

A Case for

Global Listed Infrastructure

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The fundamental case for infrastructure is grounded in the inherent characteristics of the asset class—long-lived assets in businesses with high barriers to entry found in monopolistic industries, typically supported by the resilient demand for essential services.

Highlights

- The investment opportunities are global, driven primarily by decades of declining infrastructure investment in developed economies and the need to build out large-scale infrastructure networks in developing regions.
- Through global listed infrastructure, investors can gain access to a broad base of investment themes and geographies.
- These securities typically offer an attractive total-return proposition through the combination of stable and predictable income streams and long-term earnings and cash-flow growth.
- Listed infrastructure businesses are usually structured as corporations, although a growing number are adopting structures more focused on income delivery.
- From an allocation perspective, listed infrastructure can serve as a carve-out of global equities or as a component of a real assets portfolio.

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Background

The fundamental case for infrastructure spending is driven primarily by two global megatrends, defined by the critical needs of developed and emerging economies.

- After decades of underinvestment in developed-market economies, energy, communications and transportation networks are generally in need of critical upgrades to operate efficiently and meet the challenges of increased usage and evolving demand patterns.
- The story is quite different in emerging economies, which are commonly found to be building out new infrastructure networks to provide basic services to increasingly urban populations and meet the demands of a growing middle class.

By 2030, this build-out could lead to infrastructure investment of over \$57 trillion, across a broad range of industries in the global energy, utilities, transportation and communications sectors. In our view, listed infrastructure offers a compelling way to invest in this rapidly evolving theme. Infrastructure companies tend to have strong credit quality, with predictable income streams often linked to inflation. Considering these characteristics, many infrastructure businesses have shown the versatility to perform well in periods of both rising and easing inflation, as well as throughout different points in the economic cycle.

Listed infrastructure businesses are usually structured as corporations; however, a growing number have converted to or announced plans to adopt structures more focused on income delivery, such as Master Limited Partnerships (MLPs), real estate investment trusts (REITs) and YieldCos. These structures can play a number of roles in a diversified allocation framework, based on their distinct return profiles, potential tax efficiencies and real asset characteristics.

Listed infrastructure can also serve as a complement to private equity infrastructure investments, based on the benefits of liquidity and equity-market transparency, as well as a way to access themes and opportunities not always available through private markets.

Fundamental Characteristics of the Asset Class

Infrastructure is characterized by long-lived assets in industries with high barriers to entry and monopolistic business models, typically supported by the resilient demand for essential services.

Infrastructure assets tend to produce predictable cash flows, which are generally a function of two factors—price and volume.

Predictable Revenue, Often Linked to Inflation

Infrastructure assets tend to produce predictable cash flows, which are generally a function of two factors—price and volume.

- Prices are often a function of the regulatory or concession framework and can have periodic inflation-linked adjustments.
- Volume is often a function of a region's underlying economic conditions such as gross domestic product (GDP) growth.

Below, we provide context on how price and volume tend to drive revenues in several infrastructure subsectors, while showing how these characteristics can be inherently linked with inflation.

Inherent Business Characteristics

Long-lived Real Assets	The useful lives of infrastructure assets are typically greater than 20 years.
High Barriers to Entry	The value of existing assets can be enhanced by strict zoning restrictions and large capital requirements—and in some cases exclusivity rights—which make it difficult or prohibitive for competitors to enter the market. The replacement cost cycle helps provide inflation protection.
Stable Cash Flows	The often regulated nature of infrastructure businesses can serve to enhance cash-flow predictability and lower financial risk.
Inelastic Demand	Infrastructure assets provide essential services that tend to be resistant to economic downturns.

Exhibit 1: Revenue Drivers of Infrastructure Subsectors

Revenue Drivers

Subsector	Price	Inflation Characteristics	Volume
Airports	Aeronautical—regulated, Regulatory Asset Base (RAB) methodology with 3- to 5-year rate agreements. Retail, real estate—can be regulated, unregulated or quasi-regulated.	Regulated fees generally have annual CPI-based adjustments.	Economic growth is the key driver of business/leisure travel and retail consumption. Demographic shifts in emerging markets leading to air travel as a growing means of transport.
Integrated Utilities	Power generation revenues, typically driven by market power prices.	Power prices have shown strong historical correlation with inflation.	Generally same as regulated utilities.
Passenger Rails	Transportation— often regulated with infrequent price adjustments; retail and real estate— generally unregulated.	Little inflation impact on pricing.	Passenger volumes driven primarily by GDP; retail business often a function of passenger traffic.
Ports	Mix of direct asset ownership and concessions; mostly deregulated. 1- to 5-year contracts negotiated with customers (shippers). Short-term pricing often supply/demand driven.	Longer-term contracts can have inflation escalators.	Trade volumes are usually linked to GDP. Since 1990, container volumes grew at 3.0x the rate of GDP. Tanker and dry bulk volumes have expanded at 0.7x and 1.2x, respectively.
Toll Roads	Long-term (20–99 year) concession agreements with local governments.	Generally, annual inflation-based toll adjustments.	Economic growth has historically impacted heavy vehicle traffic.
Towers	10- to 15-year contracts with wireless carriers.	Contracts generally include annual escalators of approximately 3%–5% per annum.	Increasing data intensity of wireless devices; wireless device penetration.
U.K. Water	Regulated Asset Base (RAB) methodology.	Generally, annual inflation-linked increases.	Residential demand steady; commercial demand growth historically sensitive to economic conditions.
U.S.-Regulated Utilities	3- to 5-year rate agreements with regulators.	Inflation impacts allowed returns often occur through rate base and cost of capital calculations.	Industrial and commercial demand is primarily a function of economic conditions. Residential demand historically steady over the long run and weather-driven in the short term.

At December 31, 2015. Source: Cohen & Steers.

Geographic, Asset-Class and Industry Diversification

The table below highlights a diverse cross-section of industries and subsectors that comprise the global listed infrastructure universe.

Transportation	Energy	Utilities	Communications
Toll Roads	Storage and Transportation	Electric Utilities	Wireless Towers
Airports	Renewable Energy	Gas Utilities	Satellite Services
Marine Ports	Pipelines	Water	
Railroads			

Diversification can also be provided at the security level, as these companies typically own several, if not dozens, of infrastructure assets. In our view, this broad scope of ownership is critical for several reasons:

- Regulation is a significant risk faced by the asset class; accordingly, exposure to diversified regulatory and political environments can be beneficial.
- Diversification can reduce volatility related to varying regional economic and market conditions.
- Country risks can lead to dramatically different asset and market performance.

Inflation Sensitivity

One reason often stated for allocating to infrastructure is the desire for protection from inflation. Periods in which inflation comes as a surprise can be particularly damaging to portfolio returns. To illustrate this point, we compared the sensitivity of various asset classes to unexpected changes in inflation, which we refer to as the investment's "inflation beta."

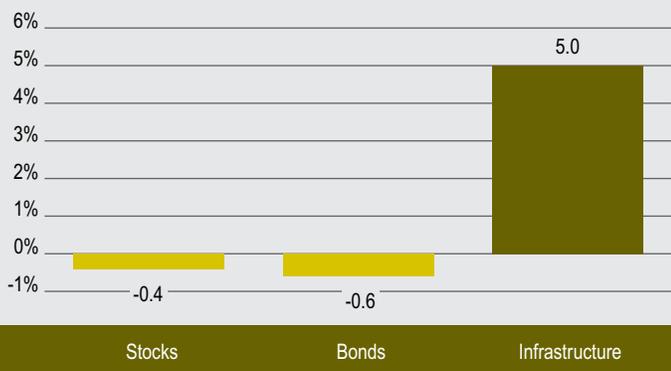
Our analysis is based on rolling 12-month real returns (actual returns minus inflation) for stocks, bonds, and listed infrastructure, measured against the gap between the realized inflation rate and a forecast published one year earlier.⁽¹⁾ An asset class with a positive inflation beta has historically outperformed its long-term real return average when inflation is higher than expected, whereas a negative inflation beta is an indication that unexpected inflation has generally hindered real returns.

The results of our inflation-beta analysis, shown in Exhibit 2, suggest that an allocation to listed infrastructure may help mitigate the damaging effects of unexpected inflation on stocks and bonds. The inflation betas below imply that for every one percentage point increase in inflation above the previous year's forecast, stocks and bonds delivered inflation-adjusted returns that were 40 and 60 basis points below average, respectively, whereas listed infrastructure outperformed its long-term inflation-adjusted average by 500 basis points. We believe this reinforces the view that listed infrastructure has distinct characteristics from a broad equity portfolio, consistent with the qualities of a real asset allocation.

Like many real asset categories, the business models of infrastructure can be linked to rising inflation.

(1) Our measure of expected inflation reflects median inflation expectation from the University of Michigan Survey of 1-Year Ahead Inflation Expectations. Inflation Beta was determined by calculating the linear regression beta of 1-year real returns to the difference between the year-over-year realized inflation rate and lagged 1-year ahead expected inflation, including the level of the lagged expected inflation rate. Linear regression is a statistical method that models the relationship between a dependent variable and one or more explanatory variables.

Exhibit 2: Inflation Beta
(Sensitivity to Unexpected Changes in Inflation)
May 1991–June 2016



At June 30, 2016. Source: Bloomberg and Cohen & Steers.

Stocks represented by the S&P 500 Index. Bonds represented by the BofA Merrill Lynch U.S. 7–10 Year Treasury Index. Infrastructure represented by a 50/50 Blend of Datastream World Pipelines and Datastream World Gas, Water & Multi-Utilities through July 2008 and the Dow Jones Brookfield Global Infrastructure Index thereafter.

Global listed infrastructure has a significantly higher sensitivity to unexpected inflation than either stocks or bonds.

In summary, the case for global listed infrastructure is grounded in the fundamental characteristics of an asset class that is diversified across geographies, industries and subsectors. The underlying assets tend to be operated in a regulatory or concession framework that is often structured with annual price escalations linked to inflation.

At the same time, the tendencies for strong balance sheets, stable cash flows and regulated business models can prove defensive in periods of economic contraction (as infrastructure tends to outperform in down markets). Infrastructure assets have historically been insulated from the effects of economic downturns by the essential services they provide across sectors, for which demand is relatively stable throughout the economic cycle.

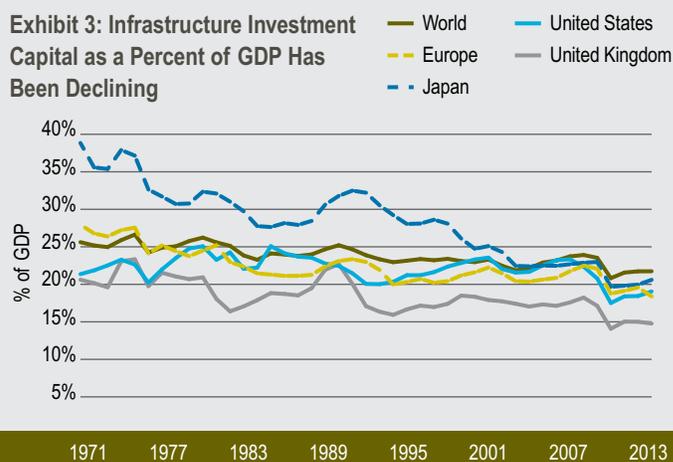
Current Trends

Key Themes Driving Global Investment Opportunities

The massive global infrastructure investment opportunity is driven primarily by two distinct trends, divided between developed and emerging economies. Developed markets often face the daunting task of replacing and upgrading their antiquated infrastructure networks (e.g., roads and bridges, electricity transmission wires and water pipelines). In contrast, emerging economies frequently face critical investment needs to support growth and powerful demographic trends, such as rising standards of living and urbanization.

Developed Markets: A History of Infrastructure Underinvestment

Developed market opportunities are framed by a steady, 50-year decline in infrastructure spending. This trend is illustrated in Exhibit 3, which shows the decline of gross capital investment as a percent of GDP in the world's largest developed economies, based on the World Bank's most recently published data in 2013.



At May 31, 2013 (most recently published data). Source: World Bank.

Infrastructure investment is defined by gross fixed capital investment as a percent of GDP.

Spending on infrastructure in the United States has been on the decline for many years. According to the American Society of Civil Engineers (ASCE), this neglect could lead to about \$3.6 trillion of spending needs by the year 2020. Yet only about \$2.0 trillion has been funded to date, leaving a funding gap of just over \$1.6 trillion, or about \$200 billion per year.

According to a study by the American Society of Civil Engineers, the deterioration of the nation’s infrastructure undermines the U.S. economy, jeopardizes public safety and threatens the quality of life.

Every four years, ASCE compiles a comprehensive report card that grades the state of infrastructure assets across a broad range of sectors. What was notable from their most recent report, published in March 2013, was America’s poor overall grade of D+. The report concludes that the deterioration of the nation’s infrastructure undermines the U.S. economy, jeopardizes public safety and threatens the quality of life. ASCE’s findings by infrastructure category are highlighted in Exhibit 4.

Exhibit 4: Poor Grades for U.S. Infrastructure from the American Society of Civil Engineers (ASCE)

	Grade	Comments
Overall Grade	D+	Grades have been near failing since the survey began in 1998, due to delayed maintenance and underinvestment across most categories.
Aviation	D	The Federal Aviation Administration projects that the cost of congestion and delays to the U.S. economy will rise from \$34 billion in 2020 to \$63 billion by 2040.
Bridges	C+	The average age of the nation’s 607,380 bridges is currently 42 years; one in nine is considered structurally deficient.
Dams	D	Approximately \$21 billion could be required to overhaul 14,000 high-hazard and 4,000 deficient dams.
Drinking Water	D	The infrastructure for drinking water in the U.S. is reaching the end of its useful life; many pipes are over 100 years old and in need of replacement.
Energy (national grid)	D+	Although about 17,000 miles of additional high-voltage transmission lines and significant oil and gas pipelines are planned over the next five years, permitting and siting issues threaten their completion.
Hazardous Waste	D	Annual funding for Superfund site cleanup is estimated to be as much as \$500 million short of what is needed.
Navigable Waterways	D-	In many cases, the inland waterways system has not been updated since the 1950s, and more than half of the locks are over 50 years old.
Ports	C	While \$46 billion in capital improvements have been earmarked from now until 2016, federal funding was declined for navigable waterways and landside freight connections to move goods to and from the ports.
Rails	C+	Since 2009, ridership has risen significantly and capital investment from both freight and passenger railroads has exceeded \$75 billion.
Roads	D	Currently, the Federal Highway Administration estimates that \$170 billion in capital investment would be needed on an annual basis to significantly improve conditions and performance.
Transit	D	Transit agencies are struggling to balance increasing ridership with declining funding.

A = Exceptional B = Good C = Mediocre D = Poor F = Failing

At March 19, 2013. Source: ASCE.

North American Midstream Energy Companies Poised for Recovery

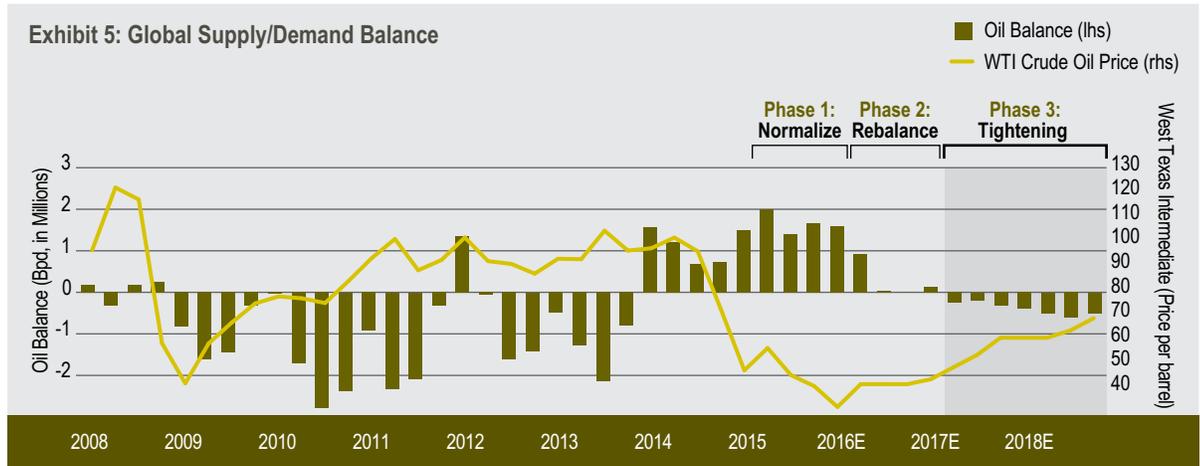
Midstream energy companies represent a key theme of North American infrastructure. They are often thought of as the “toll road operators” of the energy value chain, collecting fees for the services of transporting, processing and storing energy commodities as they move from supply regions to demand centers. Many of these companies are organized as master limited partnerships (MLPs)—a tax-advantaged vehicle designed for the efficient delivery of income to investors.

While turmoil in energy markets and a rapid decline in oil prices and production growth in recent years has weighed heavily on midstream energy companies, they now appear poised to benefit from a stabilization and longer-term increase in activity. We expect the global oil surplus to evaporate over the next year, followed by a widening supply gap in 2017 and beyond. Amid higher oil prices and an associated rise in North American production, the increased volumes stand to benefit midstream energy companies.

Although the world is currently awash in crude oil, the market could segue to shortage conditions surprisingly quickly, in our opinion.

Exhibit 5 charts the historical price of West Texas Intermediate crude and the global oil surplus/deficit, along with our estimates for the next several years. We expect the combined effects of reduced supply and steadily increasing demand will put the oil market on course for more normalized conditions, leading to a rebalanced market by late 2016/mid-2017.

The oil and gas industry's deferred spending since 2015 is likely to exacerbate the shortage in Phase 3, in our view.



At May 31, 2016. Source: Bloomberg, Cohen & Steers.

Performance data quoted represents past performance. Past performance is no guarantee of future results. Actual results for 2008–2016, 2016–2018 figures are based on Cohen & Steers estimates and proprietary methodology, which includes estimates for global demand and supply, among other economic and energy-related factors. See page 15 for additional disclosures related to this chart.

As this fundamental oil market rebalancing unfolds, we expect midstream energy stocks and MLP unit prices to respond positively to any sign of sustained higher oil prices as investors anticipate the favorable impact this will have on cash flows.

North American shale oil is well positioned to benefit from a recovery in oil demand. Like offshore and oil sands, shale offers substantial undeveloped resources. Yet in contrast to those competing sources, shale oil can be tapped in as little as 6–12 months and at a moderate cost. We expect North American shale to gain significant market share as the oil markets look for increased production post-2017, with favorable implications for midstream energy companies that operate in the region.

Antiquated Water Infrastructure Systems

As highlighted by the recent water crisis in Flint, Michigan, where elevated lead levels were attributed to aging pipes, the United States is a prime example of a need for safe water upgrades. A mid-2013 study by the U.S. Environmental Protection Agency (EPA) projected that \$384 billion in improvements would be needed for the nation's drinking water infrastructure through 2030 for nearly 75,000 systems to continue providing safe drinking water. In many cases, drinking water infrastructure was reported to be 50–100 years old. The 2013 survey, submitted to Congress every four years as part of the Safe Drinking Water Act, divided the capital requirements into the four general areas summarized in Exhibit 6 below.

Exhibit 6: EPA Assessment of Infrastructure Capital Requirements Through 2020

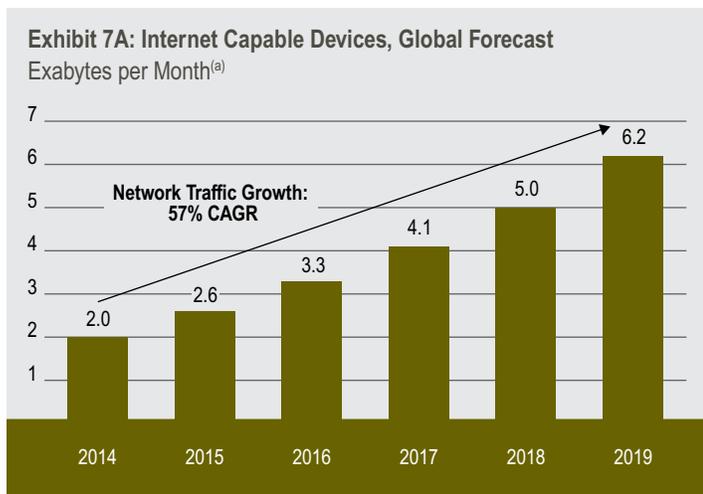
Capital Requirements by 2020	Infrastructure Category	Purpose
\$247.5 billion	Distribution and transmission	Replace or refurbish aging or deteriorating lines
\$72.5 billion	Treatment	Construct, expand or rehabilitate infrastructure to reduce contamination
\$39.5 billion	Storage	Construct, rehabilitate or cover finished water storage reservoirs
\$20.5 billion	Source	Construct or rehabilitate intake structures, wells and spring collectors

At June 2013. Source: Environmental Protection Agency.

Over the next five years, wireless data usage is projected to grow at a compound annual growth rate of 57%.

Growing Demand for Wireless Communications

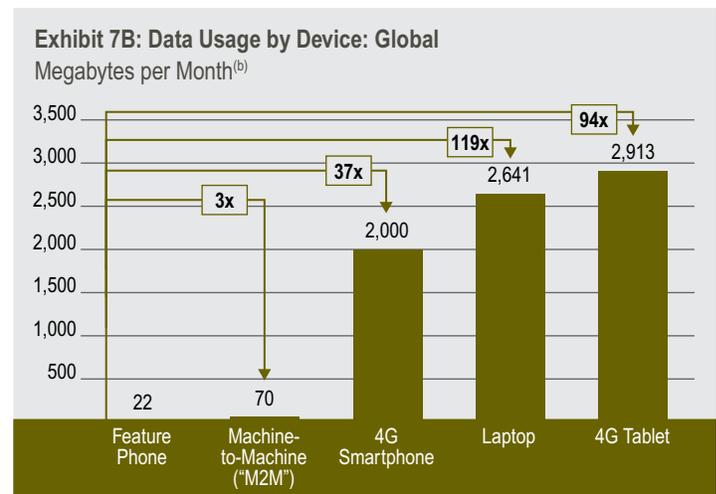
As seen with midstream energy, not all developed-market opportunities are tied to the obsolescence of aging infrastructure assets. In another example, the case for tower companies revolves around the increasingly data-intensive nature of wireless traffic, as well as the expected growth in demand for wireless devices. These trends are highlighted in Exhibits 7A and 7B below.



At February 28, 2015. Source: Cisco VNI Mobile.

See page 15 for disclosures related to these exhibits.

(a) One exabyte equals one quintillion bytes, or one billion gigabytes. (b) One megabyte equals one million bytes.



Today, there are over 100,000 commercial towers spread throughout the United States. To accommodate the increasing data intensity of wireless traffic, telecommunications carriers are reportedly investing heavily in their networks, requiring more leased space from cellular tower companies to house their communications equipment. We expect this trend to bode well for the business models of tower companies, which are often characterized by low variable costs, low churn and high operating leverage. Due to these types of business models, incremental revenues from new leases and lease escalations tend to flow directly to the bottom line. Moreover, leases tend to be long term and often have annual revenue escalators.

Emerging Markets: Demographic Shifts Are the Current Primary Drivers of Infrastructure Investment

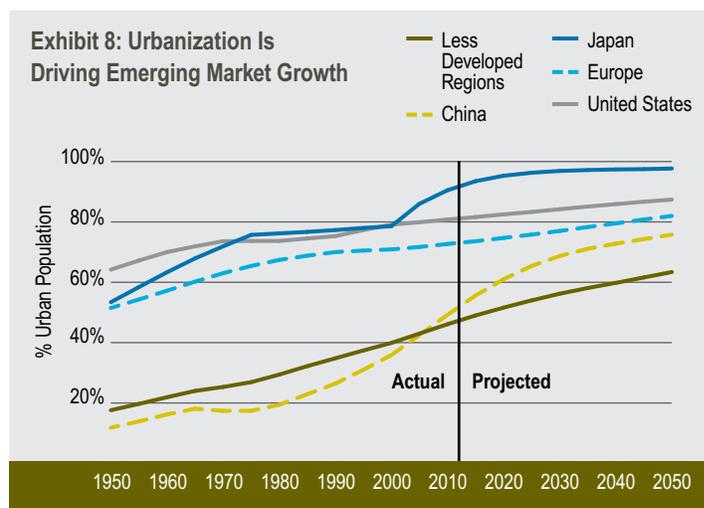
The Impact of Urbanization and the Rise of the Emerging Markets Consumer

Despite somewhat subdued near-term prospects for some of the larger emerging economies and oil exporters, many of the world's developing regions continue to be shaped by powerful long-term demographic trends—higher birth rates, rising incomes and rapid urbanization—which, in turn, are helping drive massive infrastructure spending on basic services, such as energy transmission, transportation and communications infrastructure.

Pursuant to the United Nation's Population Division, the world's urban population has grown rapidly, from 746 million in 1950 to 3.9 billion in 2014. While the level of urbanization

has lagged in Asia, this region is home to 53% of the world's urban population, followed by 14% in Europe and 13% in Latin America and the Caribbean. Exhibit 8 provides a brief summary of actual and projected urbanization trends for various countries and regions.

These trends of urbanization tend to go hand-in-hand with rising incomes, which in turn are driving demand for basic services in emerging economies. However, as we highlight in Exhibit 9, there is still an enormous disparity in the provision of their basic services, compared to developed economies.



At June 2014. Source: United Nations Population Division. See page 15 for additional disclosure related to this exhibit.

Exhibit 9: Access to Infrastructure Services by Country

United States = 100

	Passenger Vehicles	Road Network Length	Hospital Beds	Rail Line Length	Telephone Subscribers	Internet Users ^(a)	Air Transport Passengers	Electricity Consumption	Improved Sanitation Facilities
United States	100	100	100	100	100	100	100	100	100
EU	85	45	202	64	118	96	48	47	100
Japan	73	45	464	29	111	98	33	59	100
Russia	33	33	322	85	148	51	17	54	93
Brazil	32	43	32	20	103	32	20	20	87
India	2	13	30	7	51	4	2	6	54
China	10	14	74	9	71	46	10	26	58
Data as of:	12/31/2011	12/31/2011	12/31/2011	12/31/2011	12/31/2012	12/31/2012	12/31/2012	12/31/2012	12/31/2011

Data reflects the most current information available as of December 31, 2013. Source: IMF, World Bank, CIA Global Fact Book and Cohen & Steers.

(a) EU as of 12/31/2011.

To put these trends into perspective, from 2015 to 2050 the United Nations projects that the world's urban populations will grow by 2.5 billion people, with nearly 90% of the increase concentrated in Asia and Africa. Notably, about 37% of this projected increase is attributed to just three countries—India, China and Nigeria—including about 404 million in India, 292 million in China and 212 million in Nigeria. As highlighted in Exhibit 10, emerging markets will be home to 22 of the world's 25 largest cities by 2030.

Exhibit 10: 25 Largest Cities in the World by 2030 Population (thousands of people)

	1990	2010	2025	2030
1 Tokyo	38,001	38,323	37,876	37,190
2 Delhi	25,703	29,348	32,727	36,060
3 Shanghai	23,741	27,137	29,442	30,751
4 Mumbai (Bombay)	21,043	22,838	25,207	27,797
5 Beijing	20,384	24,201	26,494	27,706
6 Dhaka	17,598	20,989	24,331	27,374
7 Karachi	16,618	19,230	22,009	24,838
8 Al-Qahirah (Cairo)	18,772	20,568	22,432	24,502
9 Lagos	13,123	16,168	20,030	24,239
10 Ciudad de México (Mexico City)	20,999	21,868	22,916	23,865
11 São Paulo	21,066	22,119	22,899	23,444
12 Kinshasa	11,587	14,118	16,916	19,996
13 Kinki M.M.A. (Osaka)	20,238	20,523	20,348	19,976
14 New York-Newark	18,593	18,793	19,314	19,885
15 Kolkata (Calcutta)	14,865	15,726	17,285	19,092
16 Guangzhou, Guangdong	12,458	15,174	16,744	17,574
17 Chongqing	13,332	15,233	16,571	17,380
18 Buenos Aires	15,180	15,894	16,479	16,956
19 Manila	12,946	13,942	15,200	16,756
20 Istanbul	14,164	15,099	15,959	16,694
21 Tianjin	11,210	12,816	13,955	14,655
22 Rio de Janeiro	12,902	13,326	13,789	14,174
23 Los Angeles-Long Beach-Santa Ana	12,310	12,454	12,835	13,257
24 Shenzhen	10,749	11,287	12,067	12,673
25 Moskva (Moscow)	12,166	12,474	12,382	12,200

Source: United Nations Urbanization Project: 2014 update.
See page 15 for additional disclosure related to this Exhibit.

By 2030, emerging markets will be home to 22 of the world's 25 largest cities.

Water Scarcity: A Rising 21st Century Challenge

According to the UN, water usage has been rising over the past century at more than twice the rate of population growth. By 2025, 1.8 billion people could be living in countries or regions with absolute water scarcity; we believe it is possible that two-thirds of the world population could be under stress conditions. Fresh water accounts for less than 3% of the world's total water resources; 60% is found in just 10 countries.⁽¹⁾

Global infrastructure investment opportunities exist in water utilities, waste-water treatment providers and their related businesses. We also find attractive investment opportunities in U.S.-based regulated water utilities, which are investing heavily in pipeline upgrades and are attempting to grow through acquisitions of smaller, often-municipal water systems. Waste-water treatment is also an attractive theme, particularly in emerging markets, while we expect investment opportunities in desalinization businesses to grow significantly over time due to a rising need for potable water.

According to the UN, water usage has been rising over the past century at more than twice the rate of population growth.

(1) Source: Food and Agriculture Organization of the United Nations as of May 2015.

Risk and Return

Potential Benefits of Allocating to Global Listed Infrastructure

Attractive Risk-Adjusted Return Potential

The relatively predictable and stable cash flows of infrastructure companies historically have led to lower volatility of returns, compared with the broad equity market. Exhibit 11 illustrates this point with a comparison of the returns and standard deviations for global infrastructure securities compared with global equities for the five-year period ended June 30, 2016.

Exhibit 11: Risk-Adjusted Returns: Global Listed Infrastructure vs. Global Equities
July 2011–June 2016

	Global Listed Infrastructure	Global Equities
Annualized Return	9.3%	6.6%
Standard Deviation	10.4%	13.1%

At June 30, 2016. Source: Morningstar Direct and Cohen & Steers.

Performance data quoted represents past performance. Past performance is no guarantee of future results. Global listed infrastructure is represented by the FTSE Global Core Infrastructure 50/50 Net Tax Index. Global Equities are represented by the MSCI World (net) Index. See page 15 for index definitions.

Overlap in the constituents of global infrastructure and global equities is minimal at 5%.⁽¹⁾

The upside and downside capture ratios of the FTSE Global Core 50/50 Net Tax Index vs. the MSCI World Index over this period in the chart above were 68.2% and 46.5%, respectively. It is also worth noting that there is very little overlap between the two indexes as highlighted in Exhibit 11 above. The 96 securities of the FTSE Global Core 50/50 Net Tax Index represent 5% of the holdings of the MSCI World Index and 4.5% as measured on a market-capitalization index.

Business Structures with a Growing Focus on Income Delivery

The global listed infrastructure universe continues to expand, with a growing emphasis on security structures focused on income delivery. This relatively new round of capital formation in YieldCos, MLPs and REITs reflects the growing investor appetite for income-focused investments and the desire of many companies to segment risk to attract a broader pool of investors. Examples can be found throughout infrastructure-related sectors such as energy transmission and communications.

Rising Privatization Trends Across Global Markets

Many governments are actively seeking private capital investment in large-scale infrastructure projects. Through public-private partnerships, public projects can often be designed, implemented, administered and salvaged at lower cost and risk to the public than those associated with traditional government provisions.

A recent example can be found in the Spanish government's sale of 49% of its stake in AENA, the world's largest airport operator by passenger volume, in a February 2015 IPO. The launch priced at the top end of its expected range, and raised €4 billion in Spain's largest-ever IPO and Europe's largest IPO since 2011.

Company Profile: AENA

Country and Sector	Date of Issuance	Market Cap
Spanish Airport	February 2015	€13 billion at March 31, 2015

Cash-strapped governments are turning to private sectors for funding.

(1) Global infrastructure and global equities are represented by the indexes listed in Exhibit 11.

The income-generating characteristics of listed infrastructure can be enhanced through a REIT or MLP entity structure.

Asset Allocation

Listed Infrastructure as a Complement to Direct Investment

Listed infrastructure is a compelling way to invest in a rapidly growing sector of the global economy, combining attributes of private infrastructure investments with benefits of liquidity, transparency and daily market pricing.

Business Characteristics Similar to Direct Investments

As noted earlier, infrastructure companies tend to own long-lived assets with regulated and monopolistic structures. Their businesses are often characterized by significant barriers to entry, and there is relatively inelastic demand for the services they provide. Many invest in the same types of assets owned by sovereign wealth funds, infrastructure funds and private equity funds. In several cases, assets are co-owned by a combination of listed infrastructure companies and direct institutional investors.

Relative Liquidity Advantage

Listed infrastructure markets provide a higher level of liquidity relative to the long lock-up periods and limited secondary markets for private infrastructure investment vehicles. These securities benefit from transaction-driven, real-time pricing and can typically be sold at any time, while lock-ups on direct infrastructure investments can last anywhere from 5 to 15 years.

Moderate Leverage

Direct infrastructure investments are often highly leveraged to enhance return potential. Comparatively, most listed infrastructure companies are more conservatively leveraged.

Potential Diversification Benefits

The scope of the industry groups found in global infrastructure, such as those highlighted in Exhibit 1 on page 3, underscore the broad diversification that can be offered by listed infrastructure through a range of subsectors and geographies. There is also diversification at the security level. For example, it is not uncommon for utilities, which comprise the largest sector within the listed infrastructure universe, to own dozens or more assets spread across multiple subsectors and geographies. This type of diversification can help reduce the risk of concentrated exposure to regional economic downturns, regulations and market performance. In contrast, direct infrastructure funds typically invest in just a handful of assets, which tend to be concentrated within a few geographies and/or subsectors.

Access to Themes Not Always Available Through Private Investments

One of the attractive aspects of listed infrastructure is that investors can access a broad set of liquid investment themes across all geographies and subsectors—some of which would likely entail significant hurdles, when trying to invest directly in the same assets. Often, public companies have premier assets that may not be accessed easily.

Intriguing New Structures in an Expanding Universe for Global Infrastructure Stocks

The exhibit below highlights investment opportunities in the expanding universe of infrastructure securities structured as YieldCos, MLPs and REITs.

Compelling Income Opportunities in YieldCo, MLP and REIT Structures

	YieldCos	MLPs	REITs
Description	YieldCos can be structured as publicly traded limited liability companies, limited partnerships or traditional corporations. In many respects, they replicate the investment benefits of a midstream-energy-focused MLP, but generally house power generation assets—renewable, conventional power and thermal infrastructure—not eligible for the efficient tax treatment of MLPs.	Distributions generally tax sheltered through depreciation, and in some cases, tax credits.	Like MLPs, REITs are not taxable entities. However, they typically must pay out at least 90% of taxable earnings as dividends to shareholders.
Potential Investment Benefits	<ul style="list-style-type: none"> Historically predictable cash flows and attractive income with relatively low volatility Distributions generally tax sheltered through depreciation, and in some cases, tax credits Historically above-average dividend growth Liquidity Transparency Real-time market pricing 	<ul style="list-style-type: none"> Relatively high predictable streams of income and distributions Often lower cost of capital than C-Corporation peers Tax efficiency Liquidity Transparency Real-time market pricing 	<ul style="list-style-type: none"> Historically predictable streams of income Liquidity Transparency Real-time market pricing
Examples			
Company	NextEra Energy Partners	Enterprise Products Partners	Crown Castle International
Business Focus	Solar and Wind Energy	Midstream Energy	Wireless Infrastructure
Market Cap	\$1.3 billion at 6/30/16	\$61.2 billion at 6/30/16	\$33.4 billion at 6/30/16
Investment Case	NextEra Energy Partners (NEP) is a growth-oriented partnership formed by NextEra Energy, a leading developer of renewable energy in the United States. NEP has an attractive current dividend, expected to grow 12-15% a year. This YieldCo has right of first offer on 2.5 gigawatts of additional capacity that the parent has pledged to offer to the YieldCo over the next three years. The opportunity for acquisitions goes well beyond three years; NextEra has approximately 10 gigawatts that could be eligible for transfers to NEP.	Enterprise Products Partners is the largest midstream energy company in North America, with several business lines including natural gas liquids (NGL), natural gas, and crude oil pipelines and related services, as well as petrochemical and refined product services. The company benefits from an attractive cost of capital, strong balance sheet, substantial distribution coverage and visible distribution growth. Enterprise has recently grown its focus on NGL export logistics, which is an attractive secular opportunity, in our view.	Crown Castle, which converted to REIT status in 2014, is a pure-play U.S. tower company. The tower business has solid fundamentals, with growth driven by strong wireless data demand, high barriers to entry, and significant operating leverage. Crown Castle offers an attractive dividend yield compared with its infrastructure peers. Management expects to grow the dividend at least 6-7% a year in the next five years.

Conclusion

Our Closing Perspective

Throughout this paper, we have framed some of the unique characteristics and competitive advantages of listed infrastructure, while pointing to the sector's historical ease of access across a broad base of themes, sectors and geographies. We have also drawn parallels between the business characteristics of listed infrastructure and private equity infrastructure investment—long-lived assets, often with high barriers to entry and a monopolistic structure. But the unique value-add comes primarily from the transparency, diversification, liquidity and daily pricing advantages of public securities markets.

Depending on the asset allocation framework and investment objectives of the investor, listed infrastructure tends to be treated as a carve-out allocation from global equities or as a component of a real assets portfolio. In our view, both approaches make sense:

- An allocation as part of a real assets “bucket”—either standalone or as a complement to direct infrastructure—recognizes the unique asset profiles, inflation linkages and long-term performance characteristics of the underlying businesses.
- An allocation as a carve-out of global equities recognizes that listed infrastructure is an equity product, while appreciating its defensive attributes and alternative asset characteristics.

Within either framework, we believe listed infrastructure offers an attractive total return proposition that combines stable, predictable dividends and attractive long-term cash-flow growth.

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INFRASTRUCTURE • The Listed Alternative



Index Definitions

An investor cannot invest directly in an index and index performance does not reflect the deduction of any fees, expenses or taxes.

The BofA Merrill Lynch U.S. 7-10 Year Treasury Index is composed of U.S. Treasury Notes with a 7-10 year maturity. The Datastream World Gas, Water & Multi-Utilities Index is a global index of companies in these sectors compiled by Thomson Reuters Datastream. The Datastream World Pipelines Index is a global index of energy pipeline companies compiled by Thomson Reuters Datastream. The Dow Jones Brookfield Global Infrastructure Index measures the stock performance of publicly listed infrastructure companies. The index intends to measure all sectors of the infrastructure market. The MSCI World (net) Index (net of dividend withholding taxes) consists of a wide selection of stocks traded in 23 developed countries. It is weighted for market capitalization and is considered an important benchmark of the state of global stock markets. The S&P 500 Index is an unmanaged index of 500 large-capitalization, publicly traded stocks representing a variety of industries. The FTSE Global Core Infrastructure 50/50 Net Tax Index is a market-capitalization-weighted index of worldwide infrastructure and infrastructure-related securities and is net of dividend withholding taxes. Constituent weights are adjusted semi-annually according to three broad industry sectors: 50% utilities, 30% transportation, and a 20% mix of other sectors, including pipelines, satellites, and telecommunication towers. The utilities sector excludes the subsector generation utilities. The index is free-float market-capitalization-weighted and is reconstituted annually with quarterly rebalances.

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