Morgan Stanley
INVESTMENT MANAGEMENT

An Update on Global Listed Infrastructure

INSIGHTS | GLOBAL LISTED INFRASTRUCTURE | NOVEMBER 2023

AUTHORS

GLOBAL LISTED INFRASTRUCTURE TEAM

KEY TAKEAWAYS

- **The MSIM Global Listed Infrastructure Team sees a strong fundamental outlook for Global Listed Infrastructure (GLI) moving forward:** We view the relative recent underperformance of GLI securities to be predominantly driven by non-fundamental factors.
- **GLI companies appear to be better positioned to retain margins:** For many infrastructure companies, interest and other operating costs are typically considered "pass-through."
- **Current valuations are at odds with the fundamental backdrop and relative to broader equity performance:** Relative to global equities, GLI, as represented by the Dow Jones Brookfield Global Infrastructure (DJBGI) Index, now trades (as of October 2023) below post-pandemic trough levels, despite a materially different fundamental picture.
- **GLI could benefit from a recessionary environment:** GLI has a history of outperforming global equities in challenging economic periods.
- **The long term outlook remains strong:** Low volatility of earnings, stable cash flows and attractive returns remain the key elements of the GLI asset class.

GLI has had a challenging 2023 (through October), underperforming the broader global equity markets and giving up essentially all of the material relative outperformance witnessed in 2022 *(Display 1)*. Indeed, some of the core sectors of infrastructure have been the worst equity market performers YTD thru October, alongside other "defensive" sectors, such as Consumer Staples and Healthcare *(Display 2)*.

Given this level of relative underperformance, two questions naturally follow: 1) Is the cause of relative underperformance a result of fundamental, operational and/or financial challenges at the industry/company level—or are there other factors at play? And, 2) Where does the MSIM Global Listed Infrastructure Team currently stand from a valuation perspective, both in absolute terms and relative to global equities.

This paper looks to answer these two key questions, as well as to review the potential performance of GLI over the next 12-24 months in the context of either a global recession or a "soft/no" landing scenario, and subsequent economic re-acceleration.

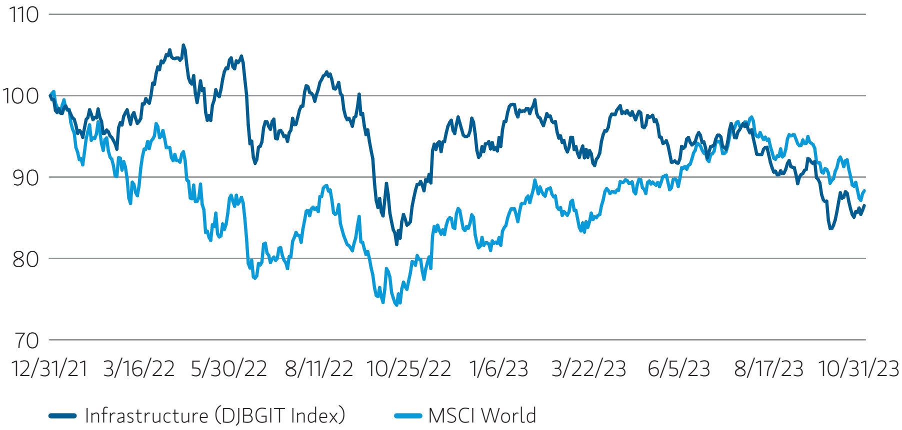
Causes of Underperformance – Are There Fundamental Issues?

In short, we view the relative underperformance of GLI securities in 2023 to be predominantly driven by non-fundamental factors, given the favorable top- and bottom-line trends for most asset/industry types in infrastructure this year. Looking at the four broad industry categories of core listed infrastructure securities strategies—Utilities, Energy Infrastructure, Communications and Transportation—only Communications exhibits a challenging 12-24 months fundamental backdrop, largely concentrated within the U.S. wireless tower subsector, where 2023 cash flow growth is largely nonexistent *(Display 3)*. By contrast, European

DISPLAY 1

Global Listed Infrastructure Is Now Underperforming Global Equities

The Dow Jones Brookfield Global Infrastructure Index vs the MSCI World (Indexed to 100)



Source: MSIM, Bloomberg. As of October 31, 2023. Global Listed Infrastructure is represented by the Dow Jones Brookfield Global Infrastructure Index. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

DISPLAY 2

GLI and Core Sectors, like Utilities, Have Had a Rough 2023

Performance YTD (through October 31, 2023)

MSCI World	+7.88%
Global Listed Infrastructure (DJBGIT Index)	-7.39%
MSCI World Utilities	-14.11%
Other "Defensive" Sectors:	
MSCI World Cons Staples	-6.12%
MSCI World Health Care	-7.51%

Source: MSIM, Bloomberg. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

DISPLAY 3

Core Fundamental Infrastructure Factors Are Strong

Average Fundamental Growth Trends in Infrastructure, 2003-24

	REVENUE	EPS/EBITDA/CF
Utilities	+3-8%	+5-10%
Energy Infrastructure	+3-5%	+4-6%
Communications - U.S.	+1-3%	+3-6%
Communications - Europe	+5-8%	+7-10%
Transportation	+3-8%	+8-10%

Source: MSIM. As of October 31, 2023. Forecasts and/or estimates are subject to change and may not actually come to pass.

tower operators and global data center companies are currently enjoying robust fundamental trends. In other sectors we see solid, mid- to high-single digit revenue and cash flow/earnings growth, with some subsectors exhibiting even stronger fundamental trends. In the context of a decelerating global economy (in most regions), we certainly view these stable operating trends as quite favorable.

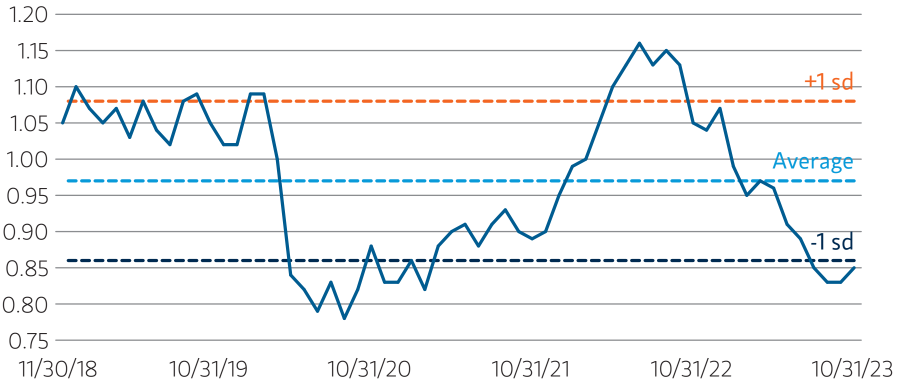
What About the Influence of Interest Rates and Inflation on Valuation and Operating Margins?

As a starting point, it should be noted that despite all the angst related to interest rates and global central bank policy, long-term interest rates, while higher, have not grown as fast as short-term interest rates (e.g., the U.S. 10-year Treasury was 3.87% on 12/31/2022 compared to 4.88% on 10/31/2023). Short-term interest rates are another matter entirely. That said, it is natural to assume that interest rate pressure may provide some short-term headwinds to equity valuations, in particular for those companies that (1) have greater debt leverage in their capital structure and (2) are thought of as an alternative to other non-equity "income" investments. Within the GLI universe, this predominantly relates to the Utilities and Communications sectors, where companies are prized for their steady, stable dividend streams. As seen in *Display* 4 and 5, both sectors are trading at attractive valuations relative to the broader equity markets.

DISPLAY 4

Utilities Sector Valuations Look Attractive

MSCI World Utilities P/E Relative to the MSCI World Index

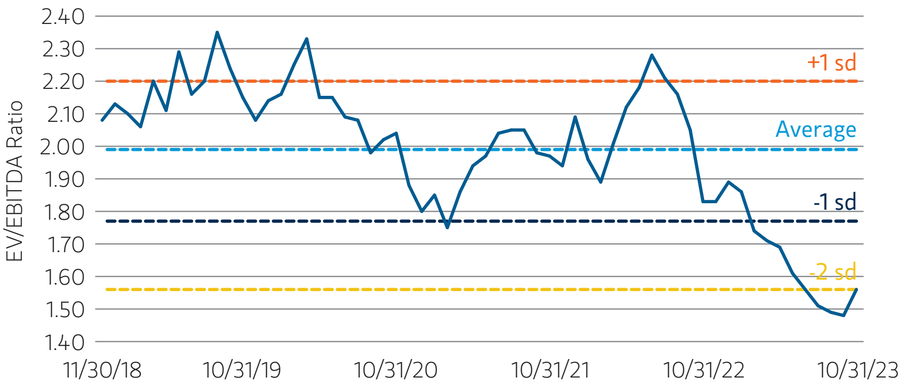


Source: MSIM, Bloomberg. As of October 31, 2023. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

DISPLAY 5

Communications Sector Valuations Look Attractive as Well

Infrastructure Communications EV/EBITDA Relative to the MSCI World Index



Source: MSIM, Bloomberg. As of October 31, 2023. The EV/EBITDA ratio is reflective of the Enterprise Value of a company compared to its Earnings Before Interest, Taxes, Depreciation, and Amortization. See disclosure page for definitions.

Furthermore, it is important to keep in mind that higher interest costs are often offset through regulation and/or company contract structure over the short- to medium-term. These costs are typically "pass through," with no impact on margins for Utilities, and can be offset by rent escalators/inflationary top-line growth for tower companies in Communications. More broadly as it relates to inflation, infrastructure companies are better positioned to retain margins compared to most general market equities, given that not only interest costs, but also other operating cost items, can be considered "pass-through" within a regulatory construct.

In fairness, there are some headwinds to these defensive sectors in the short-run (e.g., wireless carrier churn for towers and customer bill pressure in conjunction with rate cases for utilities). However, we do not believe this justifies the magnitude of relative underperformance, particularly in the context of where these assets trade in the private markets (i.e., in an absolute sense).

DISPLAY 6

Summary Inflation Protection for Certain Infrastructure Companies

SECTOR	TYPE OF INFLATION PROTECTION	METHOD OF ENFORCEMENT	COMMENTS
N American Utilities	"Loosely" direct	Regulatory Compact	Cost items are pass-through/ROEs adjustment as interest rates move
Global Utilities (ex N America)	Often direct	Regulatory Compact	Allowed a "real" return on capital with annual adjustments for inflation
Energy Infrastructure	Occasionally direct	Counterparty contracts	Contracts with annual escalators
Towers (Communications)	Direct	Contract terms with carriers	Standard escalators in the U.S. at 3% per annum ex U.S., escalators tied to local inflation
Satellites (Communications)	None	N/A	Pricing is contract based, with no regulatory backstop
Toll Roads (Transportation)	Direct	Concession contract	Tolls annually adjusted by inflation or a percentage of inflation
Airports (Transportation)	Direct for aeronautical	Regulation/concession contract	Legally allowed a "real" return plus inflation for the aeronautical business
Ports (Transportation)	None	N/A	Market-driven, with ability to receive inflation-related pricing a function of the barrier to entry/scarcity value of the facility
Freight Rail (Transportation)	Indirect and direct	For direct piece, regulation	Annual haulage charges are typically market-based N American freight rail is typically able to price above inflation, with ability to increase prices compliant with "revenue adequacy" regulatory cap. inflation adjusted basis over time)

Source: MSIM.

Perhaps the more pertinent question is one of generalist equity portfolios more broadly in the context of "risk-free" investments and other fixed income alternatives. While the MSIM Global Listed Infrastructure Team is not a generalist equity investor, simple comparisons of the equity market's earnings yield vs. alternatives highlight that equities may be at more expensive levels, implying that while GLI has been penalized for its lack of income relative to fixed income and money-market alternatives, other parts of the equity markets have not (see *Displays 7-9*).

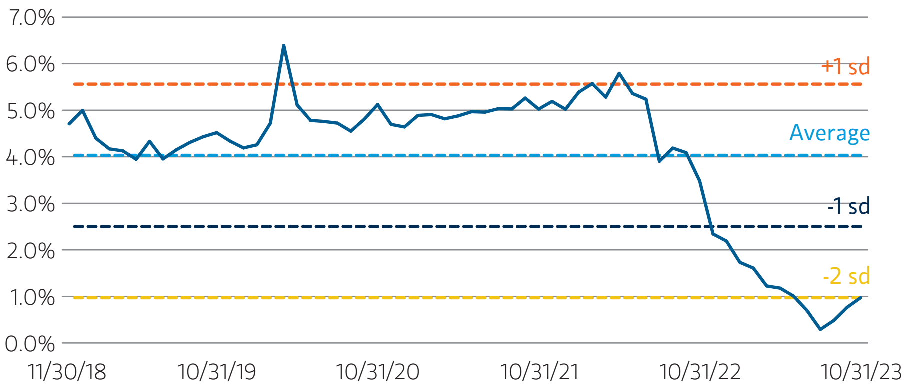
Where Does the Current Relative Underperformance Leave Us From a Valuation Perspective?

In our view, current share price levels for GLI paint a materially positive view, relative to both the global equity markets and precedent private-market infrastructure transactions, given the lackluster YTD performance. As can be seen in *Display 10* (see page 6), GLI now trades at levels below the post-pandemic trough vs. global equities, despite a materially different fundamental picture. As a reminder, during the COVID/pandemic period, the transportation and energy infrastructure sectors were negatively impacted directly by lockdowns and lower demand, in contrast to the current setup today. Also note that the period of relative underperformance for GLI was followed by a period of strong relative outperformance, as witnessed in 2022.

DISPLAY 7

Are Global Equities Expensive?

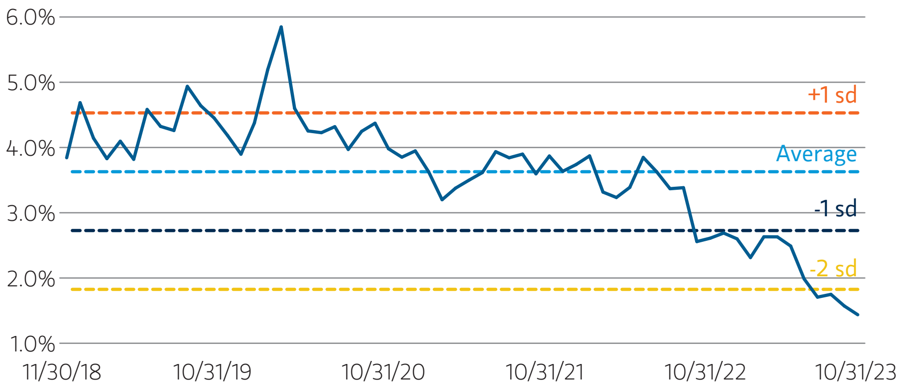
Global Equity Earnings Yield Spread vs U.S. Target Fed Funds Rate (Midpoint)



Source: MSIM, Bloomberg. As of October 31, 2023. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

DISPLAY 8

Global Equity Earnings Yield Spread vs U.S. 10-year Government Bond



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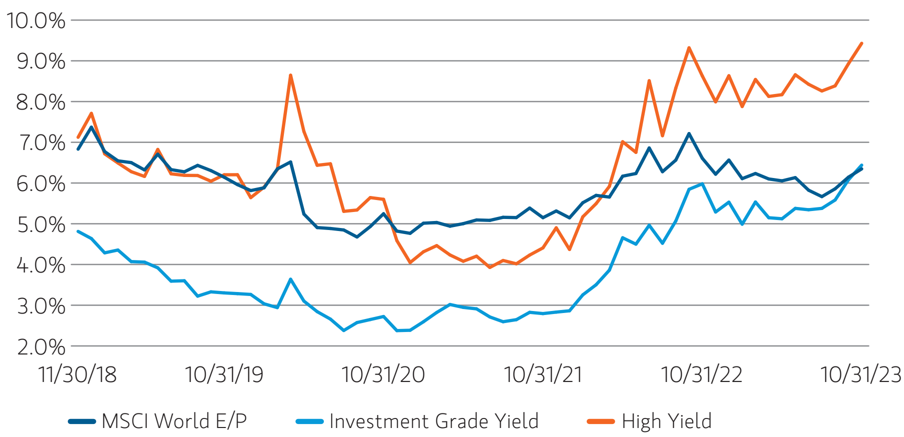
DISPLAY 9

High Yield and Investment Grade Yields vs. Global Equities Earnings Yield



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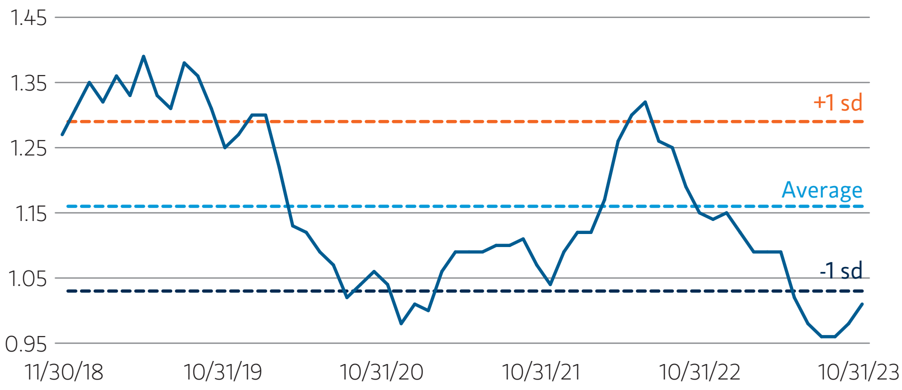
Switching to listed vs. private market valuations, the discussion is more challenging given the differences in single asset transaction underwriting within the private markets. However, using recent private market transactions across sectors, we would note a broadly favorable comparison in favor of GLI, with the communications sector comparison particularly notable *(Display 11)*.

Finally, in terms of absolute valuation vs. trading history, the picture for GLI is favorable, where transportation and communications stand out *(Display 12)*.

DISPLAY 10

Is Global Listed Infrastructure Ready for a Rebound?

Infrastructure Equity P/E Relative to Global Equities



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What Happens to GLI in a Recessionary Environment? In a Soft/No Landing Scenario? Do We See a Re-Acceleration of the Global Economy in 2024?

While listed infrastructure has not performed well year-to-date despite lingering doubts about the near-term trajectory of the global economy, the longer-term track record for infrastructure in equity drawdown periods and recessionary environments on a relative basis is strong. We assume this time should be no different and would note the underperformance in 2020 shown in *Display 13* (see page 7) can be explained by the pandemic, not a general economic downturn (the specifics of COVID directly impacted certain infrastructure subsectors in contrast to most economic downturns). In most instances, GLI is a material outperformer to global equities in challenging economic and market periods.

Alternatively, should we succeed in avoiding a modest economic downturn (or one entirely) in 2023 and return to global growth in 2024, we believe global listed infrastructure could perform well for the following reasons:

1. Areas in transportation such as freight rail could enjoy a modest recovery, as the freight market more broadly (including trucking) returns to a more positive pricing and volume environment.
2. Energy infrastructure share price performance could recover. Despite solid demand dynamics in 2023, share price performance has been lackluster on the back of concerns over a global slowdown, combined with a pullback in upstream commodity prices, namely crude oil and natural gas.
3. Longer-term secular growth areas for infrastructure, such as the energy transition and deployment of renewables, have not been rewarded in 2023.

DISPLAY 11

Recent Select Private Tower Transactions

	EV/EBITDA
U.S. listed towers	15.5 - 18.5x
Select private tower transactions	
PLDT/EdgePoint Infrastructure (Philippines)	20.0x
Axicom/Australia Tower Network (Australia)	24.5x
Telenet/Digital Bridge (Belgium)	25.1x
Telia Towers/Brookfield Infrastructure (Sweden)	28.2x
Singtel/Australian Super	24.5x

Source: MSIM. As of October 31, 2023.

DISPLAY 12

Transportation and Communications Infrastructure Stand Out

	CURRENT P/E	5Y AVG	PREMIUM/ (DISCOUNT) TO 5Y AVG
Transportation	24.8x	57.0x	-56.5%
Utilities	15.4x	17.5x	-12.5%

	CURRENT EV/EBITDA	5Y AVG	PREMIUM/ (DISCOUNT) TO 5Y AVG
Energy	9.9x	11.1x	-10.4%
Communications	16.7x	22.7x	-26.2%

Source: MSIM, Bloomberg. As of October 31, 2023.

DISPLAY 13

Infrastructure Historically Holds Up Well in Equity Market Drawdowns and Recessionary Environments

#	START	END	DAYS	MSCI WORLD RETURN	DJBGI RETURN	GLI REL OUTPERF (BPS)	EX-POST BETA	MSCI WORLD VOLATILITY	DJBGI VOLATILITY	GLI VOLATILITY LOWER?	CORRELATION
1	12/02/2020	23/03/2020	40	-34.0%	-37.3%	-330	1.09	58.3%	66.6%	No	0.95
2	26/01/2018	24/12/2018	332	-18.4%	-11.2%	718	0.60	12.6%	11.1%	Yes	0.68
3	21/05/2015	11/02/2016	266	-18.0%	-20.8%	-288	0.90	15.1%	16.2%	No	0.85
4	19/03/2012	04/06/2012	77	-12.5%	-3.7%	874	0.75	13.7%	10.9%	Yes	0.93
5	02/05/2011	04/10/2011	155	-22.0%	-9.4%	1261	0.77	24.1%	19.2%	Yes	0.96
6	15/04/2010	01/07/2010	77	-16.0%	-10.8%	521	0.94	23.9%	23.3%	Yes	0.97
7	31/10/2007	26/03/2009	512	-48.3%	-42.3%	608	0.84	31.0%	27.8%	Yes	0.94
8	19/07/2007	17/08/2007	29	-9.3%	-9.9%	-59	0.90	19.0%	20.3%	No	0.85
9	09/05/2006	13/06/2006	35	-11.3%	-4.7%	657	0.86	14.4%	13.6%	Yes	0.91

Source: MSIM, Bloomberg. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

A more stable economic and financing environment should help to underscore the opportunities in these areas, with a potentially resultant re-rating of companies exposed to such themes.

4. As stated above, valuations for "defensive" areas of utilities and communications are attractive, providing the potential for mean reversion over the medium-term.

The Longer-Term Case for GLI

As a reminder, the longer-term case for GLI appears to be strong. Since the inception of the DJBGI Index, GLI has provided superior returns to global equities at lower volatility, as the Dow Jones Brookfield Global Infrastructure Index overperformed the MSCI World Net Index by 2% over the past 20 years. Furthermore, in an absolute sense, we view the 9.01% annualized return as solid in the context of an asset class with lower dispersion of earnings variability *(Display 14)*.

DISPLAY 14

GLI Has Returned 9.0% on an Annualized Basis

BENCHMARK NAME	20Y ANNUALISED RETURN
Dow Jones Brookfield Global Infrastructure (USD)	9.01%
MSCI World Index Net Index (USD)	7.45%

Source: MSIM, Bloomberg. As of October 31, 2023. Index definitions can be found in the disclosure section. The indexes do not include any expenses, fees or sales charges, which would lower performance. The index is unmanaged and should not be considered an investment. It is not possible to invest directly in an index.

Summary of the MSIM Global Listed Infrastructure Team Investment Proposition:

- **STRONG FUNDAMENTAL OUTLOOK:** In most cases we see solid, mid- to high-single digit revenue and cash flow/earnings growth, with some subsectors exhibiting even stronger fundamental trends. We view the relative underperformance of listed infrastructure securities in 2023 to be predominantly driven by non-fundamental factors.
- **INTEREST RATES AND INFLATION AS "PASS-THROUGH":** Infrastructure companies are better positioned to retain margins compared with most general market equities given that the cost of interest and other certain operating costs can be considered "pass-through" within a regulatory construct.
- **THE CURRENT RELATIVE UNDERPERFORMANCE IS NOT JUSTIFIED FROM A VALUATION PERSPECTIVE:** GLI now trades at levels below the post-pandemic trough compared to global equities, despite a materially different fundamental picture. As a reminder, during the pandemic the transportation and energy infrastructure sectors were directly negatively impacted by lockdowns and lower demand, in contrast to today.
- **SHORT TERM OUTLOOK COULD BE POSITIVE IN DIFFERENT SCENARIOS:**
  - **THE CASE FOR A RECESSION COULD BE FAVOURABLE FOR GLI:** The longer-term track record for infrastructure in recessionary environments on a relative basis is strong. In most instances, GLI has been a material outperformer to global equities in challenging economic and market periods.
  - **IN THE CASE OF A MODEST ECONOMIC DOWNTURN WE SEE IT AS:** Positive for freight rail recovery; energy infrastructure could see a pullback in upstream commodity prices (i.e., crude oil and natural gas); a potential rerating of energy transition and renewables (not rewarded in 2023), also thanks to a more stable financing environment; "defensive" areas

of utilities and communications could see a mean reversion over the medium-term.

- **THE LONG TERM OUTLOOK REMAINS STRONG:** Low volatility of earnings, stable cash flows, higher relative income component to global equities, and attractive returns remains the key elements of the asset class.

Risk Considerations

The value of investments may increase or decrease in response to economic, and financial events (whether real, expected, or perceived) in the U.S. and global markets. The value of **equity securities** is sensitive to stock market volatility. **Diversification** does not eliminate the risk of loss. **Active management** attempts to outperform a passive benchmark through proactive security selection and assumes considerable risk should managers incorrectly anticipate changing conditions. Companies within the **infrastructure industry** are subject to a variety of factors that may adversely affect their business or operations, including high interest, leverage and regulatory costs, difficulty raising capital, the effect of an economic slowdown or recession and surplus capacity, and increased competition. Other risks include technological innovation, significant changes in the number of end-users, an increasing deregulatory environment, natural and environmental risks, and terrorist attacks.

DEFINITIONS

Enterprise Value measures the market value of a company. It is calculated as market cap plus debt, minority interest and preferred shares, minus total cash and cash equivalents.

Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) is essentially net income with interest, taxes, depreciation, and amortization added back to it, and can be used to analyze and compare profitability between companies and industries because it eliminates the effects of financing and accounting decisions.

EV/EBITDA compares the value of a company—debt included—to the company's cash earnings less non-cash expenses.

Standard deviation shows how much variation or dispersion from the average exists. In finance, standard deviation is applied to the annual rate of return of an investment to measure the investment's volatility. Standard deviation is also known as historical volatility and is used by investors as a gauge for the amount of expected volatility.

INDEX DEFINITIONS

Dow Jones Brookfield Global Infrastructure Index is a float-adjusted market capitalization weighted index that measures the stock performance of companies that exhibit strong infrastructure characteristics. The Index intends to measure all sectors of the infrastructure market.

MSCI World Index is a free float adjusted market capitalization weighted index that is designed to measure the global equity market performance of developed markets. The term "free float" represents the portion of shares outstanding that are deemed to be available for purchase in the public equity markets by investors. The performance of the Index is listed in U.S. dollars and assumes reinvestment of net dividends.

MSCI World Utilities Index is designed to capture the large and mid-cap segments across 23 Developed Markets (DM) countries around the world. All securities in the indices are classified in the Utilities sectors, respectively, as per the Global Industry Classification Standard (GICS®).

MSCI World Consumer Staples Index is designed to capture the large and mid-cap segments across 23 Developed Markets (DM) countries around the world. All securities in the indices are classified in the Consumer Staples sectors, respectively, as per the Global Industry Classification Standard (GICS®).

MSCI World Health Care Index is designed to capture the large and mid-cap segments across 23 Developed Markets (DM) countries around the world. All securities in the indices are classified in the Health Care sectors, respectively, as per the Global Industry Classification Standard (GICS®).

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