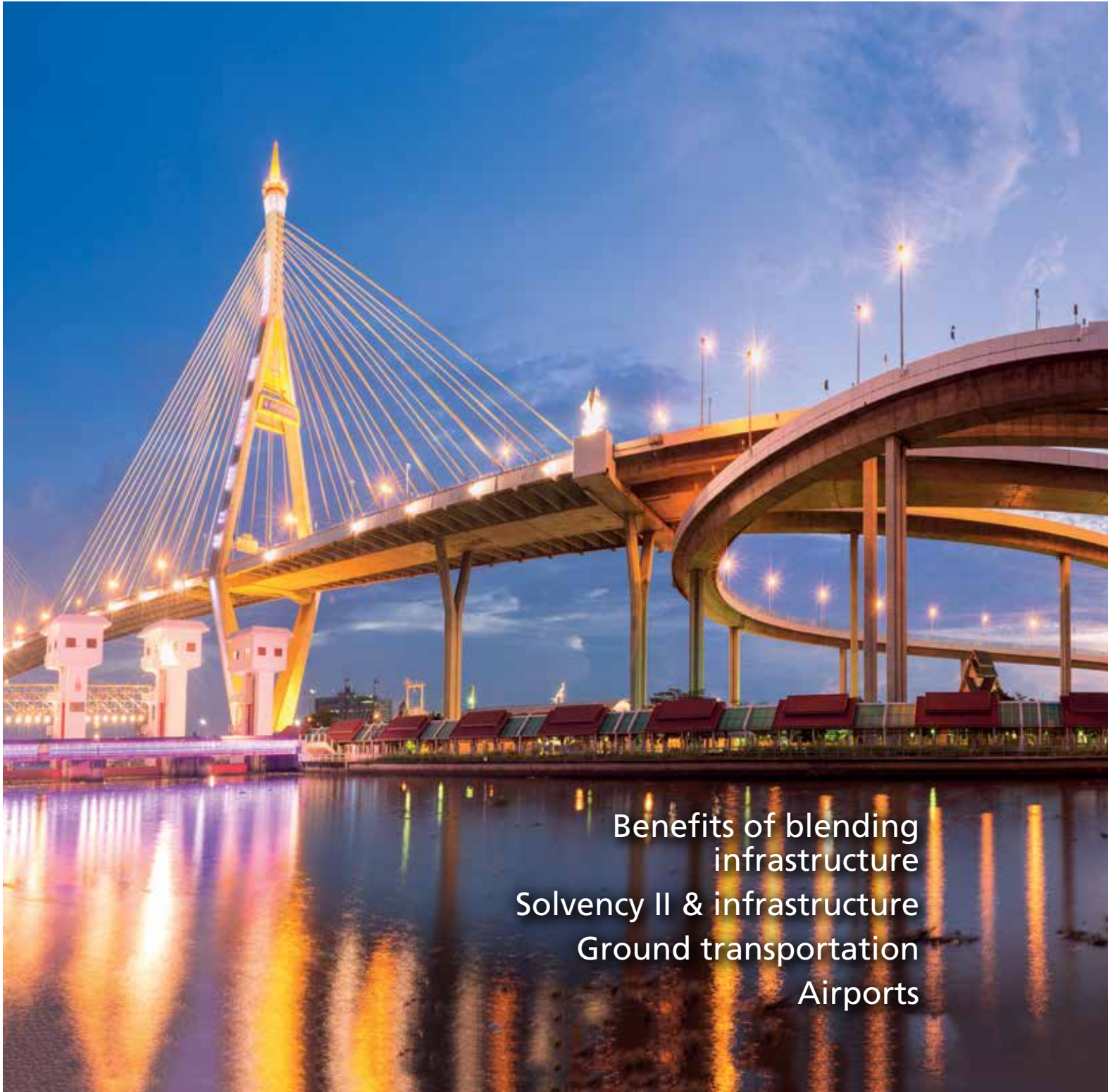




**GLOBAL LISTED
INFRASTRUCTURE
ORGANISATION**

GLIO Journal

issue 01



Benefits of blending
infrastructure
Solvency II & infrastructure
Ground transportation
Airports

With movement comes growth

Transportation infrastructure comprises the physical assets that allow the movement of goods and people. It is essential to the success of global economic health and future growth.

The importance of the transportation section cannot be overstated. In this article we focus on rail freight, passenger rail services and highways & railways sectors. Many of these assets are typically regulated, or operate under long-term concession agreements, where the operator has the right to receive cashflows from the asset for a set duration, before returning the asset to the government. Most transportation-type assets achieve inflation, or inflation-plus pricing, through regulation, or through market adjustments.

The McKinsey Institute estimate that \$50tn is required to fill global infrastructure investment needs over the next 15 years. Transportation is estimated to take up over 35% of this total, or approximately \$19tn. It will require a tremendous effort from governments and the global investment community alike, to even get close to this figure.

Chronic under-investment in the USA over recent decades has left its infrastructure in poor shape. Federal investment in infrastructure has dropped by 50% over the past three decades. The American Society of Civil Engineers estimated (in March 2017) that a total of \$4.5tn is required through 2025, 50% of which would be needed for roads, bridges and transit, and 25% for electricity and power grids. The funding gap, they estimate, being over \$1tn for roads, bridges and transit.

Broader Transportation

Under the GLIO coverage, ground freight, ground transportation services and highways & roads fall under the broader transportation umbrella and represent just under 25% of the global listed infrastructure free float (see Table 1.). These sectors connect airports, seaports, manufacturers and cities – they form the arteries of global economic activity.

Ted Brooks, Portfolio Manager at CenterSquare outlines the importance of these assets, “Transportation, within the context of global Infrastructure, is a key allocation due to its unique mix of defensive and cyclical attributes, its exposure to secular developing market themes (e.g. urbanization and the emergence of the middle-class) and its proximity to opportunities arising from a growing awareness of infrastructure investment needs in the developed world (e.g. increased infrastructure spending, and potential for greater penetration of PPPs).”

Ground Freight

The large North American railroad companies are heavily represented in the list. Combined, these companies own approximately 115,000 miles of railroad track (the majority class I) spanning like a spider’s web across North America. You simply cannot replicate this. A railroad’s competitive advantage is inseparable from its track location. >

Table 1: Global Sector Breakdown by Free Float

Sector	MC \$bn	MC Wght	FF MC \$bn	FF Wght	Yield
Electric Utilities	665,031	32.5%	571,556	34.3%	3.8%
Oil & Gas Distribution	271,672	13.3%	239,685	14.4%	4.0%
Ground Freight	258,652	12.6%	231,331	13.9%	2.0%
Multiutilities	189,367	9.3%	162,499	9.7%	4.4%
Telecom & Satellites	136,687	6.7%	116,807	7.0%	2.9%
Ground Transportation Services	118,616	5.8%	93,738	5.6%	1.3%
Gas Utilities	107,832	5.3%	69,186	4.1%	2.7%
Highways & Railways	88,398	4.3%	56,548	3.4%	4.0%
Airports	100,517	4.9%	53,958	3.2%	2.6%
Water Utilities	68,933	3.4%	48,364	2.9%	2.8%
Marine Ports	30,705	1.5%	15,792	0.9%	3.6%
Construction & Engineering	5,746	0.3%	4,632	0.3%	1.4%
Environmental Services & Equip	4,565	0.2%	4,199	0.3%	3.9%
Grand Total	2,046,720		1,668,295		3.3%

Source: Reuters, GLIO March 31, 2017

At an operational level, they carry an immense range of industrial goods from automotive, coal, energy, ethanol, fertilizer, food products, forest products, grain, industrial products, intermodal containers, sulphur, truck trailers and energy components. It is estimated that railroads are 1.9 to 5.5-times more fuel-efficient than trucks, depending on the commodity and length of the haul. Given the need to upgrade and maintain current assets, these companies must invest in maintaining, upgrading and expanding their portfolios. For example, Union Pacific invested \$4.3bn in 2015 to harden infrastructure and improve the safety and resiliency of its network and service facilities.

The sector, at an aggregate level, has re-

corded an impressive performance over the long term, returning approximately 15-16% on an annualized total return basis. But Chart 1. shows that ground-freight companies are more susceptible to the economic environment and market conditions, compared against the broad global infrastructure market. Research & Markets forecast that the rail freight transportation market in North America will grow at a CAGR of 5.57% during the period 2017-2021.

Ground Transportation Services

Dominated by the large Japanese passenger train companies (Table 3.), the four leading ground transport companies represent approximately \$90bn of free float

market capitalization. These companies service over 250bn passenger kilometers in Japan; which is more than the UK (60bn), Germany (80bn), France (85bn) and the USA (10bn) combined. In addition to rail fare revenue, these companies will derive revenues (between 5-15% of total) from commercial real estate, retail activities and hotels. The total return performance (see Chart 1. on page 16) of this sector has been steady over the long term, returning an average 6.5% on an annualized total return basis.

Highways & Railways

These companies own and operate toll-roads, bridges, tunnels and railway tracks. Between them they operate over 27,500km of assets in 19 countries. Companies such as Atlantia, Abertis, Macquarie Atlas, SIAS, ASTM and CCR operate broad network concessions for toll-roads and tunnels in France, Spain, Italy and South America.

Thomas van der Meij, Kempen & Co, reflects on the European situation: "The European toll-road operators are focused on France, Italy and Spain. Although the operational performance varied per region, all were affected by the economic downturn and have recovered since 2012/13. We expect growth (driven by operational improvement and capex plans) to continue as most leading indicators continue to improve.

Table 2: Ground Freight: Mid to Long-Term Annualized Total Returns

Company	Country	MC \$bn	FF MC \$bn	FF Wght	Yield	5 Yrs	7.5 Yrs	10 Yrs	12.5 Yrs	15 Yrs
Union Pacific	USA	85,911	75,602	32.7%	2.3%	17.0%	21.2%	17.6%	19.4%	15.8%
Canadian National Rail	Canada	55,985	48,707	21.1%	1.7%	21.9%	21.2%	16.4%	17.9%	16.1%
CSX	USA	43,126	37,520	16.2%	1.6%	19.4%	20.0%	15.7%	20.8%	16.3%
Norfolk Southern	USA	34,791	32,355	14.0%	2.2%	14.1%	16.5%	11.0%	13.8%	13.2%
Canadian Pacific Rail	Canada	21,476	21,476	9.3%	1.0%	22.1%	21.4%	13.2%	17.0%	14.0%
Kansas City Southern	USA	9,146	7,865	3.4%	1.5%	4.9%	17.9%	9.9%	15.4%	12.3%
Aurizon Hldgs	Australia	8,217	7,806	3.4%	5.1%	11.0%				
Grand Total		258,652	231,331		2.0%					

Source: Reuters, GLIO March 31, 2017

Table 3: Ground Transportation Services: Mid to Long-Term Annualized Total Returns

Company	Country	MC \$bn	FF MC \$bn	FF Wght	Yield	5 Yrs	7.5 Yrs	10 Yrs	12.5 Yrs	15 Yrs
East Japan Rail	Japan	33,877	33,877	36.1%	1.3%	14.9%	7.4%	2.2%	6.0%	5.4%
Central Japan Rail	Japan	33,535	33,535	35.8%	0.7%	22.6%	16.0%	4.1%	7.1%	7.1%
West Japan Rail	Japan	12,589	12,589	13.4%	1.9%	19.6%	13.3%	5.2%	6.4%	4.5%
MTR	Hong Kong	33,170	8,293	8.8%	2.5%	13.9%	10.2%	11.70	14.3%	12.8%
Tobu Rail	Japan	5,444	5,444	5.8%	1.1%	6.3%	1.6%	1.1%	3.8%	4.7%
Grand Total		118,616	93,738		1.3%					

Source: Reuters, GLIO March 31, 2017

Table 4: Highways & Railways: Mid to Long-Term Annualized Total Returns

Company	Country	MC \$bn	FF MC \$bn	FF Wght	Yield	5 Yrs	7.5 Yrs	10 Yrs	12.5 Yrs	15 Yrs
Transurban	Australia	18,271	14,617	25.8%	4.1%	21.8%	20.9%	10.6%	12.8%	13.3%
Atlantia	Italy	21,373	12,183	21.5%	4.0%	20.8%	12.5%	6.3%	8.3%	12.3%
Abertis Infraestructuras	Spain	15,994	10,876	19.2%	4.7%	12.8%	9.3%	4.5%	8.9%	11.6%
CCR SA	Brazil	11,484	7,005	12.4%	3.5%	8.7%	16.9%	15.0%	23.2%	26.6%
Eurotunnel	France	5,548	4,050	7.2%	2.8%	9.4%	5.4%			
Macquarie Atlas Roads	Australia	2,220	1,643	2.9%	3.1%	29.1%				
Shenzhen Intl Hldgs	Hong Kong	3,209	1,444	2.6%	3.4%	24.0%	17.2%	13.3%	16.4%	13.1%
Jiangsu Expressway	China	1,755	1,299	2.3%	4.3%	13.8%	12.9%	11.4%	14.9%	17.9%
Jasa Marga Persero	Indonesia	2,516	755	1.3%	1.7%	-0.6%	15.1%			
ASTM	Italy	1,489	700	1.2%	3.2%	28.9%	11.6%	1.6%	2.7%	9.2%
SIAS	Italy	2,178	653	1.2%	3.6%	17.3%	11.9%	2.5%	4.6%	10.5%
Shenzhen Expressway	China	677	637	1.1%	5.8%	23.0%	13.3%	7.8%	12.4%	14.2%
Yuexiu Transport Infra	Hong Kong	1,294	414	0.7%	5.5%	15.5%	16.3%	9.0%	14.4%	15.0%
Anhui Expressway	China	390	273	0.5%	4.2%	13.7%	9.1%	4.8%	10.0%	13.6%
Grand Total		88,398	56,548		4.0%					

Source: Reuters, GLIO March 31, 2017

He continues; “For external growth, we believe the operators active in the whole value chain (including construction) hold an advantage in being able to re-deploy capital in valued-added projects, thus avoiding the competition for brownfield assets, as prices in the private market have been pushed hard. The value of the concessions has been positively impacted by the bond-yield compression.”

In Asia, the listed companies own shorter stretches of the network, and are focused on the key roads in and around major cities in the region, like Shenzhen, the Guangdong province and Jakarta.

In Table 4., Transurban is the largest company globally, and a proven leader in the field with over 20 years’ experience. The company’s mid to long-term annualized total returns are outstanding. The company owns and operates a total of 250km of strategically significant roads, tunnels and bridges in Sydney, Melbourne and Brisbane, and has approximately \$7bn (A\$9bn) of local projects in its pipeline. Transurban also runs two major express ways in the Greater Washington Area, which account for about 10% of its toll revenue.

With the \$2.2tn required for US roads, bridges and transit in mind, Transurban could be poised to capitalize on its presence in the USA, if Donald Trump delivers on his promised \$1tn infrastructure spending plan. But of course, this is not going to happen overnight. Scott Charlton, Transurban CEO said: “It would be great if the Trump administration could offer some incentives like the capital recycling that was done here in Australia, or through additional loan projects.”

Sustainability

The three words that define the future of transportation are: efficient, safe and sustainable. Future transport networks need to support economic growth and well-being of our cities. Companies need to consider working with contractors to establish sustainability plans and set targets around resource management, energy use, and local purchasing and hiring. Governments need to think hard about offering innovation grants for projects that address transport and infrastructure challenges.

Of the companies covered in this article, a number such as CSX, Transurban, Abertis and Atlantia are quoted in the major sus-

tainability indices. In 2015, transportation and transportation infrastructure ranked second in terms of most improved industries in the Dow Jones World Sustainability ranking.

Transurban has been listed on the Dow Jones Sustainability Index Asia Pacific Index for the past six years, and more recently was included in the Dow Jones World Sustainability Index. The company is also included in the FTSE4Good Index, and the Australian Council of Superannuation Investors also rated their sustainability, performance and governance as ‘leading’ for the ninth consecutive year.

Henry Byrne, General Manager, Investor Relations and Corporate Affairs, views their commitment as essential: “Transurban understands the importance of our responsibility to the communities we serve, and the increasingly demanding ESG requirements of our investors. Inclusion in the major global sustainability indices is a testament to the good work we are doing.”

GLIO fully understands the importance of ESG requirements now, and in the future. GLIO is co-operating with GRESB to create a better of transparency in listed infrastructure, which will be to the benefit of companies and investors.

The Future of Transportation

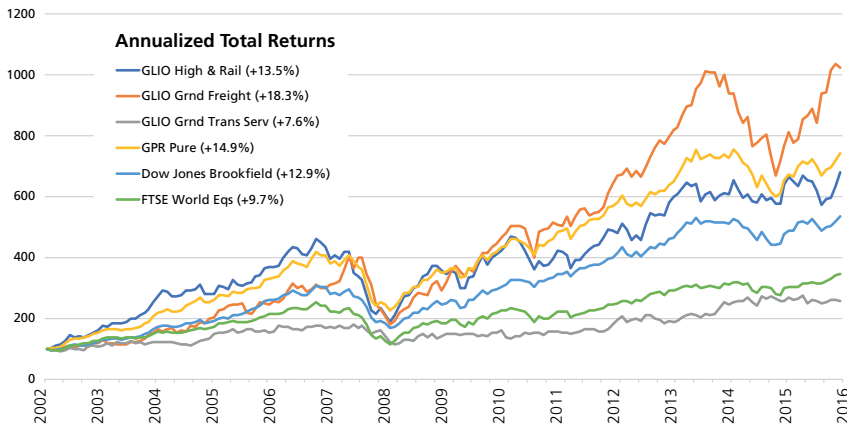
Nascent technologies will ultimately enable higher fluidity of transportation networks and will require addition capital investment. Electric, connected and autonomous vehicles are among the >

Annualized Mid to Long-Term Performance

Horizon	GLIO High & Rail	GLIO Grnd Freight	GLIO Grnd Trans Serv	GPR Pure	DJ Brookfield	FTSE World Equities
5 Years	10.1%	15.2%	10.7%	8.8%	9.1%	9.1%
7.5 Years	9.7%	18.9%	7.4%	11.7%	11.8%	8.9%
10 Years	5.4%	14.4%	4.2%	7.6%	6.9%	4.7%
12.5 Years	9.4%	17.8%	6.6%	11.9%	10.9%	7.6%
14 Years	13.5%	18.3%	7.6%	14.9%	12.9%	9.7%

Source: Reuters, GPR & GLIO, 31 March, 2017

**Chart 1: GLIO Transportation Sectors vs Global Listed Infrastructure & Global Equities
December 2002 to March 2017**



many transport innovations poised to enter the mainstream in the coming decade, all of which will fundamentally change the way we get people and goods from A to B.

This new wave of transport technology promises opportunities for more efficient and safer mobility, significant reductions in greenhouse gas emissions, and large-scale transport service integration. Significantly, it will also raise questions about how we fund transport in the future.

Focus Turning to Listed

Institutional investment will be essential to meet infrastructure investment needs – and both listed and private markets will have a key role to play. According to the 2017 Preqin Global Infrastructure Report, 53% of institutional investors plan to increase their infrastructure allocation over the longer-term. The report also indicates that the top two challenges facing private capital fund managers are valuations and deal flow.

As at December 2016, total ‘dry powder’ held by unlisted funds was \$137bn, indicating the challenges to deploy capital effectively. Total unlisted AUM including ‘dry powder’ stood at \$373bn as at June 2016. The \$2tn listed markets are ideally positioned in terms of size, liquidity, transparency and ownership of quality core infrastructure assets to offer investors the opportunity to blend both private and listed in a broader infrastructure allocation.

Listed companies own 115,000 miles of railroad track (the majority class I) spanning like a spider’s web across North America. You simply cannot replicate this.



Brad Frishberg, Head of Global Listed Infrastructure for Macquarie Investment Management, sums up: “The fundamentally attractive characteristics of these assets, notably that they provide essential services to an economy, often have formulaic inflation-linked pricing constructs, and offer key barriers to entry. Together, these characteristics may lead to attractive returns on invested capital and cash flow. These assets should be considered as part of a globally diversified GLI portfolio.”



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