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Employees' Retirement Fund of the City of Dallas: 2019 Asset Allocation Modeling

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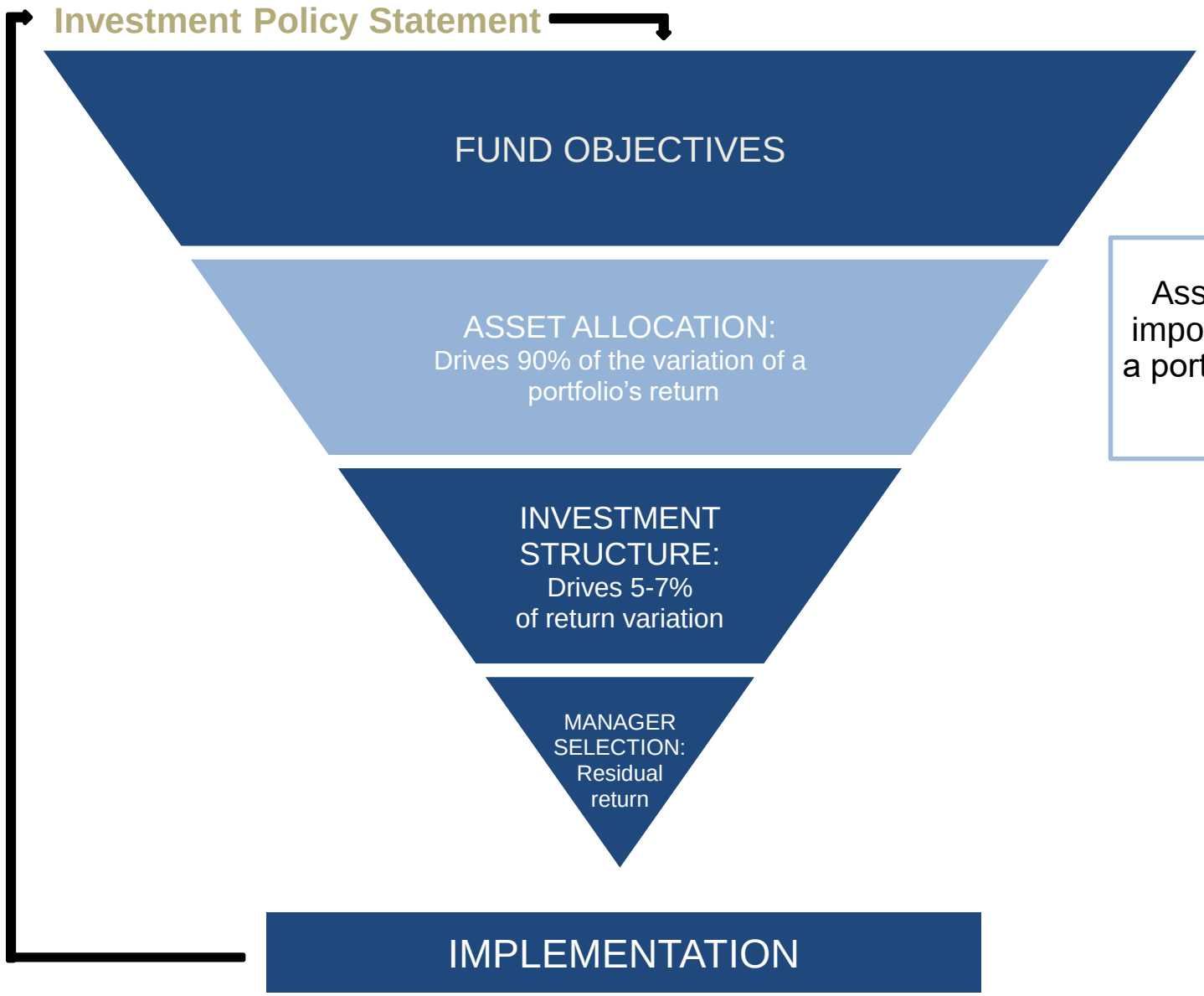
Asset Allocation

ASSET ALLOCATION



Asset allocation is the most important decision for building a portfolio to achieve the fund's objectives

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THE WORLD THROUGH RISK LENSES

Finding the optimal balance between mitigating certain risks while profiting from others is the key to long-term success. Risk lenses help to focus the asset allocation process by providing context for modeling results and orienting decisions around organizational goals.

Drawdown: The potential for the portfolio to experience a significant decline in value.

Inflation: The potential for financial assets to lose purchasing power over time.

Liquidity: The potential for an investor to be unable to buy or sell specific assets in the portfolio.

Active: The potential for an investment strategy to experience tracking error due to characteristics that differ from those of the market

Behavioral: The potential for biased decision making to impede the organization's ability to reach its investment goals

Shortfall: The potential for the portfolio to fail to reach the organization's objectives.

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ASSET ALLOCATION OBJECTIVES

- Wilshire believes the mission of a defined benefit plan is to fund benefits promised to participants
- The role of asset allocation is to manage risk in order to fulfill that core mission
  - *Maximize safety* of promised benefits *(Addressed by managing drawdown and liquidity risk)*
  - *Minimize cost* of funding these benefits *(Addressed by managing inflation and shortfall risk)*

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ASSET CLASS ASSUMPTIONS

	Domestic Equity	International Equity	Global Equity	Global Low Volatility Equity	Private Equity	Core Fixed Income	High Yield Fixed Income	Credit Opportunities	REITs	Private Real Estate - Core	Private Real Estate - Value Add	MLP	Global Public Infrastructure	Marketable Alternatives
Return - 10-Year (%)	7.00	7.75	7.45	7.41	10.05	3.85	5.90	6.69	5.65	5.40	8.40	8.40	7.98	5.60
Risk (%)	17.00	18.80	17.05	13.46	28.00	5.15	10.00	10.33	17.00	12.00	17.50	19.00	16.96	4.59
Correlations														
Domestic Equity	1.00													
International Equity	0.81	1.00												
Global Equity	0.74	0.74	1.00											
Global Low Volatility Equity	0.94	0.92	0.82	1.00										
Private Equity	0.94	0.89	0.79	0.96	1.00									
Core Fixed Income	0.74	0.64	0.62	0.74	0.77	1.00								
High Yield Fixed Income	0.56	0.45	0.51	0.55	0.53	0.35	1.00							
Credit Opportunities	0.35	0.18	0.07	0.27	0.28	0.34	0.29	1.00						
REITs	0.19	0.10	-0.05	0.13	0.14	0.22	0.18	0.88	1.00					
Private Real Estate - Core	-0.05	-0.09	-0.05	-0.07	-0.04	0.00	-0.04	0.17	0.12	1.00				
Private Real Estate - Value Add	0.54	0.44	0.44	0.52	0.65	0.51	0.58	0.27	0.17	-0.05	1.00			
MLP	0.47	0.57	0.56	0.55	0.54	0.44	0.44	0.14	0.06	-0.07	0.41	1.00		
Global Public Infrastructure	0.70	0.65	0.63	0.71	0.70	0.58	0.49	0.66	0.50	-0.02	0.53	0.55	1.00	1.00
Marketable Alternatives	0.27	0.15	0.00	0.20	0.21	0.29	0.22	0.89	0.97	0.10	0.20	0.07	0.58	1.00

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PORTFOLIO MODELING

		From Lower to Higher Risk						
Asset Class	**Current Target Policy**	**Option 1**	**Option 2**	**Option 3**	**Option 4**	**Option 5**	**Option 6**	**Option 7**
Domestic Equity	15.00%	10.00%	12.50%	13.75%	11.25%	12.50%	12.50%	10.00%
International Equity	15.00%	10.00%	12.50%	13.75%	11.25%	12.50%	12.50%	10.00%
Global Equity	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
Global Low Volatility Equity	10.00%	10.00%	10.00%	10.00%	12.50%	10.00%	12.50%	10.00%
Private Equity	5.00%	5.00%	7.50%	5.00%	7.50%	7.50%	7.50%	15.00%
Total Growth	**52.50%**	**42.50%**	**50.00%**	**50.00%**	**50.00%**	**50.00%**	**52.50%**	**52.50%**
Core Fixed Income	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
High Yield Fixed Income	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	7.50%	10.00%
Credit Opportunities	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Total Fixed Income	**30.00%**	**30.00%**	**30.00%**	**30.00%**	**30.00%**	**30.00%**	**27.50%**	**30.00%**
REITs	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Private Real Estate - Core	5.00%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
Private Real Estate - Value Add	0.00%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
MLPs	7.50%	0.00%	5.00%	7.50%	0.00%	0.00%	0.00%	0.00%
Global Public Infrastructure	0.00%	7.50%	0.00%	0.00%	7.50%	7.50%	7.50%	7.50%
Total Inflation Hedging Assets	**17.50%**	**17.50%**	**15.00%**	**17.50%**	**17.50%**	**17.50%**	**17.50%**	**17.50%**
Marketable Alternatives	0.00%	10.00%	5.00%	2.50%	2.50%	2.50%	2.50%	0.00%
Total Diversifying Assets	**0.00%**	**10.00%**	**5.00%**	**2.50%**	**2.50%**	**2.50%**	**2.50%**	**0.00%**
Total Assets	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Expected Return - 10 Years (%)	**7.17**	**7.02**	**7.22**	**7.21**	**7.24**	**7.25**	**7.28**	**7.57**
Standard Deviation of Return (%)	**11.61**	**10.38**	**11.30**	**11.34**	**11.47**	**11.55**	**11.71**	**12.47**
Cash Yield (%)	**3.95**	**3.59**	**3.59**	**3.84**	**3.72**	**3.72**	**3.57**	**3.59**
+/(-) in Expected Return - 10 Years	**-**	**(15)**	**5**	**4**	**7**	**8**	**11**	**40**
+/(-) in SD of Return (bps)	**-**	**(124)**	**(31)**	**(27)**	**(15)**	**(6)**	**10**	**86**
+/(-) in Cash Yield (bps)	**-**	**(36)**	**(36)**	**(11)**	**(22)**	**(23)**	**(38)**	**(36)**
Return\Risk Ratio	**0.62**	**0.62**	**0.68**	**0.64**	**0.64**	**0.63**	**0.63**	**0.62**

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STRATEGIC LEVERS

- Improvements in the risk/return profile of the Total Fund can be done at the margin
  - Return enhancements available through Private Equity and/or Private Value Add Real Estate, but they come at the cost of yield and liquidity
  - Risk reduction can be controlled primarily through altering equity risk exposure
  - Diversifying assets such as marketable alternatives can also moderate volatility at the Total Fund level
  - Expanding the universe of Listed Infrastructure provides a more diversified opportunity set

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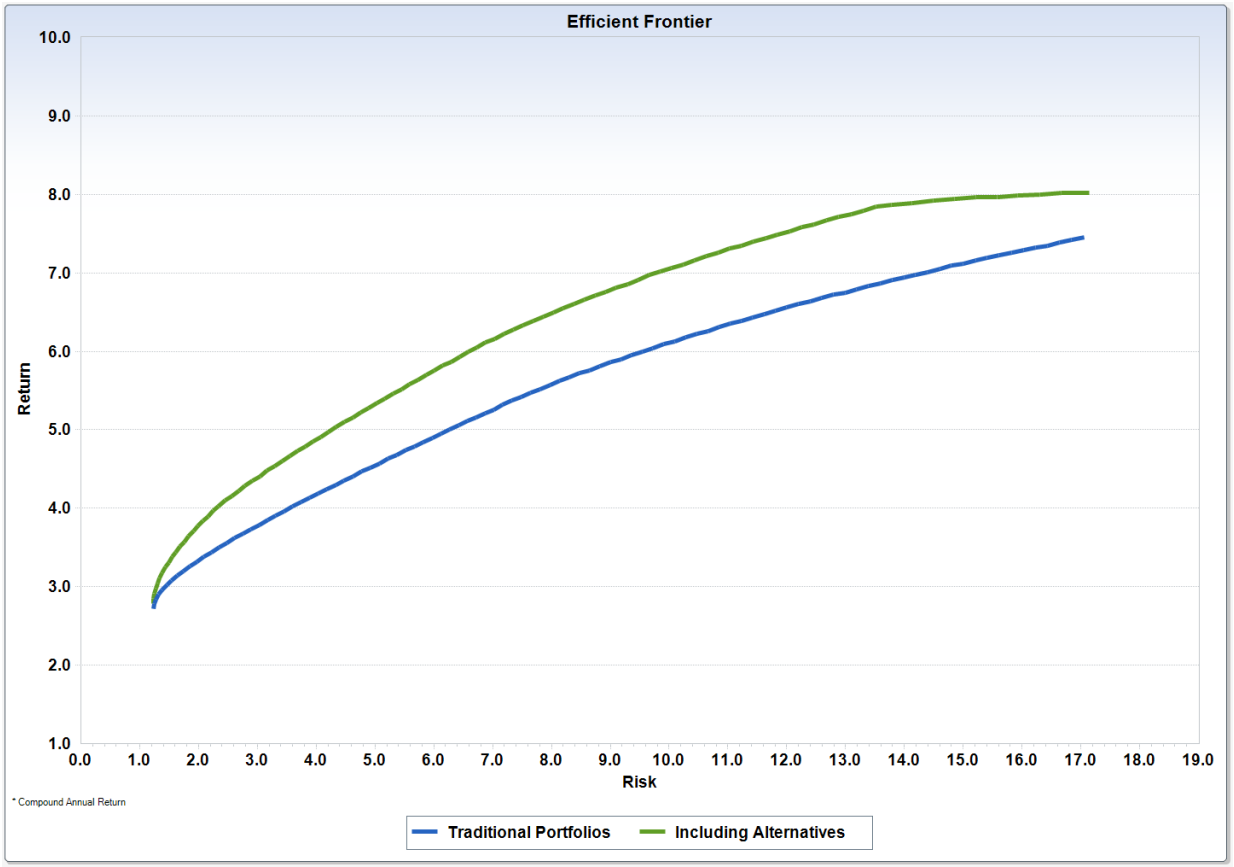
Marketable Alternatives

THE ROLE OF MARKETABLE ALTERNATIVES

Investment strategies such as marketable alternative can offer unique benefits to portfolios.

They also introduce new liquidity considerations and often come at an increased cost.



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BACKGROUND: THE ROLE OF MARKETABLE ALTERNATIVES

- Wilshire views marketable alternative vehicles as a dynamic implementation tool used to achieve portfolio objectives, rather than a separate asset class
- Marketable alternatives are not homogenous and have varying levels of directionality, risk, and liquidity
- Manager structuring and selection is highly dependent on investor objectives, risk tolerances, and governance capabilities

Therefore…

- Let's invest in a diversified set of strategies to achieve one or more outcomes which are integrated and consistent with the asset allocation policy:
  - Drive returns (Growth)
  - Mitigate specific risk factors or provide uncorrelated sources of return (Diversifiers)

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DIRECTIONAL AND DIVERSIFYING STRATEGY GROUPS

- Wilshire recommends segregating the marketable alternatives universe of strategies into **Directional** and **Diversifying** groups

Directional Alternatives

- Strategies that tend to be directionally long risk assets and exhibit higher equity correlations, though some may exhibit lower beta
- Allocations compete with traditional assets in broader portfolio
- Organized into Equity, Credit, and Multi-Asset Class categories

Diversifying Alternatives

- Strategies that rely on relative value opportunities, dynamic directional exposures, or specific market inefficiencies to generate returns.
- Generally low beta AND low equity correlations
  - Low beta/correlation does not necessarily indicate low risk
- Designed to diversify versus Policy over most rolling periods > one year
- Organized into Capital Preservation, Relative Value Arbitrage, Low Correlated Yield, and Dynamic Correlation categories

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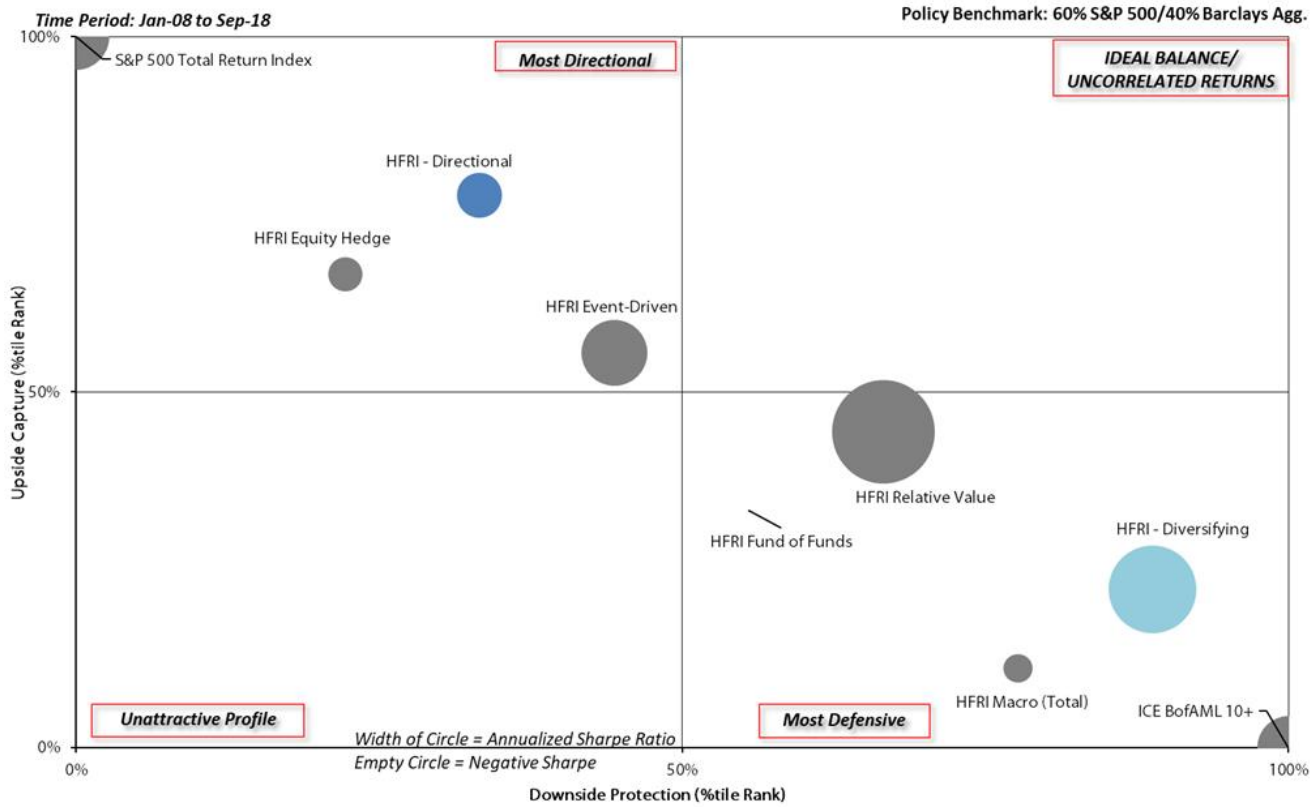
THE ROLE OF MARKETABLE ALTERNATIVES

- The chart below illustrates the role of the HFRI Directional and Diversifying strategies within a simple 60/40 portfolio of equities and bonds.
  - More technically, the Y-axis within the chart represents Wilshire's proprietary upside capture score when the policy benchmark is positive, while the X-axis represents Wilshire's proprietary downside protection score when the policy benchmark is negative.
  - The size of each circle within the chart represents the Sharpe Ratio of that index.



Data source: Hedge Fund Research, Inc.

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Global Public Infrastructure

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INFRASTRUCTURE OVERVIEW

TRANSPORTATION	UTILITIES	ENERGY	OTHER
Airports Ports Train stations Toll roads Train lines	Power generation and distribution Water treatment Transmission pipelines	Power generation Renewables Mid-stream operations	Transmission towers Cell towers Cable networks Waste management Industrial infrastructure

INFRASTRUCTURE ASSETS

- Typically long-lived and capital intensive projects with a relatively inelastic demand

KEY CHARACTERISTICS

- Essential services
- High barriers to entry (capital expenditure requirement, regulation)
- Long duration
- High operating margins and inflation linked cash flows

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INFRASTRUCTURE OVERVIEW

INVESTMENT MERITS

- Lower sensitivity to macroeconomic swings
- Low correlation with other asset classes
- High income yield
- Stable and predictable cash flows
- Good inflation protection
- Diversification

RETURN DRIVERS

- Steady population growth
- Long-term economic growth
- Increased trade and business activity

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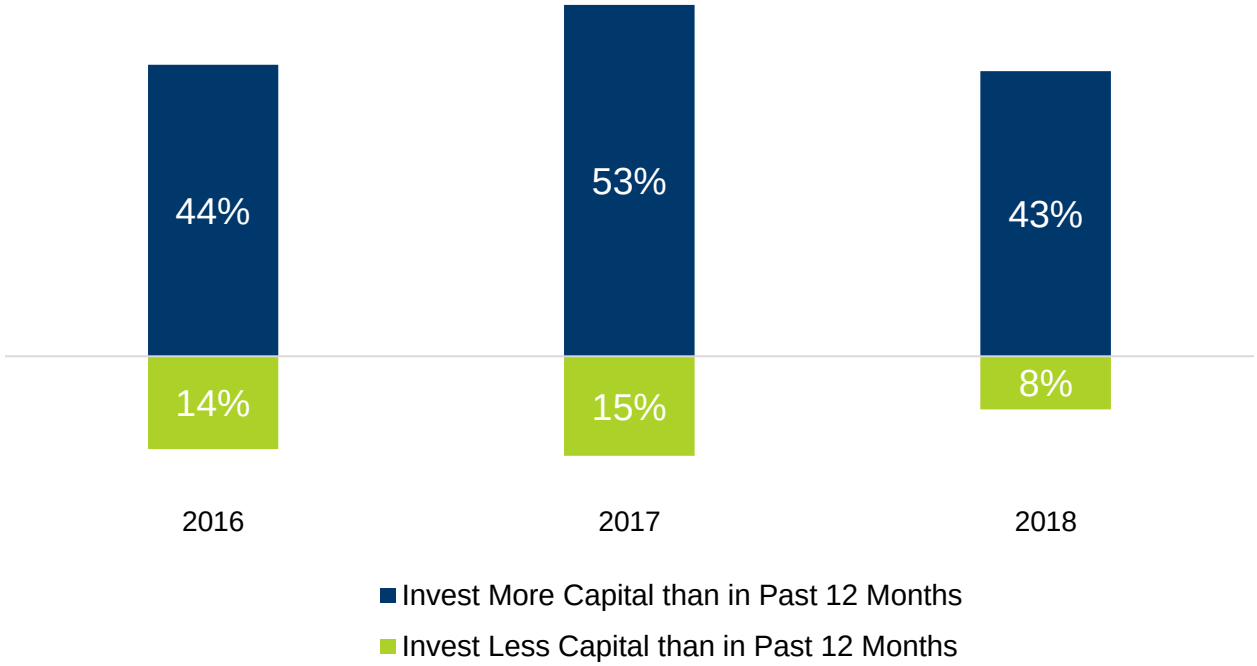
INVESTOR SENTIMENT

Institutional Investors Demand for Next 12 Months



Preqin Investor Update: Alternative Assets H2 2018.

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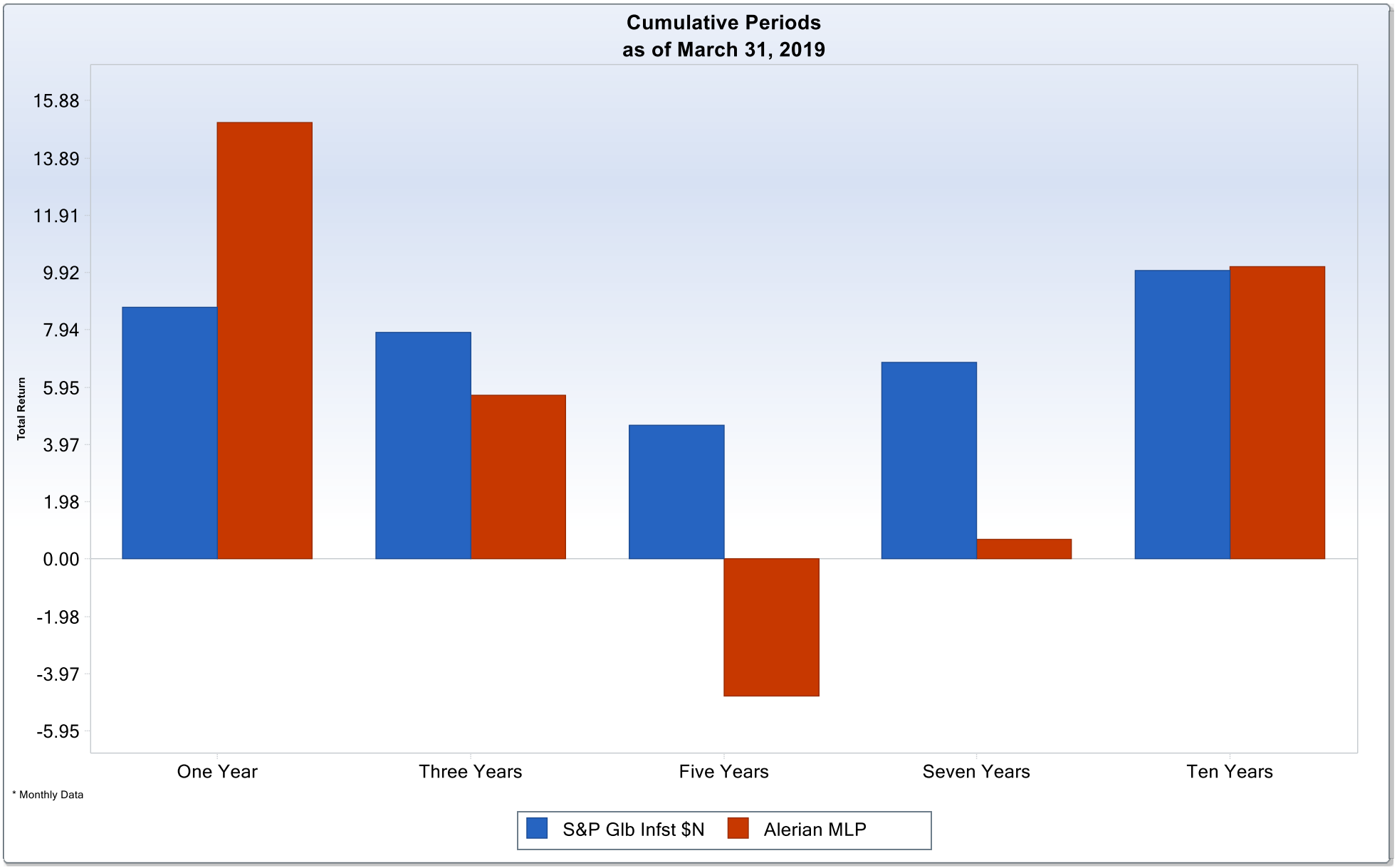
Listed Infrastructure Performance



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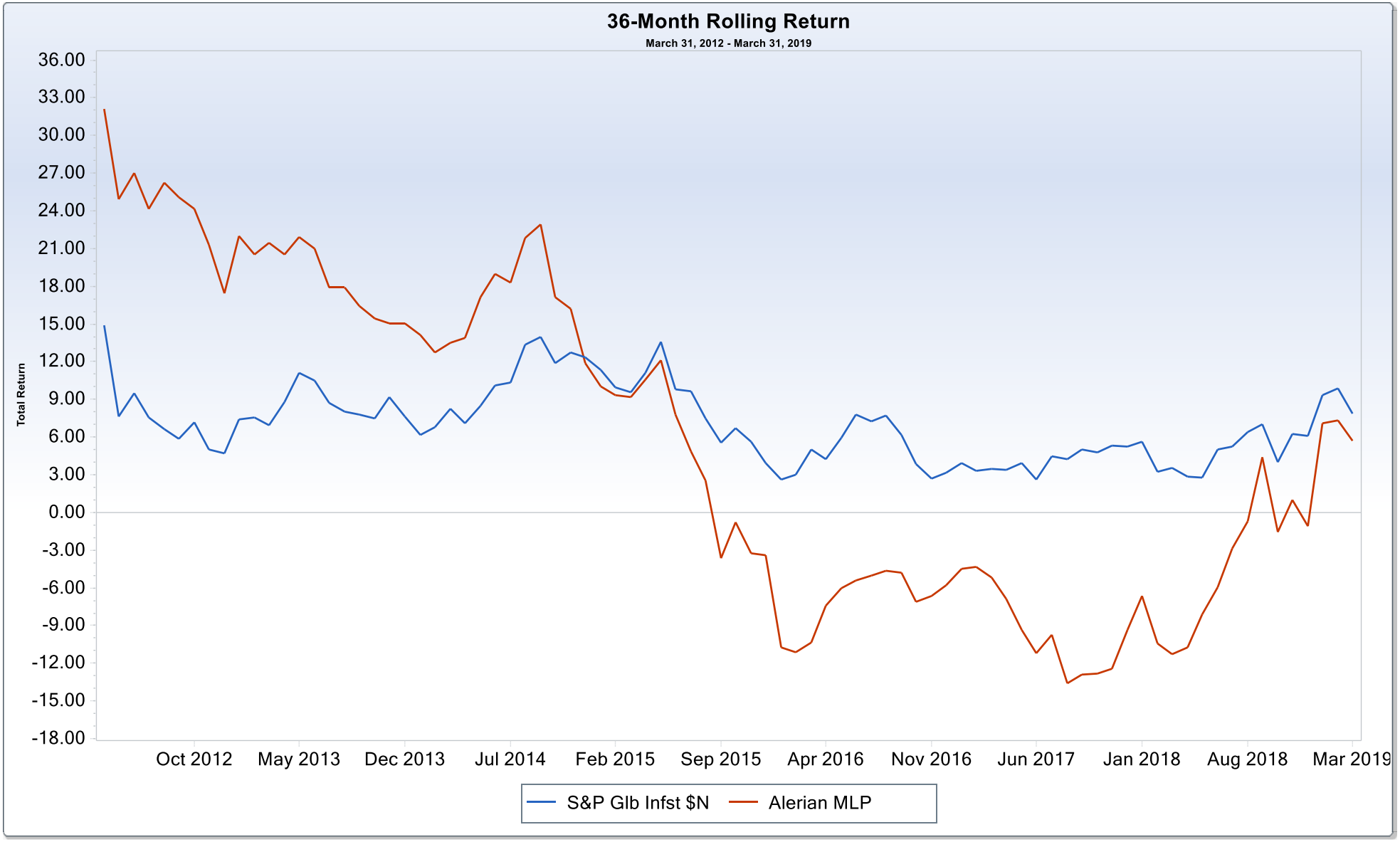
Listed Infrastructure Performance



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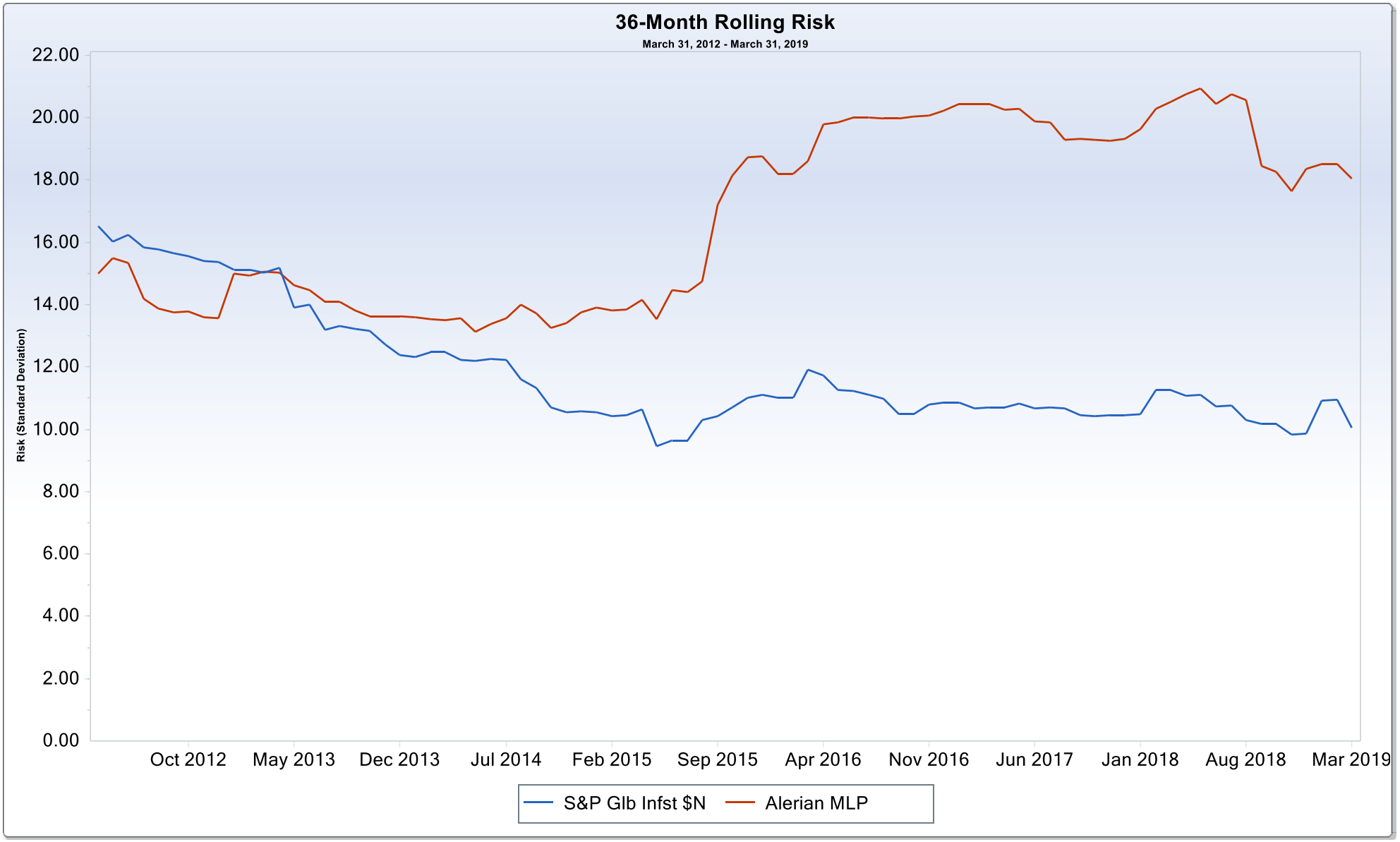
Listed Infrastructure Risk



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Listed Infrastructure Universe

Product Name
AMP Capital Global Listed Infrastructure Securities
4D Global Infrastructure Fund
BlackRock Global Listed Infrastructure Fund
CDN Global Infrastructure
Brookfield Global Infrastructure Securities Core Strategy
Global Infrastructure Securities Strategy
Global Infrastructure Securities Strategy and MLPs
CBRE Clarion Global Listed Infrastructure Strategy
CenterSquare Global Infrastructure Strategy
Cohen & Steers Global Listed Infrastructure
Cohen & Steers Global Listed Infrastructure Focus (Dow Jones Brookfield)
Cohen & Steers Global Listed Infrastructure Focus (FTSE 50/50)
Global Listed Infrastructure
Columbia Global Infrastructure
Global Listed Infrastructure
Deutsche Global Infrastructure Securities
Dynamic Global Infrastructure
Global Listed Infrastructure Strategy
Franklin Real Asset Advisors Global Listed Infrastructure
Global Infrastructure
Greystone Infrastructure Global Master - USD
Global Infrastructure
KBIGI Global Sustainable Infrastructure Strategy
Global Listed Infrastructure (Unhedged)
Global Listed Infrastructure (USD Hedge)
Global Core Infrastructure
Macquarie Global Listed Infrastructure Securities
Macquarie Hedged Index Global Infrastructure Securities Fund
Macquarie True Index Global Infrastructure Securities Fund
Magellan Core Infrastructure Strategy
Magellan Select Infrastructure Strategy
Maple-Brown Abbott Global Listed Infrastructure Strategy
MFS Global Infrastructure
Miller/Howard Infrastructure
Global Infrastructure Securities
Infrastructure Plus
Global Infrastructure
RARE Emerging Markets Strategy
RARE Infrastructure Income Strategy
RARE Infrastructure Value Strategy
RITC Global Listed Infrastructure Fund
Sun Life Sentry Infrastructure Fund I
Global Infrastructure Dividend Focus Equity
Vanguard Global Infrastructure Fund
Vanguard Global Infrastructure Fund (Hedged)
Ve-RI Listed Infrastructure I
Enduring Assets
Whitehelm Listed Core Infrastructure Fund

Universe

- 75 securities in the S&P Global Infrastructure Index
- Transportation, Utility, and Energy sector exposure
- Approximately 50 product strategies in the universe

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