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## **BLACKROCK®**

# **Confronting Market Volatility: Help Clients Weather The Market's Ups And Downs**

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#### How is BlackRock defining Smart Beta?

An evolution in the concept of passive investing

Smart Beta strategies seek to capture systematic sources of return, while retaining many of the benefits of passive strategies

#### What is Smart Beta?

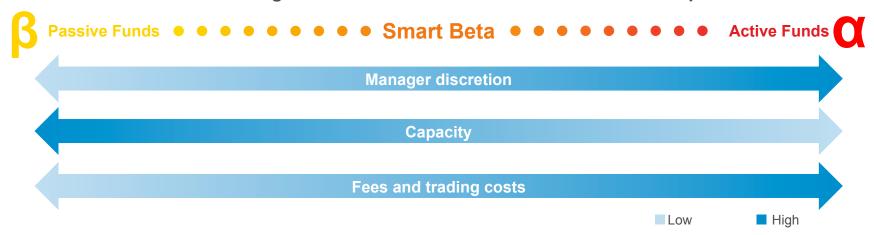
- Portfolio construction is rules-based, transparent and generally not cap-weighted
- Seeks to enhance risk-adjusted returns through exposure risk premia or market anomalies that are well-understood, persistent and desirable
- BlackRock looks for smart betas that are value creating over time and not correlated with core asset classes

#### What can Smart Beta do for a portfolio?

## A powerful tool to potentially improve investment outcomes:

- Capture many of the themes present in active portfolios for a fraction of the cost
- Efficiently implement an investment view or theme
- Provides a factor-based view of the world to enhance returns or reduce risk

#### Smart Beta strategies reside in a continuum between active and passive



## Rising Geo-Political Risk: Opportunities to Minimize Volatility

## Weakening Euro, Strengthening USD





## **Expected of Rising USD interest rates**









## **Alternative beta indices: Minimum Volatility**

#### Cap-weighted benchmarks have long been the accepted standard

- Self rebalancing
- ▶ Emphasis on larger names has the potential to enhance liquidity
- Generally low turnover and T-costs
- Incorporates the collective information of all global investors

#### However, cap-weighted indexes can

- Incorporate the collective fears of the market
- ▶ Result in large positions in 'over-valued' securities due to price-driven weights
- ▶ Become overly concentrated in the largest securities

#### Minimum Volatility strategies seek to address these weaknesses

- Capture the equity opportunity with less risk
- Exploit a well-known anomaly in market behavior

## **The Minimum Volatility Anomaly**

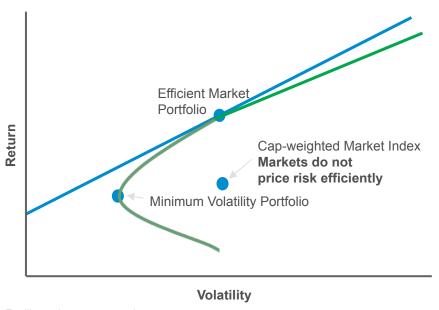
#### Higher return for higher risk?

- ▶ Modern portfolio theory tells us that there is an equity risk premium higher risk portfolios should earn a higher return.
- ▶ The "optimal" portfolio is the efficient market portfolio the highest return that can be earned for that level of risk.

#### But there seems to be an anomaly

- Empirically we observe that Minimum Volatility portfolios can provide more return per unit of risk than cap-weighted portfolios.
- ▶ Research¹ suggests existence of investors overpaying for higher beta stocks.
- Asset managers have little incentive to prefer low beta stocks given the level of "Active Risk" created.

# Efficient Frontier and Minimum Volatility Index Portfolio



For illustrative purposes only.

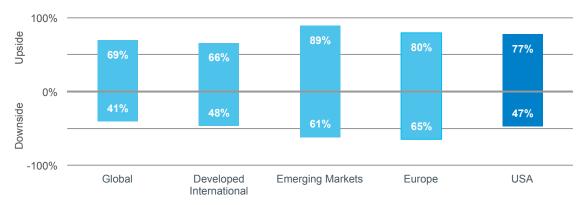
<sup>1.</sup> Baker, Malcolm P., Bradley, Brendan and Wurgler, Jeffrey A., Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly (March 2010). NYU Working Paper No. FIN-10-002. Available at SSRN: http://ssrn.com/abstract=1585031

## **MSCI Minimum Volatility Snapshot**

#### iShares MSCI Minimum Volatility Index Methodology Overview

Objective	Goal	Methodology inputs	Weighting methodology	# of constituents	Country / sector parameters	Risk model
Deliver low volatility returns while maintaining	Superior long term risk- ng adjusted returns relative	Risk and correlation	Mean-variance optimization	Dynamic	Style bias constrained	Yes – minimizing Barra Volatility
the exposure of the	to cap weighted, through	Factor exposures of the	-		Countries and Sectors	factor
parent index	lower portfolio volatility	relevant Barra Equity Model	Stocks are weighted based on contribution		constrained to +/- 5%	
			to total risk (portfolio		Individual securities	
		Variance and	variance) and		have a max weight of	
		Covariance	dependent on		1.5% or 20x cap weight	
			constraints		and min weight of 0.05%	

#### **Downside Protection, Upside Participation**



- Since inception, the MSCI MV Indices have captured more upside than downside relative to their standard indices.
- The chart at left displays the percentage of the upside and downside (relative to the standard index returns) that the MV indices have captured since December 2009.

Source: Morningstar. Based on monthly index returns from 12/1/09 – 12/31/14. MSCI USA MV Index incepted: 5/30/08, all other MSCI MV Indices above incepted: 11/30/09.

Index returns are for illustrative purposes only and do not represent actual iShares Fund performance. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.

## **MSCI Minimum Volatility Indices Methodology**

#### Barra GEML model captures effects of global common factors on portfolio return

- Optimization process that finds the best combination of stocks within stated constraints not necessarily the lowest volatility stocks
- ▶ The risk model uses *marginal contributions* to risk values to evaluate which assets are the most diversifying and concentrating to the portfolio's risk.



# Marginal contributions to active risk (MCAR) measures the correlation of an asset with respect to overall portfolio risk.

As a result, even stocks with higher relative volatility can lower risk when combined with other assets, especially those with lower correlations.

	90-day Realized Volatility	MCAR	Newmont Mining Corp	Pfizer Inc	Family Dollar Stores
Newmont Mining Corp	50.16%	-0.0011	1		
Pfizer Inc	16.20%	-0.0178	0.060	1	
Family Dollar Stores	7.30%	-0.0118	0.016	0.056	1

Source: MSCI Barra, BlackRock.

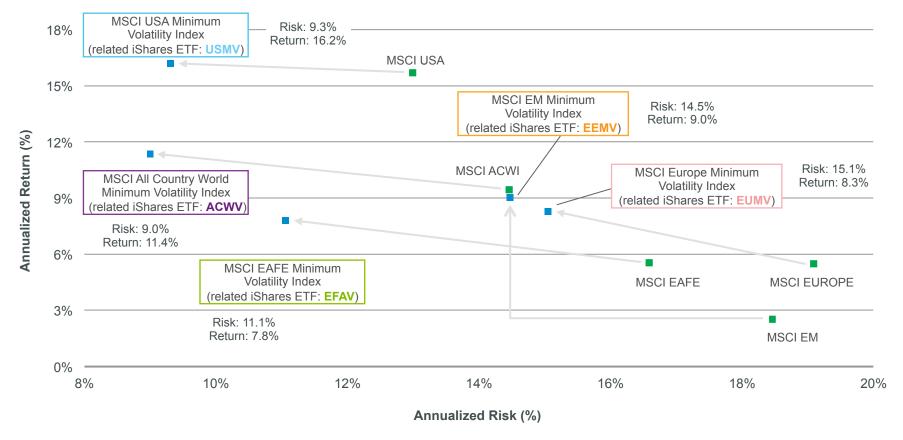
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## **Risk-Adjusted Return Index Profiles**

#### Minimum Volatility Strategies seek to provide

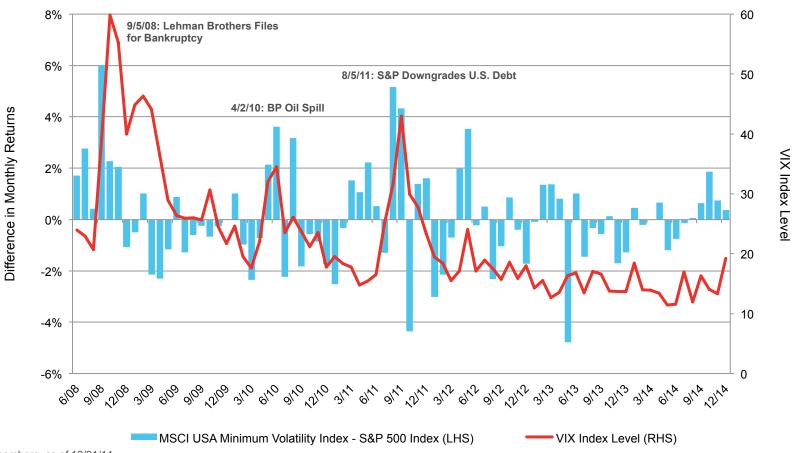
- ▶ Downside protection while maintaining some exposure to upside price movement.
- Targeted equity market returns with less variability.



Source: Morningstar and MPI Stylus. MSCI Minimum Volatility indexes incepted 5/30/08 (USA) and 11/30/09 (EM, EAFE, ACWI, EUROPE). Data shown based on index returns from 12/1/09 – 12/31/14. Index data are for illustrative purposes only and do not represent actual iShares Fund performance. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results. For actual iShares Fund performance, please visit www.iShares.com or request a prospectus by calling 1-800-iShares (1-800-474-2737).

## MSCI USA Minimum Volatility Index - S&P 500 Performance vs VIX Index Monthly Difference in Returns (June 2008 – December 2014)

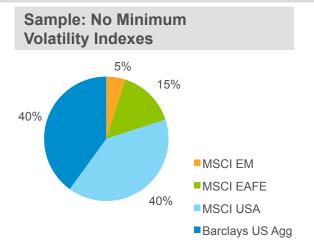
Minimum Volatility indices have performed best when market volatility was high.



Source: Bloomberg, as of 12/31/14.

The CBOE Volatility Index® (VIX®) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices. Index returns are for illustrative purposes only and do not represent actual iShares Fund performance. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.

## **Implementation Strategies**







	Sample Portfolio No Minimum Volatility Indexes	Sample Portfolio With Minimum Volatility Indexes			
Annualized return (Since inception)	9.16	9.81			
Annualized standard deviation (Since inception)	8.05	5.76			
Sharpe ratio	1.12	1.64			
Max drawdown return	-9.50	-3.82			
# Max drawdown months	5	2			

- Potentially reduce risk of the overall portfolio.
- Retain risk budget and allocate additional assets to high conviction exposures.

Sample: Minimum

Introduce new asset classes to risk averse clients.

Portfolio Inception Date 12/1/09.

Sources: BlackRock, Morningstar and MPI Stylus. 12/1/09 – 12/31/14. Sample portfolios are for illustrative purposes only, and do not represent a recommendation of any security or asset allocation strategy. Returns are hypothetical are not representative of any funds of investments.

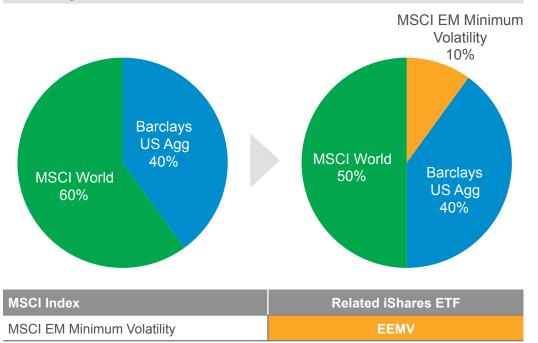
Standard deviation measures how dispersed returns are around the average. A higher standard deviation indicates that returns are spread out over a larger range of values and thus, more volatile. Sharpe Ratio is a measure of an investment's return per unit of risk. It is the investment's excess return relative to the risk free rate, divided by the investment's standard deviation. A higher Sharpe Ratio implies greater efficiency.

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## Implementation Strategies (Cont'd)

# Sample: Replace 10% of equity exposure with MSCI EM Minimum Volatility Index



	Sample Portfolio: No EM Exposure	Sample Portfolio: with EM Min Vol Exposure			
Annualized return (since inception)	8.19	8.06			
Annualized standard deviation (Since inception)	8.30	8.16			
Sharpe ratio	0.98	0.98			

Sample Portfolio Inception Date: 12/1/09.

Sources: Morningstar and MPI Stylus, as of 12/31/14.

#### **Potential Benefits**

- Implement high conviction areas for up-capture, such as Emerging Markets.
- Expose a conservative portfolio to a new asset class, while seeking to maintain same risk budget.
- Further diversify with unique exposures to additional countries.

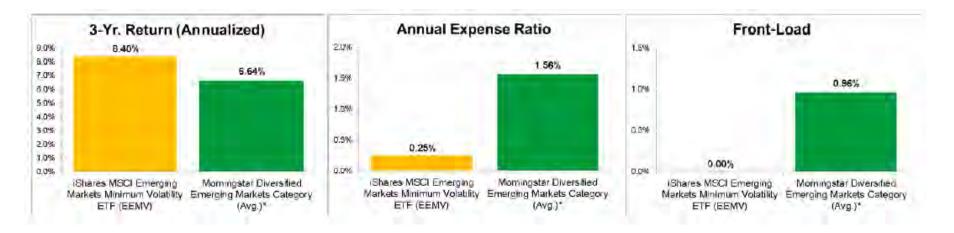
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## Implementation Strategies (Cont'd)

- Potentially replace underperforming active funds.
- Seek to reduce risk while harnessing return.
- Lower expense and daily transparency vs. active funds.



Sources: Bloomberg, Morningstar. 11/30/11 – 11/30/14. Morningstar category performance average for Diversified Emerging Markets mutual fund category.

The performance quoted represents past performance and does not guarantee future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when sold or redeemed, may be worth more or less than the original cost. Current performance may be lower or higher than the performance quoted.

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#### Standardized Performance as of 12/31/14

Fund Name	Fund Inception Date	Expense Ratio	30-Day SEC Yield With/Without Waiver	1-Year	5-Year	10-Year	Since Inception
iShares MSCI Emerging Markets Minimum Volatility ETF (EEMV)	10/18/2011	0.25%1	2.52%/2.09%				
Fund NAV Total Return				0.87%			7.38%
Fund Market Price Total Return				-0.16%			7.22%
Index Total Return				1.10%			7.63%

The performance quoted represents past performance of specific funds and does not guarantee future results for such funds. Investment return and principal value of an investment will fluctuate so that an investor's shares, when sold or redeemed, may be worth more or less than the original cost. Current performance may be lower or higher than the performance quoted. Performance data current to the most recent month end may be obtained by visiting www.iShares.com or www.blackrock.com. Shares of iShares Funds are bought and sold at market price (not NAV) and are not individually redeemed from the Fund. Brokerage commissions will reduce returns. Market returns are based upon the midpoint of the bid/ask spread at 4:00 p.m. eastern time (when NAV is normally determined for most iShares Funds), and do not represent the returns you would receive if you traded shares at other times.

<sup>1</sup>BlackRock Fund Advisors ("BFA"), the investment adviser to the Funds and an affiliate of BlackRock Investments, LLC, has contractually agreed to waive a portion of its management fees through 12/31/15 for EEMV.

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