From 1996 to 2010, the Alerian MLP Index generated a compounded total annual return of 16.8 percent. Over the same period, the S&P 500 Index returned 6.8 percent and the Barclays Capital Aggregate U.S. Bond Index return 6.0 percent. More importantly, the Alerian MLP Index's correlation was 0.34 to stocks and 0.05 to bonds.

Looking forward, MLPs offer distributions (or yield), plus the potential for distribution growth. As of September 30, 2011, the MLP market's average yield was 6.8 percent. While the high historical growth rate for the last 15 years may be difficult to duplicate over the coming decade, a 3 to 5 percent growth rate may be sustainable in the foreseeable future due to the continued growth in demand for energy in the United States and the inflation adjustments in some MLP contracts. Moreover, C-Corps continue to hold a significant number of (non-core) qualifying assets that are potentially available for divestiture. MLPs can also increase distributions organically by connecting existing pipelines and building new ones. Combining the 6.8 percent distribution yield with a potential 3 to 5 percent distribution growth rate means an expected 9.8 to 11.8 percent annual return does not seem unreasonable. In an era of low interest rates and relatively low equity risk premiums, a 9.8 to 11.8 percent potential annual return is attractive. Of course, since MLPs are publicly traded, their prices can go down as well as up. Since their total market cap is relatively small, buying or selling pressure can move prices precipitously.

### **Broad Infrastructure Investing**

In the early 1900s, con artists “sold the Brooklyn Bridge” to gullible victims. Beginning in the 1990s, governments sold bridges and other infrastructure assets to private institutional investors. The global private infrastructure investing asset class was born.

The potential global infrastructure asset base is massive (an estimated \$20 trillion). So far, only a tiny fraction is owned by private investors, but cash-strapped cities and states have begun to sell. Infrastructure assets are tangible structures, networks, and facilities that perform important functions for economic activity. Infrastructure includes transportation assets such as bridges, toll roads, railroads, tunnels, seaports, and airports. It also includes communication assets like television and radio towers, wireless networks, cable systems, and satellite networks. Additional infrastructure assets can include electricity transmission lines, utilities, water systems, hospitals, prisons, schools, courthouses, and even parking meters.

Private infrastructure investments share some characteristics with other asset classes. The structure, liquidity, and (relatively high) fees of investment pools are similar to those of private equity investments. The significant cash yield component is like fixed income. Like commercial real estate, a significant portion of value comes from the structures built on the land rather than just the land itself. Unlike many investable assets, the intrinsic value of many infrastructure assets is relatively impervious to economic cycles. Whether the economy is in expansion or contraction mode, society presumably needs core infrastructure assets in order to function.

Infrastructure assets can be attractive for many reasons. Most perform critical functions and face little or no competition so they have stable cash flows, asset values can be protected against inflation as revenues are implicitly or explicitly linked to inflation (i.e., utility rate setting, toll road rates.), and leases or concession agreements typically range up to 99 years providing a long expected asset life. However, infrastructure investments face a variety of esoteric risks. Assets are often controlled directly or indirectly by government entities and can face political pressures or regulatory risk. Illiquidity is a significant risk as there is essentially no secondary market. The newness of private infrastructure investing creates some concern. There is not yet enough history to teach us what can go wrong. Valuation uncertainty creates auditing challenges. The uniqueness of each asset makes performance

benchmarking difficult. Physical risks such as natural disasters or terrorist attacks can impair value, depending on insurance policies and each circumstance. Lastly, operation of many infrastructure assets can be complex, and the lack of skilled operators might pose problems.

For investors with a very long time horizon and low liquidity needs, private infrastructure investments offer the ability to generate inflation-protected investment returns along with significant diversification benefits. However, given private infrastructure's complex, small, and fragmented nature, manager selection and access to the highest quality assets are critical to success.

## **Timberland**

Over the past 20 years, endowments, foundations, and pensions have made timberland investing a part of their "playbook." Global institutional investors now own about \$35 billion of timberland, including \$25 billion in the United States, representing about 8 percent of total investable timberland. However, about \$150 billion worth of timberland remains owned by private non-industrial landowners. Landowners and forest products companies continue to divest timber holdings, creating opportunities for increased institutional ownership.

Timberland differs from virtually all other investable assets in that its primary source of total return is derived from organic growth. Trees grow as long as rain falls and the sun shines. As an investable real asset class, timberland offers several attractive characteristics, including historically attractive risk-adjusted returns compared to traditional asset classes and significant diversification benefits independent of capital market forces.

Trees grow in size into higher-valued assets. For example, in the southern United States, young trees begin as lower-valued pulpwood, but grow into a combination pulpwood and saw timber trees, which range from 9 to 12 inches in diameter. As these trees continue to grow beyond 12 inches in diameter, they become even more valuable because they can be used for lumber products. As tree growth continues, the value of their product classes increases as well. The negative impact of waiting to harvest (the time value of money) can be offset by the increasing size and value of the trees. When timber prices fall due to adverse economic forces, the timber investor can simply delay harvesting. This is very different than growing an agricultural commodity which must be harvested each year regardless of market prices.

Due to soil and climate conditions, geographical regions favor different types of trees. Expected returns and risk vary substantially by region and species of tree. The U.S. timber market is typically divided into three regions, which are the Northwest, Northeast, and the South. The Northwest and Northeast typically produce superior hardwoods (cherry, oak, maple, and ash), while southern timberland properties generally produce softwoods (pine, fir, and spruce). Additionally, one can diversify globally with timber investments in places like New Zealand and British Columbia, Canada.

There are strong demographic reasons to believe timber prices may continue to rise, adding another potential component to total return. Demand for timber has been rising fast, especially in emerging-market countries. This trend may continue as the middle class in emerging-market countries expands. Furthermore, international political pressure to protect publicly owned forests may further enhance timber values by creating supply shortages.

Timberland can generate income throughout the life of an investment as trees on the land are periodically harvested and sold. The income varies based on the investment and management strategy for different timberland properties, but can be a meaningful component of total return. The land used to grow the timber may also contain mineral resources, and be sold at a premium for its natural resources value. In other cases, timberland may be converted to a “higher use” (i.e., commercial real estate development as cities expand). At the very least, timberland tends to appreciate with inflation. The NCREIF Timberland Index is a composite of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only. All properties in the Index have been acquired in whole or in part by institutional investors. All properties are held in a fiduciary environment. Between 1987 and 2010, the NCREIF Timberland Index returned 13.5 percent annually, compared to 9.6 percent for the S&P 500 Index. Over the same period, the NCREIF Timberland Index had an 11.4 percent annual standard deviation compared to 18.6 percent for the S&P 500 Index. Furthermore, the annual correlation between the two indices was 0.24.

However, these positive numbers should be taken with a grain of salt. While the timberland index performance is calculated quarterly, most appraisals are performed annually. This gives the illusion of seasonality with most of the returns appearing in the fourth quarter. Appraisal data skews volatility and correlation measures as well. For example, the lagged correlation, or the correlation between the S&P 500 in year N and the timberland index in Year N+1 was 0.32 during this period. This illustrates a “lagged beta” effect due to the illiquid nature of timberland. In other words, if timberland were publicly traded, it would likely show a higher correlation.

As with any investable asset, higher returns come with corresponding risk. Illiquidity is a prime risk; cash commitments typically exceed 10 years and some investments may take up to 20. Therefore, fiduciaries should carefully consider their cash-flow requirements before investing. Natural disasters like fire and insects pose another risk, but these losses for industrial managed forests in the United States have historically been less than one half of one percent per year. Another risk is that timber prices can fall, but that risk is mitigated long-term by “storing the timber on the trunk” (delaying harvesting until conditions improve). Supply shocks are possible if the governments create new legislation to protect threatened or endangered species. The spotted owl crisis of the early 1990s is a prime example (although bad for loggers, it was actually good for aggregate timberland investors because it led to higher timber prices).

Most institutions invest in pooled vehicles due to the cost and time horizon involved. Pooled funds are managed by timberland investment management organizations (TIMOs). The typical investment structure is a limited partnership investing in a portfolio of properties diversified by location, timber market, tree age, species, and end product. Similar to private equity investments, timberland management fees are relatively high (one to two percent with an incentive fee above a hurdle rate). However, a good timber manager can add value in several ways, including property due diligence, negotiating purchases and sales, diversifying the portfolio by species and geography, and ongoing forest management to maximize timber output per field. Investors should focus heavily on the quality, experience, and depth of the management team. Managing timberland investments is a highly specialized niche and very labor intensive. Experience matters.

While illiquidity can be an issue and timberland is full of esoteric risks, effective timberland investment offers returns competitive with equities as well as significant portfolio diversification benefits, especially protection against rising inflation. Timberland is most appropriate for investors with very long time horizons and manageable liquidity needs.

## **Farmland**

Farmland investors acquire and rent land to farmers to produce crops. Farmland supply is constrained due to urban sprawl, limited expansion, and low turnover. High-quality farmland has historically produced uncorrelated, competitive returns with less volatility than equities. Returns are comprised of cash flows generated by producing and selling agriculture products and the long-term capital appreciation of the land. Farmland is an inefficient asset, meaning a skillful manager can add significant value.

Historically, farmland has been owned and operated by individual farmers—the quintessential “Mom and Pop” operation. However, modern farming has become more institutionalized. First, there is a growing trend toward the separation of owners and operators. Long gone are the days of “40 acres and a mule.” Modern farm equipment is huge ... and expensive. A combine may cost half a million dollars. Operators need to farm thousands of acres to rationalize the use of such equipment. Secondly, farming has become more technologically advanced. Laser land leveling, genetically engineered seed, advances in irrigation techniques, and insect control have enabled yields to rise dramatically over the past 20 years. Finally, many non-operators who inherit farms want to sell to realize the cash value of their land. There is a growing trend toward institutional ownership. The California Public Employees Retirement System (CALPERS) is one example of such an institutional owner.

Farm management companies exist to oversee the farms for absentee landlords. They can help with the acquisition of the land, identifying and contracting with the operator, selling the commodities, and stewardship of the land. Some of these companies are large, overseeing thousands of individual farms and employing hundreds of individuals. The individual managers typically hold a Bachelor of Science in Agriculture, have extensive farming experience and are accredited by organizations like the American Society of Farm Managers and Rural Appraisers (ASFMRA).

Farmland has historically produced a cash return of 3 to 5 percent plus appreciation. Over long periods of time the appreciation component has been about 1 percent above the inflation rate. Often a good farm manager can enhance the total return by suggesting improvements to the land. Examples of such improvements include: laser land leveling (to eliminate low spots that may flood), installing drain tiles, building on-site grain storage or drying bins, drilling wells, or adding center-pivot irrigation systems.

Farmland owners receive income through one of these methods:

- ✓ Cash rent—The operator pays a fixed price, for example, \$200 per acre. This method is the least risky for the owner and therefore, usually has the lowest return potential.
- ✓ Share crop—The owner and operator split input costs (seed, herbicide, pesticide, etc.) and share the proceeds of the crop sale.
- ✓ Custom farming—The owner pays all input cost and pays an operator to plant, weed, and harvest the crop. The owner receives all profit from the sale. This method has both the greatest risk and return potential.

Farmland returns are virtually uncorrelated with stock and bond returns and so can enhance total portfolio risk-adjusted return. The land can be acquired on either a cash basis or a leveraged basis. Risks of farm ownership include commodity price fluctuation, weather (drought or flooding), operator disappointment, insects, and fuel inflation. As with all investments, it is best to diversify both geographically and by crop type. Crop insurance is a must.

In addition to direct ownership of farmland, an investor can purchase shares in an agricultural partnership, structured much like a private equity fund. Limited partners own shares in a diversified pool of farmland assets; the general partner oversees the pool and contracts with farm managers and operators. This structure allows for diversification with a smaller amount of capital but adds an extra layer of fees.

## **Gold**

While gold is just one of many commodities, it has played a unique role in human history as a preferred store of value. In modern times, global financial markets have played a key role in shaping the relevancy of gold. In 1944, the Bretton Woods Agreement set the price of one ounce of gold at \$35 U.S. dollars. This price remained virtually unchanged until 1971 when the United States went off the gold standard. Most major countries followed the U.S. example in the early 1970s and adopted floating exchange rates, and thus gold fell out of favor, taking a back seat to world currencies, equities, and bonds.

Following its decoupling from the U.S. dollar, gold prices climbed throughout the 1970s, culminating in a January 1980 intraday price high of \$850 per ounce. Similar to the most recent run-up in gold prices, the oil crisis of the late 1970s, coupled with inflation concerns, resulted in a peak in gold prices. Gold eventually fell back to \$300 per ounce by late 1982. Gold traded mostly sideways for the next 20 years (1982 to 2002), hitting a bottom of \$252 per ounce in August 1999. The terrorist attacks of 9/11 and the subsequent wars in Iraq and Afghanistan triggered renewed interest in the precious metal, and it began its current rise. As we've witnessed throughout history, global conflicts and civil unrest often result in a flight to gold as investors seek wealth preservation in times of geopolitical uncertainty. Investors have a variety of options to gain portfolio exposure to gold. The most straightforward option is through the physical purchase of gold either in coin or bullion. However, this can be an inefficient method of investing, as gold dealers typically charge a commission of several percentage points over the spot price, and investors then must store and protect the bars.

Exchange-traded funds (ETFs) offer perhaps the most cost-effective structure to gain exposure to gold. However, in order to access the value of a gold ETF, the investor must one day convert the ETF shares back into the U.S. dollar-dominated cash. Gold investors who seek to protect themselves from the risk of U.S. government insolvency and the death of the U.S. dollar may find the need to convert gold back into the fiat currency problematic.

Investors can gain indirect portfolio exposure to gold by investing in gold mining companies. Mining company stocks, however, are not only sensitive to the price of gold but also the underlying company performance and general market movements. Mining companies make vast capital expenditures on exploration and extraction, and the company's performance is ultimately determined by the relative

success or failure of such projects. The futures market offers investors another method to gain portfolio exposure to gold.

While gold affords investors a hedge against inflation and some geopolitical crises, there can be other, lower-risk ways to insulate against such risks, such as investing in TIPS. Of course, the one advantage of physical gold over TIPS is that the U.S. Treasury could theoretically “explicitly” default on its obligations, rendering TIPS worthless. However, under that extremely dire circumstance, the gold owner must also be prepared to protect his valuable metal as government protections, property rights, and order break down. If one wants to invest in physical gold to hedge against the “Mad Max” scenario, one may also want to consider investing in a mercenary platoon to protect against looting mobs!

### **Other Investible Real Asset Categories**

Other real asset subsectors offer investors varying degrees of inflation protection, return potential, and diversification. Water is another precious resource that investors have reexamined over the past decade. While information is incomplete, it is hard to deny the compelling supply-demand story. Only about 3 percent of the world’s water is fresh. Unlike oil, water has few, if any, suitable substitutes. Demand is not projected to decline any time soon, and the development of the world’s emerging markets will continue to pressure supplies, potentially driving prices higher. Investing in water has historically been difficult since there is no water futures contract. Instead, water investment is usually indirect through water utility companies that maintain and develop water networks and infrastructure around the world.

Collectibles such as stamps, antiques, artwork, and baseball cards are loosely defined as rare assets. Collectibles are relatively illiquid assets and do not generate income. Depending on the type of asset (e.g., a Picasso painting versus a collectable child’s toy from the early 1900s), the liquidity and marketability can vary dramatically. While an expert may be able to predict the future value of a collectable, it is difficult to determine where such an investment fits within a diversified institutional investment portfolio.

### **Conclusion**

Real assets can serve multiple purposes within a diversified portfolio. Many institutional and individual investors have spending needs that are implicitly or explicitly tied to inflation. While each underlying real asset class has its own unique risks, the inflation-protected nature of intrinsically valuable assets can improve portfolio diversification, especially when the portfolio is heavily allocated to financial assets like stocks and bonds.

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*Principal, Chief Investment Officer*

As the firm’s Chief Investment Officer, Matt directs the firm’s capital markets research effort and asset allocation strategy. Matt also manages the firm’s alternative investments research effort and leads the hedge fund research team. He also advises a number of the firm’s corporate and nonprofit clients. In 2005, he co-authored “*The Practical Guide to Managing Nonprofit Assets*” (John Wiley & Sons). Matt received a BA in Economics from Northwestern University, is a CFA Charterholder, a CAIA (Chartered Alternative Investment Analyst), and is a member of the CFA Society of Chicago. Matt joined the firm in 2001.

## ***DiMeo Schneider & Associates L.L.C.'s Real Assets Team:***

### **Matthew Porter, CIMA®**

*Principal, Director of Research Analytics*

Matt is on the real assets team and also chairs the firm's investment committee. Matt also advises a number of nonprofit and corporate clients. In 2005, he co-authored *The Practical Guide to Managing Nonprofit Assets* (John Wiley & Sons). He obtained the title Certified Investment Management Analyst (CIMA®) from the Investment Management Consultants Association (IMCA) accreditation program at the Wharton School of Business and is a member of the Economic Club of Chicago. Matt received a Bachelor of Science degree in Finance from the University of Illinois in Urbana-Champaign. Matt joined the firm in 1998.

### **Brian Carlson, CFA**

*Senior Investment Research Consultant*

Brian is on the real assets research team, serving in a research and advisory capacity. He is a member of the firm's investment committee and serves on the capital markets research team. Brian also advises a number of nonprofit and corporate clients. He graduated from Northern Illinois University with his BS in Finance and is a CFA Charterholder (Chartered Financial Analyst). Brian joined the firm in 2006.

### **Benjamin Bartelt, CFA**

*Research Analyst*

Ben is on the real assets team serving in a research capacity. Ben researches real assets and traditional investment strategies and performs investment and operational due diligence on investment managers. Prior to joining the firm Ben was a Senior Mutual Fund Analyst with Harris Associates. He received his BS in Finance from Indiana University and is a CFA Charterholder (Chartered Financial Analyst).

### **Todd Leedy, CAIA®**

*Senior Alternative Investment Research Analyst*

Todd's responsibilities include researching and performing operational due diligence on fund of hedge funds, direct hedge funds, private equity and real assets managers. He also leads the firm's extensive fund of hedge funds operational due diligence efforts. As the only firm analyst to serve on all three alternative investment research teams (Hedge Funds, Private Equity and Real Assets), Todd also serves as the liaison between teams. Todd received his BS from the University of Richmond, VA in Business Administration and Finance. He earned the CAIA (Chartered Alternative Investment Analyst) designation sponsored by the Chartered Alternative Investment Analyst Association, a not-for-profit global organization committed to education and professionalism in the field of alternative investments. Todd joined the firm in 2002.

### **Nick Breit, CFP®**

*Senior Investment Research Consultant*

Nick is on the firm's real assets research team, serving in a research and advisory capacity. He also advises a number of nonprofit and high net worth clients. Prior to joining the firm, he was a Senior Financial Planner with The Ayco Company where he provided comprehensive advice to high net worth clientele. Nick earned a Bachelor of Arts degree in Finance and Economics from the University of Illinois at Urbana-Champaign and obtained the designation of Certified Financial Planner (CFP®) from the College of Financial Planning. Nick joined the firm in 2007.