INVESTMENT STRATEGY & RESEARCH

RESEARCH BRIEF

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Defensive Equities: When Defence is the Best Offence

01 Introduction

Defensive Equity: Comparing Listed Infrastructure, Listed Property and Low Volatility

In uncertain times, investors looking for shelter can consider an allocation to defensive equities to shore up their portfolio. Listed infrastructure, listed property and low volatility strategies are all different ways to invest in defensive equities, all of which also provide investors with an income yield.

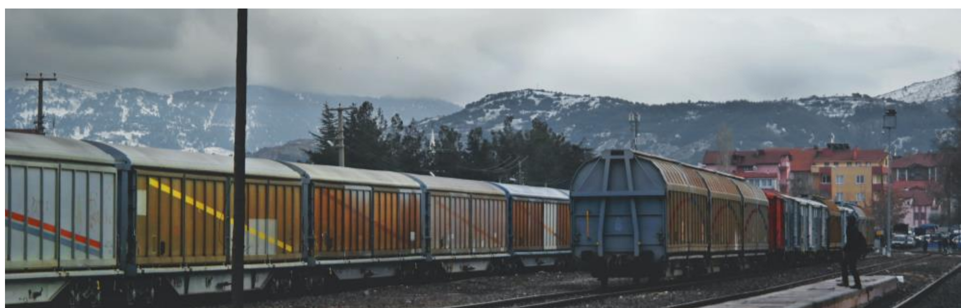
Investors can use these defensive equities as the low-risk barbell in a barbell approach to equity exposure or, for smaller investors who lack the scale to acquire private market real assets, as a substitute for real assets. For bullish investors, defensive equities can facilitate an exposure above strategic weights with a smaller increase in overall risk. And for investors who are more bearish, defensive equities enable a reduction in overall risk with no change to the strategic asset allocation. Finally, investing in defensive equities can provide investors additional dividend income.

While investing in listed property is common (mostly through listed companies Real Estate Investment Trusts (REITs)), allocations to listed infrastructure and low volatility equities are less common. Yet we find there can be significant return and diversification benefits in widening the lens on defensive equity exposures. Listed property and listed infrastructure provide a liquid proxy for real assets, while low volatility strategies tilt toward stocks based on historical price behaviour, to generate a similar factor exposure.

This article considers the risk and return profile for each of these three defensive equity thematics, including how each held up during the COVID-19 crisis and in 2022. We find that core infrastructure has delivered superior risk-adjusted returns relative to passive listed property and a low volatility index. But given the less than perfect correlation between these different liquid strategies, we believe there can room for all three in a multi-asset class portfolio.

However, there is a wide range of returns across products within each thematic. Within listed infrastructure, investors should narrow their focus on the companies that are 'core' infrastructure. Using a broader definition will decrease the defensiveness and therefore the appeal. Further, we consider the same will hold true for listed property, with better risk adjusted returns to be achieved by narrowing in on higher quality and more 'core' exposures; a passive approach gives risk adjusted returns significantly inferior to listed infrastructure and low volatility strategies, even with the higher income yield.

Listed infrastructure offers exposure to real assets has delivered superior risk-adjusted returns relative to passive listed property and low volatility funds.



02 Investment Characteristics

What are Defensive Equities?

We consider three types of defensive equities in this article – listed infrastructure, listed property and low volatility strategies. Both listed infrastructure and listed property hold similar underlying assets to their unlisted counterparts.

While in the short-term, listed funds cannot match the low risk profile of unlisted real assets, as they are continually priced on stock markets rather than being valued every three or six months, returns start to converge over the medium term. So, for investors who can look through the higher short-term volatility, listed real assets can provide a reasonable proxy for unlisted assets but with the advantage of much greater liquidity.

Low volatility funds are typically 'smart beta' or factor harvesting strategies. They are composed of stocks that historically have displayed lower price volatility and tend to be overweight to defensive sectors such as consumer staples, health care, utilities and telecommunications, some of which have similar characteristics to listed infrastructure. They provide an accessible way to include defensive, liquid assets in a portfolio, and are relatively low cost.

Table 1 below provides a sector overview of each of these investment types while Chart 1 over the page shows the breakdown by industry sector.

Table 1: DEFENSIVE EQUITIES SECTOR OVERVIEW

	LISTED INFRASTRUCTURE	LISTED PROPERTY	MINIMUM VOLATILITY INDEX
Size (developed markets capitalisation)	USD $2.4 trillion 4.1% of the MSCI World Index market capitalisation.	USD $1.8 trillion 3.2% of the MSCI World Index market capitalisation.	USD $19.3 trillion 33.3% of the MSCI World Index market capitalisation.
Dividend Yield	3.3%	4.4%	2.6%
Inflation linkages	Strong	Moderate to strong	Moderate
Largest exposures	Utilities, Transport & Communications Infrastructure	Residential, Retail, Industrial Property	Consumer Staples, Health care, Financials, Comms & IT companies
Average contract or concession life	5 to 15 years	3 to 7 years	N/A
Leverage	High 6.7x debt to EBITDA	High 7.5x debt to EBITDA	Moderate 3.0x debt to EBITDA

Source: Bloomberg, PATRIZIA

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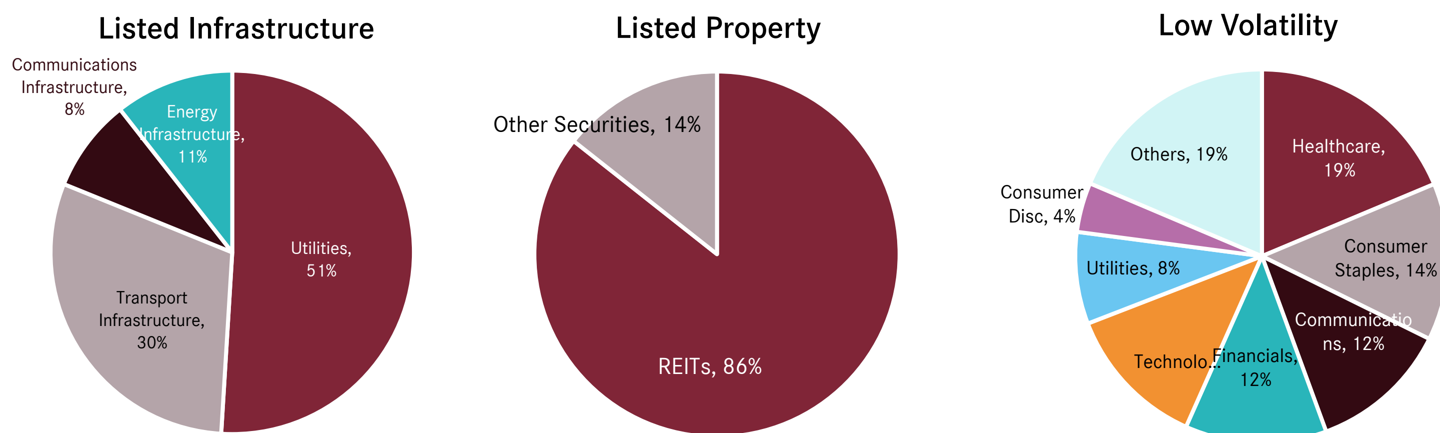
What are Defensive Equities?

Chart 1: DEFENSIVE EQUITIES - BREAKDOWN BY INDUSTRY SECTOR



Source: Bloomberg

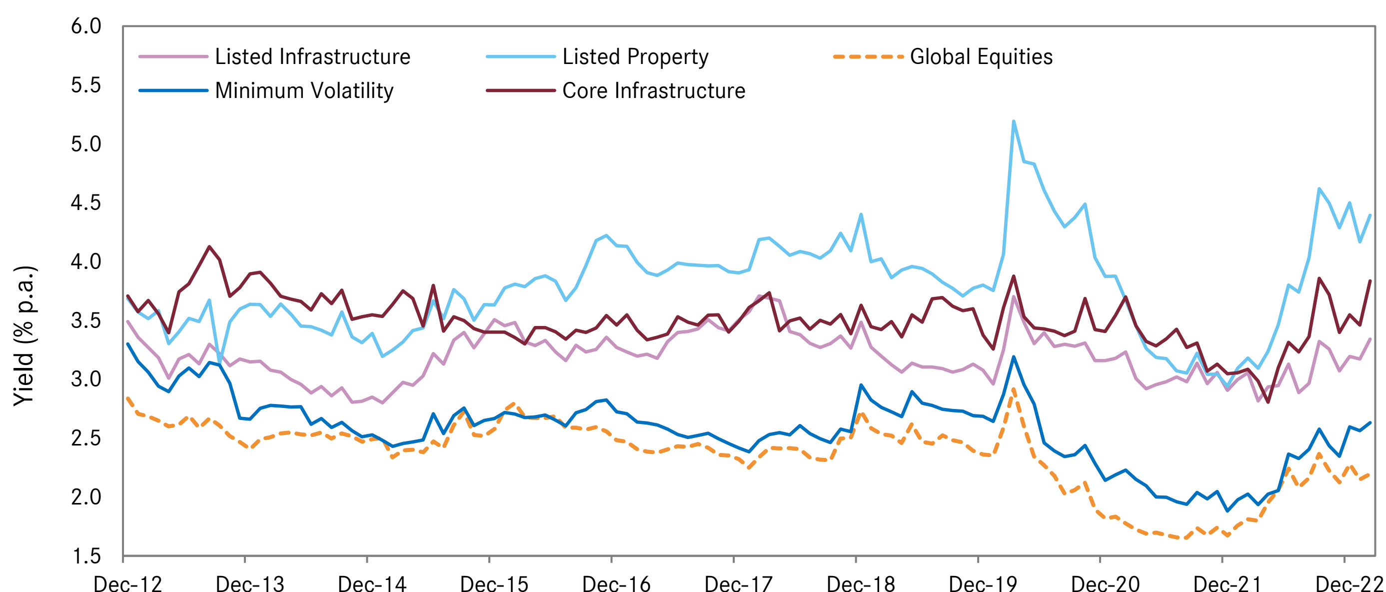
Listed property and listed core infrastructure have provided a higher dividend yield compared to other defensive asset classes. Many listed property companies are required to pay most or all their income in distribution to their shareholders, and thus have a higher payout ratio. Table 2 below provides a comparison of the characteristics of each of our three defensive equity types compared to the global equity index (MSCI World), while Chart 2 compares the dividend yield over time. Each of these includes an additional 'core infrastructure' category, a subset of listed infrastructure we define over page.

Table 2: DEFENSIVE EQUITIES – CHARACTERISTICS COMPARISON

	CORE INFRA	LISTED INFRA	LISTED PROPERTY	MINIMUM VOLATILITY	GLOBAL EQUITIES
Dividend Yield	3.8%	3.3%	4.4%	2.6%	2.2%
Dividend Payout Ratio	65%	96%	167%	57%	45%
Debt/Equity	139%	177%	83%	115%	141%
Debt/EBITDA	5.4	6.7	7.5	3.0	3.1
Return on Invested Capital	5.8%	5.7%	3.4%	8.5%	7.2%

Source: Bloomberg, PATRIZIA

Chart 2: DIVIDEND YIELD HISTORY



Source: Bloomberg, PATRIZIA

What is CORE Infrastructure

Not all definitions of 'infrastructure' are the same.

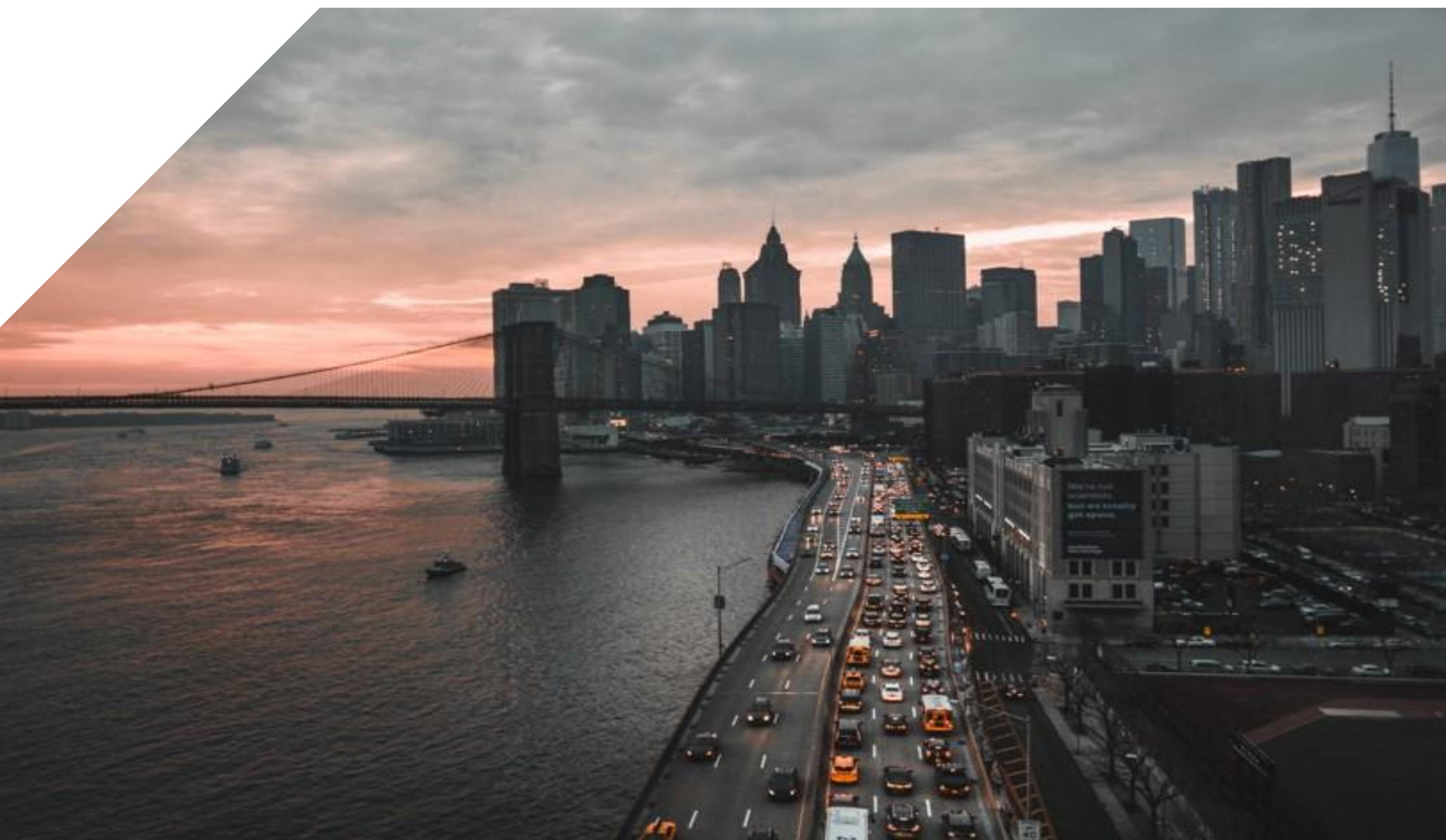
Core infrastructure is a subset of listed infrastructure that excludes quasi-infrastructure stocks, including those that are more exposed to recessions and volatile energy and commodity prices.

For example, the poles and wires of the electricity grid are a core infrastructure asset, with fully regulated inflation-linked revenues. However, a power plant is not core infrastructure if the power is sold in an open market. Other infrastructure-like assets that are excluded include data centres, logistics and warehouse facilities and renewable energy development.

By applying a strict definition, the resulting strategy focuses on the favourable characteristics of the asset class, that is; lower correlation to global equity markets, greater drawdown protection and higher yield.

This differentiation between core and non-core infrastructure can have a big impact on the returns and drawdowns an investor can expect.

There is a similar dynamic for listed property. Some listed property funds are more defensive and conservative than the benchmark indices and so would similarly enhance the risk return profile of the asset class



03 Risk Characteristics

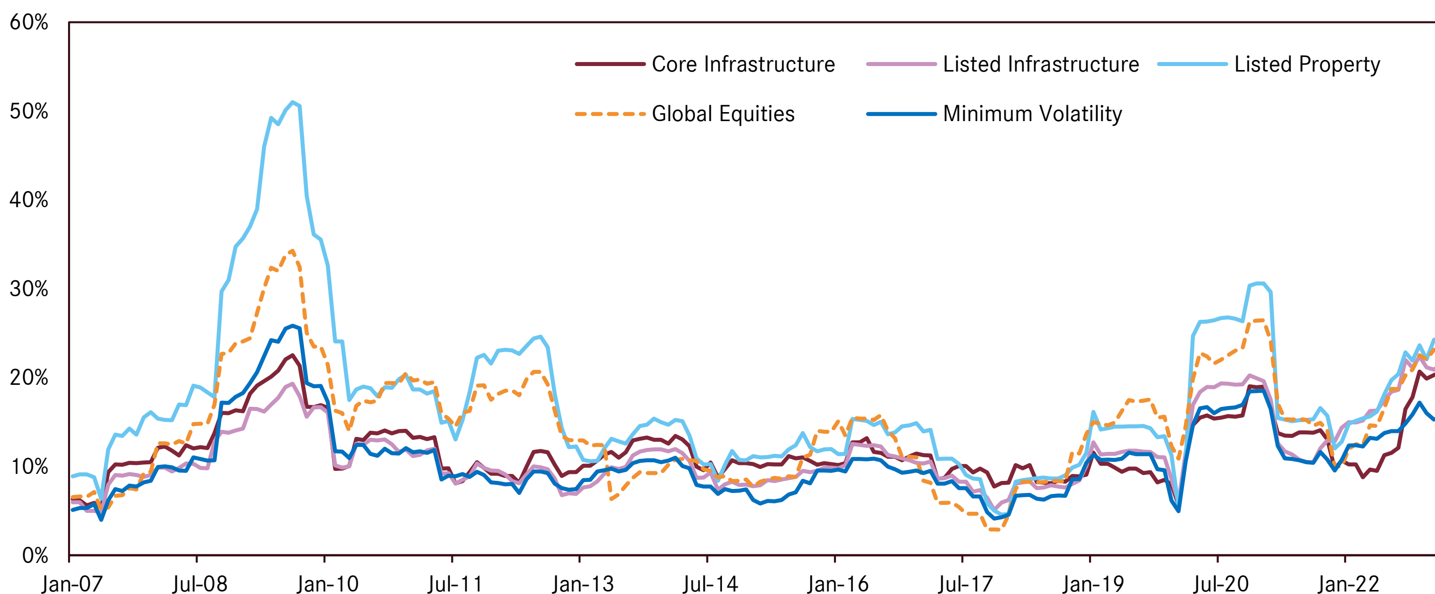
Risk Measures

For an allocation to defensive equity to be worthwhile, it should provide both downside protection and diversification from global equities. This will enhance the total portfolio outcomes for the investor. Otherwise, the allocation may be more cheaply substituted by just holding a little more cash. For this reason, an understanding of risk - and the drivers of this risk - is important.

We start by looking at price volatility, that is, how much the price jumps around day to day and month to month. As a strategy focused on reducing volatility, it is not surprising that the minimum volatility index has shown lower levels of volatility than other defensive equities over time. Core infrastructure has provided a similarly low level of volatility but combined this with better overall performance.

The rolling 12 months annualised standard deviation in Chart 3 also shows listed property has been more volatile than listed infrastructure, particularly during periods of dramatic economic shocks such as the global financial crisis of 2008-09 (GFC) and the COVID-19 pandemic.

Chart 3: ROLLING 12 MONTH STANDARD DEVIATION OF RETURNS



Source: Bloomberg, PATRIZIA

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Downside Protection

Total volatility can provide a good overview, but it's the downward volatility that matters. We find that over the last decade, the listed infrastructure index, and particularly core infrastructure, has demonstrated strong downside protection in relation to global equities.

Maximum drawdown captures the peak to trough decline during a particular investment period. As expected, the GFC and the COVID-19 related crash of 2020 caused the greatest drawdowns for all equity classes during the period under consideration. While core infrastructure suffered negative returns during these economic downturns, the magnitude was much smaller, and the recovery time was quicker compared to the other asset classes in question.

Downside capture measures the percentage of the decline in the MSCI World Index that was participated in. The low volatility index has performed well on this measure. Both listed infrastructure and listed core infrastructure also have downside capture ratios less than one and provided stronger protection in falling equity markets than the listed property index.

Table 3: DRAWDOWN ANALYSIS

		CORE INFRA	LISTED INFRA	LISTED PROPERTY	MINIMUM VOLATILITY	GLOBAL EQUITIES
2006-2020	Maximum Drawdown (%)	-35.9%	-35.9%	-67.2%	-43.5%	-53.6%
	Max DD Length (in Months)	19	43	50	41	50
	Downside capture ratio	69%	69%	124%	66%	-
Since 2020	Maximum Drawdown (%)	-17.0%	-19.7%	-29.0%	-17.2%	-20.9%
	Max DD Length (in Months)	12	12	13	9	5
	Downside capture ratio	83%	90%	123%	81%	-

Source: Bloomberg, PATRIZIA

Diversification

Defensive strategies like listed property and listed infrastructure can reduce overall portfolio risk if they are sufficiently diversified from global equities. Otherwise, they will simply add more equity beta to the portfolio. Both listed infrastructure and listed property have historically shown less than perfect correlations to global equities, and the low volatility strategy has a higher correlation with global equities, as shown in Table 4. Hence, the benefits of diversification can be improved by including infrastructure assets in a portfolio.

Table 4: CORRELATION ANALYSIS

	CORE INFRA	LISTED INFRA	LISTED PROPERTY	MINIMUM VOLATILITY	GLOBAL EQUITIES
Core Infrastructure	1	0.92	0.82	0.89	0.81
Listed Infrastructure		1	0.79	0.89	0.79
Listed Property			1	0.88	0.87
Minimum Volatility				1	0.90
Global Equities					1

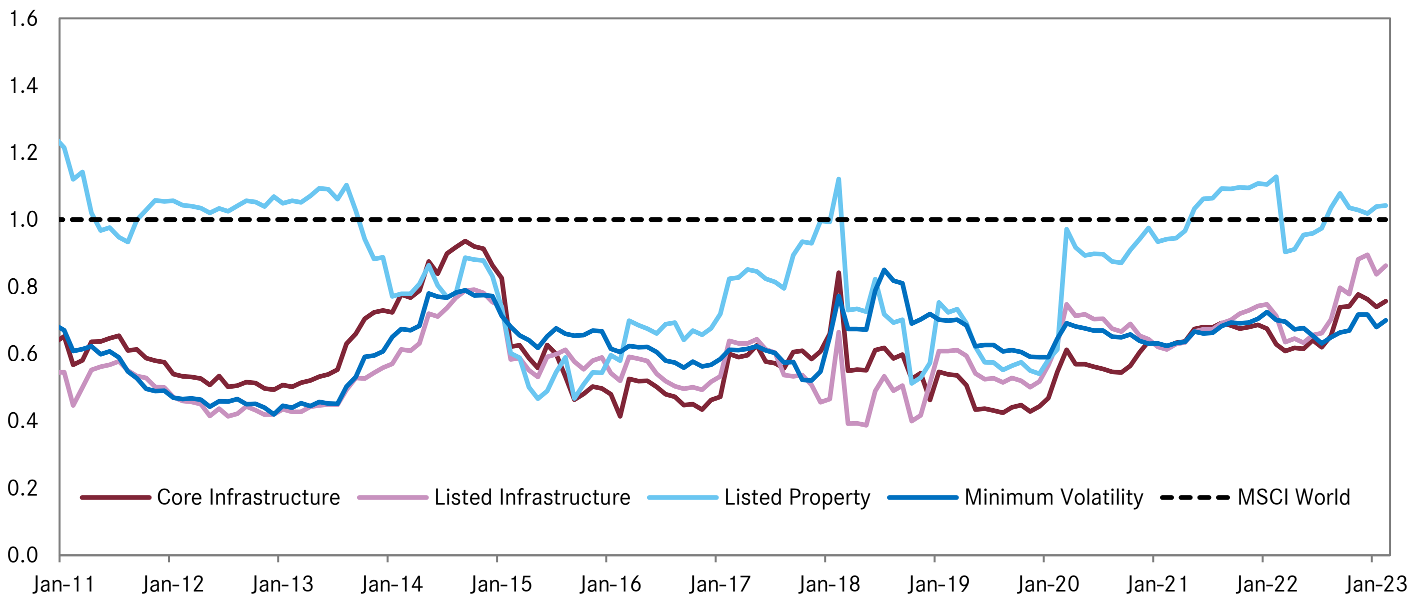
Source: Bloomberg, PATRIZIA

Equity Market Beta

Beta represents the volatility or reactivity of an investment to movements in equity markets. A beta of more than one means that if the market moves up or down 1%, the investment will move by more than 1%, whereas a beta of less than one means an investment is less volatile or sensitive to the market. For investors seeking defensive returns, a beta less than one is highly desirable.

As shown in Chart 4, all defensive asset classes have generally maintained a beta of less than one, with some exception from the listed property index. Core infrastructure assets have had lower betas to global equities compared with other defensive assets, as they are less moved by changes in market sentiment, providing insulation from cyclical volatility. When listed property has exhibited a beta higher than one, it is often when equity markets are falling, and following periods when house prices have increased at a faster rate than the equities market.

Chart 4: ROLLING 24 MONTH BETA TO GLOBAL EQUITIES



Source: Bloomberg, PATRIZIA

Listed property beta to global equity is higher than the other defensive strategies, and peaks at times of market falls; exactly when you least want it to.

04 Investment Performance

CORE INFRASTRUCTURE OUTPERFORMS

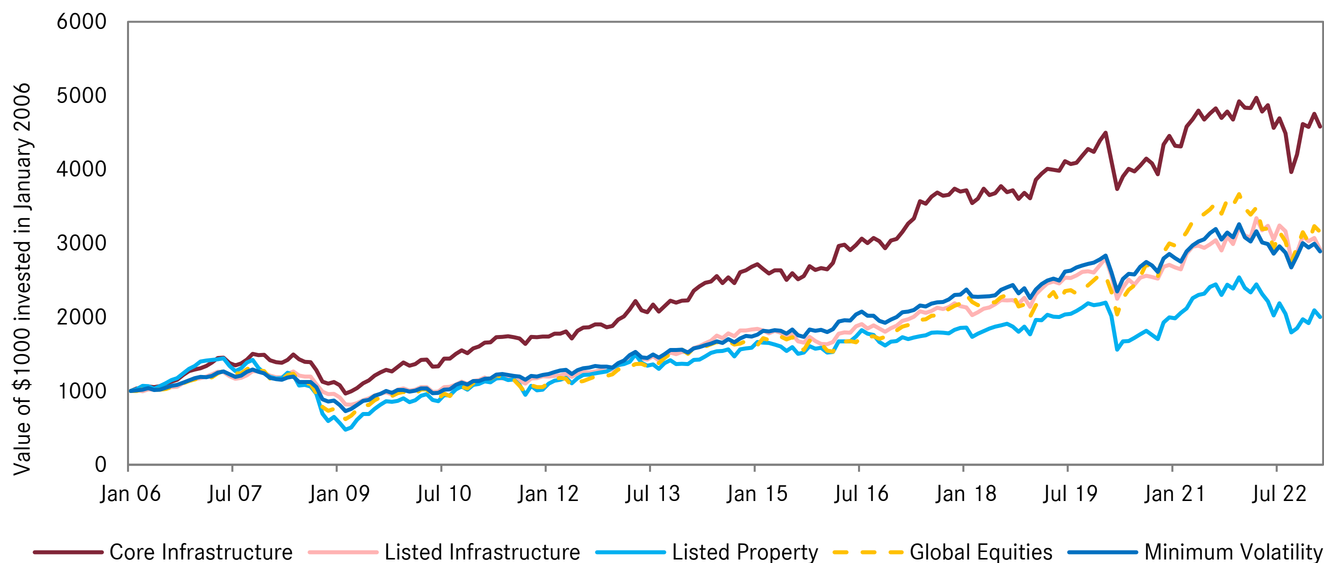
To compare long-term performance of the defensive equity types, we go back to 2006, from when reliable indices are available. Listed core infrastructure has delivered superior returns and superior risk-adjusted returns since 2006 compared to the other defensive equity classes, as shown in Table 5 and Chart 5.

Table 5: RISK ADJUSTED RETURNS SINCE 2006

	RETURN	VOLATILITY	SHARPE RATIO
Listed Core Infrastructure	9.4%	12.6%	0.75
Listed Infrastructure	6.5%	12.3%	0.53
Listed Property	5.0%	19.8%	0.25
Minimum Volatility	6.8%	11.7%	0.58
Global Equities	7.4%	16.2%	0.46

Source: Bloomberg, PATRIZIA

Chart 5: CUMULATIVE PERFORMANCE SINCE 2006



Source: Bloomberg, PATRIZIA

Pre-COVID 19 Performance

Listed core infrastructure has consistently delivered solid returns compared to other asset classes from 2006 to 2020, even when we break this time period into three distinct buckets as shown below in Table 6.

Listed property was the best performer in the years leading up to the GFC in 2008-09. But it was also the sector most affected by the crisis, not surprising given the GFC was property induced and resulted in a drawdown of more than 67%.

Table 6: ANNUALISED GROSS OF FEE RETURNS

	2006-2011	2011-2016	2016-2020
Listed Core Infrastructure	9.9%	10.6%	14.2%
Listed Infrastructure	2.8%	7.4%	14.4%
Listed Property	1.8%	6.7%	9.6%
Minimum Volatility	2.5%	9.7%	12.1%
Global Equity	2.6%	6.4%	13.5%

Source: Bloomberg, PATRIZIA

Over the period from 2006 to 2011, encompassing the Global Financial Crisis (GFC), listed property failed to return to its 2006 levels. Core infrastructure during this time performed the best, as core infrastructure's non-cyclical revenue streams were largely unaffected by the GFC. Arguably, it is unfair to be comparing asset class performance for this period. Crisis periods will always have their different, specific drivers, and unlike 2008, the next crisis will likely not have property as the major trigger.

From 2011-2016, core infrastructure continued to outperform other equities, delivering consistent returns. Listed property returns improved as the housing market recovered from historical lows during the GFC.

2016-2020 saw a rally in all listed asset sectors. Once again, listed and core infrastructure outperformed other defensive asset classes, with other equities also providing strong returns.

Table 7: Pre-COVID RISK ADJUSTED RETURNS (2006-2020)

	RETURN	VOLATILITY	SHARPE RATIO
Listed Core Infrastructure	11.3%	11.5%	1.0
Listed Infrastructure	7.6%	10.6%	0.7
Listed Property	5.8%	18.9%	0.3
Minimum Volatility	7.7%	10.8%	0.7
Global Equity	6.9%	15.0%	0.5

Source: Bloomberg, PATRIZIA

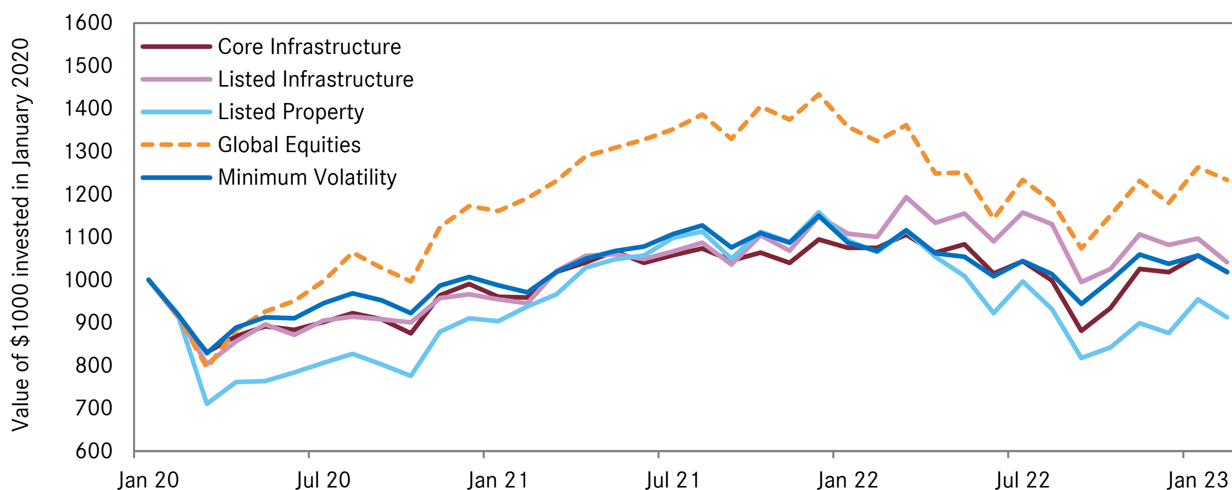
Post-COVID 19 Performance

The COVID-19 pandemic had a significant impact on all asset classes as illustrated in Chart 6. In the initial shock to markets in early 2020, core infrastructure was least affected by falling only 15% from 31 January 2020 to 31 March 2020. Global equities, the minimum volatility index and listed equities, the minimum volatility index and listed infrastructure all experienced similar falls of between 16-28%. Listed property was more affected, dropping nearly 30%, driven by lockdowns forcing the closure of retail stores and offices, and subsequent selloffs.

What is most striking about Chart 6 is not the initial drawdowns, but the subsequent increase in the value of global equities indices during 2020 and 2021, measured here by the MSCI World Index.

Despite the worldwide pandemic shuttering economies, unprecedented global fiscal and monetary easing drove stock markets higher, led to a large extent by the US market and the mega cap tech stocks, leading to stretched valuation multiples.

Chart 6: CUMULATIVE PERFORMANCE SINCE JANUARY 2020



Source: Bloomberg, PATRIZIA

In Chart 7, we look at the earnings of the companies in each sector, measured by earnings before interest, tax, depreciation and amortization (EBITDA). The comparison of earnings during 2020 and 2021 clearly demonstrates the defensive qualities of core infrastructure. Core infrastructure was the most protected, with EBITDA only falling 4% from peak to trough in 2020.

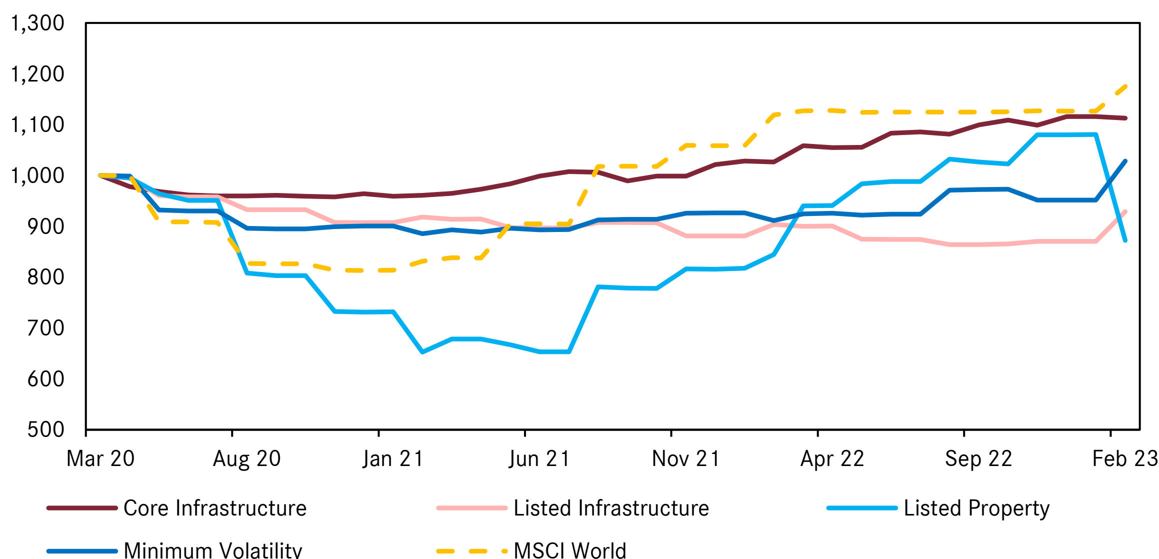
Earnings for listed property had the greatest decline, with EBITDA falling 35% from peak to trough, driven by the decline in rental income from commercial properties. The MSCI World and the MSCI minimum volatility indices also experienced earnings decline of 19% and 11%, respectively.

Transportation Infrastructure During COVID-19

Transportation infrastructure makes up around 30% of the listed infrastructure universe. The COVID-19 pandemic had a unique and significant impact on passenger rail and passenger air transport assets. Border closures and travel restrictions resulted in the near complete loss of earnings from early 2020.

Airports and passenger rail stocks have been the largest contributors to the reduced performance and increased volatility. If we consider the core infrastructure portfolio without airport and passenger rail holdings, in Chart 7, earnings actually grew by 12% from 2020 to June 2021.

Chart 7: EBITDA SINCE MARCH 2020 (Trailing 12 months)



Source: Bloomberg, PATRIZIA

Recovery from COVID 19

Since the initial shock of the COVID-19 pandemic, each sub-sector has recovered at different speeds. Core infrastructure's stable revenues led to resilience in earnings as it reached pre-COVID earnings in June 2021, and global equity earnings recovered above pre-COVID levels in August 2021.

Earnings for listed property and the minimum volatility index took a lot longer to recover than global equities, and have only recently reached their pre-COVID levels.

For listed property, earnings reached the pre-COVID levels in August 2022, but have again dropped below that as interest rates have risen significantly over past12 months.

Despite earnings taking longer to recover, global equities saw the greatest price recovery, and with the subsequent rally, the MSCI World ended 2021 at more than140% of pre-COVID prices. It outperformed all defensive equity classes during that period. Listed property followed a similar pattern with a quicker recovery despite depressed earnings, but still underperformed the MSCI World.

Core infrastructure made a smaller price recovery during this period compared to its earnings. Infrastructure stocks did not fully participate in the 2020-2021 share market rally that equities and other high beta assets experienced at that time.

Rising Interest Rates and Recent Performance

Listed infrastructure, particularly core infrastructure, has once provided significant downside protection in the falling equity market as it has outperformed global equities as well as other defensive equities in the 14-month period from January 2021 to February 2023. Table 8 provides a comparison of cumulative returns during this period.

All defensive equities barring listed property have outperformed global equities. Risk assets have faced significant declines over the past year as central banks across the globe are in a monetary tightening phase to combat inflation and have already increased interest rates several times.

As of 28 February 2023, global equities have cumulatively lost 14% of their value with significant earnings cuts still expected to follow for most segments of the market.

Core infrastructure companies with direct inflation linkage in their revenues, and regulated, long term contracted assets, will have less pressure on their earnings due to less exposure to cyclical demand and costs pass through allowed to fully regulated utilities.

Table 8: CUMULATIVE RETURNS (JANURAY 2022-FEBRUARY 2023)

	LISTED CORE INFRASTRUCTURE	LISTED INFRASTRUCTURE	LISTED PROPERTY	MINIMUM VOLATILITY	GLOBAL EQUITIES
Cumulative Return	-7.0%	-9.3%	-21.2%	-11.4%	-14.0%

Source: Bloomberg, PATRIZIA

Current Valuations

Rallies in prices of equities in 2020 and 2021 coupled with modest earnings recovery expanded multiple-based valuations for global equities and listed property to bubble proportions.

Through 2022, multiples shrunk for global equities and minimum volatility equities as returns turned negative, and they underperformed listed infrastructure, particularly core infrastructure.

Listed property still has high P/E and EV/EBITDA multiples despite underperforming other equities in the past 14 months, as earnings have fallen back to below pre-COVID levels due to recession fears and contraction in property prices.

Core infrastructure is currently trading at lower EV/EBITDA and lower P/E multiples compared to other equities, meaning defensive, core infrastructure stocks are cheaper to purchase relative to earnings.

Despite recent outperformance of core infrastructure relative to other equities, this gap in valuation remains. With the earnings for core infrastructure expected to hold up well compared to others, this leaves room for further outperformance.

Table 9: TRAILING VALUATION MULTIPLES

	P/E	EV/EBITDA	DIV. YIELD	ROIC	P/Book
Listed Core Infrastructure	16.3	10.8	3.8%	5.8%	1.6
Listed Infrastructure	24.7	15.1	3.3%	5.7%	2.2
Listed Property	24.0	19.1	4.4%	3.4%	1.3
Minimum Volatility	17.7	11.4	2.6%	8.5%	2.8
Global Equities	17.9	11.6	2.2%	7.2%	2.8

Source: Bloomberg, PATRIZIA

Core infrastructure is trading at a significant discount to other types of defensive equity yet has proved more resilient and higher returning.

05 Conclusion

RETURNS WITH LOWER RISK

Listed infrastructure, listed property and low volatility funds are all considered defensive assets. They offer stable cash flows and are a diversifier from global equities. All three asset classes have different risk and return profiles, so allocation to these assets should be made as separate decisions.

When investing in infrastructure, investors should seek out 'core infrastructure' that provides the strongest defensive characteristics, including inflation-linked revenues, long concessions and minimal exposure to energy or commodity prices. These characteristics have delivered a lower beta to global equities compared to other defensive asset classes, lower volatility over the long-term and stronger downside protection in periods such as the GFC and the COVID-19 crash. This has also protected earnings during a variety of economic scenarios.

Although not examined explicitly in this paper, we consider that the same will hold true for listed property, with better risk adjusted returns to be achieved by narrowing in on higher quality and more 'core' exposures. Otherwise, a passive approach gives risk adjusted returns significantly inferior to listed infrastructure and low volatility strategies even with the higher income yield.

Low volatility strategies have provided similar risk characteristics to core infrastructure assets. However, over the last 15 years, the low volatility index has a higher correlation to global equities and investors in listed core infrastructure have enjoyed higher absolute and risk adjusted returns.

With earnings for infrastructure expected to hold up well and the current gap in valuation between core infrastructure and other assets, core infrastructure represents a defensive asset class at a cheap price relative to earnings. With the added benefit of liquidity, listed core infrastructure provides an accessible substitute for real assets for an investor that is not suited to holding private infrastructure assets.

Given the less than perfect correlation between listed core infrastructure, listed property and low volatility indexes, there is certainly room for all three asset classes in a diversified portfolio.

Appendix

DATA

Index data is sourced from Bloomberg and is as at 28 February 2023. All performance is measured in USD unhedged terms and is gross of fees.

For listed property performance we have used the FTSE EPRA/NAREIT Developed TR Listed Real Estate Index.

For listed infrastructure, we have used the FTSE Developed Core Infrastructure Index.

For the low volatility strategy, we have used the MSCI World Minimum Volatility Net Total Return (USD) Index.

For global equities, we use the MSCI World Total Return Index.

For core infrastructure, we have used the performance of PATRIZIA Low Carbon Core Infrastructure Fund, gross of fees, since its inception from 30 May 2016. Prior to this, we use the PATRIZIA Infrastructure customised core infrastructure universe equal weighted index. The return simulation was produced using S&P ClariFI software, with a point-in-time database to avoid look-ahead bias.

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