Opportunities in Private Infrastructure Investments in the US

September 2006

Introduction

An increasing number of opportunities in private infrastructure investments are emerging across the US. These are investments in the physical capital assets instrumental in the provision of public services including transport, energy and utility facilities, communications, healthcare and educational facilities, housing, and judicial and correctional facilities. While the US has been a leader in developing the public markets for equity and debt real estate (REITS and CMBS), it has lagged behind Australia and Europe in privatization of roads and other public infrastructure. There now exist secular drivers for greater private financing of infrastructure in the US including budgetary state and local government fiscal constraints, the advent of successful public-private partnerships, and historical underinvestment in crucial infrastructure projects.

Traditionally, the municipal bond market has been the primary source of financing state and local infrastructure projects in the US. Current levels of spending on infrastructure combined with traditional means of financing infrastructure, however, have become woefully inadequate in meeting current and future US infrastructure needs. Part of the inadequacy is due to limited resources, limitations of current financing arrangements, and lack of political support for infrastructure projects at the state and local levels. State coffers are under increasing pressure to fund healthcare and other costs, with less of a priority given to infrastructure.

The concept of privatization of US infrastructure is also gaining momentum now that several international private-public toll road projects have proven successful. State and local governments across the US are making the decision to privatize toll roads, bridges and other vital infrastructure in an effort to combat state funding shortages and reduce procurement costs. Public-private partnerships in the transport sector, in particular, are becoming increasingly popular and are viewed by states and municipalities as an attractive method to obtain budgetary support while ensuring a first-class transportation infrastructure.

Finally, another driver of increased privatization of the physical infrastructure assets in the US stems from historical underinvestment. According to the American Society of Civil Engineers (ASCE), there is severe underinvestment in crucial infrastructure in the US which has led to growing congestion and capacity constraints at a time when government budgets cannot keep pace.

From an investor's point of view, infrastructure is well placed to evolve as an important new asset class for US pension funds. Infrastructure investments typically carry greater duration than 30-year government bonds (i.e. the long-life of toll-road concessions) and offer the best of both worlds in terms of being bond-like in character, but with the equity-like feature in which revenues grow over time with demographic changes, providing pension funds an attractive hedge against wage and salary inflation. There is increasing evidence of the growing market appetite for ultra long duration securities in the global capital markets, as evidenced by the warm market response to the just re-opened 30-year US treasury bonds.

Table of Contents:

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This paper will discuss these issues in detail and is organized as follows:

What is Infrastructure?

The Physical Size and State of US Infrastructure

State Infrastructure Needs

Examples of Infrastructure Privatization in the US

The Market Value of the US Infrastructure Assets

Regional Opportunities in Infrastructure Investments Across the US

Concluding Remarks and Implications for Investors

What is Infrastructure?

Infrastructure is broadly defined as the physical structures and facilities that are developed or acquired by the public agencies to house governmental functions and provide water, power, waste disposal, transportation and similar services to facilitate the achievement of common social and economic objectives.[2] Exhibit 1 provides the detailed components of the infrastructure investment universe. Broadly, infrastructure investments can be classified as either economic or social infrastructure. The focus of this paper is on economic infrastructure.

Exhibit 1
Infrastructure Investment Universe

Economic Infrastructure	Social Infrastructure
• Transport – Toll roads, bridges, tunnels – Airports – Sea ports – Rail networks • Utilities – Distribution of gas, electricity and other energy sources – Treatment and distribution of water – Renewable energy – Communications infrastructure • Specialty sectors – Car parks – Storage facilities – Forests	• Education facilities – Schools – Universities • Healthcare facilities – Hospitals – Aged care – Child care • Correctional facillities – Courts – Jails, prisons

Source: RREEF Infrastructure

Economic infrastructure consists of services for which the user is prepared to pay such as transport, utilities and communications. Investments may be sourced through government privatization processes, sales of businesses already in private hands, or by constructing and subsequently operating the asset. These businesses may be subject to varying degrees of regulatory oversight and market risk.

[1] For a complete review of definitions of various infrastructure categories please refer to "Understanding Infrastructure", December 2005, RREEF Real Estate and Infrastructure.

[2] American Public Work Association, Stone 74

Social infrastructure investments typically consist of partnerships between the public and private sectors under which the government continues to provide the core service while the private sector builds, owns, operates and maintains the physical assets and facilities. These arrangements are usually described as public/private partnerships (PPPs) and are generally employed in sectors such as affordable housing, schools, public transport and hospitals.

The Physical Size and State of US Infrastructure

There has been severe underinvestment in US infrastructure over the past decade. The US on a national and regional level has neglected its critical infrastructure. Supply has failed to meet growing demand as exemplified by an aging infrastructure, expanding demand for services with a growing population, and state/local government deficits that have restrained needed expenditures.

The American Society of Civil Engineers (ASCE) has just released its 2005 Report Card for America's Infrastructure, grading the top infrastructure categories. The summary results are reported in Exhibit 2. The grade point average (GPA) has deteriorated to a "D" overall with an estimated $1.6 trillion needed in further investments to bring conditions to acceptable levels.

Exhibit 2
The State of America's Infrastructure*
(American Society of Civil Engineers)

	Grade	
	2001	2005
Aviation/Aerospace	D	D+
Bridges	C	C
Dams	D	D+
Drinking Water	D	D-
Energy	D+	D
Hazardous Waste	D+	D
Navigable Water Ways	D+	D-
Public Parks & Recreation	–	C-
Rail	–	C-
Roads	D+	D
Solid Waste	C+	C+
Transit	C-	D+
Wastewater	D	D-

America's Infrastructure G.P.A. = D
Total Investment Needs = $1.6 Trillion

*Each category was evaluated on the basis of condition and performance, capacity vs. need, and funding vs. need

Here is a review of the critical economic infrastructure sectors in the US which may be candidates for privatization. In each case, the physical size of the sector is provided as reported by the regulatory agency.

Aviation/Aerospace: The US has the world's most extensive airport system, designed to move both passengers and cargo. Over 1.9 million passengers rely on US airports daily for both business and leisure travel, and over 38,000 tons of cargo passes through US airports each day (Airports Council International). According to the Federal Aviation Administration, as of 2004 there are more than 19,300 airports in the US. Approximately 28% of those airports are the larger, public facilities, typically operated by a state or local government agency.

According to the ASCE report card, congestion on airport runways has improved from crisis conditions earlier in the decade due to suppressed demand (post-9/11) and increased funding. Air travel and traffic have rebounded strongly more recently, however, exceeding pre-9/11 levels. In 2005, commercial air carrier domestic emplanements were 4.5% higher than pre-9/11 levels. Domestic emplanements are projected to increase 4.3% per year through 2015. Airports will also face the increasing challenge of accommodating a larger number of regional jets as well as the super-jumbo jets.

Roads: According to the Federal Highway Administration, as of 2000 the US has 8,222,393 lane miles of roads. More importantly, most (61%) of the miles driven in the US are on urban roads. The road infrastructure is aging, with much of the US interstate system over 50 years old. Increased congestion underscores a US highway system that is now operating beyond the capacity for which it was designed. Americans spend an estimated 3.5 billion hours a year stuck in traffic. Projected federal, state and local highway revenues are insufficient to meet future highway investment requirements. According the ASCE, poor road conditions cost US motorists $54 billion a year in repairs, operating costs, and lost productivity.

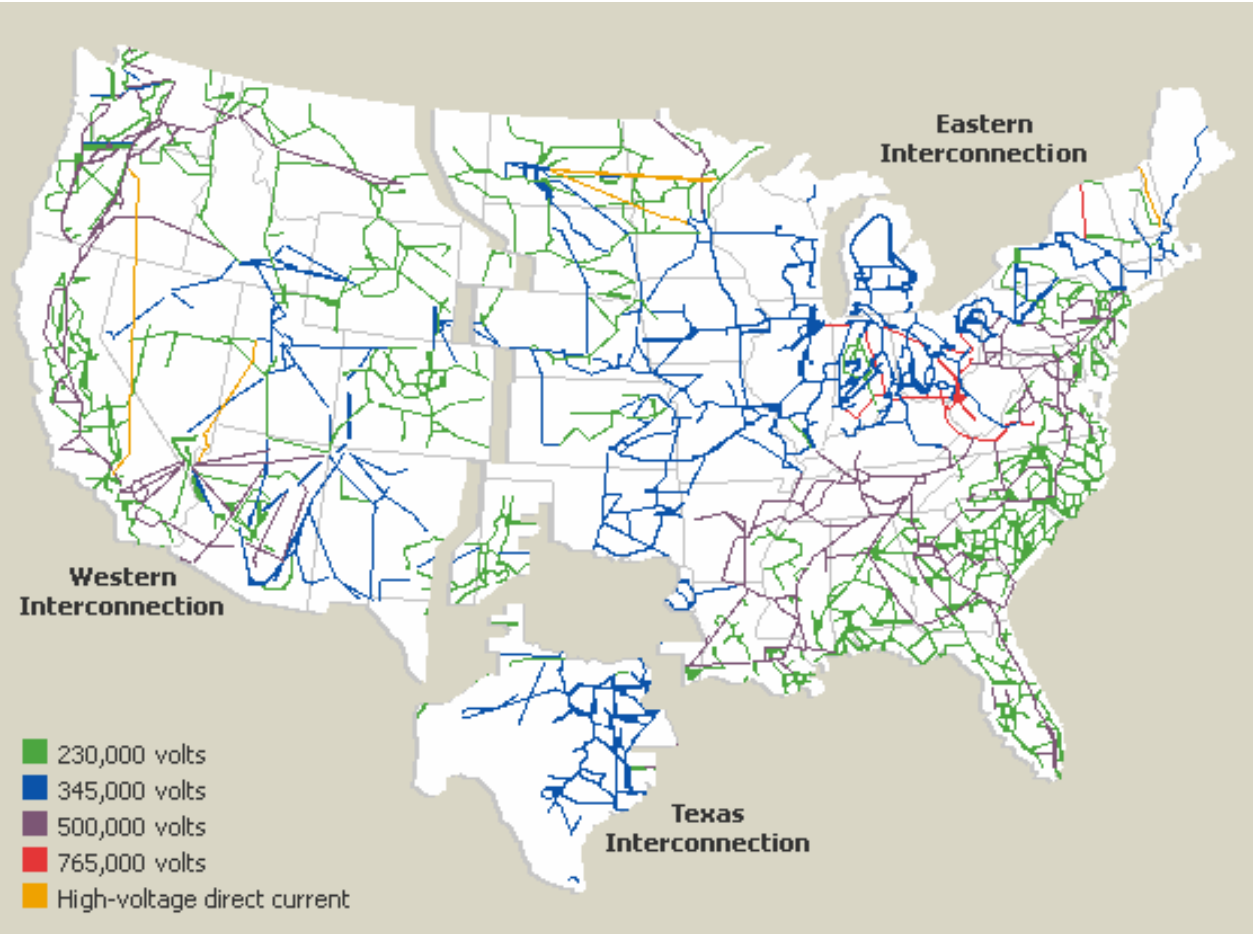
Bridges: As of 2005, there are 590,750 bridges across the US. Between 2000 and 2003, over 27% of these bridges were rated as deficient or functionally obsolete. It is estimated that it will cost $9.4 billion a year for 20 years to eliminate all bridge deficiencies. This funding shortfall and severe underinvestment has been compounded by the lack of a federal transportation program.

Dams: There exist roughly 78,000 dams in the US as listed on the National Inventory of Dams. Dams in the US produce over 74,000 megawatts of renewable electricity, meeting 10% of the nation's power needs. About 58% of the dams in the US are privately owned. Local governments own and operate the next largest number of dams at 16%. State ownership is next with about 4%. Finally, the federal government and public utilities own the balance of the dams.

According to the ASCE, since 1998 33% of the dams have been rated as unsafe. While federally owned dams are in good condition, the number of dams identified as unsafe is increasing at a faster rate than those being repaired. A total of $10.1 billion is needed over the next 12 years to address the problem of all critical non-federal dams that pose a direct risk to human life should they fail.

Energy: High-voltage electrical transmission lines in the United States are divided into three separate grids that make up what is often called the national power grid (See Exhibit 3). The three grids cover the contiguous 48 states, and parts of Canada and Mexico and are known as the Western Interconnection, the Eastern Interconnection, and the Electric Reliability Council of Texas (ERCOT) Interconnection. The three grids operate independently for the most part but are connected in a few places by direct, current lines. All US power utilities, except those in the states of Alaska and Hawaii, are connected to other power utilities through the national power grid. Dispatch centers maintain and control the flow of electricity over the grid, supplying electricity to meet the demand.

According to the ASCE, the power system needs a major upgrade since growth in demand for electricity cannot be met by current capacity. The existing transmission facilities have not been designed to meet the current high level of demand, resulting in bottlenecks and higher blackout rates.



Water/Wastewater: The US faces an $11 billion shortfall per year to replace aging facilities and to comply with safe drinking water requirements. Federal funding for drinking water in 2005 remained at $850 million, less than 10% of the national requirement. The same level of funding has been proposed for 2006.

The wastewater infrastructure management system has aged as well, discharging billions of gallons of untreated sewage into US surface waters each year. The EPA estimates that the nation must invest $390 billion over the next 20 years to replace existing systems and build new ones to meet growing demand.

Such underinvestment in critical infrastructure facilities is a secular force driving increased privatization efforts in the US. In the next section, following an assessment of state infrastructure needs, examples of privatized infrastructure assets in the US are presented.

State Infrastructure Needs

State and local growth management objectives vary widely, reflecting regional historical, political, geographic and economic considerations. According to the Urban Land Institute, "smart growth" is growth that is "economically sound, environmentally friendly and supportive of community livability." Measures commonly used to quantify the success or failure of management objectives include increasing population densities, decreased air and water pollution (or increased compliance with environmental standards), reduced traffic congestion and improved jobs/housing ratios. Although national standards have been

suggested for all of these objectives, they should be adapted to regional conditions. Implicitly, the major objectives of smart growth implicate sound infrastructure investments as essential to growth management.

The ASCE Report Card 2005 for the individual states reflects infrastructure problems across the board. Exhibit 4 reflects the top three concerns for each state. Roads ranked as the top priority for 49 out of 50, with only the District of Columbia and Connecticut having higher priority items. Bridges ranked second in importance with 31 states citing it as a critical issue; and wastewater treatment infrastructure ranked third with 26 states noting its importance.

Regionally, bridges ranked as a big concern for East Coast states, where a high degree of disrepair, structural deficiency and functional obsolescence exists. In particular, Massachusetts, Pennsylvania, New York and New Jersey have high rates of obsolescence. Exhibit 5 illustrates the details of some infrastructure issues in key states. "Key" states tend to be either densely-populated states, fast-growing or both. Further, these states are home to the country's large, high-growth metropolitan areas.

The third highest-ranking concern was investment in wastewater infrastructure, which also appears to be one of the most expensive. Not surprisingly, the most populous states indicate the highest level of investment needs. Ranked in order, New York, California, New Jersey, Illinois, Florida and Texas all estimate a need for more than $9 billion for wastewater treatment facilities.

Although not listed as one of the top three concerns, dams were noted by many civil engineers as a threat to public safety. The estimated cost to repair the nearly 6,100 high hazard dams in several states would total nearly $4.7 billion. A high hazard dam is defined as a dam wherein failure would cause loss of life and significant property damage. Burgeoning population is straining the capacity of often antiquated dams and the repairs are the responsibility of the owners, compliance of which is often not enforced for a lack of manpower and/or funds. North Carolina has the highest number of high hazard dams, but Texas, Pennsylvania and Missouri also run a disproportionately high failure risk. Despite having a lower number of high risk dams, California's estimated cost to repair is the highest at $679 million.

Examples of Infrastructure Privatization in the US

Infrastructure privatization efforts slowed considerably in the 1990s in the US, but now the concept is receiving more respect as several international private-public toll road and airport projects are proven successful. Increasingly, state governments and municipalities are making the decision to privatize toll roads, bridges and other vital infrastructure in an effort to combat state funding shortages. Today, many critical infrastructure assets that Americans rely on everyday such as airports, highways, rail roads and water systems are already managed by private companies.

Transportation: The privatization of transport, in particular, is receiving a lot of attention. The traditional raising of gasoline taxes to generate revenue for road spending is nearly impossible with gas prices nearing over $3 a gallon. At least 19 states have enacted some kind of public-private partnership program for the transportation sector. For example, in California state legislators are proposing plans to reduce traffic congestion by allowing private construction of toll roads. To offset a reported $100 billion transportation deficit, Colorado's state legislature is considering privatized toll roads to pay for construction and maintenance of its 953-mile highway system. New Jersey is studying the possibility of leasing one or more toll roads, including the 148-mile New Jersey turnpike.

Exhibit 5
Details of Infrastructure Concerns in Key States

	Bridges	Dams		Drinking Water	Roads			Wastewater
	Percent Structurally Deficient or Obsolete	No. of High Hazard*	Est. Cost to Repair ($Mil.)	Intrastructure Inv Needs Over Next 20 Years ($Bil.)	% Congestion in Urban Areas	% Increase Vehicle Travel 1990-2003	Commute Cost in Lost Time and Fuel per person**	Investment Needs ($Bil.)
Arizona	Not spec.	91	$ 64.00	$ 1.62	29%	52%	$812	$ 6.20
California	28%	336	$ 679.00	$ 17.50	60%	25%	$1,668	$ 14.40
Colorado	17%	332	$ 369.00	$ 2.50	30%	60%	$786	$ 1.34
District of Columbia	Not spec.	Not spec.	Not spec.	Not spec.	Not spec.	Not Spec.	$1,212	$ 1.47
Florida	18%	100	$ 9.50	$ 3.70	34%	69%	$927	$ 9.96
Georgia	20%	399	$ 288.40	$ 2.40	21%	50%	$1,065	$ 2.34
Illinois	17%	176	$ 171.30	$ 6.50	45%	Not Spec.	$985	$ 11.89
Maryland	29%	64	$ 64.60	$ 1.70	49%	35%	$866	$ 4.78
Massachusetts	51%	333	$ 143.50	$ 5.89	31%	16%	$958	$ 4.68
Minnesota	Not spec.	40	$ 20.00	$ 3.01	69%	42%	$740	$ 2.31
Missouri	35%	447	$ 374.10	$ 2.18	30%	34%	$647	$ 5.00
Nevada	Not spec.	134	$ 30.20	$ 0.60	44%	89%	$494	Not spec.
New Jersey	37%	196	$ 103.80	$ 3.66	51%	18%	Not spec.	$ 12.83
New York	38%	383	$ 303.10	$ 13.15	34%	26%	$820	$ 20.42
North Carolina	30%	1046	$ 394.80	$ 2.70	42%	50%	$791	$ 5.92
Oregon	25%	122	$ 98.80	$ 2.70	51%	18%	$733	$ 1.48
Pennsylvania	42%	768	$ 646.20	$ 5.26	23%	24%	$241	$ 8.06
Texas	21%	857	$ 667.00	$ 13.00	40%	38%	$1,027	$ 9.15
Virginia	26%	126	$ 147.20	$ 2.05	29%	28%	$1,212	$ 3.52
Washington	26%	140	$ 75.90	$ 4.00	34%	23%	$820	$ 2.74
Totals		**6090**	**$ 4,650.40**	**$ 94.12**				**$ 128.49**

*A high hazard dam is defined as a dam wherein failure would cause loss of life and significant property damage.

**CA Commute Cost in Terms of Time and Excess Fuel: LA = $1,668; SF = $1,335; Riverside/San Bernardino = $1,043; San Diego = $865; Fresno = $270.
**FL Commute Cost in Terms of Time and Excess Fuel: Miami = $927; Orlando = $904; Tampa = $742.
**NC Commute Cost in Terms of Time and Excess Fuel: Charlotte = $791; Raleigh = $460.
**TX Commute Cost in Terms of Time and Excess Fuel: Dallas = $1,080; Houston = $1,027; Austin = $867; San Antonio = $640

Source: American Society of Civil Engineers, 2005 Infrastructure Report Card

Exhibit 6 provides a summary of local governments that are considering privatizing some part of their road/highway infrastructure.

Exhibit 6
Contracting Out

Governments are increasingly turning to private firms to build, maintain and operate new toll roads. More than $25 billion worth of projects have been proposed or are in development acccording to a tally by the ReasonFoundation. A sampling:

Location	Route	Project	Estimated Cost, in Billions
San Antonio to Dallas	TTC-35	Build toll road	$7.2
Virginia	I-81	Rebuild, add toll-truck lanes	7.0
Dallas	I-635	Rebuild, add HOT lanes	3.0
Atlanta	I-75/575	Add HOT and toll-truck lanes	1.8
Portland, OR	3 new routes	Build toll roads	1.0
Northern Virginia	I-495	Add HOT lanes	0.9
San Diego	SR 125	Build Toll road	0.6
San Antonio to Dallas	Loop 1604	Add HOT lanes	0.6
Forth Worth	SH-161	Build toll road	0.5
Denver	C-470	Add HOT lanes	0.4

Note: High Occupancy Toll (HOT) refers to highway lanes that are open to vehicles whose drivers pay a toll.

Source: Reason Foundation, WSJ, April 18, 2006

The Chicago Skyway transaction, which was completed in January of 2005, was hailed as groundbreaking in the privatization of US infrastructure. In this case, the City of Chicago granted a 99-year lease to Cintra and Macquarie Infrastructure Group to operate, maintain, manage, rehabilitate and toll the Skyway. This raised $1.83 billion in revenue for the cash-strapped city. Cintra and Macquarie were also selected for the 75-year, $3.85 billion lease of the Indiana Toll Road. The deal calls for Cintra-Macquarie to pay the state of Indiana the full amount up front to operate and maintain the highway. In exchange, the consortium would keep all toll revenue it collects.

Airports: Of the 517 domestic airports offering commercial passenger service, 13 have management contracts with private companies. Indianapolis airport is a prime example of a successful private-public partnership. It is considered one of the more efficient domestic airports and is entirely managed by a subsidiary of a British company, BAA plc. BAA plc also holds medium-term retail management contracts with Pittsburgh International, Boston Logan International and Baltimore/Washington International airports. The partnership has been successful.

Water: Out of approximately 54,000 publicly-owned water and wastewater systems, over 2,400 of them have contracted successfully with private firms to provide system operations and maintenance services. For example, Veolia Water, a US subsidiary of a French firm, serves more than 600 communities and 14 million people through public-private partnerships with local governments, including the nation's largest water partnership with Indianapolis.

The Market Value of US Infrastructure Assets

Overview

Various data sources were used to estimate the value of existing US infrastructure assets[3]. The value of existing infrastructure is measured from two perspectives:

1. The market value of publicly traded infrastructure companies, and
2. The value of public and private infrastructure assets as reported by the Bureau of Economic Analysis (BEA).

Below is a brief description of each data source and both market value estimates for the infrastructure universe in the US.

Market Value of Publicly-Traded Infrastructure Assets

The North American Classification System (NAICS) codes were used to categorize publicly traded companies involved in infrastructure-related activities. These are companies whose principle product is to construct, operate or maintain infrastructure assets. The NAICS codes as reported in Appendix 1 were based on the following activities:

Transport: Roadways, bridges, tunnels, sea ports, airports, rail and ferries.

Energy & Utility: Oil and gas storage and distribution) electricity distribution and generation, water treatment and distribution.

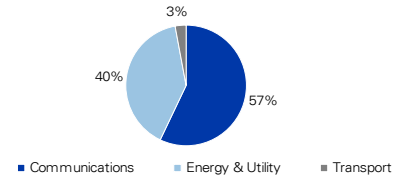
Communications: Cable networks and satellite systems.

The market value for companies whose principle product matched the infrastructure NAICS codes as reported in Appendix 1 were drawn from Standard & Poor's COMPUSTAT North American database[4].

Exhibit 7 presents the market value of publicly traded companies which as of March 2006 totaled $3.042 trillion. All actively traded and inactive companies were included in the market value calculation[5]. Communications, followed by Energy & Utility, account for the bulk of publicly-traded infrastructure companies. By contrast, a much smaller number of transport firms are publicly traded entities with a mere 3% share. The market value of publicly traded infrastructure companies, disaggregated down to the six-digit NAICS codes are presented in Exhibit 8.

Exhibit 7
Market Value of Publicly Traded Companies

$Millions, Values as of March 2006	
Communications	1,727,555.42
Energy & Utility	1,230,296.69
Transport	83,989.33
Total:	**3,041,841.43**



Source: Global Insight, Standard & Poor's COMPUSTAT, RREEF Research

[3] Data and methodology are based on the Global Insight Infrastructure Study, April 2006.

[4] COMPUSTAT data is derived from publicly traded companies on the New York Stock Exchange (NYSE), American Stock Exchange (AMSE), National Association of Securities Dealers Automated Quotations (NASDAQ), Over-the-Counter (OTC), Toronto Stock Exchange, Quebec Stock Exchange and Montreal Stock Exchange.

[5] Inactive companies represent those companies that no longer file with the SEC or trade stock due to an acquisition/merger, bankruptcy, liquidation or leveraged buyout. Market values were aggregated at a monthly frequency, spanning the last 20 years. COMPUSTAT defines market value as the month-end close price multiplied by the appropriate quarter's value for common shares outstanding.

Exhibit 8
Market Values of Publicly-Traded Companies
As of March 2006
($ millions)

Category	NAICS Classification	
Communications		
	Power and Communication lines	2,065.25
	Wired Telecom Carriers	1,037,703.95
	Cellular and Other Wireless	634,107.48
	Tekecom Resellers	1,910.97
	Satellite Telecommunications	18,510.52
	Cable	22,636.07
	Other Telecom	10,621.19
Communications Total		**1,727,555.42**
Energy & Utility		
	Pipeline Transportation	3,111.05
	Electric Power Generation, transmission and distribution	393,375.36
	Electric Power Generation	365,689.53
	Electric Power Transmission	6,716.60
	Drilling Oil and Gas Wells	121,632.00
	Support Activity for Oil/Gas	28,279.30
	Hydroelectric Power Generation	1,409.37
	Fossil Fuel Electric Power Gen.	6,194.01
	Electric Power Distribution	13,893.18
	Natural Gas Distribution	36.32
	Water Supply	71,845.92
	Water and Sewer	32,432.99
	Oil/Gas Popeline	1,404.95
	Petroleum Stations & Terminals	82,412.67
	Petroleum Products	4,555.02
	Pipeline Transportation Crude Oil	26,032.06
	Pipeline Transportation Nat'l. Gas	1,807.71
	Pipeline Transportation Petroleum	63,211.60
	Pipeline Transportation, Refined Petro	6,257.04
Energy & Utility Total		**1,230,296.69**

Category	NAICS Classification	
Transport		
	Commercial/Institutional Bldg.	2,074.67
	Highways, Streets, Bridges	2,309.58
	Other Heavy & Civil Engineering	45,264.06
	Shipbuilding & Reparing	31,086.81
	Other Airport	3,254.20
Transport Total		**83,989.33**
Grand Total		**3,041,841.43**

Source: Global Insight, Standard & Poor's COMPUSTAT, RREEF Research

Market Value of Public and Private Infrastructure Assets

The BEA also reports the value of public (government-owned as opposed to publicly traded) and private infrastructure assets in the US. The BEA data presented in this report covers values for both the net stock and annual depreciation of infrastructure in current dollars. The infrastructure asset types covered by the BEA are presented in Exhibit 9[6].

There is some overlap between the market value of publicly traded infrastructure-related companies and the BEA valuation of private infrastructure assets. A share of private infrastructure assets is owned and operated by publicly-traded companies.

Exhibit 9
BEA Public and Private Infrastructure Subtypes

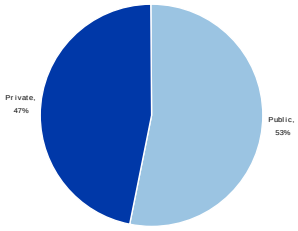
Structures	Equipment
Transportation	Communications
Power	Electrical Transmission, Distribution and Industrial Apparatus
Highways and Streets	
Sewer Systems	
Water Systems	
Other (Mostly Communication)	

According to the BEA, as of 2004 the value of public and private infrastructure assets in the US totaled $5.65 trillion. (Please refer to Exhibit 10). The public sector accounts for a 53% share. (Please note that we are not referring to "publicly-traded" infrastructure companies but to publicly-owned (i.e. government-owned) infrastructure assets.) The bulk of publicly-owned infrastructure is accounted by highways and streets. Not surprising, US highway and streets are garnering most of the privatization interest.

[6] Appendix 2 briefly describes the methodology used to calculate the net stock and depreciation values.

Exhibit 10
Infrastructure Assets

2004 BEA Data



Total Public and Private: $5.65 Trillion

Public Subcomponents. (2004, year-end estimates)	Billions of Dollars
Transportation	$ 348.8
Power	185.6
Highways and Streets	1,688.2
Other Structures*	763.1
Total	**2,985.7**

*Consists of lodging, religious, communication, sewage and waste.

Public Subcomponents. (2004, year-end estimates)	Billions of Dollars
Communication equipment	491.9
Electrical transmission, distribution and industrial apparatus	297.9
Power	1,021.1
Communication	373.8
Railroads	277.4
Other*	199.7
Total	**2,661.8**

*Consists primarily of streets, dams, reservours, sewer and water facilities, parks and airfields.

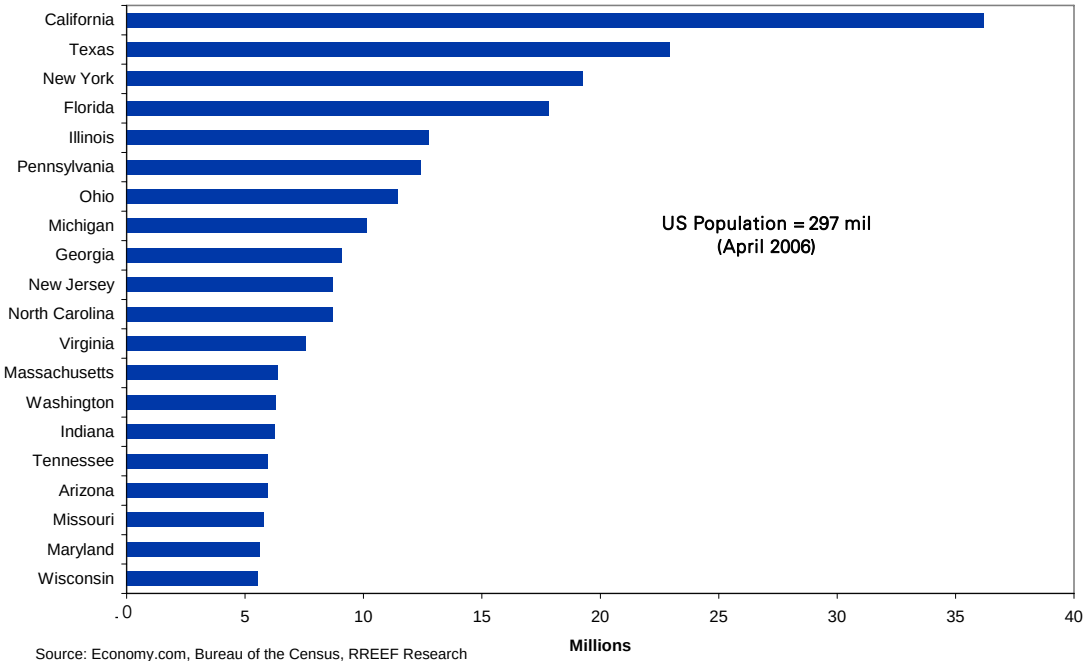
Source: Global Insight, Bureau of Economics Analysis, RREEF Research

Regional Opportunities for Private Infrastructure Investment Across the US

Macro-level demand drivers, such as demographic variables and the level of economic growth, provide the determinant characteristics of which markets have the greatest need and urgency for infrastructure investment. The most populous states and those with the fastest-growing populations and highest economic output, represented by Gross State Product (GSP), can be cross-referenced with a region's current infrastructure capacity and its fiscal health to provide a metric of overall need for investment. Following is a brief discussion of these primary determinants.

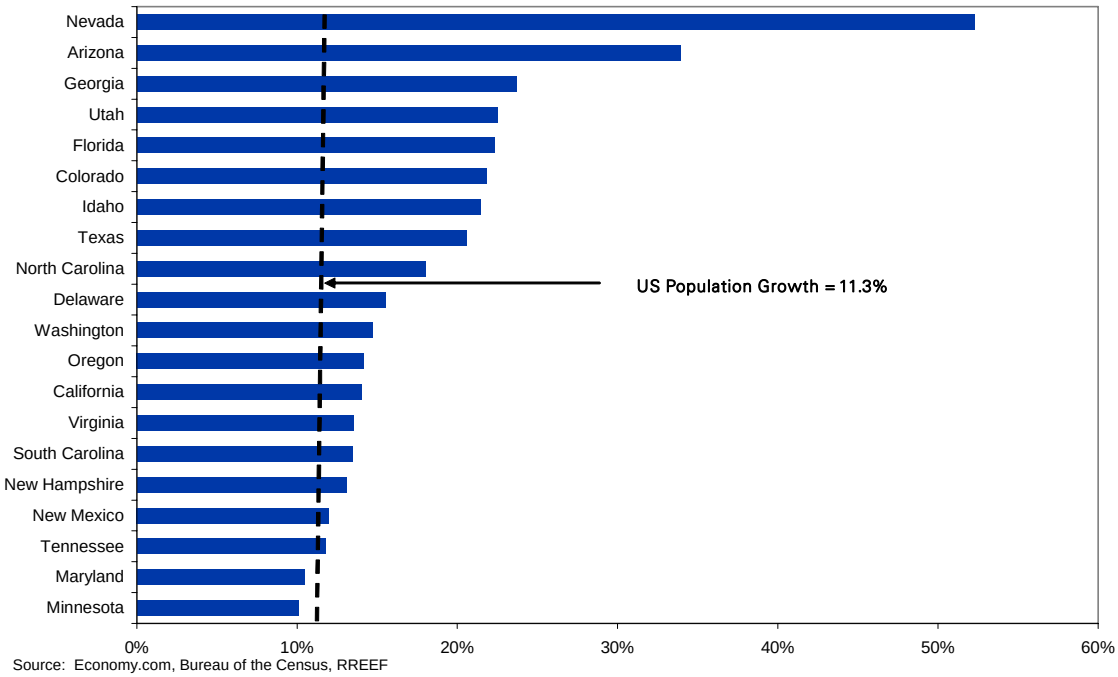
Population – The most populous state by far is California, which is home to more than 36 million people. Texas, New York and Florida follow with populations ranging between 17 to 20 million (please see Exhibit 11). These states, in particular, are gateways for international migration, and for many people the first point of entry into the US. This may result in a higher level of expenditures on social infrastructure relative to other states, and thus an under-allocation of funds for investment in economic infrastructure. As Exhibits 12 and 13 show, Nevada and Arizona were the top two fastest-growing states over the past 10 years on a relative basis and are forecast to hold those positions for the next 10 years, implying heightened capacity constraints and future needs. Ranked on an absolute basis, Florida, California and Texas could each add approximately four million people between 2005 and 2015.

Exhibit 11
Top 20 Most Populous States in the US



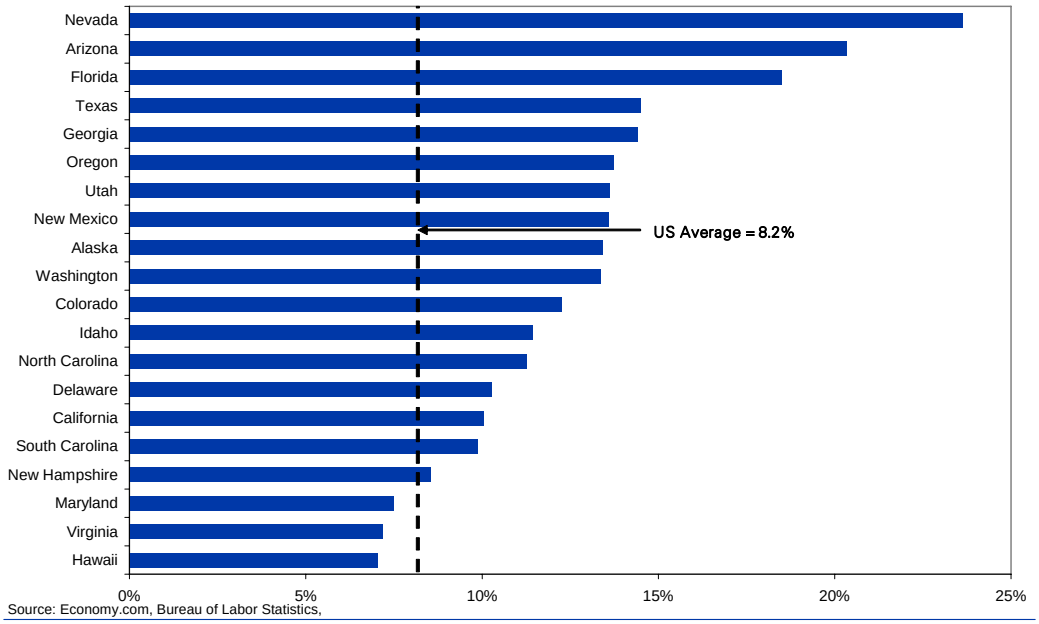
Source: Economy.com, Bureau of the Census, RREEF Research

Exhibit 12
20 Fastest Growing States - Population Change 1995-2005



Source: Economy.com, Bureau of the Census, RREEF

Exhibit 13
20 Fastest Growing States Forecast 2005-2015

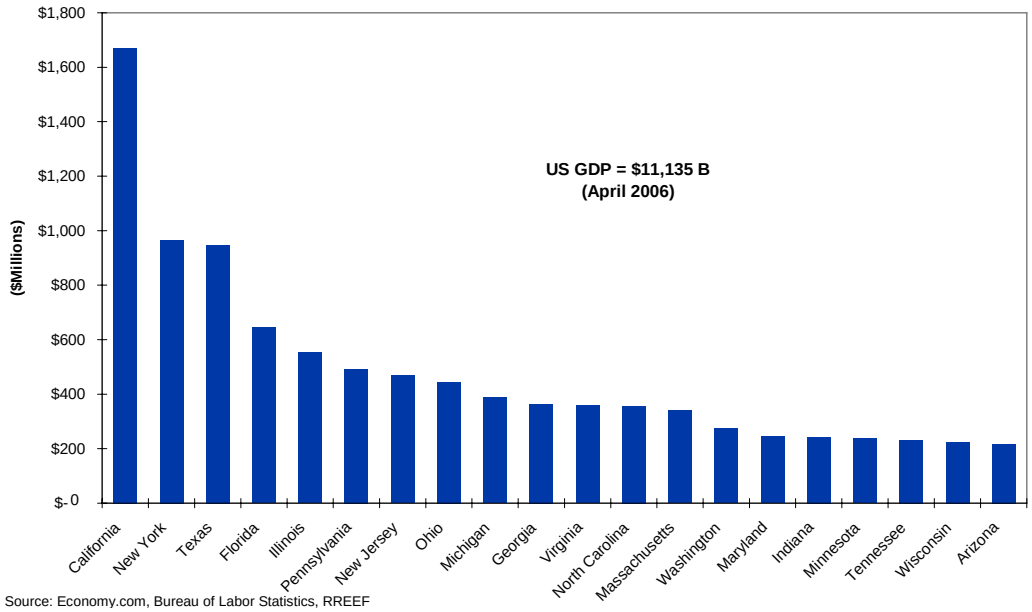


Source: Economy.com, Bureau of Labor Statistics,

Gross State Product – Exhibit 14 illustrates the size of each state's contribution to US gross domestic product. California, New York and Texas clearly exhibit high levels of overall economic output relative to the rest of the country.

Capacity - As noted earlier in the report in Exhibit 5, current infrastructure capacity in most states is overburdened, with California, Texas and New York ranking at the top of the list for the dollars needed for investment.

Exhibit 14
Top 20 States Ranked by Size of Gross State Product

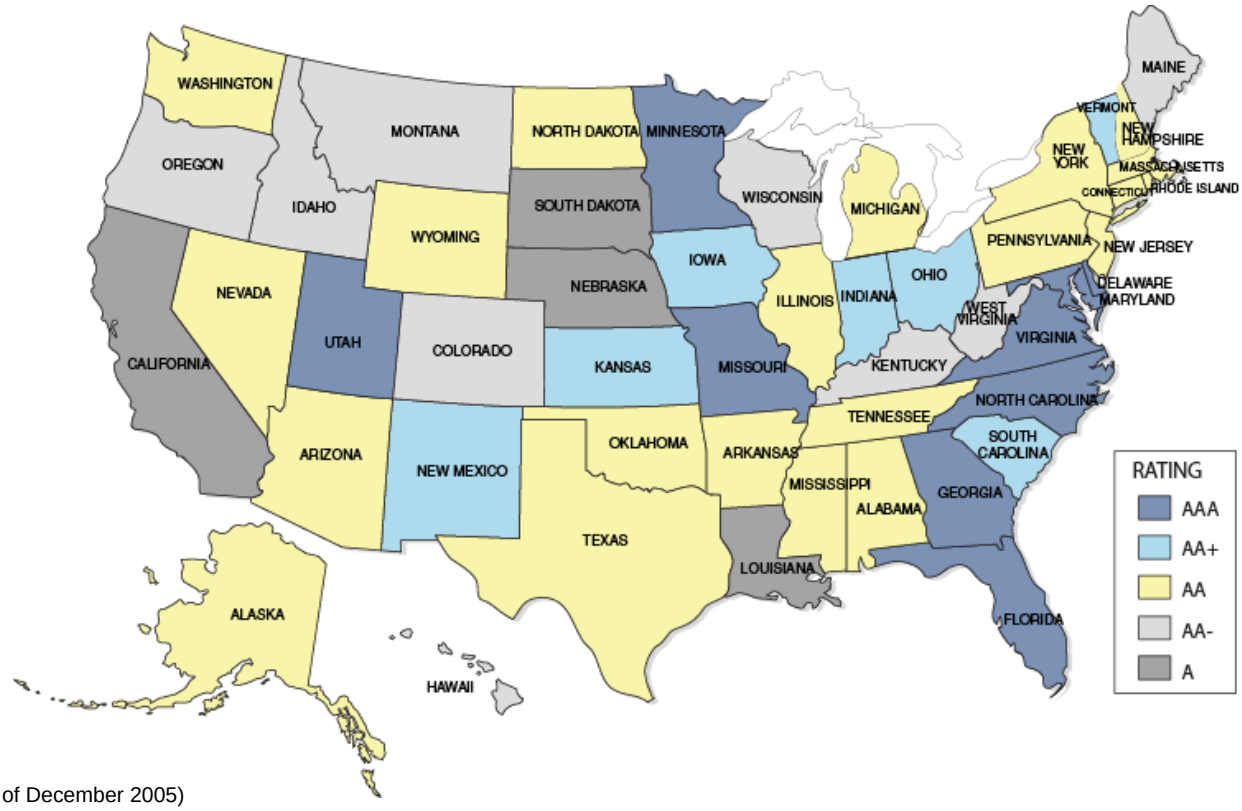


Source: Economy.com, Bureau of Labor Statistics, RREEF

Fiscal Health – From 2001 through 2004, states experienced one of their worst fiscal downturns, which, resulted in severe budget cuts, State fiscal conditions began to rebound along with the economy in fiscal 2005. Exhibit 15 illustrates Standard & Poor's State Bond Ratings for the US, intended here as a proxy for the states' fiscal health. Those states with the lowest state bond rating include California, Louisiana, South Dakota and Nebraska. Included on the next tier up are the fast growing states of Colorado, Oregon and Idaho.

Based upon ranking, those states with the largest and fastest-growing populations, highest level of economic output, and under the most fiscal duress include California, New York and Texas. These three states emerge as the top potential candidates for public-private investment in infrastructure.

Exhibit 15
S&P State Bond Ratings Map



(As of December 2005)
Source: Standard & Poor's, RREEF Research

Concluding Remarks and Implications for Investors

The large size of the US infrastructure universe presents many opportunities for international and domestic investors to include these investments in their real estate portfolios. The widening gap between funding shortfalls and growing demand due to demographic trends is driving the push towards privatization of publicly-owned infrastructure assets across the many regions of the US. Highways and streets account for the largest publicly-owned infrastructure asset in the US. Not surprisingly, they are garnering most of the attention. Tolled highway facilities in particular, are attracting pension fund investors given their long-duration and secure and inflation-protected cash streams. In addition to toll roads, other infrastructure assets are emerging as important candidates for privatization including airports, sea ports, ferries and power plants.

In many ways, infrastructure investments share the same risk-return characteristics of institutional grade, core commercial real estate. Infrastructure investments provide institutional investors with stable and high income with an inflation hedge, and increased diversification. Infrastructure assets also enjoy a long-life, low volatility of returns and stable/growing consumer demand. One important characteristic that differentiates infrastructure assets from traditional real estate is that infrastructure enjoys a monopolistic or near-monopolistic position in the market place, so supply concerns (the Achilles heal of the commercial real estate market) is not an issue.

On a regional level, three states (California, New York and Texas) emerge as top candidates for future infrastructure privatization efforts. These states are the most populous and the most fiscally constrained as proxied by the S&P bond ratings.

Appendix I
Infrastructure NAICS Definitions

Code	2002 NAICS Title
Transport: roadways, bridges, tunnels, sea ports, airports, rail, ferries	
236220	Commercial and Institutional Building Construction
2373	Highway, Street, and Bridge Construction
23731	Highway, Street, and Bridge Construction
237310	Highway, Street, and Bridge Construction
237990	Other Heavy and Civil Engineering Construction
336611	Ship Building and Repairing
48811	Airport Operations
488119	Other Airport Operations
48831	Port and Harbor Operations
488310	Port and Harbor Operations
71393	Marinas
713930	Marinas
Energy & Utility: Gas (storage & distribution)	
213111	Drilling Oil and Gas Wells
213112	Support Activities for Oil and Gas Operations
2212	Natural Gas Distribution
22121	Natural Gas Distribution
221210	Natural Gas Distribution
23712	Oil and Gas Pipeline and Related Structures Construction
237120	Oil and Gas Pipeline and Related Structures Construction
4247	Petroleum and Petroleum Products Merchant Wholesalers
42471	Petroleum Bulk Stations and Terminals
424710	Petroleum Bulk Stations and Terminals
42472	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
486	Pipeline Transportation
4861	Pipeline Transportation of Crude Oil
48611	Pipeline Transportation of Crude Oil
486110	Pipeline Transportation of Crude Oil
4862	Pipeline Transportation of Natural Gas
48621	Pipeline Transportation of Natural Gas
486210	Pipeline Transportation of Natural Gas
4869	Other Pipeline Transportation
48691	Pipeline Transportation of Refined Petroleum Products
486910	Pipeline Transportation of Refined Petroleum Products

Appendix I
Infrastructure NAICS Definitions

Code	2002 NAICS Title
Energy & Utility: Electricity (distribution & generation)	
2211	Electric Power Generation, Transmission and Distribution
22111	Electric Power Generation
221111	Hydroelectric Power Generation
221112	Fossil Fuel Electric Power Generation
221113	Nuclear Electric Power Generation
221119	Other Electric Power Generation
22112	Electric Power Transmission, Control, and Distribution
221121	Electric Bulk Power Transmission and Control
221122	Electric Power Distribution
Energy & Utility: Water (treatment & distribution)	
2213	Water, Sewage and Other Systems
22131	Water Supply and Irrigation Systems
221310	Water Supply and Irrigation Systems
2371	Utility System Construction
23711	Water and Sewer Line and Related Structures Construction
237110	Water and Sewer Line and Related Structures Construction
Communications (cable networks and satellite systems)	
23713	Power and Communication Line and Related Structures Construction
237130	Power and Communication Line and Related Structures Construction
517	Telecommunications
5171	Wired Telecommunications Carriers
51711	Wired Telecommunications Carriers
517110	Wired Telecommunications Carriers
5172	Wireless Telecommunications Carriers (except Satellite)
51721	Wireless Telecommunications Carriers (except Satellite)
517212	Cellular and Other Wireless Telecommunications
5173	Telecommunications Resellers
51731	Telecommunications Resellers
517310	Telecommunications Resellers
5174	Satellite Telecommunications
51741	Satellite Telecommunications
517410	Satellite Telecommunications
5175	Cable and Other Program Distribution
51751	Cable and Other Program Distribution
517510	Cable and Other Program Distribution
5179	Other Telecommunications
51791	Other Telecommunications
517910	Other Telecommunications

Appendix 2
Methodology for Estimating Public & Private Infrastructure Assets as Reported by the BEA

For each asset type, as reported in Exhibit 5 of the main text, the net stock and annual depreciation values are calculated using a perpetual inventory method. Under this method, the net stock in each year is the cumulative value of gross investment through that year – including both new investment and net purchases of used assets – less the cumulative value of depreciation through that year. The estimates of investment in new assets and net purchases of used assets are derived from a combination of National Income Product Account (NIPA) data, and industry data reported to the IRS and Economic Census. Depreciation is estimated by the BEA using geometric depreciation rates that are derived by dividing declining balance rates by service lives.

The main advantage of the perpetual inventory method is that, for the most part, comprehensive, detailed and relatively reliable data on new investments are available to implement it. The main limitations relate to the uncertain accuracy of the depreciation rates (which are generally a function of the assumed service lives) and the value of net purchases of used assets.

ANALYST CERTIFICATION

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst. In addition, the undersigned lead analyst has not and will not receive any compensation for providing a specific recommendation or view in this report.

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