At the corner of Insurance and Asset Management

INTERVIEW
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Thought Leadership for the Insurance Investment Community
Why Investors Should Ride the New Higher-Tech Infrastructure Wave with Liquid Real Assets

EXECUTIVE SUMMARY
The investment fundamentals for liquid real assets have improved, as investment in the U.S.’s infrastructure benefits from advances in technology. We define “liquid real assets” as actively traded, investible securities that derive their underlying cash flows from the operation of a tangible asset base.

Technology has not only refined the assets themselves but has also introduced dramatic operational influences in American infrastructure. Though this is also a global phenomenon, we feel the U.S. is ground zero for real assets innovation and rapid deployment of technology.

This is creating major ripple effects, including these three key developments:
• Electric utility and energy industries are rapidly applying new technologies, benefits of which overlap these sectors’ businesses.
• Major public and private investment have accelerated the practical application of several major improvements to reduce carbon emissions.
• Technical advancements and structural innovation are significantly affecting residential real estate and how people live, work and play.
• The interdependency of infrastructure is compounding the technology benefits for real assets.

U.S. INFRASTRUCTURE UNDERGOING MAJOR SHIFTS
Real estate brokers in Silicon Valley are saying, “all industries are now tech industries” – meaning industries as wide-ranging as agricultural, manufacturing and energy to real estate, infrastructure and a host of others, are benefiting greatly from the explosion of technological advancements that are incrementally enhancing past achievements.

For income-producing real assets, this is especially true, as competitive balances can move the goalposts with the new technology and its associated efficiencies.

A rebalancing within industries has already begun – and is certain to continue into the future. This presents an environment in which we feel investors should be mindful, as the remodeling of the infrastructure in the U.S. is well underway.

TECHNOLOGY AND ITS MULTIPLIER EFFECT
To illustrate this phenomenon, it is useful to consider industries whose dynamics overlap and benefit from repurposing advancements achieved in other disciplines.

On a macro-scale, mobile computing technology is an obvious example. Though many of us remark at the capabilities of accessing and downloading a massive amount of video on our smartphones, the electric utility and energy industries are examples where an enormous amount of capital spending can be avoided by identifying disruptions in their respective transmission and distribution networks remotely.

Whether they be electrical lines or natural gas pipelines, the reapplication of this technological innovation maintains the benefit of replacing lengthy physical inspections, often compensated at overtime rates.

This utility/energy example is only the tip of the technological iceberg of powerful synergy catalysts overlapping these two particular sectors. With the emphasis that society has placed on clean, low or zero carbon emissions, major public and private investment have accelerated the practical application of several major improvements.

For instance, the evolution of natural gas production with horizontal drilling and extraction techniques has catapulted the U.S. into one of the top energy producers in the world. Coincident with this evolution, the utility industry, in its effort to replace less environmentally favorable coal-generating plants, has adopted modern, cleaner-burning natural gas plant designs as an effective base-load alternative.

The happy coincidence of the enormous supply of domestically produced natural gas has facilitated this transition on an economic basis with its attendant carbon-friendly benefits.

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As this chart notes, since the recovery of domestic natural gas reserves reached a new level in 2008, a corresponding increase in gas-fired utility generation also gained traction in the U.S.

FIGURE 1: US Natural Gas Production vs Natural Gas Burned for Power Generation

According to the U.S. Energy Information Administration (EIA), the number of natural gas-powered plants in the U.S. rose 12% from 1,655 in 2008 to 1,854 in 2018.

**COAL POWER INCREASINGLY GOING OUT OF VOGUE**

Conversely, coal-fired plants decreased by 44% from 598 to 336. The improved design and resulting efficiency of new generation Combined Cycle Gas Turbine (CCGT) power generation plants has further allowed utilities to capitalize on this domestic natural gas phenomenon.

These developments would not have been possible without the technological prowess backing the research and discovery of new approaches that have progressed over a number of years.

Oil and gas drillers were aware of the presence of subterranean natural gas deposits in tight geological formations of the U.S. However, the ability to pinpoint with great precision the exact location, and further directionally adjust the horizontal drilling apparatus with downhole sensors on a real-time basis, suddenly enabled economic recovery thanks to that and other technological achievements along the way.

When comparing the process that can now be remotely directed in Houston versus dispatching an on-site subject matter expert (SME), the savings can be material. Replacing that human SME with a remotely directed instrument, which then relays the information across the country to geologists, would likely not have been possible without innovations brought forth in Silicon Valley and/or other technology centers.

**MAJOR INVESTMENTS IN RENEWABLE ENERGY**

The electric utility industry (along with private and academic interests) is also working feverishly to develop zero carbon emission technology that maximizes the synthesis of renewable resources, primarily solar and wind, to generate electricity.

Most U.S. states have instituted renewable mandates through their regulatory bodies. The federal government provides further economic subsidies in this regard. This has fueled enormous growth in wind and solar generation as the former grew from 55 million megawatt-hours (MWh) in 2008 to 275 million MWh in 2018, and the latter has increased from 2 million MWh in 2008 to 96 million MWh in 2018, according to the EIA.

Yet this growth has amounted to only 9% of U.S. utility-scale generation (7% wind, 2% solar, according to the EIA), highlighting the potential for growth within the industry. The electric utility industry is embarking on this opportunity as an avenue of what could be disproportionate growth – also an opportunity for selective investors.

Primarily due to the intermittency of wind and solar, a similar amount of enthusiasm if not investment has been dedicated to large-scale battery storage technology. Some states and utility companies have set future zero carbon goals, likely ensuring continued future investment.

As this chart indicates, carbon emissions among the largest countries globally fell during the Great Recession (with the exception of China) as economic activity slowed, yet the U.S. was successful in continuing that trend after positive economic growth returned.

According to the European Union cited data, only the U.S. and Japan of the top emitters charted above recorded lower emission as in 2017 than in 2014.

**FIGURE 2: Fossil CO2 Emissions by Country**


**MANUFACTURING INCREASING AS POWER COSTS DECREASE**

The advent of lower-cost power has also been a boost for the manufacturing sector in the U.S. This has drawn many international companies, particularly in the automobile industry, to invest in manufacturing plants in the U.S.

To the extent these companies wish to continue to operate in their home countries, but with better economics, this lower-cost natural gas product has led to the construction and development of export terminals on the U.S. coasts, feeding import terminals abroad with liquefied natural gas (LNG).

Even with the liquification and transport costs, the economics in the current market are attractive, not to mention the carbon emission benefits.

For real asset investors, these infrastructure advancements highlight the continuum of global capital investment, something that developing and developed nations encourage.

In fact, we see global competition in the demand for companies and management teams that can bring the above type of intellectual capital to the table that can deliver complex solutions to vast infrastructure needs throughout the world.
U.S. companies, we feel, are at the forefront of this technology-led commercial and industrial marketplace.

**GROWING DEMAND FOR DATA INFRASTRUCTURE**
The above technological benefits of the “new” U.S. infrastructure also carries over into peoples’ day-to-day lives. Commercial real estate developers are providing the next generation of structures that not only incorporate the new wave of technology but are in some respects at the top of the food chain.

The construction and proliferation of data centers and wireless towers occur seemingly in the background yet serve as the nerve center of electronic data transmission through the wireless spectrum and fiber networks. The expansion of cyber currency miners has further fueled data center demand.

Finally, major logistics warehouse networks that serve the now-ubiquitous overnight retail delivery demand are driven by all of the above, benefiting people’s lives both professionally and personally – and changing how we all live, work and play.

**THE INVASION OF SMART HOME DEVICES**
Structural innovation incorporating multiple advancements has filtered into residential real estate with smart home devices (live), shared working environment-designed office layouts (work), and countless gaming and social networks (play).

This new construct has prompted many new apartment and housing associations to incorporate these networks within the complex infrastructure not only to improve productivity but also to enhance the overall resident experience.

On a practical basis, this “internet of things,” such as lighting systems and thermostats, also deliver energy savings. Developers and operators have found that from the millennial demographic on down, these types of experiences are expected.

Office (co-working spaces), industrial, data center, and wireless towers, to name a few, also are rapidly incorporating the latest smart devices. For infrastructure investors, we feel that the fiber/wireless access that provide the platform for these forward-looking, environmentally efficient technologies are not an option, but a requirement in the future for a long-lived asset.

**ALL INDUSTRIES ARE NOW TECH INDUSTRIES**
To distill this back down to liquid real asset investing, recall that access to real asset exposure described above can be obtained through publicly traded energy infrastructure (C-Corp and master limited partnerships), commercial real estate (real estate investment trusts and real estate operating companies) and electric utility companies (both regulated and non-regulated).

Historically, part of the investor interest derives from the cash flow-centric companies that provide dividend income. This is beneficial in two ways:

1. Company management teams that monitor dividend payouts as a percentage of cash flow and focus on cash flow growth from their respective asset portfolio can provide a defensible stream of growing income.

2. The underlying asset composition is key to underlying investment protection as it provides the base for a contracted revenue stream from a customer/tenant, which then leads to this cash flow/dividend generation.

This is the fundamental “hard” asset protection, rather than the intellectual properties of intangible, or “soft” assets. In our opinion, the former provides greater downside protection in periods of distress, while the latter tends to obfuscate accounting disclosure.

**CONCLUSION**
The U.S. is the epicenter of evolution and deployment of new technologies into the nation’s infrastructure, which is being carried abroad. This new generation of real assets has boosted the nation’s energy resources, aided in the reduction of carbon emissions, and enhanced productive lifestyles where people live, work and play.

We feel now more than ever, constant surveillance within real assets investing is necessary – because all industries are now becoming tech industries. Riding this new higher tech infrastructure wave with liquid real assets is worth consideration because of these benefits:

• Greater downside protection
• Potential for growth of current income streams
• Liquid nature of the investment, relative to other hard assets (i.e., commodity or private equity), are desirable

![FIGURE 3: Infrastructure and Tech Benefits Interdependency](source: Securian Asset Management – The interdependency of infrastructure compounds, the tech benefits for real asset investments.)
For more information on real asset income investing please contact John Messing at 651-665-5097.

ABOUT SECURIAN ASSET MANAGEMENT
Securian Asset Management, Inc. based in St. Paul, MN, is an institutional asset manager specializing in public and private fixed income, commercial real estate debt and equity, pension solutions and alternative investments strategies with more than $46 billion under management as of December 2019. The asset manager was established in 1984 and traces its history to the founding of parent firm Securian Financial Group in 1880.

SOURCES:
Bloomberg and Securian Asset Management, Inc. unless otherwise noted.

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