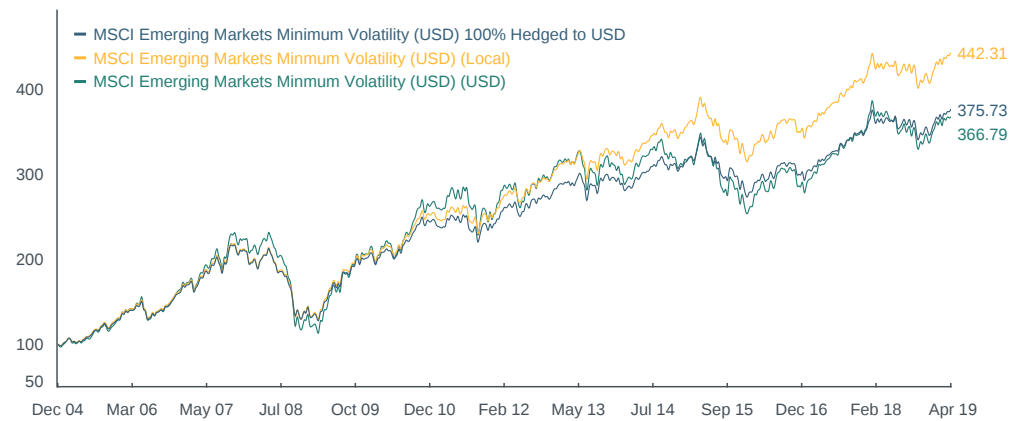


# MSCI EMERGING MARKETS MINIMUM VOLATILITY (USD) 100% HEDGED TO USD INDEX (USD)

The MSCI Emerging Markets (EM) Minimum Volatility (USD) 100% Hedged to USD Index represents a close estimation of the performance that can be achieved by hedging the currency exposures of its parent index, the MSCI EM Minimum Volatility Index, to the USD, the "home" currency for the hedged index. The index is 100% hedged to the USD by selling each foreign currency forward at the one-month Forward rate. The index aims to reflect the performance characteristics of a minimum variance strategy applied to the large and mid cap equity universe across Emerging Markets countries\*. The index is calculated by optimizing the parent index, for the lowest absolute risk (within a given set of constraints). Historically, the index has shown lower beta and volatility characteristics relative to the MSCI EM Minimum Volatility Index.

## CUMULATIVE INDEX PERFORMANCE - NET RETURNS (USD) (DEC 2004 – APR 2019)



## ANNUAL PERFORMANCE (%)

Year	MSCI Emerging Markets Minimum Volatility (USD) 100% Hedged to USD	MSCI Emerging Markets Minimum Volatility (USD) (Local)	MSCI Emerging Markets Minimum Volatility (USD) (USD)
2018	-2.38	-2.43	-5.77
2017	19.14	19.95	26.73
2016	2.92	4.62	3.90
2015	-5.81	-3.96	-12.05
2014	4.73	6.91	1.10
2013	4.42	6.90	-0.05
2012	17.37	20.54	22.24
2011	-2.47	-0.65	-6.18
2010	20.95	22.36	28.89
2009	46.81	48.62	59.37
2008	-34.38	-34.27	-41.84
2007	26.89	26.36	32.26
2006	28.26	27.93	31.76
2005	30.23	31.93	29.40

## INDEX PERFORMANCE — NET RETURNS (%) (APR 30, 2019)

	1 Mo	3 Mo	1 Yr	YTD	ANNUALIZED			
					3 Yr	5 Yr	10 Yr	Since Dec 31, 2004
MSCI Emerging Markets Minimum Volatility (USD) 100% Hedged to USD	1.74	3.01	3.33	7.81	8.23	4.94	9.31	9.67
MSCI Emerging Markets Minimum Volatility (USD) (Local)	1.78	3.05	3.23	7.80	8.87	6.15	10.92	10.93
MSCI Emerging Markets Minimum Volatility (USD) (USD)	1.33	1.88	-0.30	7.65	8.20	3.34	9.66	9.49

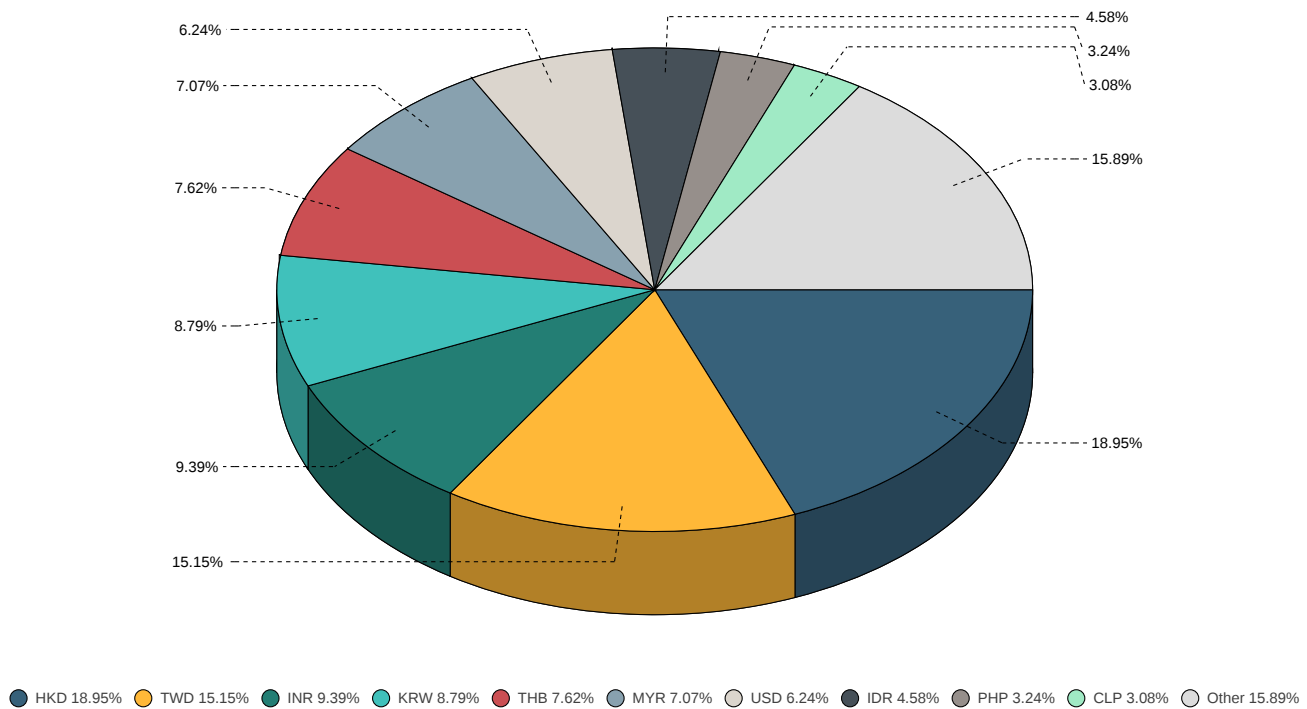
## INDEX RISK AND RETURN CHARACTERISTICS (DEC 31, 2004 – APR 30, 2019)

	ANNUALIZED STD DEV (%) <sup>1</sup>			SHARPE RATIO <sup>1,2</sup>			MAXIMUM DRAWDOWN	
	3 Yr	5 Yr	10 Yr	3 Yr	5 Yr	10 Yr	Since Dec 31, 2004 (%)	Period YYYY-MM-DD
MSCI Emerging Markets Minimum Volatility (USD) 100% Hedged to USD	7.02	8.13	9.38	0.94	0.52	0.94	0.69	44.94
MSCI Emerging Markets Minimum Volatility (USD) (Local)	7.01	8.10	9.26	1.05	0.64	1.11	0.77	46.43
MSCI Emerging Markets Minimum Volatility (USD) (USD)	9.67	11.59	13.90	0.72	0.26	0.69	0.53	53.91

\* Emerging Markets countries include Argentina, Australia, Brazil, Canada, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Taiwan, Thailand, Turkey and United Arab Emirates.

The MSCI Emerging Markets Minimum Volatility (USD) 100% Hedged to USD Index was launched on Aug 25, 2015. Data prior to the launch date is back-tested data (i.e. calculations of how the index might have performed over that time period had the index existed). There are frequently material differences between back-tested performance and actual results. Past performance -- whether actual or back-tested -- is no indication or guarantee of future performance.

## CURRENCY WEIGHTS ( APR 30, 2019 )



## INDEX METHODOLOGY

The MSCI Minimum Volatility Indexes are designed to provide the lowest return variance for a given covariance matrix of stock returns. Each MSCI Minimum Volatility Index is calculated using Barra Optimizer to optimize a given MSCI parent index for the lowest absolute volatility with a certain set of constraints. These constraints help maintain index replicability and investability and include index turnover limits, for example, along with minimum and maximum constituent, sector and/or country weights relative to the parent index. Each Minimum Volatility Index is rebalanced (or is re-optimized) semi-annually in May and November. Indexes may also be optimized for various currencies.

To hedge the currency risk in the MSCI Minimum Volatility Indexes, each foreign currency in the index is hedged back to a home currency (e.g., EUR) by notionally "selling" each currency forward at the one-month forward rate at the end of each month. To construct investable and replicable indexes, MSCI calculates the performance of Hedged Indexes using foreign currency weights and corresponding foreign currency notional amounts as of two business days before the first calendar day of the following month.

## ABOUT MSCI

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