

# A Case for Global Listed Infrastructure

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The fundamental case for infrastructure is grounded in the return potential and 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. The investment opportunities are global, driven by decades of infrastructure neglect in developed economies and the need to build out large scale infrastructure networks in emerging markets.

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. From an allocation perspective, listed infrastructure can serve as a real assets component of an alternatives portfolio, a carve-out of global equities or as a complement to direct infrastructure investments.

## Executive Summary

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

- After decades of underinvestment in developed markets, energy, communications and transportation networks are in need of critical upgrades to operate efficiently and meet rising demand.
- The story is quite different in emerging economies, which are building out new systems to meet the demands of a relatively new and rising middle class, as they provide basic services to growing and increasingly urban populations.

By 2030, this build-out could lead to infrastructure investment of over \$40 trillion, across a broad range of industries in the global energy, utilities and communications sectors. In our view, listed infrastructure offers a compelling way to invest in this rapidly growing sector of the global economy. These companies tend to have strong balance sheets, with predictable income streams often linked to inflation. Considering these characteristics, many infrastructure businesses have shown the versatility to perform well in periods of 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 adopted or announced plans to adopt structures more focused on income delivery, such as Master Limited Partnership (MLPs) and real estate investment trust (REIT) structures. Regardless of the entity structure, these income-oriented securities can play a number of roles in a diversified allocation framework, based on their distinct return profiles and real asset characteristics. They also can serve as a complement to private equity infrastructure investments, based on the benefits of liquidity and equity-market transparency, in opportunities not always available through the private markets.

# A Case for Global Listed Infrastructure

## 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.

### Inherent Business Characteristics

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

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### Predictable Revenue, Often Linked to Inflation

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

- Prices are a function of the regulatory or concession framework and typically have periodic inflation-linked adjustments.
- Volume tends to be a function of a region's underlying economic conditions (GDP growth, etc.).

On the following page, we provide context on how price and volume tend to drive revenues within each infrastructure subsector, as we show how these characteristics are inherently linked with inflation.

Exhibit 1: Revenue Drivers of Infrastructure Subsectors

Subsector	Revenue Drivers		
	Price	Inflation Characteristics	Volume
<b>Airports</b>	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 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 growing means of transport.
<b>Integrated Utilities</b>	Power generation revenues driven by market power prices.	Power prices have shown strong correlation with inflation.	Same as regulated utilities.
<b>Passenger Rails</b>	Transportation—regulated with infrequent price adjustments; retail and real estate—unregulated.	Little inflation impact on pricing.	Passenger volumes driven by GDP; retail business a function of passenger traffic.
<b>Ports</b>	Mix of direct asset ownership and concessions; mostly deregulated. 1- to 5-year contracts negotiated with customers (shippers). Short-term pricing supply/demand driven.	Longer-term contracts can have inflation escalators.	Trade volumes are driven by 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.
<b>Toll Roads</b>	Long-term (20–99 year) concession agreements with local governments.	Annual inflation-based toll adjustments.	Economic growth impacts heavy vehicle traffic.
<b>Towers</b>	10- to 15-year contracts with wireless carriers.	Contracts include annual escalators of approximately 3%–5% per annum.	Increasing data intensity of wireless devices; wireless device penetration.
<b>U.K. Water</b>	Regulated Asset Base (RAB) methodology.	Annual inflation-linked increases.	Residential demand typically steady; commercial demand growth sensitive to economic conditions.
<b>U.S.-Regulated Utilities</b>	3- to 5-year rate agreements with regulators.	Inflation impacts allowed returns through rate base and cost of capital calculations.	Industrial and commercial demand is a function of economic conditions.  Residential demand steady over the long run and weather-driven in the short term.

As of September 30, 2012. Source: Cohen &amp; Steers.

## Geographic, Asset-Class and Industry Diversification

The table below lists the diverse cross-section of industries and sub-sectors 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	

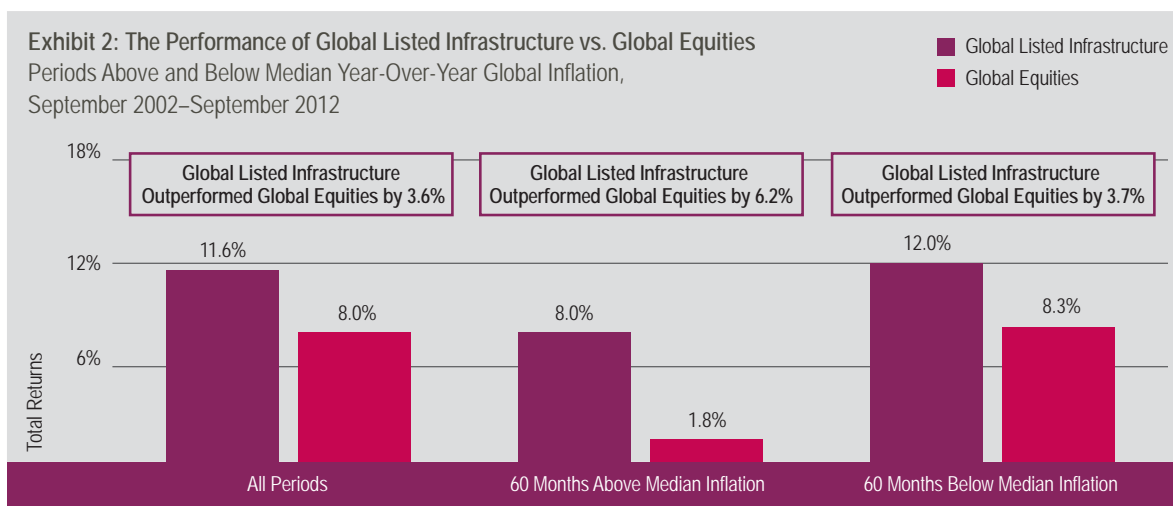
At the security level, there is diversification, as companies typically own several, if not dozens, of infrastructure assets. In our view, this broad diversification is critical for several reasons:

- 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. An example can be found among the diverse economic profiles of EU member countries, where sovereign debt concerns linger among some of the peripheral members.

## Real Assets Characteristics

Like many real asset categories, the business models of infrastructure can be linked to rising inflation. Examples can be found in the automatic escalations of many tariffs or tolls indexed to benchmarks, such as the U.S. Consumer Price Index or Eurozone Harmonized Index of Consumer Prices. Although this varies among subsectors, some of the standouts include U.K. water companies, European toll roads and Italian regulated utilities.

To test the linkage between inflation and global listed infrastructure, we examined the 10-year performance history of the UBS Global 50/50 Infrastructure and Utilities Index. The Index outperformed global equities (represented by the MSCI World (net) Index) in this period; however, the degree of listed infrastructure outperformance was more pronounced in periods when inflation was above its year-over-year median average of 2.8%. Exhibit 2 on the following page summarizes this study, which shows the average annual total returns of each index from September 2002 through September 2012, along with the time-weighted returns of each index in periods of above- and below-median inflation. Although our study uses narrow sets of data that aggregate widely divergent regional returns into global proxies, we believe the results support the thesis that a linkage exists between the returns of global listed infrastructure and inflation.



As of September 30, 2012. Source: ISI Group, Bloomberg and Cohen & Steers.

*Past performance is no guarantee of future results. Investors cannot invest directly in an index.* The information presented above does not reflect the performance of any service or product managed by Cohen & Steers, and there is no guarantee that any historical trend illustrated above will be repeated in the future.

Global listed infrastructure is represented by the UBS Global 50/50 Infrastructure & Utilities (net) Index; global equities are represented by the MSCI World (net) Index. Overall index returns are annualized total returns; returns in periods of above- and below-median inflation are time weighted. See page 22 for index definitions.

## The outperformance of global listed infrastructure compared to global equities has been more pronounced in periods of above-average inflation.

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 sub-sectors. The underlying assets tend to be operated in a regulatory or concession framework that is typically structured with annual price escalations linked to inflation. For this reason, infrastructure can take on real assets characteristics in periods of rising inflation.

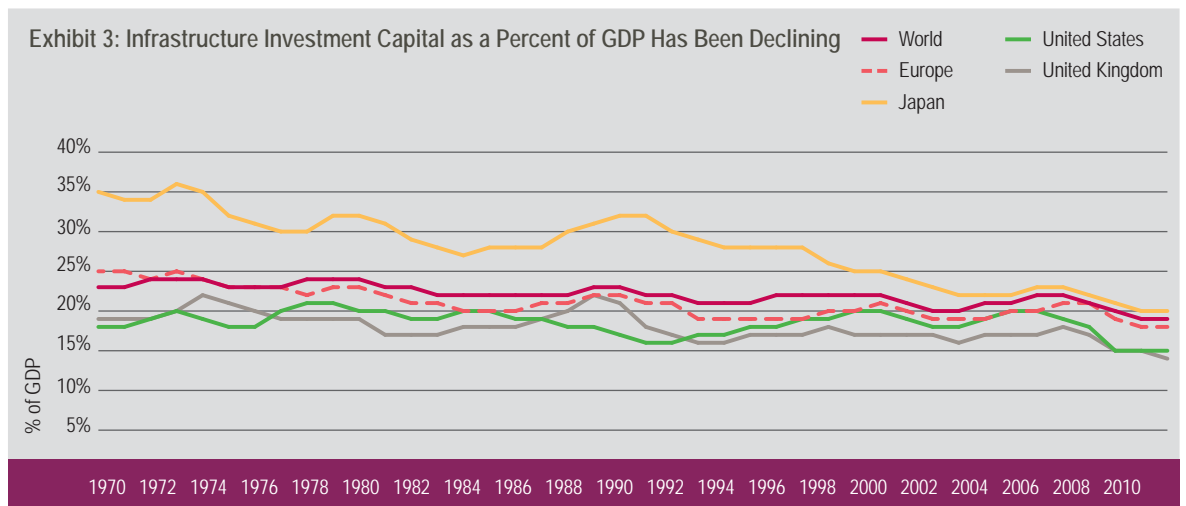
At the same time, the tendencies for strong balance sheets, stable cash flows and regulated business models can prove defensive in periods of economic contraction (as evidenced during the recent financial crisis, when utilities managed to raise significant amounts of debt and equity capital). Infrastructure assets are further insulated from the effects of economic downturn by the essential services they provide across sectors, where demand is stable throughout the economic cycle.

## Key Drivers of Global Infrastructure Spending

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

### Developed Markets: A History of 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.



As of December 31, 2011. Source: World Bank.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

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

The United States has seen a 17% decline in spending since 1970. According to the American Society of Civil Engineers (ASCE), this neglect of infrastructure assets could lead to \$2 trillion of spending in order to improve the condition and performance of the nation's infrastructure assets. Exhibit 4 on the following page highlights their findings, which were published in a comprehensive 2009 study on transportation, energy and utilities.

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

	Grade	Comments
Aviation	D	Airports are challenged by rising numbers of regional and new super-jumbo jets.
Bridges	C	160,000 deficient bridges could cost \$9.4 billion annually for 20 years.
Dams	D	Critical non-federal dams could cost \$10+ billion over the next 12 years.
Drinking Water	D-	There is an \$11 billion annual shortfall to replace facilities and comply with regulations.
Energy (national grid)	D+	Growing electricity demand and new power plant investments require new transmission facilities.
Navigable Waterways	D-	Barge transport is very economical, but replacing the functionally obsolete system of locks could cost up to \$125 billion.
Rail	C-	Costs could reach \$175–\$195 billion over the next 20 years.
Roads	D-	Poor road conditions cost U.S. motorists \$54 billion a year.
Transit	D	Government infrastructure spending led to a significant rise in transit use during the 1990s, but reduced federal spending in real dollars since 2001 threatens this turnaround.

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

As of December 2009. Source: ASCE.

As these falling grades spur government and private-sector investment across a variety of energy- and utility-related industries, they also will drive investment opportunity across global sectors and geographies. The U.S. energy transportation network, which comprises 2.5 million miles of pipelines that gather, transport and process oil, natural gas and natural gas liquids (NGLs), is becoming a prime beneficiary of this investment.

**Exhibit 5: The Scope of the U.S. Pipeline Transmission System**

Oil	Gathering systems, crude oil pipeline systems, and refined products pipeline systems	175,000 miles of onshore and offshore pipelines
Natural Gas	Gathering, processing, transmission and distribution systems	321,000 miles of onshore and offshore pipelines; 2,066,000 miles of gas distribution mains and service pipelines
Liquefied Natural Gas (LNG)	Gas liquefaction and re-gasification facilities	11 existing U.S. terminals

As of June 2011. Source: INGAA Foundation.



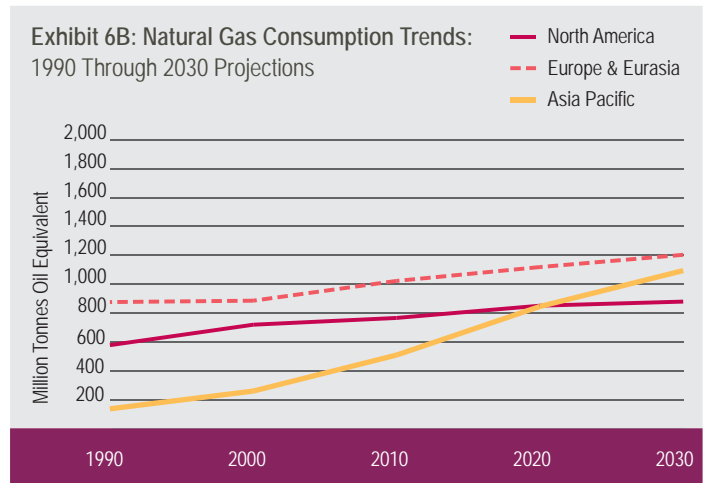
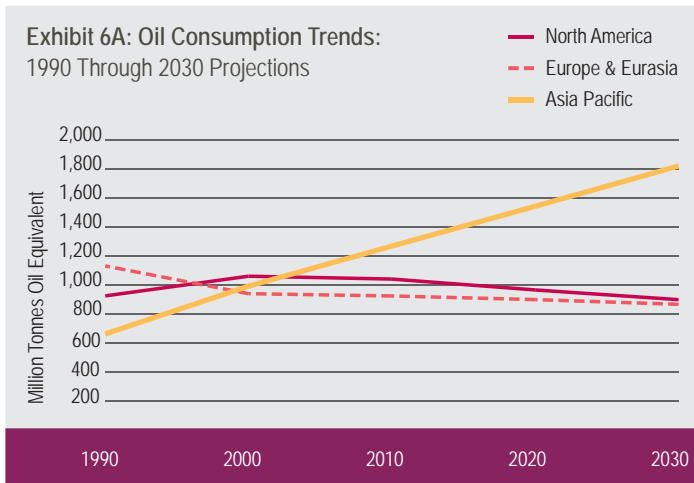
Given the shifting dynamics of supply and demand, it is estimated that the U.S. will spend over \$130 billion by 2020 to upgrade and expand its existing energy transmission infrastructure. This build-out includes about 16,400 miles of new gas transmission mainlines, 6,600 miles of new gas laterals and 165,000 miles of new gas gathering lines. Each year, the addition of approximately 800 miles of new oil pipelines is expected to increase capacity by three million barrels of oil per day, while 10,600 miles of new pipelines could transport an additional one million barrels per day of oil natural gas liquids (NGLs). These upgrades will be necessary to accommodate the shifting dynamics of energy supply and demand.<sup>(1)</sup>

***Energy Supply: Expanding through the use of unconventional drilling techniques.***

In North America, the expanding use of unconventional drilling techniques (particularly horizontal drilling and hydraulic fracturing) has significantly increased the commercial viability of natural gas production from low permeability shale formations. To put this in perspective, shale gas represented about 30% of 2011 oil and natural gas production; by 2035, this could rise to 49%.<sup>(2)</sup> These unconventional techniques have also opened up new reservoirs of crude oil and natural gas liquids, once deemed uneconomical or too tight to extract. As a result, the investment in oil and NGL pipeline infrastructure has expanded rapidly to meet the growing need for transportation systems.

***Energy Demand: Driven by rising emerging markets consumption.***

The demand side of the equation is much more internationally focused. The U.S. Energy Information Administration projects that world energy consumption will rise by 47% from 2010 through 2035. Much of the growth is expected to come from emerging economies, where above-average economic growth is accompanied by increased demand for energy. Leading the way are China and India, where consumption could rise by more than 90% in this timeframe.



Source: U.S. Energy Information Administration Annual Energy Outlook 2012.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin. A tonne of oil equivalent is a unit of energy representing the amount of energy released by one ton of crude oil.

(1) Source: INGAA as of December 31, 2011.

(2) Source: U.S. Energy Information Administration as of June 30, 2012.

As pressures on the supply and demand dynamics intensify, we believe companies engaged in midstream businesses that can gather, process and transport this added capacity to consumers worldwide will prosper.

### Water and Water Treatment Systems

Many developed economies are facing a growing need to upgrade aging water systems and a concomitant lack of funding to do so. The United States is a prime example: for 2010, the Environmental Protection Agency projected a \$91 billion requirement to maintain and upgrade the country's water and wastewater treatment systems. However, only \$36 billion was actually funded, leaving a \$55 billion funding gap. Based on a study conducted by the American Society of Civil Engineers, this gap will only escalate as time goes on. Exhibit 7 shows that if current trends persist, the investment required will amount to \$126 billion by 2020, and the anticipated capital funding deficit will climb to \$84 billion. Without intervention to help close this deficit, the needs for capital investment by 2040 will amount to \$195 billion and the funding gap will have escalated to \$144 billion.

**Exhibit 7: Annual Capital Gap for Water Infrastructure in 2010, 2020 and 2040**  
Billions of 2010 Dollars

Year	Spending	Need	Gap
2010	36.4	91.2	54.8
2020	41.5	125.9	84.4
2040	51.7	195.4	143.7

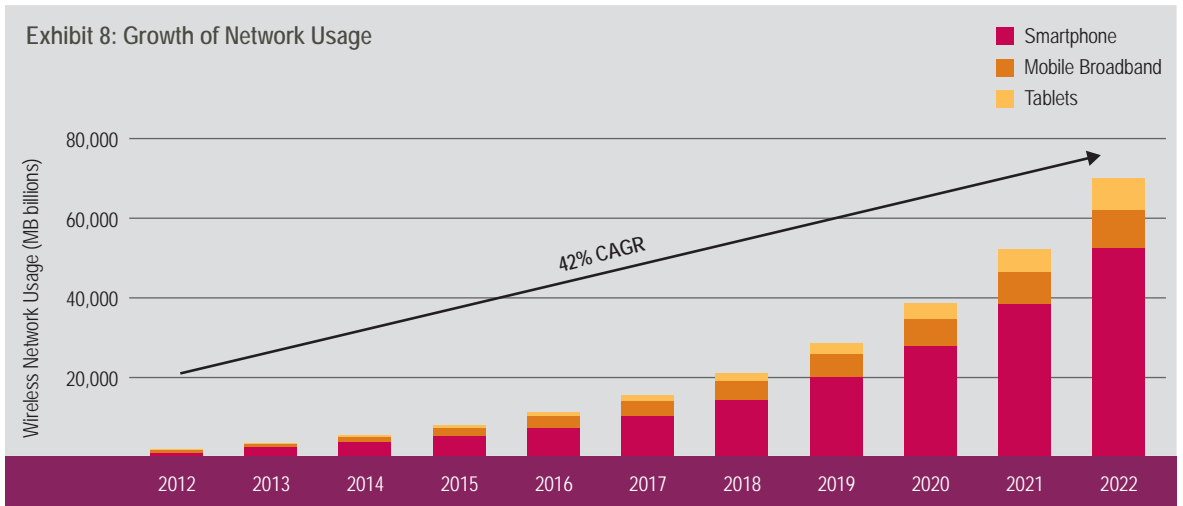
As of September 2012. Source: ASCE.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

### The Growing Demand for Wireless Communications

Not all developed-market opportunities are tied to the obsolescence of aging infrastructure assets. For example, the case for tower companies revolves around the increasingly data-intensive nature of wireless devices, as well as the expected growth in demand for those devices. Projections shown in Exhibit 8 suggest that data usage in the United States will grow by 42% per year between 2012 and 2022.

Key infrastructure themes in developed economies are centered around rising energy consumption and increasing demand for wireless communications.



As of September 2012. Source: Goldman Sachs.

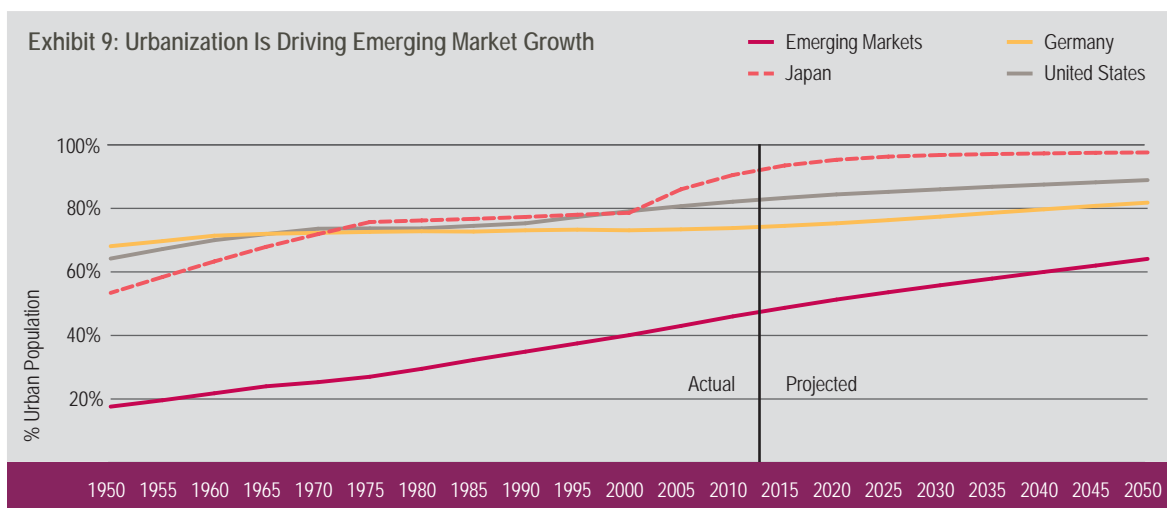
There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

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 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 characterized by low variable costs, low churn and high operating leverage. Given these types of structures, 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 inflation-linked revenue escalators.

## Emerging Markets: Demographic Shifts Are Driving Infrastructure Investment

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

The demand for new infrastructure is most pronounced in emerging markets, which have become the growth-engine of the global economy. In these regions, powerful demographic trends are evolving—birth rates are higher and the number of household formations is rising; incomes are moving higher as populations become more urbanized.



Source: United Nations Population Division: 2011 Outlook.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

These trends of urbanization tend to go hand-in-hand with rising incomes, which in turn are transforming access to basic services in emerging economies. However, as we highlight in Exhibit 10, there is still an enormous disparity, compared to developed economies.

Exhibit 10: Access to Infrastructure Services by Country

	Passenger Vehicles	Road Network Length	Hospital Beds	Rail Line Length	Telephone Subscribers	Internet Users	Air Transport Passengers	Electricity Consumption	Improved Sanitation Facilities
Data Indexed to U.S. = 100									
U.S.	100	100	100	100	100	100	100	100	100
EU	85	45	202	64	120	88	53	52	100
Japan	73	45	464	29	104	99	33	54	100
Russia	33	33	322	85	64	37	12	64	93
Brazil	32	43	32	20	46	50	13	17	87
China	10	14	74	9	44	37	6	23	58
India	2	13	30	7	6	6	2	8	54
	Per Capita	Km/Capita	Per Capita	Km/Capita	Per Capita	Per Capita	Per Capita	Kwh Per Capita	Population % With Access

Sources: IMF, World Bank, CIA Global Fact Book and Cohen & Steers as of December 2011.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

To put this in perspective, emerging market urban populations represented 46% of the total in 2010. By 2050, this should climb to 64%, based on United Nations projections.

By 2025, emerging markets could be home to 22 of the world's largest 25 cities.

**Exhibit 11: 25 Largest Cities in the World by 2025 Population (millions of people)**

	1990	2010	2025
1 Tokyo, Japan	32.5	36.9	38.7
2 Delhi, India	9.7	21.9	32.9
3 Shanghai, China	7.8	19.6	28.4
4 Mumbai (Bombay), India	12.4	19.4	26.6
5 Mexico City, Mexico	15.3	20.1	24.6
6 New York metro area, United States of America	16.1	20.1	23.6
7 São Paulo, Brazil	14.8	19.6	23.2
8 Dhaka, Bangladesh	6.6	14.9	22.9
9 Beijing, China	6.8	15.0	22.6
10 Karachi, Pakistan	7.1	13.5	20.2
11 Lagos, Nigeria	4.8	10.8	18.9
12 Calcutta, India	10.9	14.3	18.7
13 Manila, Philippines	8.0	11.7	16.3
14 Los Angeles, United States of America	10.9	13.2	15.7
15 Shenzhen, China	0.9	10.2	15.5
16 Buenos Aires, Argentina	10.5	13.4	15.5
17 Guangzhou, Guangdong, China	3.1	10.5	15.5
18 Istanbul, Turkey	6.6	11.0	14.9
19 Cairo, Egypt	9.1	11.0	14.7
20 Kinshasa, Democratic Republic of the Congo	3.5	8.4	14.5
21 Chongqing, China	3.1	9.7	13.6
22 Rio de Janeiro, Brazil	9.6	11.9	13.6
23 Bangalore, India	4.0	8.3	13.2
24 Jakarta, Indonesia	8.2	9.6	12.8
25 Chennai (Madras), India	5.3	8.5	12.8

Source: United Nations Urbanization Project: 2011 Update.

There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

By 2050, 40% of China's population could be classified as middle class.<sup>(1)</sup>

(1) Source: United Nations Population Division as of December 31, 2011.

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

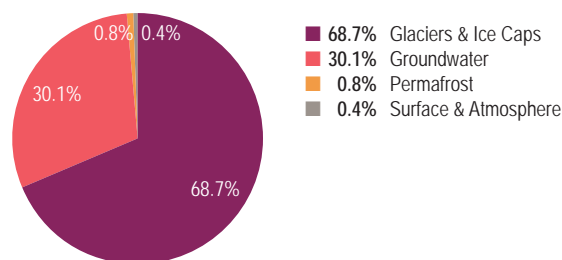
### Water Scarcity: A Rising 21st Century Challenge

Fresh water accounts for less than 3% of the world's total water supply; 60% is found in just 10 countries. Across the globe, there are a number of regions experiencing or approaching a chronic shortage of water. About 1.2 billion people, or almost one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation; another 1.6 billion people, or almost one quarter of the world's population, live in countries that lack the necessary infrastructure to take water from rivers and aquifers.<sup>(1)</sup>

This situation could be exacerbated by climate change as the 21st century unfolds. Rising temperatures, as an example, could cause flooding to increase as the atmosphere holds more moisture and droughts could reduce water availability in low precipitation areas. Sea levels are likely to rise, leading to a loss of fresh water supplies in coastal communities. There also is a growing threat to drinking supplies from saltwater intrusion into freshwater aquifers. Across developed and emerging economies, infrastructure spending will be required to meet these challenges, through government and private sector investment.

As a result, attractive investment opportunities exist 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.

Exhibit 12: The World's Fresh Water Supply



Source: USGS, BofA Merrill Lynch Global Research.

### 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 provision.

(1) Source: Food and Agriculture Organization of the United Nations as of June 30, 2012.

Developed and emerging market countries, many with stretched government balance sheets, are making public-private partnerships an integral part of their long-term infrastructure plans. For example, India plans to finance 30% of its infrastructure spending over the next five years through private enterprise; Mexico plans to fund 24% of its spending through public-private partnerships. Australia recently announced a \$200 billion privatization initiative through which 82 government-owned enterprises (power, water, ports and rails) could be sold. Exhibit 13 lists selected recent infrastructure privatizations, while Exhibit 14 lists those underway and anticipated privatizations.

Exhibit 13: Recent and Ongoing Privatizations of Infrastructure Assets			
December 2011	Portugal	Utilities	EDP: 21% stake sold in China Three Gorges for \$3.5B
February 2012	Portugal	Utilities	40% stake sold to State Grid Corp of China and Oman Oil, \$780MM
February 2012	Brazil	Airport concessions	\$14B
July 2012	Puerto Rico	Airport concessions	\$2.0B (upfront payment of \$0.6B + \$1.4B in investment commitments)
August 2012 <sup>(a)</sup>	Brazil	Toll roads and railways	\$21B
Ongoing	Portugal	Airports	Estimated at \$2B
Ongoing	Poland	Utilities	50% stake for sale, estimated at \$200MM

(a) Date of the announcement, to be executed in the next five years.

Exhibit 14: Anticipated Future Privatizations	
Greece	€15B target by 2015, including a 17% stake in PPC (power: estimated at \$200MM), EYDAP (water), DEPA (natural gas), OPAP (gambling), selected real estate assets
Spain	Barajas airport (Madrid—estimated at \$5B), El Prat airport (Barcelona—estimated at \$2B), Canal de Isabel II (Madrid water distribution, 20–30% stake for sale, estimated at \$400MM)
Portugal	Aguas de Portugal, Freight and suburban railways in Lisbon/Porto
Italy	SEA (Milan airports) 35% stake for sale, estimated at \$45MM
Australia	(New South Wales) Power generation A\$3B in first half of 2013
Australia	(New South Wales) Transmission and distribution: A\$30B in three years
Australia	(Queensland) Transmission and distribution: A\$12–15B in two years

As of October 2012. Source: Cohen & Steers.

Many cash-strapped governments are integrating privatization initiatives into their long-term infrastructure plans.

## 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 15 illustrates this point with a comparison of the long-term average standard deviations for global infrastructure securities compared with global equities.

**Exhibit 15: Risk-Adjusted Returns: Global Listed Infrastructure vs. Global Equities**

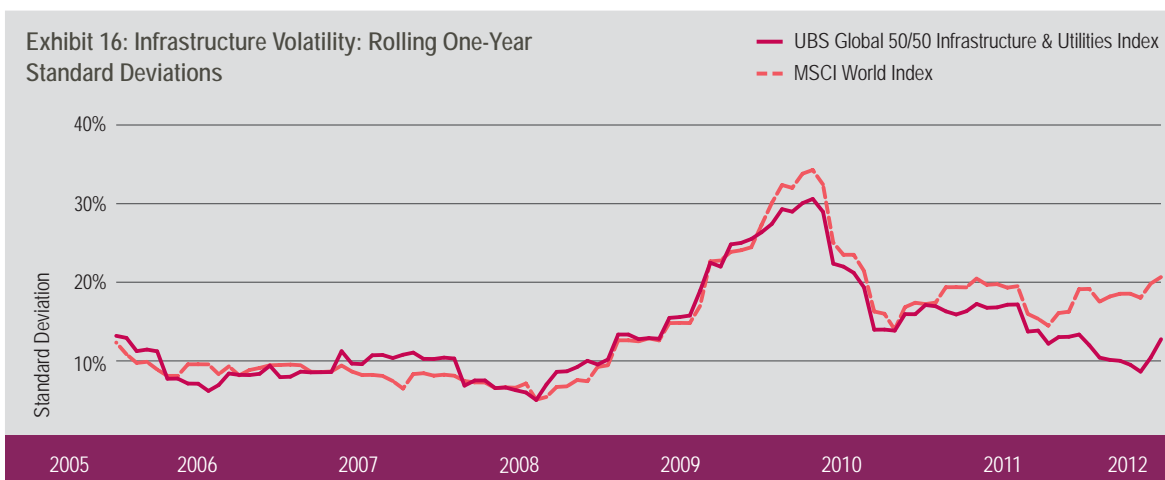
December 1994–September 2012	Standard Deviation	Sharpe Ratio
Global Listed Infrastructure	13.79	0.31
Global Equities	15.89	0.26

As of September 30, 2012. Source: Morningstar Direct and Cohen & Steers.

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Global listed infrastructure is represented by the UBS Global 50/50 Infrastructure & Utilities Index. Global Equities are represented by the MSCI World (net) Index. See page 22 for index definitions.

It is worth noting the divergence in the relative volatility levels of core infrastructure and global equities since the financial crisis. As shown in Exhibit 16, the volatility of global listed infrastructure has returned to pre-crisis levels, while that of global equities remains elevated, compared to long-term historical levels.



As of September 30, 2012. Source: Bloomberg.

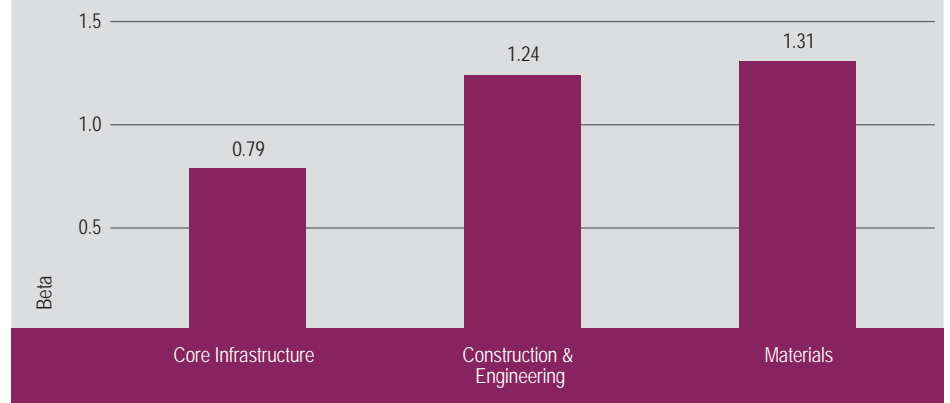
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Infrastructure is represented by the UBS Global 50/50 Infrastructure & Utilities Index. Global Equities are represented by the MSCI World (net) Index. See page 22 for index definitions.

The return to lower volatility levels pertains more to core infrastructure businesses (such as energy and water utilities, roads, energy transmission and communications) than to peripheral infrastructure-related companies that do not own or collect fees for usage (such as construction & engineering and materials). This point is illustrated in Exhibit 17, which compares the 10-year median beta of core infrastructure, construction and engineering and materials to that of the MSCI World Index.



Exhibit 17: Sector Comparison of Infrastructure Sector Betas Relative to the MSCI World Index  
September 2002–September 2012



As of September 30, 2012. Source: Bloomberg and Cohen & Steers.

*Past performance is no guarantee of future results. Investors cannot invest directly in an index.* There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin. Median beta for core infrastructure is represented by the 10-year median beta of the UBS Global 50/50 Infrastructure & Utilities Index relative to the MSCI World Index. Median betas for other groups are based on medians for the companies in each GICS classification relative to the MSCI World Index. See page 22 for index definitions.

## Business Structures With a Growing Focus on Income Delivery

Some infrastructure assets are adopting structures that serve to facilitate the delivery of income to investors. These companies are found in many sectors, such as the communications and energy examples below:

- Wireless tower companies have converted or indicated their intention to convert to REITs, a structure requiring that the majority of income be distributed to shareholders in the form of dividends. One example is American Tower, which converted to the REIT structure in January 2012.
- Some major energy transmission companies are structured as Master Limited Partnerships, or MLPs. These entities do not pay taxes, as long as at least 90% of revenues are generated from qualifying, generally energy-related activities. MLPs distribute as dividends the vast majority of their cash flows. Accordingly, assets within the MLP structure tend to trade at higher valuations, and have a lower cost of equity capital.

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

## Listed Infrastructure as a Direct Investment Complement

Listed infrastructure is a compelling way to invest in a rapidly growing sector of the global economy, combining the attributes of private infrastructure investments with the 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.

### The 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 be sold at any time, while lock-ups on direct infrastructure investments can last anywhere from 5 to 15 years.

Market liquidity also permits the construction and rebalancing of infrastructure portfolios in relatively short periods of time. Unlisted infrastructure portfolios can take several years to organize and invest fully. We frame this issue with a brief study of the listed infrastructure investment universe, which had a market capitalization of about \$2.4 trillion as of September 2012. The majority of the opportunity (\$2.0 trillion) lies in developed markets; although the emerging market universe is growing rapidly, given the faster pace of asset privatizations in those countries.

Using the UBS Global 50/50 Infrastructure & Utilities Index as a representative infrastructure portfolio, we calculated the index position size-weighted average daily liquidity per security at US\$83.9 million, with only a handful of companies trading less than US\$5 million per day. Exhibit 18 depicts the time it would take to fully invest a global listed infrastructure portfolio. We then assumed the ability to invest up to 20% of the daily average trading value of each security in the UBS Global 50/50 Infrastructure & Utilities Index without market impact. Our analysis shows that a portfolio of up to \$200 million could be fully invested within three days and 95% of a \$500 million portfolio within five days.

**Exhibit 18: Sample Time Frames for Investing a Portfolio of Global Infrastructure Securities**

	Portfolio Size		
	\$100,000,000	\$200,000,000	\$500,000,000
1 Day	95%	88%	59%
3 Days	100%	100%	89%
5 Days	100%	100%	95%

As of September 30, 2012. Source: Bloomberg and Cohen & Steers.

*Past performance is no guarantee of future results. Investors cannot invest directly in an index.*

Global infrastructure securities are represented by the UBS Global 50/50 Infrastructure & Utilities Index. See page 22 for index definitions.

## The Stability Provided by Moderate Leverage

Direct infrastructure investments are often highly leveraged to enhance return potential. Comparatively, most listed infrastructure companies are more conservatively leveraged, as illustrated in the cross-section of sectors and geographies in the following exhibit.

**Exhibit 19: Leverage as a Percent of Enterprise Value (EV)**

By Sub-Sector	Net Debt/EV	By Geography	Net Debt/EV
Airports	30.1%	North America	34.9%
Gas Distribution	36.2%	Europe	42.9%
Gas Pipelines	32.7%	Asia Ex-Japan	28.8%
Integrated Electric	44.3%	Japan	71.5%
Marine Ports	21.0%	Australia/New Zealand	25.1%
Rails	50.6%		
Regulated Electric	52.2%		
Satellites	28.0%		
Toll Roads	45.0%		
Towers	27.4%		
Water	54.3%		

Source: Bloomberg and Cohen & Steers as of September 30, 2012.

*Past performance is no guarantee of future results. Investors cannot invest directly in an index.* There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin.

## Diversification Benefits

The lists in Exhibit 19 underscore the broad diversification offered by listed infrastructure through a range of subsectors and geographies. There is also widespread diversification at the security level, through companies that own several (if not dozens of) infrastructure assets—often spread across multiple subsectors and geographies. This 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 in 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.

## Our Closing Perspective

Through this paper, we have framed some of the unique characteristics and competitive advantages of listed infrastructure, while pointing to the sector's 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 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 asset 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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#### **Index Definitions**

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 UBS Global 50/50 Infrastructure & Utilities Index (net of dividend withholding taxes) tracks a 50% exposure to global developed market utilities sector and a 50% exposure to global developed market infrastructure sector. The utilities sector excludes the sub-sector generation utilities. The index is free-float market capitalization weighted and is reconstituted annually with quarterly rebalances.

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