STATE STREET GLOBAL ADVISORS

To Time or Not to Time? How to Structure an Emerging Markets Investment Program

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SSgA Institute

A Program for Capital Insight & Learning

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Summary

- The Great Contraction has enhanced the secular case for investing in emerging markets
- At roughly 8.5 times next twelve month earnings, current EM equity valuations are not demanding. However a disorderly default/financial crisis in the Eurozone will inevitably impact emerging markets. Emerging economies can withstand a mild recession in the US and Europe, but not a serve contraction.
- Assuming a ten year average forward p/e 10.7, current emerging market valuations imply a roughly 20% decline in earnings
- The emerging markets investment equity and debt opportunity set, including EM Small Cap, Frontier Markets, China A Shares and local currency debt continues to grow; in this context, China's gradual capital account liberalization will over time reshape global finance
- Investors should reduce the home bias. A neutral weighting in emerging market equities is at least equal to the roughly 14% current MSCI ACWI weighting.

Summary (Continued)

- Public securities markets in emerging markets face a potential absorptive capacity problem. A 1% shift in global equity and debt holdings implies a roughly $485 billion shift to emerging markets.

- Emerging equity returns are distinctly non-normal, presenting both opportunity and pitfalls for Tactical Asset Allocation (TAA). Large institutions should consider structuring a well-diversified equity emerging market investment program, including passive, alternative beta, active, and TAA strategies.

- In structuring an emerging market investment program, investors may wish to think in terms of factor exposures as well as asset classes

As of September 30, 2011
Source: FacSet, IMF, Morgan Stanley

Background

A few (out of many) lessons for investors from the Great Panic and Great Recession

- The assumption of continuous liquidity is false
- Broad based asset class diversification is insufficient to prevent large wealth losses
- Leverage amplifies losses
- Behavioral bias and herding can lead to substantial deviations from fair value in asset prices
- Asset allocation needs to take into account liability structure. Pension plans tend to be short duration and to lack adequate volatility spike hedges.
- Econometric analysis needs to be supplemented by historical and scenario analysis
- Asymmetric information is a pervasive characteristic of financial markets, and mis-aligned incentives can lead to financially and socially sub-optimal outcomes
- A disciplined rebalancing approach can offset the inclination to sell at market lows

Characteristics of Emerging Equity Markets

Some characteristics of Emerging Equity Markets include:

- Diversity
- Volatility
- Stock Concentration
- Synchronicity
- Time-Varying liquidity
- Higher transaction costs than developed markets
- In some cases, less transparency and analyst coverage than developed markets

Potential for:

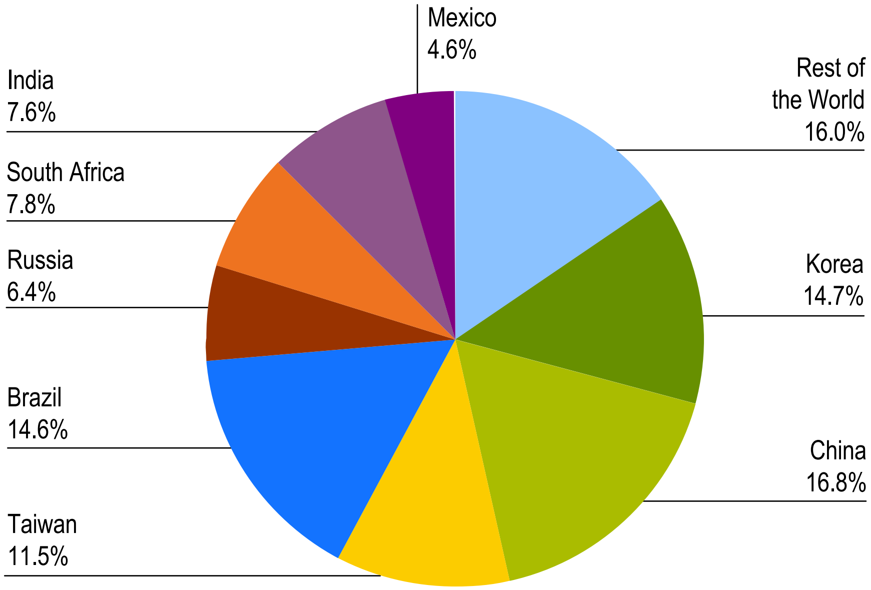
- Return enhancement
- Diversification
- Broader investment opportunity set

Diversification does not ensure a profit or guarantee against loss.

What is an Emerging Market?
What an Index Provider Says It Is!

The BRICS account for roughly half of the MSCI EM Index

Larger Markets



Regional Weights	Benchmark Weights
Asia	59.3%
Europe	10.0
Latin America	22.3
Mideast/Africa	8.4

Smaller Markets

Country	Weight	Country	Weight
Asia		**Europe**	
Indonesia	2.9%	Czech Republic	0.4%
Malaysia	3.4	Hungary	0.3
Philippines	0.6	Poland	1.5
Thailand	1.8	Turkey	1.5
Latin America		**Mideast/Africa**	
Chile	1.6	Egypt	0.4
Colombia	0.9	Morocco	0.2
Peru	0.6		

- US $3 trillion in market capitalization
- 825 companies
- 21 countries
- Roughly 13% of the MSCI All Country World Index

Source: MSCI via FactSet as of September 30, 2011. The MSCI EM Index is a trademark of MSCI Inc. Countries and weights are as of the date indicated, are subject to change and should not be relied upon as current thereafter.

Energy, Materials and Financials Comprise Substantially More of the Capitalization of Emerging Markets Than Developed Markets

Sector Weights	MSCI World	MSCI EM
Consumer Discretionary	10.4	8.1
Consumer Staples	11.0	7.5
Energy	**10.9**	**13.8**
Financials	**18.1**	**23.7**
Health Care	10.5	1.1
Industrials	10.7	6.6
Information Tech	12.2	12.9
Materials	**7.3**	**13.9**
Telecommunication	4.6	8.7
Utilities	4.2	3.5

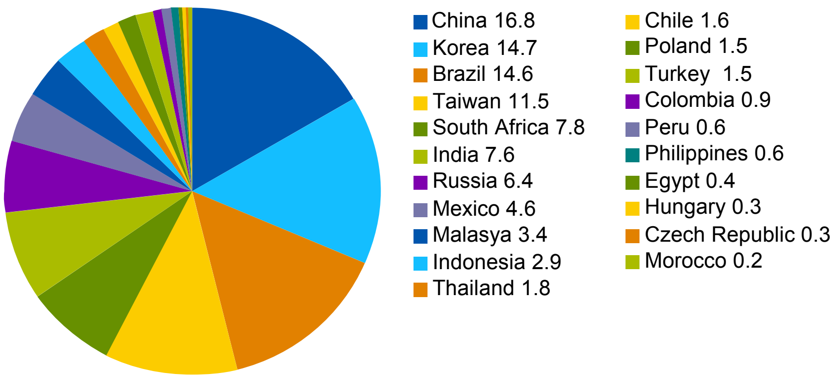
As of September 30, 2011
Source: MSCI via FactSet
Weights are as of the date indicated, are subject to change and should not be relied upon as current thereafter.

The Emerging Opportunity Set Is Broadening: EM Small Cap Is Concentrated in Asia

Approximate country weights

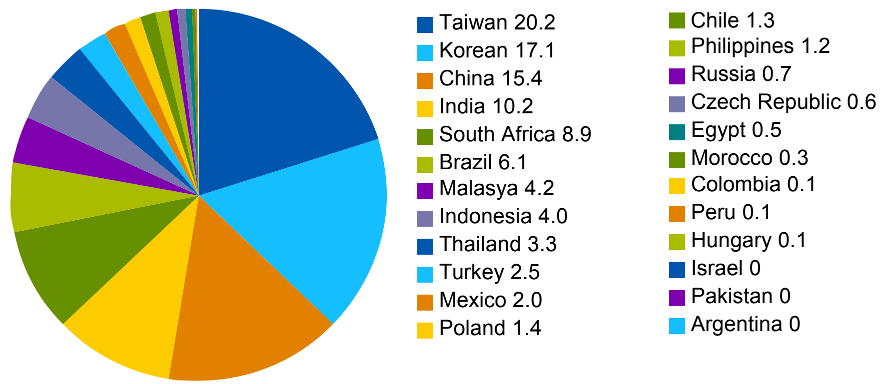
MSCI Emerging Markets

Percent of global investable market capitalization: 13%



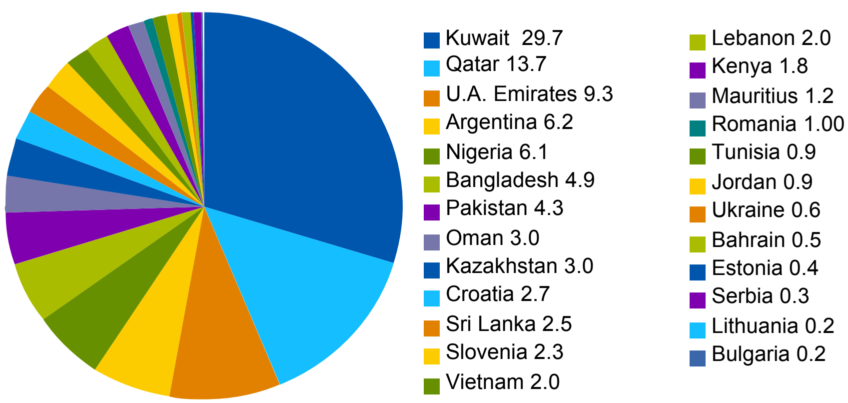
MSCI Emerging Markets Small Cap

Percent of global investable market capitalization: 2%



Custom Frontier Markets Index

Percent of global investable market capitalization: .8%



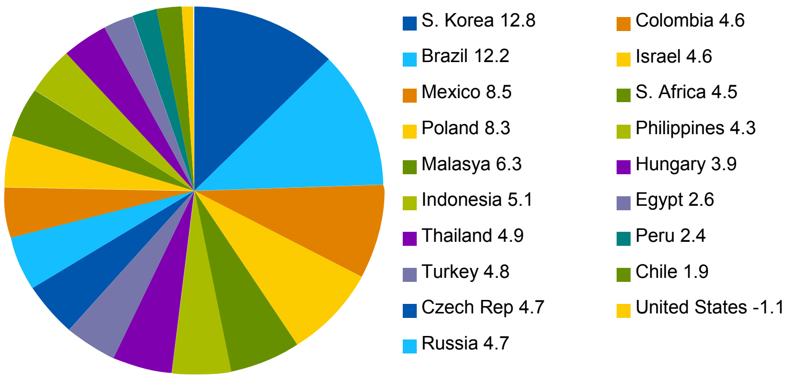
Source: MSCI via FactSet, SSgA - As of September 30, 2011
Countries and Weights are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

But Local Currency Bonds Are More Regionally Diversified

Approximate country weights

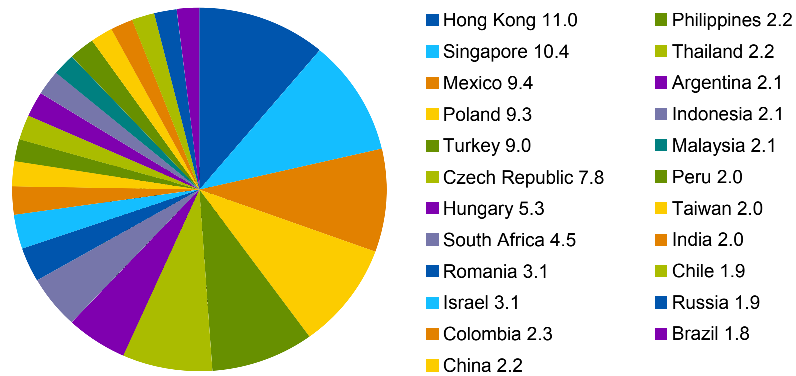
Barclay's EM Local Currency Diversified Index

Percent of global treasury bonds*: 7%



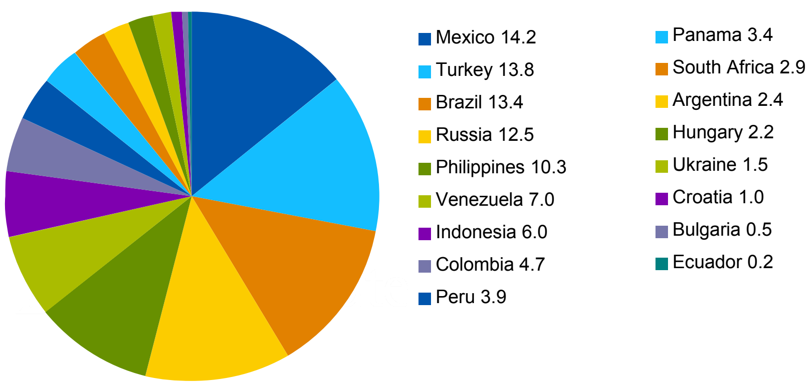
JP Morgan Emerging Local Markets Index+ (ELMI+)

(local currency denominated money market instruments)



JP Morgan Emerging Markets Bond Index Global Diversified (External Currency)

Percent of advanced economy government bonds: 1%

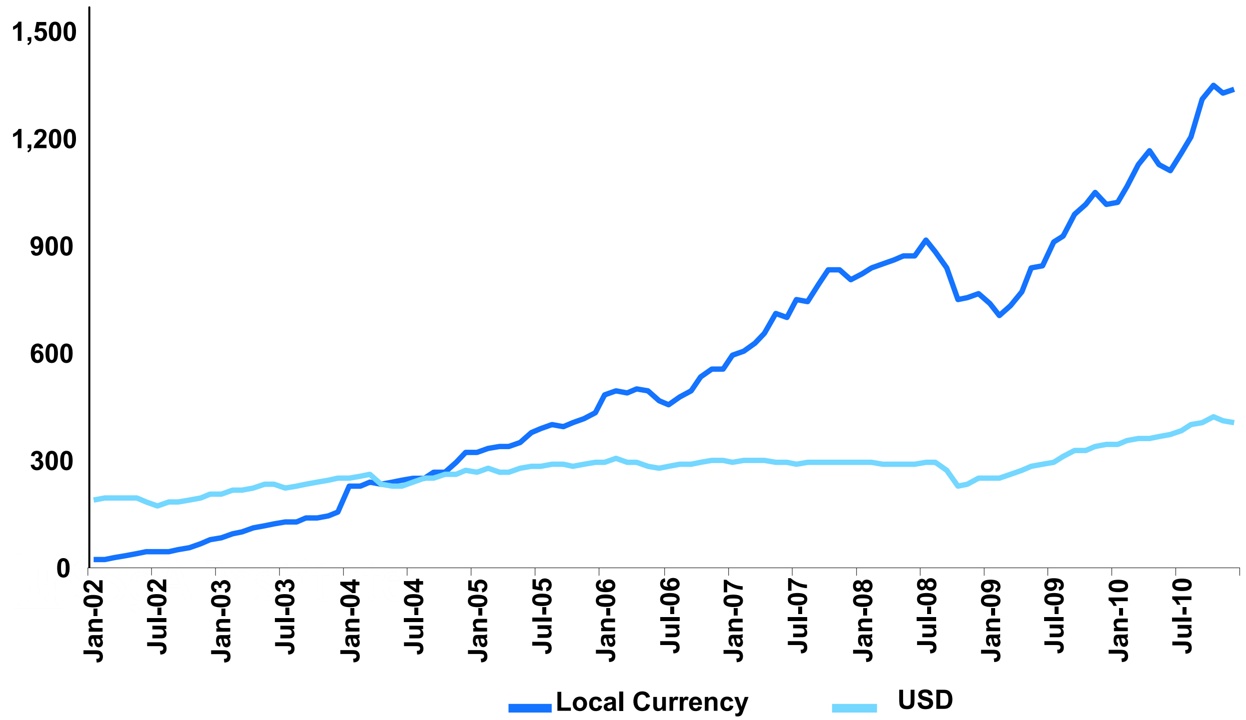


* Global treasury bonds as represented by Barclays Capital Global Treasury Bond Index - As of September 30, 2011
Countries and Weights are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

Emerging Market Local Currency Bond Markets Are Growing

- Local market instruments made up 72% of trading volume in Q3 2010
- Turnover in local currency EMD stood at US$1.4 trillion in the same period

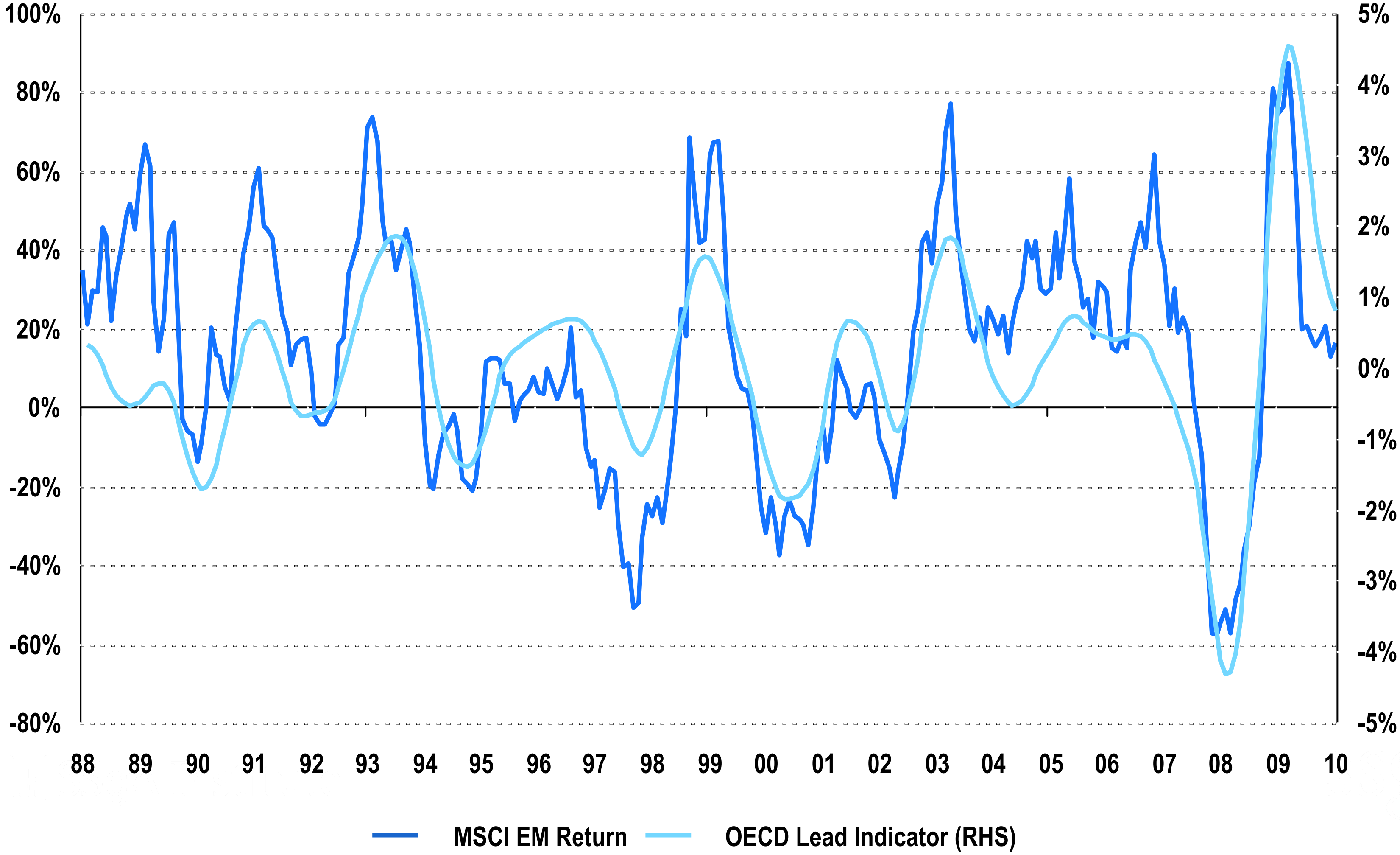
Emerging Markets Debt Composition (USDbn)



Source: ING, JP Morgan, EMTA., Rexiter Capital Markets

Emerging Market Equity Returns Tend to Track Global Output

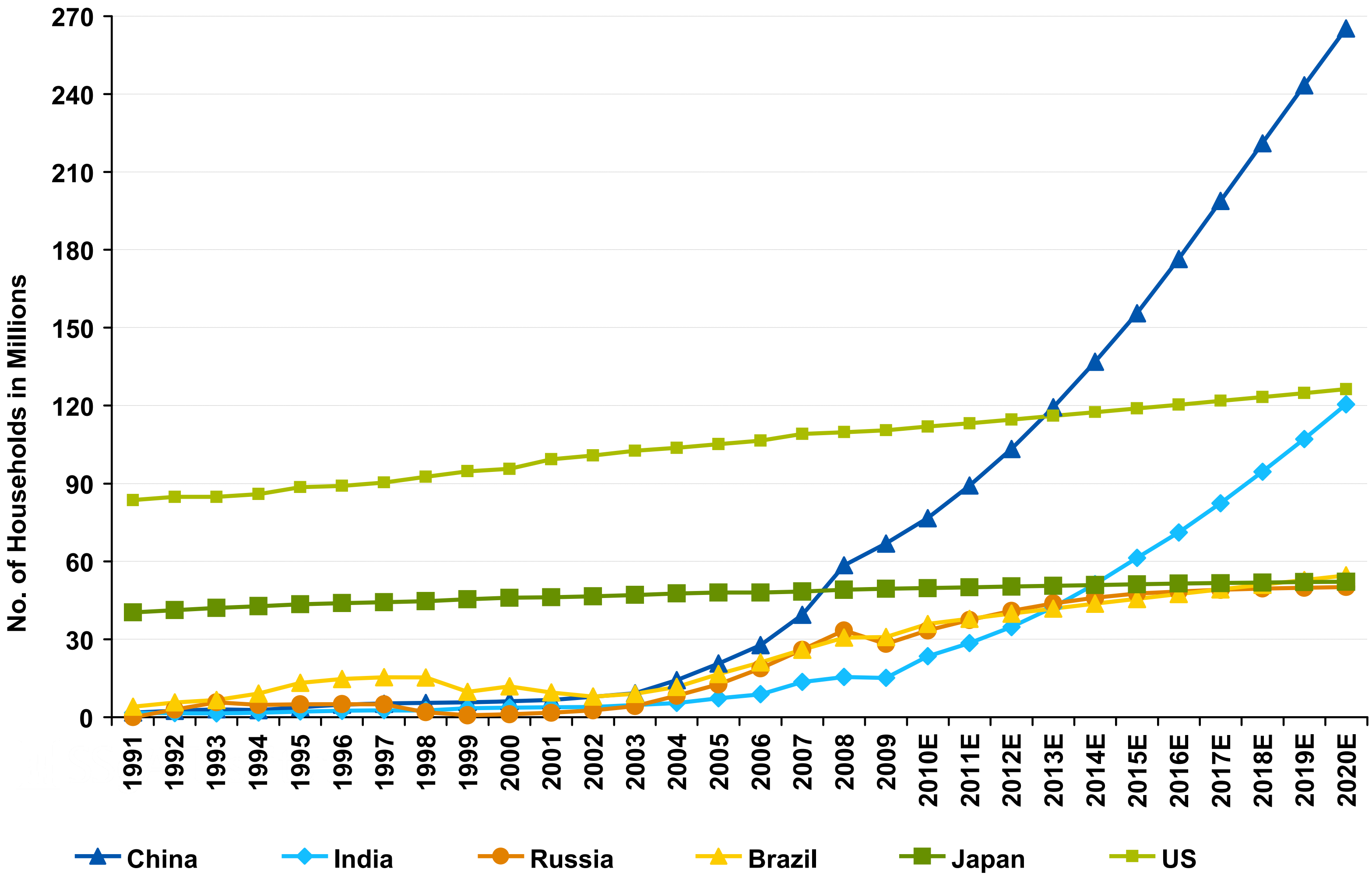
MSCI EM Equity returns and OECD leading indicator



Data as of December 31, 2010.
Source: FactSet and UBS
Past performance is not a guarantee of future results.

Domestic Demand is Growing Rapidly in the BRICS

Number of households with disposable income over $10,000

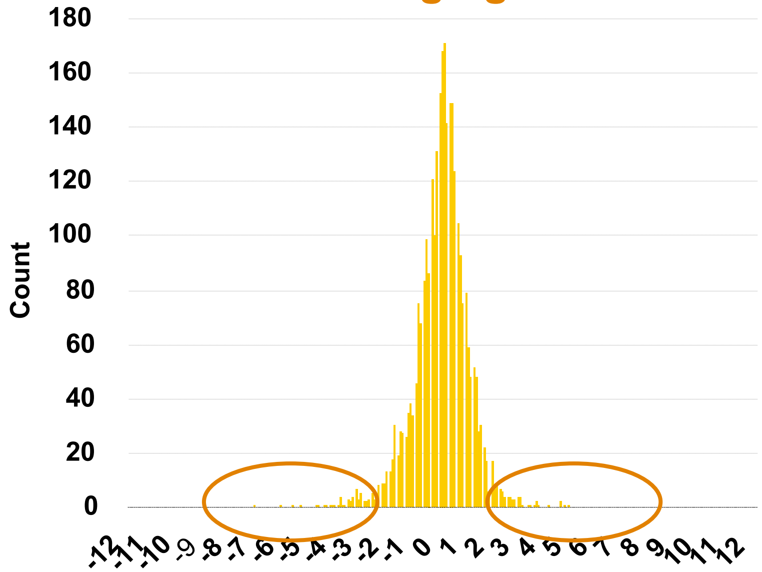


Source: Euromonitor, Morgan Stanley

Emerging Market Returns Show Excess Kurtosis

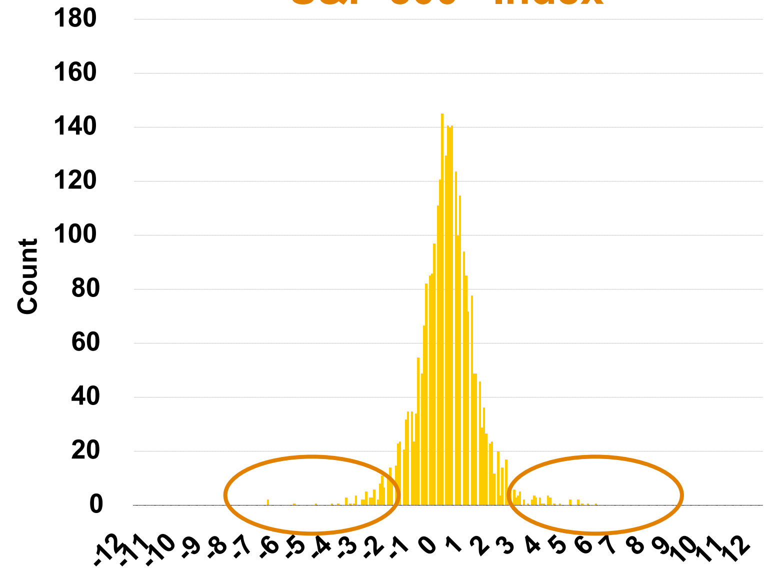
Daily MSCI Emerging Markets and S&P 500 Index returns Pre-Crisis, January 1, 1996 to May 31, 2007

MSCI Emerging Markets



% Return	
Mean	0.03
Standard Deviation	1.04
Skewness	-0.59
Kurtosis	7.78
Max	4.84
Min	-7.16

S&P 500® Index

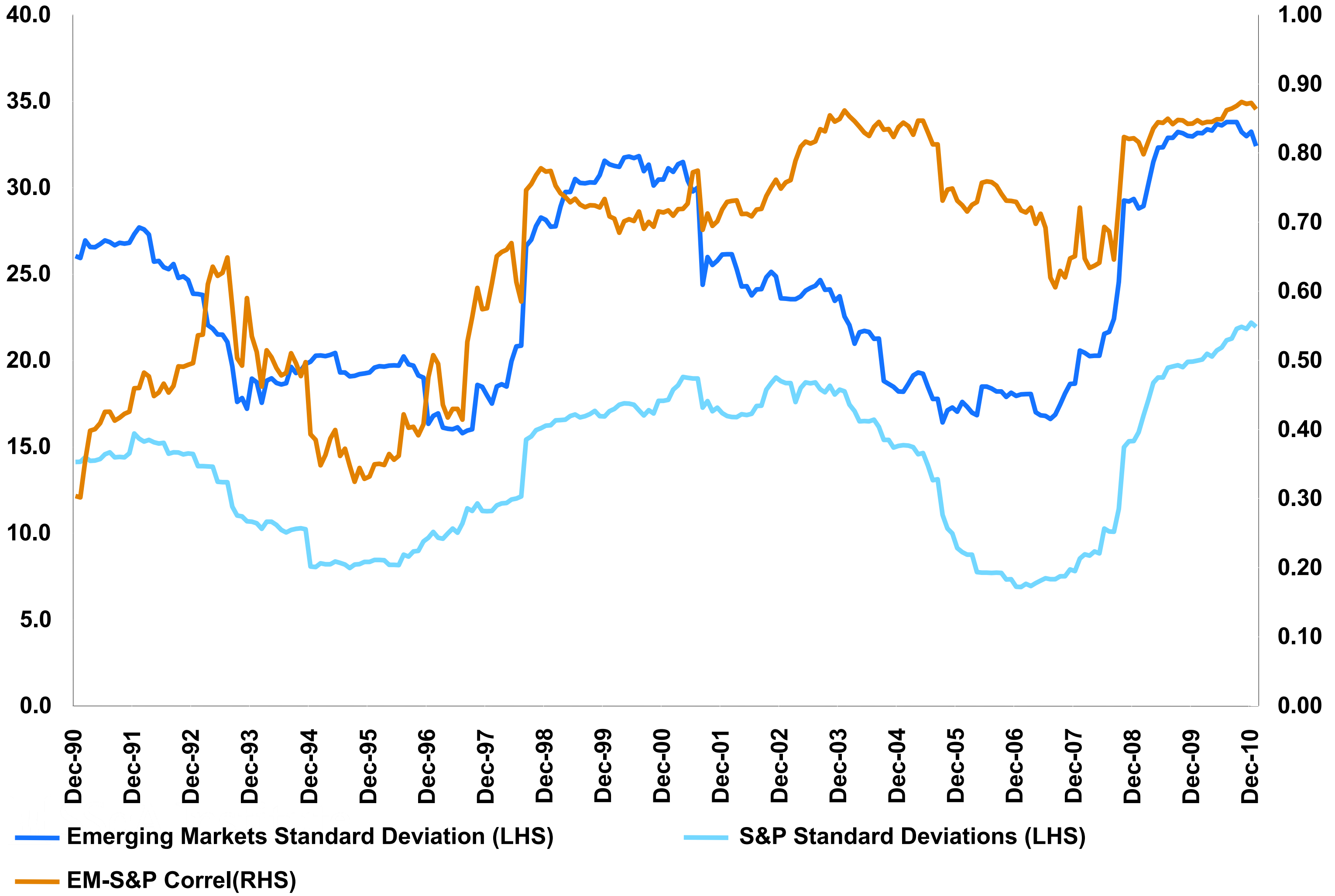


% Return	
Mean	0.04
Standard Deviation	1.10
Skewness	0.11
Kurtosis	9.28
Max	5.73
Min	-6.87

Source: Bloomberg
Past performance is not a guarantee of future results
Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.

As Emerging Markets Correlations Have Increased

Rolling 36 month correlations MSCI EM with the S&P 500



Source: FactSet

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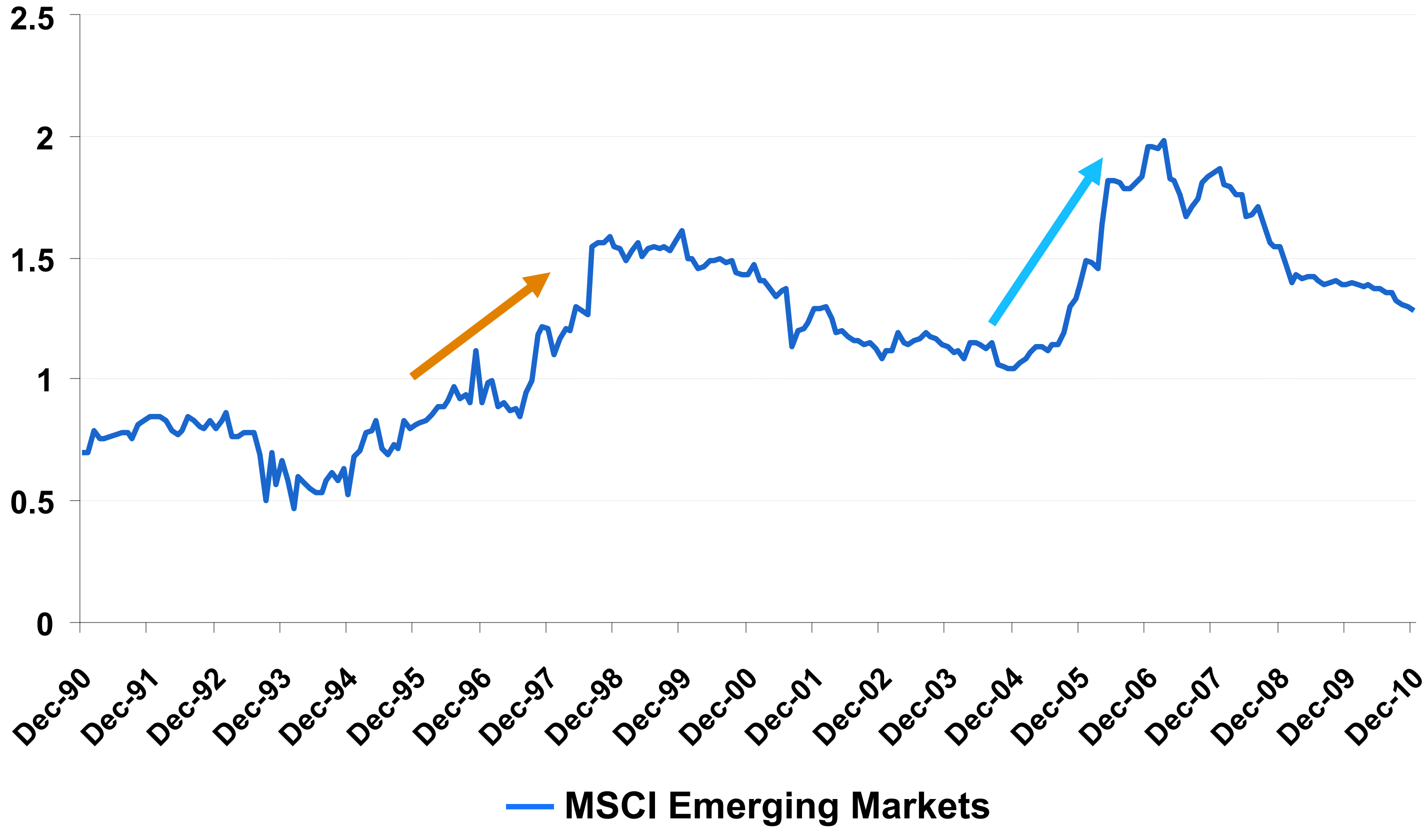
The Beta of MSCI EM to MSCI World Has Risen over Time

Rolling 36 month Beta versus MSCI World



Source: Style Advisor
Past performance is not a guarantee of future results.

Mean Reversion Theory Would Suggest That the Performance Difference Between Emerging and Developed Will Narrow

	December 31, 1987 – December 31, 2010			December 31, 1999 – December 31, 2010		
	S&P 500®	**MSCI World**	**MSCI EM**	**S&P 500®**	**MSCI World**	**MSCI EM**
Annualized Return	9.80	7.40	14.10	0.40	1.30	10.90
Annualized Standard Deviation	14.90	15.40	24.20	16.40	16.90	24.50
Beta to MSCI World	0.88	1.00	1.14	0.94	1.00	1.27
Correlation to MSCI World	0.90	1.00	0.76	0.97	1.00	0.87
Sharpe Ratio	0.38	0.21	0.41	-0.05*	0.03*	0.56*
Sortino Ratio	0.56	0.31	0.59	-0.07	0.05*	0.73*

*For ten years ended December 31, 2010 (US Dollars)
Source: Style Advisor
Past performance is not a guarantee of future results.
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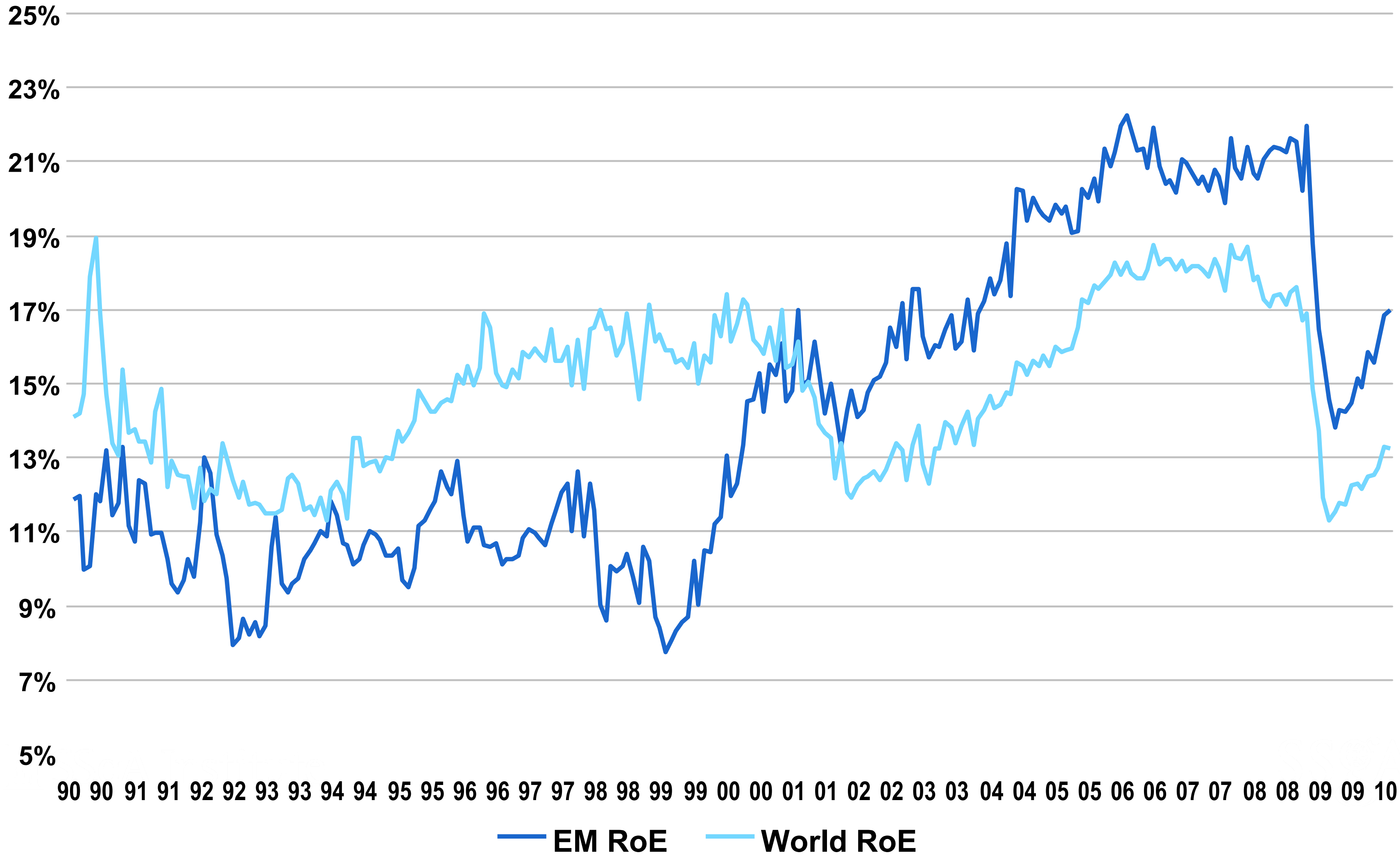
But Now Many Developed Countries Face a Substantial Fiscal Adjustment

	Current WEO Projections % of GDP — 2010			Required Adjustment between 2010 and 2020 (% of GDP)[2]
	Gross Debt	Primary Balance (PB)[1]	Structural PB	
Japan	227.0	-8.8	-6.9	13.4
United Kingdom	81.7	-10.9	-7.8	12.8
Ireland	75.7	-11.1	-8.2	11.8
Spain	66.6	-11.0	-5.8	10.7
Greece	115.0	-2.0	-2.2	9.0
United States	93.6	-8.0	-3.7	8.8
Portugal	81.9	-3.9	-2.9	6.5
France	85.4	-6.2	-2.1	6.1
Belgium	102.7	-2.3	-0.4	5.6
Austria	74.9	-3.1	-2.1	5.1
Italy	120.1	-0.7	1.0	4.8
Iceland	137.7	-2.3	0.4	4.4

1 Excludes losses from financial system support measures in the US
2 Primary balance is assumed to improve gradually from 2011–2020 Column shows adjustment necessary to bring debt ratio to 60% in 2030
Japan scenarios based on net debt, and assume a target of 80% of GDP The analysis makes simplifying assumptions.
Source: IMF.
April 2010 WEO and IMF staff estimates

And Return On Equity in Emerging Markets Continues to Exceed Return On Equity in Developed Markets

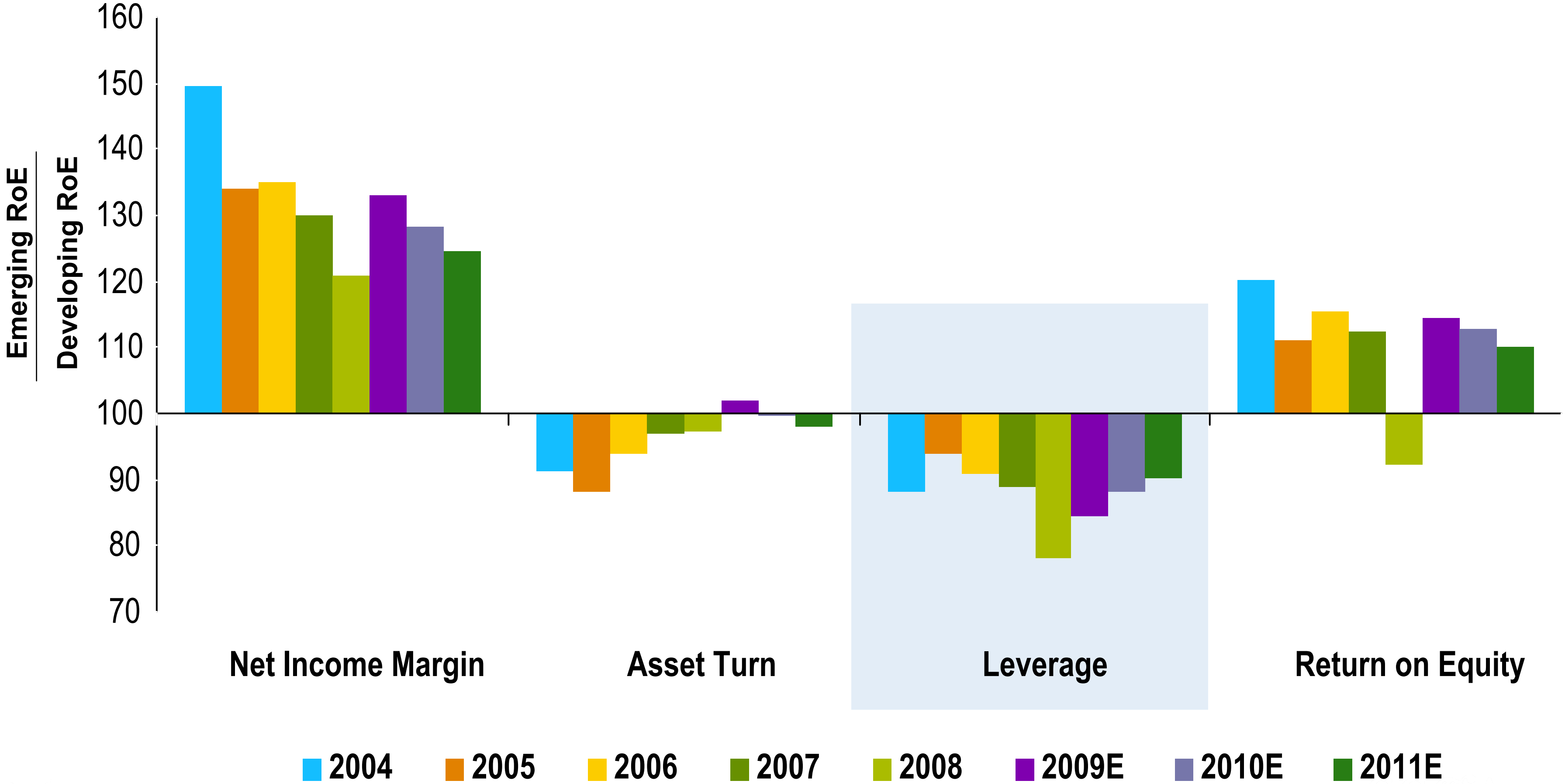
Global Return on Equity



Data as of December 31, 2010.
Source: UBS, MSCI
Past performance is not a guarantee of future results.

Corporations in Emerging Markets Tend to Have Higher Margins and Less Leverage Than in Developed Markets

GEM versus World Dupont Formula Composition of Returns



Source: UBS, World Inc. GEM Inc.
Past performance is not a guarantee of future results.

To Time or Not to Time?

Pro

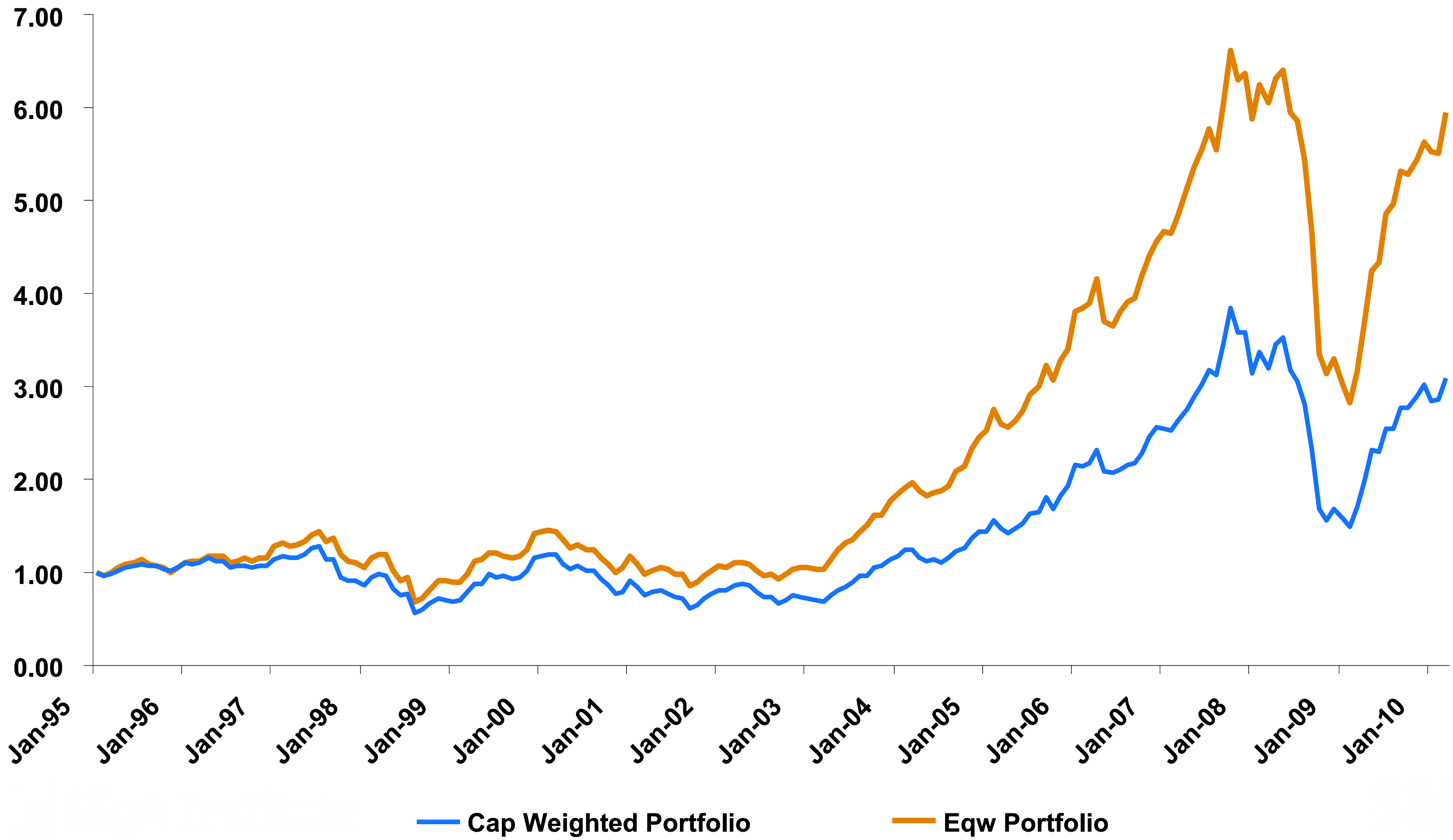
- Deviations from fair value occur from time to time
- Large payoffs to skill
- Potential uncorrelated alpha source
- Reasonable place to spend a risk budget
- Avoidance of the Regret Syndrome

Con

- High transaction costs, particularly in small cap and frontier
- Difficulty in maintaining and finding a consistently exploitable signal
- Risk budget may possibly be spent with greater assurance elsewhere
- What is the value added relative to quarterly rebalancing?

Another Possible Approach: Alternative Beta

Compound returns transaction costs = 150bp



Source: SSgA, MSCI
Past performance is not a guarantee of future results.

Alternatives to Cap Weighting

Examples of how alternative weighting approaches map to factors

Alternative Weighting Approach	Lower Valuation	Lower Volatility	Smaller Size	Positive Momentum
Fundamental Indexing™ (RAFI, GWA)	☑			
FTSE ActiveBeta™	☑			☑
SSgA Rules-based (equal-weighted low value)	☑		☑	
Minimum Variance		☑		
EDHEC Risk Efficient Index		☑	☑	
Equal-Weighted			☑	

The information contained above is for illustrative purposes only.

Low Beta Stocks Appear to Outperform High Beta Stocks

MSCI Emerging Markets Index, 1995 – 2009

Beta Range	Average Monthly Returns (%)	Annualized Performance (%)	Average LT EPS Growth	Average Number of Analysts
<0.4	1.13	14.46	11.9	5.1
0.4-0.6	0.74	9.22	14.3	4.6
0.6-0.8	0.74	9.22	16.1	4.4
0.8-0.10	0.78	9.71	18.8	4.8
1.0-1.2	0.86	10.83	22.0	5.5
1.2-1.4	1.09	13.84	20.5	6.3
1.4-1.6	0.70	8.77	21.7	6.5
1.6-1.8	0.60	7.47	19.6	6.0
1.8-2.0	-0.06	-0.75	18.4	5.7
>2.0	-0.88	-10.08	18.7	6.5

- High beta stocks are associated with glamour
  - High long term growth expectations
  - High analyst coverage
  - High daily turnover
- Glamour attracts crowds, leading to future underperformance

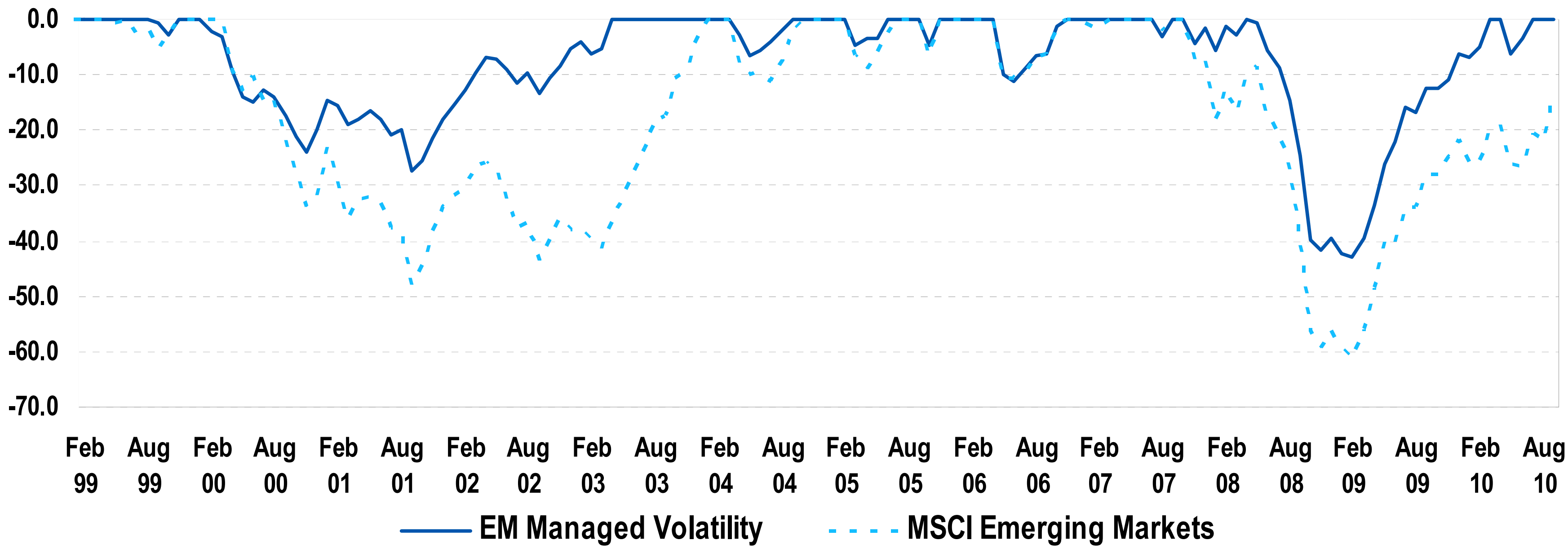
Source: SSgA
* Universe: MSCI EM Index. Period: January 1999 – December 2009.
Past performance is not a guarantee of future results.
Performance returns for periods of less than one year are not annualized.

The Objective Is to Reduce Drawdowns

EM Managed Volatility — Drawdown (Simulated Results)

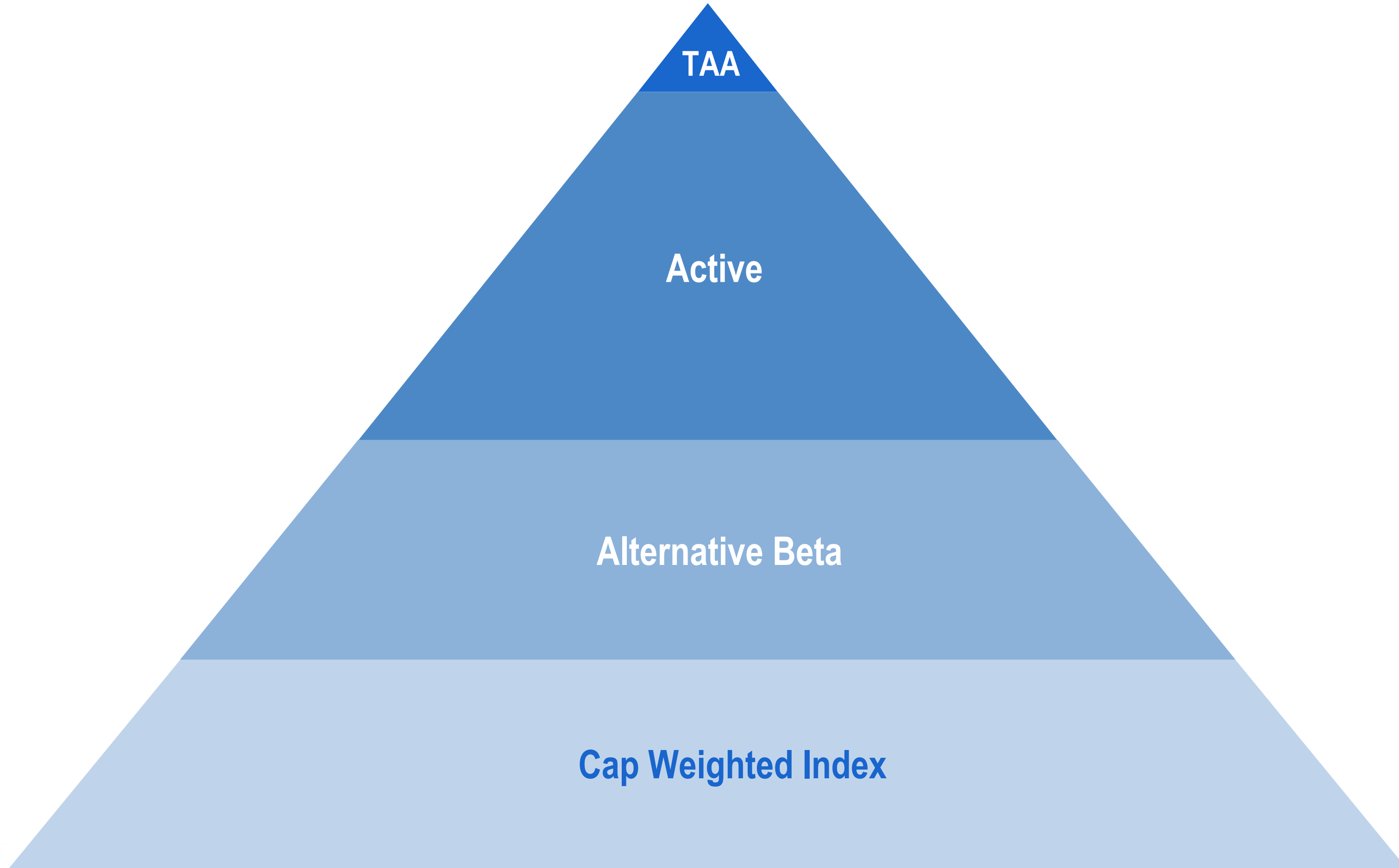
Drawdown

February 1999 – August 2010



Source: SSgA
The simulated performance shown is not indicative of actual future performance, which could differ substantially.
Please see the Appendix for additional Simulation Disclosure.

One Possible Emerging Market Equity Program Structure



Additional Considerations: Emerging Market Equity and Debt Share Common Factor Exposures

Background

- Rapid growth in the emerging market opportunity set:
  EM Small Cap, China A Shares, Frontier Markets, EM Corporate Debt, Real Estate, Alternatives

Problem

- Common factors can impact EM Debt and Equity Markets
- Common exposures can give rise to unintended risks

Possible Approach

- Stress test the portfolio and carefully analyze factor exposures
- Risk profile and optimize at the security level rather asset class level
- Can still optimize at the total portfolio security level, but within constrained asset class weights if necessary

There Is Still a Diversification Benefit to Emerging Markets Investing, But in a Crash Correlations Increase

Correlations of Emerging Market Asset Classes

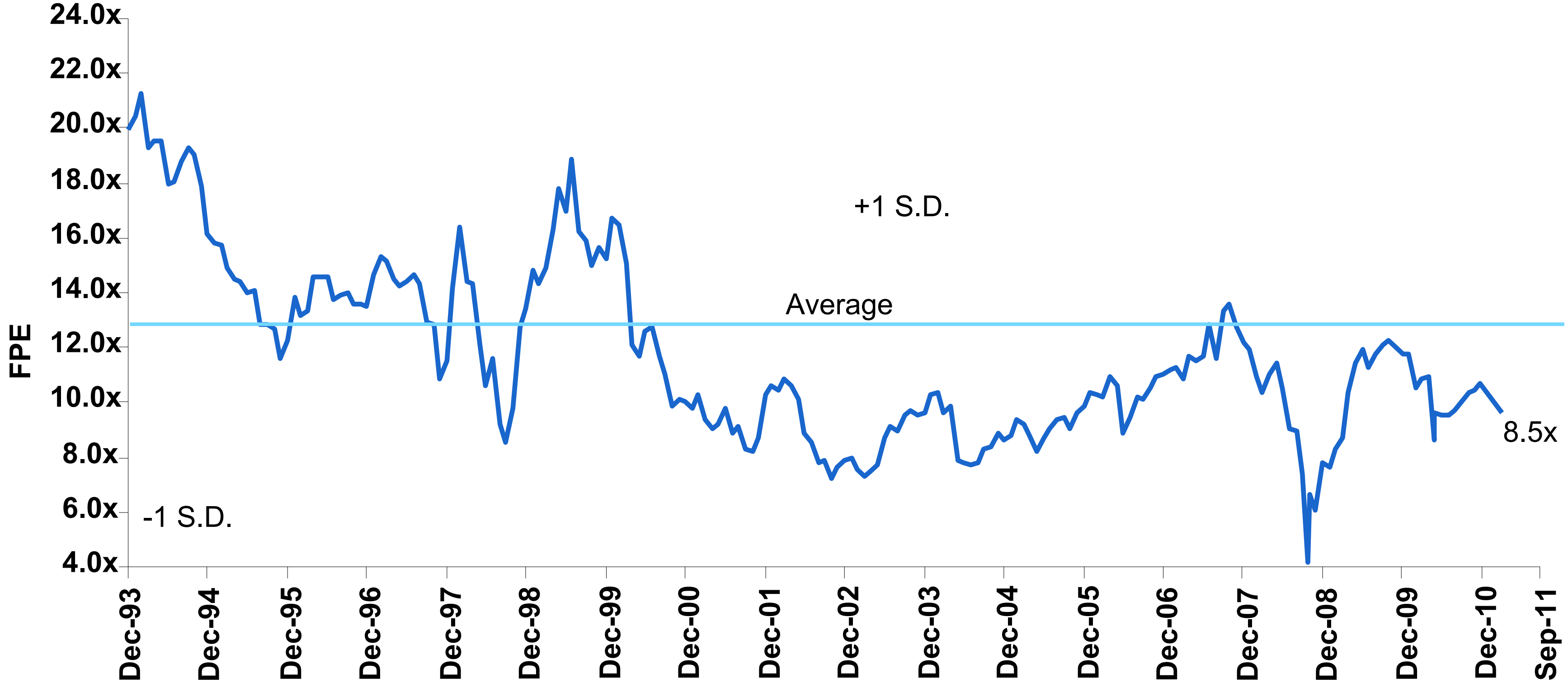
June 2002 — September 2011

	Emerging Markets	Local Currency Debt	Commodities	Dollar Index	Hard Currency Debt	China A Shares	Frontier Markets	MSCI World
Emerging Market Equities	1.00	0.78	0.58	-0.51	0.65	0.43	0.60	0.90
Local Currency Debt	0.78	1.00	0.57	-0.81	0.65	0.33	0.61	0.77
Commodities	0.58	0.57	1.00	-0.54	0.33	0.30	0.52	0.48
Dollar Index	-0.51	-0.81	-0.54	1.00	-0.46	-0.34	-0.42	-0.53
Hard Currency Debt	0.65	0.65	0.33	-0.46	1.00	0.26	0.41	0.63
China A Shares	0.43	0.33	0.30	-0.34	0.26	1.00	0.22	0.35
Frontier Markets	0.60	0.61	0.52	-0.42	0.41	0.22	1.00	0.61
MSCI World	0.90	0.77	0.48	-0.53	0.63	0.35	0.61	1.00

Source: Factset
Past performance is not a guarantee of future results. Diversification does not ensure a profit or guarantee against loss.

Equity Valuations in Emerging Markets Are Not Demanding by Historic Norms

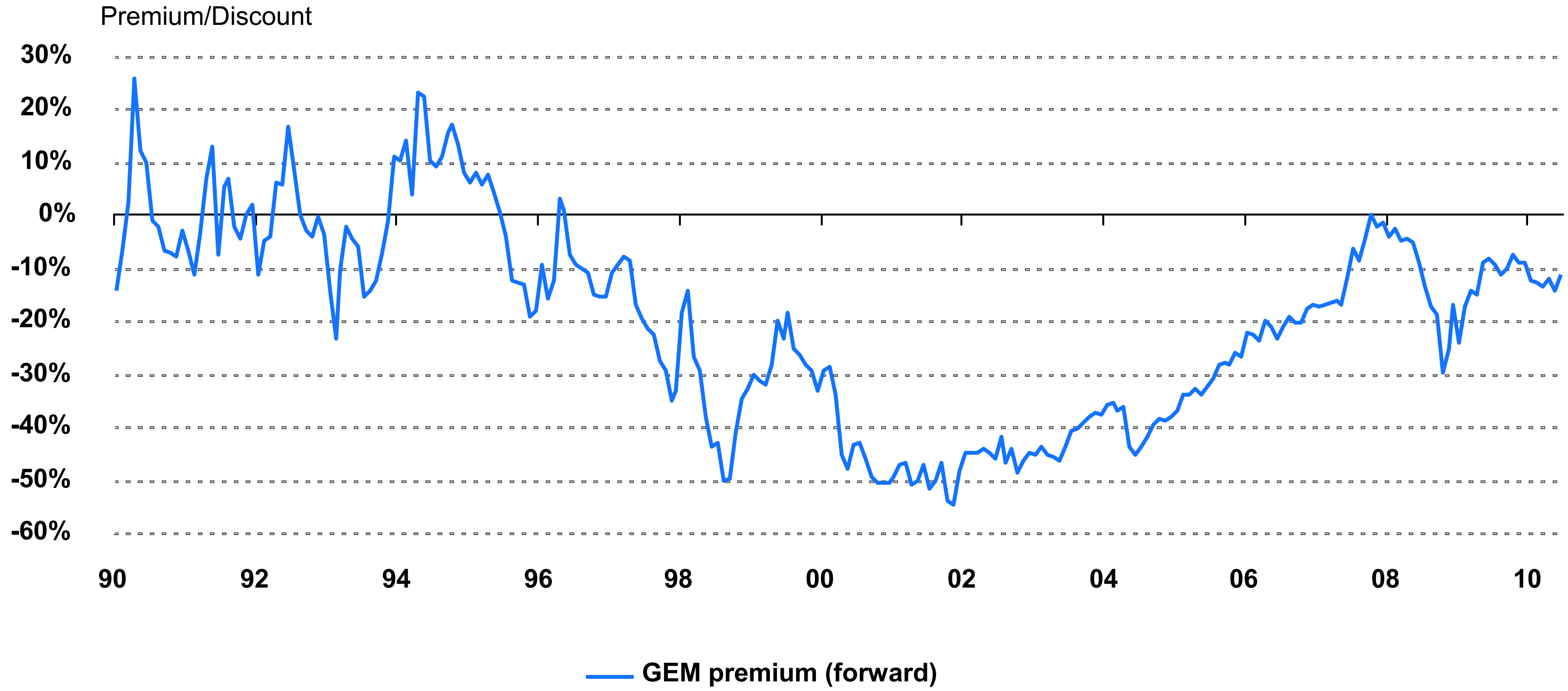
The 12 Month EM Forward PE Over Time



Source: Morgan Stanley
As of September 28, 2011
For illustrative purposes only.

What is the Equilibrium EM/DM Forward P/E Ratio?

EM Forward PE, Discount to the World



Source: FactSet and Morgan Stanley
As of August 12, 2011
For illustrative purposes only.

What is the Appropriate PE for Emerging Market Stocks?

A Gordon Growth model can be a starting point for analysis

$$P_0 = \frac{D_1}{R-g} = \frac{Pay * E_1}{(R_f + ERPB) - g} = \frac{Pay * E_1}{(R_f + ERPB) - (1 - Pay)ROE}$$

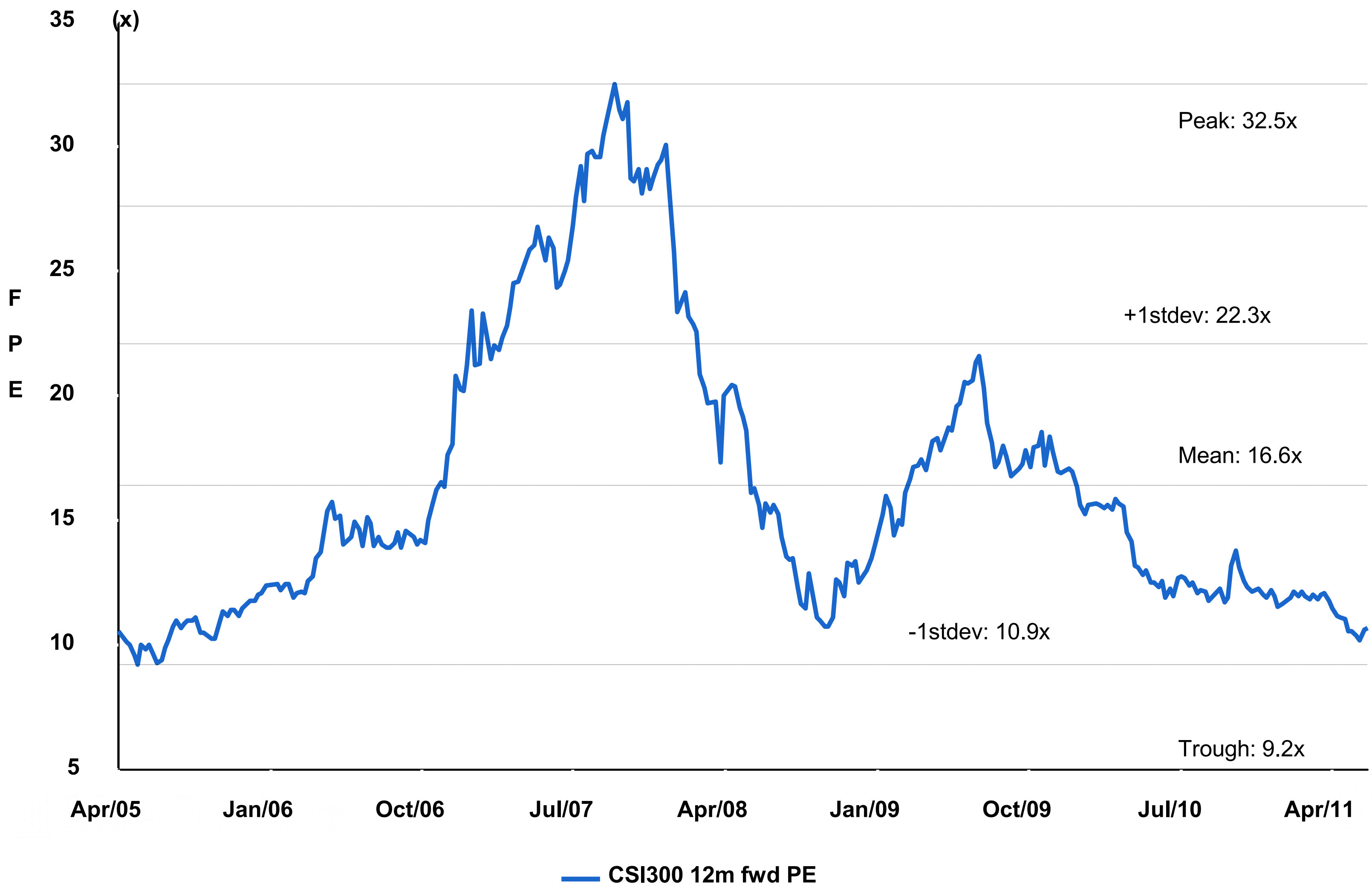
Therefore: $$\frac{P_0}{E_1} = \frac{Pay}{R-g}$$

Where:

Po	=	Price of the stock
D1	=	Dividend expected in year 1
R	=	Cost of Equity or required return
g	=	Long term earnings growth rate
Pay	=	Payout ratio
E1	=	Earnings in year 1
Rf	=	Risk Free Rate, composed of a real term and an inflation component
ERPB	=	Equity Risk Premium relative to bonds demanded to hold equities
ROE	=	Return on equity

The information contained above is for illustrative purposes only.

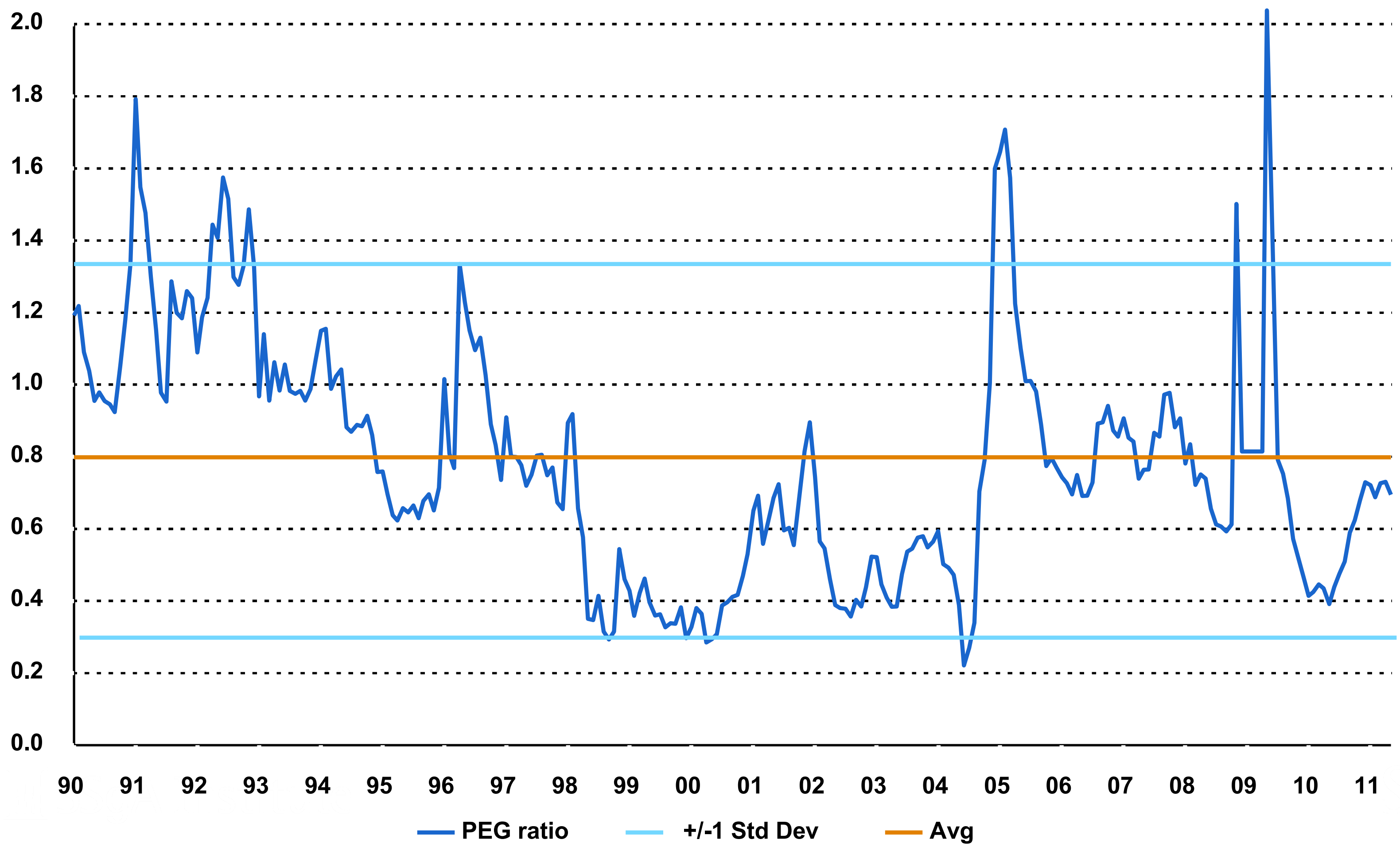
Is the Chinese A Share Market Reasonable Value?



Source: CLSA
For illustrative purposes only.

The Current EM PEG Ratio Is Below Its Historic Norm

MSCI Emerging Markets Rolling PE to Growth Rate



Source: UBS
Excludes crisis months of Dec 2008 to Apr 2009 when earnings estimates fell sharply
For illustrative purposes only.

Structuring an Investment Program: How Should We Think About Emerging Markets?

Some prior beliefs about investing in emerging markets

- Some markets are in fact “re-emerging”
- Emerging market returns are fat-tailed and skewed. Periodic crashes take place in emerging markets but volatility should be seen in a portfolio context.
- In the initial phases of equity market development, country factors dominate specific factors
- The home country bias is substantial; the international capital asset pricing model is a good place to start thinking about the world, but only a start
- There can be a first mover advantage. Domestic investors and global investors price equities off of different factors.

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Structuring an Investment Program: How Should We Think About Emerging Markets? (Continued)

Some prior beliefs about investing in emerging markets

- Herding takes place. Markets can be micro-efficient and macro-inefficient
- Home country bias, information search and acquisition costs and regulatory restrictions contribute to asset mispricings
- Weak institutions, varying degrees of transparency and lax enforcement suggests that certain markets may not be “fair games”
- The value anomaly persists
- There may be a small country effect
- The relationship between GDP growth rates and equity market returns is weak in the short/medium term

Summary

- The Great Contraction represents a structural break in the functioning in the world economy and has enhanced the case for investing in emerging markets
- The secular outlook for emerging markets continues to be favorable, but emerging markets are closely linked to the world economy and a disorderly default in the Eurozone or a severe double dip recession in the US and Europe will inevitably impact emerging markets
- At 8.5 times forward 12 month earnings, current emerging market equity valuations are not demanding. Assuming a ten year average forward p/e of 10.7, currently valuations imply a roughly 20% decline in earnings. "Mean Reversion Theory" would suggest that the performance difference between developed and emerging markets will compress.
- Emerging markets are a reasonable place to spend a risk budget, but the return distribution, high transaction costs, periodic market disruptions and time varying liquidity suggest that TAA strategies should represent only a portion of a well-diversified allocation
- In structuring an emerging market investment program, investors may wish to include an alternative beta approach and think in terms of factor exposures as well as asset classes

Emerging Markets Managed Volatility Simulation Footnotes

Emerging Markets Managed Volatility Performance:

Returns are simulated from February 1, 1999 to August 30, 2010 and assume 150bp transaction costs each way. Turnover was limited to approximately 60% annually (one-way), with monthly rebalancing.

The simulated performance shown was created by SSgA Economics Team.

The results shown do not represent the results of actual trading using client assets but were achieved by means of the retroactive application of a model that was designed with the benefit of hindsight. The simulated performance was compiled after the end of the period depicted and does not represent the actual investment decisions of the advisor. These results do not reflect the effect of material economic and market factors on decision making.

The simulated performance data is reported on a gross of fees basis, but net of administrative costs. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualized gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

The simulated performance is not necessarily indicative of future performance, which could differ substantially. The benchmark used is the MSCI Emerging Markets Index, net return. Prior to January 2001, the benchmark is calculated on a gross basis, as MSCI did not furnish official net returns before 2001. Prior to January 2004, the index was known as the MSCI EM Free Index. The index returns are unmanaged and do not reflect the deduction of any fees or expenses. The index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. All trademarks are property of their respective owners.

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Not all products will be available to all investors, please contact SSgA for further information regarding this strategy.

The performance information should not be shown without these accompanying notes.

Backtest Creation:

The testing methodology used the Barra GEM optimization model to generate historical portfolios. The data used was only that data which would have been available at the time when the historical portfolios were generated, not what is available now. These processes help to eliminate various forms of survivorship bias, both in terms of a “smarter model” and in terms of making decisions based on information that was not available at the time.

Monthly portfolios were created, and returns are the result of a buy and hold assumption on each of these portfolios. Transaction costs were assumed as stated above.

This Emerging Markets Managed Volatility process was backtested in March 2009.

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