Deutsche
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Global listed infrastructure investing

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A pure-play approach to an essential asset class

What is listed infrastructure?

The ability to invest in physical infrastructure dates back to the 1990's following a large-scale privatization trend of assets. Since then, private (or direct) infrastructure investments has become a common allocation amongst many institutions, such as pension funds and life insurance companies, that require stable yields to match their long-term liabilities, and interest in the asset class has been gradually increasing among the broader investment community.

Infrastructure is seen as a reliable and effective portfolio diversifier based on the premise of stable, predictable, inflation-linked cash flows from the ownership of physical assets. Importantly, infrastructure investing is not a short-term 'fad' as these assets provide a critical building block for the modern economy to function and operate. Examples of these essential assets include toll roads, airports, sea ports, utility power grids, cell phone towers, waste facilities, energy pipelines or water utility systems.

Over the past several decades, access to infrastructure from an investment perspective has been generally limited to large institutional investors given the significant up-front costs required to gain exposure. However, since the early 2000's we have witnessed a proliferation of listed infrastructure, which are publicly-traded equity securities that generate the majority of their cash flows from owning and/or operating physical infrastructure assets.

The growth of listed infrastructure has been driven by several global trends such as population growth, increased urbanization, a transition to low carbon economies and budget constraints of many national and local governments. These structural drivers have helped propel listed infrastructure to be viewed as a viable, long-term asset class suitable for all types of investors, regardless of portfolio size. The global privatization trend of infrastructure assets has spurred rapid growth in both the number and size of publicly-traded infrastructure companies. As the financing of infrastructure increasingly moves towards private investment, it will only increase the opportunities for investors. And, importantly, this expansion of the global infrastructure universe allows for adequate sector and regional diversification.

The mega-trends driving the growth of infrastructure

Population growth | Urbanization | World trade increases | Government deficits and under spending | New energy sources

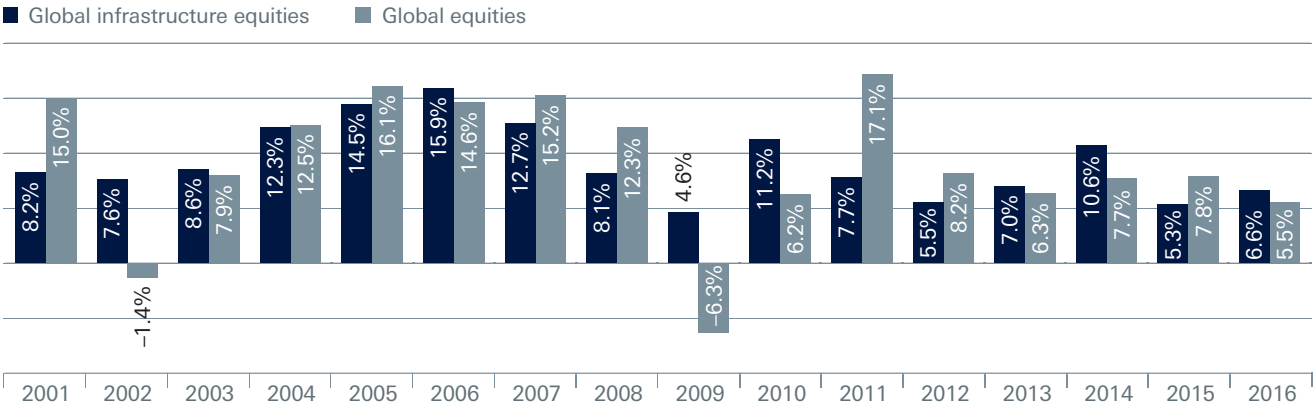
What type of exposure does global listed infrastructure provide investors?

Listed infrastructure is still a relatively new asset class, making it imperative for investors to not only be well educated on the merits of the asset class, but to clearly understand the type of exposure and risk profile of the asset class Infrastructure is a broad term, which means that not all infrastructure companies or investment funds are alike.

Our approach to global infrastructure investing is designed to provide investors true exposure to the primary fundamental characteristics of infrastructure which we call "pure-play." Or in other words, our philosophy is to offer investors exposure to an asset class that shares the same basic merits of private infrastructure investing with the added benefit of daily liquidity. Pure-play listed infrastructure companies can generate stable, resilient underlying cash flows, where cash flow growth has a lower correlation to economic cycles. As such, a pure-play methodology to listed infrastructure can provide long-term exposure to an asset class with generally low volatility, low overlap and a low beta relative to broader equity investments. The table below highlights the stability of listed infrastructure cash flows throughout various economic environments as depicted by annual EBITDA growth of listed infrastructure versus broader global equities.

Pure-play infrastructure simply means investing in assets and not "themes." We define pure-play as companies that generate at least 70% of operating cash flows from directly owning or operating infrastructure assets. While we believe pure-play infrastructure investing is the best way to strategically allocate to the asset class, it is not the only way the marketplace approaches infrastructure. Outside of

Resilience of pure-play infrastructure cash flows versus broader equities—Median EBITDA growth[1] (Local currency)



[1] EBITDA = earnings before interest taxes depreciation and amortization. **Past performance is not indicative of future returns.** Global Infrastructure Equities = Dow Jones Brookfield Infrastructure Index; Global Equities = MSCI World Daily Index. Sources: Bank of America Merrill Lynch. As of 12/31/16.

Listed infrastructure universe

	Type of company	Industries
Thematic investment	Broad companies tend to own infrastructure-related businesses, such as construction companies and diversified communications providers, rather than direct infrastructure assets.	— Engineering and construction — Timber — Diversified operations — Power generation — Shipping
	Core companies exhibit some characteristics of pure-play companies by virtue of regulation or contractual agreement, and many have loosely related infrastructure side businesses, but they typically have lower margins, are not capital intensive and/or do not derive cash flows from long-duration contracts.	— Infrastructure services — Integrated utilities — Railways — Diversified utilities — Diversified infrastructure
Asset investment	Pure-play companies typically own or operate assets that naturally exhibit fundamental infrastructure characteristics, such as high barriers to entry and relatively inelastic demand.	— Transmission and distribution — Oil and gas storage and transportation — Toll roads — Seaports — Airports — Communications (towers and satellites) — Water

the pure-play universe, infrastructure may include companies whose business profile is geared more towards "infrastructure users" or "infrastructure builders." These types of companies are generally more sensitive to commodity and energy prices or business and economic cycles. The pure-play universe is seen as less susceptible to business and economic cycles than broader equities or other types of infrastructure investments. A benefit of investing in companies that physically own and/or operate the infrastructure asset itself is that generally they generate stable and predictable cash flows which are often linked to inflation.

What are the benefits of owning listed infrastructure?

Diversification

A long-term strategic allocation to listed infrastructure has the potential to provide meaningful diversification benefits to an overall portfolio. The diversification benefits to a portfolio become more apparent when allocating to pure-play infrastructure as opposed to having other "infrastructure-like" exposure. From the context of an investor's overall portfolio, global listed infrastructure is meant to serve as a long-term equity diversifier given the low beta nature of the asset class and its low overlap with broader equities. Importantly, the defensive characteristics of listed infrastructure provide exposure to segments of the equity market that has the potential to protect investor capital in volatile or "risk-off" market environments, while also participating in "up-markets." In fact, the "pure-play" universe sits in the middle of the risk spectrum between equities and bonds.

Strong risk-adjusted returns

The pure-play infrastructure universe (represented by the Dow Jones Brookfield Infrastructure Index) is likely poised to continue generating a superior risk-return profile over the long term relative to other major listed infrastructure benchmarks. The infrastructure asset class has historically exhibited attractive risk/return characteristics, and adding listed infrastructure as a strategic allocation can move a portfolio further out on the efficient frontier. Additionally, in periods of uncertainty, investors seek areas of the equity market where they believe they will receive stable income. An important aspect of listed infrastructure is that these companies generally deliver stable and attractive dividend yields that are in excess of the broader equity market, due to their ability to generate stable and predictable long-term cash flows given the nature of their structure and income sources. The benefits of owning companies with this type of cash flow profile are not only evident in rising or positive market environments, but become increasingly noticeable in times of market uncertainty. A listed infrastructure allocation can play a critical role from a risk-adjusted return perspective in periods of heightened market volatility or slowing

global growth, serving as a ballast to broader equity market exposure.

Predictable cash flows & inflation protection

The market has historically rewarded infrastructure companies that generate stable and predictable cash flows with relatively higher returns compared to both broader equity markets and other major listed infrastructure benchmarks. In addition, a stable cash flow profile generally results in lower volatility. In fundamentally-driven market environments, infrastructure should continue to offer low volatility given the fact that the underlying assets are monopolistic in nature with inelastic demand, resulting in stable operating margins. The revenue drivers of pure-play infrastructure are simple and basic which is one of the many attractive aspects of having this type of exposure in your portfolio.
The monopolistic business profile and limited pricing risk inherent in listed infrastructure has historically resulted in less earnings volatility compared to broader equities. The underlying revenues of infrastructure companies are typically driven by stable, long-term income derived from usage fees for the essential services the assets provide. Revenues are predictable because of the long-term contractual nature as well as the ability for a company to pass on higher costs, which is often linked to inflation, resulting in real earnings growth. Infrastructure companies that physically own and operate essential economic assets generally have the ability to quickly pass-through rising input costs from inflation given that demand for these assets are inelastic, and growing in most cases.

Looking at the supply chain, these companies operate in the "midstream" segment, thereby diminishing the commodity price sensitivity rampant in the "upstream" and the economic cycle sensitivity inherent in the "downstream." These monopolistic infrastructure assets face little or no price competition. Consequently, pure play listed infrastructure tends to have inflation-linked pricing, which provides an inflation hedge. Thus, unlike many traditional equity securities, listed infrastructure may benefit in accelerating inflation environments. Generally, higher interest rates as a result of higher inflation are positive for the infrastructure asset class from both an absolute and relative performance perspective to broader stocks and bonds.

Liquid access to premier infrastructure assets across the globe

Investing in these types of infrastructure companies essentially means you are "long" assets that are critical for the global economy to successfully function and grow. Infrastructure provides a long-

Energy market supply chain—example of "midstream" infrastructure

	Upstream	Midstream	Downstream
	Exploration and production	Storage and transportation	Marketing and supply
			
Description	Discovery and production of oil and natural gas	Transportation of gas oil via small-or large-diameter pipes over various distance; storage of excess capacity	Purchasing of refined oil and gas for delivery to end users
Characteristics	Dominated by energy company majors; economic fundamentals are highly dependent upon commodity prices	Monopolistic, stable revenues; not highly correlated to underlying commodity prices	Highly competitive, typically lower-margin business
Company examples	Exxon, Conoco, Chesapeake Energy	Enbridge, Transcanada	Valero
Regulation	Minimal	Regulated	Less regulated

term investment opportunity as global demand for the services these assets support are inelastic and growing. The supply of assets that meets this demand is limited and monopolistic in nature—owing primarily to the high barriers of entry associated with building economic infrastructure (e.g. significant up-front costs and regulatory requirements).

Private equity funds have been investing in infrastructure for quite some time due to increasing demand from large endowments and pension funds seeking alternative exposure to further diversify their overall portfolio. That said, it takes significant due diligence and up-front costs to purchase an infrastructure asset. Adding to the complexity of private infrastructure investing is the difficulty to achieve adequate diversification across asset types and regions. On the public equity side, investing in U.S. infrastructure assets has been accessible for many years, but was primarily limited to utilities and railroads. Until the mid-2000's, it was difficult to build a well-diversified portfolio of listed infrastructure companies. The listed infrastructure universe has expanded rapidly as the need for private investment in public infrastructure proliferated across the globe. Today, any investor can gain immediate exposure to some of the highest quality infrastructure assets around the world, such as airports in Australia, toll roads in Europe, utilities is Asia, power grids in the United Kingdom, or energy pipelines in North America.

Conclusion

The primary benefits that infrastructure offers investors is predicated on its basic fundamental characteristics. Infrastructure represents a tangible asset that will almost always retain a residual value, which is particularly attractive during periods of market distress. Infrastructure requires high initial capital investment and this acts as a significant impediment to potential competitors entering the market. Furthermore, infrastructure assets exhibit a lower correlation to the economic cycle compared with other asset classes as user demand patterns tend to be relatively inelastic given the essential nature of these services.

From a long-term perspective, the global political, financial, and economic backdrop continues to support the need for private investment in public infrastructure. Infrastructure serves as the backbone of our society, providing the basic services an economy needs to function. A number of global trends are driving the need for infrastructure investment which creates more opportunities for investors. Population growth and increasing urbanization are fueling growth in developing markets, while chronic under spending on existing infrastructure is driving demand in developed markets. Additionally, the discovery of new energy sources, such as shale gas, is driving the continued development of infrastructure-related activities.

Infrastructure continues to gain recognition as a distinct asset class. Of considerable appeal to investors is the stability and predictability of cash flows that are long dated in nature. Infrastructure offers relatively low cash flow volatility compared to other asset classes and can also provide attractive, inflation-hedged total returns. Of paramount to investors is allocating to asset classes with the ability to deliver long-term growth opportunities and minimal volatility. Given its organic growth opportunities and defensive nature, global infrastructure stands to benefit investors on the growth front while also protecting on the downside.

Investing in infrastructure is not risk free; it requires strategic asset allocation decisions, a detailed understanding of jurisdictions and regulation, as well as specific asset management skills to mitigate risks and support investment returns. And, of course, as listed infrastructure investments are publicly-traded equities, it is not completely immune to systematic risk, or broader market events that all public equities are susceptible to. So, active management can play an important role in the infrastructure space given the relatively concentrated nature and unique characteristics of the pure-play infrastructure market compared to broader equity markets. Passive investments remain indifferent to risk throughout an economic cycle, while active managers have tools to manage risk exposures at different points of the cycle. There is a high degree of dispersion across infrastructure sectors and regions, allowing active managers to not only generate alpha, but more importantly protect investor capital through challenging market environments.

Appendix

Exposure and characteristics within the "pure-play" infrastructure universe

Toll roads

- Transportation infrastructure is a key area of growth across the globe, emerging and developed markets
- Return drivers stem from improving traffic volumes and global growth opportunities
- Local municipalities struggle with the funding and maintenance of existing roads
- As a result, an increased presence of private-public-partnerships is emerging
- Contracts and residual revenues for projects are long duration in nature
- Inflation pass-through provisions are typically included in tolling structure
- Stock examples: Transurban Group (AUD), Jiangsu Expressway (JPY), Groupe Eurotunnel (EUR)

Airports

- Benefit from strong travel budgets for both corporate and leisure travelers
- Return drivers closely linked to economic activity and consumer confidence
- Stock examples: Sydney Airport (AUD), Flughafen Zuuerich (EUR), Japan Airport Terminal (JPY)

Ports

- Growth linked to improvements in global trade and passenger ship movements
- Stock examples: China Merchants (HKD), Westshore Terminals (CAD), Hutchison Port (SGD)

Rail

- Rail industry is more closely tied to the economic cycle compared to other pure play infrastructure
- Revenues depend on health of segments such as agriculture, consumer goods, energy, housing, etc.
- Economic growth acts as a tail wind for Rail stocks, boosting volumes and driving higher revenues
- Stock examples: Union Pacific (USD), CSX Corp (USD), Canadian Pacific (CAD)

Global utilities

- Global companies engaged in Water, Power Transmission & Distribution, Renewable Energy, and Gas Distribution
- Utility sector is diverse; not all utilities are created equally, with varying risk profiles based on business model
- Our utility focused towards regulated utilities which are the pure asset owners delivering stable revenues
- Operate in highly regulated industry; inelastic demand profile; fundamental to the economy and day-to-day living
- Avoid utilities with greater sensitivity to commodities, volumes, weather, or power prices
- Renewable energy is one of the fastest growing energy resources in the world, particularly in wind
- Certain utilities have diverse business models which may reduce regulatory risk and help growth story
- Stock examples: Sempra Energy (USD), Tokyo Gas (JPY), Pattern Energy (USD), Snam SpA (EUR), Severn Trent (GBP)

Energy

- Traditional C-corps or MLPs; midstream energy companies—oil & gas storage and transportation infrastructure
- Energy pipeline assets are monopolistic in nature; offer stable revenues and not highly correlated to commodity prices
- Pipeline cash flows depends on fixed long term contracts from renting out pipelines and terminals
- New pipelines/storage facilities will be needed to support growing demand from domestic power/industrial companies
- Stock examples: TransCanada (CAD), Kinder Morgan (USD), Pemina Pipeline (CAD), Enbridge (USD)

Communications

- Universe consists primarily of US Tower stocks and European Satellites
- US Towers have unique combination of very stable cash flows and strong growth prospects
- Tower site leasing revenues are increasing as wireless carriers continue to build out their networks
- Stable revenues from increasing Smartphone penetration and data traffic growth
- Increasing tenants per tower provides scope for additional revenue
- Companies are investing in emerging markets (e.g., Brazil and Africa) due to growing mobile voice and data usage
- Stock examples: (US Towers) American Tower, SBA Communications; (Europe Satellites) SES SA, Eutelsat

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