May 2013

The case for real assets

Growing world population presents new investment opportunities

Jose Minaya, Head of Natural Resources and Infrastructure Investments

Executive Summary

- World population growth, especially a rapidly expanding middle class in emerging markets, will drive increased demand for natural resources, infrastructure and energy in the coming decades.
- Institutional investors, particularly endowments, are capitalizing on these trends through direct investments in real assets such as timber, farmland, energy and infrastructure, which are aligned with their long-term objectives.
- Opportunities in real assets include favorable long-term demand and supplyfundamentals, steady income, nontraditional portfolio diversification and inflation-hedging characteristics.
- Investing in real assets requires significant technical expertise, access to capital and local partnerships in strategic locations around the globe.

Growing populations, resource demand and investment opportunities

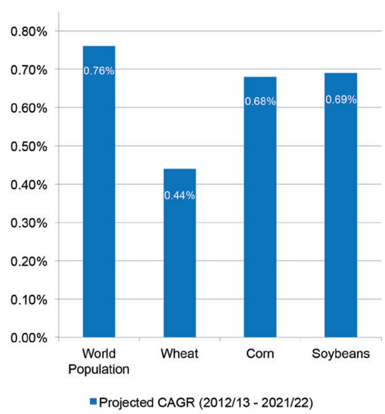
A growing world population and a rapidly expanding middle class in emerging-market countries have placed large demands on natural resources and infrastructure, which will require significant productivity gains and capital investment to keep pace with future food and energy needs. Institutional investors, particularly endowment funds, have recognized the investment implications of these trends and are increasingly incorporating these themes into their portfolio strategies through direct investments in real assets such as farmland, timber, energy and infrastructure.

Financial Services

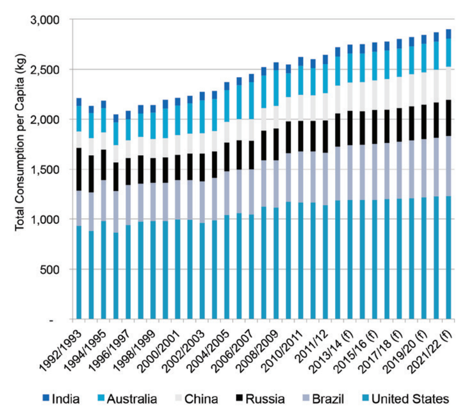
Farmland investing, for example, taps into some particularly compelling global trends. As people rise from poverty, they generally adopt a diet consisting of greater protein consumption, which puts additional strain on agriculture production. To continue feeding the world and producing greater quantities of protein, agriculture will require great leaps forward in terms of yield and productivity. Figure 1 shows steady world population and food consumption growth over the next decade, although gains in grain yields are not expected to keep pace.

Figure 1: Agriculture demand fundamentals

Population growth vs. grain yield gains



Per-capita consumption of corn, soybeans and wheat



Sources: Food and Agriculture Organization of the United Nations (FAOSTAT), USDA.

The alphas and betas of real asset investing

We aim to capitalize on these population trends and demand fundamentals by combining a lower-risk “beta” approach while sourcing opportunities to add value or “alpha,” when and where opportunities arise.

Beta is achieved by investing in production areas that are aligned with our long-term investment thesis (growing world population and resource demand), and through the way we structure our investments to protect principal and generate cash.

There are four major sub-asset classes of real assets: farmland (agriculture), timberland, infrastructure, and energy. Some of the potential investments in each category are:

- Agriculture
  - Row crops, such as corn and soybeans
  - Permanent crops, such as vineyards and fruit trees

- Timberland
  - Hardwood
  - Softwood
  - Biomass

- Infrastructure
  - Arenas/stadiums
  - Toll roads
  - Water treatment
  - Bridges/tunnels

- Energy
  - Oil
  - Natural gas

These investments are mostly “inelastic,” which means tighter supplies and rising prices should have little impact on demand. In other words, people and governments will always pay for necessities, such as food, heat, shelter and clothing, often regardless of the price, because there are few substitutes.

To achieve alpha, or market-beating returns in real assets, we believe investors need exposure to areas that add value to the underlying investment, such as an agribusiness that grows a crop, and also has an interest in production, transportation and marketing. By controlling the different stages of production and delivery, a business owner can adjust products and supply based on changing market needs, providing investors with potential income as conditions change.

Attractive investment characteristics

Real-asset investors gain exposure to scarce resources that can provide an income stream through leases and the potential for long-term capital appreciation. The asset class provides an opportunity to better align investment objectives and strategy as the investment time horizon for real assets stretches out decades rather than quarters.

This is why real assets could grow to represent 25% of the average institutional portfolio within the next decade, according to one estimate.[1] Direct investments in real assets offer several characteristics that appeal to institutions, such as potential inflation protection, nontraditional sources of diversification, potentially low volatility and the opportunity to invest in tangible things such as land and infrastructure, which can provide a store of value for capital.

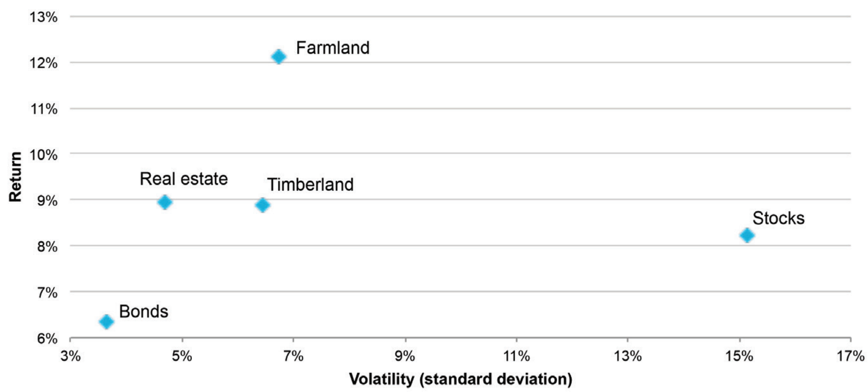
Diversification is especially appealing for institutions as traditional asset classes have become increasingly correlated in recent years. As an asset class, real assets provide diversification on two levels: low correlations with traditional asset classes such as stocks and bonds, and low correlations among the sub-categories of real assets themselves (see Figure 2).[2] Real assets also have shown high correlation with inflation, providing a potential hedge for investors seeking to protect the value of their capital.

Direct or private investments in real assets have also shown low levels of volatility over time, as these vehicles are generally not exposed to market speculation. This relationship creates opportunities to achieve hybrid-like investment return characteristics: stable bond-like current income and equity-like upside potential for capital appreciation.

Figure 2: 20-year history of higher returns and lower volatility vs. stocks

Risk-return characteristics of select asset classes

20 years ended 3/31/2013



Asset classes represented by respective indices: stocks (S&P 500 Index); bonds (Barclays U.S. Aggregate Bond Index; real estate (NCREIF National Property Index); timberland (NCREIF Timberland Index); farmland (NCREIF Farmland Index).

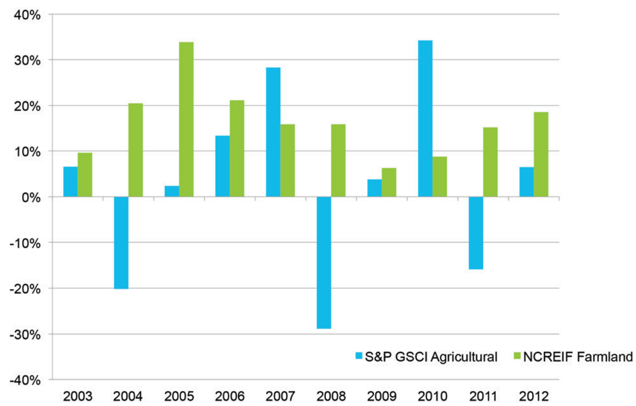
Sources: National Council of Real Estate Investment Fiduciaries (NCREIF), FactSet, Morningstar.

It is not possible to invest in an index. Performance for indices does not reflect investment fees or transactions costs.

Gaining exposure to real assets: Private vs. public investments

In addition to private, direct investment, investors can seek a degree of exposure to real assets through publicly traded securities. Although both approaches may be suitable for pursuing long-term investment objectives, their benefits and risks are not identical. Private investments have shown less volatility over time, while public investments are more liquid and transparent. For example, in Figure 3, the blue bars represent public investment returns as measured by an index that tracks publicly traded farm commodities, while the green bars show the returns of a large pool of directly held farmland properties acquired in the private market for investment purposes. During periods of stress, investors tend to sell their most liquid investments, which may explain why publicly traded securities have experienced greater volatility.

Figure 3: Public investment returns have been more volatile



Structuring a real assets portfolio to achieve long-term investment objectives

Direct investing in real assets requires specialized skills and expertise that not all asset managers have. The asset class requires significant due diligence, access to large pools of capital, scale, and relationships with skilled local partners who can manage operational risks. Optimal diversification within a portfolio requires investing across the major sub-categories and in diverse regions across the globe. When the U.S. experiences a drought, for example, exposure to farmland in other regions of the world can help offset potential losses. One of the keys to achieving the right portfolio mix is having local relationships and on-the-ground expertise in these regions.

The ability to manage operational, market and geographic or political risks also helps to achieve consistent risk-adjusted real asset returns over long periods. Investing directly in real assets involves significant operational risk—for instance, in harvesting and marketing perishable crops. We seek to reduce these risks by owning farmland that is leased to skilled local farmers who know how to raise and sell crops in their regions. This leaves the investor with two avenues of investment return: the bond-like returns generated from lease income and the potential long-term capital gains from directly owning the land.

Conclusion: Real assets will be a key driver of long-term global economic growth

Real assets will play a key role in driving global economic growth over the next several decades as the world continues to grow and increasing numbers of people rise from poverty. To keep pace, investments in infrastructure, energy, timber and farmland will be pivotal, providing many opportunities for investors. We are only beginning to see the potential for the asset class to become a much larger part of investment portfolios. Consider, for example:

- Today, only about 1% of the world's farmland is owned by institutional investors.
- An estimated $5 trillion will be spent on shale oil and gas extraction in the U.S. by 2035.
- U.S. infrastructure requires more than $2 trillion in improvements.
- Timberland wood consumption is expected to rise 59% from 2010 to 2030.

Much of the capital needed to make these improvements will likely come from institutional investors, as they continue to seek income, diversification and capital preservation strategies to meet their long-term needs..

[1] JP Morgan research, April 2012.

[2] For the period 1/1/2003 to 12/31/2012, timberland's correlation with stocks was -0.01, bonds, 0.05, commodities, 0.01, U.S. equity REITS, 0.00, private commercial real estate, -0.12 and farmland, 0.81. Farmland's correlation with stocks was 0.04, bonds, -0.01, commodities, -0.06, U.S. equity REITS, 0.04, private commercial real estate, -0.14. Private commercial real estate's correlation with stocks was 0.23, bonds, 0.10, commodities, 0.25, U.S. equity REITS, 0.21. Commodities, correlation with stocks was 0.42, bonds -0.03. The following indices were used to calculate these correlations: S&P GSCI, commodities; FTSE NAREIT All Equity, U.S. equity REITS; NCREIF NPI, private commercial real estate; NCREIF farmland, private farmland; NCREIF Timberland, private timberland.

The material is for informational purposes only and should not be regarded as a recommendation or an offer to buy or sell any product or service to which this information may relate. Certain products and services may not be available to all entities or persons.

Diversification is a technique to help reduce risk. There is no guarantee that diversification will protect against a loss of income.

Investments in real assets may be subject to illiquidity, higher expenses than traditional investments, political risks and currency volatility.

Past performance does not guarantee future results.

TIAA-CREF Asset Management provides investment advice and portfolio management services to the TIAA-CREF group of companies through the following entities: Teachers Advisors, Inc., TIAA-CREF Investment Management, LLC, and Teachers Insurance and Annuity Association® (TIAA®). Teachers Advisors, Inc., is a registered investment advisor and wholly owned subsidiary of Teachers Insurance and Annuity Association (TIAA).

© 2013 Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF), 730 Third Avenue, New York, NY 10017

TIAA CREF
Financial Services

C11095 (06/13)